

## **Gas-Driven Power Generation System: The Niger Delta Contribution to the Nigerian National Grid**

Authors Francis Enejo Idachaba (Covenant University Ota Ogun State Nigeria)

DOI <https://doi.org/10.4043/26898-MS> Document ID OTC-26898-MS Publisher Offshore Technology

Conference Source Offshore Technology Conference, 2-5 May, Houston, Texas, USA Publication Date 2016

Show more detail [View rights & permissions](#)

Export citation [Get PDF](#)

Nigeria ranks as the country with the 7th largest proven reserves of gas globally but currently focuses on the exploration of its oil with little economic use of its gas. The gas is either exported as Liquefied Natural Gas or flared by the oil and gas majors. The government has attempted to minimize the flaring by putting legislations to compel the International Oil Companies (IOCs) to stop the flaring and also encourage the utilization of the gas for electricity generation but the main challenge with this approach has been in the high cost associated with the compression and storage of the gas and the risks of vandalism associated with pipeline transport of the gas. This paper presents an approach for increasing the utilization of the gas for power generation by minimizing the risks associated with vandalization. The Niger Delta which has the bulk of the reserves can become the power generation hub of the country where all the gas driven power generation is done and fed to the national grid through a network of transformers and power lines. This configuration will eliminate the need for long pipelines while enabling the deployment of monitoring technologies on the short lines and also minimize the storage capacity required as the gas produced will be utilized by the generators. It also provides an opportunity for public Privat participation in the power supply sector. This system will ultimately improve the power supply availability in the country.

Supporting information

[SUPPLEMENTARY/OTC-26898-SUP.pdf](#)

Oyedepo S.O, Fagbenle R.O, Adefila S.S and Adavbiele S.A. Performance Evaluation and Economic Analysis of a Gas Turbine Power plant in Nigeria. *Energy Conversion and Management*. Elsevier 2013

Kaunda C.S, Kimambo C.Z and Nielsen T.K. Hydropower in contexts of sustainable energy supply. A review of technologies and challenges. *ISRN Renewable Energy Hindawi* 2012

List of Power stations in Nigeria. Wikipedia

NIPP Transactions. NDPHC Companies. National Integrated Power Projects.  
[www.nipptransactions.com/ndphc-generating-companies](http://www.nipptransactions.com/ndphc-generating-companies)

Ehiorobo J.O Developing Sustainable Electrical Power from Natural Gas. Measurement and documentation for construction of Natural gas Distribution Pipelines from gathering facilities to Power Plants. FIG congress 2010 Australia 2010

Oyem I.L Analysis of Nigerian Power Generation sustainability through Natural gas supply. Journal of Innovative research in Engineering and Science Feb 2014

EIA Country Analysis 2011

Oyewunmi. T. The Nigerian Gas Industry: Policy law and Regulatory Developments. Adepetun, Caxton- Martins Agbor & Segun

Tinubu W. Developing Domestic Gas Infrastructure. A private sector approach. The Nigerian Infrastructure Summit 2008

Other Resources

Looking for more?