



# NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION

## OIL & GAS INDUSTRY IN NIGERIA AND THE QUEST FOR ENERGY TRANSITION

By

**Capt. John R. Tonlagha**  
**Executive Commissioner, HSEC**

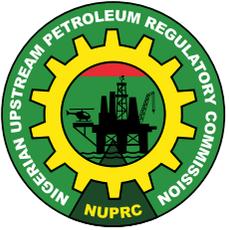
July 6, 2022



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

# Outline

- Preamble
- Nigeria's Oil & Gas Landscape
- Policy, Legal and Regulatory Framework
- Energy Transition and the Oil & Gas Industry
- Challenges and opportunities
- Way Forward



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Preamble

- The increase impact of climate change over the last five decades has made expedient for Nations to act and limit the effects.
- The UN has led global efforts to curb the effect of climate change through several multi-lateral treaties (**Paris Agreement 2015**, being the most recent) targeted at reducing greenhouse gases emission which are responsible for global warming.
- The fossil energy sources are major contributors to greenhouse gases emission and hence the determined call for transition to cleaner energy sources such as renewables.
- Developed nations and some emerging economies have adopted and commence their Energy Transition journey. This energy transition strategies and policies are designed to move the global energy sector away from fossil fuels.
- Meanwhile for Nigeria, the oil and gas Industry is central to the QUEST for national Energy Transition.



## NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION

# Nigeria's Oil & Gas Landscape -Reserves & Production

- Proven Oil Reserve**
- Proven Gas Reserves**
- 37.04 Bbbls
- 208.62 Tcf
- 600Tcf (unproven)



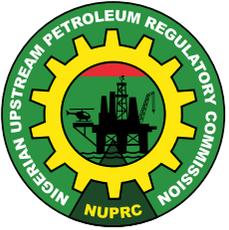
### AVERAGE DAILY PRODUCTION

- ❖ Oil – **1,191, 332 (bopd)**
- ❖ CONDENSATE – **272, 262 (bcpd)**
- ❖ AG – **4.54 (Bscf/d)**
- ❖ NAG – **2.96 (Bscf/d)**

1,463,594 bopd

7.50 Bscf/d

2176 Oil Producing wells  
125 Gas Producing wells



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Legal and Regulatory Framework -Emission Reduction

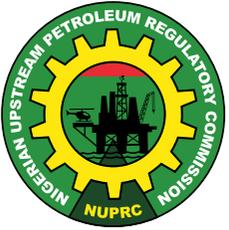
### Acts & Regulations

- **Petroleum Industry Act (PIA) 2021**
- **Climate Change Act 2021**
- Petroleum (Drilling and Production) Regulations 1969
- **Flare Gas (Prevention of Waste and Pollution) Regulations 2018**

**Oil &  
Gas  
Industry**

### Guidelines

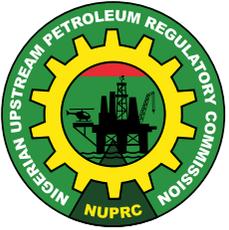
- **Guideline for Grant of Permit to Access Flare Gas-2020**
- **Guideline for Flare Gas Measurement and Data Management Obligation-2020**
- **Guideline for Flare Payments-2020**
- **Guidelines for Producer's Approved Flare Out Projects-2020**
- **Environmental Guidelines and Standards for the Petroleum Industry in Nigeria- 2018**
- **Guideline on Management of Fugitive Methane Emission and Greenhouse Gases in the Oil and Gas Industry-2022 (Draft)**



**NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION**

## Energy Transition and the Oil & Gas Industry

- Oil and gas drives **14%** of Nigeria's GDP, **95%** foreign earnings and **65%** of national budget
- Gas flaring & venting accounts for **80%** of sectors emissions, this represents **36%** of the total energy sector emissions
- Approximately 80% of Nigeria's 12.5GW of generated capacity is fired by gas. However, only 4-5GW is generated due to fluctuations in gas supply and inadequate power infrastructure.
- While the oil industry is major energy source, there is huge deficit in energy supply. \$445bn of investment is required to meet Nigeria's cumulative energy supply in the next two decades, oil & gas requires 80% of the forecasted amount(IEA).
- The global decline in financing oil & gas projects by banks, multilateral lenders as they diverts capital from fossil fuel to renewable.
- At COP26, a number of countries and financial institutions pledged to stop funding fossil fuel projects in pursuit of the net zero carbon targets being adopted internationally.
- This is presenting significant challenges as Nigeria tries to balance the needs of the country to continue developing its oil reserves in order to generate revenue, whilst at the same time developing gas as the transition fuel.



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Policies and Goals Towards Emission Reduction and Energy Transition

### Policies

- The National Climate Change Policy 2021
- The National Action Plan to Reduced Short-Lived Climate Pollutants (SLCP's)-2018
- The Nigerian Gas Transportation Network Code (NGTNC)
- National Gas Policy 2017
- The National Determined Contributions (NDC)

### Programmes

- The Nigerian Gas Flare Commercialization Programme (NGFCP)
- The National Gas Expansion Programme
- National Renewable Energy Action Plan (NREAP), 2016 (2015-2030)
- The Decade of Gas agenda
- Domestic LPG expansion programme

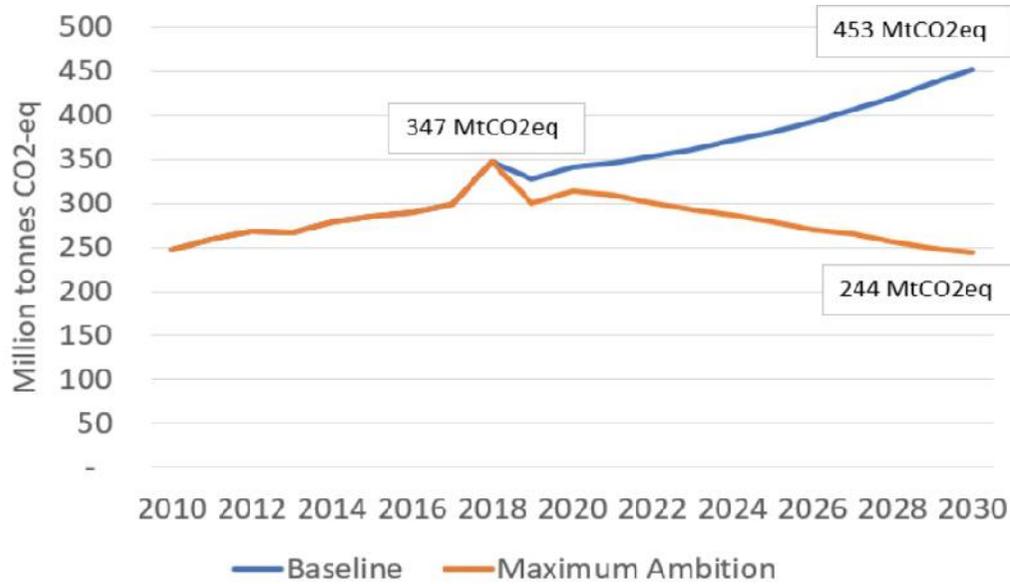


**NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION**

# National Commitment -Paris Agreement 2015 NDC Mitigation

Nigeria through the NDC sets national greenhouse(GHG) emissions reduction targets as;

- 20%** Business As Usual -unconditional reduction by 2030
- 47%** conditional (with int'l support) reduction by 2030
- Net-zero by 2060



BAU and Condition GHG Emission Scenario 2030

## Oil and Gas Emission Reduction/Mitigation



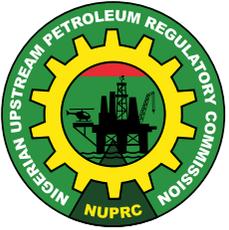
- Work towards ending gas flaring by 2030
- Prohibition of cold venting



**60% Reduction in Fugitive Methane Emission by 2031**



- Efficient gas generators
- 2.5% per year reduction in energy intensity (30% by 2030)



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Environmental Sustainability -Regulatory Stewardship

- The current HSE regulatory framework for the Upstream Oil and Gas is designed integrate HSEC considerations and best practices in all aspects of the value chain to achieve sustainable development of the sector
- HSE is thus embedded all through the Life Cycle of gas projects or activities; Design & Construction, Operations and Decommissioning.
- **The tools used at various stage for sustainable operations and to reduce carbon footprint:**

### ❖ Design & Construction

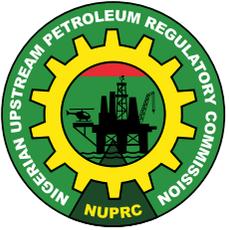
- Environmental Assessment/Environmental Management Plan
- Formal Safety Assessment

### ❖ Operations

- Environmental Evaluation Study (EES)/ Post Impact Assessment (PIA) Study
- Environmental Compliance Monitoring
- Greenhouse Gas Inventory reporting
- Monitoring & Tracking of oilfield Wastes
- Occupational Health & Safety Management
- Control of Point Sources
- Pollution Control
- Emergency Response and Coordination
- Joint Investigation Visits

### ❖ Decommissioning

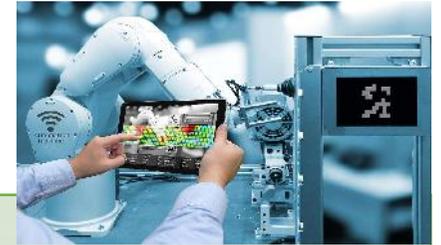
- Decommissioning HSE Plan
- Formal Safety Assessment



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Environmental Sustainability -Emission Management & Control

### Gaseous Point Source Emission Monitoring (GPSEM)



- Approval of only projects with gas utilization in the Upstream Sector

- Ambient Air Quality Monitoring of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> SPM.

CONTINUOUS  
IMPROVEMENT PROCESS

Quarterly Submission GHG/Methane Inventory

Leak Detection and Repair

The Management and Control Strategy is still Evolving



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

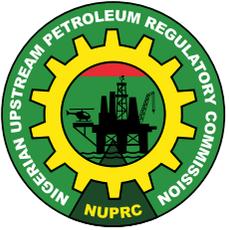
## Nigeria's Energy Transition Quest *-Key Enablers*

### National Gas Expansion Programme

- The key focus is on CNG as transport fuel and LPG as the domestic fuel for cooking and small industries (**There is need for strong commitment to attract the funding required to exploit gas as the transition fuel beyond domestic sources of capital**)

### National Gas Policy

- The NGP aims to move Nigeria from a crude oil export-based economy to a gas-based industrial economy (**The Petroleum Industry Act (PIA) 2021 anchored the key aspect of the NGP**)



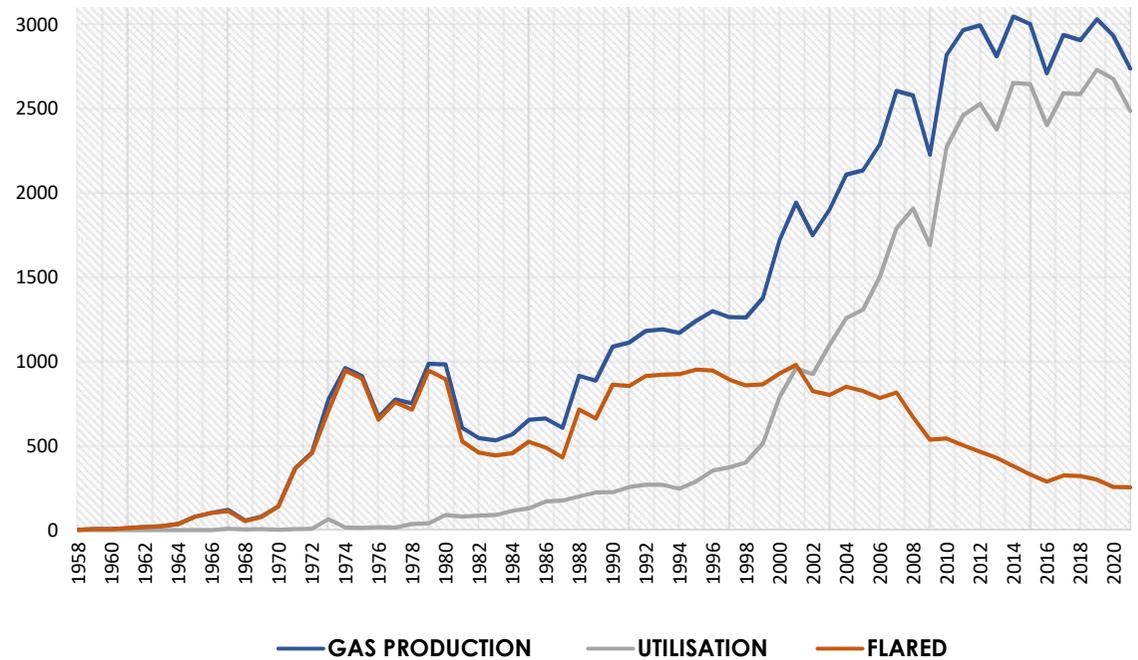
NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

There are **24** ongoing gas flare out projects at FEED, DED, Construction and pre-commissioning stages with total throughput **1082.22MMscfd**

## Key Enablers

*-Gas Flare (Prevention of Waste and Pollution)  
Regulation 2018*

Historical Gas Production  
1958-2020





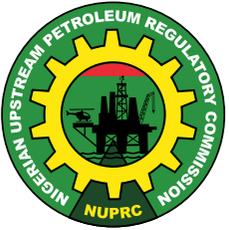
## NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION

# Nigeria's Energy Transition Quest *-Key Enablers*

### The Petroleum Industry Act (PIA) 2021

The act made notable provisions with respect gas development that are not in preceding legislation.

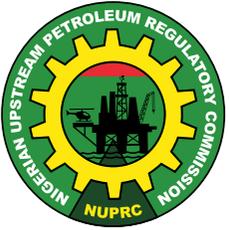
<b>Petroleum concessions</b>	<ul style="list-style-type: none"><li>• New concessions recognize the exploitation of gas and not just oil</li></ul>
<b>The Midstream and Downstream Gas Infrastructure Fund</b>	<ul style="list-style-type: none"><li>• A fund designed to promote private sector investment in midstream/downstream gas projects</li></ul>
<b>Gas operating licenses</b>	<ul style="list-style-type: none"><li>• The provision of licenses specific to midstream and downstream gas operations</li></ul>
<b>Royalty calculation and Rates:</b>	<ul style="list-style-type: none"><li>• Natural gas and NGLs royalties will be based on production only</li><li>• Natural gas and NGLs based on production, will be at a rate of 5% and 2.5% for natural gas produced and utilized in-country</li></ul>
<b>Hydrocarbon tax</b>	<ul style="list-style-type: none"><li>• The introduction of a hydrocarbon tax which provides specific exemptions for certain associated gas ("AG"), non-associated gas ("NAG"), natural gas liquids ("NGLs") and gas processing</li></ul>
<b>Pricing of gas</b>	<ul style="list-style-type: none"><li>• Providing a framework for setting the floor price of gas for power, commercial and gas-based industries</li></ul>



NIGERIAN UPSTREAM  
PETROLEUM REGULATORY  
COMMISSION

## Key Enablers -Climate Change Act 2021

- Framework for low GHG emission, green growth & economic Development
- Climate mitigation & Adaptation
- Mobilization of finance for effective climate action and carbon budgeting
- Integrate climate action in socio-economic development & environment Policies
- Set target for net-zero
- Implementation of mitigation measures to promote low carbon economy
- Spelt out obligations of public and private agencies on climate change action
- Adoption of technology e.g., Carbon Capture Utilization and Storage as part of long-term solution to net-zero & energy transition. It will be essential to decarbonization of industrial sector.

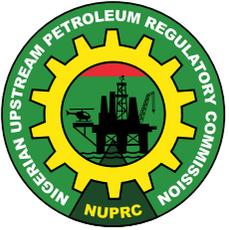


## NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION

### Gas the Transition Fuel

**The Paris Agreement 2015, the Decade of Gas & Net-zero declarations** and gas-centric policies has set the path to development of the gas resources: While this is in place the following are imperative;

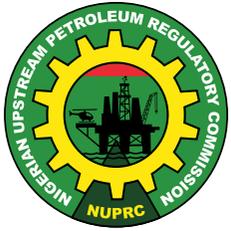
- **Aggressive exploitation and development of associated and non-associated gas reserves**
- **Development of gas transport infrastructures and swift policy implementation**
- **Government to develop gas-based economy through policies that will drive private sector financing of projects**
- **Upstream gas projects supporting Nigeria's Decade of Gas (2030) should be prioritized; post 2030 many upstream projects may become stranded as country moves to Net Zero**
- **Prioritize LPG and gas-to-power as low-hanging fruits for gas utilization and decarbonization.**
- **Acceleration of the ongoing and/or planned construction of major East – West, East – Central-North gas trunklines as well as the 7 critical upstream gas projects (aprox. 3070mmscf/d throughput)**



## NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION

### The Energy Transition -Challenges and Opportunities

- Energy Politics
- Financing of the gas development and infrastructure
- Policy utilization and implementation
- Regulatory and inter agency synergy
- Technology and innovation
- Security of oil and gas assets
- Production shut-in due oil theft and pipeline integrity issues
- Divestment of assets by IOC an opportunity for indigenous companies
- PIA transition and implementation of Climate Change Act 2021
- High volumes of export gas compared to domestic sales



# WayForward

The path to energy transition and net-zero emissions by 2060 is long and complex given our dependence on oil & gas and national energy deficit. To progress and succeed on our transition goals.



Development of gas resources and gradual introduction of renewables energy sources into the national energy mix.

Technical solutions and financial innovations are required to meet the challenges & opportunities in the gas sector in the quest of realizing the economic & environmental benefits.



Role of international lenders and investors is critical to Nigeria in development of gas as transition fuel. This will require a strategic approach to fund gas and renewables projects.

Accelerated implementation of policies (NGP 2017 etc.,) and programmes (NGFCP and NGEP) on gas through strong regulatory monitoring and synergy amongst stakeholder



Deliberate implementation & enforcement of emission reduction and mitigation commitment of the oil and gas sectors.



**“shutting-off of capital in energy infrastructure will not result in A JUST ENERGY TRANSITION and the attitude towards natural gas needs to be looked at from an energy access and energy poverty point of view”**

**VP Prof. Yemi Osibanjo**



***THANK YOU***