Anadarko takes axe to costs at African LNG project

US INDEPENDENT Anadarko has cut about $4 billion in costs from its Mozambique LNG project in the last two years, a top executive told the World Gas Conference. Page 3

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AFRICA

Two go head to head in Nigeria LNG FEED fight

Pair battle for gas capacity expansion contract as project potentially up for sanction by the end of this year

Eoin O’CINNEIDE
Washington, DC

Two consortia are competing in a dual front-end engineering and design process for liquefied natural gas capacity expansion at Nigeria LNG (NLNG), where a project sanction is possible by the end of this year.

A grouping of Italy’s Saipem with Japan’s Chiyoda is up against the consortium of JGC of Japan and US player KBR in the FEED contest for Train 7, which is set to increase capacity at the Bonny Island facility to about 30 million tonnes per annum from a current 22 million tpa.

The dual FEED study started in May, NLNG chief executive Tony Attah told Upstream at the World Gas Conference in Washington.

“Our ambition is to have it finished this year,” Attah said of the FEED, which he expects will take between six and seven months to complete.

Attah will soon meet with the competing consortia to disclose timelines more closely but is still hopeful of sanctioning the expansion project — which will effectively see the addition of two, similar-sized trains — late this year.

Once FEED is done, the engineering, procurement and construction tenders will be on the table, which the NLNG partners will need time to evaluate. The partnership consists of state player Nigerian National Petroleum Corporation (NNPC) on 49%, Anglo-Dutch supermajor Shell on 25.6%, French major Total on 15% and Italian major Eni on 10.4%.

“We will just evaluate the EPC tenders and hope that they will be competitive enough for the final investment decision — but we are really ready to take the FID,” Attah said.

“The whole idea is to try to get the FID definitely before December, but it is difficult to put a time-line on it until the FEED is complete.”

Attah said he has seen “quite a lot of interest” from other contractors about competing for Train 7, despite having only selected the two consortia for the FEED.

“We are not short of people still approaching us with indications they can build,” he said, although clarifying that it is “very unlikely” that NLNG will look beyond the current two pairings for the EPC deal.

“I think we are pretty clear that it will go to one of them. That is partly why we have deployed the dual-FEED strategy.”

NLNG shelved an ambitious plan a decade ago to add two new trains — each of 8 million tpa capacity — in a project called Seven Plus. However, Attah told Upstream late last year that he was optimistic and “very determined” that Train 7 would see the light of day.

He remains equally positive today, telling Upstream at WGC: “Essentially, the stars are aligning for this one. All the shareholders are committed to this. NNPC couldn’t be more supportive. We are very, very confident that this time around we will definitely go forward.”

Total chief executive Patrick Pouyenne earlier this week singled out NLNG Train 7 as one of the French partner’s five main targets for LNG expansion, alongside hopes to participate in Qatar Petroleum’s North Field expansion project and other schemes in Papua New Guinea, Russia and the US.

NNPC has also given NLNG assurances on feedstock gas for the expansion.

“The original concern was about funding of the upstream, which was not in my hands. I can fund my train, but I have to rely on others to fund the development of the gas,” Attah said.

“Working with NNPC, that has now been resolved. We have been given a lot of assurance about the gas availability.”

“The next scope of work is detailing out which wells and which locations, and that is really still a work in progress.

“Between now and the end of July, the idea is to really consolidate and nail things down. We expect that to run in parallel with the FEED.”

On estimated final project cost, Attah added: “It is getting closer. The whole idea is to stay competitive against the market. If the bids come in and they are competitive, we will do it.”

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Anadarko slashes costs at giant Mozambique LNG scheme

US independent keen to take advantage of lower cost cycle over last two years and also sees ‘significant opportunity’ for local content

KATHRINE SCHMIDT
Washington, DC

US INDEPENDENT Anadarko has cut about $4 billion in costs from its Mozambique LNG project in the last two years, a top executive told the WGC 2018 conference.

The company aims to lock in the advantage of today’s low point in the cost cycle as well as creating a “significant opportunity” for local content as it looks to a final investment decision in the first half of 2019.

Anadarko did not release a full capital spending figure for the project. However, executive vice president for deep water and international Mitch Ingram, did note the cost differential between 2016 and 2018 over both the onshore and offshore segments as the hydrocarbons sector overall has worked to rein in major project costs amid broader commodity price volatility.

“We feel that through hard work in the last two years with our teams and our contractors we’ve managed to optimise the development, and we have made $4 billion in savings over the past two years,” Ingram said.

“This really led to the low cost we’re forecasting for our onshore development, where we expect it will be less than $600 per tonne.”

Anadarko spent the first half of 2018 focused on building the credibility of the project with the government, setting market terms, finalising costs and preparing the site, including a resettlement programme.

At present, the company is working on contracting pricing and finalising sales and purchase agreements. Anadarko counts 6.7 million tonnes per annum of announced deals, and said it has key terms agreed to for a targeted volume of 8.5 million tpa or greater from “world-class buyers with captive demand”.

The company is now “actively” ramping up financing activities on the project with export credit agencies and commercial banks, among the final steps needed before a final investment decision, Ingram said.

Ingram also expressed optimism regarding the environment for sanctioning such projects.

“We’re beginning to see that the sweet spot is coming where LNG projects are able to be committed to over the next year or so,” he said. “Mozambique LNG is very well placed to deliver LNG for decades going forward.”

Anadarko’s field development plan for the Golfinho-Atum gas project in Area 1 was approved earlier in the year by Mozambique’s government. The project will initially consist of two trains with nameplate capacity of 12.88 million tpa of LNG. It will also supply 100 million cubic feet per day of natural gas into the domestic market.

The project may also pave the way for possible future expansion of up to 50 million tpa from Area 1.

Gas from the Prosperidade discovery, which extends into the adjacent Area 4, would supplement these supplies.

A consortium of CB&I (which recently merged with McDermott), Chiyoda and Saipem has been selected to construct the project’s two 6.44 million tpa liquefaction trains.

However, Anadarko’s push to development has not been without obstacles. One panel moderator asked about the long-term stability of the host government’s policy on LNG, suggesting that resource nationalism could be a “temptation”.

Anadarko has also more recently faced activity from militant groups in the area.

“We’ve spent a lot of time over the last two years working very closely with all levels of the government to ensure we do have enough of that legal framework in place, to ensure the commitments we make are sustainable and long-term and secure going forward,” Ingram said.

“We’re very comfortable that the government at all levels are very focused at making sure the project and the energy sector is fully supported.”
Gas has plenty of room to grow in overall energy mix

Leading regions for potential growth include non-OECD Asia, the Middle East and Africa

AMANDA BATTERSBY
Washington, DC

Gas has arguably not yet met its most optimistic growth projections, according to a special Global Gas Report by Italy’s Snam, the International Gas Union (IGU) and the Boston Consulting Group.

“In particular, the share of gas in the global energy mix has remained virtually unchanged since 2010, with marginal growth only starting to be realised in 2017,” the report, released on Wednesday at WGC 2018, read.

“While the US shale boom, rapid expansion of liquefied natural gas infrastructure, and substantial market growth in the Middle East and Asia have all served to transform the global gas industry, gas still has a way to go to achieve its full potential and share of the energy mix.

“This is due to challenges that gas faces in some markets based on its cost competitiveness relative to other fuel sources, accessibility of secure supply and debates about the role that gas can play in promoting environmental sustainability,” according to the report.

Three drivers — cost competitiveness, security of supply and sustainability — will be critical to sustain rapid gas market growth and achieve the expectations of gas market share growth over the coming decades, said the report’s authors.

Future gas growth is forecast to be concentrated in several specific regions and sectors, given overall primary energy demand growth, existing gas penetration and policy.

Leading regions for potential gas growth are said to include non-OECD Asia, the Middle East and Africa.

“Meanwhile, the transport sector in North America and global marine bunkering also offer high growth opportunities,” the report said.

It was noted that a critical enabler of global gas consumption growth across these regions and sectors would be to focus on its role in cities.

“Gas is uniquely advantageous as a fuel source in urban areas given its limited greenhouse gas and local pollution emissions, high heat intensity — valuable for industrial and buildings applications — and the scalability of gas infrastructure. As a result, by 2040 more than 90% of the projected global gas growth is likely to come from cities.”

Outgoing IGU president David Carroll said the report showed “how gas was really helping to shape the design of energy systems for cities”.

Snam chief executive Marco Alvera added: “Gas offers significant opportunities for more sustainable development.

“It will provide clean, reliable...
LNG can follow example

LIQUEFIED natural gas players are being urged to take a page out of the midstream playbook and structure contracts to be more adaptable as they look to access funding for their projects.

“What we’ve seen over the past few years, really with the shale revolution here in the US, is that pipelines that are also expensive infrastructure investments have been getting very, very creative at the way those commitments get made,” Rusty Braziel president of energy market consultant RBN Energy told a panel session at WGC 2018.

To get the next wave of expensive LNG facilities funded, Braziel said players should take notes from their pipeline colleagues and structure flexible, market-responsive contracts.

“It’s going to be a busy period, there’s going to be a lot of investment and infrastructure required to fully allow us to capture all the benefits of the resource that we have,” senior vice president for ExxonMobil subsidiary XTO Energy Monte Dobson said during the panel.

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Panama Canal plans to take more LNG carriers

Restrictions to be lifted to accommodate increasing demand from shippers as US exports expand

KATHRINE SCHMIDT
Washington, DC

THE operator of the Panama Canal plans to drop some of its self-imposed restrictions on liquefied natural gas carrier traffic on 1 October to help accommodate increased demand as US LNG exports grow. Among other things, the Panama Canal Authority will allow LNG carriers to transit during the night instead of only daylight hours and allow such vessels to "encounter" — pass through the canal during the same day going in opposite directions.

Overall, a total of 372 LNG transits have been completed since the inauguration of the canal expansion two years ago that enabled the passage of larger vessels, officials said during a briefing at the World Gas Conference.

"Lifting daylight restrictions means LNG vessels will be able to transit the locks at night — as vessels in other segments currently do," said Manuel Benitez, deputy administrator of the Panama Canal Authority.

"Lifting encounter restrictions means LNG vessels will be able to navigate Gatun Lake at the same time, allowing two different LNG vessels to transit the canal on the same day in two different directions.

"Together, these changes will provide more flexibility and time during the day to transit LNG vessels, and result in an opportunity for LNG shippers to compete for a second booking slot."

The authority projects that LNG traffic will increase by 50% by the end of its 2018 fiscal year, with a total of 244 transits. That compares to 2017, when 163 transits were completed.

LNG carriers, citing a focus on safety, aimed to start off slow when it came to the intricate balance of scheduling the LNG transits.

"Since the opening of the Neopanamax locks, even with an increase in cargoes from facilities such as Cheniere Energy’s Sabine Pass facility in the US, the expansion has averaged less than one LNG transit per day, or 5.5 cargoes per week. The canal has also only offered one reservation slot per day for LNG vessels, although it has accommodated more according to demand and availability."

The lifting of the restrictions will "unleash even more capacity for LNG," said Silvia de Marucci, executive manager, economic analysis and market research division.

"In addition to the one reservation it guarantees each day, the (canal operator) will soon offer LNG shippers, for the first time, the opportunity to compete among our wider vessel segments to book a second daily slot."

The authority has already dealt with increased demand at times, transiting three LNG vessels in one day in April, and expects higher volumes to become the norm over time.

Three per day could become a possibility by 2022, officials suggested.

The Panama Canal also saw the transit of the first ever shipment from Dominion Energy’s Cove Point terminal in Maryland on 28 April of this year, a cargo which headed to Japan.

Officials said that all of the vessels that had made a reservation had completed the transit on time, except for one that arrived late.

Only 35 arrived without a specific slot booked ahead of time, and 30 of them were able to make the journey on the same day they arrived. The last five passed through with a wait of between three and four days.
What the heck is an environmental group doing at the WGC?

Environmental Defense Fund collaborates across industries – including oil and gas – to find innovative, data-driven solutions to tackle urgent environmental challenges. One major focus? Accelerating the future of remote methane detection technology, be they on a well pad or in outer space.

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OVERVIEW

Decisions are based on three pillars: safety, high value and low carbon

On the eve of WGC 2018, Upstream surveyed a number of leading figures in the international gas industry on topical issues shaping the sector. Tor Martin Anfinnsen, senior vice president for marketing and trading at Equinor

Upstream: How do you see the prospects for the gas sector over the coming decade and beyond?
Tor Martin Anfinnsen: We have a positive view on the global natural gas market, with continued strong demand growth in Asia, and with natural gas also maintaining a significant share in the European energy mix.

Upstream: How big a part does the gas sector play in your business and how has that changed in recent years? Do you see the role of gas in your business gaining in importance over the years ahead?
Tor Martin Anfinnsen: For Equinor, natural gas has played a significant role for many years, and will continue to do so.

Upstream: If you are a producer, what percentage of your output is gas today? How has that changed in the past decade and how do you expect it to develop in the years ahead?
Tor Martin Anfinnsen: From our assets in Norway, oil and gas have held almost equal shares if you look at it in terms of barrels of oil equivalents, whereas we have higher production of oil than gas from our international activities.

In money terms, oil has had the bigger share except for in periods with low crude prices when gas has been on top. How this will be in the future will depend on exploration and investment decisions as well as on market development for oil and gas.

Upstream: What are the main challenges that the gas sector faces?
Tor Martin Anfinnsen: Natural gas is a crucial part of the daily energy supply for hundreds of millions of homes and businesses.

In some parts of the world, especially Asia, natural gas is also regarded as a fuel that helps reduce emissions as well as improve air quality and hence improve health conditions in major cities.

Among policymakers in Europe there has been a sentiment that natural gas is a fossil fuel that is part of the problem rather than part of the solution.

The industry has a job to do to explain that natural gas can play a crucial role also in the future, both as the best partner to renewables but also in its own right.

Upstream: How can governments help to further encourage the exploitation of gas?
Tor Martin Anfinnsen: The world is facing a tremendous challenge. Global population is forecast to grow from 7.3 billion to 9.8 billion over the next three decades, and the global middle class will increase from 2 billion to 5 billion through the 2030s.

Already today, 2.5 billion people lack access to clean energy. So the conundrum the world’s policymakers are facing is clear — how can we provide enough clean energy to the growing population, lift billions out of poverty, and at the same time reduce CO2 emissions?

Our view is that without natural gas as part of the solution it will be very difficult, if not impossible, to solve this. So governments need to have in place framework conditions that encourage exploration and development of new production and infrastructure.

At the same time, the industry also needs to continue the efforts to reduce its own carbon footprint throughout the gas value chain.

Upstream: Can the industry persuade public opinion that gas is part of the solution for the energy transition rather than part of the ‘fossil fuel’ problem? If so, what more should be done by the industry to try and win that argument?
Tor Martin Anfinnsen: We believe that both the industry and policymakers have a job to do to explain the magnitude of the challenge to the public, and that there are limits as to what can be achieved through electrification.

Population growth and the fact that the global middle class will more than double in the coming couple of decades will trigger demand for more energy.

We strongly believe that renewables will play a crucial role to meet this challenge, and our company is building a significant portfolio of assets within wind and solar to be part of this development.

However, we also see that electrification cannot be the only solution in all sectors like, for example, the heat intensive process industry.

Hence, the industry, together with governments, needs to foster innovation so that we can provide clean natural gas. One way to do this is to convert natural gas to hydrogen through CCS, and in Equinor we are currently working on several initiatives related to this.

Upstream: What is your company currently doing to control emissions and what more do you plan to do?
Tor Martin Anfinnsen: Equinor’s strategy is founded on the pillars — always safe, high value and low carbon. When we make investment decisions, all three are taken into account and we look for the alternatives that can bring both high value and low carbon.

Our carbon footprint from production is already among the lowest in the industry, with an average of 8.7 kilograms CO2 per barrel produced versus the industry average of 17 kg per barrel.

We are working to take CO2 emissions down further, and our new giant Johan Sverdrup field in Norway will only have 0.5 kg CO2 per barrel produced.

Viewpoint: Tor Martin Anfinnsen
Photo: ANDREW MANGUM
WGC 2018 gets to the heart of the matter
EARLIER this week, Professor Joo-Myung (Joe) Kang, assumed the role of President of the IGU as Korea assumed the Presidency of the IGU for the term 2018-2021.

Tell us a bit about your background — how did you come to be involved with the energy/natural gas industry, and what have been your main areas of focus?

I started my professional career as a development engineer at Schumberger in Houston right after graduating from University of Oklahoma with a Ph.D. in Petroleum Engineering in 1981. In May 1983, I transferred to the University of Tulsa where I was an assistant professor and have been holding a professorship at Seoul National University since 1986. Since that time, I had wonderful experience working in the gas and energy industries. Most recently, in the capacities of Chairman of the Board of Directors in KOGAS, and a Civil Member of National Energy Council, which is chaired by the President of Republic of Korea.

I also had the honour of serving as Co-Chair to the Vice President of the Ministry of Trade, Industry & Energy in a Special Committee for restructuring the National Energy & Resources Development Companies including KOGAS, KNOC (Korea National Oil Company), and others. From 2015 to 2016, I served as a Chairman of the National Coordination Committee for Natural Gas Supply and Demand. I have also published over 50 professional papers in international technical journals and over 40 in national journals, in addition to over 30 columns on national energy-related issues in major newspapers in Korea.

Your background has been in academia, but your work has straddled government and industry as well. How do you see those spheres working constructively together?

Energy is very important to governments as it is central to a nation’s economic and social development and prosperity. I truly believe that in order to efficiently develop complex energy systems that are capital intensive with long economic lives, that governments and industry must work together. Governments need to ensure that the proper financial and regulatory frameworks are in place that not only create a level playing field for market participants, but also provide investment certainty such that the risk-reward of capital investment decisions can be supported and encouraged. You can only do that with transparent and open dialogue.

What does your new position as President of the IGU President entail?

As President of the IGU, my task is to serve and lead the organization. My priorities will rest on the three pillars of strong advocacy, transparent governance, and delivering value to members. Having said that, I recognized that I cannot do it alone, and I am pleased that we have assembled a team of very strong, competent, and dedicated individuals will help us succeed in delivering these priorities. I will be very active in representing the global gas industry in key events, conferences, energy ministerials and other key global energy debates.

What will be the focus be for the Korean Presidency over the next three years?

The theme for the Korean triennium is “A sustainable future, powered by gas”. Consistent with this theme, we will aim to demonstrate that gas is the perfect catalyst towards a sustainable future, and it will do so through the lenses of environmental leadership, market vitality, and value creation. We are also privileged to have access to a network of some 1000 global experts in the eleven committees and three task forces. Triennium work plan.

We are witnessing dramatic change in the energy industry. What role can natural gas play in a sustainable future?

Natural gas is in the midst of a rapid growth phase. Since 2010 global gas consumption growth has averaged 1.8% per year, making it the fastest growing energy source other than renewable power. In that time the global gas industry has also been transformed given the North America shale boom, the rapid growth of the liquefied natural gas industry, and the development of new gas markets in Asia and the Middle East. This growth is due to the multiple benefits offered by gas as a clean, abundant, flexible, and cost-effective fuel. Industry forecasts widely expect the rapid growth of gas to continue. The IEA and other leading forecasters project that gas consumption will grow by at least 1.6% per year over the coming decades. Among all fossil fuels gas is the only energy source for which consumption is projected to grow in the long-run under all key scenarios, including the most aggressive low carbon transition scenarios.

As a result, gas is expected to overtake coal as the second leading source of energy by 2040. Of all its attributes, flexibility is the key advantage of natural gas. Natural gas is a fuel for industrial and domestic use, it can be used as a baseload, peaking load and decentralized power generator, it can fuel the vehicular and marine sectors and the infrastructure network can deliver renewable and synthetic gas to market. No other fuel offers the kind of flexibility that natural gas does.

Tell us about your life outside of work? What do you enjoy doing for fun and relaxation?

I strongly believe that keeping active keeps the mind sharp. I am an avid racquetball player, hitting the court early in the morning and before the all buzz of the workday begins. On weekends, the routine is a bit different, and I enjoy an early round of golf, to allow for time to spend with my wife and play with our four grandchildren. This provides huge enjoyment and a meaning making life truly full.
AGA in the spotlight

What is the most surprising and unexpected development in natural gas in the last century? In many ways, the natural gas industry is doing the same things we have been doing since Rembrandt Peale installed the first-ever natural gas lighting system in his Baltimore museum in 1812 — and we keep improving upon it. We continue to produce, transport and deliver natural gas safely and reliably. We have improved every step in this process from how it is extracted to the appliances that use it and everything in between.

The most revolutionary single development has to be producing natural gas from shale. We always knew there was natural gas in the ground, and in many parts of the country we had been hydraulically fracturing for decades. But combining this technique with horizontal drilling unlocked a supply of natural gas that is more than enough to meet America’s diverse energy needs at affordable and stable prices for a century and beyond.

If you had a crystal ball, what is your biggest prediction for natural gas in the next 100 years? It won’t be a surprise to most people at this conference, but natural gas is the foundation fuel for a clean energy future. Emissions will remain on the decline. Renewables will continue to grow. Our economy and those that embrace natural gas as a foundation fuel will flourish.

There is a perception gap that exists where some people believe that natural gas is incompatible with these goals when, in fact, the exact opposite is true. Natural gas is making a clean energy future possible. I think you are going to continue to see advancements in technologies that use natural gas and other innovations that enable you to use natural gas more efficiently. Recent work we did with Enovation Partners, LLC. identified more than 100 innovative natural gas technologies for the residential/commercial market. Customers that integrate these technologies and other efficiency practices could see up to a 40% reduction in their greenhouse gas profile.

How are you celebrating the centennial? Kimberly Harris, the Chair of our Board of Directors, reminds us that we should constantly be looking forward and we have followed her lead. This has already been an incredible year at AGA and we are only halfway done. We moved into our newly renovated headquarters a few months ago. We are constantly setting records for attendance and participation in AGA conferences, peer reviews and cybersecurity assessments.

The World Gas Conference, the culmination of a seven-year effort involving support from people on all continents, is finally here. There is so much to celebrate. We have carved out some time to mark the occasion and do some special things for AGA members and staff. We have a living history on our website at 100years.aga.org. We have a centennial issue of American Gas in February. We have distributed centennial gifts to conference attendees, speakers, board members and members of Congress. Every month, an AGA member company is taking over our Instagram feed for 100 hours helping us to tell the story of America’s natural gas utilities.

Networking Reception Today at 6pm

Ballroom A & B, Level 3

As the week almost draws to a close, continue networking while enjoying a fusion of American and Korean cultures as we welcome the Republic of Korea as the hosts of World Gas Conference 2021. You will be greeted by a mix of American and Korean cuisine and entertainment, with performances from traditional Korean dancers and musicians specialising in the art of Samulnori. Look out for the Harley Davidsons and our mesmerising close up Las Vegas Magician who will leave you speechless!

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WGC 2018 conference program

THE WGC 2018 program benefits from the unrivaled expertise of more than 1000 industry specialists from around the world.

This international outreach helps to create a truly global gas event representing the entire gas value chain.

Some 600 speakers will address technical, commercial and strategic issues and opportunities facing the global gas industry through a mixture of session types including Keynote Sessions and Keynote Luncheons, Current Debates, Industry Insights and Technical & Innovation Center Sessions.

Download the WGC 2018 Event App to access full program information and speaker profiles, plus much more. Password: 27wg2018

Keynote sessions

8:30am — 10:00am
Moderator: Mark Zoback, Benjamin M. Page Professor of Geophysics & Director of the Stanford Natural Gas Initiative, Stanford University
Opening Remarks: Senator Lisa Murkowski, United States Senator for Alaska, United States Senate
Panelists: Rachel Kyte, CEO & Special Representative of the UN Secretary-General, Sustainable Energy for All
Ariel Yepez Garcia, Energy Division Chief, Inter-American Development Bank
Omar Mithá, Chairman & CEO, ENH
Abdelmoumen Ould Kaddour, CEO, Sonatrach

1:10pm — 2:25pm
Panelists: Rachel Kyte, CEO & Special Representative of the UN Secretary-General, Sustainable Energy for All
Ariel Yepez Garcia, Energy Division Chief, Inter-American Development Bank
Omar Mithá, Chairman & CEO, ENH
Abdelmoumen Ould Kaddour, CEO, Sonatrach

2:25pm — 3:55pm
Panelists: Rachel Kyte, CEO & Special Representative of the UN Secretary-General, Sustainable Energy for All
Ariel Yepez Garcia, Energy Division Chief, Inter-American Development Bank
Omar Mithá, Chairman & CEO, ENH
Abdelmoumen Ould Kaddour, CEO, Sonatrach

WGC 2018 Industry Focus — Environment & Sustainability

Environment & Sustainability will be one of the key themes discussed at WGC 2018. Sustainable energy development is of crucial importance to the industry with most countries moving towards using natural gas as the cleanest fossil fuel for electricity generation.

Dynamic Current Debate Sessions this week include:
• Renewable Natural Gas: A Global Opportunity
• Strategies To Address Methane Emissions And Improve Our Environmental Footprint
• Financing Natural Gas Projects In A Lower Carbon Energy Future
• The Role Of Voluntary Action In Methane Management (Workshop)
• Viability Of Corporate Social Initiative (Csi) To Manage Risk

The WGC 2018 Exhibition features the introduction of the Sustainable Energy Pavilion where exhibitors include Environmental Defense Fund and the Business Council for Sustainable Energy. Our venue the Walter E. Washington Convention Center is also at the forefront of environmentally-friendly initiatives, including recycling, lighting automation, a state-of-the-art HVAC system for natural ventilation and a serious overall commitment to reducing their carbon footprint.

BP, our Emissions Neutral Champion for WGC 2018, will be offsetting CO2e emissions from all delegate flights and event shuttle buses through BP Target Neutral – which means delegates can enjoy WGC 2018 knowing that they have minimised their environmental impact and helped to take positive action on the climate challenge. The emissions are offset through investment in carbon reduction projects all over the world.

Please refer to the WGC 2018 Event App for full programme information.

Special Events

8:30 Young Professionals Program: WGC 2018 Young Professionals Program continues today in recognition of the key role of young professionals in the gas industry. The program aims to acknowledge, develop and support the industry’s future leaders.

3:00 LNG2019 Drinks Reception — Concourse Booth C2: Join the LNG2019 event team for a networking drinks reception and find out more about plans for the 19th International Conference & Exhibition on Liquefied Natural Gas (LNG2019) to be hosted in Shanghai, China in April 2019. Early bird delegate registration opens today — visit www.lng2019.com to register.

4:00 CWC Group Drinks Reception — Concourse Booth C3: Join the team for networking drinks — find out more about oil and gas events around the world, and how CWC could help you organise your next event.

#WGC2018CONNECT — Pick up your networking lapel pins!

DON’T forget to pick up one (or more!) of these lapel pins from the WGC 2018 Networking Hub in the conference area, designed to represent your main area of interest.
You can use the pins as an enhanced networking tool to seek out other delegates with the same interests or areas you want to know more about. Don’t forget to #WGC2018Connect.
WGC 2018 Innovation Award Winners

The first WGC 2018 Innovation Awards ceremony took place yesterday in the Technical & Innovation Center. The awards celebrate the next major innovations in technology, plus the WGC 2018 Industry Choice Award winner was announced! The 10 category winners are:

- **Liquefied Natural Gas**: Frederic Legrand, LNG Research Program Manager, ENGIE Lab CRIGEN
- **Domestic Utilization**: William Liss, Managing Director, Gas Technology Institute
- **Commercial and Industrial Utilization**: Shira Mare, Research Worker, Tokyo Gas Co., Ltd
- **Digital and Smart Solutions, and the WGC 2018 Industry Choice Award Winner** - Wim van Grunderbeek, Project Manager, Gasunie & Gerben Roseboom, Founder & Director, MapXact
- **Emissions Detection and Mitigation**: Robert Kester, CEO, Rebellion Photonics
- **Exploration & Production**: Hongyan Wang, Professor of Engineering, Research Institute Of Petroleum Exploration Development (RIPED) & China National Petroleum Corporation (CNPC)
- **Gas Transmission, Processing and Storage**: Roberto Cafagna, Managing Director, Nanto Cleantech Inc
- **Gas Distribution**: Michel Hardy, R&D Program Manager, GRTgaz
- **Transportation Driven by Gas**: Robert Bonelli, President & CEO, Adsorbed Natural Gas Products, Inc
- **Gas and Renewables**: Angel Guiterrez, R&D Manager, Nortegas Energia Distribucion, S.A.U

The second WGC 2018 Innovation Awards ceremony will take place today at 11:00 am where the winners of the final five categories above will present.
General information

For up to date event information please download the WGC 2018 Event App. Password: 27wgc2018

The app is an essential tool to help you navigate the event and contains the program for the week, speaker profiles, exhibition layout, networking features and much more.

For inquiries please visit the App Helpdesk near the Registration Area in the Grand Lobby or email apphelp@wgc2018.com.

For media and PR inquiries please visit the CWC and Edelman teams in the Media Center, in Salon A.

Shuttle buses are provided for delegates between all event hotels and the venue — please visit the WGC 2018 Event App or refer to the Pocket Guide for schedule information.

Follow us on social media for event highlights and share your experiences and photos using #WGC2018. Search for 27th World Gas Conference (WGC 2018).

Social media highlights

Jessica Lutz API @ApiLutz
Heard in every single #WGC2018 session so far: 1. #naturalgas is not a bridge fuel, it is the way forward; 2. Natural gas is a necessary partner for intermittent renewables; 3. Emissions are at 20+ year lows because of natural gas.

U.S. Energy Association @USEnergyAssn
@Shell exec Hilary Mercer tells #WGC2018 most of her teammates at @Shell_US are women #WednesdayWisdom #WomenInSTEM

@WGC2018 @PinkPetro #WomenInTech

Susan Sakmar @SusanSakmar
How will new US LNG projects get financed? “There is always money for good projects, but solving the problem of what is the right business model is critical.” Charif Souki, Chairman @TellurianLNG #WGC2018 #ONGT #OOTT

Sarah Cole Smith @SarahColeSmith
Heading back to the #WorldGasConference today. Yesterday was packed with interesting stuff including @TheBlueDevils performance.

Tellurian @TellurianLNG
@TellurianLNG President and CEO Meg Gentle “We need over 100 mt of new LNG” With @Shell Steve Hill and @EXXONMOBIL Jim Muschalk @WGC2018 #TELL

AGA Verified account \ @aga_naturalgas

Nick Stavropoulos, President & COO of @PCGEMe: Most important thing we did was focus on #safety culture. #WGC2018 #WGC2018 #natgas

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Every hotel room for the event is within walking distance of the Convention Center, numerous restaurants, and the major attractions of Washington, DC including the Smithsonian Museums, the US Capitol, the White House and the Washington Monument.

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More information about the promotions available can be found on the WGC 2018 Event App.

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Hungary seeks diverse supply

Landlocked country keen on finding western sources for gas and energy

BEATE SCHJOLBERG
Washington, DC

A Surge in global production of liquefied natural gas and more pipelines are opening up new markets for gas, but some potential customers are not able to take advantage of the rising supply even if they want to.

While western European countries are building LNG terminals to import gas from the US and elsewhere, landlocked countries in Eastern Europe remain entirely reliant on Russian gas and must look to other countries for financial help to diversify their supply.

“If we get support now from our western friends to diversify our sources of gas, it will be successful. But if we lose momentum, then I will have to go to another capital other than Washington to secure the gas future of my country,” Peter Szijjarto, Hungary’s Minister of Foreign Affairs & Trade, said in a panel debate on the future of Europe’s energy market at the WGC 2018 conference in Washington.

European Union member Hungary relies on gas from Russia to cover about one-third of its energy needs. While Europe has several gas transport routes going from east to west supplying the region with gas from its large eastern neighbour, there is little infrastructure in place to bring gas from gas fields or ports in the north or south to central parts of the continent, Szijjarto pointed out.

“We would really like to diversify our sources of energy, but the question is how,” said Szijjarto.

“The answer is big and significant infrastructure investments, in pipelines going north to south and south to north, and in LNG terminals.

“Small countries cannot afford to invest on their own. If we get European or international support we can make it a reality, otherwise we cannot buy from the US or elsewhere to diversify.”

In addition, construction of gas infrastructure should not be politicalised, Szijjarto said, pointing to the planned Nord Stream 2 pipeline from Russia to Germany, which is opposed for political reasons by, among others, Ukraine and the US.

“Energy security for small central European countries should not be a matter of geopolitics,” Szijjarto said.

“From a security of demand and supply perspective, predictability is extremely important. If we start relativising rules so that, for instance, the size of the country determines which things you are allowed to do, then you get an unpredictable environment.”

With no alternative gas supply to complement renewable energy sources, Hungary has instead opted to turn to nuclear power in an effort to cut its greenhouse gas emissions.

“The country is currently building its second nuclear power plant through an agreement with Russia’s Rusatom, financed with a Russian loan covering 85% of the cost. When the plant is completed, 70% of Hungary’s electricity will be produced by nuclear power. Nuclear will make up half of the country’s total energy supply, while the share of gas will slip to 30% from 33%.

“When talking about green and sustainable energy, we consider nuclear as cleanest, safest and cheapest in our case,” Szijjarto said.
Germans see gas in key role

GERMANS are losing faith in a fast transition to renewable energy and increasingly expect the country to rely on natural gas for many years to come, writes Beate Scholberg.

At the same time, the share of Germans who regard the US as a reliable gas supplier has halved in the past three years, a survey conducted by the country’s top oil and gas producer Wintershall showed.

A government report earlier this month revealed that Germany will only cut 3% of its 1990 greenhouse gas emissions by 2020, missing its 40% target.

Though development of renewable energy is accelerating, 43% of Germans now fear that the energy transition will be plagued by bottlenecks and outages, and three-quarters expect the country’s gas needs will rise or at least stay unchanged in the coming years to help keep energy supply stable and affordable, the Wintershall survey showed.

Norway is the gas supplier preferred by 71% of Germans, followed by 52% for Canada, 49% for Russia and 21% for the US, according to the survey. Three years ago, 40% of Germans regarded the US as a reliable supplier, according to Wintershall.

“Of course there can be occasional tiffs between friends and allies. But fair market conditions and mutual trust are the prerequisites for global trade in order to create prosperity and growth,” Wintershall board member Thilo Wieland commented. “It would be good for everyone if the relations with the US were back on track.”

The European Union as a whole will need to import about 400 billion cubic metres per year by 2030, according to Wintershall. When given a choice between pipeline gas from Russia or LNG imports from the US, 65% of the responders in the survey preferred Russian gas while only 13% opted for US LNG.

Germany currently gets almost one-third of its gas via pipelines from Russia, and another 28% from Norway. The country is looking to add another transmission route from Russia with the politically contentious Nord Stream 2 pipeline across the Baltic Sea, but has so far not built any LNG terminals. Some LNG nevertheless finds its way into Germany via neighbouring countries.

About one-tenth of Germans still believe that the energy transition can be accomplished without any other energy sources to back up renewables, the Wintershall survey showed.

About 54% see renewables combined with natural gas as the best solution, while support for timber, oil, nuclear power and coal as back-up sources ranged from 22% to 14%.

YPF sees gas as passport to exports in near future

Argentine producer looking at net swing in stocks as it develops huge unconventional resources at Vaca Muerta

FABIO PALMIGIANI
Washington, DC

ARGENTINE state-owned company YPF expects to become a net exporter of natural gas in the near future, as it works to develop huge unconventional resources in the prolific Vaca Muerta shale formation.

YPF executive vice president of gas and power Marcos Browne said the company intends first to rebuild integration with neighbouring countries in the Americas southern cone, and then take the next step to tap international markets.

“Integration with Chile, Bolivia and Brazil is the intermediate path in between where we are right now and where we would like to be in the next five or six years,” Browne told an audience at the World Gas Conference in Washington, DC.

YPF has been developing shale resources at Vaca Muerta, the second largest unconventional oil and gas play outside the US, since earlier this decade.

According to Browne, more than 800 wells have been drilled for both oil and natural gas in Vaca Muerta over the past five years, including 225 horizontal wells, in 17 pilot projects that YPF has been developing in partnership with companies such as Chevron, ExxonMobil, BP, Shell and Total in the Neuquen basin.

“When I look at the shale revolution in the US, I see we are going through a very similar path in Argentina in terms of the opportunities we have now in our hands,” he said.

“We see a bright future for natural gas, and we see YPF soon becoming an international player in the natural gas arena.”

Browne added YPF still has to deal with some internal challenges before it can become a natural gas net exporter.

“The company still imports huge amounts of regasified liquefied natural gas from Chile via pipeline during winter time to supply its gas-fired thermoelectric plants to heat its nearly 44 million citizens, most of whom are located in the Buenos Aires region.

“Once the integration in the southern cone starts to happen, we need to find a way to combine our surplus of production capacity in the summer season with our needs to keep importing LNG in the winter,” he explained.

“The better we integrate with the rest of the world, the better we will develop liquefaction facilities to be able to export LNG in the summer. Integration is the name of the game — first in the region and later in the international markets.”

He said Argentina’s natural gas needs are minimal compared to the size of the resources that can be ultimately developed in the Vaca Muerta shale formation.

According to Browne, Vaca Muerta resources are enough to supply the Argentinian market for a period of between 200 and 300 years.

“All of the sudden we are realising we are going to be net exporters of natural gas in the very near future,” Browne said.

Vaca Muerta is a world-class resource similar to the Permian basin in the US in terms of productivity.

Research company Wood Mackenzie expects output from the seven most advanced developments in Vaca Muerta to double 2016 levels by the end of the year to 113,000 barrels per day of oil equivalent, potentially peaking at 1.25 million boepd by 2031.
GAS MARKETS

China drives Asian LNG demand

Beijing leads the way but others are following close despite all facing challenges

AMANDA BATTERSBY
Washington, DC

BURGEONING gas demand in Asia, led by China, is continuing to drive the global liquefied natural gas industry, but individual nations face challenges that have the potential to slow — or even derail — this gas demand growth.

Challenges facing the natural gas industry in Asia and China include the seasonal imbalance between supply and demand, with 2017 seeing China’s largest supply shortage, Beijing Gas Group chairperson Li Yalan told the World Gas Conference 2018.

Asia and China also lack sufficient gas infrastructure including storage and pipelines, which hampers the faster growth of gas utilisation. The storage situation is particularly critical in China where storage capacity is equivalent to just 3% of annual consumption, she said.

Another challenge for regional gas consumers is the so-called “Asian Premium”, as many nations rely heavily on imports of liquefied natural gas.

“The Asian Premium undermines the capacity of Asian developing countries to use gas or expand gas [utilisation],” said Li.

The Beijing administration has thrown its support behind the natural gas industry. The China National Development & Reform Commission has spelled out key pricing policies such as gas transmission companies’ return on gross investment being capped at below 8%.

By 2020, gas should account for 10% of China’s energy mix with volumes in excess of 300 billion cubic metres, and this is forecast to increase to 400 Bcm by 2024 when China will host the WGC, said Li.

Indonesia’s economy has grown by around 5% per annum in recent years and its GDP is forecast to increase at a similar rate in the coming years.

Indonesia’s Minister of Energy & Mineral Resources, Ignasius Jonan, said that, alongside this economic upturn, the Jakarta government expects the republic’s gas demand to increase by 1.2 or 1.3 times that of its GDP annual growth.

One driver of that demand growth is that the government has mandated that no new coal-fired plants other than those already approved can be built on Indonesia’s most populous island of Java.

Ignasius told delegates that the government is focused on increasing its utilisation of indigenous gas resources and that local production is set to rise.

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BHGE sees gas growth in the mix

On the eve of WGC 2018, Upstream surveyed a number of leading figures in the International gas industry on topical issues shaping the sector. Kevin Wetherington, president North America, Baker Hughes, a GE company, responds

Upstream: How do you see the prospects for the gas sector over the coming decade and beyond? Kevin Wetherington: Consumers and various market sectors are better recognising the ability of gas to serve many energy needs — from power generation, to industry and manufacturing, to transportation. Gas is considered to be a more attractive solution than coal for new feedstock, a resource that helps meet the need for large quantities of reliable energy, while also reducing emissions attributed to electric generation. Gas is a fundamental component of a sustainable global energy portfolio.

As the global energy demand is expected to grow dramatically over the coming decades, this will influence the future “energy mix” and the likely increased adoption of gas solutions. The availability, flexibility and cost of natural gas and LNG will remain fundamentally important factors in the future. In fact, gas consumption is expected to grow faster than any other hydrocarbon through 2040 and, by 2050, gas is forecasted to match oil as an energy source.

Upstream: How big a part does the gas sector play in your business and how has that changed in recent years? Do you see the role of gas in your business gaining in importance over the years ahead? Kevin Wetherington: Gas-related technologies and services have been an important part of our portfolio since the inception of our company. One of the first nuclei of the company started as a compressor producer, but then by expanding progressively our scope and portfolio and the applications that we serve, to really become what we are today, we became the first fullstream company that can serve the entire oil and gas value chain.

As we see a general trend in the energy market to rely more and more on gas as a more viable and sustainable solution, playing a key role in this energy transition will certainly be reflected in our business.

Upstream: What are the main challenges that the gas sector faces? Kevin Wetherington: The world has an abundance of natural gas, so monetising this resource will be key. Generating demand for that gas and ensuring that the needed gas gets to market, represents an economic, logistical, and political challenge. Reducing carbon footprint, including gas flaring and control of emissions, along with new pressures for diverse energy solutions will continue to represent additional challenges.

As we see the share of energy consumption shifting more to gas over the next decades, many of our customers are relabelling their portfolios to reflect this market trend. This means an increased appetite for LNG, which after a few years of lower market demand, is now seeing new projects receiving final investment decisions. This includes Cheniere’s Corpus Christi facility, where we will be providing the turbomachinery equipment for their third LNG train.

Through the recent downturn, our industry has worked diligently to reduce the structural cost of production, while making more asset types economical, with improved efficiency and productivity, which are crucial in a segment that has historically required larger investments than others. Our ability to move products, people, capital, and ideas around the world.

Governments can be tremendous partners in continuing to support open trade markets and global supply chain advancements, supporting foreign investment so that we can keep providing better products at lower cost, while promoting economic development and jobs, along with investments in talent development to ultimately raise standards of living everywhere.

Upstream: Can the industry persuade public opinion that gas is part of the solution for the energy transition rather than part of the ‘fossil fuel’ problem? If so, what more should be done by the industry to try and win that argument? Kevin Wetherington: It is well documented that growth in energy demand will continue, with both hydrocarbons and renewables needed to meet that demand. Gas and renewables can be complementary, with better environmental outcomes. Industry experts agree that gas is needed, along with energy generated by solar and wind, to handle the peaks and troughs in energy production and demand. The industry needs to better publicise how much work is being done to help ensure that the benefits of hydrocarbon production continue to outweigh the environmental impacts. The industry has brought a relentless focus on rigorous operating standards and productivity improvements to decrease the industry’s environmental footprint, while meeting growing demand. There is a critical mass of operators who see an urgency in tackling methane emissions and many voluntary programs exist such as the Global Methane Initiative, the ONE Future Initiative, the Oil and Gas Climate Initiative (OGCI), EPA’s Natural Gas Star programme, and API’s Environmental Partnership.

Upstream: What is your company currently doing to control emissions and what more do you plan to do? Kevin Wetherington: As an equipment and solutions provider, we use our technology to help our customers reduce their environmental footprint by:

a) making operations more efficient and increasing productivity, while decreasing emissions
b) bringing new technologies to market that improve the ability to locate and eliminate unintended (ie, fugitive) emissions.

Our newest LM6000 gas turbine achieves 40% lower NOx emissions, with 20% lower total cost of ownership for the customer, and 20% more power, along with FlareX3 — a software/hardware package that combines ultrasonic diagnostics and pre-programmed algorithms to provide real-time flare control, which improves performance of the flares and also greatly reduces the energy consumed in managing the flare, are examples of how we use technology to make operations more efficient.

For technologies that locate and eliminate emissions, we have the Avitas drone programme that utilises sensors to detect fugitive methane gas emissions from both well sites and other upstream infrastructure used to move or store hydrocarbons in either liquid or gaseous form and the SENTRY fugitive methane detection product. Our role is to develop the technologies required by our customers to achieve their carbon goals.

As it relates to our own carbon footprint, we measure and publicly report our GHG emissions and intensity. We publish those numbers in our annual sustainability report, as part of our rigorous measurement and deliberate efforts to reduce emissions, as well as our consumption of water and energy. We have aggressive goals in our programme, dedicated to driving those numbers down. Reductions are driven largely by energy efficiency measures within corporate logistics and at our manufacturing plants, product and service innovations that drive down the GHG emissions inherent in our own operations, and the application of LEED standards to our building and facility maintenance programmes.
Woodside boss says operators have listened and commoditised gas markets more

Woodside Petroleum chief executive Peter Coleman has said that the market is becoming more flexible already, with changes such as an influx of new producers and flexibility of supply leading to more commoditised products.

“GAS markets have become increasingly commoditised and are ‘really opening up’ through a series of positive changes such as an influx of new producers and flexibility of supply, according to Woodside Petroleum chief executive Peter Coleman.

“The market is becoming more flexible already. We have listened to the buyers and the reality is it has happened already – and it is morphing into more commoditised products today,” the boss of the Australian independent said at WGC 2018.

“The issues around the security of supply today have for the most part gone and they have gone for a number of reasons,” he said, adding that things that used to be a barrier of entry to the market no longer are.

One major impediment to entry to liquefied natural gas markets used to be access to LNG processing technology, which was held by a smaller number of industry players. However, this technology, much like gas markets, has become increasingly commoditised.

Another major positive change is the number of new producers entering the market, Coleman, who has led Woodside since joining in mid-2011, said.

“Even in Australia in the time I have been in this role, the number of players supplying the market just out of Australia has doubled.

“Around the world, if you look at the discoveries over the last five years or so, and new resources that are yet to be developed, you have seen the US open up — which is absolutely fabulous — you have seen Mozambique that is on its way to being developed, and of course Western Canada. The list just goes on.”

US independent Anadarko Petroleum is expected to make a final investment decision on the proposed Area 1 LNG development in Mozambique, while partners UK supermajor BP and US independent Kosmos Energy are closing in on sanction of the Tortue-Ahmyem floating LNG scheme straddling the maritime boundary between Senegal and Mauritania.

“Who would have thought just a few years ago that Yamal would be producing and sending gas into Asia through the northeastern routes during the summer,” Coleman said. “It is pretty much an open market today if you want to play in that market.”

Pricing mechanisms are also changing, with an increased shift away from crude oil-linked pricing mechanisms, while long-term offtake deals of 20 years are increasingly falling out of favour.

“Consumers now can pick their pricing point. It is not going to be too long in the future where you’ll have an app on your phone and you will be able to go and pick pricing points. It is not going to be too long in the future where you’ll have an app on your phone and you will be able to go and pick pricing points, just like you do with your electricity today,” Coleman said.

Charif Souki, chairman of US LNG profile company Tellurian, agreed with Coleman that gas markets have changed significantly in recent years.

“We are now in a commodity business — and in a commodity business, the low-cost supplier prevails,” he said.

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“We are now in a commodity business — and in a commodity business, the low-cost supplier prevails,” he said.
Baker Hughes (BHGE) has won an International and GE-controlled and a subsea production system umbilicals, risers and flowlines, McDermott and BHGE net Shwe phase two job hunting a coveted award competing with TechnipFMC in a two-horse race for the coveted award. The company has signed sale and purchase agreements with start-up Venture Global, which would supply cargoes from its proposed Calcasieu Pass and Plaquemines LNG facilities, and with the Sempra-led Port Arthur LNG development, which is developing a plant in Texas. The agreements call for PNGiG to purchase 2 million tonnes per annum of LNG over a term of 20 years from each supplier. Venture Global’s Calcasieu Pass LNG facility is expected to be completed in 2022, while the Plaquemines LNG facility is due to be finished in 2023. Car-goes from Port Arthur LNG are expected to be supplied starting in 2023. Sempra is developing the Port Arthur LNG facility with Australia’s Woodside. The project envisages two natural gas liquefaction trains with total capacity of 13 million tonnes per annum, feed gas pre-treatment facilities, natural gas liquids and refrigerant storage, up to three LNG storage tanks, two marine berths and associated facilities. Calcasieu Pass LNG includes a new 10 million tonnes per annum facility and 23 miles (37 kilometres) of 42-inch-diameter pipeline in Louisiana’s Cameron Parish. Meanwhile, the Plaquemines LNG is planned as a 20 million tpa facility south of New Orleans. The announcements move the projects closer to a final investment decision. Petrobras asset sale BRAZILIAN oil giant Petrobras has agreed a deal to sell its fuel distribution, gas and logistics business in Paraguay for $383.5 million, as part of its ambitious strategy to raise up to $3.1 billion through divestments by the end of the year. Local player Grupo Copetrol is acquiring 197 service stations, representing a market share of 18% in Paraguay, 113 convenience stores and a stor-age terminal. Petrobras received a pay- ment of $49.3 million on Wednesday, and the remaining $334.2 million will be deposited in an escrow account on the closing date of the transaction. Petrobras has so far raised about $1.48 billion in its divestment initiative for the 2017-2018 period. The agreement includes the sales of a 25% working interest in the Roncador field to Norway’s Equinor, a 100% stake in the Arauao onshore field to Eneva, two jack-up rigs to Rowan, its Paraguay retail business and the initial public offering of a 28.5% stake in its fuel distribution subsidiary BR Distribuidora.
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Call for ‘stable’ US policy

THE US needs to create a "stable and durable" energy policy that will help the integration of natural gas and renewables, according to Colorado US senator Michael Bennet, writes Anamaria Deduleasa.

Opening a WGC 2018 session, the Democrat said more US states need to follow in the footsteps of Colorado, which has managed to preserve oil and gas jobs while creating others in renewable energy.

"Increasingly there's a recognition in states like Colorado, in the private sectors and capitals around the world, that we need both responsible gas production and renewables to create jobs, to meet energy demands and fulfill our responsibilities to the next generation," said Bennet. According to Bennet, the world is expected to invest around $7 trillion in solar and wind energy by 2040, at the same time as natural gas production is expected to grow, while prices for the latter will drop.

Bennet said Colorado has embraced energy transition because it "makes economic sense".

"Since 2005, we dramatically expanded natural gas production while increasing solar and wind. And through it all, we preserved our 56,000 oil and gas jobs and added 13,000 new renewables jobs," he said.

"The lesson from Colorado is that a durable policy helps create certainty for businesses and requires constructive engagement in the energy sector."

However, Bennet criticised the current US administration for failing to follow "facts" when implementing policy, and urged state and industry players to take a stand.

"Instead of embracing the market, there are certain political actors that try to manipulate it by slapping tariffs on solar panels and steel, and by trying to force the federal government to subsidise uneconomic coal plants," Bennet said.

"We need to stop lurching back and forth in our energy policy as a country and to do that we need to construct a durable policy. Businesses don't have the luxury of ignoring facts," he added.

OVERVIEW

Looking to the future: Laurent Vivier, president of gas for Total

Gas and renewables can be the ‘ideal’ partners

Commentators say fossil fuel has key role as long as prices stay competitive and work on clean production continues

ANAMARIA DEDULEASA

Washington, DC

NATURAL gas and renewable energy are the “ideal pairing” to meet the world’s future energy needs, a panel at WGC 2018 was told, as long as gas prices remain competitive and fossil fuel resources can be produced as cleanly as possible.

A partnership between natural gas and renewable energy sources is already happening, with the two sectors increasingly helping to meet energy needs.

However, the relationship has not been embraced by all energy players as a lasting one. Laurent Vivier, president of gas for French group Total, said co-operation between gas and renewables is still not “obvious on a global level”.

He said that, while some industry actors claim the two are the “perfect combination”, it should remember that there are alternatives and challenges in making them work well together in the long term.

“A lot of people are claiming that we do not need natural gas in the energy transition and we should get rid of it since it is a fossil fuel - that we only need it on a short-term basis and not a long-term one (and) that storage, batteries and renewables are the answer,” Vivier said.

“The answer to this is that natural gas needs to stay competitive and we need to be careful that we are not complacent because a lot of people in the renewables industry do not like natural gas as they associate it with fossil fuels. Natural gas needs to work to differentiate itself from other resources. It needs to become more acceptable so that this combination is not just for the short term,” he said.

To ensure its future, Barry Perry, chief executive of Fortis, said the gas industry should work to position itself as a “foundation fuel” and not as a “transition fuel”.

He said the complementary nature of the two energy sources is a “match made in heaven”, despite the existence of other solutions, as long as the industry can meet future global energy demand.

Chris Voell, director at AGSTAR - part of the Climate Change Division at the US Environmental Protection Agency - flagged up the need to help “clean up gas” and reduce emissions. He argued in favour of what he called “renewable natural gas” — or biogas.

Didier Holleaux, executive vice president of French utility Engie, is also “convinced gas and renewables were complementary”, based on his experience in France, where a combination of different resources are necessary to meet demand.

However, he echoed Voell’s view that the industry needs to make “gas clean, and as quickly as possible”. He said the industry should not focus just on volume but on saving and storing energy.

“Our first duty as a gas company is to help our customers to save energy, be more efficient. Gas is valuable.”