HOST SPONSORS: CNPC SINOPEC CNOOC

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29TH WORLD GAS CONFERENCE

WGC2025

BEIJING, CHINA 19-23 MAY

MONDAY 19 MAY 2025

WELCOME TO BEIJING!

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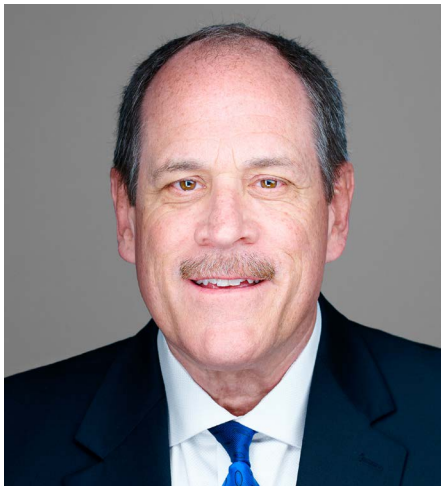
INTERVIEWS



CONFERENCE OVERVIEW

We warmly welcome you from all around the world to the 29th World Gas Conference (*WGC2025*) in Beijing! We are delighted to have you join us for this premier event at the China National Convention Center (CNCC). Get ready for a week of powerful discussions, invaluable networking opportunities, and an in-depth exploration of the role of gas in the global energy transition.

Our Conference Programme features over 80 sessions, bringing together influential leaders and industry experts to discuss every aspect of the gas value chain from current business challenges to the future of the industry. With Plenary, Current Debates, Industry Insights and Technology & Innovation Centre sessions, you'll engage with key decision-makers, gain valuable knowledge and gain cutting-edge insights.

This evening, we invite you to join our exclusive networking session — a perfect opportunity to connect with your peers, exchange ideas, and set the stage for a dynamic week of collaboration. We hope you are ready to embark for an inspiring and productive week ahead at *WGC2025*.

BADGE COLLECTION TIME & LOCATION

Your delegate badge is required to access the venue and all official *WGC2025* sessions and events.

BADGE REGISTRATION DESK:

First Floor, Exhibition Area A Foyer (Gate 7), CNCC II, Tianchen East Road, Chaoyang District, Beijing.

Monday 19 May 2025:	09:00–21:30
Tuesday 20 May 2025:	07:30– 17:00
Wednesday 21 May 2025:	08:00–17:00
Thursday 22 May 2025:	08:00–20:30
Friday 23 May 2025:	08:00–12:00

Hotel Badge Registration Desk (Hotel Guests Only):

CNCC Grand Hotel and Intercontinental Beijing Beichen

Monday 19 May 2025:	09:00–17:00

WHAT TO BRING FOR BADGE COLLECTION

Individual Registrations:

Please present one of the following:

- Proof of registration (downloaded from "My Dashboard" on the *WGC2025* website).
- Your registration QR code - if you haven't saved it beforehand, simply scan the onsite QR code to retrieve it when picking up your badge.
- Passport or valid ID card.

Group Registrations:

Please present one of the following:

- Group proof of registration (from group account's "My Dashboard" on the *WGC2025* website).
- Your registration QR code - if you haven't saved it beforehand, simply scan the onsite QR code to retrieve it when picking up your badge.

Exhibitors:

- Exhibition Confirmation Letter (all badges under a company must be collected at the same time by the exhibitor representative).

WGC2025 EVENT APP

Download and login to the *WGC2025* Event App for the most up-to-date details of the *WGC2025* programme and a detailed description of the sessions and speakers.

The *WGC2025* Event App will be an essential tool to help navigate the event. The App contains the programme for the week, the speakers, floorplan, and so much more.

HOW TO GET STARTED

Step 1: Download the Event App

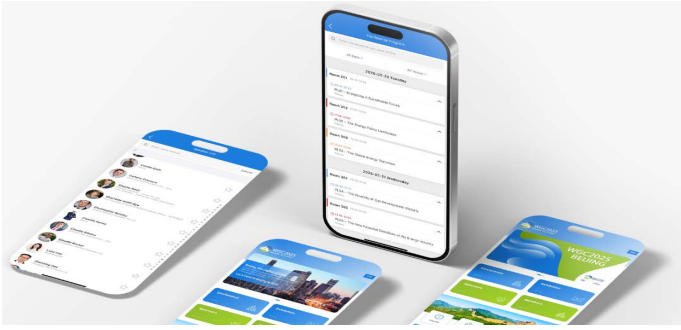
Scan or click the QR code to download the app from the App Store, Google Play or search *WGC2025* and download the App.

Step 2: Log in

Please use your Registration User ID and Password which you created when you registered to *WGC2025* and log in to the Event App.

Download on the App Store

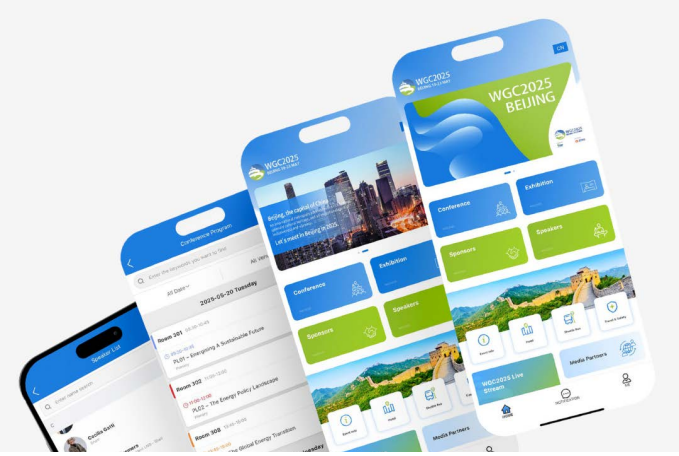
GET IT ON Google Play



Key features available

- Browse the full conference programme.
- Explore speaker profiles.
- View exhibitor & sponsor info.
- Get key event info — floorplan, shuttle times and more.

If you require help or advice with regards to the App, please speak to our staff at the Information Desk located in the Foyer of Exhibition A (L1) and the Foyer of Exhibition B (L1).



PLAN YOUR EVENING

WELCOME RECEPTION

Get ready for an unforgettable evening. Join us tonight as we kick off *WGC2025* at the Welcome Reception for an exceptional networking opportunity surrounded by the vibrant energy and unique charm of China. Connect with top industry leaders and peers while immersing yourself in the city's rich culture, exquisite cuisine, and lively atmosphere. We look forward to seeing you this evening for an exciting start to the event!

Date: Monday 19 May 2025
Time: 18:30
Location: Level 3 Foyer, CNCC II

OPENING OF THE EXHIBITION

The *WGC2025* Exhibition will open its doors for the trade visitors and delegates tomorrow Tuesday 20 May 2025.

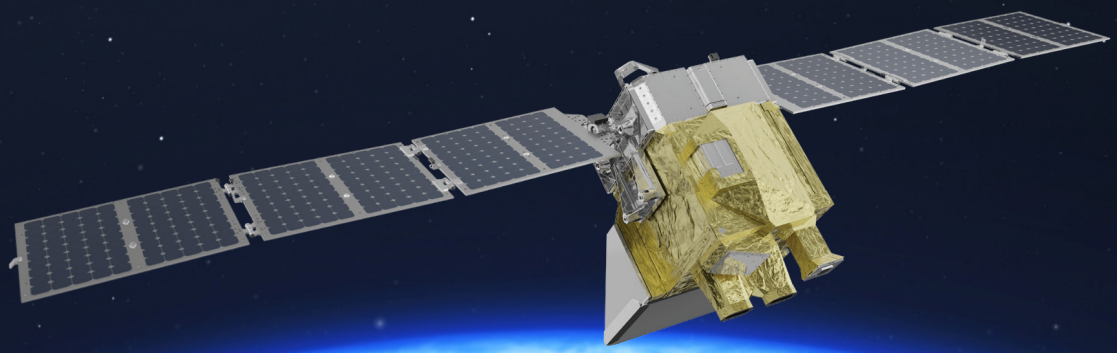
EXHIBITION OPENING TIMES

Tuesday 20 May 2025:	09:00–17:30
Wednesday 21 May 2025:	09:00–17:30
Thursday 22 May 2025:	09:00–17:30
Friday 23 May 2025:	09:00–14:00

Location: Exhibition A and B on L1, and Exhibition D on B1

The future of energy depends on methane mitigation.

能源的未来取决于甲烷减排



Try the methane detection experience.

体验甲烷检测

Hall B: W37

MethaneSAT™

BROUGHT TO YOU BY Environmental Defense Fund

TOMORROW'S TOP HIGHLIGHTS

Get ready for a day of thought-provoking discussions on our event theme **Energising a Sustainable Future**, as we dive into the evolving landscape of the gas industry.

WGC2025 OPENING CEREMONY

We will officially launch the event with the spectacular **Opening Ceremony**, featuring inspiring speeches, and a celebration of innovation in the global gas and energy sector. Join industry leaders, policymakers, and delegates from around the world as we set the stage for a transformative week of insights, collaboration, and progress.
Time: 09:00
Location: Banquet Hall, Level 3

PLENARY SESSIONS, KEYNOTE SPEECHES AND LEADERSHIP DIALOGUE

After the Opening Ceremony, head to L3 Ballroom for a series of high-level discussions with the global leaders:

- **PL01: Energising A Sustainable Future**
  Time: 10:30–11:15
  Tengku Muhammad Taufik, President & Group CEO, PETRONAS; Patrick Pouyanné, Chairman of the Board and Chief Executive Officer, TotalEnergies SE; Meg O'Neill, CEO & MD, Woodside Energy and moderated by Michael Stoppard, Senior Advisor and Global Gas Strategy Lead, S&P Global

- **PL02: The Energy Policy Landscape**
  Time: 11:15–12:00
  Fu Chengyu, Chairman, Renewable Energy and Net Zero Council; Charles Riedl, Executive Director, Center for LNG, Vice President, Natural Gas Supply Association; Rt. Hon. Ekperikpe Ekpo Ph.D, Minister of State Petroleum Resources (Gas), Federal Republic of Nigeria; Angela Wilkinson, Secretary General & CEO, World Energy Council; Sebastian Overlack, Partner; McKinsey & Company, Germany and moderated by Robert Johnston, Executive Director of Research Center on Global Energy Policy at Columbia University

- **PL03: The Global Energy Transition**
  Time: 13:45–15:00

- **Leadership Dialogue:** He Zhongwen, President, China Oil and Gas Pipeline Network Corporation (PipeChina) and moderated by David Sandalow, Inaugural Fellow, Center on Global Energy Policy of Columbia University

- **Panel discussion:** Panellists: Kirk Johnson, Senior Vice President, Global Operations, ConocoPhillips; Cristian Signoretto, Director Global Gas & LNG Portfolio, Eni; Peter Clarke, Head of Global LNG, ExxonMobil; Cederic Cremers, President, Integrated Gas, Shell and moderated by Edmund Crooks, Vice Chair for the Americas Region, Wood Mackenzie

TECHNOLOGY & INNOVATION CENTRE SESSIONS

- **TI01: Integration of Renewable Gas in Distribution Grids**
  Time: 14:15-15:00

- **Speakers:** Marco E. Sanjuan, R&D and Innovation Director, PROMIGAS S.A.; Florian Lindner, Manager, Westnetz GmbH; David Frans, Senior Partner, Sustainability Center of Excellence, Roland Berger B.V.; Sebastian Overlack, Partner, McKinsey & Company, Inc. and moderated by Jürgen Grönner, Managing Director, Westnetz GmbH

INDUSTRY INSIGHTS

- **II01: Climate Sensitivity, Investment Strategies, and Sustainability Efforts in Upstream Oil and Gas Activities Alongside Net-Zero Commitments**
  Time: 15:30–17:00
  Speakers: Faye Gerard, Director of Energy Transition and Americas, International Association of Oil & Gas Producers; Debo Fagbami, Chief Operating Officer, Xenergi Limited; Cheng Ziyun, Senior Engineer, Research Institute of Petroleum Exploration & Development (RIPED), CNPC; Wang Xiaolin Ph.D & Senior Engineer, RIPED, CNPC and Yin Xiantong, Senior Mudlogging Engineer, Daqing Drilling & Exploration Geological Logging Company

The speakers may be adjusted based on onsite developments.

PROGRAMME OVERVIEW

MONDAY 19 MAY 2025

09:00–21:30	**Registration**
18:30–21:00	**Welcome Reception**

TUESDAY 20 MAY 2025

07:30–17:00	**Registration**
09:00–10:00	**Opening Ceremony**
10:00–10:30	Coffee Break
10:30 – 11:15	**Plenary** • PL01 — Energising a Sustainable Future
11:15 – 12:00	**Plenary** • PL02 — The Energy Policy Landscape
12:15–12:30	**Exhibition Opening Ceremony**
12:30–13:45	Lunchtime
13:45–15:00	**Plenary** • PL03 — The Global Energy Transition
14:15–15:00	**Technology & Innovation Centre Sessions** • TI01: Integration of Renewable Gas in Distribution Grids
15:00–15:30	Coffee Break
15:15–16:00	**Technology & Innovation Centre Sessions** • TI02: Best Practice Innovations Across the Gas Value Chain
15:30–17:00	**Industry Insights** • II01: Climate Sensitivity, Investment Strategies, and Sustainability Efforts in Upstream Oil and Gas Activities Alongside Net-Zero Commitments • II02: Asset Repurposing for the Transmission of New Vectors • II03: Energy Integration for Building the Future and Clean Mobility • II04: The Role of Renewable Gases and Hydrogen in the Energy Transition • II05: Case Studies of Regional Gas Pricing • II06: Global Gas Markets in Transition: Balancing Growth, Flexibility, and Decarbonisation • II07: LNG, the Shortest Route to Achieve Carbon-Neutrality Goals • II08: Best Practices in Communication of Gas Companies and International Organisations • II09: Industry Dynamics - Key Insights from IGU Committees and Task Forces Triennium Work Report
16:15–17:00	**Technology & Innovation Centre Sessions** • TI03: Technology Perspectives for Methane Emission Reduction

WEDNESDAY 21 MAY 2025

09:00–10:15	**Plenary** • PL04 — The Diversity of Gas Development Globally
09:15–10:00	**Technology & Innovation Centre Sessions** • TI04: Green Gases in the Infrastructure - What Is Needed to Get It Flowing
10:15–10:45	Coffee Break
10:15–11:00	**Technology & Innovation Centre Sessions** • TI05: Innovating for Resilience: Technology-Driven Solutions in a Transforming Global Gas Landscape
10:45–11:30	**Current Debates** • CD01: Building a Resilient Energy System • CD02: Addressing the Energy Trilemma • CD03: China's Natural Gas Development Prospects • CD04: Accelerating the Mitigation of Methane Emissions through Collaboration • CD05: Challenges and Opportunities for the Infrastructure of the Natural Gas Industry • CD06: Investing in Low and Zero Carbon Technologies • CD07: AI as an Accelerator for the Digital and Intelligent Transformation of the Natural Gas Industry • CD08: LNG Market Outlook and Investment Prospects
11:15–12:00	**Technology & Innovation Centre Sessions** • TI06: Advancements in Hydrogen Technologies
11:45–12:30	**Current Debates** • CD09: Opportunities and Challenges of Hydrogen Energy • CD10: Energy and Climate Policy Shaping a Low-Carbon Energy Future • CD11: Navigating Global Gas Price Volatility • CD12: The Future of Corporate Positioning in LNG • CD13: Gas in Europe: The Role of Natural Gas in Accelerating the Energy Transition • CD14: Development of Smart Energy Systems • CD15: "Natural Gas + CCS/CCU" as a Feasible Solution to Achieving Decarbonisation Goals • CD16: Global Gas Pricing - Key Findings of Wholesale Gas Price Survey 2025 Edition

12:30–13:45	Lunchtime
13:45–15:00	**Plenary** • PL05 — The New Financial Directions of the Energy Industry
14:15–15:00	**Technology & Innovation Centre Sessions** • TI07: Innovative Technologies to Decarbonate Industrial Processes and Gas to Power Production
15:00–15:30	Coffee Break
15:15–16:00	**Technology & Innovation Centre Sessions** • TI08: E-Methane: the Drop-in Innovation
15:30–17:00	**Industry Insights** • II10: Future of Underground Gas Storage • II11: Mitigating Methane Emissions in Distribution System • II12: Detecting and Mitigating Methane Emissions: the Path to Net-Zero • II13: Environmental and Climate Change Policy: Effects on Global Gas Demand and Supply • II14: Evolving Dynamics of Gas Pricing and Market Reform in the Asia-Pacific: Pathways to Convergence and Sustainability • II15: Today and the Future of LNG • II16: Think Different, Communicate Better • II17: Green Gas Certificates: A Key Tool for Carbon Neutrality • II18: Chinese City Gas Industry Leaders Dialogue
16:15–17:00	**Technology & Innovation Centre Sessions** • TI09: The Dynamic Communication Approach in the Natural Gas Industry

THURSDAY 22 MAY 2025

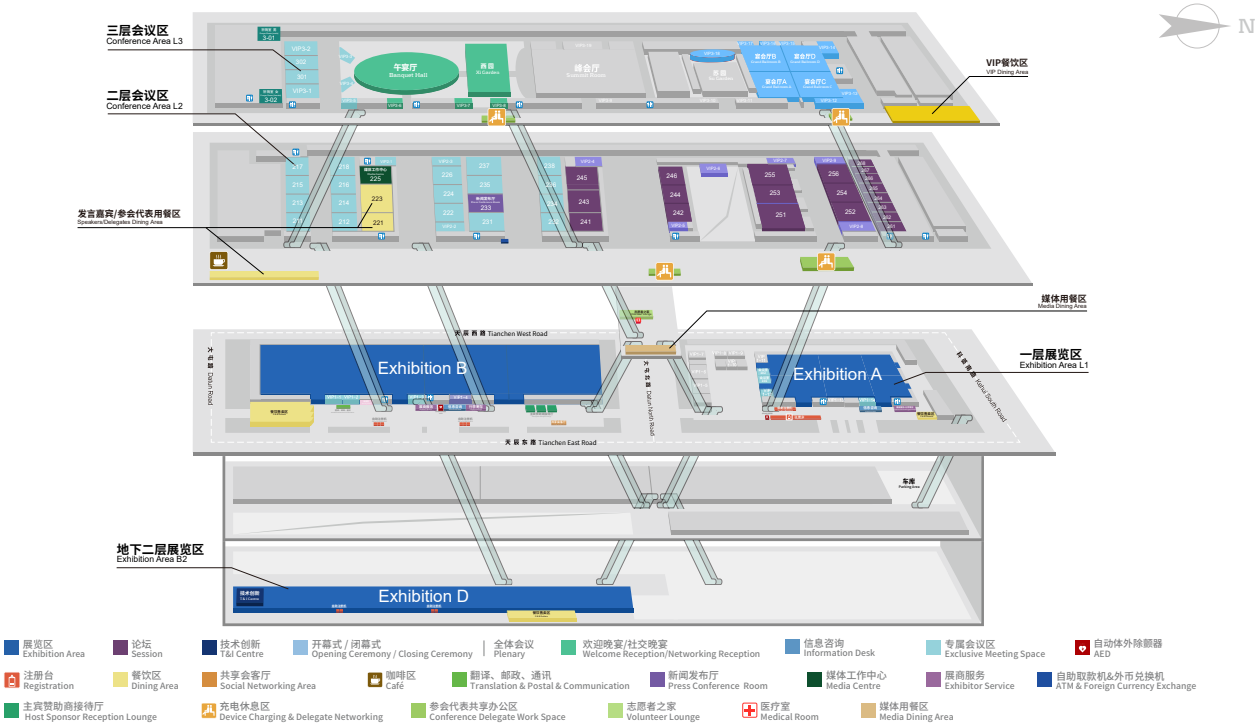
09:00–10:15	**Plenary** PL06 — What is the Future of Global LNG?
09:15–10:00	**Technology & Innovation Centre Sessions** TI10: "Megabytes to Molecules" - Digital Transformation of Natural Gas E&P
10:15–10:45	Coffee Break
10:15–11:00	**Technology & Innovation Centre Sessions** TI11: Advanced Technologies Along with the LNG Value Chains
10:45–11:30	**Current Debates** CD17: Is It Time to Develop a Unified Global LNG Trading Model? CD18: How ESG Regulations and Policies Guide the Sustainability of the Gas Industry CD19: LNG Shipbuilding and LNG Transportation CD20: The Future of New Gases CD21: Gas in the Americas: Unlocking Market Potential CD22: Natural Gas Enabling a Resilient, Secure, and Decarbonised Power System
11:45-12:30	**Current Debates** CD23: Natural Gas Pipeline Network Operations CD24: Gas in the Asia-Pacific: The Engine of Global Gas Growth CD25: The Construction, Operation, and Growth of LNG Terminals CD26: Gas in Africa: Natural Gas as an Ideal Choice CD27: The Continued Investment of Gas Infrastructure CD28: Global LNG Trends – 2025 World LNG Report Release
12:30–13:45	Lunchtime
12:30–13:40	**Luncheon: Women's Perspectives: Insights from Leaders in the Energy Industry**
13:45–15:00	**Plenary** PL07 — Digitalisation and Technological Innovation to Create a Sustainable Future
14:15–15:00	**Technology & Innovation Centre Sessions** TI12: Digital Twin: How the Digital Approach Enables Data Driven Decisions Along the Whole Gas Chain
15:00–15:30	Coffee Break
15:15–16:00	**Technology & Innovation Centre Sessions** TI13: Digital Transformation Examples with Gas Grid Operation
15:30–17:00	**Industry Insights** II19: Advanced Technologies and Innovation That Address Complex Challenges for Effective Exploration and Production Operations II20: Underground Gas Storage: Innovations, Challenges, and Sustainability II21: Guidelines and Strategies for the Integrity of the Physical Transmission Grid and the Security of the Virtual Network II22: Natural Gas and Renewable Gases Solutions: Best Vectors for Energy Efficiency and Energy Transition to Decarbonate Industries & Gas to Power II23: Innovative Solutions for ESG Excellence in the Gas Sector II24: LNG Supply and Demand Dynamics II25: Security of Supply: Lessons Learned II26: IGU New Triennium Work Plan Release
18:30–21:00	**Networking Reception - Italian Night**

FRIDAY 23 MAY 2025

09:00–09:45	**Current Debates** CD29: Technological Innovation for Safe Operations of Gas Distribution CD30: Balancing Supply and Demand Between Gas Importing and Exporting Countries CD31: Exploring the Role of Natural Gas in Clean Energy Transition CD32: Higher Education Empowers Sustainable Gas Futures
09:45–10:00	**Coffee Break**
10:00–11:00	**Plenary** PL08 — The Role of Natural Gas in the Future Energy Systems
11:00–11:15	Coffee Break
11:15–12:30	**Closing Ceremony**

The programme is subject to change and may be adjusted based on onsite developments.

WGC2025 FLOORPLAN



TECHNICAL TOURS

WGC2025 offers two technical tours for delegates to explore cutting-edge facilities and gain insights into the latest advancements in the gas and energy sectors.

Beijing Gas Xiji Station — Explore the station's pivotal role in China's CNG and LNG industries and its vital contributions to powering Beijing's energy infrastructure.
Time: Thursday 22 May 2025 at 13:00
Meeting Point: Gates 6 and 7, CNCC II

Gaobeidian Reclaimed Water Plant, Huaneng Beijing Thermal Power Plant — See how Beijing's largest reclaimed water plant supports the city's urban and industrial needs, and visit the thermal power plant, which has the strongest power generation capacity in Beijing and a leading heating capacity in China.
Time: Thursday 22 May 2025 at 13:00
Meeting Point: Gates 6 and 7, CNCC II

CITY TOURS

WGC2025 has organised five exicting cultural tours exclusively for *WGC2025* delegates, offering a unique opportunity to explore the rich history and culture of this host city throughout the week. These tours require booking, so be sure to secure your spot in advance.

The Great Wall & Tai Chi Experience
Discover the timeless beauty of Juyongguan Pass, often called the "First Great Pass Under Heaven," is a historic stronghold of the Great Wall, surrounded by lush landscapes and rich cultural heritage.
In this serene setting, delegates will practice Tai Chi, an ancient martial art that embodies strength, balance, and mindfulness. Guided by an expert and dressed in traditional attire, participants will experience the harmony of history, nature, and philosophy in an unforgettable way.
Time:
Monday 19 May (Morning —08:00)
Wednesday 21 May (Afternoon —13:00)
Friday 23 May (Afternoon —13:00)

Guided Tour on the Palace Museum
Explore the Palace Museum, one of the world's largest and best-preserved ancient wooden architectural complexes. Once home to 24 emperors, this UNESCO World Heritage Site offers a 4.5-hour in-depth tour, unveiling its imperial history, cultural heritage, and architectural artistry.
Time:
Wednesday 21 May (Afternoon —13:00)
Friday 23 May (Afternoon —13:00)

Beijing City Library and The Grand Canal Museum
Discover two of Beijing's newest cultural landmarks. The Beijing City Library combines tradition with innovation, featuring themed reading halls and China's largest library reading room. Nearby, the Grand Canal Museum brings the ancient waterway to life with interactive exhibits and striking architecture inspired by canal boats. Together, they offer a unique glimpse into China's cultural evolution.
Time:
Wednesday 21 May (Afternoon – 13:00)
Friday 23 May (Afternoon – 13:00)

Temple of Heaven
The Temple of Heaven, once known as the "Temple of Heaven and Earth," was a sacred site for Ming and Qing emperors, the Temple of Heaven is China's largest and best-preserved ancient sacrificial complex. This architectural masterpiece blends philosophy, history, and science, symbolising the nation's spiritual and cultural heritage — a timeless pursuit of harmony and innovation.
Time:
Wednesday 21 May (Afternoon – 13:00)
Friday 23 May (Afternoon - 13:00)

Shougang Park
Shougang Park, a striking symbol of industrial transformation, blends Olympic legacy with innovation. Once a steel mill, it's now a hub for culture, sports, and green development in western Beijing—home to Big Air Shougang and cutting-edge urban revitalisation.
Time:
Monday 19 May (Morning – 08:00 and Afternoon – 13:00)
Wednesday 21 May (Afternoon – 13:00)
Friday 23 May Afternoon – 13:00)

Duration of Each City Tour: 5–6 hours (including round-trip time)
Reserve your place here.

AROUND BEIJING

Beijing, China's dynamic capital, blends rich history and culture with modern innovation. In just over a century, it's transformed from an ancient walled capital into a thriving megacity, offering a captivating story of resilience, transformation, and evolution.

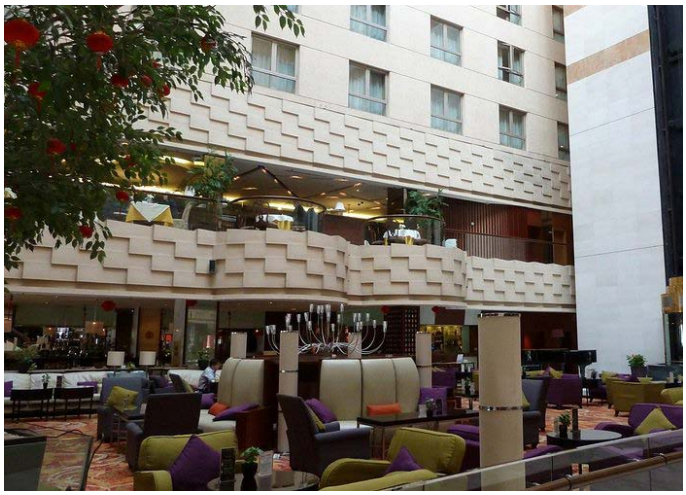
While at *WGC2025*, take some time to explore the city and dive into its incredible food scene intertwining imperial heritage, regional Chinese flavours, and modern culinary innovation. From iconic street food to world-class fine dining, Beijing offers a feast for every palate.

Here are a few must-try spots to explore while you're in Beijing:

Quanjude Roast Duck
A Beijing classic since 1864 and the go-to for Peking duck, famous for its crispy skin and rich flavours. The Hepingmen and Wangfujing locations offer an authentic dining experience.
W: https://www.quanjude.com.cn

Siji Minfu
A top choice for Peking duck with a modern touch, Siji Minfu is loved for its tender duck, braised eggplant, and golden fried shrimp, a perfect mix of tradition and innovation.
W: https://www.sijiminfu.com

Xiao Wang's Home Restaurant
A cozy spot near Ritan Park, offering homestyle Beijing cuisine like handmade dumplings, stir-fried lamb, and crispy scallion pancakes in a relaxed setting.
W: https://www.thebeijinger.com/directory/xiao-wang-fu



Haidilao Hot Pot
A hot pot experience with exceptional service, choose from a variety of broths and fresh ingredients while enjoying noodle performances.
W: https://www.haidilao.com

Great Leap Brewing
One of Beijing's first craft breweries, known for local flavours like Sichuan peppercorn-infused Honey Ma Gold and hearty burgers — perfect for unwinding after a conference day.
W: https://www.greatleapbrewing.com

GENERAL INFORMATION

Housekeeping
At *WGC2025*, we are committed to making it an enjoyable experience throughout this week. Below are some useful housekeeping guidelines to ensure your visit is memorable and educational:

Access to the Conference and Exhibition
For initial badge collection for individual delegates, please have the Proof of registration or your registration QR code. If you haven't saved them beforehand, you can simply scan the onsite QR code to retrieve your personal QR code or show Passport or valid ID card for badge pick-up. Group Proof of registration or your registration QR code is required for group registrations and Exhibition Confirmation Letter is needed for exhibitors badge collection.
You'll be required to wear your badge at all times during *WGC2025*, including social functions. You'll only be able to access the areas of the event that match your participation type, as shown on your badge.

Shuttle Buses
Complimentary shuttle buses for conference delegates and exhibitors are provided between the official partner hotels and CNCC. Further details can be found on the *WGC2025* Official Website and the Event App.

Dress Code
Business attire is requested for attendance at the conference, exhibition, technical tours and all networking functions.

Download the Event App
The Event App is your essential guide to *WGC2025* with the full programme, speaker profiles, exhibition layout, and more all at your fingertips. If you have any questions, our team at the Information Desk in the Foyer of Exhibition A (L1) and the Foyer of Exhibition B (L1) will be happy to help.

Conference Refreshments
Morning tea, lunch and afternoon tea are provided to all conference delegates. Please see the times and locations in the event programme or on the *WGC2025* Event App. All conference delegates are reminded to wear their badge to access these areas. Bistros are open in both exhibition levels for food and beverage purchases for exhibitors and trade delegates. F&B Pop-ups will also be open for paid purchases, located in the northern part of Exhibition Area A's Foyer, the southern part of Exhibition Area B's Foyer and the outside of Exhibition Area D.

Charging Station
A Charging Lounge is located at Foyer of L2 and Foyer of L3.

Prayers Room
Both male and female prayer rooms are located at L3, 3-01 is for male and 3-02 is for female. Please refer to Directional Signage for further details.

Photography
The organisers of WGC have professional photographers taking photos throughout the event. These images may be used in post-event reports, case studies, marketing collateral and supplied to industry media. If you do not want your photo to be taken, please advise the photographer.

Media and PR Enquiries
For media and PR enquiries please visit the Media Team at the Media Centre, at 225.

Medical Support and Emergency Assistance
First Aid is located at L1M. In the event of an emergency, please adhere to the instructions provided by security personnel and venue staff.

Smoking Policy
The CNCC is a non-smoking venue. Attendees are requested not to smoke inside the building.

Luggage Storage
The Luggage Storage is located in the Foyer of Exhibition A and Foyer of Exhibition B. The Luggage Storage is available for storage of personal items only and cannot be used for the storage of event-related material. The organisers do not take responsibility for any lost or stolen items.

Social Media
Follow us on social media for event highlights and why not tag us when you post on social media

- LinkedIn: 29th World Gas Conference
- Facebook: 29th World Gas Conference
- Instagram: @wgc_2025
- Twitter / X: @WGC_2025
- WeChat Official Account *WGC2025*. Scan the QR code bellow to connect:

Connect, follow and join in the discussion that we'll be having over the course of the week. Remember to use the hashtags in your posts relating to *WGC2025*:
#WGC2025 and **#WorldGasConference**

Wi-Fi
Free Wi-Fi will be available at the CNCC for the convenience of all WGC attendees.
Scan the QR code below, enter your name and ID number, and you will receive the Wi-Fi account and password. If you have a Chinese mainland mobile number, you can also connect to Wi-Fi by obtaining a verification code through your phone number. Please note that this account and password are for personal use only.

Mobile phones
Attendees will be asked to turn their mobile phones off or switch them to silent mode during the conference sessions.

LNG2026
Qatar • قطر
2-5 FEBRUARY

PRESENTED BY — HOSTED BY

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THE PREMIER GLOBAL LNG EVENT
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2-5 FEBRUARY 2026
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DOHA, QATAR

RYSTAD ENERGY: TARIFF ACTION ON CHINA WEAKENS THE CASE FOR US LNG FIDS

XI NAN, PARTNER AT RYSTAD ENERGY'S GLOBAL GAS & LNG MARKETS RESEARCH TEAM, DISCUSSES THE SIGNIFICANCE OF THE CHINESE MARKET FOR US FIDS AND THE STEPS TOWARDS DIVERSIFICATION CHINA HAS TAKEN SINCE TRUMP'S FIRST TERM.

Xi Nan
Partner at Rystad Energy's Global Gas & LNG Markets research team

The recent escalation in the trade war between the US and China impacts the natural gas and LNG markets of the two countries in different ways, Xi Nan, Partner at Rystad Energy's Gas & LNG Markets research team, told the *WGC2025 Daily*, highlighting the importance of long-term Chinese LNG demand for the ongoing wave of US final investment decisions (FIDs) and the strategic diversification of China's gas and energy supply. "Among all segments of China's gas market, the LNG sector has made the most progress by opening infrastructure to third parties and reducing barriers for market entrance," Xi said.

TARIFF ACTION CHINA WEAKENS THE CASE FOR US FIDS

The standoff between the US and China had escalated to prohibitive tariffs of 140% on US LNG. As long as tariffs of this magnitude persist, the likelihood of China buying US LNG or signing any new offtake agreements from US developers is virtually zero. Recent negotiations between the single largest LNG importer and exporter led to an agreement to lower tariffs on US LNG to 25% for 90 days and 49% thereafter. "While 25% tariffs remain a significant burden on LNG trade, the reduction of tariffs and ongoing negotiations could imply the possibility of US LNG exports to China if the margin suggests, but actual trade resumption would require structural changes" Xi noted.

Chinese buyers are among the selected few buyers combining high enough credit quality and sufficient long term demand certainty to absorb large quantities of LNG for multi-decade durations, affording them an increasingly important role in the ongoing wave of US FIDs. Projects under construction have 11 million tonnes per annum (Mtpa) of sales and purchase agreements with Chinese buyers, while SPAs totalling 7.1 Mtpa comprise pre-FID projects. "Further, a large proportion of US LNG is sold to portfolio players who will certainly have planned to send additional volumes into China, considering it is set to remain the world's single largest source of LNG demand growth through 2050," Xi said.

MULTI GAS SUPPLY SOURCES

The next phase of China's development focuses on stability and energy security. To this end, both domestic gas production and pipeline gas imports have been on a strong uptrend since 2015, growing 85% and 123%, respectively. China's energy policy in the 14th five-year plan for the period 2021-2025 has already focused on strengthening energy security, and supply diversification is one way to achieve the goal. Among all segments of China's gas market, the LNG sector has made the most progress, driven by the diversification of participants, with infrastructure increasingly being opened up to third parties and reduced barriers for market entrance. As of now, Chinese companies have signed LNG SPAs with 13 export countries and a list of portfolio players.

On the back of the LNG contracting spree in earlier years, China is robustly contracted till 2027, almost covering Trump's entire second term. Theoretical contracted volume to China is expected to reach 86 million tonnes this year, with nearly 10% to come from the US. Following a weak first quarter, growth in China's LNG imports is expected to stagnate this year at volumes of 76-77 million tonnes. As such, even if China stops importing all US-contracted volumes, its LNG demand could still be met by the remaining contracts. "The trade war is therefore less likely to threaten China's LNG supply, and LNG is unlikely to become a bargaining chip for the US to pare its trade deficit with China," emphasized Xi.

China has laid substantial groundwork for supply diversification, with US LNG being a small part of it. LNG is the marginal tier of China's gas supply, accounting for 24% of the country's gas supply in 2024 with US LNG making up just 1.5%. Moreover, natural gas itself constitutes not more than 9% of China's primary energy consumption, while the share inched down from 8.8% in 2021 to 8.5% in 2023. This means US LNG makes up just 0.12% of all energy supply into China. Even if we assume that all US LNG – including LNG from pre-FID projects – is contracted to Chinese buyers and are delivered to China, this would at most comprise less than 6% of all gas supply into China.

LIMITED DIRECT IMPACT ON CHINA GAS CONSUMPTION

China's export economy faces mounting pressure from the steep tariffs by the US, adding downside risk to the industrial sector which is most susceptible to economic fluctuations among China's gas demand sectors as. Direct impacts from the trade war on China's industrial gas consumption would likely be limited, as the US is not a main destination for China's major gas-consuming manufacturing sectors. Based on Rystad Energy's analysis, total gas demand that could be directly affected stands at a maximum of just 2.7 billion cubic meters (Bcm) this year, assuming all exports to the US are wiped out. The gas demand reduction would mostly originate from ceramic, glass, and steel products.

Adverse effects could be fully or partly offset by China's economic stimulus, which aims to bolster domestic demand, and strengthen its property and financial market. The first quarter of 2025 had a positive start with China's gross domestic product (GDP) registering a growth rate of 5.4%, exceeding this year's target of 5%. Meanwhile, China's export economy could get support from last-minute order hikes in February and March before the tariff hikes take effect.

Last year, 15% of China exports were destined for the US, equivalent to 2.8% of China's annual GDP. "While it is extremely unlikely that goods exported to the US hit zero, these stimulus measures need to create at least a portion of the economic value either through boosting domestic demand or expanding exports to other markets in order to be proven effective," explained Xi.

Xi Nan, Partner at Rystad Energy's Global Gas & LNG Markets research team, will be speaking at the session "LNG Market Outlook and Investment Prospects" at 10:45 on May 21.

CHENIERE: BRINGING SUSTAINABILITY TO GLOBAL GAS

Robert Fee
Vice President, Policy, Government and Public Affairs, at Cheniere Energy

CHENIERE ENERGY, WHICH PIONEERED LNG EXPORTS FROM THE US GULF COAST IN 2016, IS NOW LEADING THE DELIVERY OF SUSTAINABLE LNG TO GLOBAL GAS MARKETS

Cheniere Energy, a leading US developer of LNG, has been diligent in its work to make LNG exports competitive as possible, not only from a cost perspective, but from an emissions perspective, according to Robert Fee, its Vice President, Policy, Government and Public Affairs.

In an interview with the *WGC2025 Daily*, Fee highlighted a recent update to Cheniere's life cycle assessment (LCA) study of greenhouse gas emissions from its LNG operations and its robust target of achieving Scope 1 annual methane emissions intensity of 0.03% from its two operating liquefaction terminals, in Corpus Christi, Texas and Lake Charles, Louisiana.

Both, he says, were informed by a robust quantification, monitoring, reporting and verification (QMRV) programme it launched in 2022 to measure and mitigate emissions across its supply chain and to understand how emissions might change through the seasonality of liquefaction facilities.

The 16-month QMRV programme — and similar work with five producers and midstream partners in 2021 — involved the deployment of a variety of emissions detecting technologies, including satellites, two different types of aerial monitoring, and on-the-ground verification with optical gas imaging (OGI) cameras.

Photo: ***The Corpus Christi liquefaction terminal in Texas, US.***
Source: Cheniere Energy

"AMBITIOUS BUT ACHIEVABLE" EMISSIONS TARGET

At the end of the QMRV programme, the data was analysed and put together into what is an "ambitious but achievable" methane intensity target, Fee said.

"One important point about that target is that it is a measurement informed target," he said. "Most every company in the world, if they have greenhouse gas emissions targets, they are based on engineering calculations, and that is activity data times an emissions factor. What we have seen over the last decade is that oftentimes those engineering calculations understate emissions, particularly with respect to methane, where there's quite a bit of volatility."

Cheniere's target, he said, is based on measured data, and its progress to meet that target will be tracked annually to identify emission sources and take action to mitigate them.

The updated LCA study, meanwhile, includes a gas-pathing algorithm that improves the modeling of GHG emissions across Cheniere's supply chain, using actual operational data from 2022. Paths are modeled from natural gas production basins through intrastate and interstate transmission grids to its Sabine Pass and Corpus Christi liquefaction facilities on the Gulf Coast.

Cheniere's QMRV programme, as well as the LCA update, were done in collaboration with a number of academic institutions — the University of Texas at Austin, Colorado School of Mines and Colorado State University — that have since formed the Energy Emissions Modeling and Data Laboratory.

STILL NO STANDARDISATION

And that work was done even before various certification platforms in North America — MiQ, Equitable Origin, Project Canary — began to take hold in the production sector. Cheniere's early QMRV work, Fee said, gives it a unique perspective of LNG's environmental impacts.

"The goal of those efforts, which we started before certification platforms were in place, was to try and understand how you can deploy these technologies to measure missions, but also how best to report them and verify them," he said. "And I think that's something that the US is still working on figuring out — there isn't standardisation amongst those programmes."

The QMRV collaboration, he said, also helps its upstream partners in their own emissions mitigation measures. Cheniere joined the Oil and Gas Methane Partnership 2.0 (OGMP 2.0) in 2022 and is encouraging its partners to do likewise. The company achieved OGMP 2.0's Gold Standard Pathway in 2024.

"For a globally facing LNG company, an international standard for measuring and reporting methane emissions is very important," Fee said. "Everyone is in a different place in their climate journey, and that's true in the LNG market as well. We're trying to provide industry with information through the learnings from our QMRV project and through OGMP to try and focus efforts on actions that do measure and mitigate methane."

> ***"Everyone is in a different place in their climate journey, and that's true in the LNG market as well."***

Although Cheniere is actively striving to make its activities as sustainable as possible, it doesn't necessarily agree with the widely held belief that exporting LNG to coal-dependent economies like those in Asia and parts of Europe will automatically move those regimes off coal, said Anatol Feygin, Cheniere's Executive Vice President and Chief Commercial Officer.

Gas and coal are roughly equal in terms of energy supplied, Feygin said, with LNG accounting for about 13% of all gas. That implies that LNG delivers about 3% of total primary energy.

CLEANER WITH GAS

"For whatever it's worth, I am of the view that we're not going to be displacing a lot of coal," he said. "What we hopefully will be doing is allowing end users to limit how much coal they consume."

China, for example, installed about 350 GW of renewables in 2024 alone that will need to be firmed either by coal or by dispatchable natural gas.

"It doesn't require that much natural gas to allow China to have a dispatchable source that is much cleaner than coal," he said. "And that combination (renewables supported by natural gas) is a very powerful one that we think will limit China's growth in coal consumption."

In an attempt to quantify the impact of US LNG on global emissions, the US Department of Energy, as part of the Biden Administration's pause on export approvals, conducted what has been called a consequential LCA to forecast the net GHG emissions profile of LNG. It looked not just at the emissions from LNG but also at future energy demand, what alternative energy sources might be used to meet that demand and what LNG would be replacing.

"What they found was that the net greenhouse gas profile of US LNG is dramatically lower than just the emissions profile of a cargo of US LNG, because of that replacement potential — and not just replacement, but actually stopping the future growth of coal," Fee said.

That might be useful from a policy or regulatory decision-making perspective, he said, but for Cheniere, which believes the fundamentals of the global LNG market remain strong, the focus is and always has been making its product as competitive as possible, from an operational and an environmental perspective.

"That's the foundation for everything that we do, meeting our customer commitments that differentiates us these days, and then, of course, taking action to reduce emissions across our supply chain so that our product is not only competitive on a cost perspective, but also from emissions."

Robert Fee is Vice President for International Affairs & Climate at Cheniere Energy. He will be speaking at the session "Energy and Climate Policy Shaping a Low-Carbon Energy Future" at 11:45 on May 21. ■

Photo: ***The Sabine Pass liquefaction facility in Louisiana, US***
Source: Cheniere Energy

PETRONAS: ADVANCING LOWER-CARBON SOLUTIONS WHILE DRIVING ENERGY SECURITY AND TRANSITION

Abang Yusuf Abang Puteh
Senior Vice President of PETRONAS LNG Assets

ABANG YUSUF ABANG PUTEH, SENIOR VICE PRESIDENT OF PETRONAS LNG ASSETS, DISCUSSES THE EVOLVING GLOBAL GAS MARKET AND THE INDUSTRY'S ROLE IN ENSURING ENERGY SECURITY WHILE ADVANCING THE ENERGY TRANSITION. HE EXPLORES STRATEGIES TO STRENGTHEN SUPPLY RESILIENCE, ACCELERATE THE SHIFT AWAY FROM COAL, AND ENHANCE LNG SUSTAINABILITY THROUGH LOW-CARBON TECHNOLOGIES.

WGC2025 DAILY: THE GLOBAL GAS MARKET NOW FINDS ITSELF IN WHAT COULD BE DESCRIBED AS AN UNSTABLE EQUILIBRIUM. HOW SHOULD THE INDUSTRY, INVESTORS AND POLICYMAKERS ENSURE GREATER ENERGY SECURITY AND AVOID FUTURE CRISES?

Abang Yusuf Abang Puteh: Despite the influx of supply in the late 2020s, we believe that the demand for gas as a transition fuel will continue to grow. Therefore, it's imperative to continue taking a proactive approach in ensuring that LNG supply remains reliable and sustainable.

In addressing the current precarious state of the global gas market, it's paramount that all stakeholders recognise their shared responsibility in forging a path towards stability and resilience.

Collaboration across the entire value chain is not just beneficial; it's essential whereby fostering strong partnerships and implementing an effective policy framework lays the groundwork for a market that is stable, reliable and balanced, thus mitigating the risk of future crises.

At PETRONAS, we are committed to taking ownership of our role in this transition towards a more sustainable energy landscape. We firmly believe in the principles of accountability and inclusivity, ensuring that progress is equitable and sustainable for all. It is important that we collectively take tangible steps towards building a lower-carbon future, one that is able to balance environmental considerations and economic prosperity.

In this regard, we believe there are three key areas to focus on:

- Firstly, the efforts must start with the policymakers. By implementing policies and regulations that promote energy diversification and energy sustainability, they can help ensure greater energy security for their nations, while concurrently progressing the shift towards lower-carbon energy sources.
- Secondly, we must foster stronger collaboration and make stable investments in the development of new gas fields, thereby enhancing accessibility to LNG and gas. This necessitates not only the readiness of infrastructure but also the provision of technical and financial support. Collaboration between producers and consumers is essential to ensure that investments are mutually beneficial, fostering a more resilient and interconnected gas market.
- Lastly, the pivotal role of financing bodies cannot be overstated. The emergence of ESG financing, embraced by major banks in the region, marks a significant milestone in the journey towards clean energy. This signifies a collective recognition and endorsement of the importance of supporting sustainable energy projects, including LNG. By leveraging the support of such financing mechanisms, we can accelerate the transition towards a cleaner energy landscape.

Furthermore, it's important that we learn from past energy crises and address the specific challenges faced by different countries in their energy sectors. This entails ensuring that energy remains affordable for consumers and industries, guaranteeing a reliable and uninterrupted energy supply, and promoting the development of sustainable energy sources. By tackling these issues head-on, we can build a more resilient and inclusive energy ecosystem that is better equipped to withstand future shocks.

GLOBAL COAL USE REMAINS STUBBORNLY HIGH. HOW CAN THE WORLD ACCELERATE THE PHASE-OUT OF THIS FUEL?

This transition is a collective responsibility, but I believe the policymakers must lead the way. Their role is crucial in setting a clear direction for countries to tackle climate change and move towards lower-carbon energy sources. This serves as a starting point for a

Photo: ***The Kasawari gas platform off Sarawak, Malaysia***
Source: Petronas

just energy transition. With clear policies and frameworks in place, they will empower the private sector to take effective action.

PETRONAS recognises the complexities involved to effectively accelerate the phase-out of global coal use in the energy transition. Hence, we advocate for a pragmatic middle-ground approach that balances the urgency of the shift to cleaner energy with the practical challenges involved.

Energy affordability stands as a critical barrier to the adoption of more lower carbon energy sources such as LNG. Thus, addressing this issue is paramount to realising a sustainable and secure energy future. Collaboration across the entire energy ecosystem, including industry players, policymakers, financiers, authorities, and consumers, is essential in achieving this common goal.

To facilitate the transition from coal towards LNG, it's crucial to establish fair pricing mechanisms that incentivises long-term commitments from both consumers and producers. This involves reflecting the true costs of technological advancements, including carbon capture, while ensuring capital efficiency and affordability for market participants.

A diverse range of technologies and strategies, such as carbon capture, utilisation, and storage (CCUS), methane capture, lower carbon/green hydrogen, advanced biofuels, and offshore wind, must be actively developed and deployed to reduce emissions. One significant effort by PETRONAS in this regard is the development of floating LNG facilities, which eliminate the need for large land areas for LNG production. This requires significant investment, robust partnerships, and collaborative efforts among stakeholders.

PETRONAS, as a solutions provider, is committed to supporting businesses in their transition to cleaner energy alternatives. Through flexible and adaptable commercial terms, we empower customers to navigate shifting market dynamics effectively. Some of the contracting approaches we offer include:

- Flexible Contract Terms: Collaboratively designing contracts with flexible terms allows for adjustments in delivery schedules, quantities, and pricing, enabling buyers to better manage their energy portfolios and respond to market fluctuations.
- Hybrid Contracts: Offering hybrid contracts that combine features of traditional long-term agreements and short-term spot market arrangements provides buyers with a mix of fixed and variable pricing, thereby mitigating price volatility while maintaining stability.
- Indexation and Price Formulas: Tailoring contracts with innovative pricing mechanisms, such as indexation to various natural gas indices or formulas reflecting market conditions, ensures pricing alignment with real-time market dynamics.
- Portfolio Contracts: Providing access to a diverse portfolio of LNG supply sources from global assets diversifies supply chains and enhances supply security, offering buyers greater flexibility and resilience.

By embracing collaborative efforts, investing in innovative technologies, and adopting flexible commercial strategies, we can help accelerate the phasing-out of coal and pave the way for a more sustainable energy future.

HOW IS PETRONAS AND THE BROADER GAS INDUSTRY WELL-PLACED TO LEAD DEVELOPMENT OF LOW-CARBON TECHNOLOGIES SUCH AS BLUE HYDROGEN AND CCS?

PETRONAS and the broader gas industry are uniquely positioned to spearhead the development of low-carbon technologies like blue hydrogen and carbon capture and storage (CCS) for several compelling reasons.

Firstly, as a leading global energy company with decades of

Photo: ***The Avenir Advantage LNG bunkering vessel***
Source: Petronas

experience in the gas sector, PETRONAS possesses the necessary expertise, resources, and infrastructure to drive innovation in low-carbon technologies. This includes a deep understanding of gas reservoirs, production processes, and distribution networks, which can be leveraged to optimise the development and deployment of blue hydrogen and CCS solutions.

Furthermore, PETRONAS has embarked on various strategic initiatives within this area. For example, we have established a dedicated Carbon Management Division (CMD) to oversee carbon emissions reduction efforts and accelerate the development of CCS projects. This division works in collaboration with industry partners and stakeholders to explore opportunities for carbon capture and storage, ensuring that PETRONAS remains at the forefront of low-carbon technology development.

We are working together with our partners to expand our portfolio of lower-carbon solutions such as:

- Conducting a joint technical and commercial feasibility study with ENEOS Corporation (ENEOS) to produce low carbon hydrogen from PETRONAS' existing facilities, production of green hydrogen from a new hydro-powered electrolyser facility, and hydrogen conversion into methylcyclohexane (MCH).
- Developing a Carbon Sequestration Hub with Shell to collect, aggregate and sequester carbon from various domestic and international sources.
- Combined efforts with Japan Petroleum Exploration Co. Ltd. (JAPEX) to evaluate optimal capture, storage and transportation methods, as well as estimation of emissions, capture volumes and monitoring methods of CO_2 stored underground.
- Formed a global alliance and collaboration for LNG bunkering at 4 locations in Japan. Offshore wind and LNG bunkering alliances to develop solutions in hydrogen, ammonia and Carbon Capture and Storage (CCS).
- Utilising CCS technology (JOGMEC, JX Nippon Oil) for studies to develop high CO_2 gas fields in Malaysia.

WHAT ARE SOME SPECIFIC EXAMPLES OF INNOVATIONS – WHETHER TECHNOLOGICAL OR OTHERWISE – THAT PETRONAS HAS EMPLOYED TO MAKE GAS MORE SUSTAINABLE?

At PETRONAS, we are deeply committed to minimising the carbon footprint throughout every stage of the LNG value chain – from exploration, production and to transportation and delivery. Our efforts encompass a range of projects and partnerships aimed at ensuring that LNG remains as an environmentally responsible energy solution for the energy transition.

Placing our ambition into action, we've embarked on multiple pathways to reduce the carbon footprint across our integrated LNG value chain. These efforts include:

- During exploration, and to reduce the inherent emissions from feedgas, PETRONAS is embarking on a Carbon Capture & Storage (CCS) project at the Kasawari gas field in Sarawak. It is expected to come on stream by 2026 with a target to reduce carbon dioxide volume emitted via flaring by 3.3mn tonnes of CO_2 equivalent annually, making it one of the largest offshore CCS projects in the world.
- To reduce the carbon footprint of our LNG production process, we are embarking on electrification of our plants and by implementing zero flaring at our assets. Our PETRONAS LNG Complex (PLC) in Bintulu will gradually be powered by green electricity, allowing us to decommission old and inefficient gas turbines.
- Above and beyond that, our floating LNG (FLNG) facilities whereby PETRONAS is the first in the world to own and operate two FLNGs (PFLNG Satu and PFLNG Dua), are also testaments to our efforts to produce LNG in a sustainable manner where LNG can now be produced offshore, without the need for large land reclamations to set up a conventional onshore LNG plant.
- In the shipping of LNG, we have upgraded our LNG vessels with Hull Performance Solution Technology which leads us to an annual reduction of ~18,000 t of CO_2 emissions, and we continue to upgrade our existing LNG vessels with newer and energy efficient vessels.

Beyond our efforts at home, we also look forward to the start of LNG production from our venture at LNG Canada. Upon completion, LNG Canada will produce LNG with one of the lowest carbon intensities in comparison to other LNG plants in the world.

This is achieved through advanced technologies, design features as well as stringent environmental standards at LNG Canada which incorporates electrification and renewable energy integration to reduce the carbon emissions during LNG production. We believe that LNG Canada would set the benchmark for newer LNG projects and will also influence existing LNG plants to adopt new technologies to further reduce LNG's carbon footprint.

Discover how PETRONAS is advancing the energy transition with its lower-carbon solutions and integrated LNG and maritime offerings. Visit our booth at Exhibition Hall B, Level 1, China National Convention Centre II this 19th – 23rd May to connect with experts and explore innovative, customer-centric solutions designed to drive your energy ambitions forward. ■

ROSETTA ENERGY SOLUTIONS: THE CASE FOR VIRTUAL LNG PIPELINES


Karim Shaaban
CEO of Rosetta Energy

KARIM SHAABAN, CEO OF ROSETTA ENERGY, IS EXCITED TO SEE INCREASED FOCUS ON SMALL - SCALE LNG IN EMERGING MARKETS AT WGC2025.

Virtual LNG pipelines can expand energy access in remote areas, reduce reliance on costlier and more polluting oil fuels and support industrialisation in Africa, Karim Shaaban, co-founder and CEO of Rosetta Energy, a company pioneering such projects across the continent, told the *WGC2025 Daily*.

AVOIDING THE "CHICKEN AND EGG" PROBLEM

Developing a physical gas pipeline from a field to a customer is often capital-intensive and requires a large volume of supply and demand to justify the cost. This creates a "chicken and egg" problem, Shaaban said – "you have to have a committed and large enough market to justify building the gas pipeline."

Virtual LNG pipelines eliminate this need. Stranded gas can instead be liquefied and transported in 40-ft ISO containers via truck, sometimes beyond 1,500 km on the road, or shipped by barge along rivers, to where it is needed, even across country borders, regardless of a customer's relatively small volume requirements.

Moreover, the kind of economies of scale needed for major LNG export projects aren't necessary. "You don't need 170,000-m^3 LNG carriers or a 3-4mn t/yr liquefaction plant – small-scale LNG can be as low as 100,000 t/yr," Shaaban said. "With improvements in technology, we're seeing the costs of those liquefaction plants go further down."

Founded four years ago and acquired by Egypt-based Taqa Arabia in 2024, Rosetta develops such projects, from investment and debt financing, to technical and commercial work, through to operations and maintenance. It handles pre-FEED work itself, though typically awards FEED to a third party, while also handling owner's engineering on its own, to prepare for awarding an engineering procurement and construction (EPC) contract. It also negotiates supply agreements to secure the gas to liquefy, and the sales and purchase deals with LNG customers.

KEY PROJECTS AND BENEFITS

Rosetta is currently working on two such initiatives in Mauritania and Tanzania. Both countries have abundant gas reserves, most of which remain undeveloped.

"In Africa, there is a lot of untapped natural gas, and at the same time, there is a lot of dependency on liquid fuels – whether that is diesel or heavy fuel oil," Shaaban said. Most of these fuels are imported and subject to volatile and often high international prices.

"On top of that, many African nations have industrial potential that is extremely underutilised," he said.

Many African countries are still relying on exporting raw materials, "But if they had more stable and affordable energy available – like gas – they could develop that into more high-yielding products," Shaaban said. "You can imagine the multiplier effect for the economy."

Mauritania, for instance, is a major exporter of iron ore. But with reliable and affordable energy supply, the country could develop industrial capabilities to process the ore into higher-value products such as iron pellets.

Supporting projects like this, Rosetta is working in partnership with Taqa and GoGas to liquefy gas from the 1.2 trillion cubic feet Banda field and supply it to mining operations in the country's north.

Likewise in Tanzania, Rosetta is working with Africa50 – an infrastructure fund set up by African governments and the African Development Bank – to purchase gas from the grid, liquefy it and ship it to the country's northeast for use in mining and other operations. A second phase could see additional volumes exported to neighbouring countries.

Both projects aim to supply energy at "substantially lower cost" than oil-based alternatives, Shaaban said. While savings vary, Rosetta typically targets a 25% reduction or more. First production in Tanzania is targeted for 2028, and for Mauritania a year later

LNG is a cleaner energy source than oil products. Rosetta provides customers with assessments of how much they can cut greenhouse gas emissions by switching to natural gas. The company is also exploring ways to reduce emissions from liquefaction, including using electric driven trains and combining renewal power generation.

THE FINANCING CHALLENGE

Financing is the greatest challenge in developing Virtual LNG Pipelines, Shaaban noted. "To create those markets, you need to take some calculated merchant risk to get things going at the beginning," he said. "Getting lenders into that mindset can be difficult, but we are seeing improved understanding."

Large LNG export projects have the backing of major international oil and gas firms that can assume debt and have access to global markets. Rosetta, by contrast, typically works with smaller financial institutions already involved in gas-to-power, and with local and regional banks more willing to accept the higher risk of small-scale LNG. Larger development finance institutions often impose requirements that are too stringent for such projects.

Shaaban said international financiers have become more willing to fund fossil fuel projects in recent years, following geopolitical disruptions and the global energy crisis of 2021-2023.

"There is greater recognition that we still need natural gas in the energy ecosystem – that it can play a significant role as a transition fuel until renewables are scaled up, and that it will always be needed to complement renewables, because of their intermittency," he said. "We have really seen a shift in the narrative."

Given the economic multiplier benefits of small-scale LNG – such as enabling new industrial parks, factories and jobs – governments should offer strong fiscal incentives and provide flexibility on the gas feedstock cost, Shaaban added. "When people are looking to invest in new developments in a country, the key questions are: is the energy cheap enough? Is the supply secure? We are providing a solution there," he said.

"if [some African nations] had more stable and affordable energy available – like gas – they could develop that into more high-yielding products."

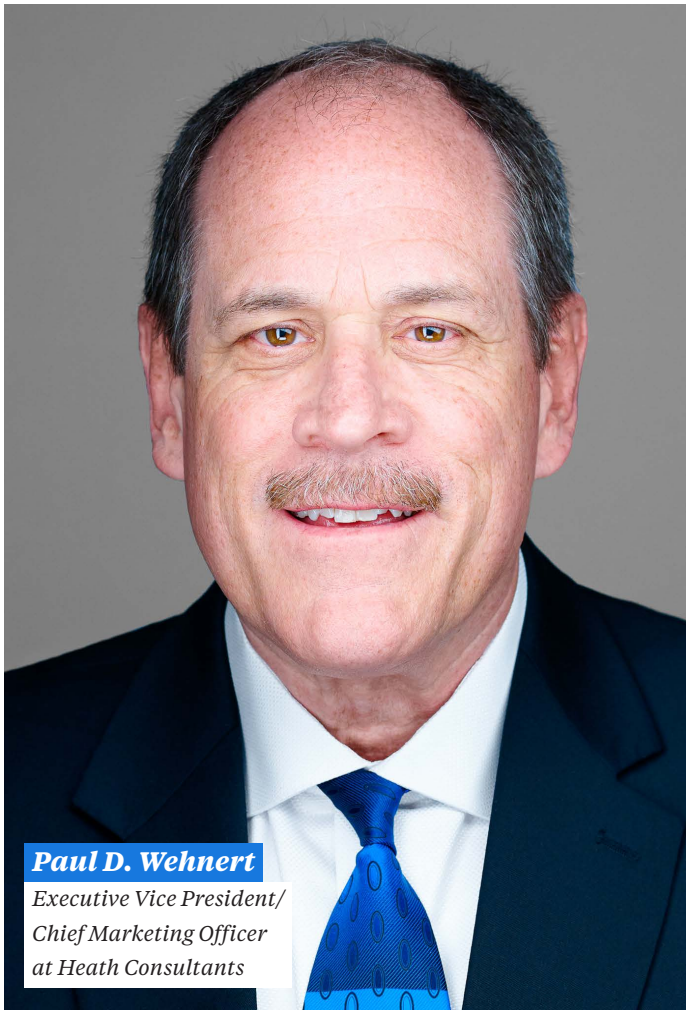
SMALL-SCALE LNG AT WGC2025

WGC2025 comes at a critical juncture in terms of shifting global gas supply and demand dynamics, with significant new LNG volumes set to arrive from the US and Qatar, while there is expected to be major growth in demand in key markets like China and India, Shaaban said. "I'm very keen to hear the global thoughts on these dynamics, as well as how the long-term pricing of LNG will evolve," he said. "I'm also excited to see there is more focus at the event around financing for small-scale gas in emerging markets, and look forward to participating in those discussions."

Karim Shaaban, co-founder and CEO of Rosetta Energy Solutions, will be speaking at the session Natural Gas Enabling a Resilient, Secure, and Decarbonised Power System, at 10:45 on May 22.

HEATH: TRANSFORMING LEAK DETECTION

SAFETY-RELATED REGULATIONS TARGETING LEAKS FROM GAS DISTRIBUTION SYSTEMS HAVE BEEN BOLSTERED WITH TOUGHER REGULATIONS FOCUSED ON REDUCING OR ELIMINATING METHANE LEAKS, THE MOST POTENT GREENHOUSE GAS. HOUSTON'S HEATH CONSULTANTS IS AT THE FOREFRONT OF DELIVERING SOLUTIONS TO MEET THOSE NEW REGULATIONS.



Paul D. Wehnert
Executive Vice President/ Chief Marketing Officer at Heath Consultants

Methane leak detection has undergone a major transformation over the past two decades, driven by both regulatory changes and technological advancements, according to Paul Wehnert, executive vice-president and chief marketing officer at Houston-based Heath Consultants, which specialises in providing leak detection services.

Wehnert, who has worked in natural gas leak detection since 1980, says early detection relied on flame-ionisation detection (FID) technology, with regulations primarily focused on safety. Detection methods were portable or vehicle-mounted, aimed at preventing accidents rather than addressing environmental concerns.

"In the last 20 years, safety remains critical, but as methane became recognised as a greenhouse gas (GHG) contributing to climate change, leak detection has expanded across the upstream, midstream, and downstream sectors," Wehnert tells the *WGC2025 Daily*.

The pace of change in methane detection technology has been extraordinary, he noted. Older platforms operated at parts per million (ppm) sensitivity, while newer ones now detect parts per billion (ppb), providing far greater accuracy.

Detection methods have evolved significantly, moving from FID to methane-specific technologies such as laser-based and optical infrared sensors. Leak monitoring has also expanded beyond portable and vehicle-mounted systems to include fixed-site sensors for continuous monitoring and aerial platforms, including drones, helicopters, fixed-wing aircraft, and satellites.

"We have seen a shift from traditional detection tools to a more sophisticated, multi-layered approach, allowing for real-time monitoring and a more comprehensive understanding of methane emissions," Wehnert says.

While company-led initiatives have played a significant role in addressing methane emissions, regulation has been the primary driver in upstream and midstream sectors, particularly in the US.

"Regulations have really driven the upstream and midstream space of late, primarily due to environmental concerns about methane as a GHG," he explains.

The downstream sector, which is more focused on safety, has been heavily regulated for years and continues to be. However, many companies are also proactively adopting leak detection technologies to meet sustainability goals and environmental stewardship commitments.

Addressing methane leaks is not only an environmental imperative but also a critical safety measure, Wehnert emphasises.

And beyond regulatory compliance, companies have an economic incentive to prevent methane leaks, as lost gas represents both financial loss and an environmental liability.

"If you focus on safety, you'll end up benefiting the environment as well," he says. "Nobody wants to lose a product that can ultimately be sold."

A major challenge in reducing methane emissions lies in replacing ageing infrastructure, Wehnert says. The natural gas industry is undertaking large-scale pipe replacement programmes to phase out legacy cast iron, early plastic materials, and bare steel pipes.

Efforts to reduce accidental pipeline damage are also crucial, with public awareness campaigns such as "Call Before You Dig" (811 in the US) playing a key role in preventing infrastructure damage and leaks.

Despite technological advancements, widespread adoption of new methane detection systems has been gradual, partly due to industry conservatism.

"The natural gas industry has always been a creature of habit, and it takes time for companies to validate new technologies against existing ones before adoption," Wehnert notes.

Quicker regulatory approval at both federal and state levels is also a key factor in the implementation of advanced detection technologies, as companies seek clarity on compliance standards and reporting requirements.

Artificial intelligence (AI) and big data analytics are also playing an increasing role in methane leak detection and prevention, Wehnert says.

AI can be used to identify high-risk areas by analysing factors such as pipe material, age, soil conditions, high-consequence areas (HCAs), and environmental exposure.

"By leveraging AI, natural gas utilities can prioritise inspections in high-risk zones, improving efficiency and reducing the likelihood of major leaks," he says.

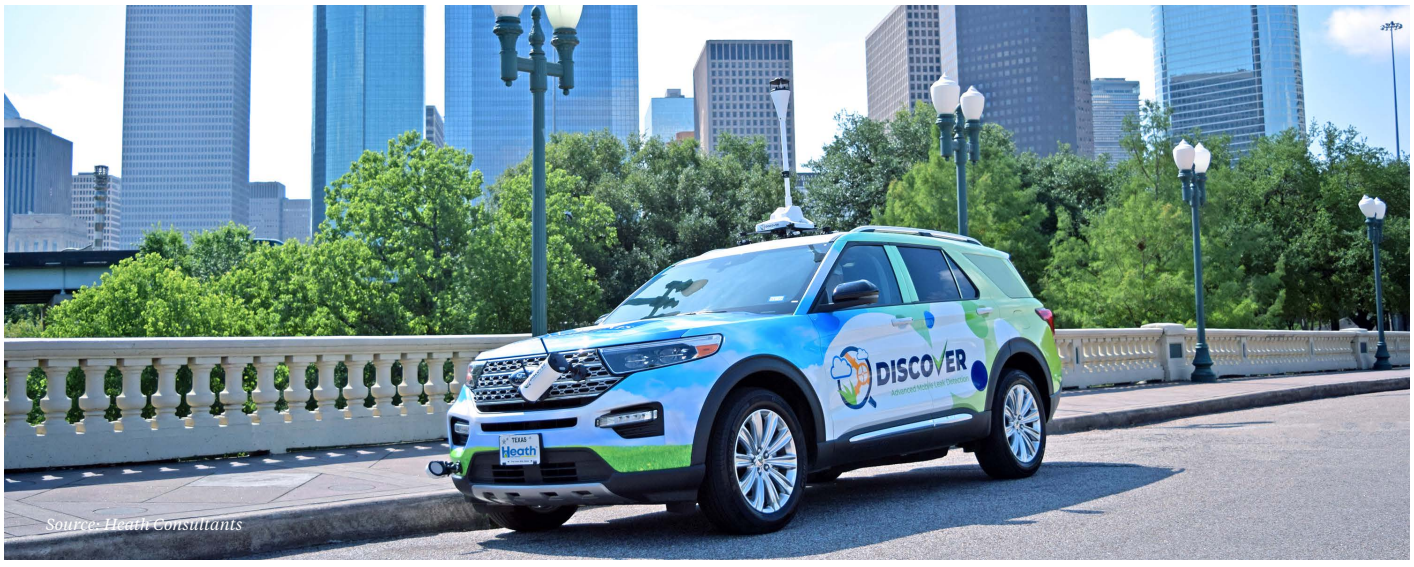
The global demand for natural gas continues to grow, with increased consumption seen in South America, India, Turkey, Egypt, Indonesia, and Malaysia, Wehnert notes.

"Safety and environmental concerns remain global issues, and continued education is critical, particularly for emerging markets looking to learn from more mature markets in Europe and North America," he says.

With industry leaders gathering at *WGC2025*, discussions on methane reduction strategies, regulatory developments, and emerging detection technologies are expected to take centre stage.

"Efforts to reduce methane emissions will remain a global priority, and the industry must continue working towards a safer and more sustainable future."

Paul D. Wehnert, Executive Vice President/Chief Marketing Officer at Heath Consultants, will be speaking the sessions "Mitigating Methane Emissions in Distribution System" at 15:30 on May 21 and "Technological Innovation for Safe Operations of Gas Distribution" at 09:00 on May 23. ■



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