Nigeria in the Global Energy Transition Era

By

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1. Recognitions and greetings.

2. I would like to thank the Chief Executive Officer of Centre for Financial Journalism, Dr. Ray Echebiri, for inviting me to deliver the 2025 edition of The Bullion Lecture. Ray appreciates the immense value of continuous learning and development. Continuous learning results in continuous improvement. Constant improvement is the driver of personal, organizational, and societal progress. Ray, who graduated top of his Economics class at the University of Calabar had made a name in the early 1990s as a leading financial journalist with the Champion Newspapers. But he wasn’t carried away by the glamour of fame; he headed for the United Kingdom where he studied Economics. Even as a successful publisher, he returned to school to study for a doctorate.

3. Knowledge acquisition is the way to go. Long before technology made its way to the centre of how we now live and work, Peter Drucker, the all-time management guru, had written about the knowledge economy. Decades later, the leading global firms are the knowledge-driven ones like Apple, Google, Nvidia, Huawei, Microsoft, Amazon, Tesla, etc; and the leading nations are the ones that invest heavily in knowledge, research, and skills. With the rise of AI the imperative of learning, unlearning, reskilling, and upgrading cannot be overemphasized

The topic of this address is Nigeria in an Era of Energy Industry in Transition. What is the motivation for discussing energy transition?

4. It is clear to everyone in the world that our dear Earth has been getting hotter and hotter. Here in Nigeria, the climate gets so hot between January and March that you sometimes wonder if your cooling systems like the ACs are working. Scientists attribute the increasingly hot atmosphere to climate change. They regard the change as an existential threat. The change is mostly from fossil fuels, namely, coal, oil, and gas. To check the impending Armageddon, a global environmental summit was held in Paris in 2015 where several countries, including Nigeria, signed an accord to reduce global warming to 1.5 degrees centigrade or less of the pre-industrial era; 194 countries plus the European Union have now signed the treaty. Nigeria has also committed to achieving net zero by 2060, that is, the period when our carbon emissions will not be more than our carbon dioxide removal from the atmosphere through such mitigation strategies as forestation. Gabon, Comoros, Panama, and Madagascar are among the countries that have already achieved net zero. Nigeria has launched the Energy Transition Plan to help achieve the net zero target.

5. The energy industry is among the largest contributors to climate change, so it has come under intense pressure in the effort to check climate change. The United Kingdom, Sweden, Slovakia, and Portugal are among the European countries that have decommissioned their coal plants, the world’s greatest environmental polluters. The United States now generates only 19% of its electricity from coal, a long leap from the period such plants used to account for 50% of its electricity. It has to be noted that the rapid decommissioning of coal plants in the United States is not a result of environmental concerns, but rather a result of business and economic considerations. It is now cheaper to build and generate power from gas-fired plants than from the fleet of coal fired power plants which are now aging and, therefore, more expensive to maintain.

6. While the campaign for the replacement of fossil fuels with renewable energy and other forms of technology considered environmentally better has been successful regarding energy from coal, the same thing cannot be said about oil and gas. The reason is not far-fetched. The campaign is sometimes not realistic in some areas. Patrick Pouyanne, the transformative global CEO and chairman of TotalEnergies, which is the most environmentally conscious of all international oil majors, has been arguing that the campaign is being rushed. In an in-depth interview published in McKinsey Quarterly on February 20, 2025, Pouyanne cited the example of the maritime sector where pollution would have been reduced by 20% if the liquefied natural gas (LNG) had earlier been allowed to replace oil rather than the energetic call for a ban on all fossil fuels. We all saw the unrealistic call for the ban at the UN Conference of Parties (COP) 28 in Dubai in 2023 and at COP 29 in Azerbaijan in 2024. But the COP organizers and participants were realistic and wise enough to accept that what the world needs is a fair and just energy transition rather than an outright ban on fossil fuels when there are no sufficient replacements yet.

7. If the call had been heeded, it would have been unfair to most developing nations. Most of the global fossil fuels are deposited in developing countries. It is difficult to persuade a poor country like Bangladesh not to build new coal plants when Japan, for instance, still uses coal plants. Poor countries don’t have the financial resources, the technology, and enough people with the skill set to transition immediately to clean energy. As it is often said, the developing countries should be allowed to breathe. Developed nations used coal, the unparalleled polluter, to industrialize and, in the process, created the global warming crisis. It may be argued that by agreeing at COP 29 last November in Azerbaijan to increase its annual financial assistance to developing countries from $100 billion to $300 billion annually to cope with the severe challenges of adjusting to a new era of green energy, the developed nations are beginning to acknowledge their tremendous culpability in the profound environmental crisis.

8. We are all victims of the consequences of climate change, no exception. Loss of seashores, ocean rise, heatwaves, desertification, gully erosion, etc, have been increasing in recent years. We all are witnesses to the annual wildfires in California. The most recent which took place this year cost $250 billion damage. Wales in the UK was hit last November by Storm Bert and Storm Darragh as well as massive winds. However, it would seem that the impact of natural disasters is felt more in poor nations because most of them cannot grapple with the disasters without foreign assistance. Bangladesh, with much of it below sea level and perennially suffering from Monsoon rains, was last August devastated by a flood from the release of water from the Tripura Dam in India. Seventy-three sub-districts and 528 principalities were affected terribly. Lake Chad, which is of vital importance to Nigeria, Chad, the Niger Republic, Cameroon, and even the Central African Republic, has shrunk from 22,772 square kilometres in 1966 to just 1,756 square kilometres now. It has now shrunk to 7.7% of its original size. Its original size was almost 7 times the size of the entire Lagos State. Now, it is merely about half the size of Lagos State. At least 150 persons died in Maiduguri and Jere local government areas of Borno State when the Alau Dam collapsed on 10 September 2024, following heavy and sustained rains. Seventy per cent of the people were affected, as 400,000 people were displaced. Needless to add, Anambra State remains the gully erosion capital of Africa, with over 1,000 active sites. In Abia State, our company, Geometric Power, has had to relocate many electric poles because erosion has caught up with their locations. The erosion menace is beyond the capacity of any state government. The states need support from both the Federal Government and international organizations. I know the Federal Ministry of Environment is trying to help but it is far short of what is required. Therefore, in this increasingly interconnected world where all of us are victims of natural disasters exacerbated by climate change, we all have to work together to avoid the impending environmental Dystopia, as some people call it. A Dystopian future is an [imagined](https://www.google.com/search?sca_esv=8d8d37d839baca63&sxsrf=AHTn8zpu4prCqF3ioJL2eD9O_Q6LyG3zuw:1743764422879&q=imagined&si=APYL9bvKONvNV8bZy6puQpL09JUBi6MVWQAnfFGdKZV0SFfj-QVddO6SYeBWle2-dM1qkfwrobRg9zZvjsQ8T7q67XA27KrIK6Mx9w8iVtCNV1Fb8O9s83E%3D&expnd=1&sa=X&ved=2ahUKEwiNs_3XnL6MAxUkREEAHVS7Bh8QyecJegQIRRAP) state or society where there is great suffering or [injustice](https://www.google.com/search?sca_esv=8d8d37d839baca63&sxsrf=AHTn8zpu4prCqF3ioJL2eD9O_Q6LyG3zuw:1743764422879&q=injustice&si=APYL9bvtFLj-ISwFDyvbg6-m4pTqZWg_PuSyeMEWTicvGrzWoW6iyCQTumKsKkFshEz5n5wWcPQ2q1E5mlUwsgRUbpFThuUsBKPxlA75CyT2amxv3Oz4jIo%3D&expnd=1&sa=X&ved=2ahUKEwiNs_3XnL6MAxUkREEAHVS7Bh8QyecJegQIRRAQ) and is bereft of reason.

Alternative Energy Sources are not Risk-free

9. In a public lecture last year, I called attention to the fact that alternative technologies being promoted around the globe as a central measure to check climate change have significant risks, but the risks are hardly mentioned in the public space. This is not right. Towards the end of March 2025, the South Korean aviation authorities published a report showing that the fire that destroyed a Korean commercial airliner, Air Busan, on 28 January 2024 was caused by the implosion of a power bank kept by a passenger in the overhead luggage compartment. Power bank, like solar batteries and solar panels, contains lithium-ion. It is thus highly combustible. We must be careful with the lithium batteries and solar panels in our homes and offices in our interest. We must avoid keeping them in places where they can become overheated.

10. The Americans have of late been promoting nuclear energy as almost clean energy because of the small quantities of materials required to produce significant energy. Americans are in great need of electricity because of the voracious appetite for electric power by data centres that drive AI. Apple and other technology giants are building modular and small nuclear reactors in the United States. The Department of Energy plans to repurpose the coal plants, that is, turn them from coal plants to nuclear plants. This is because it does not want most of the workers in the coal plants to lose their jobs and it does not want the host communities that have for decades depended on the plants to run their socioeconomic life to be devasted by the new turn of events. This is an important lesson for our Nigerian people and government. We must always care for all citizens. However, in promoting the use of nuclear energy to produce electricity in even foreign countries, Americans overlook the fact that the management of nuclear wastewater is a huge challenge. They also may overlook the fact that in the process of mining uranium, a critical mineral in nuclear production, the environment is damaged, just as the environment is damaged when cobalt, lithium-ion, and other rare minerals used in solar energy are mined. In a recent influential article, three prominent American energy analysts note that the global energy community is moving from Big Oil to Big Shovel because of the ubiquitous use of shovel in mining solid minerals needed in clean energy. In other words, both conventional energy and new energy production hurt the environment.

11. Hydroelectricity, another renewable, has its own challenges. Climate change affects water availability in the dams. Vietnam, a global manufacturing hub, suffered severe power shortages in May 2023 following a drought in the country. The Vietnamese economy is powered by hydroelectricity. Here in Nigeria, we have seen how communities and even states suffer any time the Cameroonian authorities release water from their dam which flows into the River Benue. States, communities, businesses, nonprofits, and individuals suffer tremendously often when water is released from the Kainji Dam in Niger State which supplies water to the 760MW Kainji Hydroelectric Plant in Borgu LGA. Let us not forget the serious ecological effects on inhabitants in areas where hydropower dams are built, including displacements and relocations.

The Realistic Way Forward

12. The transition from traditional energy to clean energy is no ordinary transition. It is unprecedented in the history of energy transition. The cost alone is prohibitive. In a well-circulated article published in the March-April 2025 issue of Foreign Affairs, the most influential journal on American foreign policy, Daniel Yergin, a globally respected author on energy and vice chairman of Standard & Poor’s Global, Peter Orszag, chairman of Lazard who was the Director in the Budget and Management Office in the Obama administration, and Atul Arya, a research engineer and chief strategist at S&P Global, wrote:

The most recent estimate comes from the Independent High-Level Expert Group on Climate Finance, whose members provided a framework for the COP 29 meeting—the UN’s annual forum on climate change in Azerbaijan. It is projected that the investment requirement globally for climate action will be $6.3 to $6.7 trillion per year by 2030, rising to as much as $8 trillion by 2035. It is further estimated that the global South countries will account for almost 45 per cent of the average incremental investment needs from now to 2030, and they have already been behind in meeting their financing needs, especially in Sub-Saharan Africa.

Based on such estimates, the magnitude of energy-transition costs would average about five per cent a year of global GDP between now and 2050. If global South countries are largely exempted from these financial burdens, global North countries would have to spend roughly 10% of annual GDP—for the United States, over three times the share of GDP represented by defence spending and roughly equal to what the United States spends on Medicare, Medicaid, and Social Security combined. These costs reflect the pervasiveness of fossil fuels in modern society—not just oil and gas, but also the production of cement, plastics, and steel—as well as what Bill Gates has called “the green premium”, with lower-emissions technologies being more expensive than those with higher emissions profile.

13. It is self-evident that the campaign to transition the global energy industry to clean energy, as opposed to the half a century it normally took to shift from wood to coal and another half a century to move from coal to oil, is not quite realizable. As the energy analyst, Gerard Kreeft, remarked in The Africa Oil and Gas Oil Report of March 24, 2025, this has little to do with Donald Trump’s stance that climate change “is a scam” or the current American administration’s policy of “Baby, Drill, Baby” which encourages oil companies to drill everywhere in the United States without restraint. If anything, the oil firms are likely to work without the policy in mind. They believe that climate change is real and that it poses an existential threat. However, they do not subscribe to the view that global clean energy can be achieved so quickly. The TotalEnergies CEO shares the same in the publication in McKinsey Quarterly which I mentioned earlier.

14. The Europeans, who have been at the forefront of the campaign for green energy, have since last year been coming to terms with the new reality. A report submitted towards the end of 2024 on how Europe could increase its competitiveness and written by a team led by Mario Draghi, a reputable economics professor and former Italian prime minister who has also been the European Central Bank governor, showed that natural gas would still be in great use in the region and elsewhere within the foreseeable future.

Going Forward with Natural Gas is Nigeria’s Electric Power Security

15. The global Shell CEO, Wael Sawan, announced on March 25, 2025, his company’s plans to become the world’s leading gas producer, trader, and marketer. The announcement aligns with the global trend. Gas utilization is growing across the globe, including California, which has been leading the campaign for a carbon-low United States. Earlier in this lecture I spoke of how TotalEnergies is campaigning for the replacement of oil in the maritime sector with liquefied natural gas. Though a fossil fuel, natural gas is environmentally more efficient than coal and oil, the other two fossil fuels. A combined-cycle gas-fired power plant can generate double the power produced by a hydroelectric turbine of the same capacity or any other because it uses both a gas turbine and a steam turbine to generate power. It also contributes to environmental protection by capturing and utilizing the waste heat from the gas turbine. If you have a state-of-the-art gas fired power plant like the 188MW General Electric Plant in Aba, the noise and carbon emission levels will be reduced to the barest minimum. Of course, it is also considerably cheaper to build a gas power plant than a solar power plant or even a hydroelectric power plant of the same size. For Nigeria, a country blessed with enormous gas resources, gas fired power plants are irresistible.

16. Nigeria has 209.26 trillion cubic feet of gas. This means it is the 9th country in the world with the highest natural gas deposit. It is, indeed, inexplicable that Nigeria should be struggling with gas for its 24 gas-fired plants, with over 80 million persons with no electricity access. In contrast, Algeria, with 2.9 trillion cubic feet, has long provided electricity access to all its citizens and built very good educational institutions, including an internationally recognized technical university. Algeria has one of the three largest Africa’s economies. Nigeria has the fourth largest. The Nigerian government has to find innovative ways to utilize the humungous gas resources in the country. While its efforts to earn foreign exchange through gas, including constructing gas pipelines to North Africa to export our gas to Europe, the domestic need has to be first because charity starts from home.

17. Substantial investments in gas will encourage more thermal plants which the country needs. The country currently generates about 5,500MW, but it should be up to 30,000MW by 2030, according to the Nigeria Electricity Supply Industry in its Vision 30:30:30. NESI envisions that by 2030 the country will not only produce 30,000MW but also that 30% will come from renewables. I believe that the country should aim at 100,000MW by 2040, so that we can become a higher medium economic power by then. However, it is doubtful that the country can generate either 30,000 MW by 2030, as envisioned by NESI, or 100,000 MW by 2040, as I advocate. This is because of the suspension of the guarantee instrument for Power Purchase Agreements (PPAs) by President Muhammadu Buhari's administration. As Dr Musiliu Oseni, the Nigeria Electricity Regulatory Commission (NERC) Vice Chairman, has argued eloquently, without new PPAs, no new plants will be built. The establishment of such plants as the ExxonMobil Power plant, OMA Power by the JV of Geometric Power and General Electric and others has been in abeyance because of the suspension of the PPAs. It is costly to build a plant—approximatelyUS$1.5 million per MW. No investors will build any without at least a Partial Risk Guarantee (PRG). To achieve the desired power adequacy of over 100,000 MW, the Nigerian Government has a critical role to play. During our time in Government, I, in collaboration with then Minister of Finance and Coordinating Minister of the Economy, had introduced Partial Risk Guaranty (PRG) through the World Bank as a way to incentivise and provide payment security for power plant development in Nigeria. Based on the PRG, I signed an MOU with the then global Chairman of General Electric, Jeff Immelt, for the building of 10,000 MW gas-fired power plants by our private sector and GE. GE would take equity position in each project. Not to be left behind, Siemens global President signed with me an MOU for another 10,000 MW. The Brazilian state-owned power firm also signed a similar MOU. Many companies started working fast to take advantage of this initiative. It was based on this initiative that significant projects like ExxonMobil (500MW); Oma Power (1080MW), etc. got developed to maturity. Unfortunately, the 461 Megawatt Azura-Edo Power Plant in Edo State is the only product of this initiative by the time President Jonathan left office; the Buhari Government which succeeded it did not continue with the MOUs and the PRG instrument for the PPAs. So for more than 10 years, no new power plant has been built or initiated in Nigeria. The 188MW Geometric Power plant commissioned last year was conceived before this period and built without a need for a Guarantee instrument. We should never forget that for any country’s economy to keep growing it must keep growing its energy stock year-on-year.

18. Distinguished ladies and gentlemen, I will leave you with the following thoughts:

1. One of the leaders of carbon reduction effort in the world is the United States. After nearly 30 years effort, here are the sources of fuel for power generation in the US: Renewables of all types are 21.4%; Nuclear is 18.6%; and Fossil fuel is 60%. The fossil fuel is made up of coal 16.2%, petroleum 0.8% and natural gas 43%.
2. In all the initiatives, no country undertakes the journey of carbon emission without considering sustainable energy security for its people.
3. In considering achievement of climate change objectives, Nigeria should therefore focus on energy security for the nation.
4. The country should not join the “tree huggers” of the world because they will abandon the “ship” of climate change initiatives once their own energy security is threatened. We saw how the UK, Germany, France and other European countries re-embraced coal power amid the Russia-Ukraine War that saw Europe’s energy security threatened.
5. We should recognize that natural gas is a transition fuel. Therefore, we should not be cowed to classify it as a classic fossil fuel to be extinguished immediately. This fuel is our energy ticket to sustainable economic development.
6. The Nigerian Government(s) should employ the already tested approaches to collaborate with the private sector to quickly progress power availability to the level that matches our country’s sustainable economic growth desire.
7. There should be a recognition that movement towards use of electric vehicles will require significant improvement in electric power availability as well as recharging stations infrastructure.
8. There should be a recognition that the desired power availability will require significantly improved natural gas production for domestic use.
9. I encourage different states of this nation to consider working with capable private sector operators to employ a variety of the Aba Integrated Power project model where power plant is embedded in the DisCO.
10. I encourage Governments to ringfence power availability initiatives from the usual projects where officials corruptively compromise. Let them say, “this is my altruistic gift to my people”

Ladies and gentlemen, the global energy transition is not only unprecedented in scale, as Daniel Yergin, Peter Orszag, and Atul Aryan have observed, but also troubled. Nigeria has to look before it leaps. A nation’s energy security strategy cannot be dictated by the latest buzzword.

Finally, we should stop being a country that imports what we have full capacity to produce. I am confident that we are blessed with incredibly talented people who, if given a chance, will deliver us to this destination of sustainable energy.

Thanks for listening.