

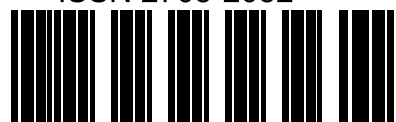


THE ENERGY REPUBLIC

NOG ENERGY WEEK SPECIAL PUBLICATION | DOUBLE EDITION | MAY - JULY 2026



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*Ronald Adams,
SNEPCO's MD*

EXCLUSIVE INTERVIEW

**Ronald Adams, SNEPCO's
Managing Director**

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CREATING GLOBAL OPPORTUNITIES

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International Location:
102 Avenue, des Champs
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NOG ENERGY WEEK 2026

Advancing Energy Ambitions for Competitive & Resilient Economies

Dear Executive,

Welcome to our NOG Energy Week 2026 Special Edition.

Each year, NOG Energy Week brings together industry leaders, stakeholders, policymakers, investors, innovators, and companies who are shaping the future of Africa's energy sector. This special edition celebrates not only another milestone but also the remarkable journey of the industry, which has continued to evolve with resilience, ambition, and purpose.

The global energy sector is undergoing one of the most profound transformations in history. As nations strive to balance energy security, affordability, and sustainability, Africa stands at a defining moment. Blessed with abundant oil and gas resources and immense renewable energy potential, each African country has a unique opportunity to build an energy future that fuels economic growth while embracing local content development, innovation, and environmental responsibility.

In this edition, we covered a variety of topics, which include exclusive interviews with senior executives and stakeholder commentaries on emerging trends, updates on major projects, policy perspectives, local content development, investment opportunities, and inspiring stories of organizations and individuals driving excellence across the energy value chain. We also produced a special report about the African Upstream Investment Outlook featuring the countries attracting capital investments in Africa.

NOG Energy Week has always been more than an exhibition or conference. It is a platform where ideas become partnerships, conversations inspire action, and opportunities translate into tangible progress.

As you explore this publication, we invite you to share your comments on the future of the African energy sector. We extend our sincere appreciation to our contributors, partners, advertisers, and readers for making this special edition possible.

Together, we are not simply discussing the future of energy—we are building it.

Best regards,
Ndubuisi Micheal Obineme
**Managing Editor,
The Energy Republic**



THE ENERGY REPUBLIC
CREATING GLOBAL OPPORTUNITIES

ABOUT THE ENERGY REPUBLIC

The Energy Republic is an international publication and business platform covering and publishing industry content in the energy, aerospace, aviation, business, technology, maritime, manufacturing sectors coupled with opportunities on natural gas, hydrogen, ammonia, solar energy, wind energy, hydro energy, geothermal energy, bioenergy resources, etc.

Our Value Propositions

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Regulatory advocacy by effective engagement with regulatory bodies, relevant Government MDAs and key stakeholders.

Media and Publicity

Deepen Natural Gas utilisation and champion gas-based industrialisation.

Business Development

Promote best practices in gas sector operations and management

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Spotlight on United States 250 Anniversary

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NOG SPECIAL EDITION



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REDEFINING AFRICA'S
ENERGY FUTURE



America at 250: Secretary Wright spotlights US energy priorities, AI and nuclear renaissance

“America's Superpower is natural gas. It's our largest and cheapest source of electricity. It's our main heating fuel. It's our main industrial fuel for petro-chemicals and fertilizer. Natural gas is key for the United States to lead in AI and make it economically compelling to bring back energy-intensive manufacturing to our country.” - **Chris Wright, US Secretary of Energy**

As the United States marks the historic milestone of its 250th anniversary, The Energy Republic traces its remarkable 250-year energy journey through seven eras, from 1776 to 2026. We explore the record-breaking milestones and forces reshaping US energy dominance, including AI-driven ambition, nuclear renaissance, LNG diplomacy, and renewable energy development.

America 250 represents more than a reflection on the signing of the Declaration of Independence in 1776. It is an opportunity to recognize the courage, innovation, resilience, and diversity that have defined the American story for many decades.

When the Declaration of Independence was signed on July 4, 1776, wood was indeed the largest and primary source of energy in the United States, providing the vital fuel needed for daily survival

By Ndubuisi Micheal Obineme

before the widespread shift to coal, oil, and renewables. 250 years later, the United States is the world's largest producer of oil, natural gas, and LNG; a record electricity generator; a rapidly expanding renewable energy industry; and a nation redefining its energy architecture around artificial intelligence, advanced nuclear, and a reconstituted fossil fuel export superpower.

US energy transition journey

The United States has experienced four major energy transitions since its founding — each driven by technological innovation, economic pressure, or geopolitical crisis. Understanding these transitions is essential for reading today's upheaval. As the EIA has noted, the history of US energy is one of 'significant change as new forms of energy were developed,' and it has always found ways to power its ambition.

◀ **1776:** Declaration of Independence signed. Wood is the dominant fuel — used for heating, cooking, and lighting. Watermills drive early mills.

The new nation is 100% renewable (biomass) by default.

◀ **1780s:** Coal mining begins in Virginia and Pennsylvania. Early industrial uses in smithing and iron-making lay the groundwork for the next energy transition.

◀ **1830s–50s:** The railroad era drives coal demand explosively. Steam engines replace water wheels in textiles and manufacturing. Coal begins its ascent toward national energy dominance.

◀ **1859:** Colonel Edwin Drake strikes oil at Titusville, Pennsylvania — the first commercially successful oil well in the US. The petroleum age is born. Kerosene replaces whale oil for lighting within a decade.

◀ **1882:** Thomas Edison opens the Pearl Street Station in New York City — America's first commercial electricity power plant, powered by coal. The electrical age begins.



The age of Edison and Tesla transforms domestic and industrial life.

◀ **1885–1950:** Coal is the dominant energy source for ~65 years. In the 1910s, the US is the world's largest coal producer with 750,000 miners producing 550 million tons annually. Coal powers steel, trains, and electricity generation.

◀ **1901:** The Spindletop gusher blows in Beaumont, Texas. The modern oil industry is born. Within years, Standard Oil controls vast swathes of US production. The internal combustion engine — and with it, American car culture — begins its rise.

◀ **1930s–40s:** Natural gas emerges as a major fuel. The Hoover Dam (1936) opens, the first mass-scale US hydroelectric facility. Rural electrification expands under the New Deal. WWII industrial energy demand reshapes US production.

◀ **1950:** Petroleum overtakes coal as the most consumed energy source in the US — a position it has held for 75 years: the post-war automobile boom and suburban sprawl cement oil's central role in American life.

◀ **1957:** The Shippingport Atomic Power Station in Pennsylvania becomes America's first commercial nuclear power plant. The nuclear age begins. By the 1970s, nuclear is supplying meaningful shares of US electricity.

◀ **1958:** Natural gas surpasses coal in US energy consumption for the first time. Gas becomes the fuel of choice for residential heating and commercial cooking across the growing suburbs.

◀ **1973:** OPEC oil embargo shocks the US economy. Overnight, energy security becomes a national priority. Speed limits are lowered, daylight saving time extended, and the Department of Energy is established in 1977. Renewables receive their first serious federal investment.

◀ **1979:** Second oil crisis follows the Iranian Revolution. Jimmy Carter installs solar panels on the White House (removed by Reagan in 1986). The US passes the Public Utilities Regulatory Policies Act (PURPA), planting seeds for independent power producers.

◀ **1980s–90s:** Deregulation of natural gas markets spurs pipeline investment and broadens gas access. The Clean Air Act Amendments (1990) reshape coal markets. Wind power emerges in California. The Internet era spikes data centre energy demand for the first time.

◀ **2000s:** The shale revolution begins, initially in natural gas. The Barnett Shale in Texas proves that hydraulic fracturing can unlock vast previously inaccessible reserves. Coal begins a long structural decline as cheap gas floods power markets.

◀ **2008:** The shale oil revolution — 'The Great Fracking Boom' — begins in earnest. US crude production, which had fallen from 9.6 million bpd in 1970 to 5 million bpd by 2008, begins an unprecedented reversal.

◀ **2012:** The US overtakes Russia as the world's largest natural gas producer. The energy independence narrative — unthinkable in 1973 — begins to take shape.

◀ **2016:** The US exports LNG for the first time from the Lower-48 (Sabine Pass, Louisiana). A structural transformation of global gas markets begins.

The Paris Agreement is signed — then withdrawn by the Trump administration.

◀ **2017:** The United States becomes the world's largest oil and gas producer, surpassing Saudi Arabia and Russia. US crude production surpasses 13 million bpd for the first time by late decade.

◀ **2019:** The US becomes a net energy exporter for the first time since 1952 — a watershed moment. Coal consumption falls to the lowest level in EIA records dating back to 1949.

◀ **2022–23:** Russia's invasion of Ukraine reshapes global energy markets. US LNG exports surge to Europe. The Inflation Reduction Act (2022) commits \$369 billion to clean energy — the largest climate investment in US history. Renewables overtake coal in US consumption for the first time since the 1880s.

◀ **2024:** US total energy production hits 103.3 quads — a record. Net energy exports reach 9.3 quads, the highest in records dating to 1949. Electricity generation rises to its highest since 1949. AI-driven data centre demand begins materially reshaping grid planning.

◀ **2026:** US marks the 250th year of independence with energy records across every major category: oil production (13.6M bpd), LNG exports (100+ MMt — first country ever), electricity generation (4.43 TWh), total energy production (107 quads — 4th consecutive record), natural gas consumption (91.4 Bcf/d record).



Wind and solar reach 17–19% of electricity generation. The AI energy inflection is underway.

The United States of America has enormous energy potential that has transformed the country from a net energy importer into an energy-independent and energy exporter.

Despite the transition to renewable energy building momentum globally, President Trump has recalibrated the United States energy sector to the fossil fuel industry. President Trump says the fossil fuel industry plays a key role in the United States' energy security and in positioning the US to chart its path in global energy markets.

The Trump administration is pursuing the most aggressive pro-fossil fuel policy agenda in modern US history, declaring a 'national energy emergency,' with the establishment of the US National Energy Dominance Council, lifting the Biden-era LNG export moratorium on Day One, halting offshore wind auctions, and championing coal and nuclear as grid reliability pillars.

However, this raises serious concerns about climate change, as critics say Trump's energy policy may jeopardize the progress made on the energy transition, particularly for the renewable energy industry in the United States.

Despite the United States slowing its energy transition due to policy reversals on fossil fuels, DNV said in its report the global shift towards renewable energy continues.

According to DNV's Energy Transition Outlook, US policy reversals and renewed support for fossil fuels are expected to delay emission reductions by about five years, with annual CO₂ emissions projected to be 500 to 1,000 million tonnes higher than previously forecast.

DNV forecasts a slightly slower transition, with the energy mix to be split 51%-49% between fossil and non-fossil fuels in 2050. Likewise, 2050 global CO₂ emissions are now forecast to be 4% higher compared to last year's Outlook.

Exploring the US energy policy on fossil fuels: Speaking on the United



States energy policy on fossil fuels, the US Secretary of Energy Christopher Wright has outlined the critical role of natural gas in America's energy security, describing it as the nation's "superpower" while outlining the complementary roles of nuclear power and renewable energy in delivering affordable, reliable, and secure energy.

Secretary Wright said the Trump administration is pursuing an energy strategy focused on expanding domestic energy production to strengthen the U.S. economy, enhance national security, and support the country's leadership in artificial intelligence (AI) and advanced manufacturing.

"America's superpower is natural gas. It's our largest and cheapest source of electricity," Wright said while speaking at CERAWeek 2026 by S&P Global in Houston, covered by The Energy Republic. "It's our main heating fuel. It's our main industrial fuel for petrochemicals and fertilizer. Natural gas is key for the United States to lead in AI and make it economically compelling to bring back energy-intensive manufacturing to our country."

Wright noted that the United States has approved more than 18 billion cubic feet per day (Bcf/d) of new liquefied natural gas (LNG) export permits over the past 13 months, further cementing the country's position as the world's largest natural gas exporter.

He also highlighted the affordability of pipeline-delivered natural gas, noting that, on an energy-equivalent basis, it costs less than 50 cents per gallon of diesel fuel, making it an attractive energy source for industries and consumers alike.

While emphasizing the growing importance of natural gas, he acknowledged that oil remains the world's most important energy source because of its unmatched energy density and flexibility.

"No oil, no modern world," he said, adding that although oil continues to lose some

market share to increasingly abundant and lower-cost natural gas, it remains indispensable to the global economy.

Grid Reliability Requires Dispatchable Power

The US Energy Secretary pointed to the severe winter weather that affected 22 eastern U.S. states in January, arguing that dispatchable energy sources prevented widespread blackouts during periods of peak electricity demand.

According to him, natural gas generation increased by 47% during the peak-demand week compared with the same period a year earlier, while coal generation rose by 24%. Nuclear generation remained stable, providing dependable baseload power regardless of weather conditions.

By contrast, he said wind generation declined by 40% during the same period, underscoring the importance of maintaining reliable generation capacity to respond to surging electricity demand.

"When electricity demand rises high, supply must meet that demand," Wright said. "What matters is delivering energy when demand is at its peak."

Using New England as an example, he said wind, solar and battery storage together supplied only about 2% of electricity during peak demand during the January period, while electricity generated from waste and biomass contributed approximately 3%.

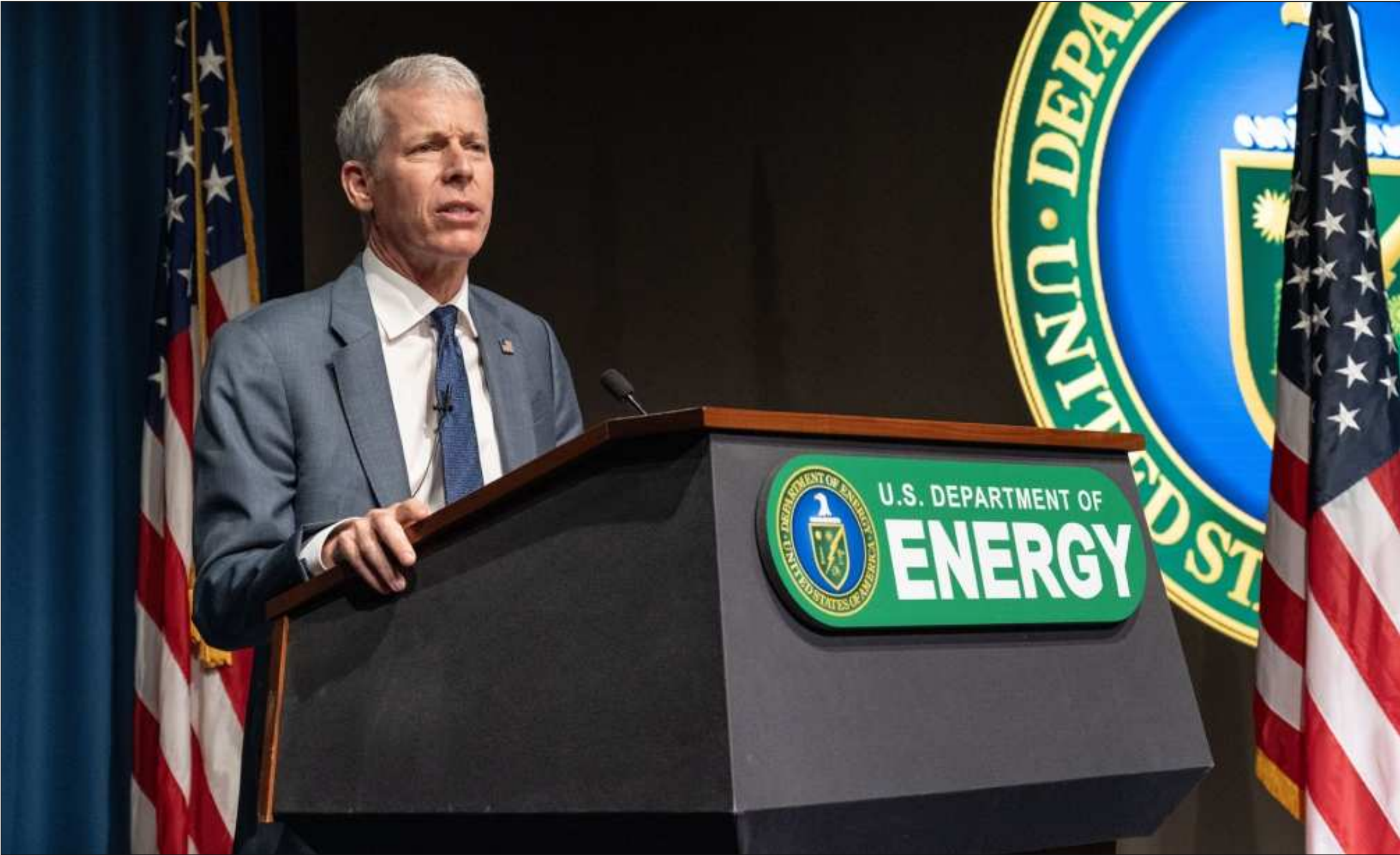
"The challenge is not simply having installed capacity," he said. "The challenge is ensuring electricity is available precisely when it is needed."

Nuclear Renaissance Underway

Secretary Wright also outlined the administration's efforts to accelerate the deployment of next-generation nuclear technologies, describing nuclear energy as a cornerstone of America's long-term energy security.

He said the administration remains on track to have three next-generation nuclear reactors operational by July 4 as part of President Trump's goal to mark the nation's 250th anniversary with significant progress in advanced nuclear development.

Although the reactors will not immediately begin supplying electricity to the grid, Wright said they are expected to have fully operational nuclear systems capable of generating the heat required for future electricity production.



Notably, the United States Department of Energy is also advancing reforms to nuclear permitting while expanding domestic uranium enrichment, fuel fabrication, recycling capabilities and long-term waste management through a competitive state-based approach for hosting nuclear innovation campuses.

Wright revealed that interest in advanced nuclear has received strong support from states, national laboratories and private companies and has been "tremendous," with significant progress also being made in fusion energy research.

Broad Energy Innovation Continues

Beyond fossil fuels and nuclear power, Wright said the Trump administration is also supporting next-generation geothermal energy, advanced energy storage technologies and new solar innovations as part of a diversified energy portfolio.

"Our mission remains clear: grow energy, improve American lives, strengthen American security and strengthen the world's energy security," he said.

International Energy Cooperation

Wright also highlighted ongoing international cooperation to safeguard global energy security, citing recent discussions within the International

Energy Agency that led to agreement on releasing 400 million barrels of strategic petroleum reserves to offset disruptions to oil flows through the Strait of Hormuz.

He noted that Japan played a leading role in the coordinated release to help stabilize supplies to Asian refineries and minimize disruptions to global fuel markets.

"Our international goal is simple—empower our allies with affordable, reliable and secure energy," Wright said. "Energy trade and infrastructure tend to create commerce, not conflict."

Energy Policy Should Be Grounded in Reality
Concluding his remarks, Wright urged policymakers to adopt a more pragmatic approach on energy policy.

"Discussions about energy need to be less political, less ideological and less cult-like," he said. "The conversation should be grounded in two things: humans and math."

He stressed that expanding access to affordable and reliable energy is essential for economic development worldwide, particularly in developing regions where improved electricity access and clean cooking fuels can significantly enhance living standards. "Limiting energy limits human potential. Expanding energy expands opportunity," Wright stated.

He closed by reiterating what he described as two guiding principles for energy policy. "Energy is life, and the world needs massively more energy. The modern world is energized by and made of hydrocarbons."

Wright added that President Trump's energy agenda is designed to reduce energy costs for American households and businesses while supporting economic growth.

"Lower cost, higher wages," he said. "That's the economic agenda."

Conclusion

On its 250th anniversary, the United States stands at another energy inflection point — as consequential, in its own way. The convergence of AI-driven electricity demand, a nuclear renaissance, a solar ambition, and record LNG exports means that the United States has an unbroken record of adapting its energy system to meet whatever its economy demands next. Wood powered independence. Coal powered industrialisation. Oil powered prosperity. Gas powered flexibility. And now, a portfolio of renewables, nuclear, and AI-driven ambition is being assembled to power the next era of US energy dominance.



Argent LNG bets on US energy dominance with \$20b LNG project



Jonathan Bass, Argent LNG CEO

Argent LNG is making significant progress on the development of its 25 million tonnes per annum (MTPA) LNG export terminal at Port Fourchon, Louisiana, positioning the project as one of the most advanced and strategically important LNG export facilities under development in the United States.

Speaking in an interview with The Energy Republic, Argent LNG's Chief Executive Officer Jonathan Bass outlined the company's vision to deliver long-term energy security, economic opportunities across the United States and supporting reliable energy access for allies and developing economies worldwide.

"Energy security is the foundation of economic stability, national sovereignty, and global peace," said Bass. "Argent LNG was established to meet growing global baseload energy demand through a strategic, values-based approach that prioritizes resilience, affordability, and environmental responsibility."

Major Project Milestones Achieved

The Argent LNG Terminal has reached several key development milestones as it advances through the U.S. regulatory process. The project has received approval for pre-filling and waterway assessment by the U.S. Coast Guard, secured a Notice of Scoping, and has progressed to filing with the Federal Energy Regulatory Commission (FERC). Designed as a modular and scalable LNG export facility, the project is being developed in phases to maximize efficiency, reduce costs, and enhance long-term competitiveness in international markets.

Internationally, the company has established strategic agreements with Türkiye and signed a Heads of Agreement (HOA) for the supply of 5 MTPA

By Ndubuisi Micheal Obineme

of LNG to Bangladesh. Argent LNG has also signed an agreement to expand the terminal site to approximately 900 acres, supporting future capacity growth.

Located at Port Fourchon, one of America's premier energy logistics hubs, the terminal benefits from deepwater access, proximity to major U.S. natural gas pipelines, hurricane-resilient infrastructure, and a skilled regional workforce.

Argent LNG CEO notes that the facility is the only LNG export project located within a government-owned port in the United States and operates under a 90-year lease with the Port of Fourchon. The project is expected to commence operations between the fourth quarter of 2029 and the first quarter of 2030.

Driving American Manufacturing and Local Economic Growth

Speaking further, Bass says domestic economic development is central to the project's strategy through its "Louisiana First" and "America First" initiatives.

According to him, the company is prioritizing U.S.-manufactured equipment, American technology providers, Louisiana-based contractors and suppliers, and regional workforce development. Partnerships with universities and colleges are also being established to develop local talent for long-term careers in the energy industry.

He said the construction and operation of the terminal are expected to create between 3,000 and 4,000 jobs while generating significant secondary economic activity across housing, food services, skilled trades, transportation, retail, and other local industries.

"Our goal is not simply to build an LNG terminal," Bass said. "We are creating generational employment opportunities and strengthening America's industrial base through manufacturing, engineering, skilled trades, and export-driven growth."

Supporting Global Energy Security

Upon completion, Argent LNG aims to supply reliable LNG to U.S. allies and emerging economies seeking secure, affordable, and dependable energy supplies. The company's target markets include Europe, particularly countries working to diversify away from unreliable energy sources, as well as rapidly growing economies across Asia, Africa, and Latin America. Argent LNG is also engaged in discussions with several African countries to expand access to reliable baseload energy.

"We believe developing nations deserve reliable and affordable energy to build infrastructure, grow their economies, and improve quality of life," he said. "Argent LNG is committed to partnering with countries that share our values of transparency, cooperation, and the rule of law to deliver long-term energy security."

Once operational, the Argent LNG Terminal is expected to become a significant contributor to global energy security while reinforcing the United States' position as a leading supplier of reliable liquefied natural gas.



THE RACE FOR CRITICAL MINERALS

United States to Start Rare Earth Processing in Next Five Years - Harvey Kaye

As the global competition for critical minerals intensifies, Harvey Kaye, Executive Director of US Critical Materials, shares insights in this interview with Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, about the United States' strategy to strengthen domestic critical mineral production and reduce dependence on China.

Apparently, China controls approximately 90 percent of global rare earth refining and processing capacity. In October 2025, China announced an export control for some critical rare earth minerals. The measures were expected to have

broad implications for global supply chains, particularly in sectors and countries that rely on Chinese minerals. These controls reinforce China's strategic position and global trade dominance in critical minerals. However, the Chinese government agreed to suspend the export controls for one year after reaching a trade agreement with the United States in November 2025.

Critical minerals are essential to the production of clean energy technologies, advanced electronics, defense systems, and other strategic industries. To bridge the gap for China's rare earth dominance, President Trump has launched Project Vault, a \$12 billion initiative designed to establish a domestic critical-minerals stockpile and accelerate

the development of global critical-minerals supply chains independent of China. As the US moves to break China's stronghold on critical minerals, can the United States catch up with China's rare earth dominance? What makes Project Vault a formidable contender to diversify the global supply chain on critical minerals?

In this exclusive interview, Harvey Kaye, Executive Chairman, US Critical Minerals, examines whether Project Vault can become a transformative force in the global critical minerals landscape, outlining the challenges and opportunities, as the United States works on expanding domestic mining, processing, and refining capacity.

Excerpts:



TER: Tell us about US Critical Materials Corp.

Harvey: US Critical Materials is a unique company. We own 334 claims on US Forest Service land, covering 11 square miles in Sheep Creek, Montana.

What is unique about this deposit, compared to many others, is that it contains adits. An adit is a horizontal tunnel drilled 30 – 40 years ago into the side of the mountain.

However, when the rare earth supply issue became apparent, particularly with the Chinese export restrictions, our geology team went inside those adits, approximately 450 feet. Within them, they encountered a solid wall resembling pink marble. The pink marble was identified as ancylite and monazite. It turned out that these were the host rocks of rare earth minerals.

The most interesting thing about the discovery is that they found 62 carbonatites. A carbonatite is a vertical intrusive body originating from deep underground and is commonly associated with rare earth mineralization.

Our geologists took samples of all these carbonatites and brought them to Activation Labs (Actlabs), a leading lab in North America for evaluating rare earths. They came back and said, “We have just discovered the richest deposits of rare earths known in North America.”

What makes our rare earth discovery unique is that it has 9% rare earth minerals, which is 90,000 parts per million, compared to Mountain Pass, which has 4%-5% rare earth, while most US deposits have 1% or less rare earth.

Importantly, we also have the heavy rare earth elements, including dysprosium, terbium, gadolinium, and yttrium. The heavy minerals are needed for military purposes, including magnets, chips, and all of that.

At US Critical Materials, we believe we represent the highest-grade, rich rare earths and critical minerals in the United States. This makes us different. Talking about the geopolitical aspects of critical minerals, China has pursued



Harvey Kaye. Executive Chairman, US Critical Minerals

a long-term strategic approach to critical minerals over the last 15-plus years. China uses the ‘Belt and Road’ initiative as its strategic and political plan. They travel around the world to source minerals, and Africa is a key example. China has controlled a significant portion of the global rare earth supply chain, particularly in processing, which has historically raised environmental concerns.

Recent U.S. policy shifts have recognized the risks of this dependence and the need for domestic capability. We testified before the U.S. Congress regarding the rare earth minerals issue.

Congress asked me what they can do to help companies domesticate US critical materials. The answer was very simple. We requested that the government help accelerate the permitting process for developing US critical minerals. It usually takes 15 years to bring critical minerals projects online. So we requested that they help us with the permitting process, make it efficient, and cut the red tape, so that companies can bring the project online in three years, not fifteen years.

Secondly, we also needed economic incentives and an enabling market for companies that produce critical minerals.

To some extent, they have been able to do that. Essentially, we will begin producing bulk extracts from Sheep Creek within the next six months. This isn’t the full production. This means that we will extract the minerals from the mountain before we start supplying them to the end users, such as magnet makers, etc. On the processing side, we were introduced to Idaho National Labs a couple of years ago.

Idaho National Labs is one of 17 national labs in the United States. We asked them if they could create an environmentally friendly technology that could process our minerals, just like what China is doing. This will give us the ability to compete with China.

We have entered into a collaboration with Idaho National Labs. They will use our ore because it is very high grade with low thorium. Rare earth deposits are most often found in conjunction with thorium, which is radioactive. If it’s up to 500 parts per million or more, it requires a nuclear regulatory authority to be able to process it. If it’s below the number, it reduces regulatory burden.

What we have is an average of 200 parts per million. This means that we are considered a geological unicorn. The reason we call it a geological unicorn is that it’s very rich in carbonatites, and it doesn’t require an open-pit mine, which isn’t good for the environment.

We extract the ore from Sheep Creek utilizing a form of underground extraction using controlled underground mining, similar to in-situ leaching. This is done inside the mine, which is like a gold mine, 5-15 feet wide. This allows selective removal of mineralized material while minimizing surface disruption.

It is very environmentally friendly and an added advantage to us. Within a year, Idaho National Labs created a new cutting-edge technology. The technology is called an electrochemical membrane reactor. It’s US-made technology. This is now a proven technology on the lab scale and bench scale models. A patent will be filed in the near future.



We call this whole thing rock to dock. The reason it is significant is that it is taken from the rock that comes out of the ground, and we go through all of the steps. Those steps are micronization, comminution, beneficiation, distillation, separation, etc. The idea is to go from the rock to the finished product, where we can produce gallium, scandium, and samarium, and other critical minerals that the industry needs—along with the heavies.

This is what US Critical Materials is doing. The world of rare earths and processing is very disjointed and confusing, with inconsistent claims and unclear capabilities. The government is trying to figure out who's real and who's not. However, we have a different approach, which is the 'integration and clearing house' approach. While we are developing this wonderful resource in Sheet Creek, we're also building a new state-of-the-art, cutting-edge processing technology with Idaho National Lab. We have also been getting requests from various mining interests from around the world, particularly from countries that have rare earth minerals. These countries include Australia, Brazil, Burundi, the Democratic Republic of the Congo, Zambia, etc. These are the countries that have rare earths. The problem is that they can't process the rare earth minerals except in China. They can't sell the output except in China.

We are working with multiple processing technologies, recognizing that no single method is optimal for all ore types. We are working with VerAI to apply artificial intelligence to ore characterization and

processing optimization. The ore from every mine is different; it's not all the same. But we can analyse the ore from wherever it comes from. As we are developing our own technology, we also have relationships with five other technologies, as no single technology can process all the minerals.

We are integrating the output from other mining operations from other countries and matching them up with the appropriate process, and then having our own people sell those end products to the users. This would replace the Chinese rare earth minerals. If we can give them a real alternative, they will move to the United States for their rare earth processing. We believe our integration strategy is working well. It also enables us to sell the end product, whether it's to the government, a European chipmaker, or an American magnet maker. With this strategy, we can order the minerals and process them here in the United States. We are working with the government on that aspect.

Notably, President Trump has announced the launch of Project Vault. The United States will provide an economic floor for the production of critical minerals facilities. The US government wants to create a strategic stockpile of minerals, just like an oil well. This enables long-term demand certainty, financing structures, and domestic industrial scale-up. We intend to supply minerals to strategic industries, contractors, etc.

TER: Can the United States catch up with China's rare earth dominance, and what makes Project Vault a formidable contender to diversify global supply chain on critical minerals?

Harvey: Yes. With coordinated effort between government, industry, and capital markets, we believe the U.S. can build a competitive supply chain as we work together in making the United States and the free world become rare earth sovereign again. The American entrepreneurial spirit is very strong. To that end, we have started signing agreements with various companies and are also doing the same thing with other rare earth processors in addition to our own processor. We are currently working with a minerals processor in Texas that has successfully extracted rare earth elements from our ore. If we have a domestic processor that is reliable, we will introduce it to the United States Department of War because they need it. They need the heavy rare earths to replace what they spend in Gaza, Ukraine, and what the military is doing right now in Iran.

The critical minerals commodity crisis has almost doubled the price of these minerals over the last 90 days. Unfortunately, the world needs the critical minerals for the economy.

As a domestic US supplier, our processor becomes priceless for fulfilling that need in terms of critical minerals processing in the United States. It is very important for the government and us in that context. We will start processing rare earth minerals over the next few years in the United States. This includes domestic supplies, processing, and other minerals that come from other places. This would also achieve a domestic certification process here. By putting all of these together and cooperating with other players in the space, I think five years is realistic.

TER: Is Project Vault an 'American First' policy or a 'Multilateral' system? What broader opportunities would it unlock for strategic partnerships?

Harvey: We are very focused on the public-private sector partnership. The INL partnership is a prime example, as we are their industrial partner. Also, the United States government has now come up with a new strategy, and US Critical Materials is working closely with the government.

Before now, the government was giving out lots of money, and they could not do it strategically. But now the government has retreated and has put a process together that works.

We have a retired 4-star general as one of our key advisors. His name is General Stephen Townsend. General Townsend, among other things, managed AFRICOM, which was the United States entire military presence in Africa. He told me a story. When they first took over Africa,



U.S. CRITICAL MATERIALS

he asked his people to do a survey and determine who owned all the rare earth and critical mineral mines in Africa. They told him that most of the mines are owned by the Chinese.

General Townsend decided to put his intelligence unit on Africa's critical minerals, and it turned out that the mines that weren't owned by the Chinese were used as the frontline company for the Chinese in another country, which is 100% owned by China. This is not working out very well for Africa because when they came in through the 'Belt and Road' initiative, China promised the people that they were going to improve their land, hospitals, and feed the children. But they did none of that.

However, we are now working with the Democratic Republic of the Congo. They have a very rich Valley, which I think they call the Valley of Fire, where all the volcanoes erupted many years ago. They have very rich, rare earth minerals and heavy minerals. We have established a joint venture with their mining interests, which enables them to ship the minerals to the US. It will be processed here in the United States.

Project Vault, at the moment, is not a public-private partnership arrangement. It's a strategic initiative that the US government has launched to break China's dominance on rare earth minerals.

Meanwhile, we are also pursuing multiple public-private partnerships, and are working with Wall Street and the capital markets to provide the financing necessary to do it. We're also working with Brazil and Australia on critical minerals. They have all the mines, and none of them wants to ship them to China.

TER: How will Project Vault impact the US markets and global supply chain?

Harvey: It will be extremely beneficial to both the domestic and global markets. Project Vault is creating a floor for the commodity price and the economic projections for critical minerals.

For example, some of these processing plants are going to take two or three years. But we're building one now with INL, which will be ready in approximately

one year. If you do the economics, it creates opportunities for the company to get a contract. This is what Project Vault offers. It provides financing if there's a guaranteed source of supply. It could be bonds, a bond resolution, direct investment from part of the government, or from the Exim Bank. The Exim Bank is willing to finance projects from Australia. This is why Australia is willing to ship the minerals to the US, because it will be financed by EximBank and processed in the United States. The whole thing turns out to work that way. It's a very effective economic model.

TER: Which other countries will you secure supply for critical minerals?

Harvey: Basically, it will be sourced from Sheep Creek because our grades compare favorably to lower concentrations historically sourced elsewhere.

Secondly, we are currently in substantial discussion with Brazil on the Yttrium mineral. It's a very important element that the US government needs. We have Yttrium as well, including people who can process it. Australia has a lot of red mud minerals. Red mud is the by-product of the mining of bauxite for aluminium. We have also signed a deal with one of the major universities in the United States, which has developed a proprietary process for processing red mud.

We are working with one of the largest aluminium providers in the world, and they have 72 sites of red mud in billions of tons. Gallium, which is needed desperately, can be processed out of the red mud. What we got from China when we were getting the gallium rolled out was 50 parts per million. But Sheep Creek has 300 parts per million. We will be able to process red mud, extract the gallium, extract the scandium, and start supplying it to the defense industry within a year. This is what makes US Critical Materials different and unique among all the companies that are in the business. Nobody is trying to put all the critical minerals together in a complete database, operating space, and an integrated plan so that the government can buy them.

TER: Which other African countries do you think could be a driving force for the US-Africa strategic partnerships on critical minerals?

Harvey: We are holding meetings and putting agreements together with industry stakeholders in the mining sector in Africa. They include gold miners, other things of that nature.

It's mutually beneficial. The world needs what they have, and we understand that there are always political risks in various things. We will make sure there's proper protection for them and us from any political disruptions. We're moving along quite well.

TER: What other strategy can the US government adopt to strengthen its critical minerals ambition?

Harvey: I think that they're doing it. The United States government is assisting in the organizing and permitting process. The Project Vault is also providing a basis for economic stability. There are also several executive orders and legislation, including the National Energy Act. The government has established the National Energy Council, working closely with the States to drive efficiency in the process. There are three steps: get the right permit, start extracting, process, and make the minerals available to the world. All of those assets are being worked upon, literally, as we speak.

TER: What's your outlook on the evolution of the United States critical minerals?

Harvey: We're very bullish. If you look at the basic economic terms, there's an unquenchable market for what is needed. Innovation across everything is dependent upon an abundant supply of rare earth. The next generation of AI chips requires Gallium from hard rocks.

Demand is driven by Innovation in AI, semiconductor manufacturing, science, medicine, space travel, defense systems, hypersonic missiles, the energy transition, etc. Heavy rare elements are essential to all these sectors. The reason that companies are involved in such high valuations of critical minerals is not because of price-earnings ratios. This is an anticipation of the market opportunities and the projected earnings between three, four, or five years from today. We are a privately owned company. But we are now in the process of moving towards becoming a publicly traded company later this year. This is what makes us different from others.

At US Critical Minerals, we have visibility for revenue generation in 2026. Very few critical mineral projects can say that. We think we're in a very unique position, and the industry is in an infancy period.

We expect the next five years to represent a significant inflection point for U.S. critical minerals.



Baltimore's Revitalization Strategy: "We're building the next chapter for long-term growth, investment opportunities" – Thomas

The Greater Baltimore Committee (GBC), the leading voice for the private sector, is on a mission to advance a bold economic development plan focused on positioning the region's key sectors for global opportunities.

In this interview with The Energy Republic, Mark Anthony Thomas, CEO of Greater Baltimore Committee, shares insights on GBC's action plan to rebuild market confidence, strengthen public-private sector partnerships, and organize the region's critical assets for long-term growth opportunities. Excerpts:

TER: What are the core pillars of GBC's revitalization strategy, and how do they differ from past approaches? How are you addressing investor concerns around risk, infrastructure, and long-term returns?

Thomas: Baltimore's revitalization strategy is ultimately about rebuilding confidence in the market. For too long, Baltimore had strong institutions, respected economic development organizations, major infrastructure, global brands, and talented people, but not enough alignment around growth. What has changed is the level of coordination, the quality of the momentum, and the clarity of the long-term strategy.

At the Greater Baltimore Committee (GBC), our work flows through a multi-year agenda: driving economic development and business investment, strengthening infrastructure and connectivity, and advancing collective impact on housing and neighbourhood investment. These aren't separate lanes. They are connected parts of the same market-building strategy. The goal is to make Baltimore easier to understand, invest in, and grow in. This is different from past approaches.

It is not focused on chasing a single project, corridor, or neighborhood at a time. It is focused on how the region organizes its assets, aligns public and private leadership, and creates stronger conditions for long-term growth.

Through business attraction, innovation-led growth, downtown and waterfront redevelopment, arts and culture, and national storytelling, we are making the case for where Baltimore's next phase of growth is already taking shape.

At the same time, the Port, Tradepoint Atlantic, transit, logistics, tunnels, bridges, site readiness, and transportation access remain central for the region's competitiveness for industrial growth, manufacturing, and global trade.

Housing, neighborhood market restoration, public safety, and inclusive economic opportunity are equally important because long-term investment follows confidence in the overall trajectory of a city and region. You can see that strategy coming together across the market.

The Port of Baltimore remains one of the country's most important trade gateways, ranking 10th nationally in foreign cargo tonnage and 11th in cargo value in 2024.

Tradepoint Atlantic's planned \$1 billion expansion is expected to increase the port's capacity by 70% by 2028.

JD Fields' decision to open a new 200,000-square-foot fabrication facility at Tradepoint Atlantic, representing approximately \$50 million in capital investment and 150 high-skilled jobs, is a strong signal



Mark Anthony Thomas, President & CEO, Greater Baltimore Committee (GBC)

that major industrial players increasingly see Baltimore as a strategic location for manufacturing, logistics, and distribution.

At the same time, Baltimore's waterfront is undergoing a \$3 billion transformation, and more than \$2 billion has been invested across arts, culture, sports, and entertainment assets. These investments strengthen downtown, attract talent, support tourism, and help reposition the market nationally.

Housing is also central to the long-term growth strategy. Baltimore is advancing one of the largest housing redevelopment initiatives in the country, supported by \$1.2 billion in public funding and projected to attract more than \$5 billion in private investment over the next 15 years. The effort is designed to revitalize more than 37,000 vacant or at-risk properties and restore neighborhood market confidence at scale.

Baltimore's next chapter will not be built through isolated wins. It will be built by connecting business investment, infrastructure, housing, culture, and neighborhood confidence into a more coherent growth strategy. That is where GBC is focused: organizing the region's assets, aligning leadership around them, and turning today's momentum into sustained economic growth.

TER: What sectors currently offer the strongest growth potential, and how is GBC positioning the region to compete globally?

Thomas: We developed a 10-year economic opportunity plan with input from public, private, civic, philanthropic, workforce, higher education, and community partners across the Baltimore Region called All In | 2035. The plan identified three major opportunity areas where the Baltimore Region has the assets, infrastructure, institutional strength, and long-term growth potential to compete globally: tech, industrial, and culture.



Greater Baltimore Committee (GBC) Board Members

First, tech.

For Baltimore, the tech opportunity is not just about startups or headlines. It is about applied technology moving through industries where this region already has depth: healthcare, biotechnology, cybersecurity, defense, manufacturing, logistics, and AI.

The next phase of AI will be defined by markets that can help companies test, commercialize, and scale technology inside real industries. This is where Baltimore has a strong case to make.

The region supports more than 75,000 technology workers and produces more than 12,500 tech-related degree completions every two years. Baltimore also generated approximately \$560 million in venture capital investment across 77 venture-backed transactions in 2025. This is a meaningful momentum, but it still does not fully match the strength of the region's underlying assets. That gap is the opportunity.

Organizations like Johns Hopkins Technology Ventures, FastForward, Techstars, UpSurge Baltimore, UMBC, and the University of Maryland BioPark are helping strengthen the broader innovation ecosystem.

Blackbird Labs' recently announced \$500 million venture studio focused on commercializing Johns Hopkins technologies is another strong signal of where the market is heading.

Second, industrial. Baltimore's industrial opportunity is anchored by the Port of

Baltimore, Tradepoint Atlantic, BWI Marshall Airport, rail, interstate access, and the region's strategic East Coast location. The Port remains one of the country's most important trade gateways, ranking 10th nationally in foreign cargo tonnage and 11th in cargo value in 2024.

Tradepoint Atlantic's planned \$1 billion expansion is expected to increase port capacity by 70% by 2028. This is where logistics, advanced manufacturing, supply chain resilience, and global trade come together.

JD Fields' decision to open a new 200,000-square-foot fabrication facility at Tradepoint Atlantic, representing approximately \$50 million in capital investment and 150 high-skilled jobs, is a strong example of the type of industrial growth the region is increasingly positioned to attract.

Third, culture. Baltimore's cultural economy is not separate from its economic development strategy. It is part of it. Arts, culture, sports, entertainment, waterfront redevelopment, culinary assets, museums, and creative industries help drive tourism, talent attraction, neighborhood vitality, and national perception. More than \$2 billion has recently been invested across arts, culture, sports, and entertainment projects throughout the region. This includes projects tied to waterfront transformation, major arts institutions, live entertainment, sports infrastructure, and destination-oriented redevelopment efforts that are helping reshape how people experience and understand Baltimore.

GBC's role is to connect these strengths into a stronger regional investment proposition.

Fragmentation has historically been one of Baltimore's biggest challenges. Strong institutions, companies, entrepreneurs, cultural organizations, and major development projects often operated in parallel instead of as part of a coordinated growth strategy.

This is why we are focused on building a regional investment pipeline, strengthening business attraction, advancing national storytelling through BOLD MOVES, supporting entrepreneurship and commercialization, and aligning public and private leadership around where the Baltimore Region can win. Markets compete on perception as much as reality. Business & Corporate Law

Baltimore's opportunity is closing the gap between what exists here and what the national and global market currently understands about us.

TER: What incentives are in place to attract capital and large-scale development projects?

Thomas: One of the biggest recent shifts was the passage of Governor Wes Moore's DECADE Act, which modernizes and strengthens Maryland's economic development toolbox to better compete for business investment, innovation, manufacturing, and large-scale development projects.

The legislation reflects a broader shift in how Maryland approaches economic growth and investment attraction. It modernizes major business attraction and financing tools, extends key tax credits tied to growth industries, strengthens innovation infrastructure programs, improves commercialization incentives, and updates economic development programs to better align with how companies and investors actually make decisions.

It also strengthens programs tied directly to Baltimore's long-term growth sectors. That includes expanding support for innovation infrastructure through the Build Our Future Program, modernizing RISE Zones to better support placemaking and commercialization around research institutions, strengthening biotechnology investment incentives, extending research and development tax credits, enhancing tools tied to cybersecurity and defense industries, and creating a more flexible Strategic Closing Fund for major business attraction opportunities.

At the same time, there has been a growing focus on place-based investment tools, including one of the most significant transit-oriented development laws in Maryland's history.



We are also excited about the continued opportunity around Opportunity Zones and what they can do to help attract long-term private investment into emerging neighborhoods, redevelopment corridors, and mixed-use growth areas across the region.

Waterfront redevelopment strategies, innovation district investments, and other place-based economic development tools are helping create more investment-ready environments throughout Baltimore.

Downtown Baltimore's newly approved RISE PILOT program is another important example. The program was designed to help catalyze large-scale redevelopment in the central business district by making the economics of major mixed-use and commercial projects more feasible.

Baltimore is putting more of the right tools in place to compete for capital, unlock stalled projects, and support long-term redevelopment. The larger focus is on making the region more competitive for long-term investment and growth.

TER: What are the immigration prospects and career opportunities in Baltimore, particularly for skilled workers and entrepreneurs?

Thomas: Baltimore offers a strong case for skilled workers, including immigrant professionals and entrepreneurs. This region sits at the intersection of industries that will define the next economy: healthcare, life sciences, logistics, cybersecurity, AI, defense, education, advanced manufacturing, and professional services. These industries are anchored by major employers, research institutions, federal assets, port infrastructure, universities, hospitals, and a growing innovation ecosystem.

Immigrants already play a major role in the Baltimore Region's economy, representing roughly 15.8% of the metro area's employed workforce.

For skilled workers, the opportunity is broad. The region continues to see demand across healthcare, engineering, biotech, cybersecurity, logistics, education, manufacturing, and technology.



Proximity to Washington, D.C. also creates access to federal agencies, contracting, research, defense, and policy-driven industries.

For entrepreneurs, Baltimore offers something many larger markets increasingly struggle with: room to build. The cost structure is more accessible than many peer innovation markets. The institutional assets are strong. Access to decision-makers is often easier. The ecosystem is becoming more connected through organizations like Johns Hopkins Technology Ventures, FastForward, UpSurge Baltimore, UMBC, the University of Baltimore, the University of Maryland BioPark, Techstars, and regional incubators.

The larger opportunity is not simply relocating to Baltimore for a job. It is helping shape the next phase of Baltimore's growth.

TER: What role should the government play in driving economic growth, and where is legislative support most needed?

Thomas: Government has to create the conditions for growth, and the private sector has to help scale it.

Public-sector leadership matters when it comes to infrastructure, transportation, permitting, public safety, housing policy, workforce systems, education, and economic development tools. These decisions shape whether investment can happen, whether companies can grow, and whether residents can access opportunity. But equitable economic growth cannot be achieved through government alone. It requires employers, developers, anchor institutions, investors, philanthropy, entrepreneurs, and civic organizations to move with the same level of urgency and coordination. This is the lane GBC is working to strengthen.

Maryland has seen (and embraced) the need to modernize the tools, reduce friction, invest in infrastructure, and support conditions that make growth possible.

The private sector needs to invest, hire, expand, mentor entrepreneurs, support workforce pathways, and help turn policy tools into actual projects. The greatest need for legislative support is around tools that help markets function more effectively: transit-oriented development, infrastructure financing, housing redevelopment, site readiness, innovation investment, public safety, and policies that make it easier for employers to grow and expand in Maryland.

The focus now has to be execution: putting the right tools to work, aligning capital with opportunity, and making sure growth is sustainable, investable, and broadly shared.

TER: Looking ahead, what does success look like for Baltimore's economy, and what key milestones should stakeholders watch?

Thomas: Success means Baltimore is no longer described as a place with potential. It is recognized as a market that is producing results.

Over the next decade, it means more people choosing Baltimore, more companies expanding here, more capital moving into neighborhoods and commercial districts, more startups scaling in the region, and more residents connected to the jobs and wealth being created.

The signs of momentum are already visible.

Baltimore has recorded population growth for the first time in more than a decade. Crime continues to trend down. Major investments are moving through housing, waterfront redevelopment, logistics, infrastructure, arts and entertainment, and innovation.

But the next phase has to be about execution and scale. The milestones to watch are clear: continued growth at the Port and Tradeport Atlantic, measurable progress on vacant housing, more business attraction wins, stronger downtown and waterfront redevelopment, more venture-backed companies scaling locally, better transit and infrastructure investment, and more residents gaining access to quality jobs. Business & Corporate Law

Over the next decade, we are focused on translating Baltimore's assets into sustained economic growth. This means aligning leadership, accelerating investment, executing major projects, growing industries where the region has a competitive advantage, and making sure more residents and neighborhoods benefit from its growth.



National Association of Foreign-Trade Zones (NAFTZ)



Melissa Irmen, National Association of Foreign-Trade Zones (NAFTZ)

US foreign-trade zones offer flexibility and predictability amid tariff uncertainty – Irmen



and scenario planning as businesses try to anticipate multiple tariff outcomes.

Programs like U.S. FTZs are giving importers more control over when duties are paid – and importantly, allowing them to adapt faster as policies evolve.

TER: How are the Foreign-Trade Zones helping companies maintain competitiveness and make long-term investment decisions compared to firms operating outside the FTZ framework?

Irmen: U.S. Foreign-Trade Zones provide a level of financial and operational flexibility that is difficult to replicate outside the program. The most immediate benefit is duty deferral, which helps companies preserve cash flow in a high-cost environment. The Harbor Maintenance Fee is paid quarterly instead of at the time imports arrive, and the Merchandise Processing Fees are paid at the time goods leave the zone.

Overall, U.S. FTZs allow businesses to better align duty payments with revenue generation, which is important for manufacturers with long production cycles or large capital investments. This can materially improve project feasibility and influence decisions around where to site new facilities or expand operations. Another great benefit is better inventory control/security, which leads to better compliance with U.S. Customs and Border Protection (CBP) requirements.

By contrast, companies operating outside the U.S. FTZ framework often face upfront duty payments and less flexibility, which can put them at a disadvantage when margins are already under pressure from tariffs and supply chain volatility.

As manufacturers and importers across the United States grapple with an increasingly complex tariff landscape, the National Association of Foreign-Trade Zones (NAFTZ) says the US Foreign-Trade Zone (FTZ) stands as a strategic tool to manage trade uncertainty amid geopolitical tension.

In this interview with The Energy Republic, NAFTZ Director of Advocacy Melissa Irmen, shares outlines the competitive advantages of the United States Foreign-Trade Zones, particularly in response to major tariff shifts from the IEEPA authorities and the layered patchwork of Section 301 and Section 232 measures — and what companies can do to protect their supply chains.

Irmen also highlighted how companies are adapting to a rapidly evolving trade environment, with emphasis on the risks and opportunities surrounding the United States–Mexico–Canada Agreement (USMCA), and how any changes to USMCA would impact North American trade flows and FTZ utilization. Excerpts:

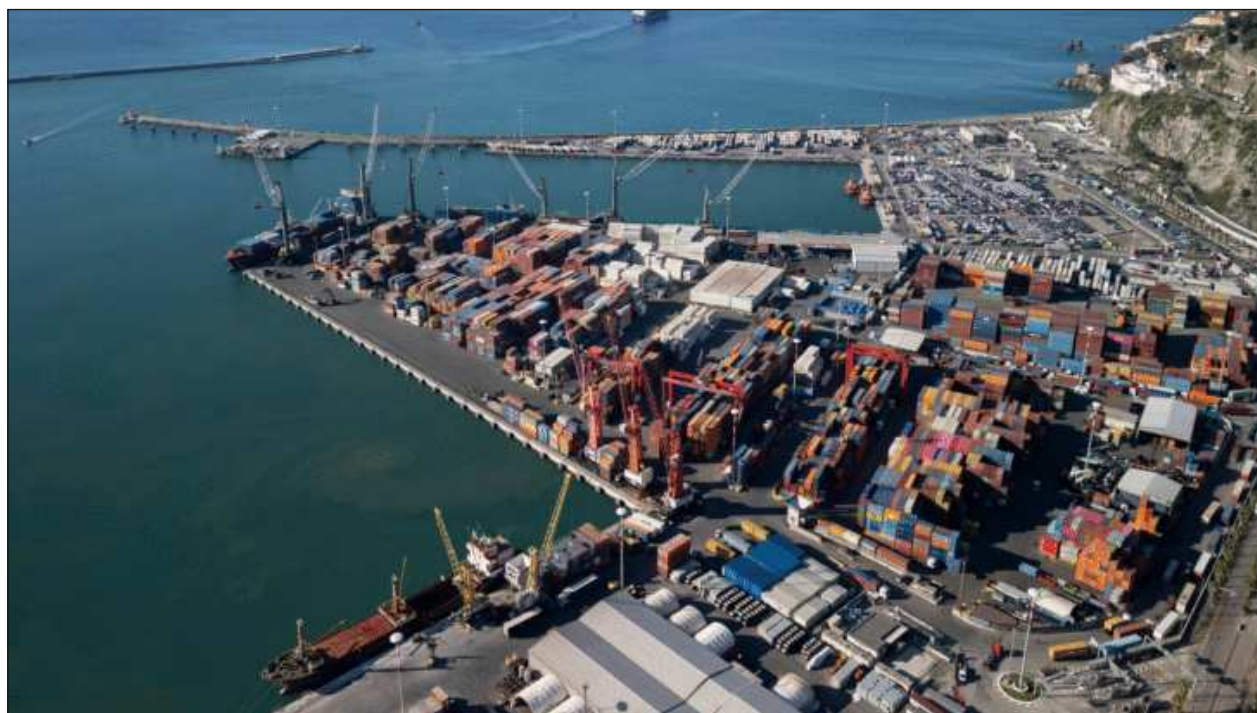
TER: How have recent tariff shifts following the United States Supreme Court's ruling on IEEPA impacted day-to-day operations for companies operating within US Foreign-Trade Zones?

Irmen: Following the Supreme Court's ruling and changes tied to IEEPA tariffs, the day-to-day operations for companies operating in U.S. FTZs have not fundamentally eased; the environment is even more complex. Businesses are navigating a patchwork of tariff mechanisms under Section 122 (limited in duration) along with ongoing Section 301 and Section 232 requirements, which have created a layered and evolving environment. This means more frequent classification reviews, tighter inventory controls, and closer coordination between trade compliance and supply chain teams. For U.S. FTZ users specifically, there has been an increased reliance on the program's duty deferral offering as companies work to stay in step with ongoing policy shifts.

TER: What immediate adjustments are importers making to manage supply chain uncertainty?

Irmen: Importers are prioritizing flexibility above all else – with some even diversifying sourcing strategies by shifting production to lower-tariff countries where possible, or splitting supply chains across multiple regions to reduce exposure.

Also, companies are reassessing inventory strategies and, in some cases, increasing buffer stock or accelerating shipments in anticipation of policy changes. We're also seeing greater investment in trade compliance infrastructure



Ditte Juul Jørgensen, Director General - Energy at the European Commission

Nevertheless, realizing the full benefits of the U.S. FTZ program – particularly for manufacturing and capital equipment – requires planning, timing, and a structured application process.

TER: What are the competitive advantages of using the US Foreign-Trade Zones in today's geopolitical environment?

Irmen: The real advantage is some level of 'control' in an environment defined by uncertainty. Since Liberation Day (April 2025), tariffs have become a structural feature of global trade. U.S. FTZs, however, give companies the ability to manage that reality more effectively.

Whether it's deferring duties or allowing time to navigate compliance before goods formally enter U.S. commerce, these zones introduce a degree

of predictability into otherwise volatile conditions.

TER: Can you elaborate on NAFTAZ's current advocacy work with the US GOVERNMENT regarding tariffs, and what specific changes are you pushing for?

Irmen: NAFTAZ is actively engaging with policymakers to ensure that the U.S. FTZ program remains an effective tool for the nation's competitiveness, particularly as tariff policy continues to evolve. Our advocacy is focused on maintaining and expanding the flexibility that U.S. FTZs provide to manufacturers and importers. This includes ensuring that new tariff actions fully account for U.S. FTZ procedures – minimizing unintended consequences that could limit the program's effectiveness and promoting policies that support duty deferral and streamlined compliance processes.

More broadly, we are working to reinforce the role of U.S. FTZs as part of a pro-growth trade strategy that supports domestic investment and supply chain resilience.

TER: Looking ahead to the 2026 USMCA review, what's the biggest risk and opportunity for U.S. businesses? How would any changes to USMCA impact North American trade flows and FTZ utilization?

Irmen: The 2026 USMCA review presents both risk and opportunity. The risk lies in added uncertainty, particularly if negotiations introduce new rules of origin, compliance burdens, or tariff-related provisions that complicate cross-border supply chains.

However, there's a real opportunity to modernize the agreement in a way that better reflects today's manufacturing and trade environment. Strengthening regional supply chains, improving regulatory alignment, and reducing friction at the borders could enhance North America's overall competitiveness.

From a U.S. FTZ perspective, any increase in trade complexity or cost pressure tends to drive greater utilization of the program. If uncertainty persists, we would expect more companies to look to U.S. FTZs as a way to manage exposure and optimize cash flow within an evolving North American trade framework.

To add some specificity: As one part of the USMCA review process, we're advocating for changes that would effectively level the playing field for FTZ-based exporters dealing with our North American counterparts (Mexico and Canada), each of which currently has more favourable tariff structures than the U.S. (in transactions involving these three nations).



Michele Vitiello, Secretary General,
World Energy Council - Italia

WEC Italia outlines opportunities to deepen US-Italy relations

Amid the geopolitical tensions between US and Europe, the World Energy Council (WEC) Italia has outlined opportunities to deepen bilateral relations between the United States and Italy, pointing to the strong transatlantic diplomatic relations between both countries that was established in 1861.

Speaking in an exclusive interview with The Energy Republic, Michele Vitiello, Secretary General, World Energy Council – Italia underscored the need to further deepen the bilateral relations, outlining strategic areas to reinforce the transatlantic cooperation.

“Energy cooperation between Italy and the United States is inherently strategic and extends across the value chain,” Vitiello noted, adding that LNG plays a key role in contributing to the transatlantic cooperation.

“But collaboration can deepen in advanced nuclear technologies, including small modular reactors, carbon capture and

storage, grid digitalization, and cybersecurity.

“There is also strong potential in strengthening critical mineral supply chains and fostering innovation ecosystems that link research institutions and industrial players,” he added.

World Energy Council serves as a neutral and strategic platform for dialogue among institutions, industry, academia, and civil society in Italy. The Council is involved in various initiatives and programs aimed to foster multi-energy and multi-stakeholder dialogue for Italian energy sector.

The Italian National Committee of the World Energy Council was founded in Rome in 1988 by national institutions and energy companies.

World Energy Council Italian Committee promotes the mission and objectives of the World Energy Council, participates in international study program and disseminates its findings nationally, and coordinates member participation in the Council’s activities and major global events. It also organizes

events (webinars, conferences, seminars, etc.) and courses, publishes and disseminates studies on the energy sector, provides qualified and up-to-date information on the energy transition at all levels, and promotes ongoing initiatives on specific energy-related topics.

The World Energy Council Italia isn’t only to advocate for specific technology or ideological position, but to strengthen the coherence and long-term sustainability of Italy’s energy strategy while helping stakeholders shape a truly just transition.

WEC Italia will lead an Italian delegation to the 2026 WPC Energy Congress, taking place from 11-15 October 2026 in Riyadh, Saudi Arabia, where they will showcase opportunities in Italy’s energy sector, including infrastructural capacity and industrial ecosystem, to global investors at the event.

They will also showcase Italy’s Mediterranean strategic role, its infrastructural capacity, and the excellence of its industrial ecosystem.



Global power demand surge puts net zero by 2050 out of reach as world heads toward 2.6°C warming - Wood Mackenzie

AI boom and geopolitical tensions strain energy systems; a 30% increase in annual investment to US\$4.3 trillion needed to limit warming to 2°C; China takes global leadership in energy transition

Surging power demand and mounting geopolitical tensions have made 2050 net zero goals unattainable, with the world now on track for 2.6°C of global warming, according to Wood Mackenzie's 'Energy Transition Outlook 2025-2026' report.

The analysis shows that achieving a 2°C warming limit would require US\$4.3 trillion in annual investment between 2025-2060 and reaching net zero emissions by around 2060. Energy sector investment must grow from 2.5% of global GDP today to 3.35% within the next decade.

The new report 'Energy evolution in the age of superintelligence' analyses four different pathways for the energy and natural resources sector – Wood Mackenzie's base case (2.6-degrees), country pledges scenario (2-degrees), net zero 2050 scenario (1.5-degrees) and delayed transition scenario (3.1-degrees).*

"The energy system is becoming more complex, interconnected, and, volatile," said Prakash Sharma, vice president, head of scenarios and technologies for Wood Mackenzie. "As power demand surges due to the expansion of technologies such as AI and electrification, what was once a mostly aspirational shift towards decarbonization is now facing the hard trade-offs of scale, system integration, capital allocation and geopolitics.

"The share of solar and wind in global power supply has grown from 5% to 20% over the past decade and the surge is expected to continue. But accelerating from deployment to a deeply decarbonized, resilient energy system is proving far more complex than simply adding megawatts."

Transition hits headwinds in the West; climate leadership shifts to China
No major economy remains on track to meet its 2030 targets, with Wood Mackenzie's Country Pledges scenario projecting net zero emissions only after 2060 – well behind 2050 timeline scientists deem necessary.

"A new climate leadership is emerging," said Sharma. "As the US doubles down on fossil fuels, pushing allies to buy its LNG, China is seizing the low-carbon mantle through EV and solar dominance, plus aggressive renewables deployment. Europe maintains the strongest net zero ambitions, viewing clean technologies as essential for economic and energy security.

"While a faster transition appears more expensive in the near-term due to compressed investment timelines, delaying it carries the

KEY FINDINGS:

Few countries in total, and no major G7 countries, are on track to meet 2030 emissions goals.

◀ A significant investment increase could still limit the average temperature increase to within 2°C warming by reaching global net zero emissions by around 2060.

◀ Energy sector capex must grow from 2.5% to 3.35% of global GDP to reach net zero.

◀ Base case emissions trajectory has moved up slightly, with peak emissions in 2028 and the rate of decline slowing to 2% per annum since the last update, representing now a 2.6°C warming.

◀ Variable renewables will surge from 20% of generation today to 60% by 2050, with solar alone doubling by 2030 and overtaking gas in 2033 and coal in 2034. **Battery storage and nuclear provide flexibility to renewable-heavy grids.**

◀ Oil demand peak has shifted from 2030 to 2032, reflecting sluggish EV sales in the US and Europe, and continued momentum in petrochemicals. **AI surge supports gas across all scenarios, pushing demand up by 180 bcm by 2050 than our previous outlook.**

China, Europe, and the US account for 70% of global capex by 2040 in the base case:

◀ China: \$913B annually (base case) vs \$1.177T (net zero) - 29% increase needed.

◀ Europe: \$455B annually vs \$619B - 36% increase needed
United States: \$388B annually vs \$682B - 76% increase needed.

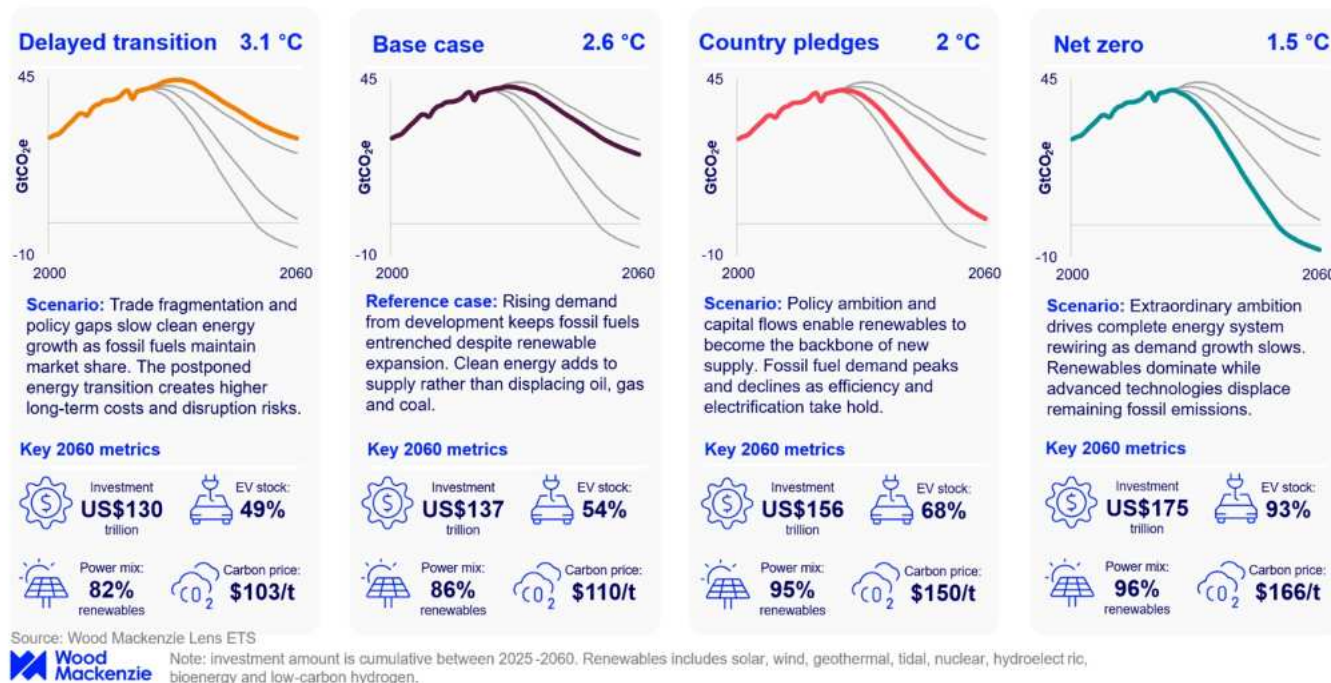
◀ Other regions face significant gaps, with other APAC nations and the rest of the world needing to more than double transition spending.

risk of significantly higher costs longer term towards climate adaptation. The decade ahead presents critical climate checkpoints that will determine whether meaningful decarbonisation remains achievable with significant investment increases."

The United States faces the steepest investment challenge among major economies. According to Wood Mackenzie's Lens Energy Transition Scenarios (ETS), the US must increase annual climate transition spending 76% to reach net zero,



Executive summary



creating new geopolitical dependencies. A typical battery electric vehicle requires 6x more critical minerals than an internal combustion engine vehicle (450 kg vs 78 kg).

“This concentration gives resource holders new leverage, while importing countries, in turn, are racing to secure offtake deals, diversify supply and build stockpiles,” said Sharma. “Critical minerals have become the new strategic battleground: their availability and affordability will shape not just technology costs but also the balance of power in a new energy landscape. Resource nationalism is shifting from fossil fuels to critical minerals.”

AI Revolution Strains Power Systems

The AI boom is creating unprecedented electricity demand, with data centers consuming 700 TWh in 2025 (exceeding electric vehicles) and potentially doubling by 2030. This surge threatens electricity crises and higher tariffs while derailing 2030 clean power commitments. However, AI itself may accelerate breakthrough technologies and optimise energy systems, as advanced simulations, optimise materials performance, and enable efficient design configurations at unprecedented speed.

Electricity Becomes the Dominant Energy Carrier

Electricity demand will expand from one-fifth of final energy consumption today to over half by 2050 under net zero scenario. Variable renewables will surge from 20% of generation today to 60% by 2050, with solar alone doubling by 2030 and overtaking coal by 2034. However, variable renewables reach their practical ceiling at 68% in our scenario due to grid stability and storage limitations. At the same time, dispatchable fossil fuels remain essential; coal continues powering developing economies while gas turbines provide critical backup where renewable infrastructure struggles with massive new load.

Oil and Gas Face a "Long Goodbye"

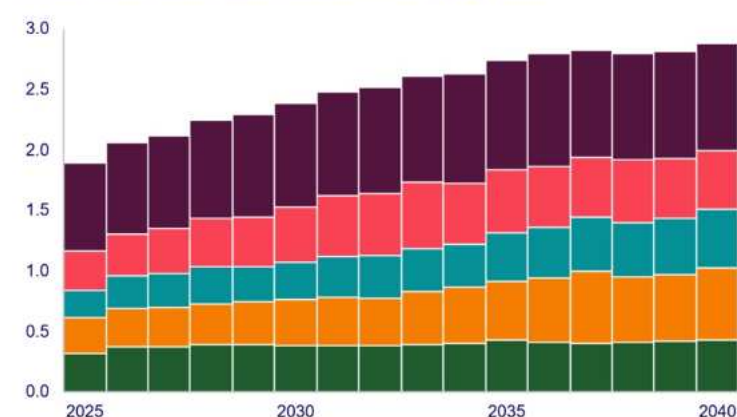
Oil demand peak has shifted from 2030 to 2032 in our base case, reflecting continued momentum in road transport and petrochemicals. Natural gas maintains its position as a bridge fuel, especially where coal must be displaced. The persistence reflects structural inertia and energy security concerns, but the ingredients for faster change are strengthening as renewables and EVs continue breaking cost records.

Investments

China, Europe and the US account for 70% of global capex by 2040 in our base case

Capex gaps are lowest in China and Europe while other markets must accelerate transition spend

Annual base case capex requirements, US\$ trillion



Note: Upstream and data centre investments excluded from country totals
Source: Wood Mackenzie Lens ETS



Average annual 2025-2040 capex, US\$ billion

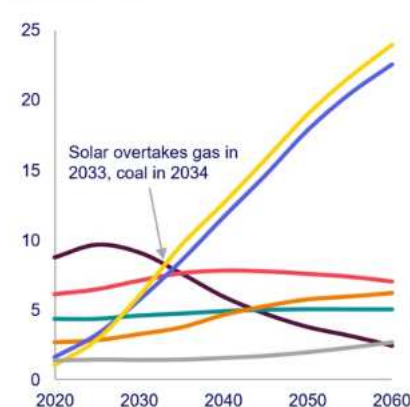
	Base case	Net zero	Gap
China	913	1,177	+29%
Europe	455	619	+36%
United States	388	682	+76%
Other APAC	470	799	+70%
Other world	459	994	+116%

Power and renewables

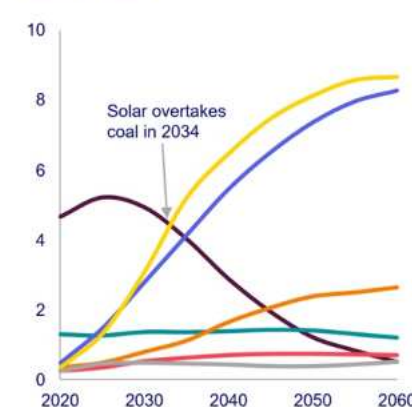
Global solar doubles by 2030, overtaking gas in 2033 and coal in 2034

Dispatchable gas generation peaks in 2041, the same year variable renewables generate half of global power

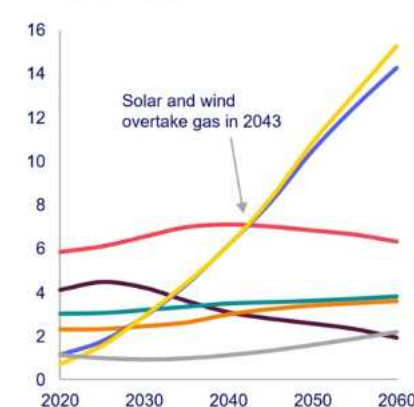
Global, PWh



China, PWh



Global ex-China, PWh



Source: Wood Mackenzie Lens ETS



a significant jump that far exceeds the investment increases needed in China and Europe.

Critical Minerals: The New Strategic Battleground

Clean technologies rely heavily on lithium, nickel, cobalt, copper, and rare earth elements. Supply chains are highly concentrated, with China dominating lithium and rare earth refining,



France Gaz targets 44 TWh of ‘Green Gas’ injection by 2030, defends role of gas in energy transition

France Gaz, the association representing French gas companies, has reaffirmed its commitment to achieving the country's green gas production ambitions, projecting that up to 44 TWh of renewable gas will be injected into France's gas infrastructures by 2030 in line with the objectives of the forthcoming Multiannual Energy Programme (PPE).

Speaking at a press conference in Paris, covered by The Energy Republic, Frédéric Martin, President of France Gaz, outlined the sector's steady progress in expanding green gas production and highlighted the industry's central role in supporting France's decarbonization agenda.

"The sector is fully committed to achieving the 44 TWh injection target for 2030 set out in the upcoming Multiannual Energy Programme (PPE)," Martin said. "The option offered to sites currently using cogeneration to switch to injecting gas into the grid is a significant step forward."

France Gaz reported that 33.7 TWh of green gas projects are

currently registered, including 227 projects, representing an additional 5.5 TWh of production capacity.

As part of its 2026 priorities, the association presented a broader vision for France's energy transition, emphasizing the continued importance of the gas sector within the country's evolving energy mix. Martin noted that, despite ongoing political uncertainty, the liquefied natural gas (LNG) market remains critical to European energy security, with France benefiting from a strong and resilient gas infrastructure.

"France maintains a strategic position due to its gas infrastructure, which offers it the best market conditions," Martin said. "This advantage appears crucial for building an ambitious and sustainable transition for both local communities and consumers."

France Gaz also called for a review of the post-2028 trajectory of CPBs and expressed opposition to the proposed increase in excise duties on gas included in France's 2026 budget, warning that higher taxes would place additional pressure on businesses and households already facing economic and energy security challenges.

By Ndubuisi Micheal Obineme

"While economic difficulties are piling up for businesses and households are feeling the effects of energy insecurity more acutely, it was incomprehensible to proceed with a new increase in excise duties," Martin said.

The association is also advocating for stronger public support to accelerate the deployment of emerging renewable and low-carbon gas technologies, enabling the recovery of French waste streams while expanding domestic green gas production.

In addition, France Gaz called for a coherent European regulatory framework that delivers competitive energy prices, particularly regarding hydrogen distribution, to provide the certainty needed to support industrial investment and long-term decarbonization.

According to the association, France's largely amortized gas infrastructure remains a strategic national asset, supporting regional development, industrial competitiveness, and long-term investment planning. France Gaz and its members also reiterated the importance of preserving France's position as a major European gas hub to strengthen national energy security.



Anthony Mazzenga, Development Director of NaTran

In this interview with The Energy Republic, Anthony Mazzenga, Development Director, NaTran, discusses the challenges, market opportunities, and outlook on the European hydrogen industry, with a spotlight on the H2med project – Europe's first major green hydrogen corridor, connecting France, Germany, Spain, and Portugal. Excerpts:

TER: NaTran is part of the H2med project alliance, Europe's first major green hydrogen corridor. What's your assessment of the challenges and market opportunities for developing such an infrastructure project?

Mazzenga: There are two main challenges. The first one is the market. We need commitments from customers to enable us to make investments and develop our hydrogen infrastructures. All the partners of the H2med project are actively engaging with market players to draw their attention and commitment to this kind of hydrogen infrastructure project. For example, we launched H2med Alliance last year to promote the project to customers.

The second challenge is a regulation. We need the regulatory framework to enable us to make long-term investments. We also need stability in terms of decarbonization policy. Some of the frameworks are already set by the European Directive 2024. But it needs to be transposed into national laws. We need long-term planning and a public guarantee to give the first pioneers customers an acceptable tariff.

TER: How would you evaluate the demand for hydrogen in Europe?

Mazzenga: Yes, we have some customers who need hydrogen. But some sectors are in crisis, such as mobility. The mobility sector is facing huge challenges, and some industry players have decided to stop their hydrogen projects in the mobility sector.

"Refineries, chemical, and steel industries will drive Europe's hydrogen growth" — Mazzenga

At NaTran, we forecast that industrial customers will drive growth for hydrogen demand, while other industries, such as refineries, the steel industry, and the chemical industry, represent a significant demand for hydrogen in the future.

TER: Which specific reforms are needed from the European Union to scale up hydrogen projects?

Mazzenga: We need political stability and strong commitments on Europe's climate target. As industry players, we also need a stable framework to enable us to promote our hydrogen project to customers, including sovereignty for local production and consumption of hydrogen in the critical industries. Our H2med project is for the interest of the domestic market in different countries, and it requires funding. The project promotes an integrated European market. The European Commission needs to fund the project. It has been done in the past for electricity and gas markets. We're sure that they will continue to fund the promotion of the internal market of the hydrogen sector in Europe. The European Union's "Connecting Europe Facility" is funding our projects in the study phase. But we will require funding for the construction part of our project in due time.

TER: How will the H2med project impact the French energy mix?

Mazzenga: It will provide a huge capacity of interconnection of 2 million tons of hydrogen per year, which is more or less 80 terawatt hours of hydrogen transit connecting France's industrial hub, H2 production plants, and H2 storage sites. The major infrastructure will bring flexibility to the grid as electrolysis can offer an output to excess electricity production and therefore reduce nuclear power plants' modulation. The flexibility enabled by a project such as H2Med can generate up to 1.5 billion cost efficiencies/year

by 2050, according to the RTE and NaTran joint study. The H2med project will be part of our energy mix in the future.

Hydrogen is key to reaching carbon neutrality in sectors where electrification is not possible. It is complementary to all other means of decarbonization, such as CCUS or biomethane. NaTran is also developing projects around the transportation of CO2 in order to support industries in implementing CCS for their non-abatable CO2 emissions.

TER: Which industries will drive growth for hydrogen development in Europe?

Mazzenga: At the moment, refineries, fertilizers, chemistry, and steel industries are the three main sectors that are obviously pulling the whole market for hydrogen development.

TER: What's your outlook for the European hydrogen industry?

Mazzenga: We see hydrogen developing on these pioneering sectors, once the infrastructure and market are available, with Europe's sovereignty in terms of energy supply reinforcing the momentum we see emerging. Other renewable energies will also support the industrial and mobility sectors.

TER: What's your company's main priorities in 2026?

Mazzenga: Our main priority in 2026 is to continue our engineering and technical studies for our projects, which will enable us to make final investment decision by 2030. Business & Industrial. We will engage with the public through dialogue because our projects must get public acceptance to get the permit to build the project.



Italy holds significant potential on floating offshore renewables - Fugro

Fugro, the world's leading Geo-data specialist, says Italy holds significant potential for floating offshore wind energy.

The Italian offshore wind sector is in its early stages, with several projects currently under development, following new auctions and government policy interventions.

In a notable development, Fugro completed a feasibility study, covering geophysical and archaeological surveys for Energia Wind 2020, which supports the 330MW Rimini offshore wind farm project development.

The Rimini offshore wind farm is one of Italy's first fixed-bottom offshore wind farm developments, located approximately 12 nautical miles off the coast of the Adriatic Sea.

Giancarlo Cristofalo, Fugro's Business Development Manager for the Mediterranean and Black Sea, said in an interview with The Energy Republic that the Rimini offshore wind farm is a reliable, competitive, and economically attractive option for offshore wind development in Italy.

Cristofalo said, "The Rimini offshore wind farm has a key competitive advantage: it is a bottom-fixed project. This approach is generally more cost-effective compared to floating solutions. It can leverage well-established and proven technology."



Giancarlo Cristofalo, Fugro's Business Development Manager for the Mediterranean and Black Sea

He noted that the Rimini offshore wind farm is a notable example that proves Italy holds significant potential for offshore renewable energy.

According to him, the Rimini offshore wind farm would also contribute to the EU's target of reaching 15 GW of offshore wind capacity by 2030.

"Once operational, the project is expected to generate up to 850 GWh of clean energy per year, strengthening Europe's renewable energy mix and reducing reliance on fossil fuels," he stated.

By Ndubuisi Micheal Obineme

However, he pointed out that most Italian offshore wind developments are expected to be floating due to deep-water conditions, while a few bottom-fixed projects are planned in the shallower waters of the northern Adriatic Sea.

"We recommend integrating environmental acoustics into project planning to reduce environmental risks such as seabed disturbance, underwater noise, and impacts on marine life," he explained, underscoring the need to monitor underwater soundscapes and marine species activity, to enable developers to schedule construction during periods of lower ecological sensitivity and minimize noise-related impacts.

In addition, Cristofalo said 130 offshore wind projects have been submitted for approval to the Italian Ministry of Environment and Energy Security (MASE).

"Over 80 GW of grid connection requests have been submitted to the Italian Transmission System Operator, Terna.

"18 GW are undergoing environmental impact assessment, and 2.2 GW have already received environmental approval. These figures highlight the availability of capital, expertise, and industrial commitment to establish a robust Italian offshore energy supply chain.

"The Italian government is working on implementing the FER2 Decree, a policy designed to incentivise innovative renewable technologies such as offshore wind, and preparing competitive auctions dedicated to this sector. These measures are highly anticipated by operators and investors, as they will provide the necessary framework and incentives to accelerate the growth of wind energy in Italy.

"Fugro is committed to supporting this transition by applying our experience and technology to help develop sustainable energy solutions for a safe and liveable world," he added.





Rimini offshore wind farm to start operational phase in third quarter 2026 – Felappi

By Ndubuisi Micheal Obineme

Energia Wind 2020, an Italian renewable energy company, has announced a significant operational update on its 330MW Rimini offshore wind farm, confirming that the landmark project is expected to enter its operational phase in the third quarter of 2026 following receipt of the required regulatory approvals.

Located approximately 12 nautical miles off Italy's Adriatic coast, the Rimini offshore wind farm is among the country's first fixed-bottom offshore wind projects and is expected to play a pivotal role in advancing Italy's energy transition agenda.

Speaking in an interview with The Energy Republic, Energia Wind 2020 Chief Executive Officer, Gabriele Felappi, said geophysical and archaeological surveys conducted by Fugro have confirmed the suitability of the project site for development.

Fugro completed the surveys in October 2025, providing technical and environmental



Gabriele Felappi, CEO of Energia Wind 2020

data required to advance the project. Felappi said the project has complied with all requirements under Italian legislation and is moving toward the next stage of the permitting process.

"The 'Unique Authorisation' is expected to be granted in the third quarter of 2026. After that, the project will be able to enter the operational phase," Felappi said.

He described the Rimini offshore wind farm as a strategic development for Italy's offshore wind industry and said it would help accelerate the deployment of renewable energy infrastructure in the country.

Felappi added that the project also represents an important step toward the Emilia-Romagna Region's target of achieving a 100% renewable energy supply by 2035.

Once operational, the 330MW wind farm is expected to strengthen Italy's renewable energy portfolio and support national efforts to reduce greenhouse gas emissions while enhancing long-term energy security.

Advanced Nuclear Technologies Gain Momentum as Global Investment and Demand Accelerate, Says S&P Global

By The Energy Republic Correspondent

Advanced nuclear technologies, particularly Small Modular Reactors (SMRs), are emerging as a key solution to meeting the world's growing demand for clean and reliable energy, according to Yulia Ivanovskaya, Senior Analyst, Energy Capital Insights at S&P Global.

Speaking on the outlook for advanced nuclear energy at CERAWeek 2026, Ivanovskaya said SMRs offer significant advantages over conventional nuclear power plants through their modular and scalable design. Major components and spare parts can be manufactured in factories and transported to project sites for assembly, reducing construction time and lowering overall project costs.

According to S&P Global research, more than 130 SMR projects are currently under development world wide, representing a pipeline capacity of approximately 27 gigawatts (GW). The United States, the United Kingdom,

Canada, Poland, Romania, Ghana, Russia, China and South Korea are among the leading countries advancing these projects, with the majority expected to begin development by 2030. Despite the strong pipeline, only Russia and China currently have operational SMR projects.

Ivanovskaya noted that SMRs offer greater operational flexibility and can utilize different types of fuel, making them adaptable to a wide range of energy needs.

She also highlighted the growing momentum behind microreactors, which typically generate less than 200 megawatts (MW) of electricity. Their compact, transportable design enables deployment in off-grid and remote locations where conventional electricity infrastructure is unavailable, expanding access to reliable clean power. While the technology presents significant opportunities, Ivanovskaya cautioned that advanced nuclear projects remain in the

early stages of commercialization and continue to face financial, construction and execution risks.

Investor confidence in the sector, however, has grown substantially. S&P Global has tracked approximately \$7 billion in equity funding raised by selected SMR start-ups, with \$4.5 billion secured in 2025 alone—a dramatic increase from \$235 million in 2024. Most of the investment has flowed toward Generation IV reactor technologies, indicating investors' growing willingness to support the development of next-generation nuclear energy.

"Advanced nuclear is strategically compelling," Ivanovskaya said. "However, achieving large-scale deployment will depend on lowering costs, improving repeatability, accelerating licensing processes and strengthening supply chains."

She added that rapidly growing electricity demand from hyperscale data centers is becoming a major driver for power expansion, creating new opportunities for advanced nuclear technologies to play a critical role in the future global energy mix.



Xavier Vasques, Vice President, Chief Technology Officer, and Director of R&D, IBM France.

“We’re building trust with data, AI models, and governance” – Vasques

In this interview, Xavier Vasques, Vice President, Chief Technology Officer, and Director of R&D at IBM France, talks to Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, on the role of artificial intelligence for the future of work, and how IBM is using AI to transform operations, build ‘Trust’ within its client-base in France and globally. Excerpts:

TER: What emerging technologies, such as AI, digital twins, automation, and advanced analytics, would have the greatest impact on the future of work?

Vasques: All of them will play a role, but the biggest shift is agentic AI. It is moving from assistants that answer questions to AI agents that take action across systems, under human supervision. The real impact comes less from any single

technology than from combining them. This includes foundation models for reasoning, automation for execution, and digital twins and analytics to ground decisions in real operational data. The challenge enterprises face isn’t just building one good agent; it is running a growing fleet of agents safely. Adoption

I’m not worried about AI adoption because AI raises our productivity and takes over repetitive tasks, allowing people to focus on what really matters.

An engineer can spend more time on engineering, while the HR professional will focus on developing people rather than paperwork, and the finance team focuses on analysis rather than data entry. This is augmentation, not replacement. AI makes things easier for people to use their judgment, creativity, and expertise. With this, the future of work becomes a human setting the intent while agents handle the execution.

TER: How is IBM building trust with its AI solutions?

Vasques: This is a very important topic for us, and trust comes from three things: openness, governance, and control over your data.

On openness, our Granite models are released under permissive open-source licensing, with disclosed data practices. This matters because most large AI models are trained by scraping enormous volumes of data from across the internet with little control over their origin, which raises real intellectual-property and copyright questions. Dictionaries & Encyclopedias

At IBM, we take the opposite approach: we know what goes into our models.

On governance, watsonx.governance monitors the entire lifecycle of a model, from the first request through to production, and consolidates the facts on every model, whether built with IBM or third-party tools, into a single dashboard. It tracks which data is used and detects bias, which is exactly what is needed to comply with regulations such as the EU AI Act.

On control, the clients can run our stack on-premises or in their own environment rather than being forced into a public cloud. The models that we deploy are owned by the client. In regulated and sovereign contexts, that is decisive. Trustworthy AI isn’t a feature you bolt on at the end; it is the architecture.

TER: How is IBM helping organizations create a foundational structure that supports AI adoption?

Vasques: One of the biggest challenges in AI adoption is data, not models. Our approach brings watsonx.ai, watsonx.data, and watsonx.governance into a single governed environment, organised around three pillars: data, AI, and governance.

This enables an organisation to move from experimentation to production without friction, with the freedom to use Granite, open-source, or third-party models. And we do not use one model for everything. We build smaller, specialised models for specific domains such as HR, procurement, finance, or engineering. This method saves cost and energy.

It also keeps the client’s data and intellectual property local. We build hybrid by design on Red Hat OpenShift, so AI runs where the data already lives.



A good example is L'Oréal. With around 4,000 researchers worldwide, they built a custom foundation model with us to replace non-renewable ingredients with more sustainable, bio-sourced ones, deployed in their own environment and fully aligned with their strategy. The lessons are consistent across projects: start by unifying and governing your data, choose models pragmatically rather than locking in, govern from day one, and measure ROI relentlessly. Computers & Electronics

TER: For organizations evaluating AI engineering platforms today, what criteria should they use beyond code generation capabilities, and what signals indicate a platform is ready for enterprise-scale AI adoption?

Vasques: Code generation is now table stakes. Specifically for development, we built IBM Bob, an agentic AI for large organisations tackling complex challenges: it does not just generate code, it works across the whole software lifecycle, taking into account architecture, data, security, and a company's own standards.

But the real signals of enterprise readiness are elsewhere. First, governance and observability are built into the platform rather than bolted on later: can you trace, audit, and monitor every model and agent decision?

Second, model freedom: a serious platform routes work across Granite, open-source, and partner models without locking you to a single vendor. Third, integration with your real systems and data, because that is where the value lives. Psychology

Fourth, deployment portability and sovereignty: can it run on-premises, in your own cloud, or in a regulated EU region?

Fifth, agent lifecycle management as you scale from one agent to a fleet.

If a platform can govern many agents across a hybrid infrastructure with measurable ROI, it is enterprise-ready.



TER: The energy industry is undergoing rapid transformation in terms of decarbonization, grid modernization, and changing customer expectations. What is IBM doing in the energy sector?

Vasques: The energy system is being reshaped by three forces at once: decarbonization, grid modernization, and surging electricity demand, not least from AI itself.

Our role is to bring AI and automation to that transition without ever compromising operational reliability, on a hybrid and sovereign-capable architecture, which matters for critical national infrastructure.

We see the most value in three areas. First, intelligent asset management and predictive maintenance on critical infrastructure: energy companies can use IBM Maximo on their path to net zero or to manage critical assets.

Second, operational efficiency in renewables. We can optimise operations and data transparency, or use computer vision to improve wind-turbine blade manufacturing.

Third, sustainability and emissions intelligence, where companies can automate their ESG reporting.

Across all of these, the throughline is the same: ground AI in trusted operational data, forecast demand and renewable generation, optimise grid operations, and keep humans firmly in command of safety-critical decisions.

TER: Sustainability goals are now a boardroom priority. What are the competitive advantages of IBM Envizi in terms of emission management compared to other technologies in the market? Management?

Vasques: Envizi's edge is finance-grade auditability combined with breadth and automation.

It automates the capture and consolidation of more than 500 ESG data types into a single, auditable system of record, and it calculates emissions across Scopes 1, 2, and 3 in an engine built on the GHG Protocol.

Three things separate it from point tools: automated data capture from utility bills, interval meters, and renewable assets rather than spreadsheets; an Emissions API that embeds GHG calculations directly into a client's existing workflows; and native integration with the rest of the IBM portfolio for asset and operations management.

TER: What changes do you foresee in the roles and responsibilities of AI working alongside the human workforce over the next few years, and what is your outlook for AI in 5-10 years?

Vasques: Over the next few years, the pattern is augmentation, not replacement. Agents will absorb routine, high-volume work, while people move toward judgment, creativity, relationships, and oversight. New roles will grow around governing AI: supervising agents, auditing their decisions, and managing risk. Oil & Gas

Governance is not optional here, especially in Europe. With the EU AI Act, we need to know who is using which model, for what, and be able to prove it. That is what keeps us in control as adoption scales.

Within five to ten years, I expect the agentic enterprise to become the norm.

At Think 2026, we introduced capabilities such as IBM Sovereign Core for operational independence and the next generation of watsonx Orchestrate as an agentic control plane, precisely because organisations need to run AI at scale across many agents, with governance and sovereignty built in. The throughline is always the same: powerful AI, deployed responsibly, with humans firmly in command.



The Next Phase for Quantum Innovation:

“IBM’s Starling will solve the hardest problem in quantum computing” – Vasques

As Quantum computing evolves, IBM is advancing Quantum innovations to develop new supercomputer systems that solve complex issues across major industries. Business&Industrial

Xavier Vasques, Vice President, Chief Technology Officer, and Director of R&D at IBM France, shares insights in an interview with Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, on the company’s trajectory for Quantum innovations and action plans to launch new Quantum computers in 2026 and beyond.

TER: Please tell us about IBM’s Quantum computing roadmap.

Vasques: We have been building quantum computers for over a decade. We put our first quantum computer on the cloud in 2016 with five qubits; but today, our Heron processors carry 156 qubits, and we operate the largest fleet of quantum systems in the world (more than 90). Since 2020, we have published our roadmap publicly and delivered against its mandate year after year. The roadmap has now reached an inflection point: we have moved from chasing qubit counts to engineering fault tolerance. InvestmentPlan Analysis

Our public plan is to deliver IBM Quantum Starling in 2029, the world’s first large-scale, fault-tolerant quantum computer, with 200 logical, error-corrected qubits able to run on the order of 100 million quantum operations. We get there through a sequence of modular processors, each providing one essential ingredient: Loon for the high-connectivity components and couplers, Kookaburra as the first fault-tolerant module that combines logic and memory, and Cockatoo to entangle modules together.

Beyond Starling, we expect a quantum-centric supercomputer by 2033, IBM Quantum Blue Jay, capable of running on the order of a billion gates across roughly 2,000 logical qubits.

In the near term, we are confident that partners running on IBM systems will demonstrate quantum advantage in 2026, the point at which a quantum computer will be able to solve a problem more efficiently than any known classical-only method to date.

TER: What is IBM doing in France, and are there any specific projects that you would like to share with us?

Vasques: France has built one of the most dynamic quantum ecosystems in Europe through its national quantum strategy, and IBM is part of that fabric on several levels. Our open-source software stack, Qiskit, is the most widely used quantum development framework in the country, across universities, national research organisations and industry.

French researchers and enterprises access our global fleet through the IBM Quantum Network, and, importantly for European clients, they can run workloads within the European Union: our first European quantum data centre is operated in Ehningen, Germany, with all job data processed inside EU borders.

In France, we also have a team in Montpellier dedicated to Qiskit, supporting our users. We work hand in hand with the French ecosystem. A good example is our partnership with Pasqal, a French company building a common, hardware-agnostic approach to quantum-



Xavier Vasques, Vice President, Chief Technology Officer, and Director of R&D, IBM France.

centric supercomputing, where machines and classical high-performance computing can work together in a single workflow.

TER: How does IBM’s approach to Quantum computing differ from other technologies, particularly in areas such as hardware, software, and ecosystem development?

Vasques: On hardware, we are betting on superconducting transmon qubits combined with a modular architecture: rather than building one impossibly large chip, we connect smaller modules with couplers and with a new family of quantum error-correcting codes, qLDPC, that cut the overhead by roughly 90 percent, paired with real-time decoding. This is what turns fault tolerance into an engineering problem rather than a theoretical one.

On software, Qiskit is the most adopted quantum development stack in the world (it is now used by nearly 70% of quantum developers and has enabled the execution of more than 4 trillion quantum circuits on quantum computers), and we are layering AI assistance on top of it to automate parts of quantum code generation. It is open and hardware-agnostic, and it can also drive other machines, not only ours.

On ecosystem, the scale speaks for itself: we operate more than 90 quantum systems globally, the largest fleet in the industry, and our network spans more than 300 organisations running real workloads today. We are also extending beyond single machines, developing the interconnect and networking layer needed to link quantum processors into distributed, quantum-centric systems. Business&Industrial

The differentiator is the full stack, from the chip to the software, delivered openly and on schedule.



TER: IBM is also investing \$10 billion over the next five years to advance Quantum computing. What key technological and business outcomes does IBM expect this investment to achieve, and how will it impact the Quantum computing landscape?

Vasques: On June 2, 2026, we announced that we will invest more than \$10 billion in quantum computing over the next five years, spanning research and development, capital expenditure, manufacturing scaling, ecosystem partnerships and acquisitions. The intent is to accelerate the roadmap beyond Starling, to industrialise quantum, moving it from leading-edge systems toward fault-tolerant scale.

A concrete part of that is manufacturing. Through a letter of intent with the U.S. Department of Commerce, IBM is establishing Andron, a dedicated

quantum chip foundry, with \$1 billion from the Department matched by \$1 billion from IBM. The outcomes we expect are threefold: demonstrate quantum advantage on useful problems in 2026, secure the manufacturing and supply chain required to scale, and deliver fault tolerance in 2029.

For the wider landscape, the signal is clear: the quantum era is no longer a research promise; it now has a time-bound industrial trajectory.

TER: As IBM plans to launch Quantum Starling by 2029, what challenges will it resolve, and which applications, including industries, could benefit from these advancements?

Vasques: The single hardest problem in quantum computing is error: qubits are fragile, and genuinely useful algorithms require long, deep circuits. Starling resolves this by running error-corrected logical qubits

at scale, which allows more than 100 million operations across 200 logical qubits. It unlocks problems classical computers cannot reach.

For an energy and industrial audience, the most relevant applications are in chemistry and materials science, designing better catalysts, battery materials without scarce heavy metals, and carbon-capture chemistry, and in large-scale optimisation such as grid balancing, logistics and risk management.

These are exactly the problems where the number of possibilities explodes beyond what classical machines can handle. We already see early signals across industries on today's systems.

With the Cleveland Clinic and RIKEN, we modelled a 12,635-atom protein, the largest ever simulated on a quantum system; Moderna has explored mRNA structure on 80 qubits; HSBC reported around a 34 percent improvement in bond-trading prediction; and Q-CTRL achieved large speedups in materials simulation.

Sustainability should be a catalyst for growth, not a compliance burden – Sandra *By Genevieve Aningo*

Sandra Osinachi-Nwadem, Senior Associate at Tope Adebayo LP (TALP), has said Sustainability should no longer be viewed as a regulatory obligation but as a strategic driver of growth, competitiveness and long-term business value.

Speaking in an interview with The Energy Republic, Sandra said the accelerating global energy transition is reshaping business, investment and legal landscapes, making sustainability a core commercial consideration rather than a standalone compliance function.

She noted that climate and energy transition litigation is rising globally, with companies facing increasing legal risks around ESG disclosures, greenwashing claims, climate commitments, regulatory changes and transition-related contracts. While Africa's energy transition litigation remains at an early stage, she said businesses must begin preparing for evolving regulatory and investor expectations.

"Sustainability should not be viewed as a cost centre or a compliance burden.



Sandra Osinachi-Nwadem, Senior Associate, Tope Adebayo LP (TALP)

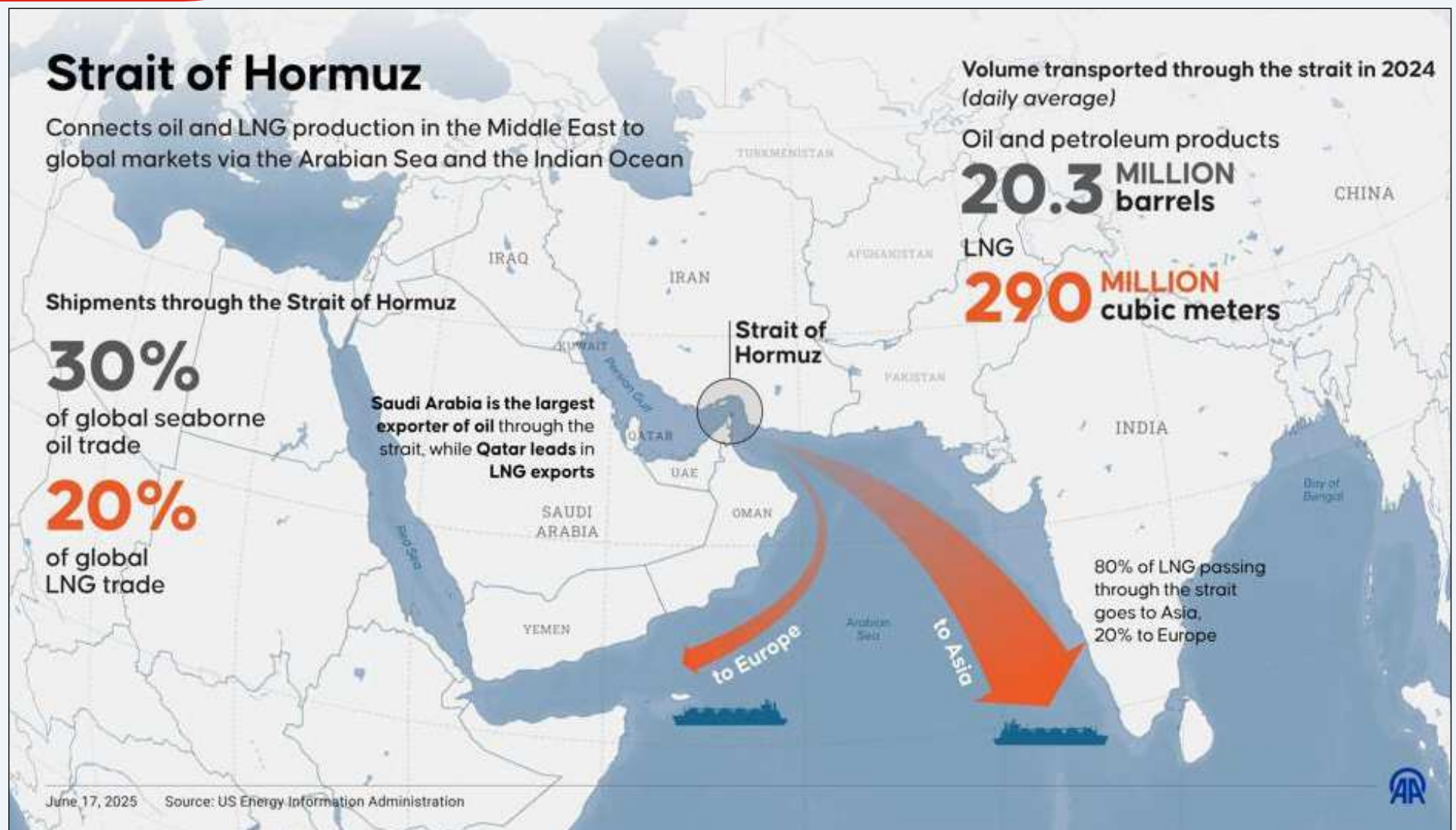
When properly embedded into business strategy, it becomes a catalyst for growth, competitiveness and long-term business value," she said. Sandra identified fragmented regulations, limited institutional capacity, inadequate ESG data, technical skills shortages and capital constraints as key barriers preventing companies from translating sustainability ambitions into operational reality. She stressed that the gap between

boardroom commitments and on-the-ground implementation remains one of the biggest drivers of sustainability-related disputes.

To address these challenges, she urged companies to integrate ESG into corporate strategy, strengthen governance and board oversight, invest in technology and data systems, embed sustainability obligations across supply chains, and adopt practical transition plans supported by measurable targets.

She also highlighted the growing importance of carbon markets, mandatory climate disclosures, ESG-linked financing and increasing investor scrutiny, noting that businesses that proactively align with these trends will be better positioned to attract capital, manage risk and remain competitive.

According to Sandra, TALP supports clients in the energy and natural resources sectors by integrating sustainability into commercial decision-making, helping businesses anticipate regulatory changes, structure bankable transactions, manage environmental and social risks, and unlock new investment opportunities. "As the energy transition gathers pace, organisations that treat sustainability as a strategic business imperative rather than a compliance exercise will be best placed to thrive in an increasingly complex global market," she concluded.



Middle East Conflict: How the US-Iran war will reshape the global energy order

By The Energy Republic Editorial Team

As the US-Iran war escalates, the conflict has exposed vulnerabilities in the global economy, highlighting how geopolitical instability can rapidly disrupt energy supplies, trade, and supply chains. The Iran war sent shockwaves across global energy markets, disrupted oil flows, and brought traffic through the Strait of Hormuz close to a standstill. But its lasting impact may extend far beyond the conflict. The war exposed critical weaknesses in the global economic and supply-chain network.

Energy security has become a top priority. One of the clearest lessons is that energy security has returned to the top of the policy agenda. The war also underscored the risks of relying heavily on a single region for energy supplies.

What may change

Many countries are likely to accelerate investments in strategic petroleum reserves, LNG infrastructure, nuclear energy, renewable power, and domestic production to reduce dependence on vulnerable supply routes.

The geography of energy trade may change: Before the war, nearly a fifth of

the world's oil consumption passed through the Strait of Hormuz. The war reminded major importers how heavily they depend on a single region for oil and gas supplies. Countries that rely on Gulf energy are now reassessing how much concentration risk they are willing to accept.

What may change

Energy buyers may seek a wider mix of suppliers, while producers outside the Gulf could gain importance. New trade partnerships and export routes may emerge as countries try to spread risk across multiple regions.

Shipping routes have become strategic assets: The conflict demonstrated that disrupting a major maritime chokepoint can affect global trade even without directly damaging oil fields or production facilities. Tanker traffic slowed, insurance costs rose, and supply chains felt the impact.

What may change

Governments may place greater emphasis on protecting key sea lanes, ports and trade corridors. Control and security of shipping routes could become as strategically important as access to resources themselves.

The era of efficiency-first globalisation is fading away: The conflict also signals the

continued shift away from an efficiency-first model of globalisation. For decades, companies prioritised lean inventories and low-cost supply chains. The war demonstrated the vulnerabilities of this approach, making resilience just as important as efficiency.

What may change

Companies and businesses may diversify suppliers, maintain larger inventories, and build greater redundancy into their operations. Geopolitical risk is now an economic risk. The conflict quickly affected oil prices, freight costs, aviation routes and inflation expectations far beyond the Middle East. It highlighted how closely geopolitical events and economic outcomes are now connected.

What may change: Governments may increasingly treat geopolitical risk as an economic risk. Foreign policy, defence planning and economic planning are likely to become closely linked.

The cost of resilience is going up.

Building resilience, however, comes at a cost. Larger energy reserves, stronger infrastructure, diversified supply chains, and increased defence spending all require significant investment.

What may change: Countries and companies may accept higher costs in exchange for greater security and reliability. The result could be a world that is better prepared for shocks but also more expensive to operate.



Iraq, Syria, UCC, Chevron, TI Capital sign MOU to develop a strategic oil pipeline by passing Strait of Hormuz

Agreements signed in Washington establish Qatar UCC as lead coordinator of an investor consortium with Chevron and TI Capital.

The governments of the Republic of Iraq and the Syrian Arab Republic signed a government-to-government Memorandum of Understanding and each signed a separate Heads of Agreement with Qatari UCC Urbacon Concessions Investments W.L.L. Chevron Business Development EMEA Ltd. and TIC Infra II LLC (TI Capital), to advance a strategic cross-border crude oil pipeline between Iraq and Syria.

In a statement made known to The Energy Republic, the project is one of the biggest transformational infrastructure projects in the middle east establishing a new energy exit corridor into the Mediterranean, bypassing the Strait of Hormuz.

The signing ceremony took place at the U.S. Chamber of Commerce in Washington, D.C., in the presence of H.E. Ali al-Zaidi, Prime Minister of the Republic of Iraq, and Expatriates of the Syrian Arab Republic.

Participants in the signing included Mehmet Arif Ozozan, Chief Executive Officer of UCC Concessions; Eng. Youssef Qiblawi, President and Chief Executive Officer of the Syrian Petroleum Company; Joe Koch, Director – Upstream,

Corporate Business Development, Chevron; and Ziad Ghandour, Sole Managing Member of TI Capital, together with representatives of the Iraqi and Syrian governments.

The agreements establish a coordinated framework to assess, develop, finance and implement an onshore pipeline corridor linking Iraqi crude oil production with export and delivery infrastructure on Syria's Mediterranean coast.

The framework brings together the Qatari-based UCC Concessions' capabilities in concession development, from Qatar to the world complex cross-border infrastructure and project execution, and Chevron's long history of delivering complex global infrastructure. and TI Capital, which brings a long history of investments in the Middle East. It also provides for structured cooperation with the relevant ministries, state companies, regulators, and technical authorities in Iraq and Syria.

This transformational project is expected to support greater resilience in regional energy flows by adding an alternative route to existing Gulf export channels. The proposed development builds on the historic Iraq-Syria oil connection while introducing a modern framework designed around international

technical, environmental, health & safety, security and financing standards.

A bilateral government working group is expected to coordinate cross-border matters and prepare a definitive intergovernmental framework. The investor consortium will work in parallel on project feasibility, bankability and a preliminary financing plan.

The final scope, route, investment structure, timetable and commercial terms remain subject to technical studies, commercial negotiations, government approvals and the execution of definitive agreements.

UCC Holding is a Qatari-based international Energy, Concessions, and Construction company, distinguished as a Grade A licensed builder and ranked among the world's leading contractors.

Recognized as 41st on ENR's Top 250 International Contractors, 10th in the Power Sector, and 98th in Buildings, UCC Holding has established a significant footprint in Qatar and across global markets.

The organization's portfolio spans large-scale power generation, aviation, infrastructure, and building projects, delivering transformational developments that shape economies and communities.

INTERVIEW



Rob DeSantis,
CEO and co-founder,
Arkestro



Arkestro AI ‘predict and execute’ smarter decisions on global supply chain

In this interview, DeSantis speaks with Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, revealing how Arkestro's AI help companies save between 16% and 30%, under supply chain management. This includes sourcing, spot buys, services, logistics, and more...

TER: Tell us about your expertise and the company's value propositions to the energy sector.

DeSantis: I am the Chief Executive Officer and Co-Founder at Arkestro. I've been in the procurement space for 30 years, starting with co-founding Ariba in 1996. I managed sales, propelling the company to \$250 million in revenue in four years and an IPO in 1999. More recently, I've been investing and advising a small portfolio of companies, including Bloom Energy, HiQ Labs, Agiloft, USEND, and more.

I was also an early angel investor and board member of LinkedIn.

With Arkestro, I saw enormous potential in the company, and our already-proven impact speaks for itself.

Energy companies deal with massive, complex, and volatile commodity prices.

We help them move from a reactive “wait and see” posture to a proactive “predict and execute” model. By addressing the biggest issues in supply chain—time and scale—

Arkestro reduces friction and competitively prices every line item while taking all other decision factors into account.

In aggregate, we've helped energy and industrial leaders capture between 16% and 30% savings, driving that value straight to earnings per share while drastically reducing cycle times and allowing teams to capture 3x to 5x more spend under management. This includes sourcing, spot buys, services, logistics, and more. Our customers include Chevron, Nissan, Valvoline, Aramco, NextDecade, Koch Industries, and more.



TER: What's your assessment regarding the current state of the global supply chain? What are the challenges and emerging trends shaping the energy supply chain ecosystem?

DeSantis: The global supply chain is permanently volatile, rather than characterized by temporary disruptions.

Over the past few years, geopolitical conflicts, climate events, and shifting trade dynamics have made resilience and efficiency a priority for energy companies and their partners. The most recent challenge is the escalation of attacks on the Strait of Hormuz, which is one of the world's most strategically important shipping passageways.

A significant portion of global oil and LNG exports passes through this route, so any instability immediately reverberates through shipping rates, insurance costs, and energy prices.

At the same time, demand in the energy sector is evolving rapidly with the rapid expansion of digital infrastructure. Data centers are becoming major electricity consumers and are reshaping energy procurement strategies. They're also evaluating how AI adoption fits into strategic plans and its ability to boost visibility, optimize logistics networks, and identify supplier risk earlier.

TER: What are the building blocks of Arkestro AI, particularly on supply chain management? How does it provide a predictable and resilient supply chain network?

DeSantis: Combining data science with human behavior science, Arkestro's leading predictive procurement platform is built on three patented sciences:

Negotiation Science: Data-driven, transparent strategies that secure optimal pricing and terms with extreme speed and scale.

Supplier Science: AI-powered supplier selection, engagement, and feedback for maximum impact to both suppliers and buying organizations.

Process Science: Using modern, embedded architecture and patented



Rob DeSantis, CEO and co-founder, Arkestro

process flows that accelerate procurement cycles at scale without extra effort.

With these capabilities, Arkestro helps shift traditional procurement to become a proactive, results-driven function. Teams are no longer stuck in prolonged negotiations or slow procurement cycles.

Instead, they can build stability and efficiency through smarter, strategic decisions grounded in rich historical data.

TER: How can Arkestro AI and predictive tools help companies optimize procurement decisions and navigate through the unprecedented challenges in the global energy supply chain? Where have these solutions been deployed so far, and what are the success stories?

DeSantis: Right now, we're helping energy companies navigate unprecedented disruptions in oil prices and availability.

Arkestro's breadth of data allows buyers to make quick turns to less-impacted channels and suppliers.

For example, our customer, Koch Engineered Solutions (KES), was looking for a solution to transform its procurement process, where most of their line item spend was not competitively priced, and spot buys were so urgent, prices paid were at a premium.

With Arkestro's predictive procurement platform, all line items—including spot buys, services, custom parts, and services—became manageable, reducing costs and saving time at scale.

The paradigm shift around speed, scale, and ease of use allowed KES to roll out globally in its first year of use and then integrate with its Infor ERP system for even faster system communication in the second year.

KES was also able to use Arkestro in engineering for new product introductions. With the ability to establish suggested prices on all line items in a matter of minutes, KES could make both design and proposal decisions with substantially more confidence than ever before.

The result is a smoother, scalable global operation that maximizes value for KES, its suppliers, and its customers.

Arkestro allows for two paradigm shifts: Addressing all spend, not just the top 10-20%, due to the platform's AI capabilities, speed, and scale.

The second is the fast time-to-value. Arkestro customers go "live in 5" days.

Twenty months ago, Chevron decided to try Arkestro to impact tangible cost savings, understand operational efficiencies, and, ideally, transform how they do business.

In the first few days of use, Chevron drove tens of millions of sales through thousands of line items on the platform.

The speed and scale of this accomplishment in such a short time were transformative, and the tangible value received was so extreme that Chevron began an enterprise-wide rollout.

Based on compelling internal stakeholder testimony on fast time-to-value on EPS impact and ease of use, Chevron decided to roll out globally before any integration.

Users from Angola, the Philippines, Australia, and Thailand were all trained last year. Chevron chose to go global with Arkestro beyond its U.S. team because of our demonstrated results: oil and gas customers realize an average tangible cost savings of greater than 20%.

Our partnership with Chevron helped them overcome the challenge of limited time and resources, enabling accelerated impact without overextending the team.

In January, during their earnings call, Chevron (like Valvoline) mentioned the use of predictive procurement as a contributor to EPS.



Because of Arkestro's patented sciences, suppliers now have a much more elegant way of receiving requests from buyers. They also get dynamic feedback quickly, which allows them to make timely business decisions rather than the traditional way of using phone, email, spreadsheets, and P2P systems.

Our data-driven, game theory-based platform delivers huge value to both buyers and suppliers quickly.

This agility has been especially valuable during supply chain disruptions, when Arkestro's adaptive model enables all parties to update and refine offers in real time based on changing market realities.

Projects can keep moving without delays.

TER: With supply chain disruption caused by trade wars, cybersecurity issues, and extreme weather conditions, what are the competitive advantages of Arkestro AI to help companies navigate through the market volatility?

DeSantis: Market volatility is the new normal in today's global supply chain. Arkestro's predictive procurement platform powers enterprises to move fast without losing control.

As a continuous, data-driven, and transparent system, Arkestro moves companies away from reactive, episodic sourcing to manage and maintain operations amid supply chain volatility. Our unprecedented platform unlocks material value in the supply chain that was never possible to achieve before, quickly and at scale.

Arkestro's platform also gives procurement teams a breadth of knowledge. Predictive procurement is based on data: historical buyer/seller behavior, market context, and institutional knowledge. Every new event builds upon that institutional knowledge.

Arkestro learns about your company's particular supply needs. Leveraging this institutional knowledge allows every individual to achieve the best outcome on every line item.

Arkestro takes out the day-to-day manual tasks that make negotiations so lengthy, allowing procurement teams to focus on critical decisions.

In particularly volatile times, that speed and visibility give Arkestro customers a significant advantage. With Arkestro, companies can move deliberately, at scale and speed, positioning themselves to absorb volatility rather than being exposed to it.

TER: What's your outlook for the global energy supply chain in 2026 and beyond? What are the key factors to drive growth in the supply chain ecosystem?

DeSantis: The global energy supply chain has reached an inflection point, where adopting predictive procurement is the primary differentiator between market leaders and those remaining behind due to volatility.

We have moved past the era of reactive procurement, and a predictive enterprise is now the baseline for managing an energy business amid surging electrification demand, data center buildout, and a fragmented geopolitical landscape. In this environment, the most resilient companies

are the ones that successfully transition from manual, back-office sourcing and procurement to predictive procurement cycles.

The industry is also shifting from AI adoption as an experiment to a deep operational function.

At Arkestro, we've seen our predictive procurement platform deliver high-impact, cost- and time-saving outcomes at scale for enterprises within days and weeks of adoption.

Past that timeframe, the value continues to deepen and becomes a core part of day-to-day functions.

Beyond AI, the key growth drivers in the supply chain ecosystem will center on supplier collaboration and spend intelligence at scale.

Together, they are transforming predictive procurement as a strategic competitive advantage, and the energy industry is one of the most important spaces where that shift is playing out in real-time. The key decision corporations now have to make is whether to bring in predictive procurement with a "land and expand" strategy or a transformational strategy.

Ultimately, transformation is the most competitive and collaborative methodology in today's fast-moving supply chain world.

Arkestro's AI-powered platform, patented sciences, and "live in 5 speed" enable enterprises to execute that transformation in days, not years.



Emerging trends in aerospace and defence sector: Digital infrastructure, advanced manufacturing and AI to become the backbone of operations – Battaglia

Amid the geopolitical tensions, the aerospace and defence sector is entering a period of profound transformation, and, at the same time, many organizations are grappling with persistent supply chain challenges, capacity constraints, and shortages of specialized human resources.

In this interview, Dr. Cesare Battaglia, PwC's EMEA & Italy Aerospace, Defence & Security Leader, discusses with Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, about the major trends reshaping the sector, highlighting the emerging opportunities for companies beyond traditional defence markets, and the disruptive forces—from AI and autonomous systems to sustainability, which are poised to define the next decade of growth and innovation for the aerospace and defence sector. Excerpts:

TER: What are the most significant industry shifts and emerging trends currently shaping the aerospace and defence sector, and where do you see market opportunities?

Dr. Battaglia: The aerospace and defence sector is undergoing a structural transformation driven by three major shifts. The first one is defence spending. It is accelerating globally, particularly in Europe, with a broader scope extending beyond the traditional military capabilities into infrastructures, digital technologies, and industrial resilience.

The second one is a strong convergence between civil and military sectors, including technologies such as AI, advanced manufacturing, and secure connectivity, which are becoming critical enablers across both domains, creating new dual-use opportunities.

The third one is industrial scale, and supply chain sovereignty is becoming a strategic priority. For market opportunities, there are many opportunities beyond the traditional defence players. There is strong



Dr. Cesare Battaglia, PwC's EMEA & Italy Aerospace, Defence & Security Leader

potential for companies in tech, manufacturing, energy, and telecom infrastructures to leverage their existing capabilities.

TER: Supply chain disruptions have challenged manufacturers worldwide in recent years. What procurement strategies are proving most effective in building more resilient and agile aerospace and defence supply chains?

Dr. Battaglia: Organizations are moving away from cost-driven procurement models toward resilience-focused strategies. The key levers include supplier diversification through near-shoring to reduce geopolitical risk, alongside building a stronger strategic partnership.

Digitalization is also playing a central role with advanced analytics, digital twins, and real-time visibility tools, enabling better forecasting and risk management across the supply chain.

TER: As the PwC's EMEA & Italy AD&S Leader, what common operational challenges do you see across these markets, and how is PwC helping governments and organizations to improve efficiency and competitiveness?

Dr. Battaglia: Across EMEA, many organizations are facing capacity constraints, a fragmented

procurement process-based scattered supply chain, and slow adoption of advanced technologies. There's also a persistent gap in specialized skills, particularly in digital and engineering domains. There will be a shortage of tens of thousands of human resources in the coming years. PwC supports both government and industry players by addressing these challenges.

TER: Looking ahead, what emerging trends or disruptive forces do you believe will define the next chapter of growth and innovation for the aerospace and defence sector?

Dr. Battaglia: The next phase of growth will be shaped by the increasing role of digital and data-driven capabilities, AI, high-performance computing, and advanced analytics, which will transform how systems are designed, operated, and maintained.

At the same time, digital infrastructure will become a critical backbone for defence operations. Another key trend is the rise of autonomous and uncrewed systems across all the domains, including air, land, and maritime domains, requiring new operational concepts and industrial models. Finally, sustainability and energy resilience will play a more prominent role, influencing both operations and long-term investment decisions.

TER: What is your outlook for the aerospace and defence sector over the next 5–10 years?

Dr. Battaglia: The outlook for the sector is very positive, supported by sustained public investment and increasing strategic relevance. We expect that continued growth and defence spending, combined with the progressive expansion of the sector's boundaries, will include infrastructure, digital capabilities, and industrial resilience.

Over the next decade, the sector will become more interconnected with adjacent industries, and civil capabilities will play a key role in the defence sector.



NOG ENERGY WEEK 2026

Celebrating Twenty-Five Years of Nigeria's Energy Story and African Energy Growth

From a modest conference hall in Abuja in 2000 to Sub-Saharan Africa's largest energy gathering, NOG Energy Week has been far more than a conference. It has been a policy laboratory, a deal room, an engineering academy, and a mirror — reflecting on Nigeria's energy sector transformation. On its 25th anniversary, we examine the evolution of NOG Energy Week and the impacts on the Nigerian energy sector and Africa's energy future.

By Ndubuisi Micheal Obineme

Launched in 2000, NOG Energy Week came into existence when Nigeria's energy sector was dominated overwhelmingly by a tight constellation of international oil and service companies. Indigenous companies played peripheral roles, largely confined to service provision or minor equity stakes. The gas sector was treated as an afterthought: billions of cubic feet of associated gas were flared daily without serious consequence, and the idea of Nigeria as a commercially serious gas nation remained more aspiration than reality.

Nigeria's energy sector had no shortage of activity, but it suffered from a real deficit of structured,

credible, multi-stakeholder dialogue during that period. Policy was made in closed government chambers. Investment decisions were taken in Houston and London boardrooms. The Nigerian professional and business community had limited access to the international conversations that shaped their industry. There was no neutral, respected platform where government, IOCs, indigenous companies, financiers, and technical professionals could sit in the same room and speak honestly about the sector's challenges and opportunities.

However, the NOG conference, organized by dmg events Nigeria, was established to address the unprecedented challenges facing Nigeria's energy sector.

According to dmg events, NOG Energy Week was founded with a clear and urgent purpose to bring together the people capable of securing Nigeria's energy future. That conviction, the company said, had remained unchanged over the past quarter century. Every minister, lawmaker, engineer, investor, entrepreneur, policymaker and young professional who had passed through the conference had contributed to building what is now recognised as a cornerstone of Africa's energy calendar.

NOG Energy Week stands as a platform to create the most authoritative annual gathering in Nigeria's energy calendar — one that would be taken seriously by the global community and consequential enough to influence the sector's direction.



Delegates at the NOG Energy Week 2026 Strategic Conference

Within a few years, NOG had established itself as an unmissable date for petroleum ministers, IOC country chairmen, NNPC leadership, and the growing community of indigenous operators seeking international credibility and market access. The conference grew steadily and has become the largest energy event in Africa.

What NOG Helped Build

The most consequential contribution any conference can make is to the policy environment in which an industry operates. By this measure, NOG Energy Week's 25-year record is remarkable.

The Local Content Revolution

The story of Nigeria's local content revolution — arguably the most transformative policy shift in the country's energy history since commercialisation — is, in significant part, the story of what NOG made possible.

Before the Nigerian Oil and Gas Industry Content Development (NOGICD) Act became law in 2010, the principle of Nigerian content was being debated, refined, and championed at NOG event. Year after year, the conference provided the structured forum where NCDMB's predecessors and early advocates could present data, make arguments, expose the cost of underutilisation of Nigerian capacity, and build the cross-sectoral coalition needed to translate a powerful policy idea into binding legislation.

The IOCs present at NOG were confronted, on the conference floor and

in the Nigerian Content Seminar's dedicated sessions, with evidence of what local content deployment could achieve. Nigerian service companies used the exhibition to demonstrate capabilities that challenged the assumption of IOC procurement officers that only international suppliers could meet quality standards. Nigerian engineers presented technical papers that quietly dismantled the premise of their own professional marginalisation. By the time the NOGICD Act was passed in 2010, the groundwork had been laid in part by a decade of relentless NOG advocacy.

The impact has been transformative. As of today, the Nigerian content level has grown from low single figures at the start of the NOG era to 61 percent. Nigerian companies now operate offshore floating production, storage and offloading vessels. The country's first indigenous onshore crude export terminal in over 50 years — Green Energy International Limited's Otakikpo Crude Export Terminal in Rivers State, with \$400 million in initial investment and a projected total of \$1.3 billion, featuring 750,000-barrel storage capacity expandable to 3 million barrels and 360,000 barrels per day pumping capacity — was celebrated at the 2025 NOG gala dinner as a symbol of what the local content era has made possible.

"When Nigeria enacted its local content law, it faced Western criticism from bodies like the WTO and EU, who labelled it anti-trade. Today, over 16 African nations and even the United States have adopted similar laws. Nigeria must lead again, driving investments that benefit the entire continent," Dr. Ernest Nwapa, Pioneer Executive Secretary, NCDMB, said at NOG event.



The Petroleum Industry Act

The Petroleum Industry Act of 2021, Nigeria's most comprehensive energy reform legislation in a generation, was another policy milestone that NOG tracked, debated, and shaped across many years. The conversations that preceded the PIA's passage were among the most contested in Nigeria's energy history — arguments about fiscal terms and their impact on investment attractiveness, the appropriate separation of regulatory functions, host community rights and the mechanisms of development trusts, the balance between IOC participation and indigenous sector growth, and the treatment of gas within a framework historically dominated by crude oil economics.

Those debates were discussed and refined at NOG conferences. The conference was not the only forum for PIA deliberation, but it was one of the most important: a space where the full range of stakeholders could engage in structured, on-the-record dialogue that builds the evidence base for reform. The IOC perspectives on investment-detering fiscal terms, the NNPC's institutional interest in restructuring, the indigenous sector's demand for a more enabling operating environment, and civil society's insistence on community rights all found expression on the NOG stage, creating a public record of the contested deliberation that eventually produced the PIA law.

The PIA led to the creation of separate upstream and downstream regulators, which include the NUPRC and NMDPRA, the Midstream and Downstream Gas Infrastructure Fund, the host community development framework, and the new licensing and fiscal regime — all of which have been presented, explained, and interrogated at subsequent NOG editions. The NOG conference has become a platform for the PIA's implementation, the forum where progress is reported and shortfalls confronted in front of the international delegates and investors.

The Decade of Gas and the Gas Master Plan

Nigeria's Decade of Gas Initiative — the strategic commitment to positioning natural gas as the cornerstone of the country's energy transition and industrial development — has been announced, elaborated, defended, and held accountable at successive NOG conferences. For an initiative whose success depends on attracting the international capital and partnership that only comes with



sustained confidence in policy direction, the NOG stage has served as the most important annual credible platform.

The NNPC Gas Master Plan 2026, unveiled in January of this year as Nigeria's most detailed and execution-oriented gas strategy, represents the maturation of a policy conversation whose contours were shaped across two decades of NOG dialogue between producers, regulators, consumers, and financiers. The targets embedded in the plan — production of 10 billion cubic feet per day by 2027, 12 bcf/d by 2030, \$60 billion in new investment across the gas value chain — are the numerical expressions of ambitions that were argued for, pushed back against, and refined over many years on the NOG conference floor.

The 25th Anniversary of NOG Energy Week: Convening at a Critical Moment in Global Energy Order

The 2026 edition of NOG Energy Week takes place at a critical moment in the global energy order, as geopolitical tensions build momentum globally.

Globally, energy security has become a first-order geopolitical concern. Russia's war in Ukraine and disruption of European gas supply chains have driven a sustained scramble for alternative LNG supply, positioning Nigeria's LNG export capacity with sustained growth opportunities.

Notably, the US-Iran conflict and the Strait of Hormuz crisis have triggered Asian and European buyers to look for new suppliers in Africa.

Justin Cochrane, African Upstream Regional Research Director at S&P Global Commodities Insight, said Nigeria is gaining prominence as a critical supplier, and the scale of the global disruption in energy supply marks a turning point for NLNG.

Cochrane stated that NLNG is now strategically positioned to fill part of the supply gap, as buyers in Europe and Asia seek to diversify away from the Gulf.

Interestingly, NOG Energy Week 2026 stands as a major industry event convening in this new world order shaped by geopolitical tensions.



Christopher Hudson, President, DMG Events

Speaking in an interview with The Energy Republic, Ronald Adams, SNEPCO's Managing Director, said NOG Energy Week is an important forum for conversations on investment, energy security, and long-term value creation.

Adams stated that the NOG event remains one of the leading platforms for dialogue, collaboration, and business engagement across Nigeria's energy sector.

"The 2026 edition marks the event's 25th anniversary, and it remains one of the leading platforms for dialogue, collaboration, and business engagement across Nigeria's energy sector.

"It brings together policymakers, regulators, investors, and industry leaders at a particularly important time for the country's energy future.

"For SNEPCo, it is a valuable opportunity to engage stakeholders on the role of deepwater and gas in powering Nigeria's progress, while also sharing perspectives on competitiveness, project delivery, safety, and local content."

As Nigeria Energy Week marks 25 years of shaping Africa's energy dialogue, Christopher Hudson, President, DMG Events, says the world's greatest challenge is no longer choosing between energy sources but delivering enough affordable, reliable and sustainable energy to meet unprecedented global demand.

Meeting this demand, Hudson said, will require every available source of energy. Natural gas and liquefied natural gas (LNG) are expected to grow significantly as dependable fuels for electricity generation and industrial

development, while renewable energy will more than double over the coming decades, becoming an increasingly important pillar of the global energy mix.

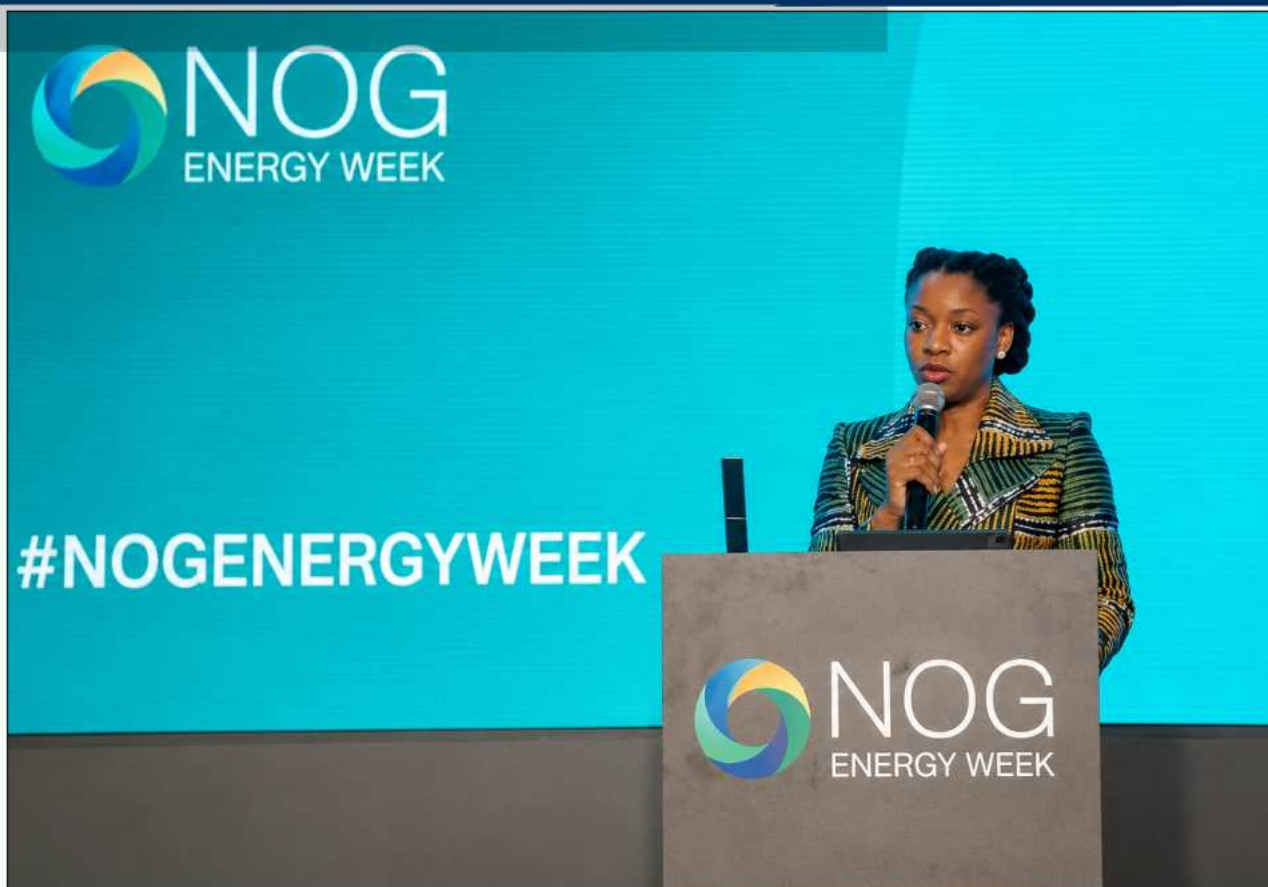
"This is not an energy transition. This is energy addition," he stressed, stating that the world must embrace an approach that expands all forms of energy simultaneously to satisfy rising demand while reducing emissions through innovation and cleaner technologies.

In his words, Hudson said NOG Energy Week is far more than an annual industry conference. "This is not another conference," he told delegates while delivering a keynote address at NOG Energy Week 2026 in Abuja. "It is where policymakers meet, businesses come together, and deals are made."

For twenty-five years, the event has been catalyzing partnerships that strengthen energy security, attract investment and encourage collaboration among governments, financiers, technology providers and energy companies. Its purpose, he explained, is to help build resilient energy systems capable of supporting economic growth while protecting countries against future geopolitical and market disruptions.

Reflecting on the conference's journey, Hudson noted that conversations initiated a quarter-century ago have evolved into policy reforms, landmark projects and enduring international partnerships that continue to shape Africa's energy landscape.

Looking ahead, he expressed confidence that the next twenty-five years hold even greater promise. Africa, he said, is no longer viewed simply as a supplier of natural resources but as a continent increasingly recognised for its innovation, investment opportunities and capacity to shape the future of the global energy economy.



Wemimo Oyelana, Portfolio Director, Africa and Country Director, dmg events Nigeria

"The 2026 edition of NOG Energy Week is not just a celebration of this remarkable 25-year journey but a decisive moment to align leaders and chart the course for the next phase of Africa's energy progress," Wemimo Oyelana, Country Director – Nigeria & Portfolio Director – Energy, dmg Nigeria events said.

Looking back at the inaugural edition in 2000, Wemimo recalled that the industry had been navigating one of the most transformative periods in its history. Delegates debated the promise of Nigeria's deepwater frontier, the development of the Bonga field, the commercialisation of the country's vast natural gas resources and strategies for ending gas flaring. They also grappled with issues that would later define the industry's evolution, including local content legislation, fiscal reforms and the long awaited Petroleum Industry Bill. At the time, many of those discussions represented aspirations rather than realities.

Twenty five years later, she said those conversations had translated into measurable achievements. Nigeria LNG had expanded from an ambitious vision into one of Africa's flagship energy success stories, with six operational trains and Train 7 under construction. The Bonga field had produced more than 800 million barrels of oil, while the Petroleum Industry Act had finally delivered the regulatory certainty the industry had sought for decades. Indigenous operators had emerged as significant players across the value chain, and the Final Investment Decision on the Bonga Southwest Aparo

project had marked the return of investor confidence to Nigeria's deepwater sector after many years.

"These milestones were never accidental. They were the cumulative result of thousands of conversations, negotiations, partnerships and commitments built patiently over time," she explained.

Speaking further, she said NOG Energy Week is now a platform whose influence extended far beyond the conference halls. Rather than simply hosting annual discussions, the event had become a place where governments, investors, operators, financiers and innovators worked together to shape policies, unlock investments and strengthen collaboration across the energy industry.

As NOG celebrates its 25 years anniversary, she stressed that the industry's most important work still lay ahead, noting that global energy demand is expected to continue increasing, while Africa's own energy needs remained urgent. Meeting those demands, she argued, would require unprecedented levels of investment, innovation and collaboration. One of the sector's greatest challenges would be attracting patient and affordable capital in an increasingly competitive global investment environment.

At the same time, she said, Africa had an opportunity to harness artificial intelligence and emerging technologies to leapfrog traditional development pathways and accelerate growth.

"These are precisely the conversations that NOG Energy Week exists to facilitate. Rather than offering simple answers to increasingly complex questions," she said. "The platform brings together policymakers, financiers,

operators, technology providers and entrepreneurs to develop practical solutions through dialogue and collaboration."

Looking ahead, Wemimo expressed confidence that the next chapter of Africa's energy story would be written much like the last, through meaningful engagement among the right people with the right ideas.

As NOG Energy Week embarks on its next quarter century, she added that the 25th anniversary was not the end of a journey but the beginning of another. Africa's energy story, she said, was entering a new chapter, one that would be shaped by bold ideas, stronger partnerships and purposeful collaboration.

"If the first 25 years had demonstrated anything, it was that some of the continent's most important energy decisions would continue to begin with conversations at NOG Energy Week."

The NOG and Africa's Continental Energy Agenda

NOG began as a Nigeria conference. Over 25 years, it has grown into something considerably larger: the most important annual energy convening in Sub-Saharan Africa, with genuine continental and global significance. The transformation from national to continental platform has happened organically, driven by Nigeria's centrality to African energy — the country accounts for approximately 30 percent of Africa's oil reserves and 33 percent of its gas — and by the growing recognition that many of Nigeria's energy challenges, and opportunities, have regional rather than national solutions.

The West African Gas Pipeline, connecting Nigeria's gas reserves to Ghana, Togo, and Benin, has been discussed and scrutinised at NOG conferences for over a decade. The Nigeria-Morocco Gas Pipeline — an even more ambitious project that would carry Nigerian gas along the West African coast to North Africa and eventually to Europe — has found in NOG one of its most prominent and consistent public forums.

The theme of NOG Energy Week 2026 — 'Advancing Energy Ambitions for Competitive & Resilient Economies' — is well-chosen for its moment. It acknowledges that ambition without competitiveness is sterile, and that resilience is the condition that makes ambition sustainable over time.



5 - 9 July 2026 | Abuja, Nigeria

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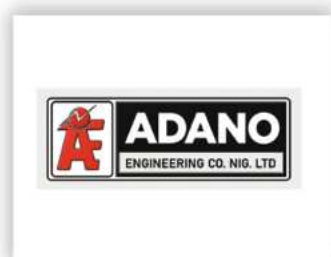
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SPECIAL REPORT



THE ENERGY REPUBLIC
CREATING GLOBAL OPPORTUNITIES

African Upstream Investment Outlook

By The Energy Republic
Editorial Team

Top African Countries Attracting Upstream Oil & Gas Capital

AFRICA CAPEX 2026 \$41B Upstream E&P investment	PRODUCTION FORECAST 11.4M boe/d by 2026	OFFSHORE CAPEX BY 2030 \$54B Growing at 6.6% CAGR	LNG EXPORT GROWTH +174% Sub-Saharan LNG 2024 – 2034
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The Energy Republic's data analysis of Africa's upstream oil & gas investment landscape, featuring country profiles, key projects, FID activities, and the structural forces driving capital allocation across the continent's leading and emerging producers.

Africa's upstream oil and gas sector is entering a new investment cycle, driven by world-class deepwater discoveries, sweeping regulatory reforms, and exploration activities across key producing and emerging markets. With global E&P capital expenditure

forecast to reach \$504 billion in 2026, Africa is expected to account for \$41 billion — roughly 8% of global spend — growing at rates that outpace most other regions.

Offshore activity is the primary engine: African offshore CAPEX of \$19 billion in 2026

is on track to reach \$54 billion by 2030, at a 6.6% compound annual growth rate. Several African nations are also balancing hydrocarbon development with broader energy transition goals, creating opportunities for responsible and sustainable resource development.

Investment scale & drivers

AFRICA E&P CAPEX 2025 \$40B Up from ~\$35B in 2022	AFRICA E&P CAPEX 2026 \$41B 8% of global \$504B total	OFFSHORE CAPEX BY 2030 \$54B 6.6% CAGR; deepwater leading	RIG YEARS 2025 (OFFSHORE) 46 +59% from 2020 levels
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Sub-Saharan Africa remains at the forefront of the continent's upstream sector, leading in the number of upcoming high-impact exploration wells and major development projects.

At the same time, sustained global LNG demand—fuelled by Europe's long-term diversification away from Russian gas and the geopolitical tension in the Middle East is strengthening the outlook for the African gas market.

Complementing these trends, the global rig market is expected to keep day rates low through 2027, improving project economics across multiple African basins. The global offshore rig market is currently favorable for operators. Short-term surplus rig capacity and declining day rates are creating cost-saving opportunities for companies planning drilling campaigns in Africa.

However, the market conditions are expected to shift during the second half of 2026/2027,

as increasing global demand for offshore rigs is anticipated to tighten supply and drive day rates higher. Companies that secure rig capacity in the short term may benefit from lower operating costs before the market tightens.

With a robust portfolio of high-impact wells and development projects, coupled with favorable short-term market conditions, Sub-Saharan Africa is poised to maintain its position as one of the world's most attractive regions for upstream investment and exploration.



Production outlook

Africa’s oil and gas production is expected to reach 11.4 million barrels of oil equivalent per day (MMboe/d) by 2026, recovering from the 7.2 MMbpd oil

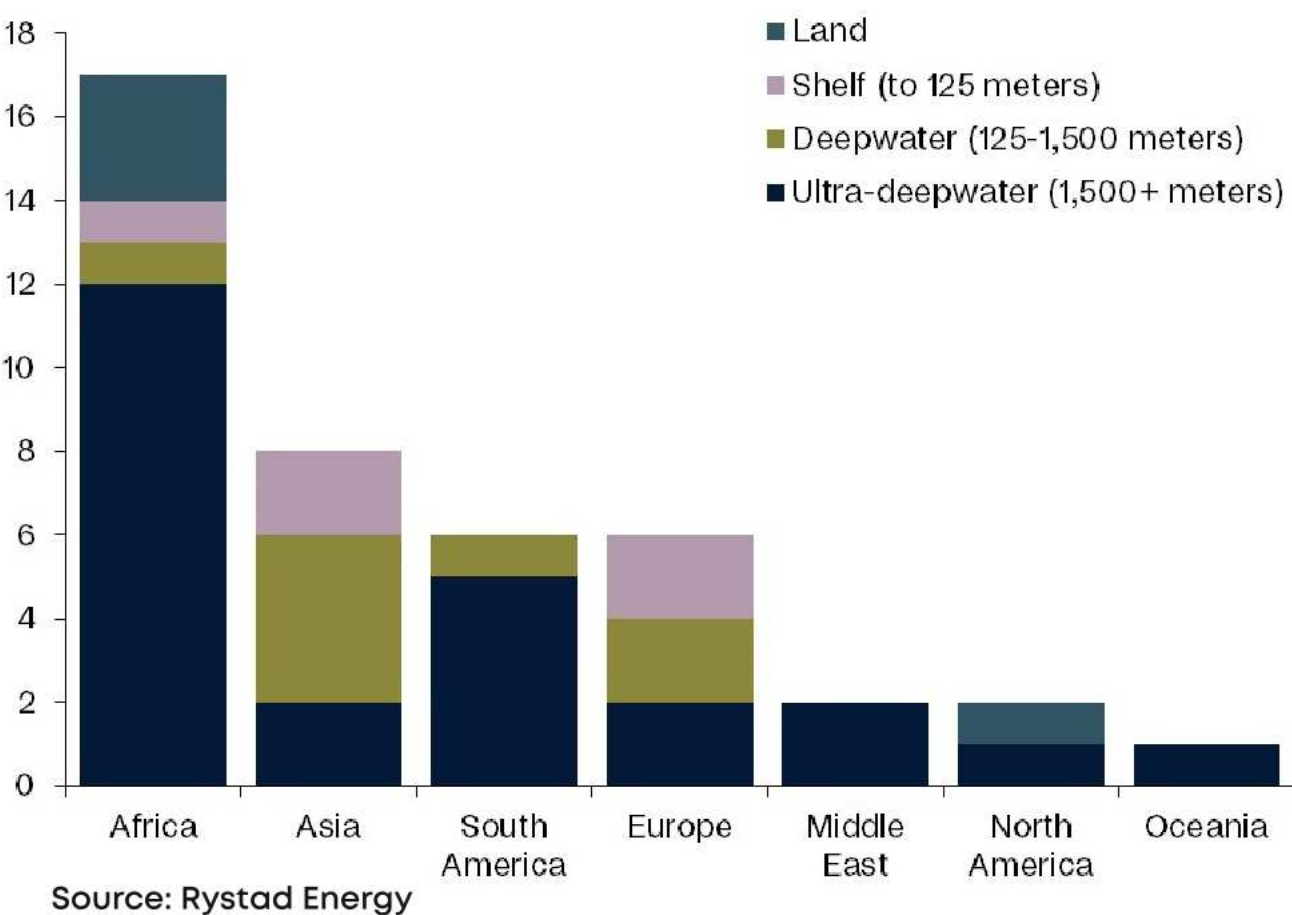
production level of 2024 to over 7.5 MMbpd by 2028. The continent’s gas export deliverables are undergoing even more dramatic transformation: sub-Saharan

African LNG exports are projected to surge from 35.7 billion cubic metres (bcm) in 2024 to 98 bcm by 2034 — a 174.5% increase — as Nigeria, Mozambique, Senegal, and Mauritania ramp up volumes.

High-impact wells by region, 2026 (number of wells)

A report published by Rystad Energy notes that the upstream sector is building strong momentum in 2026, with high-impact drilling activities expected to drive growth opportunities into the oil and gas industry. The report highlighted the success rate for high-impact wildcat wells, which rose to 38% from 23% in 2024, while total discovered volumes increased by 53% year on year to around 2.3 billion barrels of oil equivalent (boe).

According to Rystad Energy’s high-impact well outlook 2026, ultra-deepwater wells will account for around 60% of planned drilling. Most activity will target frontier regions, led primarily by major operators, while Africa is projected to continue leading global activity, accounting for around 40% of planned high-impact exploration wells.



Drilling activities

Metric	2024	2025 – 2026	Trend
Total wells drilled (Africa)	~150+	Rising	Southern Africa emerging hotspot
Offshore rig years	~38	46	+59% from 2020
Onshore share	~80%	~80%	African independent dominates onshore
Upstream projects 2024-2028 (Africa)	471 total	120 upstream	Midstream leads at 160 projects

Top African Countries Attracting Upstream Oil & Gas Capital

◀ **Nigeria:** Africa’s No.1 upstream investment destination — secured 3 of 4 african major FIDs in 2024

Nigeria is at the forefront of the African upstream investment destination, having secured three out of four major Final Investment Decisions (FIDs) announced by global oil and gas majors, with a combined value of \$13.5 billion,

according to Wood Mackenzie research. The country’s strong performance reflects the twin engines of the Petroleum Industry Act (PIA, 2021) and an active licensing cycle. A report, titled Nigeria’s Energy Sector Reforms 2023–2026: A Three-Year Review,

was published by the Office of the Special Adviser to the President on Energy and led by Olu Verheijen. The report notes that Nigeria now has a project pipeline valued at approximately \$50 billion extending beyond 2026, marking one of the country’s strongest periods for upstream investment activity in more than a decade.



Key investment metrics

2024 MAJOR FIDS	TOTAL FID VALUE (2024)	2024–25 LICENSING BLOCKS
3 of 4	\$13.5B	50
Three of Africa’s four major FIDs in 2024	Wood Mackenzie data; major IOCs	Latest round; seeking up to \$10B capital

Landmark projects

Project	Operator	Value / Scale	Status & Notes
Bonga North Tranche 1	Shell	FID approved 2024	Deepwater; first oil expected 2027; Bonga SW Aparo targeting FID 2027
Ubeta Gas Project	TotalEnergies	\$566M FID (2024)	Shallow offshore gas; supports domestic gas supply & LNG expansion
Iseni Gas Project	Shell	\$122M FID (2024)	Onshore gas development; part of domestic monetisation push
Ima Shallow Gas Project	TotalEnergies	\$750M (expected 2025)	Anticipated FID 2025; shallow offshore gas development
2024–25 Licensing Round	NNPCL / Govt	50 blocks; \$10B target	Renewed IOC interest; NNPCL targeting \$30B upstream investment by 2030

◀ Angola: Africa’s most active reform story — \$70b investment pipeline through 2030

Angola has executed one of the most comprehensive upstream sector reforms in Africa, transforming from a declining producer to a major FDI magnet.

The combination of multi-year licensing rounds, the Incremental Production Decree (Nov 2024), and the establishment of ANPG as the regulatory agency has given

international operators unprecedented flexibility. The country’s planned investment pipeline now totals roughly \$70 billion.

Key investment metrics

INVESTMENT PIPELINE (5YR)	TOTAL ENERGIES COMMITMENT	AZULE ENERGY COMMITMENT
\$70B	\$3B	\$5B
Total planned upstream investments	Near-term Angola investment pledge	4–5 year investment pipeline

Landmark projects

Project	Operator / Partners	Capex / Scale	Status & Notes
Kaminho Deepwater (Block 20/11)	TotalEnergies (40%), Petronas (40%), Sonangol (20%)	\$6B FID (May 2024)	First large-scale deepwater in Kwanza Basin; all-electric FPSO; 70,000 bpd plateau; first oil 2028
Agogo Integrated West Hub	Azule Energy (BP/Eni JV)	FPSO contract >\$5B	First oil Jul 2025 (120,000 bpd); beat schedule by 4 months; Ndungu startup 60,000 bpd in 2026



Begonia & CLOV Phase 3 (Block 17)	TotalEnergies	Combined 60,000 bpd	Online July 2025; utilises spare FPSO capacity; nearterm output resilience
Likember-01 (Block 15)	ExxonMobil	Exploration	First discovery under new Incremental Production Decree; signals ongoing frontier activity
Shell’s return (new blocks)	Shell	\$1B commitment	Returned to Angola in 2025; investing in new oil blocks; confirms renewed IOC confidence
South N’dola Field	Chevron	Expansion	First oil December 2025; part of Chevron’s expanded Angola portfolio

◀ **Mozambique:** Africa’s future LNG powerhouse with potential to become Africa’s top LNG exporter by 2030

Mozambique holds 100+ trillion cubic feet of recoverable natural gas, overwhelmingly concentrated in the offshore Rovuma Basin.

Despite security challenges in Cabo Delgado province that suspended the TotalEnergies-led Area 1 project in 2021, the country’s LNG trajectory has resumed momentum.

Mozambique’s total gas production is projected to surge from 9.1 bcm in 2025 to 62.7 bcm by 2034, and the country could become Africa’s top LNG exporter by 2030.

GAS PRODUCTION 2025E 9.1 bcm Rising to 62.7 bcm by 2034	POTENTIAL VS NIGERIA (LNG) 2030 Could become Africa’s top LNG exporter	LNG PEAK EXPORT 48.4 bcm Forecast peak in 2034 (Fitch Solutions)
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Project	Operator	Scale	Status
Coral South FLNG (Area 4)	Eni	3.4 mtpa	Operational since 2022; selling to BP under 20-year offtake; strong cashflow generating
Coral Nord FLNG (Area 4)	Eni	3.4 mtpa	FID approved; target start 2028; Eni also approved minority stake sale to Vitol
Mozambique LNG (Area 1)	TotalEnergies	13.1 mtpa	Partially restarted late 2025 after force majeure; TotalEnergies & ExxonMobil targeting first LNG by 2030
Rovuma LNG (Area 4)	ExxonMobil	15.2 mtpa	FID pending; one of Africa’s largest potential LNG projects

Key risk: Elevated insurgent activity in Cabo Delgado continues to add cost and schedule risk to onshore projects. The floating LNG model (Coral FLNG) has proven more resilient than onshore facilities to security disruption, making it the preferred development pathway going forward.

◀ **Namibia:** Africa’s hottest new exploration frontier — Orange basin could make Namibia a top-10 global producer

Namibia’s Orange Basin has emerged as one of the most exciting deepwater prospect in the world, with 88% of wells drilled in 2022–2024.

TotalEnergies’ Venus field alone is estimated to hold up to 3 billion barrels of oil in place. The basin has attracted virtually every global super-major and is

widely compared to Guyana’s pre-development phase in the mid-2010s. If the Venus FID proceeds in 2026 and first oil is achieved by 2029–2030, Namibia could rank among Africa’s top-five oil producers within a decade.



VENUS FIELD (TOTALENERGIES)

~3B bbl

Oil in place; FID targeted 2026

WELL DISCOVERY RATE (2022–24)

88%

Hydrocarbon success rate in Orange Basin

POTENTIAL (2035)

Top 10

Could rank among world’s top oil producers

Asset / Company	Block / Licence	Discovery Status	Development Outlook
Venus (TotalEnergies, QatarEnergy, Impact, NAMCOR)	PEL 56 / Block 2913B	3B bbl OIP	FID pushed to 2026; first oil targeted 2029; \$2.5B+ in subsea contracts foreseen; gas reinjection is key technical challenge
Mopane Complex (Galp, partner TBD)	PEL 83	6 successful wells	Confirmed reservoir quality; Galp seeking JV partner; no chlorite cementation issue (unlike PEL 39); strong commercial outlook
Graff-1X & Jonker-1X (Shell, QatarEnergy, NAMCOR)	PEL 39	5B bbl combined	Shell \$400M write-down (Jan 2025) due to reservoir permeability; 5 new exploration wells planned in PEL 39 for 2026
Capricornus-1X (Azule Energy / Rhino Resources)	Orange Basin	Light oil find Apr 2025	Confirms oil system in new block; Volans-1X follow-up well drilling
PEL 82 (Chevron)	Walvis Basin	Acquired 2024	Chevron expanding Namibia footprint; further exploration planned
ExxonMobil	Walvis Basin + Orange	Expanding	One existing Walvis Basin licence; reportedly seeking Orange Basin entry

◀ Senegal & Mauritania: New entrants to LNG markets — GTA project online; BirAllah gas field awaits operator

The Senegal-Mauritania border zone hosts the Greater Tortue Ahmeyim (GTA) LNG project, which achieved a transformative milestone in June 2025

when Phase 1 commenced LNG production and exports. This makes both countries new LNG-exporting nations. The project, operated by BP with TotalEnergies, APA Corporation,

and national oil companies, represents the culmination of more than a decade of development and a combined investment of billions of dollars.

Project	Status	Key Details
Greater Tortue Ahmeyim (GTA) Phase 1	PRODUCING (Jun 2025)	Operated by bp; ~2.5 mtpa Phase 1; straddles Senegal/Mauritania maritime border; FLNG + hub terminal model
GTA Phase 2 (BirAllah expansion)	Planning	bp planning 2.5–3 mtpa addition; gravity-based structure; pilot CCS system; TotalEnergies exited BirAllah in 2025— new operator needed
BirAllah Gas Field (Mauritania)	Pre-FID	~80 Tcf estimated gas; indicative development cost \$17B; Atlantic location favours FLNG; seeking operator after TotalEnergies exit
Sangomar Oil Field (Senegal)	PRODUCING (2024)	Woodside-operated; ~100,000 bpd initial production; Senegal’s first oil production; deepwater; major FX earner



◀ **Uganda:** East Africa’s oil emergence — Tilenga & Kingfisher projects; first oil expected by 2026

Uganda holds an estimated 6.5 billion barrels of oil resources in the Lake Albert Basin, with approximately 2.2 billion barrels deemed recoverable. TotalEnergies (operator), CNOOC, and the Uganda National Oil Company (UNOC) have invested billions in developing the Tilenga and Kingfisher projects, which reached approximately 70% overall completion as of August 2025.

WELLS DRILLED (PHASE 1)	PEAK PRODUCTION	FIRST OIL
143/170	190K bpd	Jun 2026
First-phase wells completed as of Aug 2025	Via EACOP to Tanzania’s Tanga port	Tilenga CPF mechanically complete

◀ **Tanzania & Republic of Congo :** Tanzania LNG: \$42b mega-project eyes FID | Congo LNG expanding to 3 MTPA by 2026

Country	Project	Scale	Status
Tanzania	Tanzania LNG (Shell + Equinor)	\$42B; 15+ mtpa	Host government agreement signed late 2024; first licensing round in >10 years covering 26 blocks launched mid 2025; 57 Tcf gas reserves
Tanzania	Mnazi Bay + Songo Songo fields	120 mmscfd (2024)	Domestic gas production for power and industry; ARA Petroleum 25-year licence for Ntorya Gas (2024)
Congo (ROC)	Congo LNG — Tango FLNG	1.5 mtpa (Tango)	Operational since Feb 2024; Eni operated; Nguya FLNG adding 1.5 mtpa by mid-2026 — total 3 mtpa
Congo (ROC)	Litchendjili Gas Field	Feeds LNG + power	Eni-operated; supplies domestic Centrale Électrique du Djéno; underpins Congo LNG export program

African LNG export outlook 2034

Country	LNG Exports 2024 (bcm)	LNG Exports 2034E (bcm)	Key Driver
Nigeria	~22 bcm	~30 bcm	NLNG T7 online 2026; TotalEnergies gas investments
Mozambique	~3 bcm (Coral)	~48 bcm (peak)	Coral Nord, Area 1 LNG, Rovuma LNG; potential #1 by 2030
Senegal + Mauritania	New entrant (2025)	~10 bcm	GTA Phase 1&2; BirAllah (if operator secured)
Congo (ROC)	~2 bcm	~6 bcm	Tango + Nguya FLNG; total 3 mtpa by mid-2026
Sub-Saharan Africa Total	35.7 bcm	98 bcm	+174.5% growth 2024-2034 (Fitch Solutions, Aug 2025)

Africa’s upstream investment cycle is entering its most consequential phase since the deepwater boom of the 2000s. Those countries that successfully deliver investor-friendly reforms — as Angola has demonstrated and as Nigeria is now showing — are attracting capital inflows. The oil and gas frontiers, from Namibia to Tanzania, represent a generational opportunity for Africa to emerge as a superpower in the global energy order.



Nigeria ready for investment across the energy value chain - Minister Lokpobiri

As Nigeria's energy sector builds momentum on growth opportunities, Senator Heineken Lokpobiri, the Nigerian Minister of State for Petroleum Resources (Oil), has said the country's energy sector has opportunities for every category of investors - small operators, mid-sized companies, and global majors. He made this known at the 25th NOG Energy Week in Abuja.

Speaking at the NOG Energy Week Conference, Minister Lokpobiri said that the government reforms, under President Tinubu, were designed to restore investor confidence by eliminating regulatory uncertainty, strengthening institutions, and creating a more predictable business environment.

One of the clearest indicators is the growth in drilling activity. When the current administration assumed office, Nigeria had roughly forty active drilling rigs. Today, that figure has risen to more than sixty, a development the minister described as a strong signal that investors are once again committing capital into Nigeria's upstream sector.

For years, he said that global investment capital migrated to emerging petroleum

By Tobi Owoyimika

provinces while Nigeria struggled with policy uncertainty and delayed reforms. That narrative is changing, the minister said.

A significant part of this turnaround, according to the minister, stems from the implementation of the Petroleum Industry Act (PIA) and the decisive reforms introduced under President Bola Ahmed Tinubu's administration. These measures have provided the legal certainty and commercial confidence investors had long demanded.

A notable milestone includes the successful completion of major asset divestments that transferred onshore operations from international oil companies to capable indigenous operators. Lokpobiri described the asset divestments as a strategic realignment that benefits the Nigerian energy industry.

Notably, indigenous companies have assumed greater operational responsibility, accounting for more than 60 percent of Nigeria's daily crude oil production. International oil companies have redirected their investments toward deepwater developments, where their technical expertise and financial strength remain globally competitive.

"It is not that companies are leaving Nigeria," he explained. "They are repositioning their investments while indigenous companies are proving they have the competence to manage assets successfully."

He described this evolution as a powerful demonstration of Nigerian capacity, arguing that local operators are no longer merely supporting international companies. They are increasingly leading the country's production growth.

Beyond upstream investments, he also addressed one of the global energy industry's most contentious debates about energy transition. The minister noted that the current reality across the global energy sector has compelled the world to adopt a more balanced perspective centred on an energy mix. Lokpobiri maintained that Africa should not be pressured into abandoning the very resources capable of financing its industrialisation while advanced economies continue relying heavily on fossil fuels.

According to him, Africa contributes only a small fraction of global carbon emissions, yet is often expected to bear a disproportionate share of the transition burden. However, he advocated a pragmatic approach that allows Nigeria to responsibly develop its hydrocarbon resources while simultaneously investing in cleaner technologies, economic diversification, and sustainable energy solutions.

He said that oil revenues remain essential for financing infrastructure, education, healthcare, industrial expansion, and broader national development.

In addition, the minister also reaffirmed the government's commitment to strengthening the entire petroleum value chain through continued deregulation, downstream expansion, refinery rehabilitation, and improved industry competitiveness.

Addressing concerns raised by operators regarding the multiplicity of fees, taxes, and regulatory charges, Lokpobiri disclosed that government has already initiated comprehensive benchmarking exercises to align Nigeria's fiscal framework with international best practices.

The objective, he explained, is not merely to reduce administrative burdens but to position Nigeria among the world's most competitive investment destinations.

He added that the administration has adopted a collaborative approach built on continuous engagement with industry stakeholders.



Nigeria has positioned itself as one of Africa's most attractive destinations for oil and gas investment, with more than US\$50 billion worth of upstream projects now in the visible investment pipeline, according to the Special Adviser to the President on Energy, Mrs. Olu Verheijen.

Speaking during a Special Address at the 25th NOG Energy Week Conference and Exhibition in Abuja, Verheijen said the Federal Government's comprehensive reform agenda under President Bola Ahmed Tinubu has transformed Nigeria's investment climate, restoring investor confidence and driving a resurgence in upstream activity.

She noted that global investment capital is increasingly flowing to countries that offer policy certainty, competitive fiscal terms and credible regulatory frameworks, stressing that Nigeria's recent reforms are yielding measurable results.

"Capital is no longer sentimental. It is rational. It prices risk. It follows credibility," Verheijen said. "Nigeria is no longer asking to be trusted; Nigeria is working to be bankable."

According to her, Nigeria now has over US\$50 billion in upstream oil and gas projects in the visible pipeline, while the country has secured more than US\$10 billion in Final Investment Decisions (FIDs) over the past three years—investments that had been delayed for years before the current administration's reforms.

She added that crude oil and condensate production has increased by approximately 400,000 barrels per day since 2023, with onshore production reaching its strongest level in two decades. Nigeria has also emerged as one of Africa's leading destinations for upstream investment, significantly increasing its share of the continent's FIDs.

"The competition is no longer only geology against geology. It is government against government. It is rules against rules. It is delivery against delay," she said.

She highlighted reforms including the recalibration of fiscal terms, regulatory clarity, streamlined oversight, targeted investment incentives and the reduction of contracting timelines by more than half.



'We have more than \$50 billion upstream projects in the pipeline' - Verheijen

By Genevieve Aningo

Together, these measures, she said, have strengthened Nigeria's competitiveness in attracting global energy capital.

Looking ahead, Verheijen reaffirmed the government's ambition to increase crude oil production to three million barrels per day and gas production to 10 billion standard cubic feet per day by the end of the decade, while positioning natural gas as the foundation of Nigeria's industrialisation strategy.

She stressed that the government's vision extends beyond crude production to creating greater domestic value through gas-to-power, petrochemicals, fertiliser production, compressed natural gas (CNG), liquefied natural gas (LNG) exports and manufacturing.

"We have chosen not to be a warehouse of raw potential. We have chosen to become an engine of African industrialisation," she said.

Verheijen also highlighted ongoing reforms in the power sector, including the ₦4 trillion Presidential Power Sector Financial Reforms Programme, designed to restore confidence across Nigeria's electricity value chain by resolving legacy obligations, improving payment discipline and strengthening the bankability of the sector.

She noted that gas remains central to the country's energy transition and industrial growth strategy. To improve affordability and expand domestic utilisation, the government has introduced tax incentives for LPG, supported duty exemptions for gas infrastructure investments worth approximately US\$92.6 million, and is implementing measures to increase domestic gas supply and improve market transparency.

Speaking on indigenous participation, Verheijen pointed to the growing strength of Nigerian companies across the energy value chain, noting that indigenous participation in the gas sector has increased from 69 percent to 83 percent. She also cited the operational success of the 650,000-barrels-per-day Dangote Refinery as evidence that Africa can successfully deliver industrial-scale energy infrastructure.

She maintained that sustaining investor confidence will require continued commitment to policy consistency, regulatory efficiency and disciplined execution.

While acknowledging that challenges remain—including infrastructure, affordability, security and execution—Verheijen said Nigeria's reforms are laying the foundation for long-term investment-led growth.

She concluded by urging investors, operators and stakeholders to view Nigeria's progress through the lens of measurable outcomes rather than promises.



Ronald Adams, Managing Director, SNEPCO

SNEPCo will continue investing in deepwater and gas projects in Nigeria – Adams

In this interview, Ronald Adams, Managing Director, Shell Nigeria Exploration and Production Company Limited (SNEPCo), talks to Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, on the company's long-term investment plan in Nigeria, highlighting the critical factors attracting capital investment for oil and gas projects and what Nigeria needs to continue doing to become globally competitive in deepwater and gas projects. **Excerpts:**

TER: Shell paid over \$2 billion to the Nigerian government in 2025. What factors drove this contribution compared to previous years, and what major milestones were recorded from SNEPCo's operations in 2025?

Adams: Shell's payments to government reflect the scale of its business and its commitment to transparency, and in 2025 those payments to Nigeria totalled about \$2.02 billion, covering production entitlements, taxes, royalties, and statutory fees.

From a SNEPCo perspective, 2025 was an important year operationally and strategically. A key milestone was the final investment decision on the HI gas project in October 2025, which will supply gas to NLNG before the end of the decade.

Shell also completed the increase in its interest in OML 118, which includes the Bonga field, lifting its stake from 55% to 65% and reinforcing its position in Nigeria's deepwater sector. So the story in 2025 was not just the value delivered through payments to government, but also the

strengthening of Shell's long-term position in Nigeria through targeted deepwater and gas investments.

TER: What new initiatives have SNEPCo introduced to strengthen its social investment programmes?

Adams: Sustainability is at the heart of our social investments, so we favour partnerships in project implementation, allowing all parties to contribute to the common good. One of our most significant recent social investment milestones is the Geosciences Centre



Ronald Adams, Managing Director, SNEPCO

of Excellence at the University of Lagos, delivered in partnership with NNPC Limited and the Nigerian Content Development and Monitoring Board. The Centre was commissioned in April 2026 and is designed to strengthen teaching, research, and hands-on training in geosciences, helping to build Nigerian capability in a critical area for the energy sector.

The establishment of the Centre of Excellence is the latest milestone in our support for education over the years, which has seen the award of scholarships, donation of science laboratories to secondary schools across Nigeria, and the construction of e-learning centres at universities in Delta, Enugu, Edo, and Bayelsa states.

TER: As global competition for capital investment builds momentum, how can Nigeria sustain investors' interest in

the upstream sector, and what is SNEPCo's long-term plan for upstream investment?

Adams: To sustain investor interest, Nigeria needs to remain globally competitive by providing regulatory stability, fiscal predictability, efficient approvals, and a secure operating environment. Capital is mobile, and investors will continue to compare Nigeria with other destinations on ease of doing business, project economics, and confidence in long-term policy consistency.

For SNEPCo, the long-term plan is to continue investing in Nigeria through a focused deepwater and integrated gas portfolio. This is already reflected in major decisions such as Bonga North, where Shell took FID in December 2024, and the HI gas project, where FID was taken in October 2025.

Shell has also completed the share sale of its former onshore subsidiary and publicly

states that its focus in Nigeria is now on deepwater and LNG, reinforcing the long-term direction of the portfolio.

Overall, our approach is to remain a disciplined long-term investor in Nigeria, advancing projects that are competitive, value-accretive, and aligned with the country's energy ambitions.

TER: How will Shell's \$20 billion investment in Bonga South West impact the Nigerian oil and gas industry, and what role will local content play in the execution of the project?

Adams: The proposed Bonga Southwest/Aparo development awaits FID. The project has the potential to be one of the most significant deepwater investments in Nigeria in many years, once executed, following the recently approved fiscal incentives. I have no doubt that, consistent with our track record, local content would be an important part of that project. But let's wait for the FID.

TER: Which specific areas is SNEPCo prioritizing for sustained growth in Nigerian Content?

Adams: The priority areas for sustained growth in Nigerian content are those where local capability can continue to move up the value chain and deliver long-term value. That includes fabrication and manufacturing, subsea and offshore support services, maintenance and turnaround execution, engineering support, and human capital development.

We have already seen strong progress in these areas. Nigerian companies have supported major fabrication scopes for Bonga and related infrastructure, and indigenous yards have taken on increasingly complex work in-country.

Nigerian companies also played an important role in the 2026 turnaround maintenance campaign on the Bonga FPSO, contributing to a safe and efficient execution.

Going forward, our focus is to deepen that capability further, supporting more in-country execution, greater technical specialization, and stronger local supply chains that can participate competitively in future project delivery.

We see Nigerian content not simply as a compliance requirement, but as a long-term value proposition for our business, the industry, and the broader economy.



ASSET INTEGRITY MANAGEMENT

Bolanle Odunayo-Ojo,
SNEPCo's Senior
Operations Manager
and Bonga FPSO
Asset Manager



Bonga FPSO turnaround reinforces Nigeria's position in deepwater environment — Bolanle

In this interview with The Energy Republic, SNEPCo's Senior Operations Manager and Bonga FPSO Asset Manager, Bolanle Odunayo-Ojo, discusses the risks of neglecting critical offshore assets, with emphasis on the engineering and safety upgrades carried out during the Bonga FPSO turnaround maintenance exercise, and what lessons other African operators can learn from it. **Excerpts:**

TER: Nigeria temporarily deferred millions of dollars in oil and gas revenue during the Bonga FPSO turnaround maintenance. Why should the turnaround maintenance programme be considered a strategic investment rather than a revenue loss?

Bolanle: The turnaround maintenance should be seen as a strategic investment because it protects the long-term integrity, reliability, and productive life of one of Nigeria's most important deepwater assets, rather than simply as a short-term deferment of output.

The 2026 programme was a statutory and integrity-assurance exercise designed to help the Bonga FPSO operate safely and efficiently for the next 15 years, while reducing unplanned deferments and strengthening overall asset resilience.

The scope of work went beyond routine maintenance and included statutory inspections, certification and compliance checks, major asset-integrity upgrades, engineering modifications, and subsea assurance activities. Those interventions are essential for a facility that processes and exports oil and gas from offshore Nigeria and has a capacity of about 225,000 barrels of oil per day and 150 million standard cubic feet of gas per day.

In that context, the programme is best understood as an investment in future performance: it supports safer operations, reduces the likelihood of unplanned outages, and helps prepare the FPSO for future demands, including its role in supporting the Bonga North development.

TER: What risks could Nigeria face if major offshore assets like Bonga FPSO do not

undergo regular turnaround maintenance?

Bolanle: The turnaround exercise is one of the key actions to ensure safety, operational reliability, environmental performance and production continuity. At an operational level, it helps us to maintain equipment uptime, which will mean sustained production with a positive impact on national revenue, energy security, and confidence in Nigeria's offshore operating environment.

TER: As the Bonga FPSO Asset Manager, what are the key engineering and safety upgrades carried out during the Bonga FPSO turnaround maintenance exercise, and how does it reflect a shift toward sustainability-driven asset integrity management in the oil and gas industry?

Bolanle: The 2026 turnaround maintenance involved a broad package of engineering,



Bonga floating production, storage and offloading (FPSO) vessel

inspection, and integrity work that goes well beyond what can normally be done during routine operations on a live offshore facility.

The scope included statutory inspections, certification and regulatory compliance checks, major asset-integrity upgrades, engineering modifications to improve long-term operations, and subsea assurance activities.

In execution terms, the campaign brought together maintenance, engineering, operations, inspection, and construction disciplines, with more than 1,000 personnel working offshore and thousands more supporting from shore.

From an asset-integrity perspective, this reflects a more sustainability-driven approach because the focus is on extending the life of an existing asset, improving reliability, reducing unplanned deferments, and lowering the risk of incidents or loss of containment.

In other words, it is about getting safer and more efficient performance out of the existing infrastructure, while supporting long-term production and preparing the facility for future developments such as Bonga North.

TER: What are the critical success factors in delivering a safe, cost-effective and efficient turnaround maintenance programme on the Bonga FPSO?

Bolanle: The first success factor is rigorous planning and coordination. A turnaround maintenance campaign on an offshore asset of this scale requires

detailed preparation, a strong sequence of work, and close integration across technical, safety, logistics, and support functions. The fact that the 2026 exercise was completed 11 days ahead of schedule and without a safety incident points to the effectiveness of that planning and execution discipline.

The second is collaboration. SNEPCo acknowledged support from partners, regulators, and industry institutions including NUIMS, NUPRC, and NCDMB, showing that successful delivery depends not only on the operator but on alignment across the wider ecosystem.

A third critical success factor is local capability. Of the 55 companies involved in the turnaround, 43 were wholly Nigerian, while eight of the 12 international service providers maintained operational bases in Nigeria. More than 95% of the over 1,000 offshore personnel were Nigerians, demonstrating the depth of in-country expertise supporting safe and efficient delivery.

Ultimately, a successful turnaround depends on the combination of disciplined planning, strong safety culture, partner alignment, and a capable workforce that can deliver complex work to global standards.

TER: What lessons can other African operators learn from Shell's approach to asset integrity management?

Bolanle: One of the clearest lessons is that asset integrity should be treated as a strategic discipline, not a maintenance event. SNEPCo positioned the Bonga turnaround as a statutory and integrity-assurance programme

designed to extend asset life, improve resilience, and reduce unplanned deferments, showing that long-term field management begins with protecting the health of the core production system.

A second lesson is the value of disciplined execution. Delivering a major turnaround ahead of schedule and without a safety incident demonstrates that operational excellence comes from planning, coordination, leadership visibility, and an embedded safety culture.

A third lesson is that local capability can be a genuine enabler of performance. The strong participation of Nigerian companies and personnel in the Bonga turnaround shows that building domestic technical capacity strengthens delivery, resilience, and long-term competitiveness.

More broadly, other operators can take from this the importance of integrating safety, reliability, cost discipline, and workforce development into one asset-management philosophy rather than treating them as separate agendas.

TER: What are the long-term gains from the Bonga FPSO turnaround maintenance, and how will it impact Nigeria's oil and gas industry?

Bolanle: The long-term gains begin with a stronger, more reliable FPSO that is better positioned to support sustained production from Bonga over many more years. The turnaround was designed to help the FPSO operate safely and efficiently for the next 15 years, while reducing unplanned deferments and strengthening asset resilience. The impact also extends to future developments.

A successful turnaround helps prepare the FPSO for the additional operational demands associated with Bonga North, which is a subsea tie-back to the Bonga facility with first oil expected before the end of the decade.

For the wider industry, the turnaround reinforces confidence in Nigeria's ability to execute complex deepwater work to high standards. It also demonstrates the growing strength of Nigerian technical capability, with strong participation from indigenous companies. So the long-term value is not only about sustaining one asset. It is also about supporting future production, strengthening local capability, and reinforcing Nigeria's position as a serious deepwater operating environment, enabling SNEPCo to continue to contribute to national development and social investments.



Elohor Aiboni, Incoming, Executive Vice-President and Country Chair
Shell Companies in Nigeria.

Shell appoints Elohor Aiboni as Executive Vice President and Country Chair Nigeria

Former Managing Director, Shell Nigeria Exploration and Production Company Limited (SNEPCo), Elohor Aiboni, currently on assignment as Asset Director at Brunei Shell Petroleum, has been appointed Executive Vice President and Country Chair Nigeria, taking over from Marno de Jong, who leaves Shell to pursue an opportunity elsewhere, after a 34-year career with the Company.

Marno was appointed Senior Vice President Nigeria in 2020 and later became Executive Vice President in addition to the role of Country Chair,

overseeing all Shell's operations in Nigeria.

Marno joined Shell in 1992 as a Project Engineer at the start of a career that has seen him serve across Project Delivery, Engineering, Commercial, and Upstream Development in the United Kingdom, Venezuela, Nigeria, Australia, the United States, the Netherlands, Malaysia and Indonesia.

Under his leadership, Nigeria's flagship Bonga asset delivered strong performance, sustaining high availability well above target, while he has also been instrumental in advancing major investment decisions,



including the HI offshore gas project and the Bonga North development.

"I'm grateful for the support I have enjoyed since my time in Nigeria, which has enabled us to achieve progress on many fronts," Marno said.

"I leave with fond memories of warm friendships and strong support from colleagues in Shell and our partners.

"I'm confident that Shell operations in Nigeria will continue to deliver value and growth under Elohor, given the strong leadership credentials she brings to the roles, and wish Shell Nigeria every success."

Elohor is the first Nigerian to take up the combined role of Executive Vice President and Country Chair Nigeria, bringing over 24 years' experience within Shell across Nigeria's offshore, shallow water and onshore businesses with international assignments in Kazakhstan and Brunei.

Elohor became Managing Director of SNEPCo in 2021, the first female to hold the post. She led the deepwater business and associated investments in Nigeria, with Bonga achieving the 1 billionth barrel of oil in 2023. She left for Brunei in 2024, where she oversees asset performance, production, and project delivery.

In her words, Elohor said: "I'm excited at the opportunity to continue to contribute to the efficient delivery of Shell's business in Nigeria and thereby power progress in a country we've been part of for more than 60 years. Marno has led from his heart these six-plus years, sustaining operations and breaking new ground in project delivery and growth. It's a legacy I'm keen to build on with the support of colleagues and other stakeholders."

The new appointment takes effect August 1st, 2026.



Joseph Mordi, General Manager, Wells & Geoscience Operations, Shell Nigeria Exploration and Production Company Limited (SNEPCo), alongside other Shell leaders, receives an award from the Special Adviser to the President on Energy, Olu Verheijen, during the NNPC Awards Night and Dinner at the 2026 Nigeria Oil and Gas (NOG) Conference and Exhibition in Abuja.

Shell recognised for landmark achievements at 2026 NOG Energy Awards

Shell has been honoured with two prestigious awards at the 25th edition of the Nigeria Oil and Gas (NOG) Energy Week Conference and Exhibition in Abuja, in recognition of its outstanding contributions to Nigeria's energy industry and its commitment to advancing inclusion and sustainability.

Shell received the Equality in Energy Award, while Daystar Power, a Shell company, was recognised with the Sustainability in Energy Award during the NOG Energy Awards ceremony held on Wednesday night.

The awards celebrate Shell's leadership in promoting equality, diversity and inclusion across its businesses, as well as Daystar Power's contributions to decarbonisation through the delivery of clean energy solutions across West Africa.

The recognition reflects Shell's longstanding contribution to Nigeria's energy sector, where it has played a pioneering role in oil and gas development for more than six decades while continuing to expand its portfolio in natural gas, renewable energy and power solutions.

Shell's commitment to fostering an inclusive workplace has seen women appointed to key leadership positions across its businesses.

Most recently, former Managing Director of Shell Nigeria Exploration and Production Company Limited (SNEPCo), Elohor Aiboni, was appointed Executive Vice President and Country Chair, Nigeria, becoming the first Nigerian to hold the combined roles. She assumes office on 1 August.

Daystar Power, acquired by Shell in 2022, continues to accelerate the energy transition by providing solar and hybrid power solutions to businesses across Nigeria, Ghana, Togo, Senegal and Côte d'Ivoire, helping customers reduce emissions while improving energy reliability.

Speaking at the conference, Group Chief Executive Officer of the Nigerian National Petroleum Company Limited (NNPC Ltd.), Bayo Ojulari, congratulated the award recipients and commended the spirit of collaboration and teamwork that contributed to the success of this year's conference.

Shell was a key sponsor of the 25th NOG Energy Week Conference and Exhibition, where it hosted an exhibition showcasing its businesses and a well-attended industry dinner.

In remarks delivered on his behalf by General Manager, Wells and Geoscience Operations Nigeria, Joseph Mordi, Shell's Executive Vice President, Nigeria and Country Chair, Marno de Jong, reaffirmed the company's commitment to Nigeria's energy future.

"We will continue to play our role in developing the industry and help to promote economic growth in Nigeria through the efficient delivery of our businesses in deepwater oil and gas production, integrated gas, renewables and power solutions," he said.

The awards underscore Shell's continued focus on delivering value through innovation, operational excellence, inclusion and sustainable energy solutions while supporting Nigeria's economic growth and energy transition.



NOG 25 ENERGY WEEK ANNIVERSARY

ExxonMobil commits \$1 billion for Usan Infill drilling project

By Genevieve Aningo

ExxonMobil Nigeria, on behalf of the OML 138 partners, has announced the commencement of a cumulative US\$1 billion investment in the Usan Infill Project, a strategic deepwater development expected to unlock an additional 40,000 barrels of oil per day (bpd) at peak production. The announcement was made by Jagir Baxi, Managing Director of ExxonMobil Nigeria, during NOG Energy Week 2026, where he highlighted the project's significance for Nigeria's oil and gas industry and its alignment with the Federal Government's drive for increased oil production.

"This milestone will be marked by the on-block arrival of a world-class deepwater drilling rig, together with the sail-away of major new subsea deepwater equipment towards the block," Baxi said.

Describing the project as a unique short-cycle investment, Baxi noted that first production is expected within approximately six months of on-block execution, with peak production of 40,000 bpd anticipated within 18 months. "The entire investment has been developed within approximately 18 months following the completion of advanced seismic acquisition and

processing in mid-2024," he said.

"More than US\$300 million has already been committed by the OML 138 partners, while the 2022 renewal of OML 138 for an additional 20 years provided a strong vote of confidence in the asset, stakeholder partnerships and Nigeria's regulatory framework."

The Usan Field has been in production for 14 years, during which the OML 138 partners have invested approximately US\$16 billion, producing more than 350 million barrels of oil and delivering an estimated US\$4.6 billion in value to Nigeria. The new Usan Infill Project is expected to contribute an additional US\$1.2 billion in revenues to Nigeria over the next four years, with the first revenues expected to begin flowing later this year.

Beyond production and technology, Baxi emphasized the importance of the people driving the success of the Usan operation.

"I am proud that the Usan FPSO offshore operations are delivered by a workforce of nearly 400 talented professionals, the vast majority being Nigerians, who safely operate this world-class production facility around the clock," he said. "They are supported by hundreds more Nigerians across our concessionaire teams, regulators and

contracting partners."

Baxi acknowledged the strong collaboration of key stakeholders, including the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), Nigerian National Petroleum Company Limited (NNPC Ltd.), and the Nigerian Content Development and Monitoring Board (NCDMB), whose support enabled the investment to move forward.

He also expressed appreciation to ExxonMobil's OML 138 investment partners—Chevron, TotalEnergies, and Nexen—for their continued commitment and collaboration.

Reaffirming ExxonMobil's long-term commitment to Nigeria, Baxi said the company remains focused on deploying its global expertise, advanced technology, operational excellence and investment capacity to expand its deepwater portfolio and contribute to Nigeria's energy growth.

"ExxonMobil, through its Esso affiliates in Nigeria, remains firmly committed to Nigeria's oil and gas industry. Building on the Usan Infill Project and ongoing sector reforms, we look forward to unlocking further investments, production growth and long-term value across OML 138 and other deepwater assets in which Esso has interests," he said.



TOTALENERGIES:

Nigeria plays an important role in global energy security - Bouyer

Nigeria is reinforcing its position as a critical player in the global energy landscape by advancing the development of its vast natural gas resources while demonstrating exceptional reliability as an energy supplier amid geopolitical uncertainty and conflict in the Middle East.

Speaking during the strategic panel session, "Synchronising Gas Strategies: Strengthening Energy Security," at the 25th NOG Energy Week Conference and Exhibition held at the Bola Ahmed Tinubu International Conference Centre in Abuja, Managing Director of TotalEnergies EP Nigeria Limited, Matthieu Bouyer, highlighted Nigeria's significant progress in creating an enabling environment for gas investments through strengthened government policies, regulatory reforms and investment incentives.

According to Bouyer, the Nigerian government's sustained efforts over the past three years have significantly improved investor confidence, particularly in the development of non-associated gas resources.

"There has been a lot of effort by the government over the last three years on regulations and investment incentives, especially for non-associated gas," Bouyer said. "The conditions are clearly on the right track to unlock these gas volumes. More importantly, there is a growing willingness to develop gas as an alternative energy solution, and that momentum is coming from Nigeria itself."

He noted that the reforms are already translating into major industry investments and project development.

"We have seen many fruits from government efforts, which have led to major projects," he said. "TotalEnergies' Ubeta Project received its Final Investment Decision (FID) in 2024, and another project is expected very soon. There is a pipeline of investments that may not have materialised without the positive atmosphere created by the authorities."



Matthieu Bouyer, Managing Director, TotalEnergies EP Nigeria Limited

By Ndubuisi Micheal Obineme

The potential is clearly there."

Bouyer also underscored the enduring importance of natural gas in ensuring global energy security, describing it as both a transition fuel and an essential energy source for economies worldwide.

"Gas is a transition energy, but beyond that, it remains essential," he said. "If gas supplies were suddenly cut in Europe, populations would immediately feel the impact—either enduring extreme heat in summer or extreme cold in winter. We experienced similar pressure during previous supply disruptions when demand for gas increased significantly."

Highlighting Nigeria's strategic role in global energy markets, Bouyer said the country's ability to maintain uninterrupted energy exports during recent geopolitical tensions in the Middle East has further strengthened its reputation as a dependable supplier.

"Nigeria has an important role to play. Even during recent geopolitical tensions in the Middle East, Nigerian energy exports continued to flow uninterrupted. That consistency and reliability are valuable."

This is why unlocking Nigeria's gas resources is important not only for domestic consumption but also for export markets," he stated.

Beyond Nigeria, TotalEnergies has also urged Nigerian companies to become more competitive on the global stage.

Addressing an NOG panel session titled "Offshore Frontiers & Local Content: Nurturing Local Capacity to Support Production Growth," TotalEnergies's Nigerian Content Manager, Achese Amadi, said Nigeria's local content success story should evolve into regional and international competitiveness.

"The industry needs to have the mentality that while it is local content-driven, it must also have a global outlook. Once service providers adopt this mindset, they can expand across the region and deliver greater value to the country," he said.

Mr Amadi reaffirmed TotalEnergies' commitment to fostering partnerships, technology adoption and capacity development.

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Redefining African Energy Future: Why partnerships, not reserves, will shape next phase of Africa's development - Ojulari

In this era of geopolitical uncertainty, shifting investment patterns, rapid technological advancement and the accelerating global energy transition, the Group Chief Executive Officer of NNPC Limited, Engr. Bayo Ojulari, has called on African nations to fundamentally rethink how they develop their energy resources by prioritising strategic partnerships that create sustainable value across the continent.

By Ndubuisi Micheal Obineme

For decades, Africa has been described as a continent with abundant oil reserves, enormous natural gas deposits, critical minerals and immense renewable energy potential. The continent has long possessed the ingredients of an energy superpower.

Beyond hydrocarbons, it has abundant sunshine, wind, hydropower potential, strategic minerals and one of the world's youngest populations. Together, these assets present enormous opportunities to drive industrialisation, create jobs and strengthen energy security. But these advantages have often been undermined by fragmentation.

Discussions around the continent's energy future have revolved around production volumes, reserve potential, exploration campaigns and infrastructure deficits.

At the NOG Energy Week 2026, Engr. Bayo Ojulari, Group Chief Executive Officer, NNPC Limited, challenged that narrative, offering a constructive perspective for Africa's next phase of development.

Speaking at the NOG Strategic Conference, Ojulari said Africa's next phase of energy development would depend less on the abundance of its natural resources and more on the strength of collaboration among governments, investors, regulators, financial institutions, technology

providers, academia, national oil companies and host communities.

Although Africa is endowed with vast oil and gas reserves, critical minerals, renewable energy resources and one of the world's youngest populations, Ojulari observed that the continent continues to attract only a modest share of global energy investment.

He noted that while discussions about Africa's energy future have traditionally focused on reserve growth, production volumes, exploration activities and infrastructure gaps, the real challenge lies elsewhere.



"Africa's greatest challenge is no longer about discovering more resources. It is about connecting the people, institutions and investments needed to transform those resources into sustainable prosperity," Ojulari said.

According to him, Africa's greatest obstacle is neither geology nor opportunity, but the disconnect among the key stakeholders required to translate abundant resources into long-term economic growth and industrial development.

He identified fragmented collaboration as one of the biggest barriers to the continent's energy transformation, citing weak linkages between resource owners and operators, investors and projects, innovation and execution, as well as policy and capital.

Ojulari noted that commercially viable projects across Africa often struggle to attract investment, while universities and research institutions frequently operate independently of industry. Similarly, regulators and financiers often move at different speeds, emerging technologies outpace deployment, and national ambitions are pursued without sufficient regional coordination.

He stressed that addressing these challenges requires Africa to shift from a resource-driven mindset to one anchored on strategic partnerships and integrated energy ecosystems.

"The future belongs not simply to oil and gas producers, but to connected ecosystems built on trust, collaboration and shared value," he said.

Ojulari emphasised that Africa already possesses the ingredients required to become a global energy powerhouse, including abundant hydrocarbons, vast natural gas reserves, renewable energy resources, critical minerals essential for the global energy transition and a dynamic, rapidly growing youth population.

To unlock this potential, he said, building stronger partnerships must become the continent's foremost priority.

"The continent's next energy breakthrough will not come from discovering more oil and gas. It will come from building stronger institutions,



Engr. Bayo Ojulari, Group Chief Executive Officer, NNPC Limited

deeper partnerships and a more connected energy ecosystem," he said.

He advocated for a structured ecosystem in which governments, national oil companies, international investors, regulators, financial institutions, technology firms, academia, service providers and host communities operate as partners pursuing shared outcomes.

According to Ojulari, energy has evolved into one of the world's most interconnected industries, where no single organisation possesses all the capabilities required for success.

Reflecting on the growth of leading international energy companies, he noted that many achieved global scale by sharing risks, pooling expertise and forging strategic alliances—a model Africa must embrace to maximise the commercial value of its energy resources.

"The winners of the next energy era will not necessarily be those with the largest reserves. They will be those who build the strongest partnerships around those reserves," he said.

Ojulari concluded by urging governments, national oil companies, investors, regulators, financiers, academia and service providers across Africa to work together in positioning the continent as a global destination for energy investment, technology, innovation and sustainable value creation.

How NNPC Limited is driving the next phase of development

He disclosed that NNPC Ltd recorded an average 98 per cent recovery across its five crude oil export terminals between April 2025 and May 2026, compared with operational

low of about one per cent at the Bonny Oil and Gas Terminal in June 2022.

Ojulari also announced that Nigeria's crude oil production has risen to 1.71 million barrels per day—the highest level in five years—while NNPC Exploration and Production Limited (NEPL) achieved a record production of 365,000 barrels per day.

He added that gas production reached 7.5 billion standard cubic feet per day, driven by the successful completion of the River Niger crossing on the Ajaokuta-Kaduna-Kano (AKK) Gas Pipeline and the commissioning of the ANOH Gas Processing Plant.

According to him, NNPC Ltd maintained 100 per cent compliance with all Joint Venture cash call obligations throughout 2025 and up to June 2026, while sustaining its drive toward achieving crude oil production of two million barrels per day. Business & Industrial

Since the last NOG Energy Week, he said, the Company has signed landmark Gas Sale and Purchase Agreements (GSPAs) covering 1.29 billion standard cubic feet per day for long-term LNG feed gas and 750 million standard cubic feet per day for domestic industrial gas supply to DFL FZE and Dangote Refinery.

He urged stakeholders to move beyond transactional relationships to strategic partnerships, from isolated projects to integrated value chains, and from exporting raw resources to building competitive industrial economies.

"At NNPC Limited, we see ourselves not just as an energy producer but as an ecosystem builder—connecting capital, technology, policy, talent and markets to create lasting value for Nigeria and Africa," he added.



NOG 2026: Africa's energy future will be built by institutions, not resources alone - NCDMB

Africa's energy future will not be determined by the size of its oil and gas reserves but by the strength of its institutions, the quality of its workforce, and the ability of local businesses to compete on a global scale. This was the central message from a high-level panel discussion at the 2026 NOG Nigerian Content Seminar, where industry leaders called for a shift from resource-driven development to deliberate investment in human capital, institutional capacity and regional collaboration.

Moderated by Hadassah Hussaini, Adviser, Diplomatic Relations, NNPC Limited, the NOG Nigerian Content panel featured Dr. Abdulmalik Halilu, Director, Corporate Services, Nigerian Content Development and Monitoring Board (NCDMB); Engr. Wole Ogunsanya, FNSE, Chairman of the Petroleum Technology Association of Nigeria (PETAN); Ibrahima Talla, Executive Secretary of the African Local Content Association (ALCA); and Aune Amutenya, Acting Petroleum Commissioner, Namibia's Ministry of Industries, Mines and Energy.

Despite representing different countries and institutions,

the panelists shared a common conviction: Africa's natural resources can only deliver sustainable prosperity when supported by strong governance, capable institutions and a highly skilled workforce.

Speaking on Nigeria's local content journey, Dr. Abdulmalik Halilu said the country's greatest achievement has been institutionalising local content through governance structures that extend beyond political administrations and market cycles.

According to him, Nigeria's success rests on three key pillars—strong governance, fit-for-purpose capacity development and effective monitoring—which have created investor confidence while providing a transparent framework for indigenous businesses to thrive.

"The real transformation began when local content evolved from government policy into legislation through the Nigerian Oil and Gas Industry Content Development Act," he said. "That legislation established dedicated funding, measurable targets and a specialised institution responsible for implementation."

He noted that the Act has embedded local content into corporate strategy, with virtually every major operator and service company now maintaining dedicated local content departments.

By Ndubuisi Micheal Obineme

Dr. Halilu stressed, however, that legislation alone cannot build industrial capability.

Highlighting the NCDMB Rollout Initiative, he described the programme as a practical intervention designed to equip professionals with the knowledge required to navigate compliance, quality management, statutory reporting and international industry standards.

"We are proud to be part of the Rollout Initiative," he said. "It seeks to promote the philosophy of local content and industry best practices."

He explained that many compliance issues arise not from deliberate violations but from limited understanding of regulatory requirements.

"Many organisations receive compliance queries because of avoidable lapses," he noted. "Some staff simply are not doing what they are supposed to do."

The solution, he said, is to institutionalise knowledge by developing in-house experts capable of guiding organisations through increasingly complex regulatory environments.

Abdulmalik Halilu
PhD

Engr. Wole
Ogunsanya

Maggy Shino

Ibrahima Talla

Director - Corporate
Services

Chairman

Director - Petroleum
Upstream Unit

Executive Secretary

Nigerian Content Development &
Monitoring Board (NCDMB)

PETAN

Office of the President, Republic of
Namibia

African Local Content Association
(ALCA)



"It is about developing that ecosystem," he said. "You have an SME within your organisation that can provide guidance on virtually anything."

Dr. Halilu also emphasised that NCDMB is applying the same standards internally by continuously investing in staff development. "As we are training people outside, we are also training our own staff," he said.

Underscoring the importance of leadership succession, he pointed to emerging professionals participating in the conference, expressing confidence that they represent the next generation of industry leaders.

"A few years from now, those are the people you will see on this stage speaking," he explained.

Addressing compliance with contributions to the Nigerian Content Development Fund (NCDF), Dr. Halilu urged companies to meet their statutory obligations, warning that failure to make the mandatory one percent contribution could have significant long-term consequences.

"That one percent may seem insignificant," he cautioned, "but if you don't contribute it, the NCDF is going to suffer."

He noted that NCDMB has introduced an online NCDF Compliance Certificate to simplify compliance and encourage proactive participation.

While stressing the importance of regulatory compliance, Dr. Halilu maintained that sustainable local content growth ultimately depends on sustained investment across the industry.

"Capacity cannot grow in isolation," he said before delivering what became one of the defining messages of the session: "No projects, no local content."

He explained that every delayed Final Investment Decision (FID) postpones employment opportunities, technology transfer, manufacturing growth and wider economic development throughout the energy value chain.

To reinforce the importance of project execution, he highlighted NCDMB's proposal for an annual FID Day to celebrate projects that achieve Final Investment Decision and recognise the economic opportunities they unlock.

Calling for stronger collaboration between regulators and investors, Dr. Halilu urged both parties to accelerate project delivery.

"It has to be a handshake," he said, stressing

that government and industry must work together to unlock growth.

Against the backdrop of changing global energy dynamics and geopolitical uncertainty, he observed that Nigeria is attracting renewed investor interest because of its stable regulatory environment and strengthening institutions.

"NCDMB is here to enable you," he assured participants. "We are here to promote businesses. We are here to provide support."

Concluding his remarks, Dr. Halilu reflected on the Board's broader mandate.

"When you look at NCDMB," he said, "the 'D' is there for a reason. It stands for Development."

The discussion concluded with a shared consensus that Africa's long-term competitiveness will be defined not by the resources beneath its soil, but by the institutions it builds, the people it develops, and the partnerships it fosters to drive industrial transformation across the continent.



Africa's Green Hydrogen Frontier: Can hydrogen become a replica for Africa’s oil and gas?

Africa poised to become a global green hydrogen leader, with potential to generate \$110 billion annually by 2050

KEY FIGURES AT A GLANCE		
Production Potential (2050)	30–60 Mt/yr	Conservative AGHA estimate; up to 50 Mt by 2035 (EIB/AU/ISA)
Investment Potential	€1 Trillion	EIB / African Union joint study estimate
GDP Uplift by 2050	\$60–120 Bn	From AGHA member states alone
New Jobs Created	3.7–4 Million	Across the full value chain by 2050
Announced Capacity	125+ GW	Combined electrolyser projects announced
Operational Capacity (2025)	23.5 MW	Egypt 15 MW, Namibia 5 MW, South Africa 3.5 MW
Projects at Feasibility Stage	>40,000 MW	39 projects under analysis as of 2025
Export Revenue (2050)	\$110 Bn/yr	Deloitte estimate for hydrogen & derivatives

Africa holds one of the world's largest renewable energy resources, with green hydrogen potential. This positions the continent to become a leading player in the global energy transition.

Unlike oil and gas, which produce carbon dioxide and greenhouse gas, green hydrogen is produced without generating greenhouse gas emissions, making it a critical energy source in the global transition to low-carbon energy. Green hydrogen is produced by using renewable electricity (solar, wind, or hydropower) to split water into hydrogen and oxygen through electrolysis. In this process, electricity from renewable sources is passed through water (H₂O) using an electrolyzer device. The electrical energy splits the water molecules into hydrogen (H₂) and oxygen (O₂). Hydrogen is collected as a fuel, while oxygen is released or captured for industrial use.

The Energy Republic's analysis examines Africa's hydrogen landscape across four dimensions: the raw resource potential, the evolving policy environment, active

By Ndubuisi Micheal Obineme

investment flows, and the market opportunities ahead. With its unparalleled renewable energy endowment, Africa is well placed to play a pivotal role in shaping the global energy transition and advancing a more sustainable, low-carbon future.

Overall, the announced electrolyser capacity on the continent now exceeds 125 GW, rivalling Africa's total installed solar base. The Africa Green Hydrogen Alliance (AGHA) — comprising 11 member states — projects 30–60 million tonnes of annual production by 2050 and up to \$120 billion in incremental GDP.

In February 2025, eight African countries, including Algeria, Egypt, Kenya, Mauritania, Morocco, Namibia, South Africa, and Tunisia, had adopted national hydrogen strategies and roadmaps. With much of Africa receiving more than 2,000 kWh/m² of solar irradiance annually and vast wind resources across North, East, and Southern Africa, experts say Africa is well-positioned to become a leading producer and exporter of green hydrogen. Some notable landmark renewable energy projects in Africa include Morocco's Noor Ouarzazate Solar Complex

and Kenya's Lake Turkana Wind Power project, which demonstrate the continent's growing capacity to support large-scale hydrogen production. Furthermore, industry reports have shown that there are 350GW of wind and solar projects currently in development across Africa. Nearly two-thirds of this project pipeline and around 216 GW across 35 projects are earmarked for green hydrogen production, with much of the output intended for export. Industry experts have said that Africa's exceptional renewable energy resources could enable some of the world's lowest green hydrogen production costs, particularly in countries such as Namibia and Mauritania, where ideal combinations of wind and solar resources exist.

In Angola, a group of German consortiums (CWP Global, Gauff and Conjuncta) in partnership with Sonangol is developing a green hydrogen project aimed at utilizing existing hydroelectric power generation to produce green hydrogen and derivatives, with the planned electrolysis capacity reaching up to 600 MW. This is the first of its kind in Sub-Saharan Africa.



Export Destination	2030 Target (Mt/yr)	Mechanism	Key African Suppliers
European Union	10 Mt (REPowerEU)	Pipeline + ammonia shipping	Morocco, Egypt, Mauritania, Tunisia
Germany	4 Mt (H2Global + bilateral)	H2Global auctions; offtake support	Namibia, Egypt, South Africa
Japan	TBD; interest expressed	Ammonia co-firing; LH shipping	South Africa, Namibia
Global Market (2050)	500–660 Mt total demand	Africa share: 5–10%	AGHA members + Nigeria, DRC

Dr. Stefan Liebing, CEO of Conjuncta GmbH, said Angola offers a special framework and good options for the production of green hydrogen, noting that the country can take a leading role in Africa in developing a new global green hydrogen industry.

Speaking in an exclusive interview with The Energy Republic, Dr. Liebing stated that Angola will become one of the first countries in the world to use its renewable energy potential for the export of green energy products and complement its oil and gas exports.

"Angola will generate significant revenue from another pillar of its energy export strategy," he said, adding that the country will be in a good position to be a front-runner in building a hydrogen economy.

Beyond exports, green hydrogen presents significant opportunities to power industries, transport, electricity generation, and the production of chemicals such as ammonia. As governments and investors accelerate renewable energy development, the key challenge will be balancing export opportunities with Africa's urgent need to expand domestic energy access.

Production Cost Advantage

Africa's solar and wind potential translates directly into competitive hydrogen production costs. Reported levelised costs of hydrogen (LCOH) in Sub-Saharan Africa range from as low as \$0.12/kg to \$22.63/kg depending on location, technology, scale, and resource quality — with optimal locations projected to become among the cheapest in the world as technology matures.

Namibia's combination of coastal winds and desert sun in particular offers some of the globally lowest projected

Country Market Profiles

Some group of countries form the operational core of Africa's hydrogen landscape, brought together in the Africa Green Hydrogen Alliance (AGHA).

Founded in 2022 with six members — Egypt, Kenya, Mauritania, Morocco, Namibia, and South Africa — the AGHA has since expanded to 11 members, adding Algeria, Angola, Djibouti, Ethiopia, and Nigeria, with Tunisia considering membership. These countries represent distinct strategic positions and project maturity levels.

The Alliance provides a platform for government-private sector-DFI collaboration on policy, financing, capacity building, and certification standards.

Major Financing Gap Despite Growing Support
Africa's green hydrogen sector continues to attract significant international interest, but investment remains overwhelmingly concentrated in early-stage planning rather than project delivery, highlighting a widening gap between ambition and implementation.

Although more than 114 GW of electrolyser capacity has been announced across the continent, only 13 MW had reached a final investment decision by early 2023. By 2025, just three projects, with a combined capacity of 23.5 MW, were operational, underscoring the challenge of converting project announcements into deployed infrastructure. A breakthrough came in July 2024, when a green ammonia project in Egypt secured the world's first renewable hydrogen offtake support through a €400 million commitment from Germany under the H2Global mechanism. While the deal represents a significant milestone for the sector, Africa has yet to secure an equivalent commercially driven hydrogen offtake agreement.

European governments remain the dominant source of public financing, providing nearly 80% of all public funding commitments for African renewable hydrogen projects. Germany has

emerged as the leading contributor through its development bank, KfW, and demand-side initiatives such as H2Global, alongside broader support from the European Union and several European partner countries.

Encouragingly, less than 2% of public funding—around \$150 million—has been provided as loans, with the vast majority delivered through grants and equity. This financing structure limits debt exposure for African countries and represents a departure from historical resource development models.

However, financing remains well below what is needed to unlock Africa's green hydrogen potential. Analysis by Development Reimagined estimates that \$108.9–149.9 billion in infrastructure investment will be required annually across 13 African countries through 2030, including \$22–30 billion per year for energy infrastructure alone.

Closing the gap between announced projects and committed investment will be critical if Africa is to establish itself as a competitive global supplier of renewable hydrogen and its derivatives.

Innovative Finance and Global Partnerships Position Africa to Unlock Green Hydrogen Potential

To address the financing gap, experts say that innovative financing models will help bridge the continent's significant infrastructure funding gap. Namibia's SDG Namibia One Fund and South Africa's SA-H2 Fund are pioneering blended finance approaches that combine development finance, grants and private capital to reduce investment risk for early-stage projects. Meanwhile, the African Development Bank's SEFA Green Hydrogen Programme, launched in late 2025 with support from



Sector-Specific Opportunities

Sector	Application	Market Status
Mining & Metals	Zero-emission haulage; green steel; green aluminium smelting	Pilot projects in South Africa; Hylron Oshivela (Namibia) operational
Agriculture / Fertilisers	Green ammonia as nitrogen fertiliser; import substitution	Commercial projects in Egypt; continent currently net fertiliser importer
Transport	Fuel cell buses, trucks, trains; shipping bunkering (ports)	Demonstration projects; South Africa hydrogen valley transport corridor
Power Generation	Long-duration storage; grid balancing; backup power	Early-stage; limited operational capacity globally (0.4 GW in 2024)
Aviation	Sustainable Aviation Fuel (SAF) via Power-to-Liquid	South Africa HySHiFT project development stage
Chemicals	Green methanol; industrial hydrogen feedstock	Feasibility studies; Morocco targeting chemical export hub

Germany, is providing up to US\$20 million per project for feasibility studies and project development through to financial close.

Demand for African green hydrogen continues to strengthen, with Europe positioning itself as the largest near-term export market through the EU's REPowerEU strategy, while Japan and South Korea are pursuing strategic partnerships to secure future supply. At the same time, domestic opportunities are equally significant, with green hydrogen offering solutions for energy access, renewable energy storage, and local fertiliser production across the continent.

International collaboration is also accelerating through initiatives such as the EU-Africa Green Partnership and Germany's H2Global programme, which are helping establish the regulatory and commercial frameworks needed to support long-term market growth.

Despite this progress, substantial challenges remain. Africa faces an annual infrastructure financing gap estimated at US\$108–150 billion through 2030, while water availability, regulatory uncertainty and the absence of commercial-scale projects reaching final investment decisions continue to constrain sector growth.

Industry experts agree that while Africa possesses world-class renewable resources and significant export potential, scaling the green hydrogen economy will depend on sustained investment, innovative financing solutions and continued international

cooperation to transform opportunity into commercial reality.

Offtake Uncertainty

Even as Africa's emerging green hydrogen sector continues to attract significant international interest, industry reports highlight several critical barriers that could affect the successful development of major projects across the continent.

One of the most pressing challenges is the lack of offtake demand. Out of the 35 major green hydrogen projects currently tracked in Africa, only four have publicly announced offtake agreements with identified buyers. Without long-term purchase commitments, securing project financing remains difficult, while market demand may depend on supportive policies such as carbon pricing and regulatory incentives.

The report also highlights growing concerns that Africa's hydrogen industry could replicate historic patterns of resource extraction, with projects largely financed and led by foreign investors for export markets. Civil society organisations have raised questions about land allocation, water use, and the potential diversion of renewable energy resources away from improving domestic electricity access.

An estimated 216 GW of planned renewable energy capacity is earmarked for hydrogen production, raising difficult questions about balancing export revenues with the urgent need to expand electricity access for millions across Africa.

Finally, evolving international certification requirements, including the European Union's Renewable Energy Directive II (RED II), present additional challenges. Meeting

stringent sustainability and carbon accounting standards will require strong regulatory institutions and technical capacity, which currently vary considerably across African countries.

The findings underscore the importance of strengthening regulatory frameworks, securing reliable market demand, and ensuring that green hydrogen development delivers meaningful economic and social benefits alongside export opportunities.

Market Outlook

Africa has a unique opportunity to emerge as a major player in the global green hydrogen economy, with annual production projected to reach 30–60 million tonnes by 2050—representing up to 10% of global demand. New analysis highlights that the continent's greatest economic opportunity lies not only in hydrogen production but in developing downstream industries such as green ammonia, green steel, and sustainable aviation fuel (SAF).

With Deloitte forecasting up to \$110 billion in annual hydrogen export revenues by 2050 and a joint European Investment Bank–African Union–International Solar Alliance study estimating €1 trillion in cumulative investment, the sector has the potential to transform African economies, create high-value jobs, and accelerate industrialisation.

Realising this opportunity will require decisive policy action. Governments are encouraged to establish clear regulatory frameworks, promote local processing and ownership, invest in workforce development, ensure sustainable water management, and leverage international climate and investment forums to secure favourable financing and technology transfer.

For investors, the hydrogen projects in Egypt, Namibia, and South Africa stands as a near-term opportunities. On long-term basis, the success of Africa's hydrogen industry will depend on blended finance models, integrated value chain investments, robust certification systems, and proactive management of community and environmental risks.

Industry stakeholders says Africa's long-term competitiveness on hydrogen will also depend not simply on exporting green hydrogen, but on creating greater value through domestic manufacturing and industrial development, positioning the continent as a strategic partner in the global energy transition.

Goni B. Ali

Dr. Mustapha
Abdullahi FNSE, CEng

Abdur

Deputy Director, Strategy & Gas
Department | Team Lead for
Hydrogen Development
Ministry of Petroleum Resources

DG & CEO

Energy Commission of Nigeria

CEO

AFRENTA



Nigeria poised to become Africa's next hydrogen hub as national policy takes shape



By Ndubuisi Micheal Obineme

Nigeria is positioning itself to become a major player in the global hydrogen economy as the country accelerates efforts to develop its first-ever National Hydrogen Policy, Dr. Mustapha Abdullahi, the Director General of the Energy Commission of Nigeria (ECN), has said.

Speaking during the hydrogen panel discussion at NOG Energy Week, Dr. Abdullahi emphasized that hydrogen is no longer a technology of the future but a rapidly emerging pillar of the global energy transition that presents significant opportunities for economic growth, energy security, and industrial development.

"Hydrogen is no longer just an energy solution for the future; it is already shaping the global energy landscape today," Dr. Abdullahi said. "Countries such as Namibia, Morocco, and Egypt are making remarkable progress in building hydrogen ecosystems, and Nigeria must position itself as a key player in this emerging sector by harnessing our abundant renewable energy resources and strategic geographic advantage."

He highlighted Nigeria's ongoing efforts to establish a robust policy framework for hydrogen development through the Presidential Committee on the National Hydrogen Policy, which is currently driving the formulation of the country's first National Hydrogen Policy. According to him, the initiative represents a critical milestone in Nigeria's clean energy journey and demonstrates the Federal Government's commitment to diversifying the nation's energy portfolio.

Dr. Abdullahi also noted that the approval of the National Energy Master Plan by President Bola Ahmed Tinubu in 2023 provides a strong strategic foundation for integrating hydrogen into Nigeria's long-term energy transition agenda.

"The National Energy Master Plan reinforces hydrogen's role in Nigeria's future energy mix and provides the strategic direction required to unlock investment, innovation, and sustainable development in the sector," he said.

With some of Africa's most abundant solar energy resources and a strategic location that offers access to regional and international markets, Nigeria is well positioned to

produce green hydrogen competitively. Dr. Abdullahi said these natural advantages could support industrialization, create new economic opportunities, expand exports, and strengthen the country's energy security while contributing to global decarbonization efforts.

The Director General reaffirmed the Energy Commission of Nigeria's commitment to advancing policies, strategic partnerships, and innovative initiatives to unlock the country's hydrogen potential.

"At the Energy Commission of Nigeria, we remain committed to advancing policies, strategic partnerships, and innovative initiatives that will unlock Nigeria's hydrogen potential. By leveraging our abundant solar resources, we can drive sustainable economic growth, strengthen energy security, and position Nigeria as a leader in Africa's clean energy transition," he stated.

He concluded by stressing the importance of taking decisive action today to secure Nigeria's place in the rapidly evolving global hydrogen economy.

"Our future depends on the decisions we make today," Dr. Abdullahi added.



Anita Otubu,
Senior Director,
Sustainable Energy
for All (SEforALL)

"We are creating viable renewable energy ecosystems across Africa" - Otubu, SEforALL

In this interview, Anita Otubu, Senior Director, Sustainable Energy for All (SEforALL) talks to Genevieve Aningo, Senior Correspondent, The Energy Republic, outlining the organisation's strategy to unlock Africa's renewable energy potential, as well as bridge the energy access gap, coupled with the growing role of mini-grids in rural electrification, the policy and investment priorities needed to unlock the continent's vast renewable energy potential.

TER: Africa holds the world's largest untapped renewable energy resources, but still struggles with energy poverty. What is SEforALL doing in Africa to bridge the energy access gap, and which African countries are playing a pivotal role in driving the organization's deliverables on clean energy development?

Otubu: Despite holding the world's largest renewable energy potential, nearly 600 million Africans still lack access to electricity, and hundreds of millions more experience an unreliable power grid supply.

Additionally, roughly one billion people lack access to clean cooking solutions. SEforALL exists precisely to close that gap by mobilising ambition, policy frameworks, finance, and technical

know-how towards addressing the challenge at scale. Renewable & Alternative Energy

SEforALL works across Africa to accelerate universal access to affordable, reliable, and sustainable energy through policy support, technical assistance, market activation, and blended finance mechanisms. An example of this effort is the Universal Energy Facility (UEF), a results-based financing mechanism that provides catalytic grants to accelerate the deployment of distributed renewable energy solutions, such as mini-grids, standalone solar for productive use, and clean cooking technologies.

Since 2020, the UEF has allocated over USD 74 million to energy access projects across Africa, benefiting more than 65,000 people, powering nearly 4,000 businesses and institutions including health and education

facilities, and deploying over 6.7MW of solar PV capacity.

Our priority markets span Sub-Saharan Africa, particularly Western and Eastern Africa, where the lack of energy access is most concentrated.

Across all markets, SEforALL's approach focuses on creating commercially viable renewable energy ecosystems by combining public, private and philanthropic capital, strengthening local institutions, improving regulatory frameworks and ensuring that energy access delivers measurable socio-economic impact for communities. Energy & Utilities.

In Nigeria, over \$10 million USD was disbursed to 29 project developers to deploy clean energy solutions. Unlike typical household electricity connections, these deployments consist of high-capacity stand-alone solar and battery



storage systems that power businesses, institutions and productive-use activities, enabling income generation, reducing reliance on diesel generators and supporting local economic growth.

Over 37,000 livelihoods were impacted positively, with over 3,000 tons of CO₂ emissions avoided annually.

Powering Social Infrastructure is our dedicated programme that ensures schools and health facilities have access to reliable, sustainable electricity. SEforALL conducts comprehensive assessments of the energy needs of the health and education sectors at the country level, then provides governments and financial partners with a clear strategy and roadmap to support the electrification of social infrastructure.

Following the assessments conducted in Nigeria, Rwanda and Sierra Leone, SEforALL developed forward-looking roadmaps with short-term, actionable recommendations for the public sector, development partners and the private sector — aimed at overcoming barriers to accelerating deployment of sustainable power solutions for schools and health facilities. CompanyNews

SEforALL is a co-champion of Mission 300, an ambitious initiative by the World Bank and the African Development Bank that aims to halve the number of people living without electricity in Sub-Saharan Africa.

In our role as the Secretariat for Mission 300, SEforALL views this as a mechanism not just for direct beneficiaries but for catalyzing clean energy markets, with price discovery gains and business models that can scale far beyond the 300 million direct beneficiaries.

TER: SEforALL has launched the SOGREA initiative to accelerate mini-grids development in rural communities in Sierra Leone. Could you highlight the number of communities this project will impact?

Otubu: The Salone Off-Grid Renewable Energy Acceleration (SOGREA) initiative represents one of the most comprehensive off-grid energy programmes currently underway in West Africa. Sierra Leone has an electrification rate of just 36% of the total population,



Anita Otubu, Senior Director, Sustainable Energy for All (SEforALL)

with meaningful grid access effectively concentrated in Freetown. Rural communities have long been left behind due to the prohibitive cost of grid extension infrastructure.

SOGREA is funded by the European Union and Denmark, and implemented by UNOPS and its hosted entity SEforALL, in close partnership with the Government of Sierra Leone.

SOGREA provides partial financial support to private sector developers to cover a portion of the upfront costs of developing new mini-grids and upgrading existing assets.

Under the SOGREA Investment Support Window, we are targeting the deployment of about 100 new mini-grids and capacity expansion of existing assets by 2028. This ongoing initiative will deliver over 25,000 new or improved electricity connections at affordable tariff levels, directly serving rural households, schools, health facilities, small businesses and communities where the absence of electricity has long been a barrier to education, healthcare and economic development. Renewable & Alternative Energy.

TER: How is the project going to change the structural weaknesses in transmission, distribution, and grid stability in Sierra Leone?

Otubu: Sierra Leone's grid is heavily concentrated in Freetown, with limited rural extension and frequent reliability challenges. The SOGREA initiative addresses these structural weaknesses by bypassing the limitations and higher cost of centralized grid expansion and instead deploying decentralized mini-grid systems. The mini-grids reduce dependence on costly transmission

infrastructure, provide reliable power directly to communities, and strengthen local governance of energy systems.

By catalyzing private investment and introducing results-based financing, SOGREA also builds market confidence, ensuring that distributed renewable energy becomes a sustainable complement to national grid development. Energy & Utilities

More importantly, SOGREA also targets institutional strengthening alongside physical deployment. Working with the Government of Sierra Leone, the initiative supports improvements to the energy sector's regulatory environment, building the capacity and clarity that private investors need, such as bankable offtake frameworks, transparent licensing conditions and predictable tariff structures.

TER: Are you seeing a stronger need to develop more mini-grids rather than large utility-scale solar projects in Africa?

Otubu: There is no single solution that fits all of Africa's energy access challenges — the most appropriate technology depends on population density, geography, demand profiles and the state of existing infrastructure. That said, for reaching the rural and peri-urban communities where energy poverty is most acute, distributed renewable energy systems, including mini-grids and standalone solar, offer the most practical and cost-effective pathways available today.

Utility-scale solar projects play an important role in strengthening national grids and lowering electricity costs in urban markets, and we fully support their development. But for dispersed rural populations, building out the transmission infrastructure to deliver power from a centralized generation asset is often expensive, and it takes many years to deliver the project.

A mini-grid can be deployed in a matter of months. It is scalable as electricity demand grows, and when properly structured, it supports productive use of energy in agriculture, healthcare, and small businesses and industries.

SOGREA's focus on mini-grid deployment reflects a deliberate strategy of meeting communities where they are, rather than waiting for grid extensions that may not arrive within the next decade.



Anita Otubu, speaking at a conference.

TER: Notably, SEforALL has also launched the #EmPower Clean Energy campaign across Africa. How would this initiative bridge the energy access gap?

Otubu: SEforALL's #EmPower Clean Energy campaign is grounded in a fundamental insight: access to electricity is not simply about having a connection; it is about having clean, reliable, sufficient power throughout the full day and night. For millions of Africans with a nominal connection who receive electricity for only a few hours, the transformative potential of energy access is severely limited.

The campaign draws attention to the quality gap as much as the access gap. A healthcare facility that can only refrigerate vaccines during daylight hours and a school that cannot provide a safe learning environment in the evening are real consequences of intermittent supply. The 24-hour framing, during our Clean Energy Day activities, made those consequences visible, measurable, and politically urgent. The campaign is also shifting how governments, donors, and investors define and measure success. It directly reinforces our programme work: when we finance mini-grids through SOGREA or other programmes, we are financing systems designed to deliver consistent power, not just a nominal connection that delivers electricity only for part of the day. Energy& Utilities.

The campaign also highlights the importance of productive use by integrating energy access with agriculture,

cooling and clean cooking. These applications require a reliable supply throughout the day to be commercially viable and genuinely transformative for livelihoods, making 24-hour reliability not just a quality-of-life issue but a development imperative.

TER: Looking ahead, where does SEforALL see the biggest opportunities for renewable energy in Africa, and what should the government do to attract more investments, including strategic partnerships with the public and private sector?

Otubu: The opportunity in Africa is immense and accelerating. Falling costs for solar PV and battery storage have fundamentally changed the economics of distributed renewable energy. Today, mini-grids and standalone solar systems can deliver electricity at costs that are competitive with diesel generation and, in many contexts, competitive with grid extension, thus opening markets that were previously considered economically marginal. Business& Industrial. Many of the biggest opportunities lie at the intersection of energy access and productive use, such as agriculture, cold chain logistics, clean cooking, and health services, to name a few. These sectors generate the anchor demand that makes mini-grids commercially viable and drives stronger system utilisation.

In SOGREA, for example, we are actively working to integrate productive use alongside basic household connections, because that is what makes the business case durable and the development impact

lasting. To accelerate deployments, a public-private partnership at scale is required. Governments should focus on providing regulatory clarity for developers and investors expecting stable licensing frameworks, clear tariff guidelines, and transparent permitting processes.

Blended finance instruments like the results-based financing models SEforALL deployed through the UEF help de-risk private investment and demonstrate viable business models to commercial lenders. BusinessNews Governments can also support demand aggregation, connecting anchor customers such as schools, health posts and agro-processing facilities to underpin mini-grid business cases.

TER: Africa is signalling a major resurgence in solar energy growth across the continent, with 23GW of new solar installations expected between 2025 and 2028. What is the SEforAll investment plan in Africa in 2026 and beyond?

Otubu: 2026 is a pivotal year for SEforALL's work in Africa, and the momentum behind distributed renewable energy has never been stronger. Africa's projected 23 GW of new solar installations between 2025 and 2028 is an encouraging signal, but achieving universal energy access requires that growth to reach rural and underserved communities as well. This is precisely where SEforALL's investment and catalytic work is focused.

In Sierra Leone, SOGREA is entering its most active deployment phase. Over €25 million in catalytic investment will be available to private mini-grid developers through 2028, with a parallel stream of up to 3,000 electric cookstoves being deployed in the same period to support a country that still relies heavily on firewood and charcoal for cooking. Energy& Utilities

Beyond financing, SEforALL continues supporting governments with technical assistance, integrated energy planning, policy reforms and market development to ensure long-term sustainability and scalability of renewable energy investments.

Overall, SEforALL sees Africa's projected renewable energy growth as a major opportunity to accelerate universal energy access while supporting economic growth, climate resilience, energy security and long-term sustainable development across the continent.

SEforALL is advancing the development of markets and the investor confidence that will drive sustained energy access investment across Africa well beyond the lifetime of any single programme.



**Barr. Ismaeel
Ahmed, OON,
Executive Chairman,
Pi-CNG & EV**



Nigeria's mobility outlook: CNG and EVs will become mainstream transportation - Ahmed

In this interview, Barr. Ismaeel Ahmed, OON, Executive Chairman, Pi-CNG & EV, talks to Ndubuisi Micheal Obineme, Managing Editor, The Energy Republic, stating that compressed natural gas and electric vehicles will become part of Nigeria's mainstream transportation in the future. Ahmed also outlined the progress made in expanding vehicle conversion centres across the country, including refuelling infrastructure, and the ongoing efforts by the organization to make CNG and EVs affordable to all Nigerians. **Excerpts:**

TER: What were the most significant milestones recorded by Pi-CNG & EV within 2025 and 2026?

Ahmed: In 2025, the Initiative moved from early mobilisation to visible implementation. We expanded conversion capacity by 300 per cent, onboarded more conversion centres, supported growth in refuelling infrastructure, deployed CNG and EV platforms, and strengthened partnerships with states, operators, financiers, OEMs and regulators.

This demonstrated that clean mobility is not limited to one part of the country. These achievements provide the foundation for 2026, where the focus is now on scaling, deeper infrastructure penetration, safety compliance, access to financing, and wider adoption.

A major milestone this year was the activation of key corridors, including the Northern Corridor rollout, which kicked off in Kano and expanded to Kaduna, Gombe, Maiduguri, and Katsina, with the deployment of 40 CNG buses, seven electric buses, and over 200 CNG-powered tricycles.

TER: What are the emerging trends shaping CNG & EV adoption in Nigeria as of today?

Ahmed: The CNG and EV landscape in Nigeria is evolving rapidly, driven by several converging trends. First, we're seeing stronger engagement on energy security on a global scale and the need to ensure unfettered energy access.

From a national perspective, state governments are increasingly recognising gas-powered transportation as a solution for reducing transport costs, improving energy security, and stimulating local economic development.



Barr. Ismaeel Ahmed, OON, Executive Chairman, P-iCNG & EV

At the same time, financial institutions are beginning to develop innovative financing models that will make vehicle conversions and fleet acquisitions more accessible.

Secondly, the private sector is responding with significant investments in refuelling infrastructure, conversion centres, and fleet deployment.

Commercial transport operators, logistics companies, and corporate fleets are no longer viewing CNG as an alternative fuel. They now see it as a strategic business decision that delivers substantial operational savings.

The sustained increase in petrol prices has significantly altered the economics of transportation in Nigeria. Households, businesses and transport operators are increasingly seeking alternatives that offer greater price stability and lower operating costs, making CNG and EVs more attractive options.

Perhaps the clearest indicator of how far the market has come is the shift in consumer behaviour. Nigerians are no longer asking, 'What is CNG?' They are asking, 'Where can I convert my vehicle? Where can I refill? How much will I save?' That tells us we have moved beyond awareness into the adoption phase.

While CNG is leading the transition by leveraging Nigeria's abundant gas resources, interest in electric vehicles and charging infrastructure continues to grow. The future is not CNG versus EVs; it is a complementary clean mobility ecosystem.

The priority now is execution: scaling infrastructure, strengthening local manufacturing, ensuring reliable gas supply, and making clean transportation accessible and affordable for every Nigerian.

TER: What key challenges continue to limit the pace of CNG adoption, and how is the Initiative actively addressing these constraints?

Ahmed: The biggest challenge today is not demand. It is ensuring equitable access to CNG infrastructure across the country. While adoption is growing rapidly, refuelling stations, conversion cost, and gas supply infrastructure are still concentrated in a few locations.

To achieve nationwide adoption, we must significantly expand this network so that Nigerians, regardless of where they live or operate, have convenient access to CNG services.

Another challenge is access to affordable financing. Although CNG delivers significant long-term savings, the upfront cost of vehicle conversion can be a barrier for many individuals and fleet operators.

Pi-CNG & EV is addressing these constraints by accelerating the rollout of refuelling stations and conversion centres across all geopolitical zones, working with private-sector partners to strengthen gas supply and infrastructure, supporting local manufacturing and conversion capacity, and collaborating with financial institutions to develop financing solutions that reduce the cost of entry.

Our focus is simple: remove the barriers to adoption and build a reliable, nationwide

ecosystem that makes clean, affordable transportation accessible to every Nigerian.

TER: With over 250 CNG vehicle conversion centres now operational nationwide, what is PiCNG & EV's strategy in deepening private sector partnerships to make vehicle conversion more accessible and affordable?

Ahmed: Our strategy is to make conversion easier, safer, and more affordable by de-risking the ecosystem for private players. This means working with banks, fintechs, OEMs, conversion centres, transport unions, and fleet operators to create financing models that allow Nigerians to convert without bearing the full cost upfront.

We recently signed an MoU with CrediCorp and Moniepoint so people can convert and "pay small, small."

We are also strengthening standards and certification so that private-sector expansion does not become unregulated expansion. Access must grow, but it must grow without compromising the safety of the people it is intended to serve.

TER: Refuelling remains a major concern for drivers. How does PiCNG & EV plan to scale up the refuelling infrastructure?

Ahmed: The biggest challenge today is ensuring that infrastructure development keeps pace with growing demand. While interest in CNG continues to rise, refuelling infrastructure remains unevenly distributed across the country. To achieve nationwide adoption, we must expand refuelling access, strengthen regional gas distribution, increase conversion capacity, and improve access to affordable financing.

At Pi-CNG & EV, we are addressing these constraints by accelerating the development of a nationwide refuelling ecosystem. Working closely with NMDPRA, NNPC, GACN, and other stakeholders across the gas value chain, we are prioritising the deployment of anchor refuelling stations along major transport corridors, highways, and high-demand clusters.

Our approach is to facilitate the deployment of mother stations, daughter stations, CNG facilities, and mobile refuelling solutions, while leveraging strategic partnerships with existing fuel retailers and infrastructure providers to ensure broader, more reliable access to CNG. This coordinated, corridor-based approach is improving gas availability, strengthening supply resilience, and giving consumers the confidence to transition to CNG.



TER: Notably, Pi-CNG & EV has worked closely with the Standards Organisation of Nigeria to improve uniformity and safety standards for CNG equipment. Beyond standardisation, what additional measures are being implemented to ensure user safety and build public confidence?

Ahmed: Standardisation is only one part of safety. We are also supporting certified conversion centres, technician training, compliance monitoring, public awareness, and stronger coordination with regulators such as SON, NADDC, FRSC, NMDPRA and other agencies.

The Nigeria Gas Vehicle Monitoring System (NGVMS) is also being developed to support digital verification, improve traceability, and ensure that only properly converted vehicles using approved kits can access refuelling at licensed stations when fully deployed.

TER: Northern Nigeria has historically been underserved in terms of CNG refuelling and gas availability. How will the Ajaokuta-Kaduna-Kano (AKK) pipeline, expected to come online in 2026, change the CNG landscape in the region?

Ahmed: I would not characterise Northern Nigeria as largely underserved today. The region has witnessed significant progress in recent years through targeted investments and strong private sector participation.

Today, CNG and gas infrastructure are already present in states such as Kano, Kaduna, Katsina, Gombe, Nasarawa and Adamawa, thanks to the efforts of strategic partners including Greenville LNG, NIPCO Gas, Asad Group, Rolling Energy, and several other investors who have continued to expand gas availability across the region.

The Ajaokuta-Kaduna-Kano (AKK) Pipeline therefore represents not the beginning of gas availability in Northern Nigeria, but a major catalyst for scaling it. By providing a reliable, high-capacity transmission backbone, the pipeline will improve gas accessibility, enhance supply reliability, reduce transportation and logistics costs, and unlock new investments in refuelling infrastructure, industrial gas utilisation, and power generation.



Launch of Rolling Energy's CNG refilling station in Jaji, Abuja recently.

For the Presidential Initiative on Compressed Natural Gas and Electric Vehicles, the AKK pipeline creates an opportunity to accelerate the deployment of CNG refuelling stations, conversion centres, and gas-based mobility solutions across the northern corridor. It will support greater market penetration, improve investor confidence, and make it easier to extend CNG access into new cities and communities.

Ultimately, AKK is an enabler of scale. It will complement the progress already achieved by existing gas suppliers and infrastructure developers, creating a more resilient, interconnected gas network that supports the long-term growth of CNG adoption across Northern Nigeria.

TER: What fiscal or policy incentives has the government introduced to support CNG adoption that private sector investors may not yet be fully aware of, and how is Pi-CNG & EV helping stakeholders access these incentives?

Ahmed: The government has introduced several measures to encourage investment and adoption, including support around duty waivers, tax-related incentives, equipment import facilitation, financing partnerships, and policy coordination to reduce bottlenecks. Pi-CNG & EV plays a facilitation role by helping investors and operators understand available incentives, engage the right agencies, and navigate the ecosystem more effectively.

TER: What are your main priorities in 2026 and beyond?

Ahmed: Our focus is clear: to deepen access to CNG and EV infrastructure across Nigeria, expand refuelling and charging networks,

deploy more mass transit buses and tricycles, scale up conversion financing, attract greater private investment and strengthen local assembly and manufacturing.

Above all, our goal remains unchanged: to make transportation significantly more affordable for Nigerians and reduce the burden that high transport costs place on families, businesses and the economy.

TER: What's your outlook for CNG & EV adoption in Nigeria in the next five years?

Ahmed: My outlook is quite simple: I would like to see CNG become the fuel of choice for mobility in Nigeria. I would like to see Nigerians move cleaner and cheaper, powered increasingly by a resource that we already have in abundance.

For me, the bigger vision is energy independence. I want to see Nigeria reach a point where our transportation costs and living expenses are no longer significantly affected by events happening thousands of miles away—whether it is geopolitical tensions in the Middle East or disruptions in global supply chains. We have abundant natural gas resources, and we should be able to leverage those resources to power our mobility and strengthen our economy.

I would also like to see the sector mature into a thriving industry in its own right—one that attracts investment, creates jobs, develops local expertise, and offers meaningful career opportunities for Nigerians. If we achieve that, we would have unlocked significant infrastructure investments, expanded economic opportunities, and fulfilled the mandate of this Initiative: ensuring that Nigerians can move cleaner, cheaper, and more efficiently.



Barr. Ismaeel Ahmed, OON, Executive Chairman, Presidential Initiative on Compressed Natural Gas and Electric Vehicles (Pi-CNG & EV), signing an MoU with Credicorp and Moniepoint to provide financing opportunities for those who want to convert but do not have the means. **"Convert Now, Pay Small, Small"**

On the electric vehicle side, my vision is equally clear. I want Nigerians to have choices. The beauty of life is choice.

If someone decides to purchase an electric vehicle, they should be able to find charging infrastructure within a reasonable distance, charge affordably, and have access to technicians who possess the skills and expertise to maintain and service those vehicles anywhere in the country.

Ultimately, that is what I envision for the mobility sector. Nigerians should have the freedom to choose between electric vehicles, CNG-powered vehicles, or even conventional fuel vehicles—not because they have no alternatives, but because multiple options are available to them. Availability is key. Affordability is key. Accessibility is key.

Over the next five years, I expect CNG and EV adoption to move beyond early adoption and become mainstream, particularly among commercial transport operators, fleet owners, logistics

companies, government fleets and urban mobility providers.

CNG will continue to play an important role in reducing transportation costs and enhancing energy security, while EVs will gain greater traction as charging infrastructure expands,

policies evolve and local capacity develops. The future will not be about one fuel replacing another overnight. Rather, it will be about building a practical, diversified and resilient mobility ecosystem that reflects Nigeria's realities and gives Nigerians cleaner, cheaper and more sustainable choices.



Pi-CNG & EV's courtesy visit to NADDC to strengthen collaboration



Unlocking Nigeria's Mobility Opportunities: Tetracore bets on CNG investments to drive Nigeria's industrial and mobility growth

Tetracore Energy Group has unveiled an ambitious expansion strategy aimed at deepening domestic gas utilisation and accelerating Nigeria's industrialisation through significant investments in gas infrastructure, power generation, compressed natural gas (CNG), and gas-based industries.

Speaking in an interview with The Energy Republic, Oladayo Williams, Tetracore's Managing Director (Subsidiaries), said the company is positioning itself as a major player in Nigeria's energy transition by expanding across the natural gas value chain, with projects designed to stimulate long-term gas demand, strengthen energy security, and support sustainable economic growth.

According to Williams, the company's journey in Nigeria's domestic gas market began with supplying piped natural gas to industrial clusters and power users before expanding into compressed natural gas infrastructure to serve industries and businesses in locations without pipeline access.

Today, he said, Tetracore operations span gas supply and distribution, virtual pipeline solutions, AutoCNG infrastructure, gas-fired power generation, and large-scale gas-based industrial projects.

"Natural gas is more than just a commodity to us. It is the foundation for industrialisation, manufacturing expansion, energy security, economic growth and Nigeria's energy transition," he said.

As part of its long-term growth strategy, Williams revealed that the company is developing a 1,200-tonnes-per-day urea fertiliser plant in Koko, Delta State, while also investing in Gas-to-Liquids (GTL) projects and expanding its nationwide AutoCNG network.



Oladayo Williams, Managing Director (Subsidiaries), Tetracore

He said these investments are expected to create sustainable domestic demand for natural gas, improve the commercial viability of upstream gas production, and encourage additional investments in pipelines and other midstream infrastructure.

Expanding Gas-to-Power Investments

Tetracore believes Nigeria's electricity challenges extend beyond gas availability, noting that weak transmission infrastructure, overdependence on the national grid, and the slow implementation of the Electricity Act continue to constrain reliable power supply.

While describing the Federal Government's approval of outstanding payments owed to gas producers as a positive development, Williams said broader reforms and increased private sector participation remain critical to improving the gas-to-power value chain.

To address these challenges, he said Tetracore has recently commissioned its 20-megawatt Independent Power Project (IPP) and has commenced expansion plans that will increase capacity to 100MW by the first quarter of 2027.

By The Energy Republic Correspondent

According to him, the project forms part of its broader commitment to delivering decentralised, reliable and commercially sustainable power solutions for industrial and commercial customers.

Outlook for Nigeria's Gas Sector

Looking ahead, he expressed optimism that natural gas will play an increasingly strategic role in Nigeria's economic development over the next decade by powering industries, transportation, manufacturing and electricity generation.

However, he clarified that the company's main focus is to optimise existing gas supply and distribution infrastructure to improve operational efficiency and reliability while expanding CNG and virtual pipeline solutions to industries located beyond the national pipeline network.

He also notes that large-scale gas-consuming industries such as fertiliser production and Gas-to-Liquids projects are essential to creating long-term demand for natural gas and attracting investments across the upstream and midstream segments of the industry.

In his words, he highlighted the strategic importance of its Atakoba Independent Power Project in strengthening domestic gas utilisation by supplying reliable gas-fired electricity to industrial customers.

"Tetracore is positioning for opportunities expected to emerge from the Ajaokuta-Kaduna-Kano (AKK) gas pipeline corridor, particularly in Nasarawa State, where it is developing gas-powered electricity solutions to support mining and industrial operations," he stated.

"We remain committed to supporting Nigeria's industrial transformation by expanding access to cleaner energy, strengthening domestic gas utilisation and creating long-term economic value," he added.



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*Ikpoba Okha LGA, Benin.***





**“Renewables alone can’t industrialise Nigeria. Gas remain essential”
— Brown, Seplat CEO**

Roger Brown, Seplat Energy CEO, has said renewable energy alone cannot industrialise Nigeria and that gas remains essential in transforming the country for sustained economic growth.

Brown said this at the NOG Energy Week 2026 strategic conference, advocating for the harmonization of the Nigerian gas sector legislation to unlock new investment opportunities.

In a recent development, Nigeria’s gas production rose from 6.8 billion cubic feet per day (bcf/d) in 2023 to 7.5 bcf/d in 2025, representing a significant increase over the period.

Despite this progress, the output is still far from monetizing the country’s over 215 trillion cubic feet (TCF) of proven reserves - far below Nigeria’s long-term target of 10–12 bcf/d by 2030.

Speaking at the NOG panel session titled “Advancing Energy Ambitions for Competitive & Resilient Economies,” Seplat CEO noted that Nigeria has made significant progress in developing its gas industry over the past decade, but warned that fragmented legislation

By Genevieve Aningo

across the upstream, midstream and downstream segments continues to constrain investment.

According to Brown, the country’s gas sector has evolved from a largely neglected industry into a vibrant ecosystem capable of supporting multiple Gas Sales Agreements (GSAs) and attracting a broader range of investors.

While acknowledging that policy frameworks such as the Petroleum Industry Act (PIA), the Nigerian Gas Master Plan (NGMP) and the Decade of Gas (DoG) initiative have laid a strong foundation for the industry, he said Nigeria now needs a harmonised legislative framework that aligns policies governing the entire gas value chain.

He explained that gas development is linked to several strategic sectors, including electricity generation, compressed natural gas (CNG) for transportation, liquefied petroleum gas (LPG) for clean cooking, as well as petrochemicals and fertiliser production.

Natural gas fuels over 70% of Nigeria’s electricity generation. The power sector is the biggest offtaker for gas supply.

Highlighting the central role of natural gas in Nigeria’s economic development, Brown argued that the country’s long-standing electricity deficit cannot be resolved without expanding gas production and infrastructure.

“Every sector, including education, manufacturing and employment, depends on power, and that power will not materialise without gas.

“The power is not going to materialise without the gas. Quite frankly, we’re not going to transform Nigeria with renewable energy alone. Gas remains essential.”

Addressing financing, Brown said the Nigerian Gas Master Plan (NGMP 2026), which aims to catalyse more than \$60 billion in investments across Nigeria’s oil and gas value chain by 2030, represents an important milestone but is unlikely to be sufficient to fully unlock the country’s gas potential.

“There has been a strong start, but the work is not finished. Government must continue to refine the regulatory environment in tandem with industry stakeholders to ensure sustained growth,” he added.



Nigeria's Minister of State for Petroleum Resources (Gas), Rt. Hon. Ekperikpe Ekpo, has declared that Nigeria is undergoing a strategic transformation from being a resource-rich nation to one powered by natural gas, positioning the country as a key contributor to global energy security and Africa's industrial development.

Speaking at the opening ceremony of NOG Energy Week 2026 in Abuja, Minister Ekpo described natural gas as the indispensable bridge between energy security and sustainability, stressing that Nigeria's vast gas resources provide a unique opportunity to drive economic growth, industrialization and improved living standards.

"With 215 trillion cubic feet of proven gas reserves—the largest in Africa and among the top ten globally—Nigeria has a historic responsibility to convert this resource into jobs, industrial output and a lower cost of living for our people," Ekpo said.

Speaking on the conference theme, "Advancing Energy Ambitions for Competitive & Resilient Economies," the Minister emphasized that leadership in the future energy landscape will depend not only on resource endowment but on bold reforms and strategic vision.

"The nations that will shape the future of energy will not necessarily be those with the greatest resources, but those with the clearest vision and the courage to reform," he stated.

Ekpo attributed renewed investor confidence in Nigeria's energy sector to the implementation of the Petroleum Industry Act (PIA) 2021 and the Executive Orders introduced by President Bola Ahmed Tinubu. According to him, these reforms have streamlined contracting processes, introduced fiscal incentives for non-associated gas development, and accelerated Final Investment Decisions across the gas value chain.

The Minister also highlighted Nigeria's growing influence in the global gas industry. In 2026, the country assumed the Presidency of the Gas Exporting Countries Forum (GECF) Ministerial Meeting, while Nigeria's Dr. Philip Mshelbila was elected Secretary-General of the Forum.



Nigeria is transitioning to a future powered by gas – Minister Ekpo

He further noted that Nigeria became the first OPEC member to attain association status with the International Energy Agency (IEA), reinforcing its position in the global energy landscape.

Under the Federal Government's Decade of Gas initiative, Ekpo said priority remains focused on maximizing domestic value through strategic investments in infrastructure, clean energy and transportation.

He noted that work is progressing on the Ajaokuta–Kaduna–Kano (AKK) and OB3 gas pipeline projects to expand gas supply from the southern producing regions to industrial centres across northern and western Nigeria, while additional gas processing facilities are being developed to eliminate routine gas flaring.

The Minister also highlighted the National Clean Cooking Programme, which aims to transition five million households to Liquefied Petroleum Gas (LPG) by 2030, reducing emissions and improving public health. In addition, he said the Presidential Compressed Natural Gas (CNG) Initiative is expanding nationwide through the rollout of vehicle conversion kits and refuelling stations, with the potential to reduce

By Ndubuisi Micheal Obineme

transportation costs by as much as 50 percent.

On Nigeria's international ambitions, Ekpo said the Nigeria LNG Train 7 project will increase the country's liquefied natural gas production capacity from 22 million tonnes per annum to 30 million tonnes per annum, further strengthening Nigeria's role in ensuring global energy security.

He added that Nigeria is driving regional energy integration through three strategic pipeline projects: the Trans-Saharan Gas Pipeline linking North Africa and Europe, the Africa-Atlantic Gas Pipeline across West Africa, and the Nigeria–Equatorial Guinea Gas Pipeline aimed at unlocking gas resources in the Gulf of Guinea.

Reaffirming the Federal Government's commitment to creating a conducive investment climate, the Minister assured investors that Nigeria has established a stable, competitive and predictable environment for energy investments.

"Nigeria is open for business. Nigeria is ready. Nigeria is investing in the future. Together, let us build that future—powered by partnership, driven by innovation and sustained by the limitless potential of natural gas," Ekpo concluded.



NIGERIA'S JOURNEY TOWARDS A GAS-POWERED ECONOMY

DOG maps out 60 projects to unlock 4.6 bcf/d for domestic gas market

By Ndubuisi Micheal Obineme

As Nigeria pushes for 12bcf/d gas production, the Decade of Gas (DOG) Secretariat has announced a notable development to unlock new project opportunities aimed at increasing domestic gas supply.

The domestic market has been on the receiving end of gas supply shortfalls, even as overall gas production increases, with the export markets accounting for a significant portion of gas supply.

In the first quarter of 2026, domestic supply fell to 1.906 bscf/d in January, dipped to 1.763 bscf/d in February, and only marginally recovered to 1.855 bscf/d in March 2026, according to the NMDPRA report. This shift underscores a widening imbalance in the domestic market.

Furthermore, data from NUPRC also showed that domestic gas sales stood at 2.18bcf/d, representing 26.6% of total utilisation, while about 2.11bcf/d, or 26.5% of output, was consumed for field operations and own use. The report also notes that export sales reached 3.07bcf/d during the month, accounting for approximately 40% of total gas production.

Experts say that the disparities in the domestic gas market highlight the structural bottlenecks within the Nigerian gas value chain, particularly on domestic gas supply reliability and lack of commercially viable contracts.

Speaking in an interview with

The Energy Republic, Ed Ubong, Coordinating Director, Decade of Gas (DOG), revealed the government's plan to unlock new project opportunities to increase domestic gas supply.

According to him, the Decade of Gas has mapped out 60 gas projects to deliver an additional 4.6 Bcf per day into the domestic market.

Launched in 2021, the Decade of Gas initiative is focused on transforming Nigeria into a gas-powered economy by 2030 through a series of policy reforms, infrastructure development, and investment strategies.

Ubong said Nigeria's gas sector has moved beyond policy formulation into full implementation, with coordinated efforts beginning to deliver measurable results across production, infrastructure, investment, and domestic utilisation.

He said the Federal Government remains committed to increasing gas supply to as much as 12 billion cubic feet per day by 2030 as part of its ambition to transform Nigeria into a gas-powered economy.

"The sector is at a critical stage, and we are firmly in the implementation phase," Ubong narrated. "The Decade of Gas initiative has played a central role in translating Presidential directives into coordinated action across the gas sector, bringing together government, regulators and industry players around a shared objective of positioning gas as a driver of energy security, industrialisation and economic growth."

According to him, progress has been recorded across the gas value chain, with improved collaboration between producers, regulators and investors helping to accelerate project delivery and strengthen domestic gas supply.

He cited the completion of the OB3 pipeline as one of the key infrastructure milestones expected to improve gas transmission capacity and connect supply to major demand centres, while other strategic infrastructure projects are being closely monitored to ensure timely delivery.

Ubong also said that there have been onprogress in resolving longstanding gas-to-power debts, describing improved payment mechanisms as critical to restoring liquidity and investor confidence across the sector.

"The Federal Government has made meaningful progress through a combination of mechanisms, including royalty deductions and the development of a bond programme to clear outstanding obligations," he said.

He added that the Secretariat has continued to engage stakeholders across the gas and power value chain to improve commercial arrangements, strengthen payment discipline and establish more transparent settlement mechanisms.

On the government's target of building a gas-powered economy by 2030, Ubong expressed confidence that the goal remains achievable if priority projects are delivered on schedule.

He revealed that the Decade of Gas Secretariat has identified 20 strategic gas supply projects capable of delivering an additional 4.6 billion cubic feet per day into the domestic market,



while supporting 60 priority demand projects designed to accelerate gas utilisation across industries.

According to him, domestic consumption is projected to account for about 60 per cent of Nigeria's total gas demand by the end of the decade.

Beyond industrial applications, Ubong said government programmes are expanding access to cleaner energy through nationwide LPG distribution and the Presidential Compressed Natural Gas (CNG) Initiative.

He said CNG-powered buses, tricycles and haulage trucks are already operating on Nigerian roads, supported by the gradual rollout of refuelling infrastructure since 2024.

On private sector participation, he described indigenous companies as critical partners in achieving the objectives of the Decade of Gas initiative.

He said the Secretariat continues to support local operators through capacity-building programmes, stakeholder engagement and improved access to investment opportunities.

He also highlighted the Nigerian Upstream Petroleum Regulatory Commission's Flare Gas Permits programme, which has issued permits to 28 awardees, unlocking an estimated \$2 billion in investments and creating the potential for up to 100,000 jobs through the commercial utilisation of previously flared gas.

Ubong further disclosed that the Decade of Gas Secretariat has identified 16 priority gas infrastructure projects requiring an estimated \$22 billion in investment to strengthen Nigeria's domestic gas network.

Overall, he said Nigeria's broader gas development programme is expected to attract approximately \$30 billion in investments by 2030, supporting upstream production, pipeline expansion, gas processing facilities, gas-to-power projects, transportation, manufacturing and clean cooking initiatives.

Despite acknowledging challenges related to infrastructure financing and project execution, Ubong maintained that stronger collaboration among government, regulators and private investors has positioned the sector for sustained growth.

"More importantly, there is now clearer alignment, stronger collaboration and a shared sense of direction across the industry," he said. "While challenges remain, the sector is moving in the right direction, with a stronger foundation now in place for sustained growth."

Axxela Calls for Stronger Infrastructures and Policy Certainty to Unlock Nigeria's Gas Economy

Axxela Gas Distribution has reiterated that Nigeria's transition to a gas-powered economy will depend not on the size of its natural gas reserves, but on sustained investments in infrastructure, financing, and market-enabling policies.

In an exclusive interview with The Energy Republic, Managing Director of Axxela Gas Distribution, Kehinde Alabi, said Nigeria's 210.54 trillion cubic feet of proven gas reserves present a significant opportunity for industrialisation, energy security, and economic growth. However, he stressed that unlocking this potential requires efficient gas processing, transportation, and distribution infrastructure.

Alabi noted that Axxela has played a leading role in expanding domestic gas infrastructure across key industrial corridors, helping manufacturers and businesses reduce energy costs, improve operational reliability, and transition to cleaner fuels.

He identified infrastructure financing, regulatory certainty, commercial clarity, and investment protection as critical enablers for attracting private capital into Nigeria's gas sector.

According to him, policy consistency,



Kehinde Alabi, ALDG Board Chairman, and Managing Director, Axxela Gas Distribution

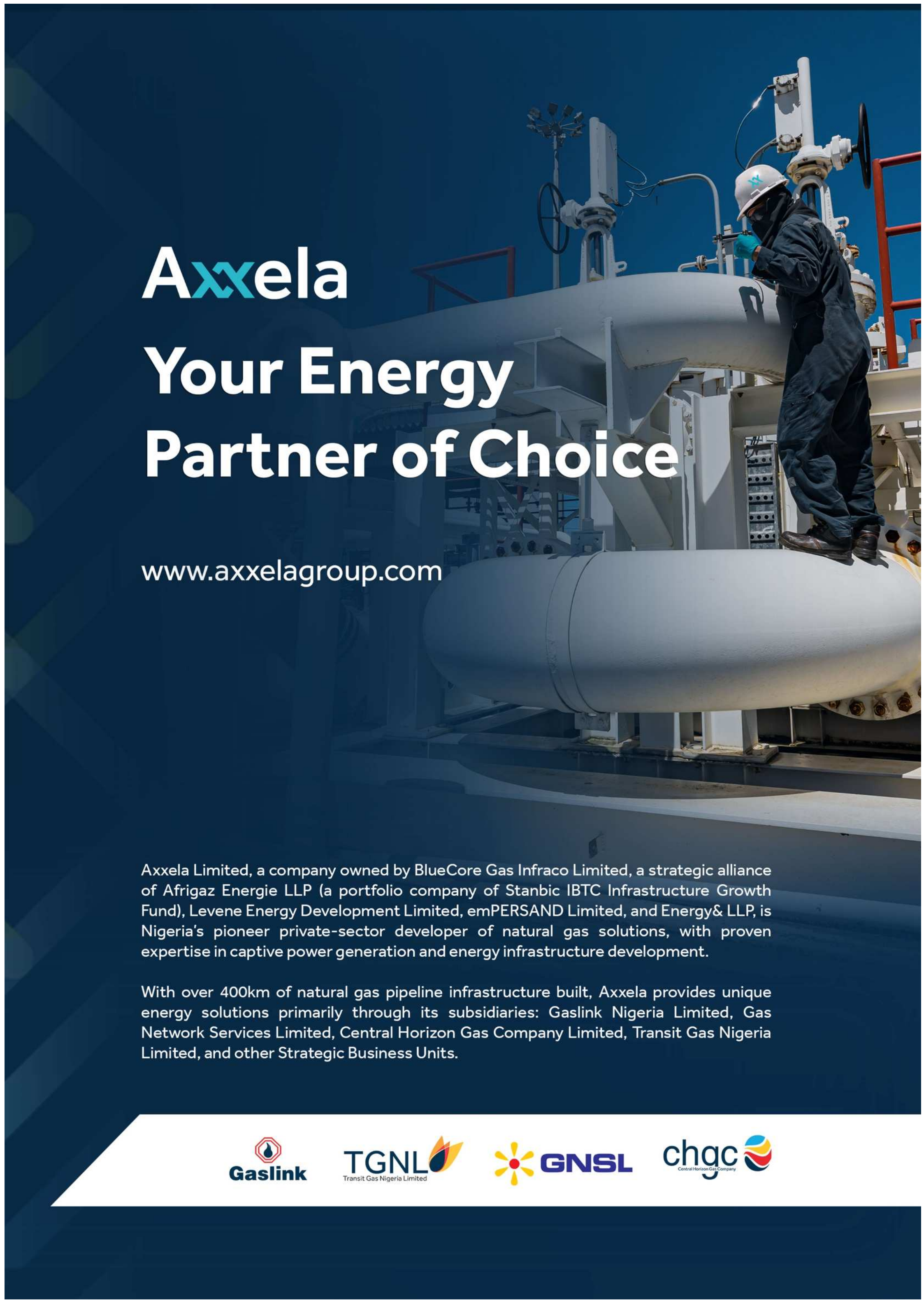
effective implementation of the Petroleum Industry Act, and continued collaboration between government and industry stakeholders will be essential to accelerating domestic gas utilisation.

Looking ahead, Alabi expressed confidence that gas will play an increasingly central role in Nigeria's industrial development, power security, and economic competitiveness, supported by reforms such as the Decade of Gas

By The Energy Republic Correspondent

initiative and strategic infrastructure projects including the Ajaokuta-Kaduna-Kano (AKK) and Obiafu-Obrikom-Oben (OB3) gas pipelines.

"The opportunity ahead is bigger than sector growth alone—it is about whether Nigeria can convert its gas abundance into a lasting national advantage," Alabi said.



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Axxela Limited, a company owned by BlueCore Gas Infracore Limited, a strategic alliance of Afrigaz Energie LLP (a portfolio company of Stanbic IBTC Infrastructure Growth Fund), Levene Energy Development Limited, emPERSAND Limited, and Energy& LLP, is Nigeria's pioneer private-sector developer of natural gas solutions, with proven expertise in captive power generation and energy infrastructure development.

With over 400km of natural gas pipeline infrastructure built, Axxela provides unique energy solutions primarily through its subsidiaries: Gaslink Nigeria Limited, Gas Network Services Limited, Central Horizon Gas Company Limited, Transit Gas Nigeria Limited, and other Strategic Business Units.





NOG Energy Week 2026 Charts Nigeria's Path to a Stronger Domestic Gas Market

For decades, Nigeria has been described as a gas-rich nation with the resources to industrialize the country. With 215.19 trillion cubic feet (TCF) of proven gas reserves—the largest in Africa and among the world's biggest—the country has long possessed the resources to power industries, expand electricity generation, fuel transportation, and drive industrialisation.

Yet despite these vast reserves, Nigeria continues to grapple with a persistent domestic gas supply shortfall.

Gas production has risen steadily, increasing from 6.8 billion cubic feet per day (bcf/d) in 2023 to 7.5 bcf/d in 2025, with the government targeting 12 bcf/d by 2030. However, much of that production continues to serve export markets, while domestic industries, manufacturers and households struggle to access affordable gas supply.

That contradiction—and more importantly, how to resolve issues around domestic gas shortfall—formed the centrepiece of discussions during one of the most anticipated strategic sessions at NOG Energy Week 2026.

Moving Beyond the Reserve Narrative

The NOG panel session titled "Boosting the Domestic Gas Market – Driving Economic Growth and Development," brought together senior leaders from across Nigeria's gas value chain to examine why one of the world's most gas-endowed nations continues to face domestic gas shortfalls in-country.

Moderated by Oluwole Oladapo Adama, Team Lead, Projects and Natural Resources Practice at Y Awonuga LLP, the session featured Engr. Chichi Emenike, Second Vice President of the Nigerian Gas Association; Barr. Ismaeel Ahmed, Executive Chairman of the Presidential Initiative on Compressed Natural Gas and Electric Vehicles (Pi-CNG & EV); Moses Duku, Head of Communications at Greenville LNG, representing Managing Director Ritu Sahajwalla; and Oluwole Oladapo Adama, Executive Director of the Midstream and Downstream Gas Infrastructure Fund (MDGIF).

While each panellist approached the discussion from a different segment of the industry, a common discussion emerged: Nigeria's challenge is no longer discovering gas. The challenge is delivering it.

In her opening remarks, Awonuga said even

By Ndubuisi Micheal Obineme

as Nigeria possesses one of the world's most significant hydrocarbon basins, reserves alone do not create prosperity.

"The question is no longer about the size of our reserves," she said. "It is about how we turn those reserves into economic growth and development."

The Commercial Reality of Producing Gas For Engr. Chichi Emenike, increasing domestic supply begins with recognising the commercial realities faced by upstream producers.

Although Nigeria has made considerable progress over the past decade, she argued that sustainable growth depends on creating an investment environment where supplying the domestic market is commercially viable.

"We've come a long way on this gas discussion," she reflected. "We're certainly in a better place today than where we were, but there is still a lot of work to be done."

Developing a single gas well in parts of the Niger Delta, she explained, can cost between US\$20 million and US\$25 million, with virtually every major cost denominated in foreign currency. Yet domestic gas sales are largely paid for in naira.



NOG CONFERENCE FEATURES



Delegates at the NOG Energy Week Strategic Conference

"You are putting everything into a market that pays you back in naira," she stated. "Unfortunately, you are going to experience losses."

That foreign exchange mismatch, coupled with regulated pricing, she argued, continues to discourage investment in domestic gas production.

Engr. Chichi questioned whether price controls accurately reflect producers' financing costs and investment risks, arguing that greater pricing flexibility would encourage additional supply while improving investor confidence.

According to her, creating a commercially attractive domestic gas market requires liberalised pricing, affordable financing for producers and regulatory certainty capable of encouraging long-term investment.

"You don't know how I borrowed my money. You don't know the tenure or the financial indices behind that investment, yet a pricing ceiling is imposed. Can we liberalise this market?"

She nevertheless acknowledged that implementation of the Petroleum Industry Act has significantly improved engagement between regulators and operators, creating a stronger platform for future reforms.

She also highlighted another important shift taking place across the industry.

Environmental stewardship, she noted, has moved from the margins to the boardroom.

"Methane emissions reporting, gas flare reduction, ESG performance and host community participation are increasingly

shaping investment decisions," she stated, noting that flare commercialisation projects are creating new opportunities to convert previously flared gas into productive economic value.

She also highlighted the ongoing progress in gas flare commercialisation, noting that operators increasingly work alongside third-party investors and host communities to monetise flared gas rather than waste it through routine flaring.

Solving a Distribution Challenge

Speaking on behalf of Greenville LNG, Moses Duku, Greenville's Head of Communications, argued that Nigeria's domestic gas challenge also extends to an infrastructure gap rather than a resource problem.

Duku said the success of the Nigerian gas sector will be measured not by production statistics but by the number of businesses, factories and households that successfully benefit from the gas sector and the resulting improvement in their economic wellbeing.

"Economic growth is something you measure. While Development is about how much access you have created," he explained.

"Our challenge is not an asset problem," he noted. "It is a distribution problem."

Traditional pipeline networks, he said, cannot reach every industrial cluster and community across Nigeria.

Recognising those limitations, Greenville LNG has invested heavily in alternative delivery systems, deploying more than 700 cryogenic LNG trucks, establishing LNG hubs nationwide and expanding virtual pipeline infrastructure capable of transporting gas far beyond the reach of conventional pipelines.

Creating Demand That Attracts Investment From the government's perspective, expanding domestic gas consumption is equally important.

Barr. Ismaeel Ahmed outlined the progress already being made through the Presidential Initiative on Compressed Natural Gas and Electric Vehicles (Pi-CNG & EV), describing it as one of Nigeria's most significant interventions to stimulate both demand and private investment.

According to Ahmed, approximately US\$2.5 billion in private investment has been invested into Nigeria's CNG sector.

However, he cautioned that investment figures alone do not determine success.

"It only matters if the end user can access what the government wants them to access."

That philosophy has guided Pi-CNG & EV's focus on three priorities—availability, affordability and accessibility.

Ahmed pointed to the growing economic benefits already being experienced by Nigerians using compressed natural gas, including lower transport costs, cleaner combustion, longer engine life and reduced household energy expenses.

He called for stronger integration across the entire gas value chain—from feedstock production to retail dispensing infrastructure—to further reduce costs and accelerate nationwide adoption.

Investment Requires More Than Capital

On financing, Oluwale Oladapo Adama, Executive Director, Midstream and Downstream Gas Infrastructure Fund (MDGIF), reminded participants that attracting investment requires more than capital alone.

Sharing MDGIF's experience from evaluating hundreds of project proposals, Adama revealed that many project developers approach financiers before their projects are commercially prepared.

"Most proposals come when they are not actually ready," he said. He explained that investment projects demand bankable commercial models, completed engineering designs, environmental approvals, regulatory licences, secured gas supply arrangements and comprehensive project planning.

Every proposal, he said, must demonstrate commercial viability and the ability to generate sustainable returns.



Adama also corrected a widespread misconception regarding the MDGIF. He said the MDGIF was established by the government under the Petroleum Industry Act and explained that the fund does not operate as a grant programme. "It is government money," he acknowledged, "but we are investors."

Looking ahead, Adama estimated that Nigeria requires approximately US\$20 billion annually over the next decade to develop the domestic gas infrastructure needed to support economic growth.

Unlocking that level of investment, he said, will depend on deliberate efforts to de-risk projects and create stronger confidence among banks, institutional investors and private capital providers.

A Shared Vision for Nigeria's Gas Future

While the panellists represented different parts of Nigeria's gas ecosystem, their recommendations were remarkably consistent.

They called for commercially realistic pricing, regulatory certainty, affordable financing, expanded infrastructure, investment-ready projects, and policies that balance supply with demand.

The conversations at NOG Energy Week 2026 reflected a growing shift from celebrating the scale of Nigeria's gas reserves to focusing on how those reserves can drive industrialisation, attract investment and improve the lives of millions of Nigerians.

If those recommendations translate into action, the country's gas reserves will finally become one of its most powerful engines of sustainable economic growth.

NNPC Limited Rolls Out Roadmap for Nigeria's Emergence as Regional Gas Hub

NNPC Limited has reaffirmed its commitment to positioning Nigeria as a leading regional gas hub through the implementation of its Gas Master Plan, which provides a commercially driven and execution-focused roadmap for unlocking the nation's vast gas potential.

Speaking during a strategic panel session themed "Realising Future Gas Economies – Building Secure, Integrated and Globally Competitive Hubs" at the 2026 NOG Energy Week in Abuja, NNPC Limited's Focal for the Gas Master Plan Implementation Assurance Team, Ekpei Ukam, outlined the critical pillars required to establish secure and globally competitive gas hubs.

Ukam identified three essential requirements for achieving this objective: integrated gas infrastructure spanning pipelines, processing facilities and distribution networks; policy and regulatory alignment capable of attracting sustained investment; and robust data and assurance systems to monitor implementation of the Gas Master Plan while ensuring projects remain commercially viable and bankable.

He noted that the successful development of globally competitive gas hubs in Nigeria will depend on the effective integration of these three elements, stressing that infrastructure, enabling policies and implementation assurance must work in tandem to deliver



Ekpei Ukam, NNPC Limited's Focal for the Gas Master Plan Implementation Assurance Team

By Jackson Olagbaju

According to Ukam, the NNPC Gas Master Plan is designed to provide a clear, commercially viable and execution-anchored framework that will position Nigeria as a competitive gas hub serving domestic industries, regional markets and the global energy landscape.

This underscore NNPC's strategic vision of leveraging Nigeria's abundant natural gas resources to drive industrialisation, enhance energy security, deepen regional energy integration and strengthen the country's competitiveness in the global gas market.

NNPC's Gas Master Plan is a strategic roadmap for national development. The company described the plan as a declaration that natural gas will serve as the backbone of Nigeria's industrialisation, a pillar of national energy security, and a transition fuel to support economic growth.

The first pillar in the plan focuses on '**Cost Competitiveness**', particularly reducing unit operating costs across Nigeria's upstream sector. The second pillar of the plan, according to the company, is centred on deepening '**Collaboration**' across the energy industry.



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INTERVIEW

Krishna Kishore,
Senior Director -
Solutions &
Value Delivery,
UptimeAI

UptimeAI integrates intelligent management solutions for critical gas infrastructures

In this exclusive interview with The Energy Republic, Krishore explains how the company's artificial intelligence delivers real-time solutions for critical gas infrastructures including monitoring and detecting GHG emissions. **Excerpts:**

TER: UptimeAI has launched AI Reasoning Agents to transform energy operations. How proactive are the AI agents on gas infrastructures?

Krishore: The most important distinction in this conversation is the difference between detection and decision. Legacy predictive analytics platforms only alert you when something is degrading. They tell you what is happening, but not why, and certainly not what to do about it. That gap has historically required a highly experienced engineer to bridge the bottleneck. This is where gas infrastructure operations lose the most time and money.

In the gas sector, proactivity equals to risk mitigation, and UptimeAI's Reasoning Agents are architected around that principle. Think of them as a 24/7 virtual engineer that never suffers from alarm fatigue. Unlike legacy predictive analytics tools that focus on anomaly detection, these agents provide comprehensive decision support, diagnose root causes, recommend specific actions, and continuously learn from operational outcomes.

On gas infrastructures, specifically whether compression trains, pipeline systems, processing plants, or reinjection facilities, this shift from passive detection to active reasoning is enormously consequential.

The reasoning process follows a structured sequence: anomalies are identified through dynamic baseline models that adapt to seasonal shifts, load changes, and post-maintenance events rather than static thresholds, eliminating the false positive volume that causes operators to ignore alerts.

The agent then synthesizes cross-system data from process historians, CMMS work orders, inspection records, shift logs, P&IDs, and OEM documentation, connecting equipment behavior to process conditions and maintenance history rather than treating each asset in isolation before mapping symptoms against libraries of over 1,000 asset-specific failure modes combined with the plant's unique operating history.



Critically, the system also prioritizes issues based on asset criticality and potential production loss, enabling leadership to shift from a reactive break-fix mindset to a genuinely strategic maintenance model.

In practical terms, for gas infrastructure, this means the system is continuously scanning the full operational environment, not just waiting for a threshold breach. A documented example from UptimeAI's oil and gas deployments illustrates this well: a \$1.5 million compressor trip was avoided by identifying the root cause of an unexplained temperature rise in a reinjection compressor thrust bearing, a diagnosis that required a full-system picture, not just asset-level monitoring.

That is what genuine proactivity looks like in high-stakes gas operations: not more alerts, but earlier and more accurate diagnoses with recommended corrective actions delivered before failures cascade without requiring constant human oversight to make it happen.

TER: How does the AI help in prevention, detection, monitoring, and reporting methane emissions?

Krishore: Methane management is not just an emissions challenge. It sits at the intersection of operational integrity, regulatory compliance, and climate accountability, and it remains one of the most critical challenges facing gas infrastructure operators globally. It is fundamentally an operational reliability challenge. Most methane releases are consequences of equipment degradation, such as compressor seal wear, valve leakage, unstable pressure conditions, or inefficient process operation.

UptimeAI's Reasoning Agents address this by combining monitoring, detection, prevention, and reporting into a continuous intelligence-driven system.

On the prevention side, UptimeAI continuously evaluates operating conditions, historical failures, and maintenance effectiveness to identify precursor conditions before emissions occur.



For example, in a compressor train, the AI may detect a gradual rise in seal gas temperature combined with pressure fluctuations and vibration changes, identifying an early-stage dry gas seal degradation weeks before an actual methane leak develops. The system then recommends targeted maintenance actions and recommends an operating adjustment to prevent seal failure and unplanned venting.

On detection and monitoring, the Root Cause Agent correlates anomalies across compressors, pipelines, separators, valves, and instrumentation simultaneously rather than analyzing assets in isolation. The platform combines operational data, process context, historical incidents, and virtual sensing models to identify fugitive emissions, intermittent leaks, abnormal flaring events, and efficiency losses with much higher contextual accuracy. Where physical methane sensors are limited, AI-based soft sensors estimate emission behavior using process variables and equipment signatures.

On reporting and regulatory compliance, the HAZOP Analysis Agent adds another layer of value. The system digitizes P&IDs, automatically generates process nodes, and continuously evaluates deviations using engineering standards, operating procedures, and incident history. This transforms traditional static HAZOP studies into continuously updated operational risk intelligence. The result is a verifiable and auditable emissions management framework aligned with global regulatory expectations, including OGMP 2.0, emerging EU methane regulations, ESG reporting requirements, and international LNG export compliance standards.

More importantly, AI shifts the industry from periodic inspection-based emission management toward continuous intelligence-driven emission control. Instead of relying on occasional leak detection campaigns, operators gain continuous visibility into the small percentage of assets and process conditions that contribute disproportionately to total emissions. This enables maintenance resources and capital investments to be directed where they create the highest operational, environmental, and regulatory impact.

For regions where gas monetization, infrastructure reliability, and emissions

reduction are all strategic national priorities, this kind of integrated AI-driven operational intelligence can play a meaningful role in reducing flaring, improving asset reliability, strengthening regulatory compliance, and supporting the long-term sustainability of the gas value chain.

TER: How can the AI Agents be integrated into existing gas assets and facilities?

Krishore: Integration complexity is the single most legitimate concern operators raise when evaluating industrial AI, and in gas infrastructure, it deserves a direct answer. Facilities operate with mixed-vintage assets, legacy control systems, fragmented maintenance records, and multiple disconnected data sources accumulated over decades and changes of ownership.

Any AI solution that demands major infrastructure replacement before it can deliver value is simply not a realistic option for most operators. That is precisely the problem UptimeAI's integration architecture is designed to solve.

The platform connects directly with various structured & unstructured data sources without requiring a rip-and-replace approach or significant new hardware investment. What differentiates the architecture is its ability to create a unified operational intelligence layer & a digital knowledge graph by combining process data, equipment health, maintenance history, and engineering documents into a single contextualized system.

Assets are mapped hierarchically across systems, units, and facilities, enabling the AI to reason across process interactions.

A practical example illustrates how far this integration flexibility extends.

In one deployment, the customer's historian system was prohibited from communicating directly with external cloud infrastructure due to OT cybersecurity restrictions and API governance policies. Rather than treating this as a barrier, UptimeAI designed a customer-specific architecture using a secure bridge server within the client-controlled network environment.

Operational data from legacy DCS and historian systems was transferred through OPC-based communication into a local processing and aggregation layer,



before being securely transmitted to the UptimeAI cloud environment through governed API channels. The operator maintained strict OT-to-external segregation while fully benefiting from scalable AI-driven reasoning without disrupting a single existing operation. This approach reflects a broader design philosophy.

Cybersecurity alignment is built in, not bolted on. Role-based access control, secure data segregation, governed API integration, and industrial cybersecurity practices are embedded into the architecture to meet the requirements of critical infrastructure environments. The platform supports flexible cloud and hybrid deployment models, designed to align with existing enterprise IT, OT, and security policies from day one.

Ease of deployment and speed to value are equally critical advantages. Because the platform is built on pre-configured industrial domain models and existing plant connectivity, deployments move from data ingestion to actionable insights within weeks rather than years. Operators can begin with their highest-value assets and progressively scale coverage as digital maturity improves across the facility, a model that is particularly well-suited to gas infrastructure in markets like Nigeria, where asset vintages and data maturity vary significantly across the same portfolio.

Equally important, the system is designed as a human-in-the-loop decision intelligence platform. Operators, reliability engineers, maintenance teams, and process specialists collaborate within

the same workflow, reviewing diagnoses, assigning actions, creating work orders, and preserving a full operational decision history across shifts.

No institutional knowledge is lost when a shift ends or an experienced engineer retires. The result is a progressive modernization model: operators transform their operational intelligence capabilities without disrupting existing infrastructure, achieving scalable AI adoption, faster deployment cycles, stronger cybersecurity alignment, and sustainable performance improvement across even the most complex gas infrastructure environments.

TER: What strategic partnerships have been established with UptimeAI Agents in Nigeria, and how is it strengthening their critical infrastructures?

Krishore: UptimeAI's most significant active engagement in Nigeria is with a top 5 national energy company and one of the country's most important emerging indigenous energy operators.

UptimeAI is currently supporting them through the initial deployment of its Operational Excellence platform focused on proactive asset monitoring and operational intelligence. This first phase establishes the digital foundation by connecting operational data sources, contextualizing assets, and enabling early warning intelligence across critical equipment before progressively expanding into advanced AI Reasoning Agents and decision intelligence workflows.

The scale and complexity of this major producer's operations make this engagement particularly significant. Managing large production asset networks, pipelines, flow

stations, and gas processing infrastructure requires continuous operational visibility, reliability management, and faster engineering decision-making.

UptimeAI's platform helps strengthen these capabilities by combining process intelligence, maintenance context, engineering knowledge, and AI-driven operational reasoning into a unified operational intelligence layer.

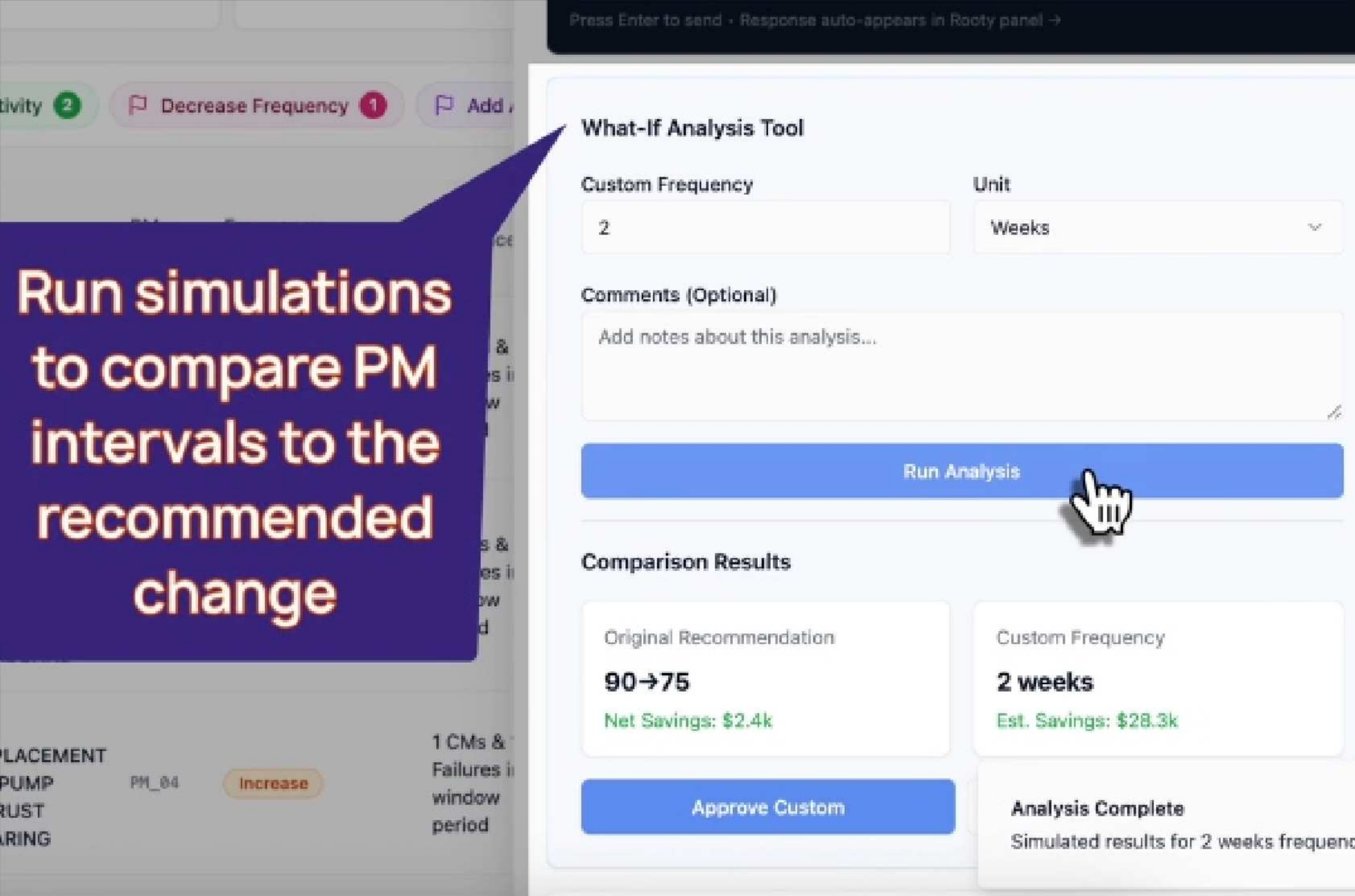
More importantly, the partnership reflects a broader shift taking place across the energy industry.

As operators inherit larger and more complex infrastructure portfolios, maintaining international standards of reliability, emissions management, and operational performance with leaner teams becomes increasingly challenging.

AI-driven operational intelligence helps close that gap by scaling expertise across the organization rather than relying solely on the availability of highly experienced personnel.

Beyond Nigeria, UptimeAI's broader deployments across oil and gas, power generation, and utility infrastructure environments in the Middle East (for example, Petroleum Development Oman) and other global industrial regions further demonstrate the scalability of the platform across highly complex and mission-critical operations operating under stringent reliability, efficiency, and cybersecurity requirements.

Ultimately, the value of these partnerships is not only technological. They help build long-term institutional capability through knowledge digitization, AI-assisted diagnostics, operational standardization, and more resilient infrastructure operations.



Run simulations to compare PM intervals to the recommended change

TER: How sustainable is the AI solution compared to other technologies in the global market?

Krishore: Sustainability in industrial AI needs to be evaluated across three dimensions: technological longevity, economic durability, and environmental impact. UptimeAI’s AI Reasoning Agents are designed to deliver value across all three.

From a technology perspective, one of the key differentiators is the platform’s continuous learning architecture. Every approval, refinement, operator action, and engineering feedback loop helps improve the system over time. The reasoning agents continuously adapt their decision logic and contextual understanding without requiring constant model retraining or large data science teams. This allows the platform to evolve with changing operating conditions rather than becoming obsolete like many static, rule-based traditional machine learning systems.

From an economic standpoint, the impact is equally significant. Customers are seeing measurable improvements in reliability, operational performance,

maintenance optimization, and safety that can translate into meaningful EBITDA improvement for large industrial operations.

Unlike many enterprise AI programs that require long implementation cycles and complex customization, UptimeAI’s domain-ready reasoning agents, explainable workflows, and pre-configured industrial intelligence models enable faster deployment cycles and quicker time to value.

Most customers see 10X return on investment in the first 4-8 weeks after deployment. On the environmental side, the benefits are direct and measurable. An AI system that prevents unplanned failures, improves compression efficiency, reduces unnecessary flaring and venting, strengthens HAZOP analysis, and enables continuous operational optimization contributes directly to lowering emissions intensity across gas operations.

For example, in a gas compression environment, identifying compressor performance degradation early can help operators avoid unnecessary recycle operation, excess fuel gas consumption, and unplanned flaring events while simultaneously improving equipment reliability and maintenance planning.

As methane management, carbon accounting, and ESG compliance become increasingly important for LNG exports and infrastructure financing, operational intelligence is becoming a core sustainability capability rather than just a productivity tool.

Compared to traditional APM, condition monitoring, or predictive analytics platforms that typically solve isolated problems, UptimeAI’s reasoning agents orchestrate multiple engineering capabilities simultaneously, including trend analysis, criticality assessment, process reasoning, FMEA intelligence, and engineering document interpretation. This more closely reflects how experienced engineers solve real operational problems in the field.

The scalability of the platform is also important from a sustainability perspective. Once deployed, the intelligence layer can scale across facilities, asset classes, and geographies while continuously accumulating operational knowledge and best practices across the organization.

Ultimately, UptimeAI represents a shift from isolated monitoring systems toward continuously learning operational intelligence platforms that help industrial operators become more reliable, more efficient, and more sustainable over the long term.



By Jackson Olagbaju

Additional measures announced include revised procedures for obtaining the Nigerian Content Equipment Certificate (NCEC), an online complaints escalation platform, the registration of Nigerian Content Training Providers and a compliance certificate for the Nigerian Content Development Fund (NCDF).

Executive Vice President, Finance, Strategy and Commercial at Renaissance Africa Energy Company Limited, Olusegun Banwo, said every energy ambition ultimately translates into a capability requirement, adding that successful project delivery depends on having the right people, relevant skills and resilient supply chains.

Furthermore, the NOG panellists also called for stronger collaboration among government, regulators, international oil companies, indigenous operators, financial institutions and academia to align education, training and industry needs while creating greater opportunities for emerging professionals.

Across the sessions, participants agreed that the next phase of Nigeria's local content journey will be measured not only by higher participation levels but by the ability of Nigerian companies to compete internationally through innovation, advanced manufacturing, skilled talent and stronger supply chains.

As Nigeria prepares for increased deep-water developments and expanded gas projects, stakeholders said sustained collaboration, policy consistency and continued investment in local capacity will be essential to retaining more value within the national economy while positioning Nigeria as a leading energy and industrial hub for Africa.

Industry Stakeholders said that the industry's future success will depend on building sustainable industrial capacity capable of competing on the global stage. They stressed the need to build globally competitive companies, strengthen technological capabilities, expand domestic manufacturing, and develop a highly skilled workforce.

NCDMB: Nigerian content hits 61% in oil and gas industry

Nigeria's local content has achieved a major milestone in the oil and gas industry, rising to 61 per cent, according to the Nigerian Content Development and Monitoring Board (NCDMB). The milestone was highlighted during the NOG Nigerian Content Seminar 2026 in Abuja.

Portfolio and Country Director of DMG Nigeria Events, Wemimo Oyelana, said Nigeria's local content policy has become a global reference point and urged stakeholders to move beyond fabrication and assembly into research, innovation and indigenous technology development.

NCDMB described the increase in local content as evidence of the growing capabilities of Nigerian companies across exploration, production, engineering, fabrication and offshore operations. They also cited technology transfer from international operators to indigenous firms as one of the major achievements of Nigeria's local content policy, laying the foundation for long-term industrial growth.

Speaking on behalf of the Executive Secretary of NCDMB, Engr. Felix Ogbe, the Board's Director of Capacity Building, Engr. Abayomi Bamidele, announced a series of reforms aimed at strengthening transparency and ensuring

contracts are awarded to companies with proven technical competence.

According to him, the reforms include a nationwide joint capacity verification exercise and the introduction of a harmonised five-tier contractor grading system developed in collaboration with the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), NipeX, the Petroleum Technology Association of Nigeria (PETAN), the Oil Producers Trade Section (OPTS) and other industry stakeholders.

In his words, Ogbe said the initiative will involve physical verification of companies' facilities and operational capacity, helping eliminate intermediaries that secure contracts without the capability to execute them while giving genuine Nigerian manufacturers and service providers greater access to industry opportunities.

"It is painful when companies that own manufacturing facilities and operational assets become subcontractors to firms that merely secured contracts without the required capacity," he said.

NCDMB also reaffirmed its commitment to increasing Nigerian content to 70 per cent through sustained investment in manufacturing, technology development, workforce training and improved access to finance.



Alpha Maxvalue Energy and Renewables Ltd

Beyond Consulting: How Alpha Maxvalue is helping indigenous companies build commercial structures for long-term growth

In this interview with The Energy Republic, John Kadiri, Managing Director, Alpha Maxvalue, shares insight on the company's value propositions and how it is helping indigenous companies to develop business structures for long-term growth. **Excerpts:**



John Kadiri, Managing Director/CEO, Alpha Maxvalue Energy and Renewables Ltd

TER: What is Alpha Maxvalue doing across the energy value chain, and which market gap did the company identify?

Kadiri: At Alpha Maxvalue, we work side-by-side with independent and indigenous energy companies to navigate complexities, unlock new markets, and build the commercial frameworks that fuel long-term growth. We provide the strategic edge that companies need to compete and win.

We identified a specific gap: the lack of practical knowledge among emerging independents regarding the long "gestation period" of oil and gas projects.

Many underestimate the upfront work and cost required before revenue flows. While other consulting firms are often deeply academic, we offer a fine blend of scholarly insight and scalable, practical industry experience.

We don't just write reports; we help execute strategy, specifically tailored to the cash flow realities of our clients.

TER: How have your 21 years of experience working with Shell and Agip-ENI influenced Alpha Maxvalue's approach to deal structuring, commercial negotiations, and stakeholder management?

Kadiri: We carved a niche for Alpha Maxvalue in managing the monetization of oil, gas, and electrons, whether through market entry strategy, commercial structuring, or stakeholder relations. My experience at Shell and Agip-ENI taught me how the global majors de-risk projects. We bring that "big oil" discipline to the "indigenous" scale. We understand the complexities of commercial negotiations because we've sat on both sides of the table. That humongous experience and network are refined daily to influence our approach. We don't impose a one-size-fits-all solution; we provide best-practice frameworks customized to the scale and objectives of each specific client.

TER: Alpha Maxvalue aims to support newly licensed marginal field operators. What are the most common challenges operators face during market entry, and how does your company help them navigate regulatory and commercial requirements?

Kadiri: We characterize marginal field players into three distinct groups:

1. The Professionals: They have the knowledge but lack patient capital and struggle with ownership dilution.
2. The Politically Connected: They can acquire assets but often lack respect for corporate governance and prefer to keep assets undeveloped for a quick flip.
3. The Businessmen: They understand structures and governance but lack patience for the industry's long gestation period.

Ironically, the first two groups rarely seek consultants. Our sweet spot is the third group—businessmen who need to operationalize their investments. The challenges vary depending on when they engage us.

For some, we provide basic support like market sizing and facility location analysis. For others, we offer an end-to-end roadmap for regulatory approvals and commercial agreements. We assess needs and agree on the exact scope of support without ambiguity. So far, the results have been strong, though we carry good lessons learned from every engagement.



TER: With Nigeria's evolving energy landscape, including power sector reforms, what opportunities do you see for indigenous companies, and how is Alpha Maxvalue positioned to support their growth?

Kadiri: The divestment from onshore assets by IOCs and the privatization of the power sector have created a mature landscape. We have seen indigenous companies list on the NGX, foreclosures in the GenCo/DisCo space, and new investors buying out legacy shareholders. The opportunity today is in consolidation.

It is no longer about just acquiring assets; it is about operational excellence—reducing OPEX, improving efficiency, and converting our abundant resources into accessible power for Nigerians.

Alpha Maxvalue has been privileged, by God's grace and the trust of industry colleagues, to support the improvement of commercial acumen and relationships in this space. We are positioned to help indigenous players scale efficiently through this consolidation phase.

TER: Looking ahead, what's the company vision for the next five years, particularly in industries such as renewable energy and gas sector?

Kadiri: Our vision is to evolve from pure advisory to investment partnership. We plan to expand our confidence and ability to co-own economic interests in assets.

Specifically, we are looking at the gas midstream/downstream and gas-to-power value chain. There is still a gap between stranded gas and power demand.

Over the next five years, we aim to bridge that gap—not just by advising, but by partnering, collaborating, and jointly developing assets. We want to move from being a "consultant" to a "co-owner," creating tangible value alongside our clients.

Shell awards \$518 million in contracts to indigenous companies

Shell Companies in Nigeria awarded contracts worth \$518 million to indigenous companies in 2025, underscoring the company's continued commitment to strengthening Nigerian content in the country's oil and gas industry.

According to figures published in Shell's 2025 Payments to Governments Report, a total of 123 indigenous companies were engaged across the value chain of Shell's businesses in Nigeria during the year.

Commenting on the milestone, Vice President, Commercial, Rohan D'Souza, said the level of engagement reflects Shell's unwavering support for Nigerian service providers.

"The payments show a strong support for Nigerian service providers in our operations," D'Souza said. "We see the development of Nigerian companies beyond compliance with laws. It is an integral part of a longstanding strategy to create a win-win relationship with indigenous companies and support them to create more value in the oil and gas industry within and outside the country."

Shell said its long-standing investment in local capacity development has enabled Nigerian companies to expand their technical capabilities and competitiveness.

In a statement, Gladys Afam-Anadu, SNEPCO's Communications Manager, noted that indigenous companies, over the years, provided a broad



Shell leaders and other dignitaries at the Shell booth during the ministerial tour marking the opening of Nigerian Content Day at the 2026 NOG Energy Week in Abuja.

range of services to Shell's operations, including technical and logistics support, while benefiting from initiatives designed to strengthen their expertise, systems, and operational processes. As part of its continued support for indigenous contractors, SNEPCo recently launched a \$3 billion Contract Finance Facility in partnership with nine leading Nigerian banks. The facility is designed to provide contractors with improved access to financing for the execution of contracts within SNEPCo's operations.

According to the statement, the financing will be available in both Naira and U.S. dollars, providing contractors with greater flexibility to meet project funding requirements. Highlighting Shell's broader contribution to Nigeria's economy, D'Souza said the company

paid approximately \$2.016 billion to the Nigerian Government in 2025 through production entitlements, royalties, taxes, and statutory fees.

"When you consider the fact that Shell also paid some \$2.016 billion through production entitlements, royalties, taxes, and statutory fees to the Nigerian Government in 2025 alone, you get an idea of the enduring partnership we have forged in the country since we set foot here more than 60 years ago," he said.

Shell said its continued investment in indigenous businesses and contributions to government revenues demonstrate its long-term commitment to Nigeria's economic development, local content growth, and the sustainability of the country's energy sector.



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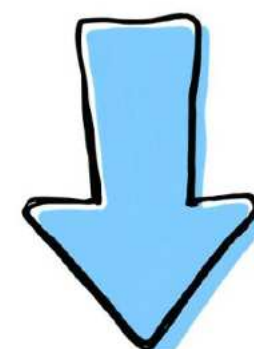


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By Jackson Olagbaju



companies to meet their compliance requirements more efficiently.

He warned organisations against delaying compliance until enforcement actions are initiated, noting that the compliance certificate would increasingly become a requirement for accessing certain industry services.

Bamidele also stressed that sustainable local content growth depends largely on increased investment and faster execution of energy projects.

"The future of local content growth is closely tied to the future of project development. No projects, no local content," he said.

He explained that every approved oil and gas project creates opportunities for Nigerian manufacturers, contractors, engineers, service providers and host communities, while delays in project execution slow the growth of indigenous capacity and industrial development.

To encourage faster investment decisions, Bamidele proposed the establishment of an annual Final Investment Decision (FID) Day during major industry events such as NOG Energy Week and the Nigeria International Energy Summit (NIES), where projects reaching FID would be formally recognised.

According to him, celebrating projects that achieve FID would encourage investors, regulators and project partners to move beyond approvals and ensure timely project execution.

He called for stronger collaboration between regulators and investors, noting that while regulatory agencies have worked to reduce approval timelines, many projects continue to experience delays after receiving regulatory clearance.

Bamidele also observed increasing interest from international investors in Nigeria's energy sector despite global geopolitical uncertainties, saying many companies now recognise that every producing region presents unique opportunities and challenges. He assured stakeholders that NCDMB remains committed to creating an enabling environment for businesses to thrive.

"The 'D' in NCDMB stands for Development. Our responsibility is not simply to regulate but to develop people, businesses and assets," he said.

He reaffirmed the Board's commitment to promoting investment, strengthening indigenous capacity and supporting the growth of Nigerian businesses as the country's energy industry enters a new phase of expansion.

NOG Nigerian Content Seminar: NCDMB outlines strategies to strengthen local content

The Nigerian Content Development and Monitoring Board (NCDMB) has reaffirmed its commitment to strengthening local content in Nigeria's oil and gas industry through capacity building, improved regulatory compliance and accelerated project development.

Speaking on behalf of the Executive Secretary of NCDMB, Felix Omatsola Ogbe, at the 2026 NOG Nigerian Content Seminar, the Board's Director of Capacity Building, Engr. Abayomi Bamidele, said developing skilled professionals remains critical to sustaining Nigeria's local content achievements and unlocking future investment.

NCDMB boss said the Board's strategy extends beyond regulatory oversight to building a highly skilled workforce capable of supporting long-term industry growth.

He highlighted the NCDMB's flagship programmes designed to strengthen local content implementation by equipping organisations with professionals trained in regulatory compliance, quality management systems, statutory reporting, ISO certification and other industry standards.

According to him, the initiative will help organisations develop internal expertise capable of reducing compliance violations and improving operational efficiency.

He noted that many companies receive compliance queries because employees lack adequate knowledge of regulatory requirements, adding that the Board's training programmes are designed to address such gaps. He encouraged compliance officers, contract personnel and subject matter experts across the industry to enrol in the Board's certification programmes, explaining that NCDMB will issue an annual schedule of professional development courses for industry participants. He added that the Board is also investing significantly in developing its own workforce to ensure it continues to provide effective regulatory and developmental support to the industry.

On compliance, Bamidele urged operators to fulfil their obligations to the Nigerian Content Development Fund (NCDF), stressing that timely contributions are essential to funding initiatives that promote indigenous capacity development.

He announced the introduction of the digital NCDF Compliance Certificate platform, describing it as an online tool that enables



By Jackson Olagbaju



NCDMB, NUPRC, NMDRA, Others, to Conduct Joint Industry Capacity Audits

The Nigerian Content Development and Monitoring Board (NCDMB), Nigerian Upstream Petroleum Regulatory Commission (NUPRC), Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), as well as the Nigerian Petroleum Exchange (NIPEX) and the Oil Producers Trade Section (OPTS), comprising all international oil companies, have jointly developed a framework to harmonise the grading system for ranking various in-country capacities and capabilities.

Speaking at the Nigerian Content Seminar at the NOG Energy Week 2026, the Executive Secretary of the Nigerian Content Development and Monitoring Board (NCDMB), Engr. Felix Omatsola Ogbe, highlighted the ongoing progress on Nigerian capacity expansion, industrialisation, manufacturing, sustainability, and global competitiveness.

The earlier phase, corresponding to the first 15 years of implementation of the Nigerian Oil and Gas Industry Content Development (NOGICD) Act, 2010, witnessed the phenomenal surge of indigenous participation from marginal levels of less than 5 percent to 61 per cent, with Nigerians now owners and managers of critical operational assets, providing services, executing projects,

and contributing significantly across the oil and gas value chain.

In a keynote address, the NCDMB boss, represented by the Director, Capacity Building Directorate (CBD), Engr. Abayomi Bamidele, declared that Nigeria's energy sector now has the capacity to support a vibrant manufacturing ecosystem, and that many local manufacturers are faced with difficulties associated with limited market access, technology gaps, and financing constraints.

He pointed out that addressing the challenges "requires strategic collaboration among regulators, operators, service companies, financial institutions, and manufacturers," and noted that within the regulatory and business environment of the Nigerian oil and gas industry, there is potential for robust collaboration on the back of the Presidential Directives on Local Content Compliance Requirements.

He explained that under the Harmonisation Road Map drawn up by the oil and gas industry regulatory agencies in concert with the OPTS, the next key action is to commence modification of their various certification portals in readiness for joint industry capacity audits of in-country manufacturers and service providers operating

within the oil and gas industry.

The outcome of the audit will provide a detailed understanding of existing capabilities, eliminate intermediaries, improve contracting cycle timelines, and ensure direct patronage of established service providers for business sustainability and growth.

The capacity audit, he emphasised, would aid in identifying service providers able to support major capital projects such as the seven Deepwater Projects, while the industry, through the Harmonisation Framework, has adopted five classes of service providers, which recognize new entrants into the oil and gas industry that require support in one form or the other.

According to him, "Class 4 and Class 5 of the Framework tagged 'Emerging Players' and 'Essential Vendors' [respectively] will form the foundation for a robust vendor development programme designed to support the evolution of such service providers into manufacturers and original equipment manufacturers."

He expects the joint industry capacity audit to commence within this third quarter.

"As we look ahead," he stated, "I believe that three strategic priorities should guide the next phase of local content development." The first of the three is competence, that is, continuous investment in human capital, technology transfer, innovation, and technical excellence to ensure Nigerian companies can deliver at global standards.

For the second priority, namely, capacity expansion, he said, "We must move deliberately towards manufacturing, industrialization, and the development of scalable productive assets. For collaboration, the third priority, he said, industry operators, service companies, government agencies, financial institutions, original equipment manufacturers (OEMs) and research institutions must work together to build sustainable industrial ecosystems.

On recent initiatives on capacity building by the Board, the Executive Secretary highlighted the release of the Nigerian Content Equipment Certificate (NCEC) Application Guidance Notes to provide clarity on requirements to secure approval of applications, the Field Readiness Training Programme, which focuses on top-10 high-demand areas, the Nigerian Content Trainers Registration Certificate (NCTRC), Back-to-the-Creek Initiative, and the Cradle-to-Career Academic Excellence Recognition and Advancement Programme. The NOG Energy Week is dedicated to providing further clarity to oil and gas industry stakeholders on the provisions of the NOGICD Act.



Market Growth and Energy R



NOG 2026 delivers multi-billion dollar gas supply deals, new petroleum licenses

The 25th NOG Energy Week produced a series of landmark announcements that collectively reinforce Nigeria's ambition to attract fresh upstream investment, expand crude oil production, accelerate gas commercialisation and strengthen its position as Africa's leading energy investment destination.

NUPRC Awards 19 New Petroleum Prospecting Licences

In another major development, the NUPRC formally presented Petroleum Prospecting Licences to successful bidders from the 2022/2023 Mini Bid Round and the 2024 Licensing Round. The exercise covered 12 successful awardees across 19 Petroleum Prospecting Licences, spanning deep offshore, shallow water and continental shelf acreages.

Companies receiving licences included Broron Energy Limited, Petroli Energy Marketing and Supply Limited, Sahara Deepwater Resources Limited and Tulcan Energy E&P Company Limited.

According to the Commission, the awards form part of Nigeria's broader strategy to

stimulate exploration, expand hydrocarbon reserves, attract long-term investment and create sustainable economic value.

NNPC, Seplat Sign Landmark Indigenous FLNG Gas Supply Deal

The conference also witnessed the execution of a 15-year wet gas sale and purchase agreement between NNPC Limited and Seplat Energy Producing Nigeria Unlimited to supply 200 million standard cubic feet of gas per day (200 MMscf/d) to the UTM Floating LNG project—Nigeria's first indigenous floating liquefied natural gas development.

The agreement was signed by NNPC Group Chief Executive Officer Bashir Bayo Ojulari, Seplat Energy CEO Roger Brown, and UTM FLNG Managing Director Julius Rone.

Additional agreements were executed with Ajaokuta Steel Company Limited, Chevron Nigeria Limited, AGPC and NNPC Exploration & Production Limited to strengthen gas supply, transportation and distribution infrastructure.

Ojulari described the agreements as a major step towards implementing the Federal

By Tobi Owoyimika

Government's gas-based industrialisation agenda.

"This is not just about signing agreements; it is about igniting the engine of Nigeria's industrialisation," he said.

"Gas is the key. It is a source of revenue and profit, and the hydrocarbon resource with the greatest potential to transform Nigeria's industrialeconomy."

He added that the agreements establish a transparent and standardised framework for nationwide gas utilisation while creating additional domestic supply capacity, enhancing energy security and supporting Nigeria's ambition to become a global industrial hub.

The project is expected to support financing activities ahead of a targeted Final Investment Decision (FID) by the end of 2026.

Eni Targets OPL 245 Investment Decision

Italian energy company Eni also announced that it expects to reach a Final Investment Decision (FID) on the long-awaited OPL 245 project by December 2026, signalling continued momentum for one of Nigeria's most significant offshore developments.



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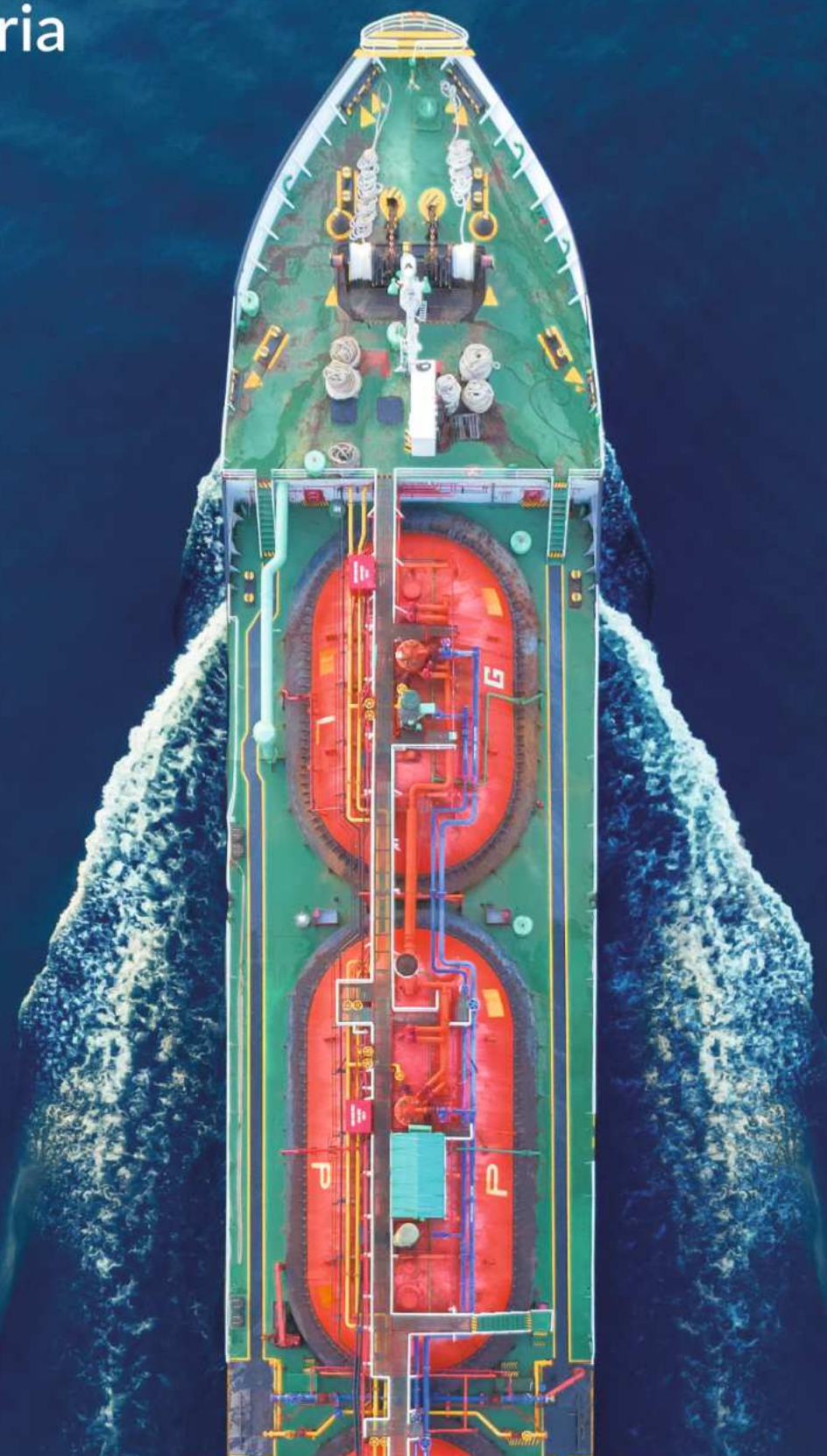




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