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29TH WORLD GAS CONFERENCE

WGC2025

BEIJING, CHINA 19-23 MAY

FRIDAY 23 MAY 2025

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CONFERENCE OVERVIEW

Welcome to the final day of the 29th World Gas Conference (*WGC2025*). Over the past few days, Beijing has been the global hub for dialogue, innovation and collaboration across the gas and energy value chain. As we conclude this remarkable gathering, we encourage you to make the most of today, whether it's deepening your knowledge, connecting with peers, or engaging in meaningful conversations that will carry forward long after the conference ends.

Through expert-led discussions on topics including the Global Energy Landscape, Energy Transition, LNG, finance, digitalisation and innovation, *WGC2025* has highlighted the crucial role of gas in the energy transition.

Don't miss our final plenary session The Role of Natural Gas in the Future Energy Systems followed by the official *WGC2025* Closing Ceremony, where we'll reflect on this week's achievements and pass the torch to our next WGC host for WGC2028.

Thank you for being part of this remarkable event. Let's make this last day an unforgettable one. We wish you continued success and look forward to welcoming you to the 30th World Gas Conference (WGC2028) in Milan, Italy, on 19-23 June 2028.

FRIDAY'S PROGRAMME HIGHLIGHTS

DON'T MISS THIS MORNING'S CO-HOSTED SESSION:

- **CD29: Technological Innovation for Safe Operations of Gas Distribution**
  Time: 9:00-9:45
  Location: Room 251
  Co-hosted by: 北京燃气 BEIJING GAS
- **Plenary Session – PL08: The Role of Natural Gas in the Future Energy Systems**
  Join us as we explore the evolving role of natural gas, a fuel in transition that is increasingly seen as both a bridge and a destination in the global energy mix. With expanding applications, innovative technologies, and growing momentum behind low- and zero-carbon gases, natural gas remains critical to ensuring energy security, reliability, and affordability in a decarbonising world.
  Hear from keynote speaker Huang Weihe of the Chinese Academy of Engineering, followed by a panel discussion with Mohamed Hamel, Secretary General, Gas Exporting Countries Forum; Marcelo Andres Mena Carrasco, CEO, Global Methane Hub; Menelaos Ydreos, Secretary General, International Gas Union (IGU) and moderated by Edmund Crooks, Vice Chair for the Americas Region, Wood Mackenzie
  Date: Friday 23 May 2025
  Time: 10:00 – 11:00
  Location: L3 Ballroom

TODAY'S THE DAY: DON'T MISS THE WGC2025 CLOSING CEREMONY

Join us as we celebrate an incredible week of innovation, insight, and global collaboration. Reflect on the highlights, honour the progress made, and look ahead to the future of gas and energy. Let's close *WGC2025* on a high—together, inspired and energised for what's next.

Date: Friday 23 May 2025
Time: 11:15 – 12:30
Location: Banquet Hall on Level 3, CNCC II

EXHIBITION

Today is your final chance to explore the *WGC2025* Exhibition, open until 14:00. Don't miss this opportunity to network, strike new deals, and connect with industry leaders, innovators, and fellow exhibitors in one of the gas sector's most dynamic and business-focused environments.

Exhibition opening times

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.

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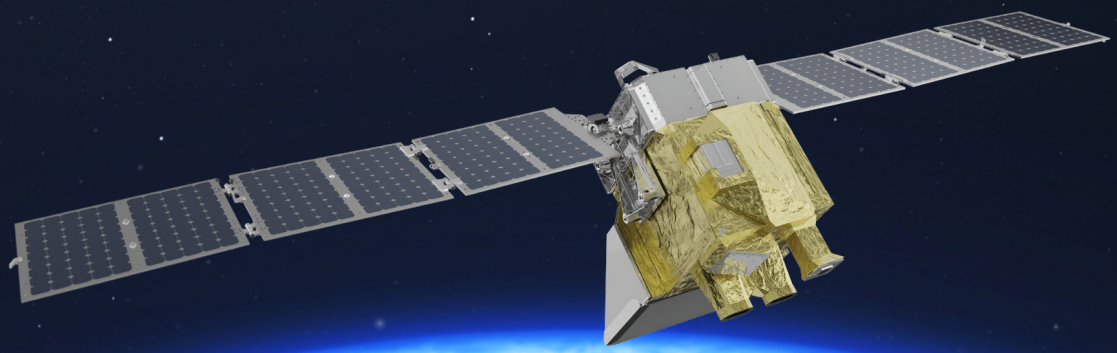

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Hall B: W37

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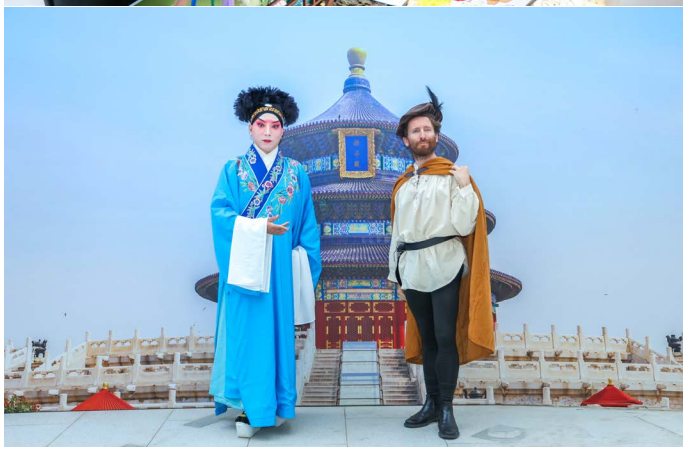
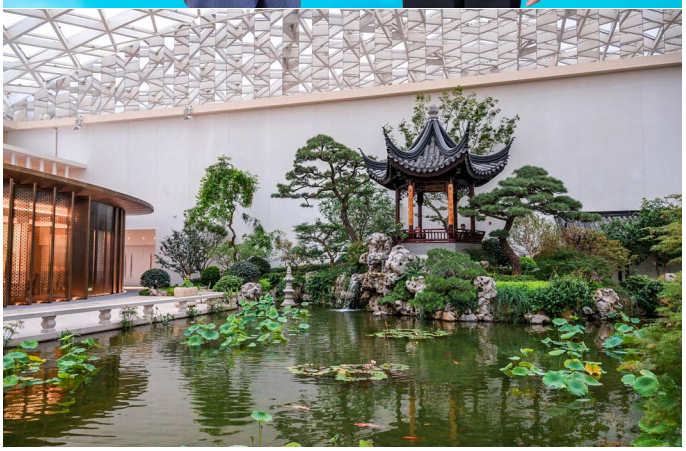
NETWORK RECEPTION

Highlights from last night's Italian Night Networking Reception, where attendees enjoyed connecting, sharing insights, and celebrating the spirit of collaboration in true Italian style.





CONFERENCE AND EXHIBITION HIGHLIGHTS


WGC2025
BEIJING 19-23 MAY
WGC2025 Exhibition Opening Ceremony
20 May 2025 Beijing, China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WGC2025


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29th World Gas Conference
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中国华电

EXPLORE BEIJING

Beijing offers a wide variety of dishes that reflect its rich history and dynamic culinary scene. From traditional street snacks to world-renowned fine dining, the city's diverse food culture is sure to satisfy every palate. Here are some must-try dishes and the best spots to experience them:

Peking Duck
A signature dish of Beijing, famous for its crispy skin and tender meat.
Where to go: Quanjude Roast Duck, Da Dong Roast Duck.

Zha Jiang Mian (Fried Sauce Noodles)
Noodles served with a savory pork or beef sauce, often topped with fresh vegetables.
Where to go: Baodu Feng (Fried Sauce Noodles Restaurant).

Jianbing
A popular street food breakfast snack, similar to a savoury crepe with eggs, crispy dough, and various fillings.
Where to go: Street vendors across the city.

Hot Pot
A communal meal where diners cook their own meat, vegetables, and noodles in a simmering pot of broth.
Where to go: Haidilao Hot Pot, Dong Lai Shun.

Chuan'r (Skewered Meat)
Grilled skewers of seasoned meat, often lamb, served with spices.
Where to go: Wangfujing Night Market, Dongcheng District.

Beijing Snacks
A range of local snacks, including baozi (steamed buns) and jiaozi (dumplings).
Where to go: Donghua Men Market, Nanjing Road.

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.

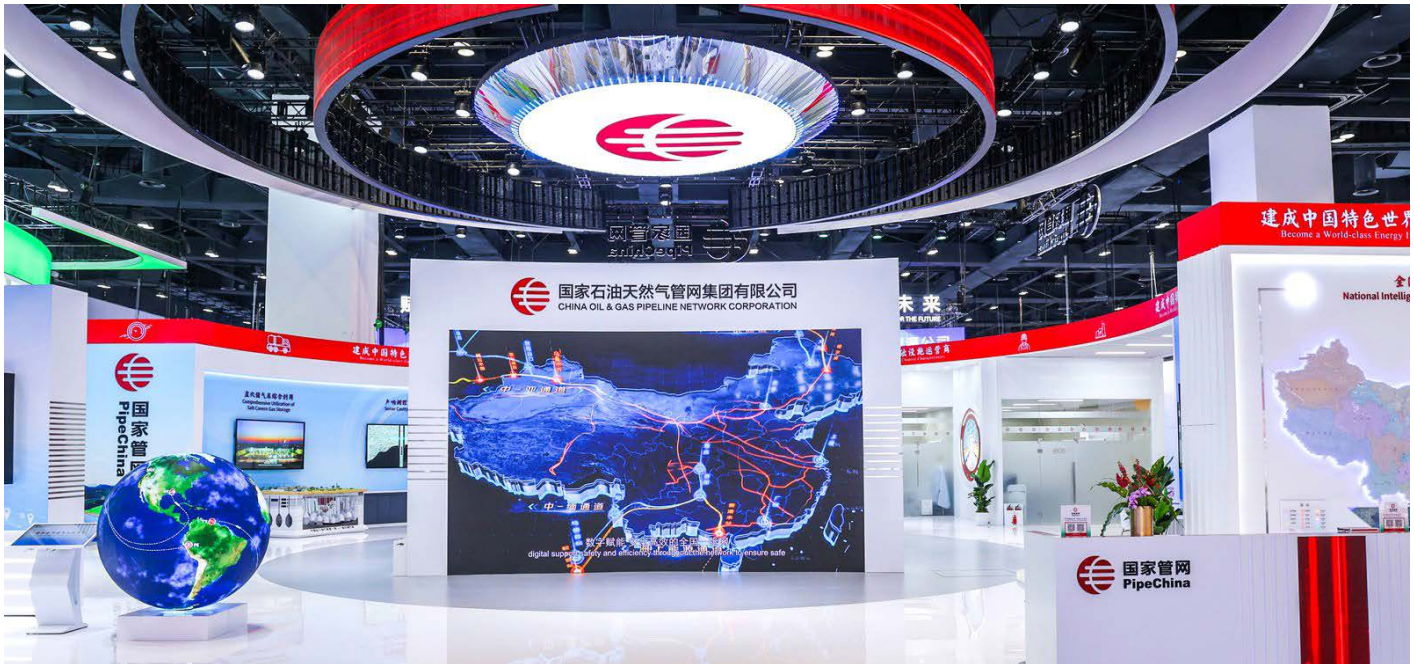
Social Media
Follow us on social media for event highlights and why not tag us when you post on social media

- 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.



PIPECHINA MAKES DEBUT AT WGC2025, VOICING CHINA'S CALL FOR "DEEPER OPENNESS AND SHARING" IN GLOBAL ENERGY SECTOR

At the 29th World Gas Conference (*WGC2025*), under the theme of "Connecting the World with Pipelines, Sharing the Future through Openness", China Oil & Gas Piping Network Corporation (PipeChina) showcased its achievements in building a world-class energy infrastructure operator with Chinese characteristics. Through six core exhibition areas – Open Service and Trading Platform, Nationwide Integrated Natural Gas Network, LNG Terminal Business, Energy Storage Business, Intelligent Regulation and Technological Innovation – PipeChina presented its progress to over 3,000 energy industry representatives and technical experts from 70 countries and regions around the world.

The interactive experience zone drew particular attention, featuring an open service and trading platform that covers China's entire oil and gas infrastructure. This platform enables end-to-end rapid responses – from demand submission to intelligent route matching - comprehensively improving resource allocation efficiency. On the customer interaction side, an AI-powered customer service system supports dual-channel (voice/text) assistance, providing precise answers to customers' professional inquiries across all scenarios of the entire life-cycle while offering personalised recommendations based on historical interaction data.

By offering "single-ticket" and "one-stop" services, PipeChina has spurred rapid growth in market participation across the oil and gas sector, with downstream pipeline network users increasing to 1,300 (a 55% increase); shipper clients rising to 882; small and medium-sized shippers seeing nearly a tenfold growth in service volume; and single-entry capacity rose from 157bn cubic metres to 240 bcm.

Through optimised routing and reduced pipeline transportation rate, PipeChina has saved approximately RMB12bn ($1.7bn) annually in annual energy costs for society. This has motivated various domestic resource providers to boost reserves and output, leading to doubled coalbed methane production, significant increases in unconventional gas and offshore gas output, and a 42% growth in domestic natural gas production over five years. In addition, national apparent natural gas consumption has surpassed 420 bcm, resulting in an expanded share of natural gas in primary energy consumption. These outcomes highlight how PipeChina, as the "1" in China's "X+1+X" oil and gas market system, energises the entire industry by bridging upstream and downstream sectors.

SHENERGY GROUP: ADVANCING SAFER, MORE ECONOMICAL AND GREENER GAS DEVELOPMENT

At *WGC2025*, Shenergy Group showcased its achievements in the natural gas and new energy sectors, including the full natural gas value chain of production, supply, storage, and distribution, innovative gas safety measures, initiatives to improve the business environment, digital transformation in gas services as well as advancements in green electricity, green methanol and the "three vertical, three horizontal" hydrogen energy development strategy. In the context of China's carbon peaking and carbon neutrality goals and the acceleration of a new energy system, Shanghai Gas, a subsidiary of Shenergy Group, is committed to advancing the natural gas industry toward safer, more economical, and more environmentally friendly development.

Shenergy Group stated that it views this conference as an opportunity to enhance communication, explore innovative cooperation models, and work together to inject greater stability into the industry and promote the sustainable development of the natural gas market.

TOWNGAS: DEEPLY ROOTED IN THE GAS INDUSTRY, CONTINUALLY INNOVATING CLEAN ENERGY SOLUTIONS

The Hong Kong and China Gas Company Limited (Towngas), a century-old enterprise, has long been deeply rooted in the gas industry. With flexible and innovative thinking and a broad strategic perspective, it continues to expand the space for green and low-carbon transformation, providing the market with safe, reliable and clean smart energy.

To promote energy conservation and carbon reduction, Towngas has invested in nine biomass natural gas projects in Shandong, Jiangsu, and Sichuan provinces, which collectively supply nearly 30mn cubic metres of green natural gas annually. The company is also actively involved in projects in blending hydrogen in natural gas pipelines and hydrogen energy. Notably, the "Hydrogen for Every Household" hydrogen blending project undertaken by Weifang Towngas in Shandong province has been approved by China's Ministry of Science and Technology. The project aims to achieve a 10% hydrogen blending ratio in urban gas pipelines, serving over 100,000 households.

In response to the decarbonisation needs of the transportation sector, Towngas is vigorously developing green methanol and sustainable aviation fuel (SAF) to support sustainable industry growth. Its green methanol plant in Inner Mongolia uses proprietary technology to convert biomass waste and used tires into green methanol. The company is planning to build a second green methanol production base in Foshan, Guangdong province. By 2028, the combined operating capacity of both bases will reach 500,000 tonnes per year.

To facilitate emission reduction in the aviation industry, Towngas is actively developing its SAF business by recycling illegal cooking oil into SAF, hydrotreated vegetable oil (HVO) and other renewable fuels. Its SAF production base in Zhangjiagang, Jiangsu province, currently supplies around 300,000 tonnes of SAF and HVO annually. A second SAF production facility in Malaysia is scheduled to begin operations later this year.

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Email: sales@lng2026.com

Carlos Cortes Simon
Executive Chairman of the Chilean Natural Gas Association

HOW GAS SUPPORTS CHILE'S PATH TO DECARBONISATION

NATURAL GAS IS UNIQUELY POSITIONED TO SUPPORT CHILE'S ENERGY SYSTEM WHEN RENEWABLES FALL SHORT, WHILE REDUCING RELIANCE ON COAL AND DIESEL, CARLOS CORTES SIMON, EXECUTIVE CHAIRMAN OF THE CHILEAN NATURAL GAS ASSOCIATION, TELLS THE WGC2025 DAILY.

WGC2025 Daily: How does natural gas contribute to energy security, affordability and sustainability in Chile?

Carlos Cortes Simon: Natural gas plays a critical role in ensuring Chile's energy system remains reliable, affordable and resilient amid its transition toward decarbonisation. In 2024, variable renewable energy accounted for 40% of the gross generation, up significantly from previous years, but it still requires flexible thermal support to guarantee system stability — particularly during seasonal and hourly mismatches between supply and demand.

Gas-fired generation solves this issue while producing lower emissions than coal. It also contributes to affordability through competitive marginal costs and by reducing reliance on diesel when the system is under stress. Events like the nationwide blackout in February 2025 demonstrated the need for fast-reacting, firm generation sources. Natural gas is uniquely positioned to support the grid in such contingencies, delivering system services that renewables and storage alone still cannot provide on a large scale.

How could policy further unlock these benefits?

Chile's 2024 Decarbonisation Plan outlines a clear coal withdrawal strategy, but maximizing gas' contribution to a secure and low-carbon system will require more detailed regulatory alignment. Priority areas include enabling hybrid solutions (gas + storage), establishing performance-based incentives for flexible generation, and accelerating permissions for repowering and reconversion of existing assets.

Additionally, regulatory clarity on blending renewable gases — such as biomethane and green hydrogen — into the gas grid would allow the industry to contribute directly to decarbonisation. Given current market uncertainties, long-term policy stability is essential to unlock investments in gas infrastructure and ensure its continued role as a transition enabler.

How has Chile's government shored up planning for the phasing out of coal-fired generation, and what implications will this have for natural gas?

The government has committed to a full coal phase-out by 2040, with over 70% of existing capacity already scheduled for closure or reconversion by 2026. This has direct implications for the gas sector, which is expected to provide both firm capacity and fast-ramping flexibility in a system increasingly reliant on renewables.

The blackout in February, revealed the operational and communication challenges that arise when the grid is highly stressed. The post-event analysis underscored the need for robust backup capacity, geographically distributed generation, and fast system recovery protocols — all areas where natural gas has played a proven role. As

"Events like the nationwide blackout in February 2025 demonstrated the need for fast-reacting, firm generation sources. Natural gas is uniquely positioned to support the grid in such contingencies"

coal exits the system, gas will be a key tool to ensure energy security and operational continuity during both planned transitions and unforeseen disturbances.

How has gas use in the power sector evolved in the past year, and how has the mix changed in terms of domestic gas, LNG and pipeline gas from Argentina in that time?

In 2024, natural gas contributed 12 TWh to Chile's electricity generation, accounting for 14% of the annual total. Its share peaked at 23% in May and averaged 20% during Q2, reflecting its critical role during periods of lower renewable output.

The sourcing mix was balanced between LNG (56%) and pipeline gas from Argentina (44%), with LNG dominating in Q2 and Q3 and Argentine gas being more prominent in Q1 and Q4. This diversification improved supply security and reduced dependence on volatile global LNG prices. While coal generation declined by 17 percentage points between 2021 and 2024, natural gas declined by only three percentage points, underscoring its strategic resilience. Combined-cycle power plants operated with variable costs around $57/MWh, making them economically viable for flexible dispatch.

How have Chile's raising of power tariffs supported the sector and what are the implications for natural gas?

After years of suppressed rates, tariff normalisation in 2024–2025 has restored economic factors for generators and improved conditions for long-term contracting. This has been especially important for flexible technologies like gas, which rely on predictable cost recovery to remain available and to invest in performance upgrades.

However, discussions around the Electricity Subsidy Bill have raised concerns amongst stakeholders about market distortions, financing burdens, and price stabilisation mechanisms that

could impact the financial viability of both new and existing supply contracts — including gas-fired generation. Ensuring coherent and transparent policy design is key to maintaining investor confidence and unlocking gas' full potential in the evolving market structure.

What has been the recent progress on developing biogas/biomethane and clean hydrogen in Chile, in terms of policy and project development? How is/can the natural gas industry contribute to development of these renewable gases?

Chile continues to make progress in renewable gas development. The National Green Hydrogen Strategy has catalysed pilot projects in Magallanes and the Atacama Desert, while biomethane initiatives are expanding in agriculture-driven southern regions.

The natural gas industry can serve as a platform for scaling up these efforts — via the sharing of infrastructure, blending into distribution networks and facilitating early market aggregation.

"Chile's path shows how gas can support large-scale renewable integration and system security during structural transitions and real-time emergencies."

Long-term success depends on regulatory certainty around quality standards, blending thresholds and commercial frameworks. Leveraging the existing gas system can accelerate the deployment of renewable gases while ensuring reliability and cost-effectiveness.

There are concrete examples in the country that reflect the progress of renewable gases, as well as blends of natural gas with green hydrogen. Metrogas and Aguas Andinas have proven that it is possible with a project in La Farfana that is already injecting biomethane into the distribution network of Greater Santiago, supplying thousands of households. Likewise, Gasvalpo is also delivering a blend of natural gas and green hydrogen to more than 3,200 customers in La Serena and Coquimbo. These kinds of innovations are not pilot programmes — they are a glimpse into the future we aspire to build as an industry.

What discussions do you look forward to hearing about and contributing to at the WGC2025?

We are keen to engage in discussions around the evolving role of gas in systems that must remain reliable, affordable and have low-carbon emissions. Chile's path shows how gas can support large-scale renewable integration and system security during structural transitions and real-time emergencies.

Topics of particular interest include cross-border energy integration in Latin America, frameworks for renewable gas markets, and strategies to address volatility in both the physical and financial energy markets. We hope to share Chile's lessons and learn from global experiences that advance resilience and innovation in the gas sector. ■

CHARTING THE FUTURE OF MALAYSIAN GAS

ABDUL AZIZ OTHMAN, PRESIDENT OF THE MALAYSIAN GAS ASSOCIATION (MGA), DISCUSSES THE ROLE OF GAS IN MALAYSIA TODAY AND IN THE FUTURE, THE EMERGENCE OF LOW-CARBON TECHNOLOGIES IN THE COUNTRY AND THE OPPORTUNITIES AND CHALLENGES OF NEW UPSTREAM DEVELOPMENTS.

WGC2025 Daily: How does natural gas contribute to Malaysia's current energy landscape and how is the role of the fuel expected to evolve over time?

Abdul Aziz Othman: Natural gas plays a central role in Malaysia's energy system. It currently contributes over 40% to the country's primary energy mix, powering industries, homes and transportation.

It is also the cleanest-burning fossil fuel, and that gives it a distinct role in supporting our energy transition goals – balancing the energy trilemma of affordability, security, and sustainability. It complements renewable energy by providing flexible, uninterrupted power to stabilise the grid, especially with increased penetration of variable renewables. From the industry's view, we don't see gas as a short-term bridge but rather as a long-term enabler.

Aligned with the National Energy Transition Roadmap (NETR), natural gas is expected to remain a core fuel beyond 2050. With technologies like CCUS, hydrogen integration and methane abatement, gas will evolve into a lower carbon and cleaner energy source, helping us meet Net Zero ambitions without compromising reliability.

Beyond its environmental benefits, the Malaysian gas industry is a key economic pillar – contributing significantly to public revenue, industrial growth and job creation across the value chain.

Malaysia plans to unveil its Natural Gas Roadmap by the third quarter of 2025. What are the key components of this roadmap, and how will it shape the future of the gas industry?

The Natural Gas Roadmap (NGR) is a timely development. From what has been shared by the Ministry of Economy, the roadmap

Abdul Aziz Othman
President of the Malaysian Gas Association

will tackle both near-term and long-term challenges to ensure that natural gas remains a secure and competitive energy source.

We are pleased with the announcement made by Yang Berhormat Dato' Seri Rafizi Ramli, Minister of Economy Malaysia, at the Malaysian Gas Symposium (MyGAS 2025). The MyGAS 2025 was organised by the Malaysian Gas Association (MGA), a Charter Member and also the Regional Coordinator of the IGU for Southeast & South Asia during the IGU Executive Committee Meeting in Kuala Lumpur on February 13, 2025.

From an industry standpoint, we welcome the focus on liberalisation and infrastructure. There are pressing needs to expand regasification and pipeline capacities and coverage, especially with projections that Malaysia could become a net importer of LNG in the next 10 to 20 years. Opening the market to third-party access and refining price mechanisms will help increase competition and investor confidence.

Another important element is the roadmap's alignment with the wider National Energy Transition Roadmap (NETR). This means gas will continue to support Malaysia's economic ambitions while helping to decarbonise industries, especially as the electricity demand grows from sectors like data centres.

The roadmap also arrives at a time when Malaysia holds the ASEAN Chairmanship, and we believe it can help position the country as a regional gas hub, especially as more ASEAN countries begin to increase their LNG imports.

As Malaysia assumed the Chairmanship for ASEAN 2025 beginning January 1, 2025, the country committed to steering the Association forward in strengthening regional peace, stability and prosperity.

On February 9, 2025, the Minister of Economy recently highlighted that through NGR, the Government is taking decisive steps to:

- Alleviate barriers to third-party access.
- Strengthening our LNG infrastructure.
- Position Malaysia as ASEAN's de facto natural gas hub.

This is especially timely given ASEAN, as a bloc, will be a net importer of LNG in 2027. Malaysia, too, must quickly reinvent its global standing in this changing regional energy landscape.

The above components of the NGR are designed to ensure Malaysia's energy security, promote economic growth and position the country as a key player in the regional gas industry.

What are the key infrastructure projects underway that will support the growth and distribution of natural gas across Malaysia? How will they improve energy access, affordability and security?

Malaysia is proactively expanding its natural gas infrastructure to meet the escalating energy demands, particularly from the burgeoning data center industry. This expansion is pivotal in ensuring energy access, affordability and security across the nation.

"We are seeing encouraging momentum in infrastructure development, particularly to support future demand growth."

We are seeing encouraging momentum in infrastructure development, particularly to support future demand growth. The most notable project is the proposed third Regasification Terminal (RGT-3) in Lumut, Perak, which would complement existing terminals in Sungai Udang and Pengerang. With demand for LNG expected to surpass current capacity by 2029, RGT-3 will be crucial in maintaining a stable supply.

In addition to the economic activities and population increase, demand growth is being attributed in part; by the booming data centre sector. Electricity demand for data centres alone is projected to reach 7.7 GW by 2030 and 20.9 GW by 2040. Gas-fired generation will play a key role in meeting that demand reliably.

These projects are also in line with NETR's projection that gas will still make up 56% of Malaysia's energy mix by 2050. Beyond supply security, infrastructure expansion will support market liberalisation by facilitating third-party access, creating a more competitive and cost-efficient gas ecosystem.

How are MGA members in the Malaysian gas sector working to reduce the emissions footprint of the gas they produce?

As an association, MGA champions a whole industry approach to climate action. Our members are working across the value chain to deploy lower-carbon solutions that align with Malaysia's national targets, which includes:

45% reduction in Greenhouse Gas Emissions by 2030;
30% reduction in methane emissions by 2030;
Net Zero Emissions as early as 2050;
70% Renewable Energy (RE) installed capacity by 2050.

Carbon capture is one area where we see an opportunity for regional leadership and collaboration. PETRONAS is advancing large-scale CCS projects in the Penyu Basin and offshore Sarawak. They are joined by other MGA members like Shell and ExxonMobil, who are collaborating on regional CCS solutions.

Under the National Energy Transition Roadmap (NETR), natural gas remains a key contributor and lever of secure, lower carbon energy. MGA members are proactively contributing through cutting-edge technologies, ecosystem engagement and collaborative policy alignment through six energy transition levers that were identified, namely:

- Energy Efficiency;
- Renewable Energy;
- Hydrogen;
- Bioenergy;
- Green Mobility;
- Carbon Capture.

Methane emissions are another priority. Industry players are implementing robust leak detection and measurement programmes, and Malaysia is a participant in global initiatives like OGMP 2.0. PETRONAS recently achieved Gold Standard status and is leading efforts to establish a regional METEC facility.

We also focus heavily on energy efficiency. Through MGA's Task Force on Cogeneration, members such as Sime Darby Energy Solutions and Gas Malaysia Energy Advance have implemented CHP systems that significantly cut carbon emissions in industrial facilities.

Importantly, we don't just look at major players. Sustainability is also being promoted within the SME ecosystem. It is being cascaded across the Oil & Gas Services and Equipment (OGSE) sector, primarily composed of Malaysian SMEs.

The Malaysia Petroleum Resources Corporation (MPRC), under the Ministry of Economy, launched the National OGSE Sustainability Roadmap (NOS-R) to support 1,235 OGSE companies in adopting ESG practices by 2030.

This includes sustainability reporting frameworks, risk management tools and structured engagements with stakeholders.

What role can low-carbon technologies such as CCS and hydrogen play in Malaysia's energy transition, and what progress has been made in these areas so far?

Low carbon technologies are no longer optional – they're essential to ensuring gas remains viable in a decarbonised future.

The passing of Malaysia's CCUS Bill in March 2025 is a landmark milestone. It provides legal clarity and sets up a dedicated agency to oversee permitting, storage and post-closure monitoring. This is key to catalysing investment in CCS hubs that can serve both domestic and regional emitters.

Hydrogen also holds promise, especially in industrial applications and export markets. Under the Hydrogen Economy & Technology Roadmap, Malaysia targets production of 2mn tonnes of hydrogen annually by 2030. Sarawak and Sabah are already moving, with the Rembus Hydrogen Plant and Sabah Green Hydrogen Hub both underway.

In relation to application, Kuching, Sarawak is the first city in Southeast Asia to introduce hydrogen fuel cell-powered buses for public transportation.

For MGA, these developments are positive because they ensure natural gas doesn't just remain relevant, but becomes a foundation for other clean technologies to scale.

Malaysia continues to offer new exploration blocks to international investors. How would you characterise the potential for new gas development in the country?

As an industry, we acknowledge that Malaysia still holds meaningful opportunities for new gas development – but these opportunities come with a new set of challenges.

Much of the remaining potential lies in offshore deepwater fields or in reserves that are more technically complex, such as those with high CO_2 content. These are not your typical low-hanging fruits – they require advanced technology, strategic partnerships and strong investment confidence to bring online.

While large volumes of gas remain untapped – especially offshore Sarawak and Sabah – these reservoirs often contain high levels of CO_2, like the K5 gas field (with up to 70% CO_2), requiring advanced technologies and substantial investment to unlock their value.

"The good news is that Malaysia is not starting from zero. We are already seeing innovation in action – for instance, floating LNG facilities have enabled the monetisation of once-stranded fields."

PETRONAS continues to explore viable development strategies, including carbon capture and storage (CCS) technologies, to manage the high CO_2 content.

A substantial portion of Malaysia's remaining gas reserves are located offshore Sarawak and Sabah, regions that collectively hold over 60% of the country's gas reserves.

The good news is that Malaysia is not starting from zero. We are already seeing innovation in action – for instance, floating LNG facilities have enabled the monetisation of once-stranded fields. Projects like PFLNG SATU and PFLNG DUA demonstrate how gas development can evolve alongside changing technical and commercial realities.

PFLNG SATU, launched in 2016, with a capacity of 1.2mn tonnes/year was first deployed at the Kanowit field (180 km offshore Bintulu, Sarawak) and later relocated to the Kebabangan field (90 km offshore Sabah).

PFLNG DUA, commissioned in 2021, is designed to operate in deepwater and high-CO_2 environments with a production capacity of 1.5mn t/yr of LNG and operating at the water depth of 1,300 metres.

These innovations allow for the cost-efficient development of challenging and high-CO_2 gas reservoirs, underscoring the need for both advanced technology and substantial investment to unlock Malaysia's upstream potential.

The industry is also encouraged by the government and PETRONAS's efforts to introduce improved fiscal terms and tailored production sharing contract models. This is essential to attract new investments, especially in areas with higher development risks or costs. Flexibility in commercial models will play a big role in unlocking future resources.

Malaysia's upstream future won't be as straightforward as in the past, but with the right tools and cooperation, it can still be a significant pillar of our energy ecosystem.

It also requires a coordinated effort between policymakers, regulators and industry to make these projects viable and bankable over the long term.

From an MGA standpoint, we see the Malaysian gas industry entering a more complex but still promising phase. The potential is still there, but it will take a new kind of collaboration to realise it – one that balances cost effective technology, innovative commercial structures, economic viability feasibility and national energy security goals.

"We hope WGC2025 will be a platform to bring balance back into the global energy conversation. In many discussions, especially at the global level, gas is often left out or underplayed."

What are the primary objectives and mission of the Malaysian Gas Association, in terms of providing energy affordability, security and sustainability for Malaysia?

MGA represents the whole value chain of the gas industry – from producers to users, service providers and policymakers. Our mission is to advocate for the sustainable and inclusive growth of the Malaysian gas industry.

MGA promotes a vibrant and sustainable gas industry through advocacy, communication, and education.

MGA continues to support cross-collaboration between various economic sectors and Government Ministries through our participation in national committees, providing industry perspectives to assist the formulation of pragmatic and efficacious policies and action plans.

A strong collaboration between policymakers and industries is vital to ensuring an effective energy transition. We do this by shaping policy dialogue, sharing knowledge and promoting solutions that support energy security, affordability and sustainability.

As the voice of the gas industry, MGA has consistently contributed to shaping national energy policies, MGA has been proactively involved and contributed to key policy frameworks, including the National Energy Policy 2022-2040, the LT-LEDS and NETR. We also represent the industry on national climate platforms such as the National Biomass Action Plan, National Energy Efficiency Action Plan (NEEAP) and hydrogen development committees.

Our role is not just technical. We bridge policymakers, industry players and the public on the role gas plays in the transition.

What critical discussions are you looking forward to taking shape at WGC2025?

We hope *WGC2025* will be a platform to bring balance back into the global energy conversation. In many discussions, especially at the global level, gas is often left out or underplayed.

This is particularly challenging for regions like ASEAN. Here, we have ambitious decarbonisation goals, but also growing populations, rising energy needs and different economic realities. We can't afford to adopt transition models that don't reflect our local context.

As MGA, and as Chair of the IGU's South & Southeast Asia Coordination, we want to ensure the industry's voice – especially from developing economies – is heard clearly. That means advocating for gas as a transition enabler, calling for financing support and encouraging policymakers to adopt more flexible timelines.

WGC2025 is a chance to send a unified, realistic message to the world: gas still matters, and it must be part of the solution. ■

Charlie Riedl
Executive Director of the Center for Liquefied Natural Gas (CLNG)

US LNG'S RISE TO DOMINANCE

THE LAST DECADE HAS SEEN THE METEORIC RISE OF US LNG, CREATING ENVIRONMENTAL AND ECONOMIC BENEFITS BOTH AT HOME AND INTERNATIONALLY. BUT THE INDUSTRY NEEDS POLICY AND REGULATORY CERTAINTY TO FULLY LEVERAGE ITS POTENTIAL, ACCORDING TO CHARLIE RIEDL, EXECUTIVE DIRECTOR OF THE CENTER FOR LIQUEFIED NATURAL GAS (CLNG).

The US has rapidly expanded its LNG exports over the past decade, leveraging its abundant and low-cost gas supply to capitalise on and fuel global gas demand growth, Charlie Riedl, executive director of the Washington-based Center for Liquefied Natural Gas (CLNG), told the *WGC2025 Daily*. At the same time, the industry's success has also been underpinned by its commitment to high environmental standards and focus on reliable and flexible supply.

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In 2016, the US exported its first LNG cargo from the lower 48 states via Cheniere Energy's Sabine Pass terminal in Louisiana. Today, it is the world's largest LNG exporter, having shipped 88.3mn tonnes last year.

FIRST CARGO TO TOP EXPORTER IN UNDER A DECADE

In 2016, the US exported its first LNG cargo from the lower 48 states via Cheniere Energy's Sabine Pass terminal in Louisiana. Today, it is the world's largest LNG exporter, having shipped 88.3mn tonnes last year. With multiple new projects in the pipeline, volumes are expected to more than double by 2028, according to the US Energy Information Administration.

"The ongoing growth in the US LNG export industry is a fascinating story," Riedl said. In addition to benefiting from vast and low-cost shale gas resources — development of which has pushed overall US gas production up by more than 40% in the past seven years, US LNG has also been bolstered by a global surge in gas demand, which it played a role in accelerating.

Part of this demand has been driven by efforts to transition away from coal and other high-emission fuels, a trend similar to what occurred in the US two decades ago, Riedl said. As recently as 2000, coal accounted for more than half of US power generation; by 2024, that share had fallen to 15%, largely replaced by natural gas.

"What we saw in the US, and what we are seeing internationally now, is gas reducing emissions, improving air quality and providing reliability that supports renewable energy deployment," he said.

The success of US LNG is also linked to the sector's strong environmental track record, he added. "We likely have the highest level of transparency in regulations and reporting standards globally," Riedl said, emphasising that customers value this, along with the US's reputation as a reliable trade partner. Given the continued expansion of US LNG, he noted, "the world is signaling its desire to do even more business with the industry."

ENVIRONMENTAL FOCUS

Riedl, who has led CLNG since 2016, recalled that methane emissions were nowhere near as discussed in industry circles and in government at that time. "It wasn't even on the table," he said. Since then, however, the US gas industry has taken significant steps to monitor, report, verify and reduce methane emissions. This progress has been driven not only by tighter regulations but also on the industry's own initiative, as demonstrated by the increased use of voluntary certification programmes like MiQ, Project Canary and Equitable Origins.

"The LNG industry responds to pressure to address emissions — whether from buyers, governments or public opinion," Riedl said. "The industry is working hard and remains committed to addressing those environmental concerns, and transparency about standards has become critical for buyers."

Technological advances have also played a role, he said, pointing to the use of drones to detect methane leaks as an example. "An operator in an office in Houston can now remotely pilot a drone over thousands of miles of pipeline infrastructure to identify leaks and rapidly dispatch repair teams."

FLEXIBILITY OF SUPPLY

Flexibility remains a key advantage of US LNG, Riedl noted. This relates to the offer of various different contract types, tied to a choice of Henry Hub, JKM, TTF or other pricing mechanisms, marking a departure from previous use of oil indexation. US

contracts also lack destination clauses.

"Flexibility really is what makes US LNG unique," he said.

That flexibility helped Europe secure alternative gas supplies following the loss of Russian pipeline volumes in 2022. Today, around 75–80% of US LNG exports are directed to Europe. Some of these volumes are under long-term contracts with Asian buyers, but are rerouted as needed because of the lack of destination clauses. Shifting market conditions could see more US LNG flowing to Asia in the future.

The absence of destination clauses also allows buyers with ambitious climate targets and uncertain gas needs in the future to sign 20-year contracts without the risk of being locked into unneeded cargoes, as they can resell them. Riedl noted that several European utilities are exploring this option.

THE NEED FOR CERTAINTY IN POLICY AND REGULATION

Casting a shadow on future LNG expansion, the Biden administration temporarily halted approvals for LNG exports to non-FTA countries in January 2024, citing the need for a review of the environmental and societal impacts of expanded exports. The move sparked industry criticism, with companies arguing that policy uncertainty undermined investment and buyer confidence. One of President Donald Trump's first executive orders upon taking office lifted the pause.

"We strongly advocate for regulatory certainty. Ideally, we want policies that favour LNG because of its benefits for trade, energy security, emissions reductions and job creation. But even if policies aren't favourable, we at least need predictability. It's the uncertainty that makes permitting, financing, and investment difficult."

While the halt did not impact US LNG export volumes in the short term, "it is difficult to ignore the effects it had and will continue to have," Riedl said.

Although the moratorium lasted only a year, some projects changed ownership, some companies nearly collapsed, and fewer contracts were signed due to uncertainty. "It was a significant setback for the industry and for buyers, and there is still a lot of work to be done to repair that damage internationally," he said.

The new administration has signaled support for LNG growth, pledging to cut red tape for liquefaction projects and the pipelines and fields that support them. In February, Commonwealth LNG in Louisiana became the first project to receive a conditional non-FTA export approval since the pause was lifted, marking a step toward a final investment decision (FID) later this year.

However, with the new administration only a matter of months into office, challenges persist. "The US LNG permitting process remains lengthy and costly, with potential court challenges," Riedl said.

In August 2024, for instance, the US Court of Appeals for the D. C. Circuit overturned the Federal Energy Regulatory Commission's approvals for NextDecade's Rio Grande LNG and Glenfarne's Texas LNG, both planned for the Port of Brownsville, Texas.

"We strongly advocate for regulatory certainty," Riedl said. "Ideally, we want policies that favour LNG because of its benefits for trade, energy security, emissions reductions and job creation. But even if policies aren't favourable, we at least need predictability. It's the uncertainty that makes permitting, financing, and investment difficult."

"We don't want to see large pendulum swings from one administration to the next," he added, expressing hope that Congress will codify rules that streamline permitting while maintaining strict environmental oversight.

At *WGC2025*, Riedl looks forward to discussions on how the rest of the world is responding to US policy shifts and what this means for global energy and other trade. He is also eager to hear talks on the environmental issues affecting gas, its role in the energy transition, and geopolitical factors affecting global gas flow, including whether Russian gas might return to Europe and the deepening energy ties between Russia and China.

Charlie Riedl is the Executive Director for the Center for LNG (CLNG) and Vice President of the Natural Gas Supply Association (NGSA). He will be speaking at the session "Balancing Supply and Demand Between Gas Importing and Exporting Countries" at 09:00 on May 23.

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