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EXHIBITION & CONFERENCE

GEORGE R BROWN CONVENTION CENTER | HOUSTON | 17-20 SEPTEMBER 2024

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Co-Hosts:



**The world's largest energy exhibition and conference for natural gas, LNG, hydrogen, climate technologies & AI, and low carbon solutions**

**SHOW PREVIEW 2024**



**Transforming energy through vision, innovation and action**

Gastech Show Preview brought to you by:



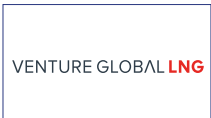
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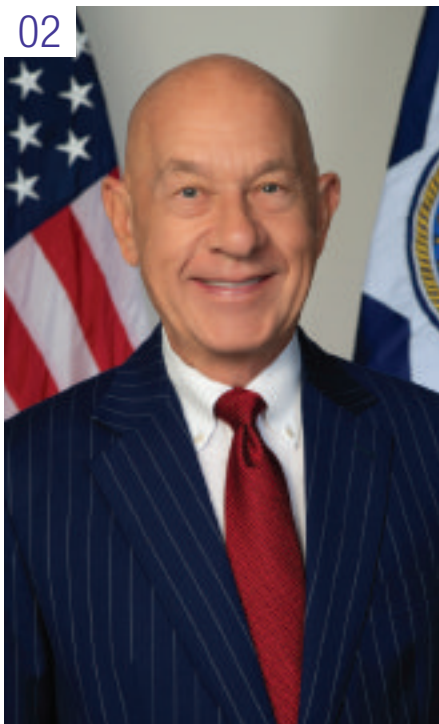
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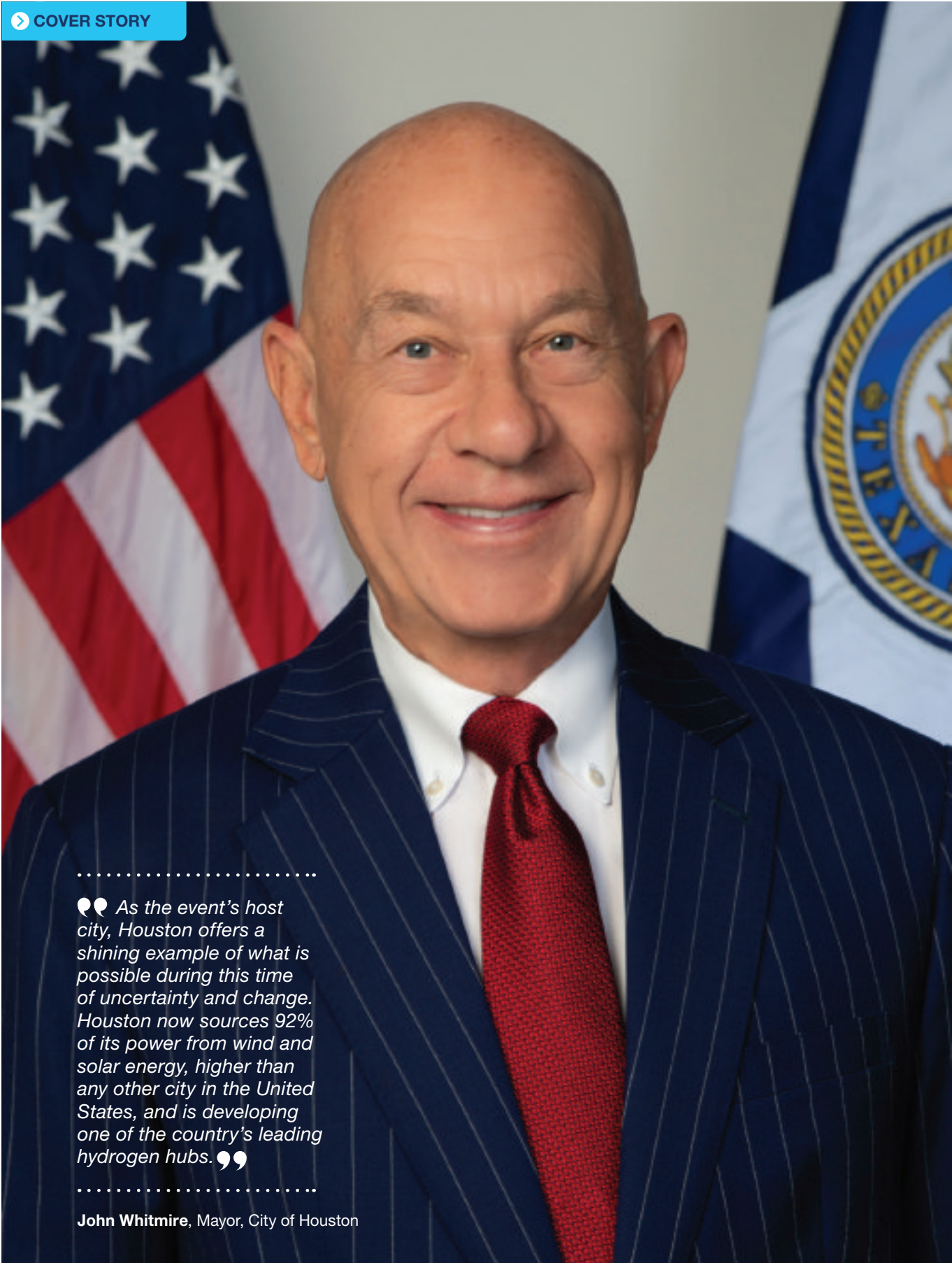
Stay ahead of your competitors

Save time and effort

Track and report



COVER STORY



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🗨️ *As the event's host city, Houston offers a shining example of what is possible during this time of uncertainty and change. Houston now sources 92% of its power from wind and solar energy, higher than any other city in the United States, and is developing one of the country's leading hydrogen hubs.* 🗨️  
.....

**John Whitmire**, Mayor, City of Houston

# Gastech in Houston: A landmark moment on the global energy calendar

John Whitmire, Mayor, City of Houston

**A**s I observe the current global landscape, I see an ever-changing set of political, social, and financial priorities that are influencing the decisions of today’s leaders. The traditional trade routes and industries are evolving, while new sectors and emerging technologies are shaping our future. In Houston, embracing change has been central to our identity and success. Founded in 1836 at the junction of Buffalo and White Oak Bayous, this city has pursued progress and innovation, serving as a destination for forward-thinkers revolutionizing the world around us. At the heart of this journey has been our energy sector, which first materialized in the early 1900s following substantial oil discoveries in the greater Houston region.

Building on more than a century of policy making and public-private collaboration, including the formation of the Energy Corridor District in 2001, Houston serves as the energy capital of the United States. The city is home to more than 4,700 energy-related firms that make it indispensable to domestic energy security and prosperity through expanding LNG export projects, as well as a leading target for foreign investment. Despite this incredible success, we have never limited ourselves to the confines of oil and gas, and in 2021, the city unveiled a plan to lead the global energy transition toward an energy-abundant low carbon world. With the support of leading companies – such as Chevron, ExxonMobil, Shell, bp America, and Schlumberger – and benefiting from the galvanizing impact of the Inflation Reduction Act, Houston is now home to the ground-breaking ventures and projects that are decarbonizing key sectors and unlocking new growth opportunities for renewable resources.

Houston is immensely proud to host Gastech, the premier gathering platform for natural



.....  
“Houston is immensely proud to host Gastech, the premier gathering platform for natural gas, LNG, hydrogen, climate technologies & AI, energy manufacturing, and low carbon solutions. As a landmark moment on the energy calendar, Gastech has a rich 52-year history of uniting the industry’s leading actors - including Ministers, CEOs, and leading innovators – to drive the energy transformation forward and deliver actionable strategies for meeting our climate goals.”  
.....

gas, LNG, hydrogen, climate technologies & AI, energy manufacturing, and low carbon solutions. As a landmark moment on the energy calendar, Gastech has a rich 52-year history of uniting the industry’s leading actors - including Ministers, CEOs, and leading innovators – to drive the energy transformation forward and deliver actionable strategies for meeting our climate goals. As the event’s host city, Houston offers a shining example of what is possible during this time of uncertainty and change. Houston now sources 92% of its power from wind and solar energy, higher than any other city in the United States, and is developing one of the country’s leading hydrogen hubs. I encourage all Gastech attendees to soak in the entrepreneurial and innovative spirit that has sustained this city for decades. In the words of Bill Gates, “If you want to catch a glimpse of our country’s clean energy future, you should head on down to the Lone Star State.”

Register to visit the Gastech Exhibition

▶ ORGANIZER'S WELCOME

# TAKING DECISIVE ACTION TO DRIVE A SUSTAINABLE ENERGY FUTURE



**A**s we navigate the critical challenges of enhancing global energy security and expediting decarbonization, fostering unity within the global energy sector has never been more important. At this critical juncture, Gastech stands as a pivotal forum for shaping the energy industry. We are delighted to host this year's event in Houston, the epicenter of global energy, where we invite you to collaborate, connect, and influence our energy future.

Now in its 52nd year, Gastech 2024 is committed to "Transforming energy through vision, innovation, and action." This tagline reflects our dedication to envisioning and driving a sustainable energy future through strategic foresight, technological advancements, and collaborative efforts. By uniting visionary strategists and technical experts, we forge paths toward global energy security and effective climate solutions.

Our agenda reflects a renewed focus on both developed and developing energy economies across the Global North and South. Over four days, we will explore key conference themes vital to our industry's future: energy

.....

🗨️ *Our agenda this year reflects a renewed focus on both developed and developing energy economies across the Global North and South. Gastech continues to tackle the foremost challenges and opportunities facing the industry – such as the rapidly increasing energy demand driven by data centers powering the AI revolution.* 🗨️

.....

security; the role of natural gas and LNG as enablers of the energy transition; the transformative impact of climate technologies and AI; and the essential role of hydrogen in achieving net zero. Artificial intelligence (AI) takes center stage this year as a critical enabler of the energy transition. AI's potential to optimize energy systems, predict and manage energy demand, and enhance operational efficiency is unparalleled. Our expanded ClimateTech & AI exhibition and conference will showcase cutting-edge climate technologies and AI innovations impacting the energy value chain.

The Gastech Energy Club also returns with its invitation-only Leadership Roundtables, tackling the industry's most pressing issues.

We thank the City of Houston and Houston First for their outstanding support in hosting this event, along with our co-hosts: Chevron, ExxonMobil, Mexico Pacific, and Shell. Their leadership and commitment drive significant, positive changes within our sector.

With the support of our partners, we will welcome over 50,000 attendees from more than 125 countries, 800 exhibitors including 20 country pavilions, and 1,000 speakers and global energy leaders, executives, industry experts, and energy professionals, reinforcing the power of collaborative industry action.

I look forward to your participation in the critical conversation on how we can come together to transform this industry for a sustainable future. And, where better to do it, than in the energy capital of the world.

**Christopher Hudson**  
President - dmG events

## fueling today with tomorrow in mind

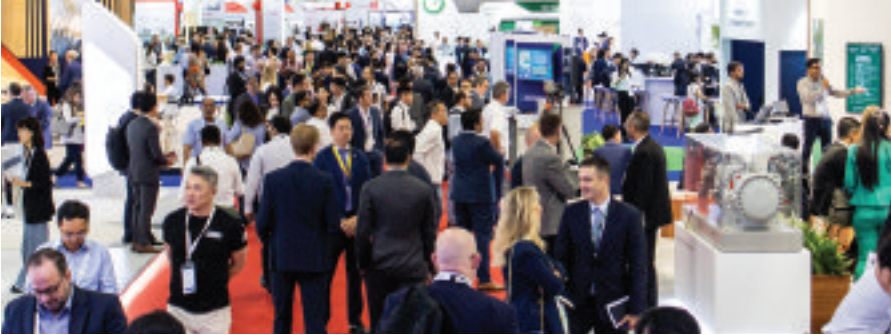
At Chevron, we're helping bring energy solutions to customers around the world. As global demand for LNG rises, we're expanding our gas portfolio while also increasing production of renewable fuels. Meeting today's energy needs while forging new paths to the future.

That's *Energy in Progress*

As a proud sponsor of Gastech Houston,  
Chevron invites you to visit our booth at C150.

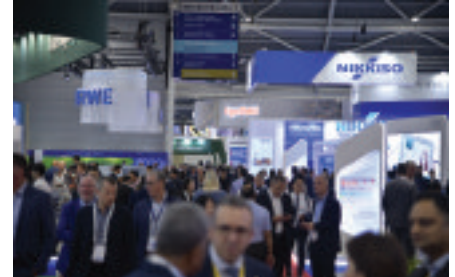


# 5 key facts about Gastech 2024



## Gastech is North America's largest natural gas and LNG event this year!

Houston's position as a global energy hub will enable Gastech 2024 to tap into more than 4,700 energy-related enterprises, and host the most comprehensive and impactful conversations about the future of the global energy industry. The US as a world leader in global energy is at the forefront of decarbonization technologies and energy supply.



## Gastech is driving crucial investment

With an estimated US \$37 trillion investment required between today and 2030 to sustain our trajectory towards a net zero transition by 2050, Gastech will respond to a pressing need for enhanced cooperation and investment across the energy industry.



## Gastech is aligning a path to success

Under the theme of "Transforming energy through vision, innovation and action", Gastech will offer an invaluable platform for key stakeholders across the energy value chain to address challenges and align on a path to success. The Gastech Strategic Conference is structured around a set of principles and priorities integral to the industry's future:

- ▶ Pioneering an equitable energy transition
- ▶ Championing natural gas as an enabler of the energy transition
- ▶ Mobilizing capital for a next-gen energy system
- ▶ Forging a multi-source energy future through climate technologies
- ▶ Elevating hydrogen's role in the global energy mix
- ▶ Catalyzing partnerships, policy & regulation for sustainable impact
- ▶ Cultivating talent for an evolving energy landscape



## Gastech will deliver a fresh perspective

Gastech is a forum that stimulates and supports innovation – forging fresh partnerships and opening doors to actionable solutions. By selecting a different host-city each year, Gastech maintains a fresh perspective, shining the spotlight on the diverse teams driving change around the world and fostering peer-to-peer networking in the regions that matter most.



## Gastech facilitates meaningful connections

Gastech puts strategy-defining CEOs, and policymakers in the same room as technical experts who can make a vision for the future of energy a reality.



Register to visit the Gastech Exhibition



# Reshaping energy

**Growth** | Connections | Brighter Futures

ExxonMobil's LNG value chain is reliable, efficient and responsive. Meeting the world's energy demands, enabling dependable economic growth for people, businesses and communities.

**Together, we are reshaping energy.**

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

# Gastech in numbers

**Gastech** is the largest global exhibition and conference for natural gas, LNG, hydrogen, climate technologies & AI, energy manufacturing, and low carbon solutions. In its 52nd year, **Gastech**, co-hosted by industry leaders **Chevron, ExxonMobil, Mexico Pacific, and Shell**, will bring together 50,000 international attendees, 800 exhibitors, and 1,000 speakers in Houston from across the value chain, playing a critical role in revitalizing collaborations and partnerships.



50,000



attendees

800



exhibitors

7,000



delegates

1,000



speakers

125



countries represented

## DID YOU KNOW?

The United States exported more liquefied natural gas (LNG) than any other country in 2023. US LNG exports averaged 11.9 billion cubic feet per day (Bcf/d)—a 12% increase (1.3 Bcf/d) compared with 2022

Source: US Energy Information Administration (EIA)

## Houston, a city famed for solving some of the world's toughest energy challenges

The host destination for this edition of Gastech, Houston provides an ideal platform for engaging with key stakeholders and energy leaders from across the value chain who are harnessing the power of natural gas and climate technologies to reinvent the energy industry. Gastech 2024 will convene record numbers of energy professionals, executives, and policymakers to accelerate the global collaborations and partnerships needed to overcome the scale, complexity, and urgency of energy transitions.



# A closer future for energy security

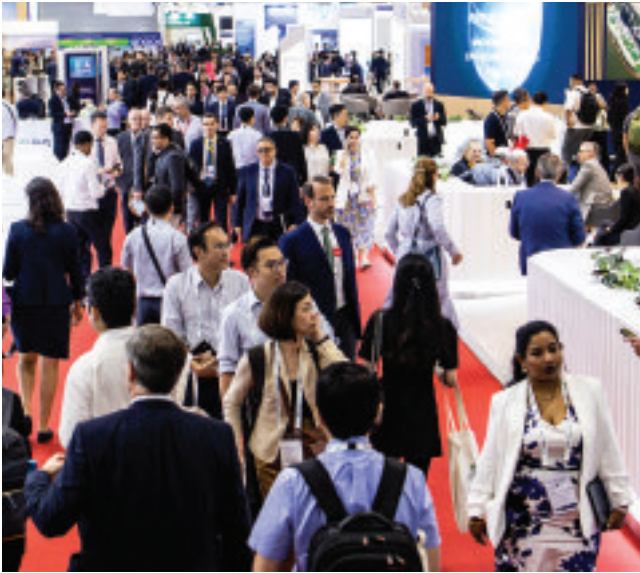
Mexico Pacific's anchor project, the 15 mtpa Saguaro Energía LNG Facility, is the most advanced LNG development project on the West Coast of North America. The Saguaro Energía LNG Facility achieves significant cost and logistical advantages resulting in the lowest landed price of North American LNG into Asia by leveraging low-cost natural gas sourced from the nearby Permian Basin and a significantly shorter shipping route avoiding Panama Canal transit risk.

More information can be found at [www.mexicopacific.com](http://www.mexicopacific.com).

Follow us @MexicoPacific on  



# 5 reasons to attend



Meet face to face with companies and **decarbonization** experts from across the evolving energy ecosystem who are helping to drive sustainable progress.



Discover the **latest innovations, solutions, and technologies** driving energy systems towards a net zero future, from 800 international exhibitors spanning the energy value chain. Understand how innovative solutions can deliver tangible impact at scale.



Gain the latest insights into how the energy industry is collaborating across multiple industry sectors to **meet ambitious net zero targets**.



Collaborate and connect with 50,000 global energy professionals **seeking conversations and partnerships** to address the challenges and opportunities created by the energy transformation.



**The Gastech Conference** is at the heart of the energy sector, convening Ministers, global C-suite executives, policymakers, and innovators across more than 160 sessions with a singular objective: transforming the trajectory of the energy industry through vision, innovation and action.



Register to visit the Gastech Exhibition



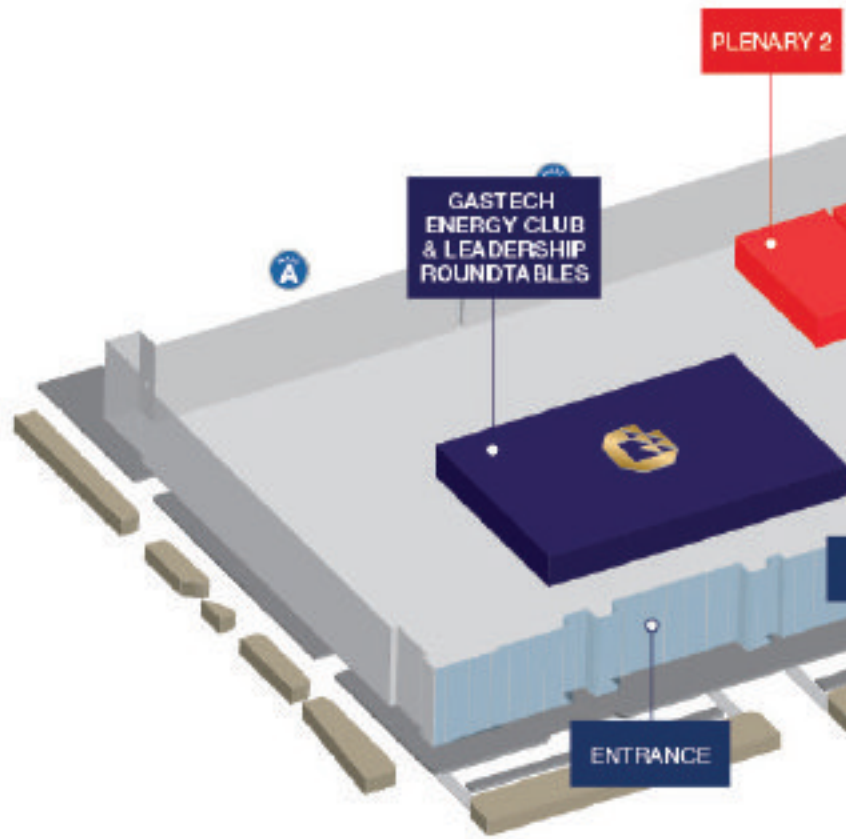
**Trust. Integrity. Energy Security.**  
Delivering LNG where and when you need it.



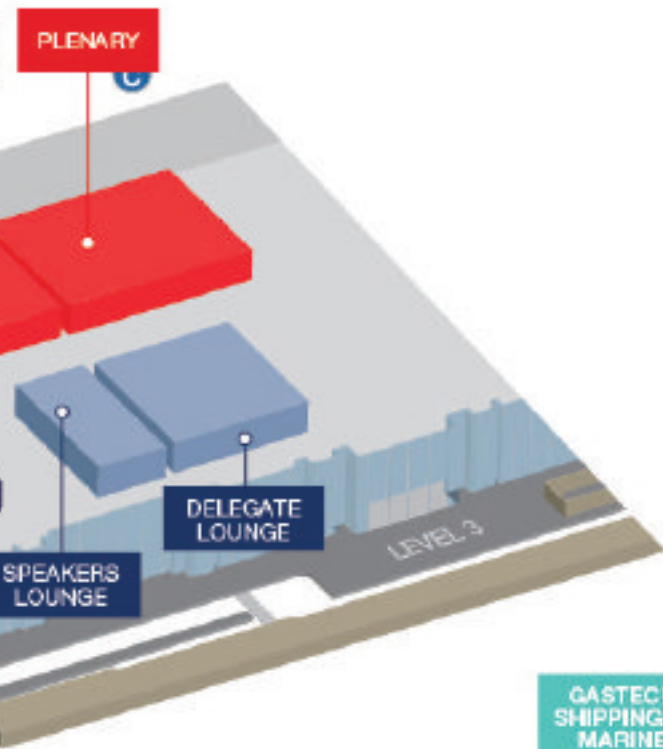
[www.shell.com/natural gas](http://www.shell.com/natural gas)

# Explore the Gastech Exhibition

The Gastech Exhibition show floor will showcase 800 exhibitors from across the energy value chain, alongside 20 international country pavilions. Specialist industry areas focused on decarbonization technologies include Gastech Hydrogen and Gastech Climatetech & AI, alongside dedicated conference theaters addressing critical industry issues.



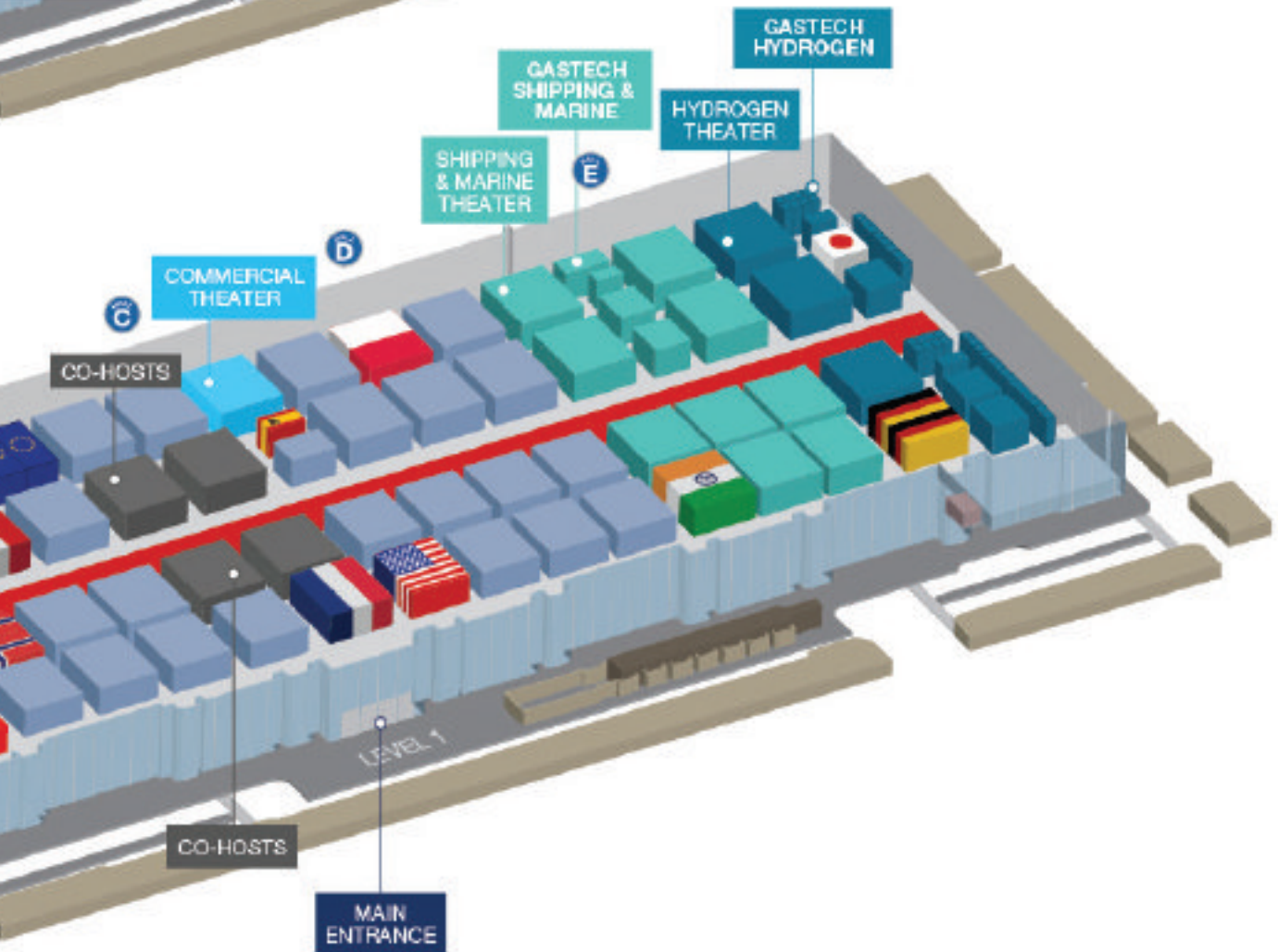
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SHOW OPENING TIMES		
Day 1	Tuesday 17, September	09:00 – 18:00
Day 2	Wednesday 18, September	09:00 – 19:00
Day 3	Thursday 19, September	09:00 – 18:00
Day 4	Friday 20, September	09:00 – 14:00



Gastech is situated at  
**George R Brown Convention Center**,  
 1001 Avenida de las Americas, Houston,  
 Texas 77010



Register to visit the Gastech Exhibition

EXHIBITION OVERVIEW

# Gathering the forces for change

A truly global exhibition dedicated to delivering a more sustainable energy future

**M**ore than 800 companies from across the world, representing the global energy ecosystem, will convene at the Gastech Exhibition in Houston, the energy capital of the world, this September. Gastech provides a global platform for businesses to showcase the latest strategies and cutting-edge innovation to industry leaders, decision makers, and financiers across the energy value chain: from the largest technology providers and energy suppliers to the most game-changing start-ups. Co-Hosted by industry leaders Chevron, ExxonMobil, Mexico Pacific, and Shell, and under the theme “Transforming energy through vision, innovation, and action”, Gastech 2024 will convene record numbers of energy professionals, executives, and policymakers to accelerate the global collaborations and partnerships needed to overcome the scale, complexity, and urgency of energy transitions.



- ▶ Located this year in the US, a world-leader in global energy, and at the forefront of decarbonization technologies and energy supply.
- ▶ All the major US energy players will be represented on the Gastech exhibition show floor.
- ▶ Across 5 exhibition halls, Gastech will feature specialized industry areas - Climatech & AI, Hydrogen, Shipping & Marine - as well as game-changing start-ups at the forefront of decarbonization.
- ▶ Meet with the leading players in the energy world, strengthen business partnerships, source products and solutions, and drive future business growth.

## Must-visit show floor features

### Hydrogen

#### Accelerating hydrogen's role in the global energy mix

To transition towards a more sustainable future, the energy industry needs to embrace innovation and invest in hydrogen technology to decarbonize production, drive operational efficiencies and ensure competitive pricing for off-takers.

Located in Hall E

Discover more

### Climatech & AI

#### Decarbonizing the energy value chain

Gastech Climatech & AI will provide a dedicated forum to discuss and showcase key technologies, innovations and solutions in carbon capture, utilization and storage, power grid, electrification and digitalization and AI.

Located in Hall A

Discover more

### Shipping & Marine

#### Investing in LNG infrastructure and decarbonizing the marine value chain

A showcase of expertise in ship building, ship to ship transfer, terminal infrastructure and decarbonization technologies, alongside spotlighting how marine services, logistics, and transportation of freight can be achieved in an environmentally responsible way.

Located in Hall E

Discover more



Register to visit the Gastech Exhibition



EXHIBITING COMPANIES

# Convening the world's biggest names in energy

This September **Gastech** will bring together more than 800 exhibiting companies from all over the world. It will gather a host of NOCs, IOCs, NECs, and IECs, and 20 international exhibiting country pavilions with a focus on natural gas, LNG, hydrogen, climate technologies & AI, energy manufacturing and low carbon solutions.



A selection from over 800 exhibitors this year:



[View All Exhibitors](#)

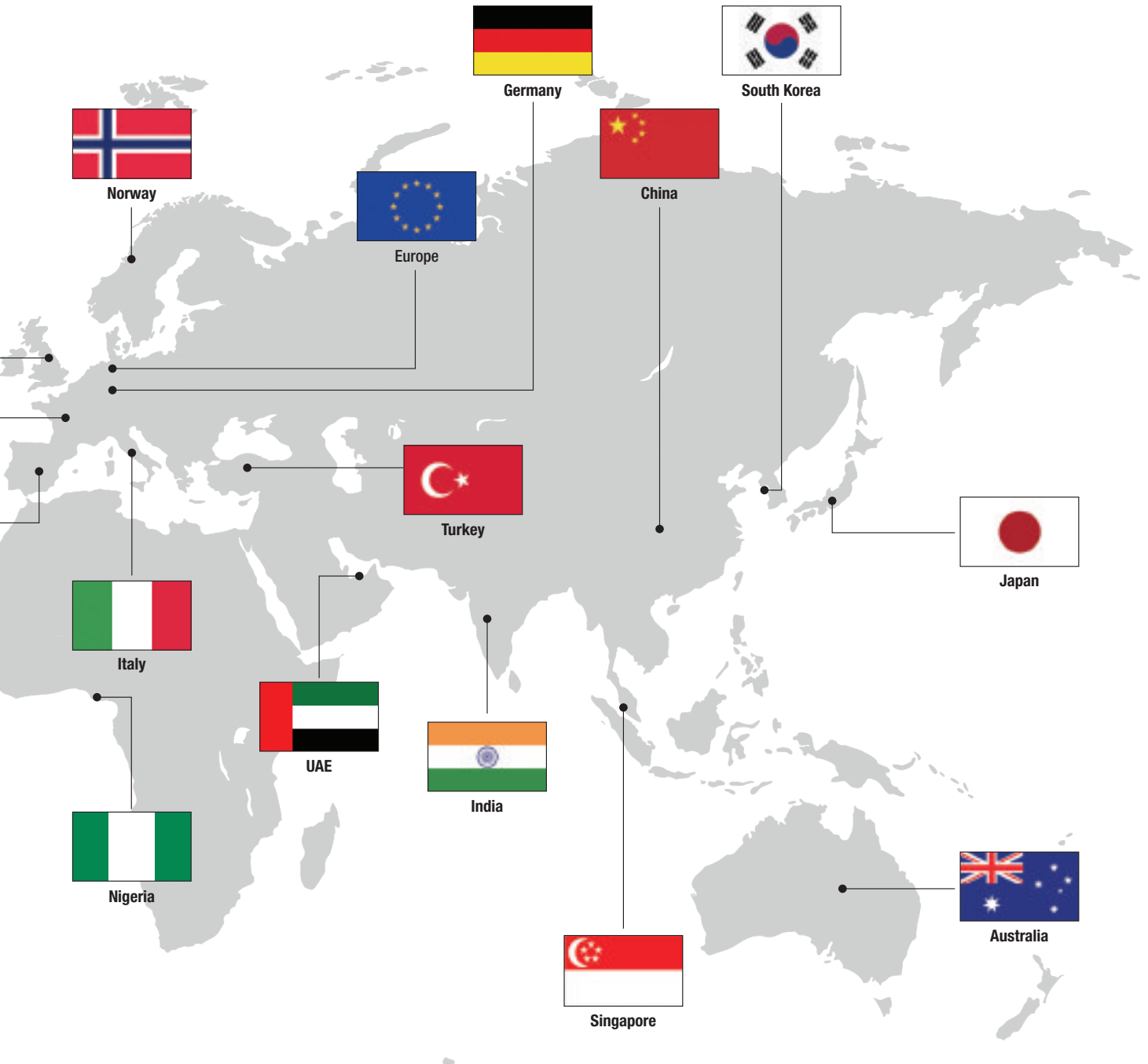
COUNTRY PAVILIONS

# An international hub of energy commerce



# 20 international country pavilions

Register to visit the Gastech Exhibition





Climatech & AI Host Sponsor:



# Catalyzing decarbonization with advanced climate technologies



**Over the next 10 years, US \$21 trillion will need to be invested in nascent climate technology start-ups to support their development, commercialization and adoption**

As the leading event for the world's foremost technical experts and energy industry visionaries, Gastech Climatech & AI serves to inspire innovative dialogue and connect those driving the rapid adoption of climate technology and AI solutions across the energy industry. A greatly-expanding area on the Gastech show floor, it delivers an essential forum to discover key technologies, innovations and solutions in carbon capture, utilization and storage, power grid, electrification and digitalization and AI. Bringing together both end users and solution providers, you will discover climate technologies that will help accelerate the transition to a low carbon energy value chain. Seek out existing technologies, available for development at scale, as well as new technologies, all of which have a role to play in addressing climate change and achieving net zero ambitions.

## The key pillars shaping the Climatech & AI Conference Programs:

- 1 Catalyzing decarbonization** with advanced climate technologies
- 2 Advancing green molecules and electrons** for a new energy system
- 3 Unlocking the potential of hydrogen** as a critical component of the broad energy mix
- 4 Empowering talent** as a critical enabler of transformation across the value chain
- 5 Prioritizing decarbonization** in industrial and hard-to-abate sectors
- 6 Leveraging technological advances** for enhanced power generation and efficiency
- 7 Accelerate methane abatement** by unifying efforts and standardizing reporting



[View the Gastech Conference Agenda](#)

**LOCATION: HALL A**



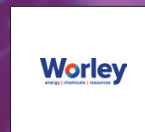
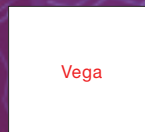
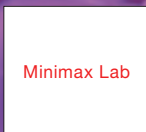
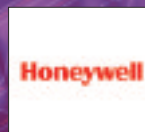
With unparalleled access to the world's leading energy ecosystem, Houston is uniquely positioned to drive low carbon energy innovation forward. As a quickly emerging energy innovation hub and home to over 200 climatech startups, Houston is primed to develop and deploy the technologies needed to decarbonize industry at scale. We look forward to hosting Gastech Climatech & AI 2024 and the opportunity to showcase our region's success.

**Jane Stricker**

Senior Vice President | Greater Houston Partnership | Executive Director | Houston Energy Transition Initiative



### Discover innovative clean tech companies including:



## Gastech Climatech & AI:



- ▶ Support the decarbonization drive towards net zero
- ▶ Showcase cutting-edge AI and technologies technologies pioneering a more sustainable future
- ▶ Share leading industry insight to shape policy and support emerging technologies
- ▶ Bring the global energy industry together to advance this critical sector
- ▶ Drive finance and capital investment into new climate technologies

### \$21 trillion

INVESTMENT NEEDED IN THE NEXT 10 YEARS IN NASCENT CLIMATECH START-UPS

### \$1.8 trillion

TOTAL GLOBAL SPENDING ON CLEAN-ENERGY TRANSITION

### \$282 billion

WORTH OF INVESTMENT IN US CLEAN ENERGY PROJECTS IN IRA'S FIRST YEAR

### 280

CLEAN ENERGY PROJECTS ANNOUNCED ACROSS 44 US STATES IN US INFLATION REDUCTION ACT'S (IRA) FIRST YEAR

[View the Gastech Conference Agenda](#)





Hydrogen Principal Sponsor:



# Accelerating hydrogen's role in the global energy mix

**A**fter the momentous announcement at COP28, we saw a groundbreaking pledge to accelerate low carbon hydrogen production to help decarbonize the global energy system. Gastech Hydrogen exhibition and conference is perfectly poised to drive transformational progress in the energy industry. To transition towards a more sustainable future, the energy industry needs to embrace innovation and invest in hydrogen technology to decarbonize production, drive operational efficiencies and ensure competitive pricing for off-takers.



## The key pillars shaping the Hydrogen Conference Programs

- 1 Elevating hydrogen's role** in the global energy mix
- 2 Mitigating risks** in the hydrogen supply and infrastructure development
- 3 Evolving policy frameworks** to accelerate low carbon hydrogen deployment
- 4 Empowering talent** as a critical enabler of transformation across the value chain
- 5 Scaling hydrogen demand** by building structure and support across industries



 [View the Gastech Conference Agenda](#)

Hydrogen Host Sponsors:



NORTON ROSE FULBRIGHT



LOCATION: HALL E

“Decarbonizing sectors that are hard to abate will require the adoption of cleaner technologies for its production, thus enabling hydrogen and hydrogen-based fuels to play a significant contribution in the Net Zero Emissions Scenario.”

Source: International Energy Agency (IEA)

## KEY FEATURES

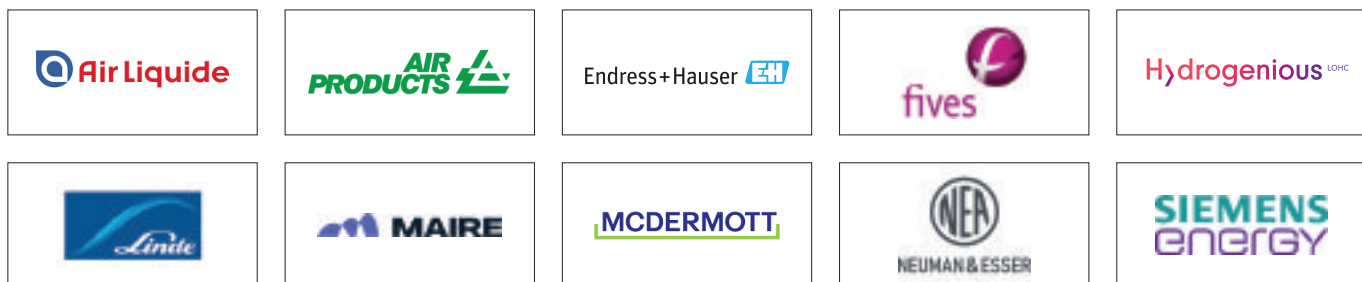
- HYDROGEN EXHIBITION
- HYDROGEN CONFERENCE PROGRAM
- HYDROGEN HUB & START-UP



## Core sectors represented on the show floor

- ▶ HYDROGEN PRODUCERS
- ▶ ENERGY SUPPLIERS AND UTILITIES
- ▶ STEEL MANUFACTURERS
- ▶ PETROCHEMICAL PRODUCERS
- ▶ OFFSHORE ENERGY SOLUTIONS
- ▶ AUTOMOTIVE MANUFACTURERS
- ▶ INDUSTRIAL VEHICLE MANUFACTURERS
- ▶ FUEL CELL MANUFACTURERS
- ▶ HEAVY INDUSTRY ORGANIZATION
- ▶ PROCESS INDUSTRIES MANUFACTURERS
- ▶ INDUSTRIAL ENGINEERING
- ▶ AEROSPACE
- ▶ MARITIME INDUSTRIES

## A selection of hydrogen companies at Gastech 2024:



[View the Gastech Conference Agenda](#)

# Shipping & Marine

Host Sponsor:



## Investing in LNG infrastructure and decarbonizing the marine value chain

**To achieve net zero emissions by 2030, a nearly 15 percent reduction in international shipping emissions is needed.** After a historic COP28, significant efforts have recently been made to align and accelerate decarbonization efforts across the energy-maritime value chain to meet these fast-approaching targets. Gastech Shipping and Marine, located within the main exhibition, will showcase expertise across the marine value chain, including, ship to ship transfer, terminal infrastructure and decarbonization technologies, and will spotlight how marine services, and marine transportation, can be achieved in an environmentally responsible way.



### 5 reasons to attend:

- ▶ Understand the decarbonization drive of the marine value chain towards a net zero future
- ▶ Discover cutting-edge technologies pioneering a more sustainable future
- ▶ Connect with the global shipping and marine industry to advance this critical sector
- ▶ Hear leading industry insights supporting shipping technology development
- ▶ Drive finance and capital into maritime decarbonization to accelerate adoption and progress

### The Shipping & Marine Conference Program will address:

	<b>New shipping technologies</b>		<b>Decarbonizing shipping</b>		<b>Alternate fuels and fuel selection</b>
	<b>Bunkering</b>		<b>Onshore, nearshore, offshore and floating solutions</b>		<b>Operating and maintenance optimization</b>

### Dedicated exhibition, featuring participating companies including:



[View the Gastech Conference Agenda](#)



**LOCATION: HALL D**



# SnapLNG™ by T.EN

We are opening new frontiers in natural gas liquefaction with SnapLNG by T.EN.™  
Delivering low-carbon LNG in a new way with an accelerated time to market.

## The Solution

# ZERO

LNG decarbonized production  
Pre-engineered and standardized modular solutions  
Optimized asset life cycle performance  
LNG certainty



TECHNIP  
ENERGIES

# Carbon markets can play a major role in financing clean energy

By **Joseph McMonigle**, Secretary General of the International Energy Forum (IEF)

**C**arbon credits could play a significant part in reaching net zero by 2050. But the carbon market needs much greater integrity and credibility — as well as supply. How can we achieve this?

The global voluntary carbon market (VCM) is a critical tool for mobilizing finance for decarbonization efforts. As the market for carbon credits has grown, however, the value and effectiveness of the market has come under scrutiny. To restore trust and increase confidence in the market, it is critical that carbon credits represent real, additional, verifiable emission reductions. The credibility and integrity of carbon credits rely heavily on the standards governing their creation and purchase.

Strengthening market mechanisms, ensuring rigorous accounting standards, and increasing global cooperation are all essential to ensure that carbon markets contribute towards a low carbon future.

## Popular tool

Voluntary carbon credits have become an increasingly popular tool for climate action in recent years. They allow companies to offset their carbon emissions by funding projects that reduce or remove carbon from the atmosphere. This can include energy efficiency projects, tree planting, and other carbon avoidance projects including sequestration of methane from landfills. They also have the potential to finance emerging climate technologies, such as carbon capture and storage (CCS) projects. Currently, however, the methodologies for certifying carbon schemes are so restrictive that engineered CCS projects are effectively shut out of the market.

VCM inflows reached a peak of \$2 billion in 2021 and were estimated to grow to more than \$50 billion by 2030. However, concerns about a lack of regulation have persisted and a string of newspaper investigations in 2023 highlighted inflated impact claims by carbon credit developers and gaps in project design. These eroded trust in voluntary carbon markets and led to a significant reported slowdown in the market, with sharp declines in VCM prices and contracts.

High-integrity carbon markets still have the potential to be a highly effective mechanism for



Joseph McMonigle, Secretary General of the International Energy Forum (IEF)

decarbonization, and there are clear pathways to ensuring they are verifiable and trusted. However, the future blueprint for international carbon markets has yet to gain international consensus. Article Six of the Paris Agreement, which relates to the governance of carbon markets, remains mired in the United Nations decision-making process. One of the most promising developments at the most recent UN Climate Conference in Dubai (COP28) — where the topic was one of intense discussion — was an agreement by major carbon registries, including Gold Standard and Verra, to align on carbon accounting principles under a new framework. While details of the framework remain thin, it represents a potentially important step towards greater harmonization across carbon markets. Independent carbon market regulators, including the Science Based Targets Initiative and the Voluntary Carbon Markets Integrity Initiative, also agreed to produce a cohesive carbon project quality standard, which could make the market significantly easier to navigate for buyers.

## Government scrutiny

Greater government scrutiny could also be an important way of improving confidence and boosting the integrity of carbon markets. Currently, compliance carbon markets are regulated and aim to offset carbon through national schemes by requiring the purchase

of credits from energy-intensive industries, while voluntary markets are unregulated. In recent years, there are signs that both markets are converging, which could lead to more robust and transparent standards and digital verification efforts for both markets.

One example is Singapore's carbon tax, which allows companies to meet part of their tax liabilities through the purchase of certified third-party carbon credits. More countries — including the United States — are starting to explore alternative market models.

There are also a growing number of initiatives designed to improve transparency in carbon markets. Independent global regulators, such as Voluntary Carbon Markets Integrity Initiative (VCMI) are pushing for tougher scrutiny of the voluntary carbon markets, including a code of practice to ensure that companies buying credits can do so with confidence. Meanwhile the Climate Action Data Trust launched its Public Data Dashboard, meaning the public can now access and scrutinize carbon credit purchases within unprecedented ease.

## Steady supply of carbon credits

As the VCM grows, carbon credit projects will have to ramp up at an unprecedented rate. Nature-based solutions and efficiency gains are valuable, but not sufficient on their own. Green-lighting CCS projects which are currently shut out of the market by restrictive certification requirements would be a powerful tool for accelerating decarbonization. This would take advantage of the wave of forthcoming projects given investment impetus through mechanisms such as the US government's federal tax credit, adding a new steady supply of carbon credits to the global market.

Strengthening credit verification, using digital methods, better matching between buyers and suppliers through standardized project descriptions and a stronger market infrastructure will all help to scale up VCMs. Revitalizing the carbon market so that it meaningfully contributes to emissions reduction goals is a key challenge for climate action. There are signals that 2024 could be the year where global co-ordination and standardization mean that they can start to realize their significant potential.

# The crucial role of LNG in the energy transition and the path forward

As the world strives to balance energy security, sustainability, and affordability, LNG emerges as a key player in the energy transition. With the need for cleaner fuels and rapid economic growth, particularly in Asia, LNG provides a feasible bridge between traditional fossil fuels and renewable energy.

By **Nobuo Tanaka** | Executive Director-Emeritus, International Energy Agency

**In the rapidly evolving landscape of global energy, Liquefied Natural Gas (LNG) has emerged as a pivotal player.**

Its role in bridging the gap between traditional fossil fuels and renewable energy sources is undeniable.

As nations grapple with the urgent need for cleaner energy while ensuring economic stability and growth, LNG offers a feasible solution. However, this transition is not just about one energy source replacing another; it is about a comprehensive overhaul of our energy infrastructure and policies. Investments in renewable energy, batteries, and electric vehicles are crucial and reassuring indicators of a broader commitment to sustainability. Just as Europe embarked on a quest for alternative gas sources in the aftermath of geopolitical conflicts, Asian economies also face the pressing need for LNG and cleaner fuels to support their rapid economic growth in the coming decades. The prevailing sentiment in the financial sector today, however, suggests that a longer timeframe for the energy transition might be necessary. Energy security remains a top priority globally, and this reality cannot be ignored.

The discussion on the energy trilemma—balancing energy security, sustainability, and affordability—is ever-present. For instance, regional power grid connectivity is a fascinating subject. Europe is actively developing grid connectivity to enhance energy security, which also boosts sustainability by enlarging the market and mitigating the intermittency of solar and wind energy. A larger market can fill gaps and provide more affordable energy, a model that Asia can learn from. Of course, overcoming the divergent interests of individual countries is a challenge, but Europe's experiences in balancing affordability, security, and sustainability offer valuable lessons for the Asian energy market.

Understanding the broader context of the energy transition is crucial. Renowned scholar and professor Vaclav Smil emphasises that each iteration of the energy transition takes longer than the last. From coal replacing



Nobuo Tanaka, Executive Director-Emeritus, International Energy Agency

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 ☞ *Extending the timeframe for the energy transition and aiming for net zero within the next decade could facilitate a smoother transformation of the energy sector. However, this extension comes with risks. We must not become complacent.* ☞  
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wood, to oil replacing coal, and then natural gas replacing oil and other sources, each shift slows down progressively. Now, the challenge is to increase the share of renewables in the energy mix at an unprecedented speed. The nuclear sector, which Prof. Smil terms a “successful failure,” is expected to play a complementary role. But can we realistically achieve this accelerated transition? And can the planet afford to wait? Extending the timeframe for the energy transition and aiming for net zero within the next decade could facilitate a smoother transformation of the energy sector. However, this extension comes with risks. We must

not become complacent. Innovation and investment in necessary areas must be pursued with urgency. Balancing technology advancement, supply-side considerations, and emission reductions requires a multifaceted approach. Governments must create an enabling environment, with regulation and carbon pricing being two critical pillars. Japan serves as a noteworthy example. The country aims to be net zero by 2050 and has recently introduced carbon pricing, with plans for a carbon surcharge for utilities and importers. This mirrors Japan's earlier success with LNG. Fifty years ago, when Japan started importing LNG from Alaska, the costs were high, and few believed in its viability as an alternative to pipeline gas. Today, LNG is a prized commodity, thanks to a regulated market.

The future of the energy transition hinges on scaling up and financing existing technologies. The technologies likely to be commercialised in the next decade—hydrogen, transportation, storage, batteries, and small modular reactors—are already available. The challenge lies in deploying these technologies at scale. While governments are keen to fund research and development for innovative technologies, they must now focus on providing substantial financial support for deployment, which requires much more than R&D investment. The potential of direct air capture (DAC) is exciting. If DAC costs become low enough, it could simplify the decarbonisation of heavy industries like steel and cement. Additionally, nuclear fusion holds promise. With numerous small commercial fusion ventures emerging in the US, Europe, Japan, and elsewhere, there is hope that one of them will succeed. A successful fusion project in the coming decades would revolutionise power generation and redefine our energy paradigm. While LNG plays a critical role in the energy transition, a balanced approach that includes significant investments in renewable energy and innovative technologies is essential. The path forward requires collaboration, innovation, and a steadfast commitment to sustainability.

▶ STRATEGIC INSIGHTS PARTNER: BOSTON CONSULTING GROUP



# Fostering demand for CO2 removal: A critical need for climate goals

**T**he global climate crisis demands urgent and innovative solutions to mitigate carbon emissions. One of the critical components in achieving net zero emissions by 2050 is the effective deployment of carbon dioxide removal (CDR) strategies. While various carbon abatement technologies are being developed, they alone won't suffice. There is a real need to scale CDR methods to address the residual emissions that are either too expensive or technically unfeasible to eliminate through current abatement technologies. This is particularly important for participants in the natural gas market. Technologies such as CCUS and hydrogen can gradually decarbonize gas, but addressing the remaining emissions is still necessary, where CDR methods prove effective.

## The imperative for CDR

According to the Intergovernmental Panel on Climate Change (IPCC), CDR is indispensable for counterbalancing hard-to-abate emissions. Projections indicate that by 2050, approximately 6 to 10 gigatons per annum (Gtpa) of CO<sub>2</sub> will remain unabated. These residual emissions are expected to be predominantly from the industrial (40%), energy supply (30%), and transport (20%) sectors. Without CDR, reaching global net-zero targets remains improbable.

## Policy and market drivers

To foster CDR adoption, a robust policy framework is essential. Governments must leverage a combination of carbon pricing mechanisms, regulatory requirements, and financial incentives. These measures can help create a viable market for CDR technologies, driving innovation and reducing costs over time. For instance, carbon pricing can internalize the environmental costs of emissions, making CDR solutions more competitive. Regulatory mandates can compel industries to adopt CDR technologies, while financial incentives can reduce the upfront costs associated with implementing these solutions.

## Types of CDR methods

CDR methods vary in durability and technological maturity. Lower durability methods, such as afforestation and



Alex Dewar, Managing Director & Partner  
Boston Consulting Group

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 ☞ *Achieving global net zero emissions by 2050 is a challenge that requires comprehensive strategies encompassing both carbon abatement and removal.* ☞  
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reforestation, have been in practice for decades but offer temporary sequestration. In contrast, medium to high durability methods, such as direct air carbon capture and sequestration (DACCS) and biomass with carbon removal and storage (BiCRS), are emerging technologies promising long-term sequestration. Direct Air Carbon Capture and Sequestration:

- DACCS involves capturing CO<sub>2</sub> directly from the atmosphere and storing it underground or in long-lived products. This method is highly durable, with the potential to permanently remove CO<sub>2</sub> from the atmosphere. However, it is currently expensive and energy-intensive, requiring significant investment and technological advancements to scale.
- Biomass with Carbon Removal and Storage (BiCRS): BiCRS leverages biomass to capture CO<sub>2</sub> during growth. The biomass is

then processed to produce energy, and the resultant CO<sub>2</sub> is captured and stored. This method integrates carbon removal with energy production, offering a dual benefit. Yet, it necessitates careful management of biomass resources to avoid negative environmental impacts.

## Challenges and opportunities

The primary challenge in scaling CDR technologies lies in the high costs and technical hurdles associated with durable methods. Additionally, there is a lack of consensus on the volume of residual emissions that need to be removed, leading to uncertainty in market projections and investment strategies. To overcome these challenges, sustained research and development (R&D) investments, coupled with supportive policy frameworks, are crucial. Public-private partnerships can play a pivotal role in advancing CDR technologies, bringing together the expertise and resources needed to innovate and scale these solutions. Several countries and organizations are already making strides in CDR. For example, the United States has launched initiatives to support DACCS through grants and partnerships. In Europe, the European Union's Innovation Fund is investing in large-scale carbon removal projects. Private companies are also contributing, with firms like Climeworks and Carbon Engineering pioneering DACCS technology. These efforts highlight the potential for collaborative approaches to accelerate CDR deployment.

## The path forward

Achieving global net zero emissions by 2050 is a challenge that requires comprehensive strategies encompassing both carbon abatement and removal. While CDR technologies are still in their infancy, their role in addressing residual emissions is undeniable. By fostering a conducive policy environment and encouraging innovation through investments and collaborations, the world can scale CDR solutions to meet the climate crisis head-on. The path to a sustainable future hinges on our ability to integrate these cutting-edge technologies into a broader decarbonization strategy, ensuring a livable planet for future generations.

# Could US data centers and AI shake up the global LNG market?



US gas demand growth threatens to push up Henry Hub gas prices

By **Massimo Di Odoardo**, Vice President Gas and LNG Research, Wood Mackenzie and **Eugene Kim**, Research Director for Americas Gas, Wood Mackenzie

**S**hale gas has revolutionised the US gas industry over the last 15 years. Huge volumes of low-cost upstream gas have helped push coal out of the power generation mix and underpinned the burgeoning global trade in US LNG exports. The sheer scale of the resource had forged our view that Henry Hub prices would stay cheap as chips for the foreseeable future, underpinning US LNG's competitiveness. However, changing dynamics in US power and gas markets have led us to take a more bullish view of how gas prices develop. In the past two years, we have raised our forecast for gas demand from the power sector to reflect the difficulty the US faces in achieving its very challenging renewables build-out targets. Additionally, the spree of LNG contracting activity following the Russian invasion of Ukraine has led us to increase our forecasts for LNG exports, easily the biggest growth segment for North American gas demand. The second big upgrade came in our North America gas strategic planning outlook. It takes into account the explosive growth in data centres and AI that's unfolding, along with the reshoring of power-intensive industries such as chip manufacturing.

Today's data centres are power hungry. They already account for around 5% of US electricity demand, needing 2 bcf/d of gas, assuming 60% is met by gas generation. AI recent developments provide fresh momentum and have led us to increase electricity requirements by an additional 5% through to 2050. As a consequence, we now expect total US gas demand to increase by 30 bcf/d (300 bcm) by the early 2040s compared with 13 bcf/d (130 bcm) previously. There is, of course, plenty of gas supply to accommodate more demand in North America - the issue will be at what cost. The incremental gas demand will lead to the earlier exhaustion of low-cost resources, both from liquids-associated plays and the dry gas basins of the US Lower 48. Additionally, our view is that associated gas from tight oil will start declining towards the end of the next decade with even the Permian hitting the wall in the mid-2040s.

Wood Mackenzie Henry Hub price forecast (Real) dated 2022, 2023 and 2024



Source: Wood Mackenzie North America Gas Service. Prices are expressed in Real term. They are lifted directly from Wood Mackenzie's published reports, so reflect different year bases: 2022, 2023 and 2024, respectively.

As a result, Henry Hub prices are likely to experience further upward pressure from the mid-2030s as higher cost plays are tapped, from the Marcellus in the Northeast to supply demand centres along the Atlantic seaboard. Wood Mackenzie's 'old view' was that Henry Hub would be range-bound between US\$3/mcf and US\$4/mcf (in real terms) through 2045. We're now expecting prices to hit US\$4/mcf more than a decade earlier. Beyond 2035, our modelling suggests the market gets progressively tighter, lifting Henry Hub closer to US\$6/Mcf (in real terms) through the 2040s. That's up to 45% above our forecasts of two years ago.

This is certainly good news for upstream producers who have experienced years of modest prices in a well-supplied market. But what are the implications for LNG markets? First and foremost, there remains a huge global appetite for LNG. We forecast 230 Mtpa of new supply will be needed to meet demand growth to 2050, adding 30% more volumes to capacity already onstream or under development. The US will have a big part to play in delivering that supply. While price is critically important, US LNG has other advantages including flexibility for buyers on cargo destination, lower cost cargo

cancellation options and swift project build times that conventional projects can't match. Most buyers, including those in price-sensitive markets newer to LNG, will continue buying LNG on 15-to-20-year contracts and look at the economics over the life of the deal. For most of that contract exposure, Henry Hub-indexed LNG looks a pretty safe bet. The risk, based on WoodMac forecasts, is skewed towards the back end of a long-term contract. Asian buyers will, as ever, compare Henry Hub-linked contract prices with oil-indexed contracts from conventional LNG projects. But should Henry Hub prices drift upwards in the longer term, oil-indexed contracts from conventional projects will become a more attractive option, assuming the same Brent price or lower, and the same indexation. Over time, though, that arbitrage would close as higher Henry Hub prices would provide headroom for sellers to increase oil-indexation levels.

It's also worth bearing in mind that buyers lament the lack of new, competitive sources of supply other than the US and Qatar. One potential positive that could emerge is that higher Henry Hub prices would spur investment in new conventional sources of LNG outside these two countries.

▶ CO-HOST: CHEVRON | STAND: C150

# Chevron focused on delivering an efficient and lower carbon energy future

In an exclusive interview ahead of Gastech 2024 in Houston, Colin Parfitt, President, Midstream at Chevron, highlights the vital role of LNG as an enabler of the energy transition, and how Chevron is adapting to global trends in demand and helping with the expansion of reliable energy access.

## What role do you foresee LNG playing in the energy transition?

Delivering the energy the world needs while lowering carbon intensity is a complex challenge. At Chevron, we believe there are steps we can take today to deliver a lower carbon future.

Much of the world has been transitioning from higher carbon intensity coal to lower carbon intensity natural gas for decades, accelerating this process will hasten carbon reduction achievements.

Natural gas emits roughly 50% less carbon when producing electricity than coal. Electricity accounts for about 20% of the world's total final energy consumption. The International Energy Agency estimates that up to 1,200 Mt CO<sub>2</sub> could be abated worldwide by switching from coal to existing natural gas-fired power plants. Chevron supports policies that incentivize the conversion of facilities to natural gas and the incorporation of lower carbon technologies to coal fired electric generation facilities.

## What trends do you see in global demand for LNG? How is Chevron planning to adapt to meet this demand?

Global energy demand is projected to increase through 2050, fueled by population growth and increased standards of living. We are also seeing huge growth in Artificial Intelligence, which the World Economic Forum estimates could be using more power by 2028 than the entire country of Iceland used in 2021.

In all projection scenarios from the U.S. Energy Information Administration (EIA), natural gas will support 15-20% of global electricity generation in 2050.

Natural gas is critical to a lower carbon future. Coal currently accounts for more than one-third of global electricity generation.

At Chevron we are bringing rich natural gas resources to market to meet global demand.



Colin Parfitt, President, Midstream at Chevron

Our business is growing. We are building on our strong, reliable global portfolio to meet these demands.

## Different regions are employing different strategies to reach climate targets at varying paces. How does the energy transition differ for those in developing verses developed countries?

At Chevron, we believe everyone has a right to strive for a better standard of living. We will continue to play a significant role in this through expansion of reliable energy access. Countries face unique challenges in meeting climate targets while striving for affordable,

and affordability. Size, scale, and speed play a significant role in the energy transition and play an outsized role in the developing world where greater challenges to energy access and affordability exist.

## What role do regulation and policy play in advancing the global energy transition?

Regulation and permitting challenges exist globally for expansion of both traditional and new energy infrastructure. Chevron supports market-oriented policies and expedited permitting processes for energy projects that seek to reduce carbon emissions, including coal-to-gas switching, carbon capture and storage (CCS), and deployment renewable and new energy technology.

The industry is working hard to meet demand using responsible lower carbon technologies. To lead in the future, we need to lead in policy enablement. We believe that meaningful permitting reform should be viewed as an enabler of the energy transition. The mainstream at large seems to have an opinion that the energy transition can happen swiftly.

## How do you view the long game on energy transition?

We sit at the intersection of one of the greatest challenges in human history: delivering energy essential to modern life in efficient and sustainable ways. We live in a world where consumers expect when they flick a switch, the lights turn on. Currently, renewable energy has intermittency challenges and by itself lacks

At Chevron, we believe everyone has a right to strive for a better standard of living, and we'll continue to play a significant role in this through expansion of reliable energy access

reliable energy access. For many, lower carbon natural gas is a viable option. In fact, COP28 recognized the importance of fuels, such as natural gas, to ensure energy security during the transition.

Expectations of a simple global transition have been shaken as climate goals coexist with priorities for energy security, access,

sufficient grid storage capacity to meet the world's energy demands reliably. LNG will play an essential role in reaching global carbon reduction goals. I am extremely optimistic, with professionals at Chevron and in the broader energy industry, we will find ways to supply energy both reliably and at a lower carbon intensity.

▶ CO-HOST: MEXICO PACIFIC | STAND: B550

# Leading the charge in global energy security with LNG facility

**Industry and government leaders worldwide are intensifying efforts to bolster energy supply security while advancing environmental goals, particularly reducing greenhouse gas emissions.** Liquefied natural gas (LNG) is central to this global agenda, positioned to provide reliable and affordable energy for future generations amidst geopolitical uncertainties, insufficient investment in energy infrastructure, and evolving market dynamics. At the forefront of these developments is Mexico Pacific's Saguaro Energía LNG Facility, the largest private investment in Mexico. Coupled with the Sierra Madre Pipeline, this project promises to harness the robust resources of the U.S. and Mexico, establishing a North American hub to enhance energy security and environmental sustainability across the region and beyond. Integral to Mexico's Sonora Plan, the project aims to drive clean energy development and economic prosperity in collaboration with North American allies. Sarah Bairstow, CEO of Mexico Pacific and Chair of Gastech 2024's Executive Committee, underscores the project's momentum: "With all permits secured and commercial contracts in place, supported by governments and capital markets, we are finalizing financing towards our investment decision. Working with industry leaders, we aim to deliver infrastructure that fortifies global energy security, reduces emissions, and solidifies North America as a significant LNG supplier."

## Rising global LNG demand

Global LNG demand has consistently doubled every decade since its inception, driven by increasing energy needs and a shift towards cleaner fuels. Forecasts suggest a widening supply gap, necessitating substantial investment in liquefaction capacity, particularly in North America and the Middle East. The Asia Pacific region, which consumes over two-thirds of global LNG, is poised for substantial growth. To meet this burgeoning demand, investments in LNG infrastructure are crucial, spanning liquefaction and regasification facilities. Innovations in production technologies are optimizing efficiency and lowering costs, making LNG a pivotal component of the global energy transition. As a flexible complement to



Sarah Bairstow, CEO of Mexico Pacific and Chair of Gastech 2024's Executive Committee



The above illustrations represent Mexico Pacific's anchor project, Saguaro Energía, a 15 mtpa North American West Coast LNG export facility, located in Puerto Libertad, Sonora, Mexico.

intermittent renewable sources, natural gas plays a vital role in stabilizing energy grids and meeting escalating global energy demands.

## Unlocking the potential of the Permian Basin

The Permian Basin holds the world's largest proven natural gas reserves, predominantly as a byproduct of oil extraction. Significant quantities of associated gas are flared annually due to inadequate infrastructure, highlighting the urgent need for market access. Mexico Pacific's LNG facility offers a strategic solution by exporting Permian Basin gas via the Sierra Madre Pipeline, minimizing flaring and enhancing global LNG supply. Strategically located in Puerto Libertad, Sonora, Mexico Pacific reduces shipping times to

Asia by approximately 15 days compared to Gulf of Mexico routes via the Panama Canal, ensuring cost-effective and efficient delivery. This logistical advantage, coupled with state-of-the-art environmental practices, positions Mexico Pacific as a leader in sustainable LNG production and distribution.

## Commitment to sustainability and stakeholder engagement

Mexico Pacific prioritizes environmental stewardship and community engagement, employing advanced technologies and sustainable development practices. The Sierra Madre Pipeline, spanning 800 kilometers through northern Mexico, exemplifies this commitment by avoiding densely populated areas and environmentally sensitive zones. Collaborations with local governments and communities ensure projects proceed with social acceptance and contribute positively to regional development. Mexico Pacific has agreed to invest in targeted, high-impact community infrastructure and unprecedented social programs in Sonora and Chihuahua, including the Municipality of Pitiquito (Puerto Libertad) where the LNG facility will be located. Through a strong focus on engagement with municipal leaders and community members, as well as robust data collection on social investment needs and initiatives, Mexico Pacific is now evaluating social investments in six areas of focus: community infrastructure, skills development, education, security and peace, environment, and health, ensuring a lasting positive impact on communities in which Mexico Pacific constructs and operates.

## Charting a path to a sustainable future

Mexico Pacific's ambitious LNG project not only addresses immediate energy security concerns but also sets a precedent for sustainable development in the LNG industry. By leveraging abundant Permian Basin resources and strategic location advantages, the company is poised to redefine North America's role in global LNG markets. With robust stakeholder relationships and a steadfast commitment to environmental responsibility, Mexico Pacific is paving the way towards a brighter, closer, and more sustainable energy future.

▶ CO-HOST: EXXONMOBIL | STAND: C120

# ExxonMobil: Meeting the world's energy demand and lowering emissions

**ExxonMobil returns to Gastech as a Co-Host sponsor.** This year at our booth, C120, members from our LNG and Low Carbon Solutions businesses look forward to reconnecting with you. We will have senior leaders from ExxonMobil speaking throughout the event, where we will cover a broad representation of topics.

## What kinds of things are top of mind for ExxonMobil right now?

ExxonMobil is working to meet the world's growing demand for energy and products essential for modern life, while lowering emissions and addressing the challenge of climate change. We expect LNG to play an increasingly important role as growing economies and industries around the world seek to diversify their energy supplies and meet their climate goals.

Our Low Carbon Solutions organization is focused on creating a lower-carbon future for customers around the world by working to bring lower-emission technologies to market and make them accessible to hard-to-decarbonize industries worldwide. Focusing on CCS, hydrogen and low-emission fuels, our team is using experience and expertise with large, complex projects to help customers find their path to meeting a range of lower-emission goals, while also reducing our own Scope 1 and Scope 2 emissions.

## What are you hearing as being top-of-mind for customers? How is ExxonMobil helping meet supply / bring more supply and adjust to customer needs in a net zero future?

We are working with our customers on solutions to increase supply. We are well-positioned to contribute to this endeavor and to deliver LNG from large high-quality resources and facilities from ExxonMobil operated projects and our strategic JVs around the globe. Ultimately, we plan to double our portfolio by 2030. ExxonMobil is looking at opportunities across the value chain, including downstream of regasification terminals and working with our customers and host nations to look at various solutions, including LNG-to-power with CCS, LNG to blue hydrogen or small-scale LNG distribution.



As we pursue these energy sources, there will be an increase in the critical role of long-term relationships between producers and consumers. While buyers and sellers will continue to seek an element of flexibility in their energy supply arrangements, long-term contracts will underpin the new investments required to expand traditional value chains to include CCS, hydrogen and low-emission fuels. Many of our natural gas and LNG customers have significant post-combustion emissions that they'd like to abate, and we offer a one-stop shop CCS solution from capture through transportation to storage, and that will enable customers to reduce their emissions.

## Who will be attending Gastech from ExxonMobil?

Representatives from across our LNG and Low Carbon Solutions businesses — from our trading group to market development to country offices — will be in attendance. Come say hello at booth C120!

## What else can we expect to see from ExxonMobil at Gastech?

We are excited to announce our LNG Power Play award winners at Gastech. Power Play launched six years ago to help bring together

women in the LNG industry to network and do business. This year, we're thrilled to have four categories, having added a Low Carbon Solutions focused award: the Low Carbon Accelerator. Additional categories include the Pioneer, recognizing innovation/technology, the Ambassador, recognizing outstanding leadership and the Rising Star, recognizing an up-and-comer in the industry.

## Why is diversity and inclusion such an important initiative for ExxonMobil?

ExxonMobil's strategic talent objective is to have a diverse and engaged workforce, and to provide every individual unrivalled opportunities for personal and professional growth with impactful work to meet society's evolving needs. Earlier this year, ExxonMobil published our "Investing in People" chapter of the 2022 Sustainability Report, where we outlined five goals: a place to thrive; attract the best talent; enable employees to reach their full potential; develop future leaders; and harness diversity.

## What do you hope to get out of Gastech in 2024?

We look forward to productive and meaningful conversations with our peers, customers and government officials.



▶ EXHIBITOR: KENT | STAND: C160

# From megawatts to methane: solutions for the future

By: **Jacob De Boer**, Process SME Hydrogen and New Energy, Kent

## **S**ynthetic ammonia production sustains food production for more than half of the world's population.

With the global agricultural land shrinking and many regions suffering from nutrient-depleted soils, maintaining a sufficient and cost-effective supply of nitrogen-based fertiliser is critical to feeding the growing population.

Many regional ammonia plants around the world convert natural gas to ammonia for fertiliser, releasing nearly two tonnes of CO<sub>2</sub> per tonne of ammonia produced. Conveniently, these plants produce a substantial concentrated CO<sub>2</sub> stream.

Considering that ammonia plants are high-capex and long-life operating assets, that can run for more than 40 years, replacing them in the face of the energy transition can be very expensive, significantly impacting food production costs.

As green energy supply is highly variable, it leads to the need for additional supply side assets, that in mostly are weather dependent. For instance, solar energy averages around 20% efficiency, requiring either five times the investment in capacity or the addition of high-cost batteries to deliver a reliable energy supply. Operating plants with only 20% effective energy supply is not economic.

But, what if there was a way to extend the useful life of ammonia plants while reducing CO<sub>2</sub> emissions? By re-using much of the existing plants infrastructure and integrating green energy sources with minimal disruption, we could reduce CO<sub>2</sub> emissions by 30-40%,

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 ☞☞ *What if there was a way to extend the useful life of ammonia plants while reducing CO<sub>2</sub> emissions? By re-using much of the existing plants infrastructure and integrating green energy sources with minimal disruption, we could reduce CO<sub>2</sub> emissions by 30-40%, ensure food stability and use scarce capital wisely.* ☞☞  
 .....



ensure food stability and use scarce capital wisely. There are several potential solutions to do this such as adding and integrating green power and/or biogas into the ammonia plant.

### **Adding green hydrogen directly to the syngas loop**

This is the simplest method, converting green power (when cost-effective) to hydrogen to offset natural gas usage. However, there's a limit to the amount of hydrogen (around 10%) that can be added without disrupting the plant's heat and mass balances, considering that compression steam and nitrogen are added in the upstream secondary reformer.

### **Reusing available 'captured' CO<sub>2</sub> stream**

Methanation of CO<sub>2</sub>, demonstrated in several projects, supports developing a transition pathway for existing gas-based plants, extending their operational life and flexibility to operate with varying degrees of green energy supply. This process produces Synthetic Natural Gas (SNG), which is of higher purity than typical natural gas (sulfur-free and low inerts). By using captured CO<sub>2</sub> and (excess) green hydrogen to produce methane, we can reduce the natural gas usage and thus net emissions. For example, with 50MW SNG modular units, can each offset around 45 tonnes per day of natural gas. This flexible approach allows generating a drop-in product using surplus green energy, which can revert to full natural gas operation during green energy supply variance.

### **The potential of biogas for ammonia plants near large cities**

While generally attractive, biogas alone is insufficient to supply a full ammonia plant. Typically, biogas comprises mainly bio-methane and bio-CO<sub>2</sub>, which can be integrated with SNG to create a locally sourced energy supply, reducing dependence on often long-distance piped natural gas. Moreover, this approach can also be applied beneficially with methanol and other Power-to-X opportunities.

There are multiple pathways to making ammonia plants more sustainable, and the optimal solution may vary depending on the specific conditions of each plant. These strategies offer significant potential to reduce emissions and extend the operational life of existing assets. However, navigating these complex options requires expertise and innovative approaches. Partnering with a knowledgeable and experienced team can ensure that these solutions are effectively implemented, optimising the performance of ammonia plants and achieving better environmental and economic outcomes.

With the right guidance, the transition towards a greener and more sustainable ammonia production is not only feasible but also beneficial for the sectors connected to these plants. Kent has extensive experience with small to large-scale green hydrogen, ammonia, and other syngas projects. We offer innovative solutions backed by practical experience across various plants worldwide to support our clients.

► PROCUREMENT MEETING PLACE

LOCATION: HALL B

In partnership with:



# Transforming the industry's approach to collaboration and connection



The Procurement Meeting Place is a central hub championing the vital role of smaller enterprises and leading companies in natural gas, LNG, hydrogen, climate technologies, and AI for a low carbon future. Attendees from across the energy value chain can benefit by meeting new and innovative suppliers. Gastech exhibitors can book face-to-face meetings with key figures to expand their network and gain exclusive insights. The Procurement Meeting Place is where connections are generated, and business is done.

## 5 critical themes to look out for in the panel sessions:

- ▶ Advancing energy transitions through resilient and sustainable supply chains
- ▶ Hype or hope? The power of artificial intelligence to transform procurement across the energy sector
- ▶ The Procurement Balancing Act – Globalization vs Localization
- ▶ Procurement's critical role in taking on its organization's scope 3 emissions
- ▶ Reskilling legacy talent via procurement

### Why you should participate?

- ▶ Learn from procurement leaders
- ▶ Form new business relationships
- ▶ Expand your business network
- ▶ Speed networking
- ▶ Key insights into global trends, challenges, and goals
- ▶ Strategic insights to drive positive contributions within their companies
- ▶ Connect with peers across the energy sector and share best practices

### Key features:

- ▶ Access to dedicated procurement-focused panel sessions
- ▶ 5-minute speed networking with potential business partners

### Who can participate?

- ▶ Procurement professionals
- ▶ Gastech exhibitors and suppliers



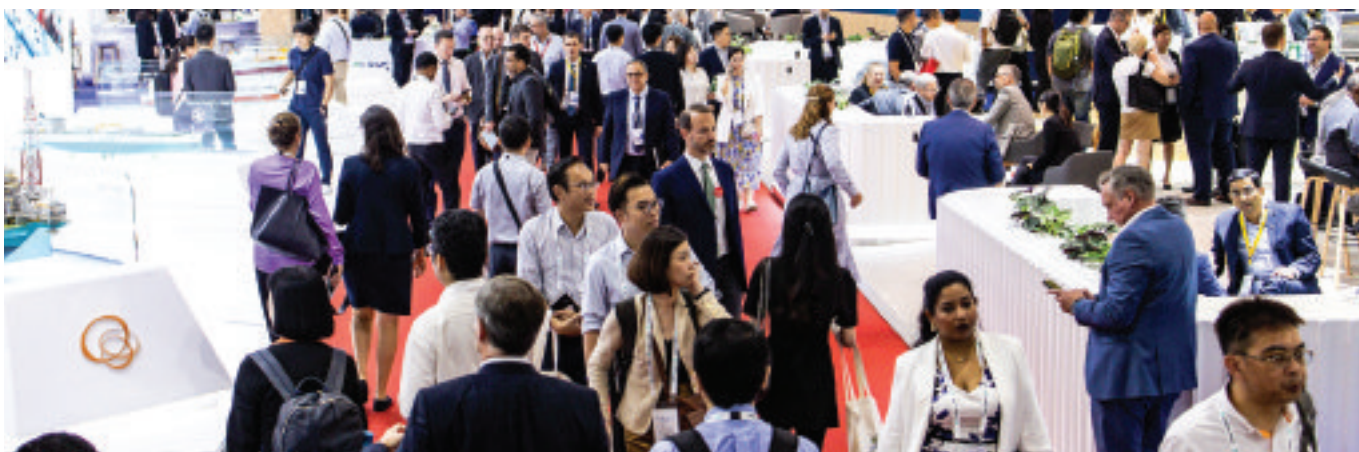
Apply to participate

Hosted Buyer Program Partner:



▶ **HOSTED BUYER PROGRAM**

# Expand business networks and meet potential partners



The Gastech Hosted Buyer Program serves as a platform for connecting buyers seamlessly with Gastech exhibitors. It's a chance for primed deal-making opportunities – creating a network of unparalleled business prospects. The exclusive program offers a unique chance to attend a selection of personalized meetings to discuss and showcase relevant products and solutions. It's a lucrative solution for decision-makers to connect with existing and new suppliers spanning the energy value chain, conveniently under one roof.



### Are you eligible?

A hosted buyer is an individual responsible for purchasing the commodities, products, services, or solutions supplied by Gastech's exhibiting companies. A prospective hosted buyer will be assessed based on their decision-making authority, spending power, and relevance to the exhibitors at Gastech.

### How your company can benefit?

- ▶ Connect with global suppliers: identify relevant suppliers that match your specific purchasing requirements.
- ▶ Create a personalized schedule to maximize time: manage your time efficiently and take advantage of a concierge service to help build a bespoke series of meetings.
- ▶ Qualifying buyers will receive complimentary flights and accommodation.
- ▶ Conduct months' worth of meetings in just 4 days - saving you time and investment.

[Apply to participate](#)



Gastech Energy Club Official Partner:

VENTURE GLOBAL LNG

GASTECH ENERGY CLUB



# Defining the global energy agenda through the power of collaboration

The Gastech Energy Club is a prestigious, members-only networking experience connecting Ministers, government officials, CEOs, and board members from world-leading energy companies, spanning natural gas, LNG, hydrogen, climate technologies and AI, and low carbon solutions. The Gastech Energy Club is designed to foster collaboration among the industry's most distinguished leaders, facilitating critical discussions, forging connections, and navigating the evolving energy landscape, away from the media for meaningful exchanges. The Gastech Energy

Club empowers executives to shape the future of the industry through trusted connections and influential partnerships. The Gastech Energy Club will host the invitation-only Leadership Roundtables, which will gather the industry's elite to participate in a series of roundtables, held under Chatham House rules, to share their insights on how to tackle important industry challenges and how to capitalize on growth opportunities presented by the energy transition. The connections built at the Gastech Energy Club will allow members to drive and influence change by networking with a trusted group of like-minded executives.



The connections built at the Gastech Energy Club will allow members to drive and influence change by networking with a trusted group of like-minded executives.

**Communicate**

Join a distinguished community of members including Ministers, CEOs, and global business leaders. It's a premier platform for connecting with like-minded executives.

**Influence**

A dynamic environment where members can engage in business-critical conversations, shaping the future growth, and influencing trends amidst a rapidly evolving energy landscape.

**Connect**

Harness the power of collaboration during the four days of high-volume business dialogues and networking. It's the ideal environment to create successful partnerships that pave the way for mutual success.

1,000

VIP Energy club members

300

High-level roundtable participants

15

Private meeting suites

10

Leadership Roundtables

Gastech Energy Club Suite Sponsors



Apply to become a member

# We design, build and maintain the assets that power the world for today, and make it future-ready for tomorrow.

We are decarbonising conventional energy sources, while actively committing to sustainable energy through hydrogen, CCUS, energy storage and offshore wind. All through the greatest, smartest people on earth.

VISIT US AT

**STAND C160**

▶ LEADERSHIP ROUNDTABLES

# Inspiring high-level debate on the future of energy



**H**osted in the Gastech Energy Club, the invitation-only Leadership Roundtables garner the sector's most distinguished leaders. Held over 3 days and under Chatham House rules, the Gastech 2024 Leadership Roundtables enables dialogue that explore actionable strategies and solutions to deliver new pathways for decarbonization, affordable and reliable future, whilst capitalizing on growth opportunities presented by the energy transition.

Discussions will focus on the role of policy in delivering an orderly transition, explore how new regulatory frameworks are altering traditional investment flows and accelerating the development and deployment of low carbon solutions through public-private partnerships, and how to enable a low carbon and renewable energy transformation in developing countries through international investment and cooperation.

Matching Gastech's strategic conference themes, the influential roundtables will also



examine the role of natural gas in addressing global energy needs and accelerating the transition as a low carbon fuel of choice, how to leverage new financing mechanisms to de-risk, incentivize and increase the infrastructure investments required to transform energy systems and how to bridge the gap between pilot-phase technologies and commercially

viable solutions to drive decarbonization and emissions reduction.

Each roundtable will be facilitated by an experienced moderator and hosted by an industry leader to ensure highly interactive discussions and offer fresh perspectives on the actions required to drive growth over the next decade.



[View the Leadership Roundtables Agenda](#)

# Leadership Roundtables Agenda

Location: Executive Boardroom | Gastech Energy Club

<b>TUESDAY 17 SEPTEMBER</b>	<b>12:00-13:30 New Energy Economy</b> Powering humanity through energy	Hosting Partner: 
	<b>14:30-16:00 Ministerial Roundtable: New Energy Economy</b> Policy innovation to enable decarbonization in tandem with stable energy markets.	Knowledge Partner: 
	<b>16:30-18:00 Natural Gas</b> Are we entering the 'platinum age' of natural gas? Exploring the strategic role of natural gas in addressing global supply needs and accelerating the energy transition.	Industry Partner:       Knowledge Partner:
<b>WEDNESDAY 18 SEPTEMBER</b>	<b>09:30-11:00 New Energy Economy &amp; Investment</b> In times of energy crisis and geopolitical recalibrations: what are the challenges and opportunities for the energy transition in the mediterranean region?	Hosting Partners: 
	<b>11:45-13:15 New Energy Economy &amp; Climate Technologies &amp; AI</b> Enabling the growth of low carbon and renewable energy transformation in developing countries through international investment and cooperation.	Knowledge Partner: 
	<b>11:45-13:15 Climate Technologies &amp; AI</b> Bridging the gap between pilot-phase technologies and commercially viable solutions to drive decarbonization and emissions reduction through stakeholder collaboration.	Industry Partner:       Supporting Partner:
	<b>16:15-17:45 Hydrogen</b> Hydrogen: Global opportunities and lessons learned from the United States Inflation Reduction Act.	Industry Partner:       Supporting Partner:       Knowledge Partner:
<b>THURSDAY 19 SEPTEMBER</b>	<b>09:30-11:00 Investment</b> Leveraging a broad range of financing sources and mechanisms to secure investment in gas and LNG infrastructure.	Knowledge Partner: 
	<b>11:30-13:00 Natural Gas</b> Balancing LNG supply with demand growth to drive an interconnected and globalized gas market.	Industry Partner:       Supporting Partner:       Knowledge Partner:
	<b>14:00-15:30 Climate Technologies &amp; AI</b> Leveraging collaborative action and funding to achieve 2030 methane emissions goals.	Industry Partner: 
	<b>16:00-17:30</b> The role of US energy in delivering energy security and decarbonization	Hosted by: 

This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

Apply to become a member

# Gastech Conference Overview

The Gastech Conference is an essential forum for energy professionals to shape the future of the industry. The conference sets the industry's critical agenda by driving energy security and transitions through groundbreaking innovation, visionary leadership, and decisive action.

## Strategic Conference

Exploring the role of natural gas and LNG in delivering low carbon global energy security, as well as the core geo-political and economic issues affecting energy supply and demand

## Gastech Climatech & AI

Accelerating strategies to decarbonize the energy value chain

## Gastech Leadership Roundtables

Integral to the Gastech 2024 leadership agenda

## Gastech Hydrogen

Championing hydrogen as a low carbon solution within the future energy mix

## Technical & Commercial Conference

The Gastech Technical & Commercial Conference is the industry's critical platform for tomorrow's pioneers and pathfinders, showcasing the groundbreaking innovations and inspiring visions that can accelerate climate action and deliver a transition to a more sustainable tomorrow

## Future Leaders

Cultivating talent for an evolving energy landscape

## Diversity, Equity & Inclusion in Energy

Cultivating diversity, equity, and inclusion for an evolving energy landscape

[View the Gastech Conference Agenda](#)





# The Gastech Strategic Conference

## Driving the global energy conversation

Gastech is an essential forum for energy professionals to steer the future of the industry. The carefully curated agenda will provide a platform to discuss both the challenges we face and the solutions needed to deliver energy security and drive the industry towards a low carbon, decarbonized future.

At Gastech 2024, the energy industry's preeminent thought leaders, including over 1,000 speakers such as global CEOs, Ministers, policymakers, and business leaders, will gather to explore critical issues related to global energy security, policies, investment opportunities, and decarbonization solutions.

**160**

Conference sessions

**1,000**

Speakers

**7,000**

Delegates



“Ensuring customers have the energy they need at a price they can afford is essential, and the solutions we make available – like hydrogen, ammonia and CCUS – must be suited to the needs of the customer.”

Meg O'Neill | CEO & MD | Woodside Energy

# Delivering outstanding speakers year-on-year

Gastech convenes leading minds in energy every year. From Ministers and policymakers to global CEOs in government, industry, finance, and technology sectors to set new agendas for the energy industry and advance the critical discussions on global energy security and energy transitions. A selection of confirmed Strategic Conference speakers include:



**H.E. Arifin Tasrif**  
Minister of Energy & Mineral Resources  
Indonesia



**Hon. Kanchana Wijesekera**  
Minister of Power & Energy  
Sri Lanka



**H.E. George Papanastasiou**  
Minister of Energy & Industry  
Cyprus



**Rt Hon Ekperikpe Ekpo**  
Minister of State for Petroleum Resources (Gas)  
Nigeria



**August Pfluger**  
Congressman  
R-TX 11th District



**Joseph McMonigle**  
Secretary General  
International Energy Forum



**Mike Wirth**  
Chairman of the Board & CEO  
Chevron Corporation



**Wu Junli**  
Chairman  
PetroChina International



**Jack Fusco**  
President & CEO  
Cheniere Energy



**Ryan Lance**  
Chairman & CEO  
ConocoPhillips



**Lorenzo Simonelli**  
Chairman, President & CEO  
Baker Hughes



**Yukio Kani**  
Global CEO Chairman,  
JERA Co., Inc  
JERA



**Meg O'Neill**  
CEO & MD  
Woodside Energy



**Ruikun Wu**  
Deputy MD  
Sinopec International Cooperation Dept.



**AK Singh**  
MD & CEO  
Petronet LNG



**Abdulkarim Al-Ghamdi**  
EVP - Gas  
Aramco



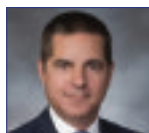
**Peter Clarke**  
SVP  
ExxonMobil Upstream Oil & Gas



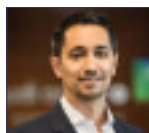
**Guido Brusco**  
COO - Natural Resources  
ENI



**Russell Hardy**  
CEO  
Vitol



**Mike Sabel**  
Co-Founder & CEO  
Venture Global LNG



**Mahdi Aladel**  
CEO  
Aramco Ventures



**Nick Dell'Osso**  
CEO  
Chesapeake



**Sukhmal Jain**  
Member of the Board & Director Energy Marketing  
Bharat Petroleum Corporation



**Toby Z. Rice**  
President & CEO  
EQT Corporation



**Kevin Gallagher**  
MD & CEO  
Santos



**Michael Lewis**  
CEO  
Uniper



**Marco Alverá**  
CEO & Co-Founder  
TES



**Sarah Bairstow**  
CEO  
Mexico Pacific LNG



**Alan Heng**  
Group CEO  
Pavilion Energy



**Arief Setiawan Handoko**  
President Director  
PGN



**Philip Mshelbila**  
MD & CEO  
Nigeria LNG



**Vartika Shukla**  
Chairman & MD  
Engineers India



**Andrew Barry**  
VP - Global LNG Marketing & Chairman - ExxonMobil LNG Market Development  
ExxonMobil Upstream Oil & Gas



**Masaru Saito**  
Group CEO - Environmental Energy Group  
Mitsubishi Corporation



**Anil Kumar Chalamalasetty**  
CEO & MD  
Greenko



**Paul Krishna**  
Chair  
Ipicca



**Freeman Shaheen**  
President  
Chevron Global Gas



**Danny Rice**  
CEO  
NetPower



**Alessandro Puliti**  
CEO  
Saipem SpA



**Yoki Firnandi**  
CEO  
PT Pertamina International Shipping

View the Gastech Conference Agenda





Hear from 1,000 speakers across 160 sessions



**Zoë Ujnovich**  
Integrated Gas & Upstream Director  
Shell



**Chris Ashton**  
CEO  
Worley



**Proscovia Nabbanja**  
CEO  
Uganda National Oil Company



**Jorge Pikunic**  
CEO  
VPI



**Claude Letourneau**  
President & CEO  
Svante



**Dr. Katan Hirachand**  
CEO & Chief Country Officer  
Societe Generale India



**Anne-Laure de Chammand**  
Executive Board Member  
Siemens Energy



**Edouard Neviaski**  
CEO  
Engie Gems



**Adam Rauwerdink**  
SVP  
Boston Metal



**Steve Hill**  
EVP - Gas & LNG  
Mercuria



**Tze San Koh**  
President - China Gas Marketing  
ExxonMobil



**Paul Marsden**  
President  
Bechtel Energy



**Zubin Bamji**  
Programme Manager - Global Flaring & Methane Reduction  
World Bank



**Cederic Cremers**  
EVP - LNG  
Shell



**Wei Cai**  
CTO  
Technip Energies



**M.L. Peekthong Thongyai**  
Senior Executive VP - Gas Business Unit  
PTT Public Company



**Christian Signoretto**  
Director - Global Gas & LNG Portfolio & Deputy COO  
ENI



**Dan Holton**  
Senior VP - Low Carbon Solutions  
ExxonMobil



**Cynthia Hansen**  
EVP & President - Gas Transmission & Midstream  
Enbridge



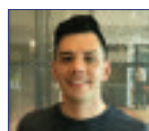
**Dr. Paula Gant**  
President & CEO  
GTI Energy



**Jane Liao**  
VP  
CPC Taiwan



**Carsten Poppinga**  
CCO  
Uniper



**Michael Lee**  
CEO  
Octopus Energy US



**Colin Parfitt**  
President - Midstream  
Chevron



**Yumiko Yao**  
EO, Senior General Manager of LNG Business Dept. (Joint Role) President of Tokyo LNG Tanker Co.  
Tokyo Gas Co., Ltd.



**Eirik Wærness**  
SVP & Chief Economist  
Equinor



**Richard Holtum**  
Global Head of Gas, Power & Renewables  
Trafigura



**Matthew Babin**  
Head of Energy & Natural Resources  
Palantir Technologies



**Lynn Loo**  
CEO  
Global Centre for Maritime Decarbonisation



**Bruce Niven**  
Head - Strategic Venturing  
Aramco Ventures



**Jillian Evanko**  
CEO  
Chart Industries



**Krista Johnson**  
President  
Johnson Matthey



**Katie Ellet**  
President - Hydrogen Energy & Mobility - North America  
Air Liquide



**Jason Heron**  
Head of Clean Fuels & SAF Ambassador  
Airbus Americas



**Ahmed El-Hoshi**  
CEO  
OCI Global & Fertiglabe



**Austin Knight**  
VP - Hydrogen  
Chevron



**Alberto de Min**  
CBO  
newcleo



**Bobby Tudor**  
CEO & Founder  
Artemis Energy Partners



**Chris Powers**  
VP - Carbon Capture, Utilization & Storage (CCUS) & Emerging  
Chevron



**Kent Truckor**  
Senior Director - Energy Origination  
Climeworks

[View the Gastech Conference Agenda](#)



# The Gastech Strategic Conference themes

To drive transformational change in the energy sector, Gastech Strategic Conferences will address 7 business-critical themes:

## New Energy Economy - Pioneering equitable energy transitions

Energy security and sustainability are reshaping global energy markets. During COP28, the UAE Consensus launched the Global Decarbonization Accelerator, creating a framework for accelerating a just, equitable, and orderly energy transitions to enable developing economies to achieve prosperity with lower emissions.

Gastech 2024 connects policymakers, energy companies, climate technologists, financial institutions, and NGOs to address changes crucial for affordable, secure low carbon energy and resilient economies.

## Natural Gas & LNG - Championing natural gas as an enabler of the energy transitions

Natural gas represents a fuel of choice for achieving the transitions to net zero, as a flexible, lower carbon, and reliable energy source. Enabling the displacement of coal-fired power and providing a dependable energy source to counter the intermittent availability of wind and solar.

Gastech 2024 will facilitate the natural gas and LNG industry to energize high-impact opportunities to champion the strategic advantages as a key enabler of orderly and stable energy transitions.

## Investment - Mobilizing capital to fast-track a next-generation global energy system

Achieving successful energy transitions will require over \$100tn by 2050, with finance requiring extensive public and private sector collaboration, robust policy support, and strong market signals to bolster investor confidence. Landmark policies and agreements including the Inflation Reduction Act, the European Green Deal, and UAE Consensus have greatly accelerated investment, but more is needed to reach net zero targets.

Gastech 2024 will enable stakeholders to identify, solidify, and deliver the investment opportunities to fast-track the next generation global energy system while ensuring continued growth in shareholder value.



## Climate Technologies & AI - Forging a multi-source energy future through climate technologies

Developing and scaling up technologies that will reduce emissions and enhance energy efficiencies, to successfully execute the energy transitions, requiring capital, research and development, and innovative partnerships.

Gastech 2024 will transform the energy industry to identify innovative, multi-source solutions to overcome the barriers to market readiness and accelerate the journey to net zero.

## Hydrogen - Elevating hydrogen's role in the global energy mix

Hydrogen's potential to decarbonize high-emission operations positions it as a promising enabler of decarbonization in hard-to-abate industries. Scaling up hydrogen requires stimulating supply and demand while reducing production costs. The COP28 Declaration of Intent on Mutual Recognition of Certification Schemes for Renewable and Low Carbon Hydrogen and Hydrogen Derivatives outlines a framework to support hydrogen's technical and commercial development.

To support these aims, Gastech 2024 will unite market shapers, policymakers, technologies, infrastructure developers, and energy producers to strategize its adoption as a transformative force in the global energy system.

## Partnerships & Collaboration - Catalyzing partnerships, policy, and regulation for sustainable impact

The scale and complexity of the energy transitions require governments and organizations to forge new alliances with industrial energy consumers, financiers, nongovernmental organizations, and technology innovators to support rapid decarbonization goals.

Gastech 2024 will stimulate the conversations and kick start the actions that will inspire and empower new transformative partnership models to successfully execute the energy transition and ensure vibrant future gas markets.

## Talent - Cultivating talent for an evolving and disruptive energy landscape

The energy transition is forecast to require 103 million new skilled jobs by 2030, necessitating extensive upskilling and training. The scale of the need is anticipated to culminate in significant bottlenecks as companies struggle to secure the workforce needed while inspiring, recruiting, and retaining people is a significant challenge.

Gastech 2024's talent programs will address the real-life recruitment and retention challenges and strategies to inspire and connect a new generation of energy leaders and professionals who can operate with greater agility and entrepreneurship in an evolving and disruptive energy landscape.

[View the Gastech Conference Agenda](#)



# Gastech Strategic Conference Programs

## Strategic Leadership

Exploring the core geo-political and economic issues affecting global energy supply and demand

The Gastech Strategic Leadership Conference Program will contribute to a global agenda for delivering secure, affordable and low carbon energy by harnessing the growth opportunities for natural gas and LNG, unlocking new markets to empower humanity through greater energy inclusion and supporting the development of economies across the world. Through the high-level conversations that form the Gastech Strategic Leadership Conference Program, policy leaders, energy industry CEOs, major energy consumers, financiers, technologists, and NGO leaders will draw the roadmap towards a more secure, sustainable and stable energy future.

## Hydrogen

Unlocking the full potential of hydrogen as a critical component of the broad energy mix

The Gastech Hydrogen Strategic Conference Program brings together the energy industry's thought leaders to discuss the challenges and opportunities of mainstreaming hydrogen.

The program explores how stakeholders from across the value chain can collaborate to jumpstart new investments, funding, and off-takers. They will ensure cost-competitiveness of projects, equipment, and technology, stimulate innovation and R&D, while solving the fundamental issues of how to safely store and transport hydrogen.

## Climatech & AI

Accelerating strategies to decarbonize the energy value chain

The Gastech Climatech & AI Strategic Conference Program will bring together energy leaders, policy analysts, investors, and technology influencers to debate and demonstrate the latest innovations, technology and AI, and operating systems designed to reduce, measure, report and mitigate global emissions.

From CCUS and DAC, to new routes to investment and scalability of nascent technologies, the program will deliver high-level insights into cross-industry partnerships and strategies for creating commercial value from new and emerging climate technologies.

160 Conference sessions | 1,000 Speakers | 7,000 Delegates



# Strategic Conference: Tuesday 17 September

10:00 - 11:00 **PLENARY**

## Opening Ceremony

10:00 - 10:15 Welcome Addresses

10:15 - 11:00 **Ministerial Panel**  
From mitigation to adaptation:  
Navigating volatile geopolitics in a  
fragmenting global order

Global energy markets continue to be impacted by the war in Ukraine and major climate events resulting in price volatility, disrupted supply chains, increased costs and greater investor uncertainty. Against this backdrop governments are dealing with the challenges of delivering secure low carbon energy at an affordable price.

Mitigating risks and designing a robust energy strategy that can withstand unforeseen challenges will require a multifaceted approach using a range of energy sources and extensive collaboration across borders and sectors. As the scale of the task and the associated costs emerge, how can governments reconcile near term priorities with long term investments? How can governments foster enabling environments for investment in multiple energy streams, nurture innovation and generate investor confidence in long-term ROI?

### AUDIENCE INSIGHT

The key role of policy innovations and collaboration in de-risking energy supply chains.

11:05 - 11:25 **PLENARY**

## Strategic Leadership: New Energy Economy

**Keynote Address:**

Mike Wirth, Chairman of the Board  
& CEO, Chevron Corporation

12:00 - 12:45 **PLENARY**

## Strategic Leadership: New Energy Economy

**Global Leadership Panel:**  
Redefining the energy landscape:  
Reimagining strategies and  
business models to balance  
growing energy demand with  
impactful progress on global climate  
goals

Natural gas, LNG and hydrogen will be pivotal in reaching net zero goals. In 2023, the IEA forecast natural gas would be a key to the energy transitions as the only fossil fuel predicted to experience demand growth beyond 2030. Meanwhile, hydrogen is projected to scale up from today's level to meet 10% of global energy consumption by 2050.

International energy companies are uniquely positioned to expedite deployment of these low carbon energy solutions to deliver significant GHG reduction across multiple geographies, without compromising shareholder value. But to what extent will accelerated progress towards net zero goals require new business strategies and business models? What role can innovative partnerships and collaborations, reprioritization of investments and the reorganization of supply chains play in transforming global energy systems?

### AUDIENCE INSIGHT

Understanding the new strategies, business models and collaborations required to deliver and operate in a net zero energy environment in the context of rising global energy demand.

12:00 - 12:45

## CLIMATECH & AI THEATER

### Climatech & AI

**Global Leadership Panel:**  
Stimulating early-stage investment  
into climate technologies to meet  
net zero goals

As global mandates for emission reductions continue to drive market demand, investment into climate technologies is critically important to scale their deployment across industry and assets. However, 40% of potential emissions reduction can be attributed to developing, or yet to be developed, technologies (McKinsey).

Over the next 10 years, an estimated US \$21tn will need to be invested in new climate technologies to support their development, commercialization and adoption. To achieve this, a multitude of funding sources will be required, along with tax equity market incentives as set out by supportive policies like the United States Inflation Reduction Act. With risk-adverse private investors prioritizing developed, mature technologies, how can governments, venture capitalists and blended finance models bridge the investment gap to bring viable technologies to market?

### AUDIENCE INSIGHT

Explore the new investment solutions needed for start-ups and scale-ups to reach commercial viability and maturity.

12:00 - 12:45

## HYDROGEN THEATER

### Hydrogen

**Global Leadership Panel:**  
Establishing hydrogen as a  
critical component in the global  
energy mix

As a low emitting energy source, when produced from either renewable electricity or carbon-abated fossil fuels, hydrogen is an attractive proposition for governments and corporations alike, as they realign strategies and policies to match global net zero ambitions.

With the opportunity to unlock groundbreaking transformation and decarbonization across hard to abate industrial, power generation and transportation sectors, what market conditions and deployment challenges need to be overcome to build out sustainable hydrogen supply chains and economies?

### AUDIENCE INSIGHT

Overcoming barriers to establish hydrogen's position within the global energy mix.



Attendees can expect an evolved and dynamic Gastech, reflecting the latest innovations and discussions in the energy sector.

**Michael Deighton**

SVP Operations at Kent Plc | Gastech Governing Body Member

This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

# Strategic Conference: Tuesday 17 September

12:45 - 13:30 **PLENARY**

## Strategic Leadership: New Energy Economy

### USA Domestic Policy Panel:

Decarbonization and global energy security in 2024: Impacts and implications of the USA LNG export terminal permitting pause

The announcement of a temporary pause on approvals for new liquefied natural gas (LNG) capacity in the United States, has led to widespread debate among energy leaders and LNG market experts. The pause impacts 17 projects, four of which were already at an advanced commercial stage. Supporters of the policy have cited the benefits of reduced emissions from the projects and reduced risk of energy price spikes for US consumers. Detractors have criticized the policy for immobilizing funds, compromising the position of the US as a reliable partner in global energy security and indirectly hampering progress on decarbonization in countries reliant on coal-fired power.

Although LNG market impacts are not expected in the short-term, if the permitting pause continues at length, it has the potential to hinder the sector's growth. This raises questions around potential paths forward, including alternatives for coal-reliant economies, should expected LNG supply be delayed and how to balance immobilized funding earmarked for LNG project development against much needed funding for low or no carbon energy solutions.

### AUDIENCE INSIGHT

Examining the impact of policy uncertainty in pursuit of net zero and a secure global energy system.



12:45 - 13:30

## CLIMATETECH & AI THEATER

### Climatetech & AI

### Global Leadership Panel:

Building a commercial market for CCUS

The IEA estimates that US \$3.5tn per year is needed to capture or offset emissions from existing oil and gas output, and operational capacity of CCUS needs to increase 100-fold. For these targets to be realized, directional global policy guidance for investors, clear regulations governing pipelines and storage, and indirect monetization routes for industrial and power generation players, will be required.

With skepticism over the impact of carbon capture dampening investment appetite from traditional oil and gas operators, what needs to change to stimulate market demand and incentivize large-scale deployment? Where can CCUS be best deployed across the value chain to achieve maximum environmental impact and commercial returns.

### AUDIENCE INSIGHT

Unlocking large-scale commercial CCUS growth and adoption.

12:45 - 13:30 **HYDROGEN THEATER**

### Hydrogen

### Global Leadership Panel:

Driving the hydrogen transition through partnerships

Partnerships between governments, energy producers and consumers, technology and finance are critical in the development of credible solutions that will enable the development of a hydrogen economy. Multilateral and bilateral collaborations offer opportunities for shared R&D, increased cost and operational efficiencies and enhanced opportunities to develop robust international and cross-border supply chains.

As stakeholders look to advance the hydrogen agenda, what challenges does the gas industry need to overcome to be 'hydrogen ready'? What role will partnerships play in achieving this status, and what new forms of collaboration are needed to strengthen the viability of the hydrogen market, drive demand and enable hydrogen's integration into existing and future energy systems?

### AUDIENCE INSIGHT

Overview of the role of new multi-stakeholder partnerships in developing critical and viable hydrogen economies.

13:30 - 13:50 **PLENARY II**

## Strategic Leadership: New Energy Economy

### Energy Talks:

The new energy pragmatism and the realities of the energy transitions

The 2022 Inflation Reduction Act heralded a rush of investment into low carbon energy solutions proving a boon to climate technology research, development, deployment and adoption in the US and sparking competing legislative responses in other regions across the globe. However, amid soaring global energy demand, emissions from the sector reached a record high of 37 gigatonnes in 2022 according to the IEA. Despite the historic wording in the UAE Consensus reached at COP28 urging the transition away from fossil fuels, global energy leaders have argued that the current energy transition strategy is failing and a move away from fossil fuels will not be possible in the context of meeting rising global energy demand.

In this frank discussion, energy legends will discuss the hard realities of achieving mid-century net zero targets, alternative pathways and strategies for ensuring investments are deployed to maximum effect.

### AUDIENCE INSIGHT

Taking stock of progress on energy transition and considering alternative pathways to decarbonization.

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# Strategic Conference: Tuesday 17 September

13:50 - 14:10 **PLENARY II**

## Strategic Leadership: Climate Technologies & AI

### Energy Talks:

Data centers, disinformation and disruptive transformation: Unpacking the impacts and potential of artificial intelligence in 2024

Since the launch of ChatGPT in 2022, artificial intelligence has loomed large in the public consciousness as both a threat to livelihoods and authenticity but also as an opportunity to enhance creativity, streamline business processes and improve lives. The full potential of artificial intelligence is yet to be understood and fears abound that the energy required to power the proliferation of data centers to support the expansion of AI technologies, will counter the environmental benefits it offers.

In this energy talk, leaders at the AI vanguard will discuss the impacts that technologies are making to support energy efficiencies and energy security, along with what they see as the way AI will interplay with our everyday lives.

### AUDIENCE INSIGHT

Capturing the AI opportunity to drive decarbonization and growth for the energy sector.

15:15 - 16:00 **PLENARY**

## Strategic Leadership: Natural Gas & LNG

### Global Leadership Panel:

The strategic advantage of natural gas as a vital enabler of the energy transitions

Across the energy industry, businesses are seeking new pathways to decarbonize their legacy businesses; counter their reported 18 Gt CO2 emissions and build low carbon business models to penetrate new markets. As a readily available lower carbon energy source the case for natural gas being a vital enabler of the energy transitions is strong due to its flexibility and reliability for feedstock.

How can natural gas producers and suppliers adjust their strategies and business models to address growing supply needs in a time of geopolitical uncertainty and maximize LNG's growth opportunities in the energy mix?

### AUDIENCE INSIGHT

Understand how the industry is flexing its strategy to reaffirm natural gas's position as the leading enabler of transitions to a low carbon energy system.

14:00 - 14:20 **PLENARY**

## Strategic Leadership: New Energy Economy

### Keynote Address:

Ryan Lance, Chairman & CEO, ConocoPhillips

14:30 - 15:15 **PLENARY**

## Strategic Leadership: Partnerships & Collaboration

**Global Leadership Panel:**  
Aligning ambitions and competencies to deliver a decarbonized energy system

Decarbonizing the global energy system necessitates finding new ways to build collaboration and partnership models to ensure continued business success while delivering on society's climate action expectations. Harnessing cross-sector expertise, sharing risk, partnering across geographies, fostering greater understanding of specific business and operating model challenges across industries and innovating, through the sharing of knowledge and ideas, will be key to achieving major emissions reductions across energy supply chains.

What will the new business partnerships look like? Which collaboration models provide actionable and scalable blueprints for breaking down organizational barriers to 'coopetition'? What needs to happen to ensure an even spread of both risk and reward, to ensure a mutually beneficial outcome as businesses transform operations and cut emissions?

### AUDIENCE INSIGHT

How cross-sector collaborative partnerships are driving decarbonization at pace.



14:10 - 14:30 **PLENARY II**

## Strategic Leadership: Investment & Policy

### Energy Talks:

No transition without transmission: Overcoming capacity and capability challenges and levelling the playing field for renewable energy technology

The Inflation Reduction Act is expected to provide an estimated USD1.2tn of incentives for low carbon energy investments by 2032. The landmark legislation created the world's most favorable investment climate for clean energy with investment in renewables rising from USD11.1bn in 2019 to USD38.6bn in 2022. However, transmission infrastructure is now under pressure and will need to increase by three fold from 2020 levels by 2050 to meet demand.

In this Energy Talk, a US utility leader will discuss strategies for overcoming interconnector delays, allaying community concerns regarding the siting of critical transmission infrastructure and strategies for mitigating climate driven disruptions.

### AUDIENCE INSIGHT

Strategies for overcoming capacity challenges in order to maximize the renewable investment opportunity.

16:20 - 16:40 **PLENARY II**

## Strategic Leadership: Partnerships & Collaboration, Climate Technologies & AI

### Energy Talks:

Mining for the energy transitions: Securing access to the critical minerals required for net zero

Clean energy technologies represent the fastest growing demand for critical minerals and the share of consumption is set to grow up as much as 90% in the case of lithium by 2040 according to the IEA. Ensuring robust supply chains for copper, cobalt, nickel, rare earth elements and lithium represents a key priority in achieving energy transition goals.

In this Energy Talk, a leading mining CEO will discuss how the sector is rising to the challenge through diverse and responsible supply chains and how partnerships are supporting greater sustainability across operations.

### AUDIENCE INSIGHT

Strengthening supply chains to secure access to the minerals required for the energy transitions.



# Strategic Conference: Tuesday 17 September



**16:00 - 16:45 PLENARY**

## Strategic Leadership: Hydrogen

### Global Leadership Panel: Boosting hydrogen demand, deployment, and trade across industrial sectors

The need for industrial decarbonization is accelerating the development of hydrogen and hydrogen-based fuels to meet global climate goals faster.

Global hydrogen use is increasing year-on-year, but market demand remains concentrated in long established applications met by hydrogen produced from unabated fuels, with underdeveloped expansion for new applications across industrial sectors. How can private and public sector stakeholders collaborate, on new incentivizing funding programs, partnerships, and policy frameworks, to create and accelerate the development of hydrogen markets?

#### AUDIENCE INSIGHT

Explore hydrogen supply and demand dynamics across heavy industry, and understand the mechanisms that can unlock greater demand, use and deployment globally.

**16:40 - 17:00 PLENARY II**

## Strategic Leadership: Climate technologies & AI & Investment

### Energy Talks: Identifying and scaling the technologies to deliver net zero

In January 2024, Aramco Ventures announced that it has more than doubled its investment funds to US \$7bn to fast track progress on developing the critical climate technologies that will prove essential to accelerating the journey to net zero.

In this Energy Talk industry leaders will discuss investment priorities, strategies for improving the efficacy of key climate technologies such as direct air capture and carbon capture, utilization and storage, how the firm plans to improve the economics of producing green hydrogen and what he views as the policies that will unlock the rapid uptake of hydrogen as a critical tool supporting the industrial sector to eradicate emissions and reach net zero targets.

#### AUDIENCE INSIGHT

Strategies for leveraging climate technologies to achieve meaningful progress against net zero targets.

**16:45 - 17:30 PLENARY**

## Strategic Leadership: Climate technologies & AI

### Plenary Strategic Leadership: Climate technologies & AI Harnessing the promise of artificial intelligence to deliver low carbon energy transformation

Artificial Intelligence (AI) has ushered in a new era of technology investment with Goldman Sachs predicting that investments could amount to US \$200bn by 2025. Meanwhile, a recent survey by EY showed that 92% of oil and gas companies are investing in AI, or plan to, over the next two years.

AI is already transforming the energy industry with applications to optimize operations, detect, and eliminate emissions, turbocharge R&D and anticipate demand fluctuations through machine learning with ever increasing accuracy.

However, concerns are mounting over whether the energy required to power AI technologies, and the associated emissions, will offset the potential benefits. What is required to fully unlock the potential of AI in the energy sector to drive forward decarbonization goals, without putting those goals at risk? What benefits can AI deliver as the energy industry decarbonizes? What advances in AI are on the horizon and how could they be utilized to deliver climate goals?

#### AUDIENCE INSIGHT

Delivering energy sector transformation and accelerated decarbonization through AI.

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# Strategic Conference: Wednesday 18 September

10:00 - 10:45 **PLENARY**

## Strategic Leadership: New Energy Economy

### Ministerial Americas Panel: Pioneering energy economies across the Americas

Boasting an abundance of natural, renewable, and critical resources, the Americas are positioned to become the next global supply powerhouse. Alongside being recognised as a leader in clean energy, massive offshore discoveries in the Suriname-Guyana Basin are set to contribute ~1mb/d to global energy supply, offering off-takers an alternative source of supply, whilst skyrocketing national and regional economic growth.

Meanwhile, hydrogen economies are developing at pace, and the Inflation Reduction Act has sparked a manufacturing revolution extending beyond the US. Increased imports of critical minerals from South America are expected to meet the growth of clean energy demand, alongside increased access to transitions technologies and research. As governments across the Americas set out ambitious energy policies, how can fossil fuels and clean energy be leveraged to meet global demand whilst supporting regional decarbonization agendas?

### AUDIENCE INSIGHT

Understand the growth potential of new, diversified energy economies across the Americas.

10:40 - 11:00 **PLENARY II**

## Strategic Leadership: Natural Gas & LNG

### Energy Talks: Delivering projects in a challenging operating and cost environment

Engineering, procurement and construction companies (EPCs) face challenges to deliver projects on time and on budget, reckoning with shifting supply chains, talent shortages and variable costs.

In this Energy Talk, an industry leader will discuss how contractors manage these variables in today's operational landscape. Chris will offer perspective on how AI, new technologies and innovative approaches are revolutionizing energy networks, power grids and gas infrastructure, and how these advancements contribute to the efficient and cost-effective completion of projects to accelerate the path toward net zero.

### AUDIENCE INSIGHT

Strategies for navigating supply chain challenges and bottlenecks to deliver projects on time and on budget.

10:00 - 10:20 **PLENARY II**

## Strategic Leadership: Partnerships & Collaboration, Natural Gas & LNG

### Energy Talks: Natural Gas, the final frontier: The role of LNG in fuelling a new era in sustainable, lower cost space exploration

LNG is set to play a pivotal role in defining a new space age propelled by the fuel's clean burning nature and, affordability and density. Displacing traditional rocket fuels for LNG brings a wealth of potential benefits including enabling the reuse of launch vehicles and decimating costs opening up a new world of opportunities through economies of scale including asteroid mining, more sustainable and affordable space tourism along with the development of zero gravity manufacturing.

In this Energy Talk, a leading space exploration figure will set out a vision for delivering a cleaner, more affordable space program powered by natural gas and the opportunities associated with greater space access.

### AUDIENCE INSIGHT

Understanding the scope of the natural gas opportunity for space exploration.

10:45 - 11:05 **PLENARY**

## Strategic Leadership: New Energy Economy

### Keynote Address: Wu Junli, Chairman, PetroChina International



10:20 - 10:40 **PLENARY II**

## Strategic Leadership: New Energy Economy

### Energy Talks: Balancing shareholder value with rising power demand and the decarbonization agenda: The new IEC conundrum

Shell has sat at the vanguard of the decarbonization agenda among IECs, with early methane abatement targets and a marked shift into power generation in recent years. As the holder of the world's largest LNG portfolio, Shell has dominated LNG trading, accounting for 17% of all traded transactions in 2023. The company has also committed to investing US\$1bn annually on hydrogen and carbon capture and storage technologies. However, the company leadership has highlighted the obstacles that excessive regulation presents to company strategy and has mooted a delisting from the London Stock Exchange in favor of New York. Shell leadership has also spoken about the lack of efficacy of the carbon credits scheme as a decarbonization tool and its potential scrapping.

In this Energy Talk, Shell Integrated Gas and Upstream Director Zoë Yujnovich discusses the company's priorities in the context of growing global power demand along with shareholder actions and expectations. She will also set out her vision for what regulation would be required to turbocharge progress on the hydrogen economy and Shell's natural gas and LNG strategy and how she sees as the future for the LNG trading sector evolving.

### AUDIENCE INSIGHT

Adapting strategies and priorities in a changing operating environment.

11:00 - 11:20 **PLENARY II**

## Strategic Leadership: Natural Gas & LNG

### Energy Talks: Trading in the energy transitions: Growth strategies on the road to net zero

Vitol has witnessed extraordinary growth in the past few years, fuelled largely by the surge in demand for LNG in the wake of the Russian invasion of Ukraine. In 2023, the trading house transacted 17m tonnes of LNG, up 25% on the previous year. In this Energy Talk, Russell Hardy CEO of Vitol will discuss the opportunities and limitations for LNG as a transition fuel worldwide, with a focus on likely demand centres and how energy transition policy is likely to shape the LNG market worldwide.

### AUDIENCE INSIGHT

Outlook for natural gas and LNG trading in the Net Zero Scenario.

# Strategic Conference: Wednesday 18 September

**11:15 - 12:00 PLENARY**

## Strategic Leadership: New Energy Economy & Natural Gas & LNG

### Global Leadership Panel: Rising power demand scenarios and the need for diversification: LNG as a conduit to a robust energy portfolio

Driven by factors such as the increased number of data centers globally, increased uptake of EVs by consumers and other factors, power demand will continue to rise. According to the IEA's Net Zero Emissions by 2050 (NZE) Scenario, electricity will meet over 27% of total final energy consumption in 2030 (compared to 20% in 2022). In combination with increased global renewables capacity, the expansion of nuclear energy and the scale-up of hydrogen capabilities, LNG is expected to play a key role in meeting this rising demand, providing security of energy supply and displacing coal-fired power generation.

#### AUDIENCE INSIGHT

Understand the role of LNG is expected to play in building diversified and resilient energy portfolios alongside other fuel sources to mitigate market volatility while decarbonizing power generation at scale and pace.

**11:20 - 11:40 PLENARY II**

## Strategic Leadership: Natural Gas & LNG

### Energy Talks: Disrupting funding and business models in LNG

Mike Sabel with his co-founder Bob Sember founded Venture Global LNG in 2013 with a new modularized approach to project development aimed at minimizing costs. After a highly oversubscribed initial fundraising round, the company developed Calcasieu Pass, followed by Plaquemines LNG and are now constructing the second phase of Calcasieu Pass, CP2.

In this intimate discussion founder Mike Sabel will reflect on the journey of Venture Global LNG and how it has earned its reputation as a disrupter in the North American LNG export business. He will also share his vision for LNG as a tool for decarbonization in emerging markets, his views on the regulatory environment and what he sees for the future directions for the company.

#### AUDIENCE INSIGHT

Understanding new models of engagement in an evolving LNG sector.

**12:00 - 12:45 PLENARY**

## Strategic Leadership: Natural Gas & LNG

### Global Leadership Panel: The new Latin American LNG export wave

With some notable exceptions, Latin America's geographical isolation and sufficient intraregional supply has meant that significant gas resources across Latin America have not been prioritized for investment. As energy demand rose in the region in the 2000s, a new era of import project development saw the construction of terminals in Brazil, Chile and Colombia with Latin America importing as much as 5% of globally traded LNG.

Now advances in shale drilling technologies, coupled with higher natural gas markets, have promised to unlock the value of Argentina's huge shale deposits in the Vaca Muerta, while major natural gas discoveries in Suriname and Guyana have attracted huge investments for LNG export projects. In Mexico, eight LNG export projects exporting US pipeline natural gas are under development.

What is needed to fast track projects to capture strong global appetite for LNG in the short to medium term? How can policymakers reassure investors in the region?

#### AUDIENCE INSIGHT

New LNG supplies for Latin America and their impact on global LNG markets.

**12:00 - 12:45**

**CLIMATE TECH & AI THEATER**

## ClimateTech & AI

### Global Leadership Panel: Optimizing Direct Air Capture to reduce legacy global emissions

Direct Air Capture (DAC) has emerged as a technology poised to complement rapid, global emission reductions through the removal of legacy CO2. Momentum is building behind DAC as a durable, quantifiable carbon removal tool: 130 DAC facilities are under development globally and the US Department of Energy has recently announced plans for US \$1.2bn in funding for regional DAC hubs.

However, there are obstacles to deploying DAC at scale: associated costs are high – with only two commercial-scale plants in operation – and investment in DAC hinges on proactive policy and incentives. With its potential to significantly impact net zero targets, what can be done to accelerate at-scale development and deployment of DAC?

#### AUDIENCE INSIGHT

Evaluating the environmental and commercial benefits of and challenges to developing, deploying and utilizing DAC at scale.

**12:00 - 12:45 HYDROGEN THEATER**

## Hydrogen

### Global Leadership Panel: Financing for hydrogen scale-up: Strategies for de-risking and accelerating hydrogen infrastructure development

The Hydrogen Council estimates that US \$1.5tn investment is required to fund the hydrogen infrastructure needed to achieve transition goals by 2050. Governments play a significant role in de-risking and greenlighting large-scale national infrastructure rollout through supportive policies and public funding. However, spiraling project costs and the high price of production have threatened the viability of some hydrogen projects and their potential return on investment and despite momentum growing only 7% of projects have made it to Final Investment Decision.

What can developers do to reassure investors on the feasibility of hydrogen projects, and what critical infrastructure needs to be put in place to enable customer offtake? How can policies provide clarity and stimulate funding into the infrastructure projects needed to drive a global hydrogen economy?

#### AUDIENCE INSIGHT

Discover the requirements for creating a favorable investment environment for critical hydrogen infrastructure development.

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# Strategic Conference: Wednesday 18 September

12:45 - 13:30 **PLENARY**

## Strategic Leadership: Investment

### Global Leadership Panel:

Aligning investment portfolios with energy project financing and net zero objectives

Integrating net-zero objectives into business models is increasingly important as investors prioritize sustainability and decarbonization into their decisions when funding energy projects and, in the context of higher interest rates, continued price volatility and inflated risk premiums, sourcing financing has become even more challenging for gas, LNG, hydrogen and new energy projects.

With governments and investors reluctant to take the long-term view necessary to deliver the US \$4.5tn per year needed by 2030 to adhere to the 1.5°C pathway, as outlined in the IEA's Net Zero Roadmap, how are investors reviewing the challenges faced by the industry in the race to net zero? How is an uncertain policy environment impacting investor appetite for gas, LNG and low carbon energy projects?

### AUDIENCE INSIGHT

Understand the key steps for aligning investment portfolios with net-zero objectives through emission metrics, shareholder engagement, thematic investing opportunities related to sustainability, managing risks, encouraging collaboration and regular monitoring and reporting.

14:00 - 14:20 **PLENARY**

## Strategic Leadership: Natural Gas & LNG

### Onstage Interview:

Freeman Shaheen, President, Chevron Global Gas



12:45 - 13:00

## CLIMATETECH THEATER & AI

### Climatetech & AI

### Global Leadership Panel:

Enabling decarbonization across hard to abate industries through cross-sector partnerships.

Emissions from the steel, cement, petrochemicals, shipping, and aviation sectors are projected to rise by 30% by 2050 if actions aren't taken to enable rapid decarbonization. Recent initiatives, such as COP28's Industrial Transition Accelerator have called for public and private sector stakeholders to drive mutually beneficial collaborations to bringing new technologies to maturity, boosting demand for sustainable products, overcoming legacy grid and physical infrastructure challenges, and creating enabling regulatory and investment environments.

What steps need to be taken to develop the partnerships between suppliers and end-users capable of creating the combination of commercial, financial, technology and industry knowledge necessary to quicken the pace of emissions reduction, in the hard to abate sectors of industry, energy and transportation, to hit net zero targets?

### AUDIENCE INSIGHT

Understand the role cross-sector partnerships play in offsetting Scope 3 emissions and increasing the pace of decarbonization across hard to abate industries.

14:30 - 15:15 **PLENARY**

## Strategic Leadership: Climate Technologies & AI

### Global Leadership Panel:

Driving purposeful industry progress on methane reduction

COP28 yielded major announcements on methane emissions reduction including the establishment of US \$1bn task fund, new US legislation for oil and gas companies to manage methane and the World Bank's Global Gas Flaring Reduction Partnership Fund.

How will the fund be leveraged to support methane reduction in high emitting regions and deliver the 30% reduction on emissions reduction from 2020 levels, as mandated by the Global Methane Pledge? Are tougher measures required to encourage greater action from operators? What is needed to unite organizations behind a common roadmap so the industry can take the necessary actions to achieve the near zero methane mandate set out by COP28?

### AUDIENCE INSIGHT

Charting a unified strategy for the rapid curtailment of methane emissions.

12:45 - 13:30 **HYDROGEN THEATER**

## Hydrogen

### Global Leadership Panel:

Powering decarbonization with hydrogen

Under the Net Zero Emission scenario (NZE), hydrogen will be central to the reduction of emissions for energy consumers in the industrial and heavy transportation sectors. Barriers to more widespread use of hydrogen include lack of infrastructure for the establishment of a robust supply chain and the high cost of hydrogen compared to other feedstocks.

To better track against NZE targets, policy actions can incentivize off-takers to make the switch to hydrogen and to unlock greater demand to support the scale-up of the hydrogen economy. But what else can be done to support the switch to hydrogen? Is greater flexibility required in offtake agreements to stimulate demand? And how could infrastructure investment impact on end-user appetite for hydrogen?

### AUDIENCE INSIGHT

Understanding how policy, commercial and infrastructure actions can stimulate off-taker demand and unlock further growth for the hydrogen sector.

14:30 - 15:15 **HYDROGEN THEATER**

## Hydrogen

### Global Leadership Panel:

Scaling the use of ammonia to fast-track the energy transition

Ammonia holds immense potential for new applications, including as an energy carrier, storage solution and as a maritime fuel. The IEA predicts ammonia production will expand by nearly 40% by 2050, driven by economic and population growth. While the use of ammonia as a fuel shows promise, its application as a zero-carbon fuel is under-utilised due to challenges in production methods and high indirect CO2 emissions.

The IEA has flagged significant progress is needed to develop the ammonia value chain and maximise its potential. Critical development actions will be needed including supportive regulatory and policy frameworks; targeted investment; creating demand generation and sustainable supply chains and developing supporting technology innovation.

### AUDIENCE INSIGHT

Understand the challenges and opportunities in scaling ammonia as a sustainable fuel source.

# Strategic Conference: Wednesday 18 September

15:15 - 16:00 **PLENARY**

## Strategic Leadership: Partnerships & Collaboration

### Global Leadership Panel: Strengthening collaboration between energy producers and industrial consumers

To align with mid-century net zero goals, energy companies are transforming partnerships and business models to overcome the scale, complexity, and urgency of the transition to low carbon energy sources. At the same time, producers and consumers are co-creating international partnerships and rethinking procurement mechanisms to unlock the benefits of new interconnected energy markets.

Are organisations able to replicate successful business models across different geographies and divisions and how are they measuring their success? How do these new business models impact investment decisions and infrastructure development across hard-to-abate sectors?

#### AUDIENCE INSIGHT

Understand the evolving business strategies to accommodate the new partnership and collaboration models to overcome the challenge of decarbonization and making the right asset investment decisions.

🗨️ *Every year, Gastech presents an invaluable opportunity for our industry to take a leadership role in the energy transition and make real commitments to the innovations and investments that will define the future of natural gas and LNG.* 🗨️



**Sarah Bairstow**  
CEO Mexico Pacific  
and Gastech Executive  
Committee Chair

15:15 - 16:00 **HYDROGEN THEATER**

## Hydrogen

### Global Leadership Panel: Pathways to unlocking clean hydrogen production and demand generation

The Hydrogen Council estimates the production of green hydrogen costs between US \$4.5 to US \$6.5/kg, discouraging producers and off-takers from shifting from lower cost, higher carbon energy sources. High capital costs of renewable energy, paired with expensive electrolyzers and equipment, are the main price drivers, creating a barrier for widescale demand generation.

Globally, supportive policies are being implemented including the Inflation Reduction Act 45V Tax Credit offering producers tax credits of up to US \$4/kg, and the European Hydrogen Bank's Innovation Fund which is unlocking €800m – €2bn of fixed premiums for produced green hydrogen to help bridge the gap between the high price of production and competitive pricing for off-takers. As industry waits to harness the full potential of green hydrogen, there is also the opportunity to scale-up through blue hydrogen – driving the commercial development of bridging technologies and infrastructure, whilst supporting transition goals.

Alongside these interventions, what other steps can be taken to ensure cost competitive production of green hydrogen?

#### AUDIENCE INSIGHT

An analysis of how green hydrogen cost and production challenges can be overcome to create more market certainty and demand.

16:00 - 16:45 **PLENARY**

## Strategic Leadership: Natural Gas & LNG & Investment

### Global Leadership Panel: Matching the growth of large, capital-intensive LNG export and import projects with projected long-term global demand requirements

A wave of new LNG projects is forecast to come online in the next five years, adding more than an 200mt of natural gas export capacity, half of which is under construction in the United States and Qatar. Although Europe and Asia account for 90% of all new import capacity in development, LNG demand in Europe could prove short-lived as the continent pursues its ambitious decarbonization agenda and the price sensitivity of many Asian importers has called into question LNG demand growth forecasts, highlighting the investment risk associated with new LNG projects.

With an estimated US \$55bn forecast to be invested in new LNG supply in 2024 and 2025, can investors and project developers reconcile the projected supply surplus with the development of untapped new markets and uses of LNG? Or will oversupply render some projects unprofitable?

#### AUDIENCE INSIGHT

Understand how the principals in global LNG supply and demand are configuring their assets to align supply with future demand and minimising the risk of sitting on stranded assets.

16:00 - 16:45 **CLIMATETECH & AI THEATER**

## Climatetech & AI

### Global Leadership Panel: Tackling global methane emissions through certifications, standardized data reporting and measurement technologies

In line with the 30% methane reduction target outlined within the Global Methane Pledge, both public and private sector players are looking to introduce enabling regulations and mechanisms to support methane reduction. As such, new and improved technologies and certifications are being deployed to accurately detect, transparently track and report methane leakages.

Existing technologies such as satellites, drones, regional and point sensors, and Optical Gas Imaging cameras, have been successful in identifying Scope 1 emissions, but Scope 2 and 3 emissions data isn't always available and the collection and processing of this data can be both time and labour intensive.

As the use of climate technology accelerates, how can public and private stakeholders' partner to invest, innovate and improve data-sharing and reporting mechanisms, measurement technology and abatement solutions to slow the flow of global methane emissions.

#### AUDIENCE INSIGHT

Access new and improved technologies that can drive greater standardized reporting transparency and impact on efforts to tackle global methane emissions.

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# Strategic Conference: Wednesday 18 September

16:45 - 17:30 **PLENARY**

## Strategic Leadership: Natural Gas & LNG

### Global Leadership Panel:

Future directions for the globally traded LNG market

The energy crisis sparked by the Russian invasion of Ukraine spurred an unprecedented dash for gas as consumers in Europe rushed to find replacements for the 137bcm of Russian gas under sanctions. The heightened market activity fast tracked the maturation of a globally traded LNG market after years of striving to commoditize but resulted in key coal-switching markets in Asia failing to secure volumes as prices soared.

More than two years on from the invasion, the global gas market has stabilized with Europe's storage inventories almost at capacity, mild winters and a concerted program by consumers to reduce industrial demand. In Asia, a fall in demand in from legacy consumption markets such as Japan has led to growth cultivation in emerging markets as cargoes are resold within the APAC region.

In 2024, the European Union's Emissions Trading Systems was extended to cover LNG carriers effectively placing a carbon tax on all imports to the bloc with the consequence of potentially creating a bifurcated global LNG market according to Wood Mackenzie. At this intersection, what will the next era of LNG trading resemble? To what degree will exposure to price volatility dampen consumer appetite for natural gas in favor of other fuel sources and how might carbon taxes impact global market dynamics?

### AUDIENCE INSIGHT

Understanding the paradigm shifts in LNG trading and outlook for the globally traded LNG market.

16:45 - 17:30 **CLIMATE TECH & AI THEATER**

## ClimateTech & AI

### Global Leadership Panel:

The role of policy in incubating competitive climate technology innovation hubs

Climate technology is primed for extraordinary growth as the world decarbonizes. To unlock the much-needed funding that will enable effective scale up and roll out, climate technology innovators are gravitating to countries and regions with the most favorable market conditions – whether that's through enabling policies, demand-creation mandates, tax subsidies, multi-source funding access, or access to greater R&D opportunities.

National and regional policies, initiatives and regulatory frameworks have been launched across the world, to stimulate innovation, investment and job creation in the climate technologies needed to achieve net zero goals. But do policymakers need to do more to overcome funding and technology gaps to incentivize climate technology start-ups and scale-ups to localize their R&D and operations in support of national decarbonization efforts? What risks do elections or change in leadership pose to the progressive policies designed to accelerate the energy transition?

### AUDIENCE INSIGHT

Evaluating models of successful climate-related industrial policies and their outcomes to understand the mechanisms for cultivating competitive climate technology innovation zones.

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## Producing Clean Ammonia at Low-Cost, Reliably

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# Strategic Conference: Thursday 19 September

**10:00 - 10:45 PLENARY**

## Strategic Leadership: Climate Technologies & AI

### Global Leadership Panel:

**Harnessing new business models to navigate a complex CCUS value chain and achieve decarbonization goals**

2023 saw a record US \$4bn of global investments in CCUS as the energy industry puts its weight behind carbon capture technology as a key decarbonization tool in the journey to net zero. However, progress on CCUS has been uneven.

Industry and investment appetite, coupled with incentivized policies at national level, have created new enabling environments for CCUS's rapid development. From increased operational efficacy and the cost-reduction of CCUS technologies coupled with new value chains incorporating cross-industry hubs, increased CO2 point-source carbon capture capacity and potential impact across hard-to-abate sectors, there are a multitude of opportunities for effective use of CCUS.

With an annual investment of US \$3.5tn required between now and 2050 to ensure widespread adoption of CCUS, how can companies and countries overcome barriers to implementation, incentivise the investments required and continue to accelerate deployment in all regions across existing operations and new large-scale infrastructure to contribute to net zero goals?

### AUDIENCE INSIGHT

How can industry capitalize on new and repurposed opportunities to accelerate the deployment of new CCUS projects to hit net zero targets.

**10:45 - 11:30 PLENARY**

## Strategic Leadership: Partnerships & Collaboration & Climate Technologies & AI

### Global Leadership Panel:

**Decarbonizing heavy transportation: Collaborations to address the acceleration of climate technology solutions from development to deployment**

Decarbonizing heavy transport, specifically shipping, aviation and HGV is a key challenge in addressing climate change. According to Brookings the transportation sector is responsible for about one-quarter of global GHG emissions and emissions are growing, even in the developed world where other emissions are generally flat. To steer the transport industry to net zero by 2050, robust strategies will be needed to stimulate supportive policies, global standardisation, innovation in technologies and collaboration across the value chain to drive the adoption of low- and zero-carbon fuels.

What are the barriers to investment in zero-emissions fuelling infrastructure, including biofuels, hydrogen, and clean ammonia, which can pave the way for achieving their long-term supply and the climate benefits of decarbonization? How can policymakers keep technology advances and policy in alignment as the technology advances? What incentives are required to accelerate the adoption of low- and zero-carbon fuels in aviation, shipping and heavy transport?

### AUDIENCE INSIGHT

Fast tracking collaborative efforts to decarbonize heavy transport.

**12:00 - 12:45 PLENARY**

## Strategic Leadership: Natural Gas & LNG

### Global Leadership Panel:

**Energy Inclusion: Widening access to natural gas and LNG to support the transitions to a lower-carbon energy system in emerging economies**

The use of natural gas in emerging and high growth economies has great potential to transform progress on climate goals. The displacement of coal by natural gas as a principal fuel for power generation represents an opportunity to cut global carbon emissions by 25%. However, price and supply volatility has raised concerns over the affordability and viability of natural gas as a primary feedstock.

Will the growth in new LNG supply allow emerging and high-growth markets to access this lower carbon energy with confidence and at a price they can afford? Will it realistically accelerate the switch to gas from higher polluting fuels? How is the development of new export projects across the global south supporting greater energy inclusion?

### AUDIENCE INSIGHT

Understand the opportunity and challenges associated with widening access to cleaner energy in high growth markets.



This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

# Strategic Conference: Thursday 19 September

12:00 - 12:45

CLIMATETECH & AI THEATER

## Climatetech & AI

### Global Leadership Panel: Nuclear energy as a catalyst for delivering a sustainable energy transition

As net zero emitters, nuclear power plants are well positioned to replace traditional fossil fuel plants – but deployment has been hindered by significant barriers, from high construction costs and lengthy project lead times to unstable economics and the safety concerns of the public. At COP28, over 20 countries pledged to triple nuclear energy by 2050, signaling global intent to explore the role nuclear energy will play in achieving global decarbonization goals.

Nevertheless, there are signs that public and private stakeholders are exploring the viability of integrating nuclear power into the future energy mix to enhance energy security and affordability, boost economic development and achieve net zero targets faster. This interest is being driven by enabling policies, increased geopolitical competitiveness and targeted investment into R&D that accelerates the fast innovation and cost reduction needed to unlock low-cost, flexible off-grid power solutions and the use of nuclear energy for low-carbon cost-competitive hydrogen production. With this in mind, how significant is the role of nuclear alongside natural and low-carbon gases in the global energy mix, and what more can be done to expand its capabilities and deployment?

#### AUDIENCE INSIGHT

Explore the emerging and contributory role of nuclear energy in delivering energy security and decarbonization in line with net zero targets.

12:00 - 12:45 HYDROGEN THEATER

## Hydrogen

### Global Leadership Panel: Innovation in hydrogen transportation and storage: Incubating the solutions needed to realize the hydrogen economy

The safe long-distance transportation of commercial quantities of hydrogen remains an industry-wide challenge but also as an opportunity to achieve major cost-efficiency gains. Liquid hydrogen and ammonia are the most discussed options for hydrogen transport via ships, but new investments coupled with new innovations are required to open new options for global transportation and distribution. Can established gas, e-fuels, liquid organic hydrogen carriers and synthetic fuels transportation, infrastructure and supply chains be leveraged to achieve these goals?

Technological development and equipment investment is required to make it economically viable to transport hydrogen over long-distances and open global end-to-end supply chains.

In addition, the safe storage of hydrogen presents several challenges: its molecule size and high diffusion rate often leads to leakages and material damage, storage technologies are energy intensive, and widespread adoption has been hindered by challenging economics. How can infrastructure developers capitalize on government incentives to create innovative solutions that overcome technical barriers to hydrogen roll out while also turbocharging project development?

#### AUDIENCE INSIGHT

Strategies for unlocking the storage and transportation innovations required to enable the scale-up of hydrogen at pace.

12:45 - 13:30 PLENARY

## Gastech 2025 Handover Ceremony

12:45 - 13:30

CLIMATETECH & AI THEATER

## Climatetech & AI

### Global Leadership Panel: Increasing the efficiency of transmission technologies to ensure grid resilience and greater access to sustainable electricity

The US Department of Energy has announced \$3.46bn investment for 58 projects designed to strengthen grid resilience, increase battery storage and build new transmission lines and microgrids. Meanwhile, the European Commission plans to introduce regulatory incentives, faster permitting, and improved network tariffs to stimulate greater cooperation between regulators, technology providers and utilities, and improve access to financing and EU funding programs.

Globally, large scale energy projects from DAC to green hydrogen production, alongside the rise of AI and quantum computing which necessitate the construction of giant data centers, will create enormous demand growth for electricity and putting increased strain on grids which are already struggling with queues of large load connections. How can global energy systems act urgently to accommodate these spikes in demand to ensure grids are enablers of the energy transition, able to support diversified and decarbonized energy mixes, and withstand both supply and climate disruptions?

#### AUDIENCE INSIGHT

Explore the role of grid resilience as an enabler of the energy transition.

12:45 - 13:30 HYDROGEN THEATER

## Hydrogen

### Global Leadership Panel: Accelerating commercial scale hydrogen deployment through the development of hubs

In 2023 the US Department of Energy announced US \$7bn for the establishment of seven hydrogen hubs to jumpstart localized markets for clean and low-cost hydrogen. Elsewhere, hubs, such as Net Zero Teesside in the UK, are showcasing how low emission hydrogen clusters can regenerate brownfield industrial areas, foster innovation through centralized R&D, secure hydrogen off-taker demand and create jobs in the new energy economy.

What is the blueprint to successfully establish a hub and support its scale up and expansion? Will the creation of hubs be enough to stimulate off-taker demand at the levels required to achieve the tipping point in the widescale adoption of hydrogen?

#### AUDIENCE INSIGHT

The role of hydrogen hubs as a route to fast-tracking hydrogen uptake at scale.





# Strategic Conference: Thursday 19 September

14:00 - 14:45 **PLENARY**

## Strategic Leadership: Climate Technologies & AI

**Global Leadership Panel:** Fostering greater climate technology innovation, deployment, and scale across the value chain

Total venture and private equity investment in climate technologies reached US\$638 billion in 2023 globally according to PWC. Launch of the US Inflation Reduction Act has sparked global interest in driving clean energy investment into climate technology and efficiency solutions through policies, regulatory frameworks, and subsidies. In the US, projects worth \$224bn have been announced, catalyzing a new domestic manufacturing ecosystem of climate technologies.

Climate technology innovation is key to ensuring a significant decarbonization of energy systems and GHG emissions reductions. How can governments, the energy value chain and the emerging climate technology market face overcome challenges related to scalability, matching market demand with new energy supply and a lack of the workforce skills needed to drive further adoption and deployment of low-carbon technologies?

### AUDIENCE INSIGHT

How climate technology can be developed and deployed at pace and scale to maximize momentum on global emissions mitigation.

14:45 - 15:30 **PLENARY**

## Strategic Leadership: Natural Gas & LNG

**Global Leadership Panel:** Redefining the parameters for LNG buyer-supplier engagement in a changing global energy era

A new raft of long-term LNG supply agreements has disrupted the spot and short-term contracts markets that have characterized sales of LNG to Europe previously. New contracts have seen notable changes that offer buyers greater assurance and flexibility in return for security of demand. Demand has been further strengthened by shifting government policies in Europe, in reaction to growing concerns over the costs of reaching net zero. Furthermore, the pause on the development of new infrastructure in the US has raised concerns regarding security of supply once more.

Has the inclusion of new pricing mechanisms in long term contracts caused a paradigm shift in how LNG is traded? What factors, beyond price, are persuading LNG buyers to commit to multi decade LNG supply deals? How will the evolution of energy markets impact LNG contracts in the future and customer preferences?

### AUDIENCE INSIGHT

How are evolving contractual models providing greater flexibility to LNG consumers?

15:30 - 16:15 **PLENARY**

## Strategic Leadership: Natural Gas & LNG

**Global Leadership Panel:** Reimagining North American LNG project strategy to overcome barriers and meet new demand

The EIA predicts that U.S. liquefied natural gas (LNG) exports will continue to lead growth in U.S. natural gas trade as LNG export projects currently under construction start operations and ramp up to full production by the end of 2025 including an increased natural gas exports by pipeline, mainly to Mexico.

However, supply forecast is expected to be tight in 2024, with a limited increase in global LNG output to restrain demand growth, notably for Europe and the mature markets of Asia – as delays in new liquefaction plants and issues surrounding the availability of feed gas at existing projects could push back supply growth to 2025. Compounded by geopolitical uncertainty, spiralling cost of projects, concerns over reusing and building of critical infrastructure such as pipelines and terminals and shortage of skilled labour all have the potential to generate further volatility.

What would be required to expedite the development of LNG projects, meet growing demand, and contribute to energy security and sustainability in new demand markets?

### AUDIENCE INSIGHT

What innovation can LNG and natural gas project developers adopt to overcome commercial and regulatory challenges to make projects more agile, competitive and resilient.

.....  
 ☕☕ *As one of the most important gas industry events of the year, Gastech offers a unique opportunity to discuss the key issues of the day, including energy security, decarbonization and the energy transition.* ☕☕  
 .....



**Tom Summers**  
 Senior SVP President - LNG Marketing & Trading, Shell



This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

# Strategic Conference: Friday 20 September

10:15 - 10:40 **PLENARY**

## Strategic Leadership: New Energy Economy

### Keynote Address:

Future of space aviation with zero carbon fuels

12:30 - 12:50 **PLENARY**

## Gastech 24 Wrap Up

A look back over the last four days, highlighting the unparalleled blend of pioneering content, thought leadership and cutting edge innovation.

Pulling the key points from both the Strategic Conference and Technical & Commercial Conference to summarize how Gastech 2024 will lead to actions for global energy transition.

Book a delegate pass  
[gastechevent.com/delreg](https://gastechevent.com/delreg)

10:45 - 11:30 **PLENARY**

## Strategic Leadership: Talent

### Global Leadership Panel:

Talent for the transitions: Building the workforce needed to deliver the challenge of the century

As energy companies match the pace of innovation with the changing nature of work, the IEA forecasts tremendous growth in energy employment in the years ahead. IRENA estimates that employment in the energy sector could grow to 139 million by 2030, with another 16 million workers shifting to clean energy roles. Sixty per cent of these new jobs will require some degree of post school training and reskilling.

Which leadership strategies are being adopted to enhance the reputation of the industry as a flexible career path in a multifaceted ecosystem? How are businesses closing critical skills gaps and redefining the employee value proposition and industry experience to inspire engagement across demographics?

### AUDIENCE INSIGHT

Encouraging and supporting new talent flows and skills recruitment to ensure sustainable future success.

This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

**Atlas Copco**

**CUT THE CARBON**  
TRANSFORM • SAVE • CONTRIBUTE

**Smart technologies, that transform industries**

**Atlas Copco Gas and Process advanced turbomachinery solutions**

We empower our customers to create a prosperous future for the world. Every idea and solution is built with passion, ingenuity and extensive experience.

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# Three ways to register for Gastech

## Strategic Conference - \$5,100

- Opening Ceremony
- Strategic Leadership Program
- Hydrogen Strategic Program
- Climatetech & AI Strategic Program
- + Technical & Commercial Conference
- + Feature Programs

## Technical & Commercial Conference - \$3,000

- Hydrogen Technical Program
- Climatetech & AI Technical Program
- Shipping & Marine Program
- EPC & Gas Processing Program
- Commercial Program
- + Feature Programs

## Exhibition Visitor - FREE

- 800 international exhibitors
- Gastech Hydrogen
- Gastech Climatetech & AI
- Gastech Shipping & Marine
- 20 International country pavilions
- Feature Programs -  
Diversity, Equity & Inclusion in Energy;  
Procurement Meeting Place

# Gastech Houston 2024

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# Gastech Technical & Commercial Conference

The Gastech Technical & Commercial Conference serves as a vital platform for the industry's future pioneers and pathfinders, highlighting groundbreaking innovations and inspiring visions that can drive climate action and facilitate the transition to a more sustainable future.



## Gastech Technical Conference Programs

The Gastech Technical Conference Programs will be a window to a more sustainable and lower carbon future, displaying cutting-edge technology and research in natural gas, LNG, hydrogen, low carbon solutions, and climate technologies & AI, as well as the tangible impact of an evolving policy landscape.

39

Sessions

130

Speakers

4

Programs

Climatetech  
& AI

Hydrogen

Shipping  
& Marine

EPC & Gas  
Processing

## Gastech Commercial Conference Program

The Gastech Commercial Conference programme sets out a forum for executives and company leaders to share their practical visions of how the energy industry will deliver on the transition strategies that are redefining the energy industry and beyond.

18

Sessions

70

Speakers



50,000

Attendees

7,000

Delegates

800

Exhibitors



[Book a delegate pass](#)

# Technical & Commercial Conference Programs

The Gastech Technical & Commercial Conference will deliver world-class programs in Hydrogen, Climatech & AI, EPC & Gas Processing, Shipping & Marine, and Commercial, carefully selected by the 50 members of the Governing Body, based on Call for papers submissions.

## Climatech & AI

The Climatech & AI Technical Conference Program will highlight leading peer-reviewed analyses and the latest advancements in net zero technologies. The conference will discuss commercialization challenges, evolving regulations, and proof-of-concept case studies, emphasizing the importance of these innovations for achieving mid-century emissions targets.

**Key categories include:**

- Direct Air Capture
- CCS Technology
- CCS Offshore
- CCS Project Specification
- Emission Measurement

## Hydrogen

The Hydrogen Technical Conference Program will present in-depth market analysis and top peer-reviewed papers on developing and deploying new technologies in the expanding hydrogen economy across the value chain. Topics include current market conditions, long-term forecasts, and technical breakthroughs in infrastructure and transportation, essential for hydrogen's role in the energy mix.

**Key categories include:**

- Hydrogen Production
- Hydrogen Use
- Hydrogen Safety
- Hydrogen Liquefaction & Storage
- Hydrogen Transportation & Storage

## EPC & Gas Processing

The EPC & Gas Processing Technical Conference Program will present excellent peer-reviewed insights on equipment selection, digital project delivery, asset management, and health, safety, and environmental methodologies. Over three-and-a-half days, it will cover new learnings, technological breakthroughs, and best practices in energy infrastructure design, construction, and operation.

**Key categories include:**

- LNG Liquefaction
- Project Updates
- FLNGs
- Technology to Deliver Low Carbon LNG
- LNG Upstream



## Shipping & Marine

The Shipping & Marine Conference Program will feature top peer-reviewed papers on infrastructure opportunities, highlighting sustainable and environmentally responsible marine services, logistics, and freight transportation.

**Key categories include:**

- Shipping Policy & Regulation
- LNG Fuel
- Alternative Fuels
- Ammonia Fuel
- Ammonia Transportation

## Commercial

The Commercial Conference Program will feature sessions connecting policy with practical strategies. Speakers from various energy sectors will discuss emission reduction, energy and climate policies, project updates, governance, regulations, finance, and trading.

**Key categories include:**

- Carbon Border Adjustment Mechanism (CBAM)
- LNG Supply
- LNG Demand
- Low Carbon LNG
- FSRUs

**1,000**

Speakers

**160**

Conference sessions

**125**

Countries represented

[Book a delegate pass](#)



# Agenda Overview



## Day 1 - Tuesday 17 September

12:00 - 14:00

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater		
12:00 - 13:00 Carbon Border Adjustment Mechanism (CBAM)	12:00 - 13:30 Shipping Policy & Regulation	12:00 - 14:00 LNG Liquefaction - Session 1		
13:00 - 14:00 LNG Supply				

14:30 - 16:30

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatetech & AI Theater	Hydrogen Theater
14:30 - 15:30 LNG Demand - Session 1	14:30 - 16:00 Shipping Commercial	14:30 - 16:00 LNG Liquefaction - Session 2	14:30 - 16:00 Direct Air Capture	14:30 - 16:00 Hydrogen Use
15:30 - 16:30 LNG Demand - Session 2	16:00 - 17:30 LNG Fuel	16:00 - 17:30 Project Updates	16:00 - 18:00 CCS Technology	16:00 - 18:00 Hydrogen Production
16:30 - 18:00 LNG Demand - Asia				

## Day 2 - Wednesday 18 September

10:00 - 13:00

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatetech & AI Theater	Hydrogen Theater
10:00 - 11:30 Low Carbon LNG	10:00 - 12:00 Ammonia Fuel - Session 1	10:00 - 11:30 FLNG	10:00 - 11:30 CCS Offshore	10:00 - 11:30 Hydrogen Safety
12:00 - 13:00 LNG Legal	12:00 - 13:30 Ammonia Fuel - Session 2	12:00 - 14:00 Technology to Deliver Low Carbon LNG - Session 1		
13:00 - 14:00 FSRUs				

14:00 - 17:30

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatetech & AI Theater	Hydrogen Theater
14:30 - 15:30 LNG Shipping - Session 1	14:30 - 16:00 Alternative Fuels	15:00 - 17:00 Technology to Deliver Low Carbon LNG - Session 2	14:30 - 16:00 CCS Project Specification	16:00 - 17:30 Hydrogen Liquefaction & Storage
15:30 - 15:30 LNG Shipping - Session 2	16:00 - 17:30 Ammonia Transportation			
16:30 - 18:00 LNG Shipping - Session 3				



Book a delegate pass

This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.



## Day 3 - Thursday 19 September

10:00 - 13:00

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatech & AI Theater	Hydrogen Theater
10:30 - 11:30 <b>Ammonia</b> 12:00 - 13:00 <b>Shipping Emissions - Session 1</b> 13:00 - 14:00 <b>Shipping Emissions - Session 2</b>	10:00 - 11:30 <b>Carbon Dioxide Shipping</b> 12:00 - 13:30 <b>Liquid Hydrogen Shipping</b>	10:00 - 11:30 <b>Digital Advances for LNG</b> 12:00 - 14:00 <b>Operations Liquefaction - Session 1</b>	10:00 - 11:30 <b>Emissions Measurement</b>	10:00 - 11:30 <b>Hydrogen Transportation &amp; Storage</b>

14:00 - 17:30

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatech & AI Theater	Hydrogen Theater
14:30 - 15:30 <b>Biomethane</b> 15:30 - 16:30 <b>Net Zero Strategy</b> 16:30 - 17:30 <b>ESG</b>	14:30 - 16:00 <b>Terminals - Session 1</b> 16:00 - 17:30 <b>Terminals - Session 2</b>	14:30 - 17:00 <b>Natural Gas Treatment</b>	14:00 - 16:00 <b>Project Development</b> 16:00 - 17:30 <b>Low Carbon Power Generation</b>	14:30 - 16:00 <b>Green Gas - Session 1</b> 16:00 - 17:30 <b>Green Gas - Session 2</b>

## Day 3 - Friday 20 September

10:00 - 11:30

Commercial Theater	Shipping & Marine Theater	EPC & Gas Processing Theater	Climatech & AI Theater	Hydrogen Theater
10:30 - 11:00 <b>Hydrogen</b>	10:00 - 11:30 <b>Non-Marine Transport</b>	10:00 - 11:30 <b>Power Generation</b>	10:00 - 11:30 <b>LNG Terminals</b>	10:00 - 11:30 <b>Synthetic Methane</b>



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 ☁️ *The strength of topics and the inclusion of new perspectives promise an exciting and enriching experience.* ☁️  
 .....

**Geoffroy Hureau**  
 Secretary General, CEDIGAZ | Gastech Governing Body Member 2024

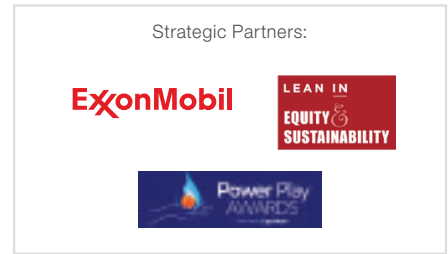
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This Preview is accurate as of August 2024. Sessions and topics will continue to evolve and are subject to change.

▶ DIVERSITY, EQUITY & INCLUSION IN ENERGY

# Cultivating diversity, equity, and inclusion for an evolving energy landscape

As the energy industry embarks on the journey toward a decarbonized future, diversity, equity, and inclusion (DE&I) are imperative pillars for building the energy workforce of the future needed for success. The Gastech Diversity, Equity, and Inclusion in Energy Program is designed to ignite conversation and foster collaboration around talent. Built upon a long history of leadership and engagement, by dedicating a space for collaboration to inspire tangible actions. It's the industry's dedicated platform for energy professionals spanning the entire value chain to cultivate DE&I for an evolving energy landscape.



## A selection of the confirmed speakers include:



**Stuart Broadley**  
CEO  
EIC



**Lori Hernandez**  
Managing Director,  
South Capital Projects  
Lead  
Accenture



**Stephanie Sirt**  
VP Global Strategic  
Accounts  
Schneider Electric



**Molly Determan**  
President  
Energy Workforce &  
Technology Council  
Lead



**Lancine Dosso**  
Head of Project  
and Business  
Development  
Engie R&I



**Rakhi Oli**  
Sr. Leader Global Strategy  
& Business Management,  
Low carbon Business  
Segment  
Flowsolve Corporation



**Juan Castelblanco**  
VP HR Americas  
Kent



**Jenny Solomon**  
VP Portfolio  
Governance &  
Analysis  
Woodside Energy



**Chair: Lamé Verre**  
Co-Founder and Chair  
Advisory Board,  
Lean in Network  
| Equity &  
Sustainability

## Why Attend?

### HEAR

How industry practitioners are approaching the task of redressing gender and race-based imbalances in the workforce.

### GAIN

Insight into what a more diverse workforce can mean to your organization.

### LEARN

How companies are tackling barriers to entry to improve representation in the industry.

### EXPLORE

How other sectors have transformed their workplaces with diversity and inclusion initiatives



View the Gastech Conference Agenda



**FUTURE LEADERS**

Future Leaders Program Sponsor:



# Cultivating talent for an evolving energy landscape



**T**he Gastech Future Leaders program is a series of seminars exclusive to 200 recent graduates, MBAs and young energy professionals with up to three years' experience working in the energy industry. The program is aimed at boosting the energy sector's dynamic landscape, enhancing its reputation to attract diverse talent across the entire value chain, whilst driving the industry forward by investing in talent to highlight its positive impact on a global scale. A comprehensive 4-day series of sessions conducted by senior industry leaders, the Future Leaders program is aimed at bolstering the next generation of energy pioneers. It provides insights into different fields when it comes to choosing career paths whilst equipping them with practical skills such as networking to navigate the future energy landscape. From marketing and engineering to economics and HR, top-of-the-line professionals will point our Future Leaders in the direction of leadership opportunities available across the energy value chain, the skillsets needed to support tomorrow's global energy needs, and expert insight into career paths throughout the industry.



## A selection of the confirmed speakers include:



**Dr. Hemachandran Kannan**  
Director of AI Research Centre, Woxsen



**Tim Tarpley**  
President Energy Workforce & Technology Council



**Dena Wiggins**  
President and CEO Natural Gas Supply Association



**Chris Barkey**  
CTO IET Baker Hughes



**Mervin Azeta**  
Global Flexible Work and Culture Project Manager SLB



**Chair: Charlie Riedl**  
CEO CLNG

## Key pillars for the interactive program

### Module 1

Energy Strategy: Corporate, Marketing, Competitive

### Module 2

Human Resource and Organisational Culture

### Module 3

Project and Operational Risk Management

Supporters:



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EXHIBITOR: WISON NEW ENERGIES | STAND: B501

# Wison New Energies announces a low-emission second generation FLNG

By: **Xuan Chi (Damien) Nguyen**, Chief Technology Officer, Wison New Energies

## Wison New Energies announces a Low-Emission 2nd Generation FLNG

Wison New Energies - formally Wison Offshore & Marine - addresses the challenges of decarbonizing Floating Production Systems, aiming for a greener and more sustainable future through innovation and collaboration.

Wison believes the industry faces growing challenges posed by a discerning financing community, more focused on environmental, social and governance (ESG) performance, and mounting stakeholder pressure.

Addressing these challenges, Wison advocates the provision of quality low-emission options to clients and project developers – solutions that not only reduce emissions significantly but also maintain the economic viability of projects supported by solid lifecycle cost analysis.

It is imperative, Wison insists, for the industry to articulate a clear decarbonization ambition that aligns with the urgency to transform floating production systems (including FPSO, FSRP & FLNG) through clear metrics in terms of carbon emissions.

Wison sets ambitious targets in response, aiming for a 25% reduction in emissions for the roll-out at Gastech of its second-generation of FLNG products and an ambitious 80% reduction target by 2030 in line with the world's carbon-neutral ambitions.

To achieve the initial 25% reduction, Wison has explored, and now offers, technologies such as combined cycle power systems, GT air inlet chilling, and high-efficiency liquefaction cycles. These technologies are complemented by tapping into a diverse array of options, including improved efficiency in heating, cooling and operational performance.

Wison envisions a medium term future where carbon-neutral floaters become a reality, employing further emerging technologies such as carbon capture, and power import from shore or adjacent renewable power sources. Achieving these targets necessitates collaboration with technology suppliers, and



regulators, and the creation of markets for low-emission FPSO and FLNG vessels. The priority for lower emissions is adopting combined cycle power generation to reduce fuel consumption on FPSOs and FLNGs, and we acknowledge the growing importance of CCGT offshore, even though only a few systems are currently being implemented. We expect a positive outlook for LNG in the next decades as the fuel has the advantage of being available from many areas of the world and not dependent on proximity to pipelines and markets. The thermal power from natural gas can provide the base load the grid needs and be paired with the intermittency of renewable energy. This is why, Wison sees a promising future for LNG in partnership with renewable energies.

“We expect a positive outlook for LNG in the next decades as the fuel has the advantage of being available from many areas of the world and not dependent on proximity to pipelines and markets. The thermal power from natural gas can provide the base load the grid needs and be paired with the intermittency of renewable energy.”

Collaboration between government bodies, regulators, clients, EPC contractors, and suppliers is crucial. We must all believe in and commit to jointly developing quality options to reduce emissions. This requires a commitment to investment and continuous collaboration with technology suppliers well ahead of the time when they need to be implemented on projects. This is what Wison is committed to doing.

Wison has therefore signed collaboration agreements with several strategic suppliers to develop the low-emission solutions that we are now offering to our clients. This multifaceted collaboration is pivotal to creating both the market and solutions that align with the Paris Agreement's commitment to reducing GHG emissions and limiting global temperature increases well below 2°C compared to pre-industrial levels.

This Wison commitment to collaboration in sustainable solutions aims to establish a foundation for future endeavors in FLNG vessels and onshore LNG applications across the globe.

The company's track record in the FLNG industry is marked by various engineering, procurement, and construction contracts, including the Tango FLNG (operating), the FLNG for ENI (currently under construction), FLNG for Genting (awarded in 2024).

▶ EXHIBITOR: ATLAS COPCO | STAND: B160

# Integrally geared compressors cut the carbon and boost carbon capture

**If the world is to move to a more sustainable future and hit net zero by 2050, industry needs to rapidly transition towards low carbon forms of energy production and industrial production.** Recognising this, Atlas Copco Gas and Process created Cut the Carbon and put it at the heart of how we operate. Our machines play crucial roles in energy efficiency and are essential for industrial processes across the world, and they sit at the heart of the capture, use and storage (CCUS) of CO<sub>2</sub>.

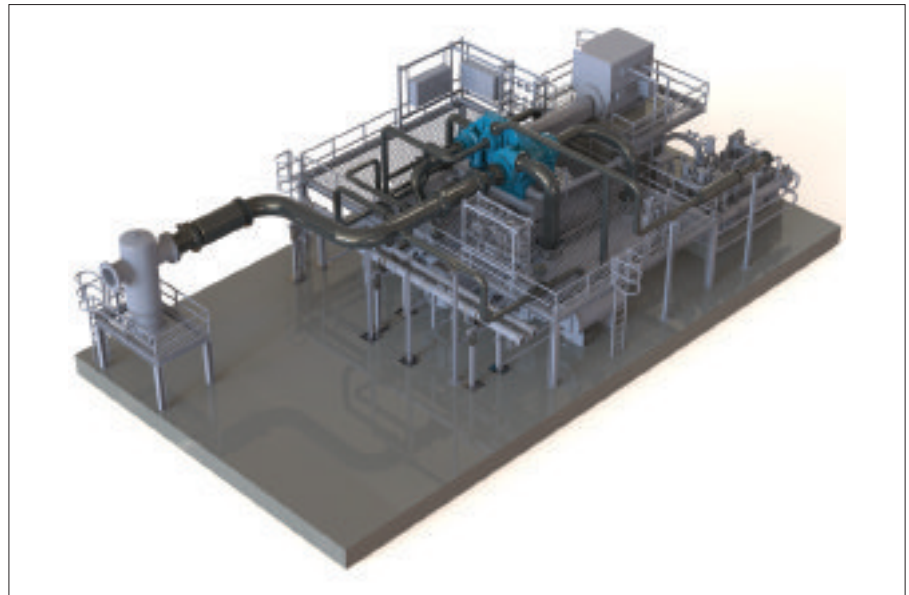
## Cut the Carbon

At Atlas Copco Gas and Process, we know that fundamental concerns about our planet need to lead to concrete action on climate change. And if the low carbon transition is to succeed, our technological innovations and know-how need to be in step with sustainable practices. As well as working with highly efficient industrial heat pumps, creating hydrogen solutions, and ensuring our machines receive first-class revamps and upgrades, our technology is also making a real impact in CCUS. Though still an emerging field, the capture, use and storage of CO<sub>2</sub> is becoming an increasingly important factor in the energy industry and in hydrocarbon processing. This can be seen with the 45 commercial CCUS facilities already operating worldwide, and the fact that, according to the IEA (International Energy Agency), there are hundreds of projects “in various stages of development across the CCUS value chain”. There is significant potential for CO<sub>2</sub> capture in the cement and steel industries, as well as at hydrocarbon facilities, such as gas processing, power generation, synfuel, and hydrogen production.

## Compression technology & CCUS

CCUS facilities rely on high-quality, reliable compression technology. Once captured, CO<sub>2</sub> can be used on site, or it can be compressed and transported via pipeline, rail, road (trucks) or ships to be used in a range of applications. Otherwise, it can be stored deep underground (such as in saline aquifers, or oil or gas reservoirs).

Underpinning the development of major CCUS projects has been the capability of integrally geared centrifugal turbocompressors to



effectively perform CO<sub>2</sub> duty. Atlas Copco Gas and Process know-how in the field has been built on decades of experience in chemical, petrochemical, and CCUS processes. We developed our technology from initially working with low and medium-pressure applications up to higher pressures of 100 and 200 bar (and above).

Nowadays, integrally geared compressor (IGC) technology is a well-established, highly efficient, and reliable method of compressing CO<sub>2</sub>. And there are several reasons why our integrally geared compressors work so well with CO<sub>2</sub> compression: their capacity to adapt rotor speed in one or more pair of stages, which provides increased efficiency. In addition, our IGCs have the advantage of combining the gearbox, lube oil system, and all the compression stages onto a single skid unit. Flexibility is built into all our IGC designs. Not only does every impeller in effect become its own stage but it has its own casing, with its own inlet and discharge connections. The benefit of fewer impellers, however, is not just confined to speed, or efficiency and performance: the benefits can also be seen in a lower footprint and lower capex.

With a demanding and challenging gas such as CO<sub>2</sub>, it is critical that leakages are kept to an absolute minimum. Our specially designed

carbon ring seals, dry gas seals, and seal support systems are central factors in ensuring that IGCs work well with CO<sub>2</sub>. Our machines are also designed to have intercooling between stages, with a concomitant increased flexibility, more efficient compression, and minimized maintenance requirements. In addition, our compact modular and flexible IGC designs have a small footprint at the same time as delivering maximum efficiency.

## Trusted and reliable partners

Atlas Copco Gas and Process provides both modular and customized solutions for CCUS applications, with our customers' requirements central to machine designs. With more than 30 successful CCUS applications already installed, our customers embrace us as trusted, reliable partners. They also place great value on our global footprint, which means local manufacturing and comprehensive aftermarket support.

The climate emergency is driving forward solutions that will help reduce carbon emissions. Though still an emerging field, the capture, use and storage of CO<sub>2</sub> is increasingly becoming part of hydrocarbon processing and the energy industry. Our integrally geared machines maximize CCUS efficiency, creating significant energy savings.

▶ PLAN YOUR VISIT TO GASTECH HOUSTON



The George R Brown Convention Center ranks among the 10 largest convention centers in the US.

Gastech is situated at **George R Brown Convention Center**, 1001 Avenida de las Americas, Houston, Texas 77010.

## Travel to Gastech

Centrally located in the heart of downtown Houston, the GRB is easily accessed from all areas of the city- no matter how you choose to commute. There are several convenient parking options on campus located just a short walk from the convention center.



### By METRORail

The METRORail North Line has a stop north of GRB. The Purple and Green North Lines connect the Convention District to Houston's Theater District along with many other stops. One-way tickets cost \$1.25 and can be purchased using cash or credit at all rail stops.



### By Taxi

Houston has more than 2,400 taxis. The City of Houston has authorized a flat taxi fare of \$6 for all trips in the downtown area. This \$6 fare will apply anywhere within the Central Business District, bounded by Interstate 45, Interstate 10 and U.S. 59. The fare, in addition to increased downtown taxi stands, provides an easy alternative to driving to lunch, business meetings and activities throughout the downtown area. No surcharges will apply to the fare, which can accommodate multiple riders under the \$6 total rate.



### By Zipcars

Zipcars are available for rent at 8 locations throughout downtown Houston. Zipcar allows users to rent a nearby car when they need access to it.



### Ride-Sharing Services

Houston was the first city in Texas to approve ride-sharing services including Uber. These alternative transportation companies allow users to request a ride via smartphone apps.



### By B-Cycle

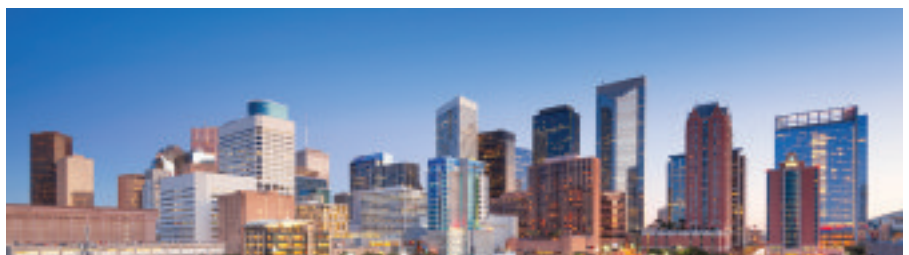
Houston B-cycle is a public bike sharing system, intended to be used for short trips in and around downtown Houston and surrounding urban areas. Houston B-cycle members can pick up a bike at any B-station and return it to that same station or any other B-station when they're done. Membership to the system can be purchased online or at any station.



## 10 THINGS TO DO IN HOUSTON

- ★ Space Center Houston
- ★ Houston Museum of Natural Science
- ★ Houston Botanic Garden
- ★ Buffalo Bayou Park
- ★ Houston Zoo
- ★ Museum of Fine Arts, Houston
- ★ Art Car Museum
- ★ Galleria
- ★ Gerald D. Hines Waterfall Park
- ★ Hermann Park

[Find out more](#)



### Accommodation

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