



# **THE EVOLVING INTERNATIONAL GAS MARKET AND ENERGY SECURITY IN NIGERIA: REGULATORY AND POLICY ISSUES**

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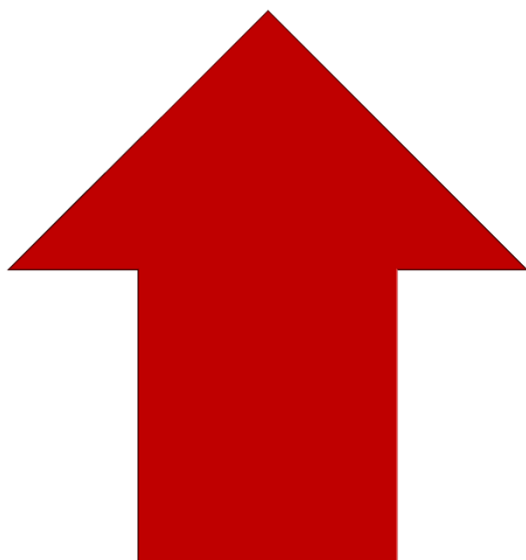
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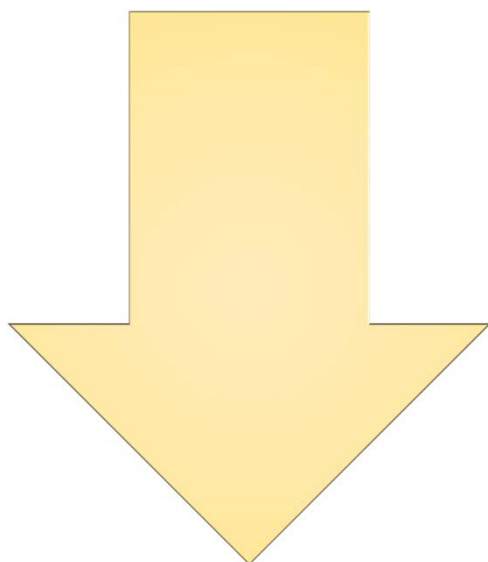
- I. Introduction
- II. The evolving International Gas Market – Regional to global outlook
- III. The gas supply industry and energy security in Nigeria- regulatory and policy issues
- IV. Conclusion

# I. INTRODUCTION



An increasingly international and potentially 'oversupplied' gas market

- Shale gas revolution, recent new discoveries; resuscitation of Iran; new LNG deliveries from North America, Australia etc.
- Increasing commoditization of gas in trading hubs vs traditional long-term supply arrangements
- Dynamic contractual patterns - LNG destination flexibilities



## ***Evolving scenarios and implications in Nigeria***

- Largest proven gas reserves in Africa and 9<sup>th</sup> globally
- 4<sup>th</sup> amongst LNG exporters globally; 8.3% global market share (IGU, 2016)
- The gas-rich but energy poor question
- *Security of demand vs security of supply issues – incentivising midstream gas investments and effective regulation – affordability and reliability of energy supply*
- Legal and regulatory reforms + perceived instabilities and insecurities

## II. THE EVOLVING INTERNATIONAL GAS MARKET – REGIONAL TO GLOBAL OUTLOOK

### **Record-high Global Gas Production (IEA, *Natural Gas Information, 2015*).**

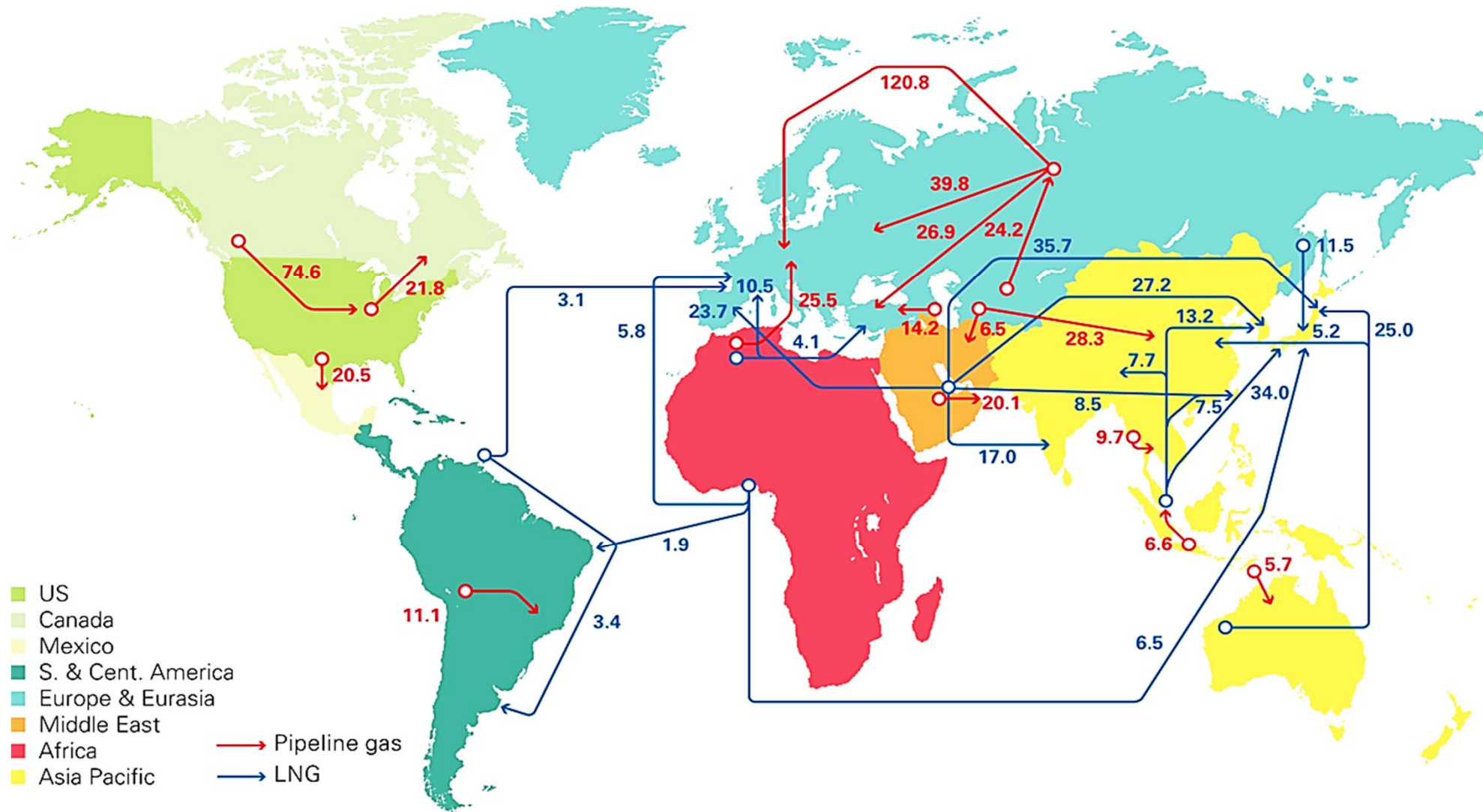
- non-OECD gas production has doubled since 1994
- OECD increases - US and Canada
- Iran's gas production increased by 6.8% in 2014 alone.
- New gas discoveries in Tanzania, Israel, Mozambique, Egypt etc.
- General growth in demand over the last 20 years e.g. China and Japan
- North America to become a net exporting region (*BP Energy Outlook to 2035*).

### **Global Gas Security Review (IEA, 2016)**

- Diverse LNG supplies, spot-markets and increase in traded gas
  - *more interconnected and integrated gas markets and prices*
- US LNG supplies and destination flexibilities in contracts
- Power sector fuel-switching capabilities and gas storage
- LNG supply flexibility - uncontracted volumes, contracted but re-directed, contracted to multiple destinations

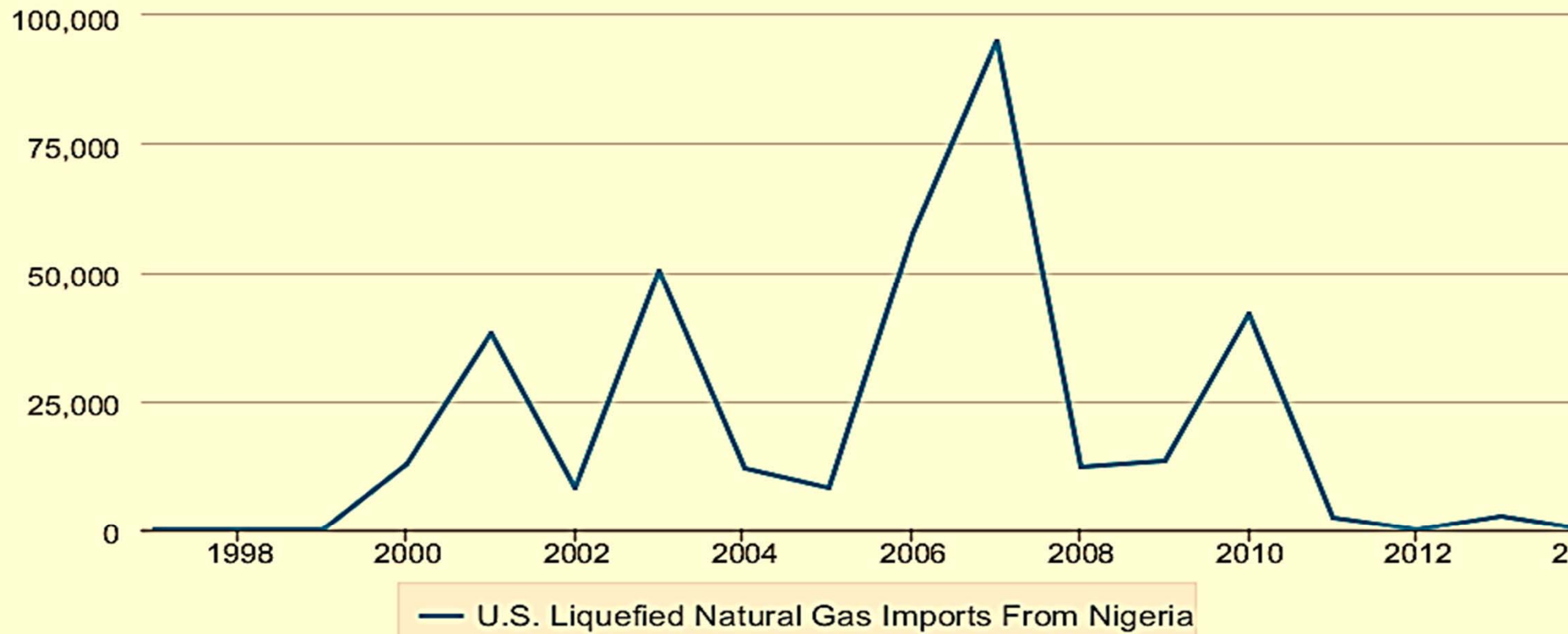
# Major global gas trade movements 2014 (billion cubic metres)

Source: BP Statistical Review of World Energy 2015



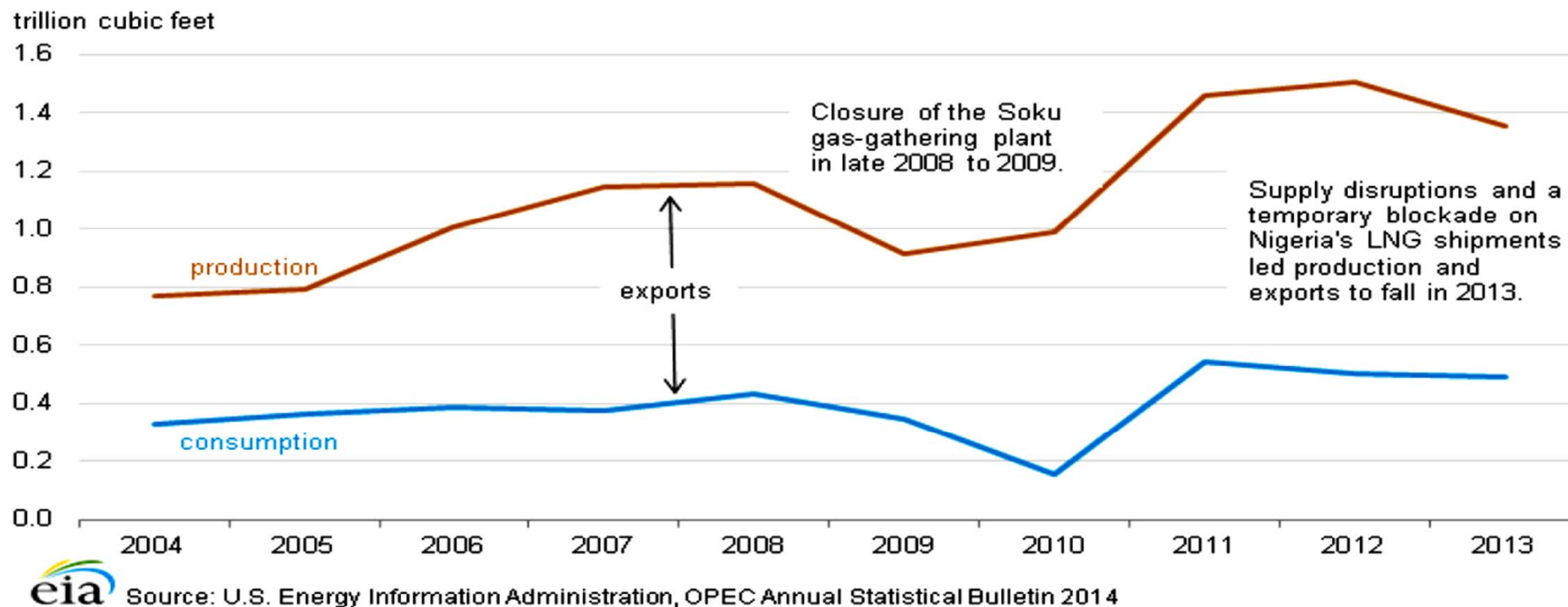
## U.S. Liquefied Natural Gas Imports From Nigeria

Million Cubic Feet



Source: U.S. Energy Information Administration

## Nigeria's dry gas production and consumption trends 2004 - 2013

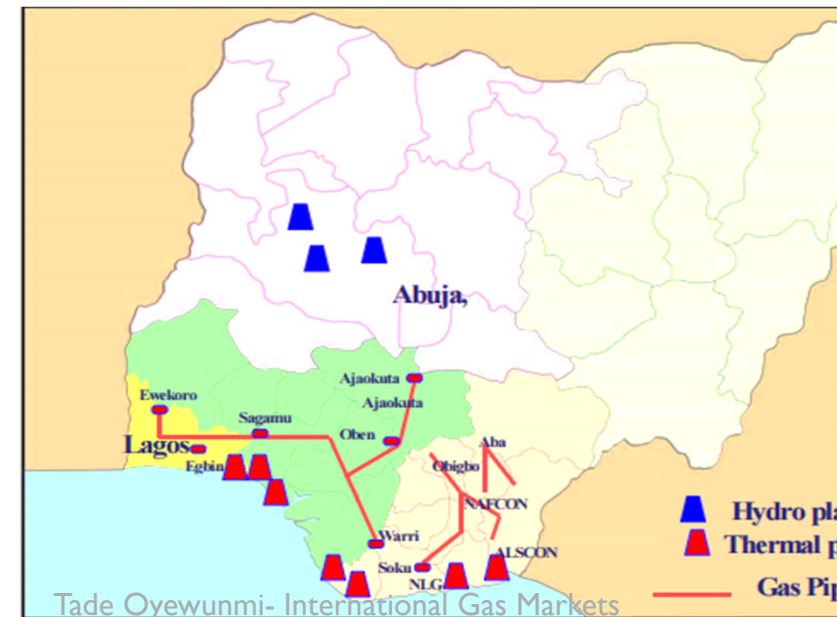
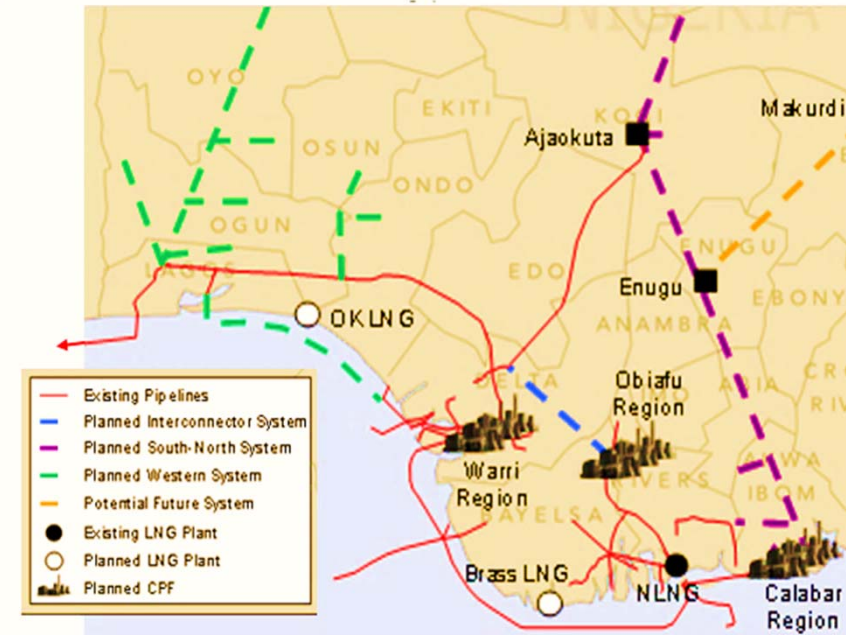


- ❖ Constrains to production and domestic utilisation
  - Inadequate processing and transportation infrastructure
  - Onshore location of most reserves
    - ✓ The Niger Delta security and socio-economic issues
    - ✓ Regulatory and legal uncertainties- the petroleum industry reforms 2004 till date

### III. GAS SUPPLY INDUSTRY AND ENERGY SECURITY IN NIGERIA- REGULATORY & POLICY ISSUES

#### Trends and Outlook

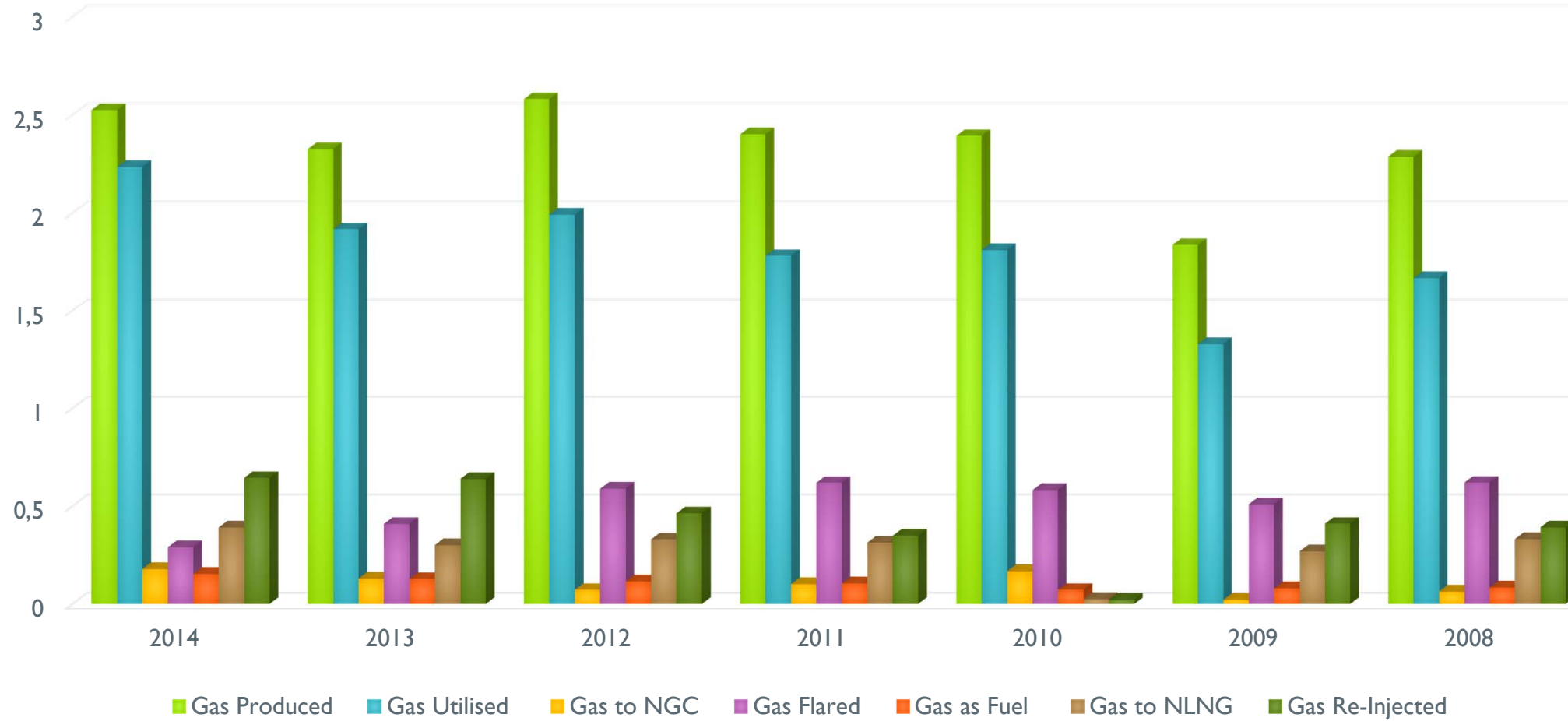
- 180 Tcf of proven gas reserves (US EIA 2015)
  - ✓ Over 20-35% of gross production is flared
  - ✓ inadequate domestic infrastructure
  - ✓ Incoherent policy and regulatory framework
  - ✓ International security of demand vs domestic security of supply dilemma
  
- Nigerian National Petroleum Corporation (NNPC)
  - ❖ Nigerian Gas Company (NGC)
    - ✓ NNPC gas transmission, distribution and marketing subsidiary
    - ✓ Owns 91% of existing domestic pipeline network
  
- About 75% - 80% of power generation assets require reliable and secured gas supply
  - ✓ load shedding, blackouts, private petrol and diesel generators
  - ✓ NEPA corporatisation, unbundling and privatisation 2001 – 2013 – EPSR Act 2005
  - ✓ The Nigerian Electricity Regulatory Commission (NERC)





### Nigerian 7-year Gas Production and Utilization Outlook from 2008 - 2014 (mscf)

Source: 2014 NNPC Annual Statistical Bulletin, last modified 01/01/2016: Gas utilized includes gas to Eleme Petrochemicals, gas re-injected, gas for LNG, LPG/NGL for Eleme Petrochemical, sold to 3rd parties and gas to power.



## Regulatory approaches- Nige gas supply to power marke

### Power- NEPP 2001, EPSR Act 2005

The NERC?- electricity market regulation; a fair and reasonable pricing framework that incentivises efficiency

**The MYTO- an inventive based/cost and price-cap tariff setting approach, 15-year tariff path, annual minor reviews, major reviews every 5 years**

### Gas supply Institutions and Administration

- ⑩ Minister of Petroleum/Ministry of Petroleum Resources
- ⑩ Department of Petroleum Resources (DPR) or Department of Gas or Aggregator???
- ⑩ NNPC (majority participating interests in upstream JVs)
- ⑩ NGC (transmission and marketing)

### Regulatory framework (Gas)

- ⑩ The Petroleum Act, 1969
- ⑩ The Petroleum (Drilling and Production) Regulations 1969
- ⑩ Oil pipelines Act 1956/Oil Pipelines Regulations 1995
- ⑩ **National Oil and Gas Policy, 2004**
- ⑩ **Nigerian Gas Master Plan, 2008**
- ⑩ **National Domestic Gas Supply and Pricing Policy 2008**
- ⑩ **National Domestic Gas Supply and Pricing Regulations 2008**
- ⑩ The Petroleum Industry Bill, 2008 – 2012/Petroleum Industry Governance Bill 2016???

### Regulatory issues in gas su

- ⑩ NNPC Upstream funding dil
- ⑩ **Export vs domestic supply trade-offs**
- ⑩ Transitional cost-based regul pricing for gas
- ⑩ A 2008 15% rate of return f supplier
- ⑩ NERC or Minister - **market monitoring role**
- ⑩ Gas-to-power price cross-subsidization for non-power consumers
- ⑩ **Who is the regulator?**

## ■ Upstream contractual framework, regulation, operations and investment issues

### NNPC/IOC JVs and JOAs

- NNPC (55%), Shell (30%), Elf (10%) and Agip (5%)
- NNPC (60%) and Chevron (40%)
- NNPC (60%) and Mobil (40%)
- NNPC (60%) Agip (20%) and Oando (20%)
- NNPC (60%) and Elf (40%) etc.



### Other upstream arrangements

- PSCs e.g. NNPC/Mobil PSC

Marginal Field Concessions/  
Sole Risk Concessions

Other JVs between NNPC and indigenous E&P Companies include:

- NNPC/NPDC (55%) and SEPLAT (45%)
- NNPC/NPDC (55%) and Neconde (45%)



NNPC's JV participating interests funding challenges

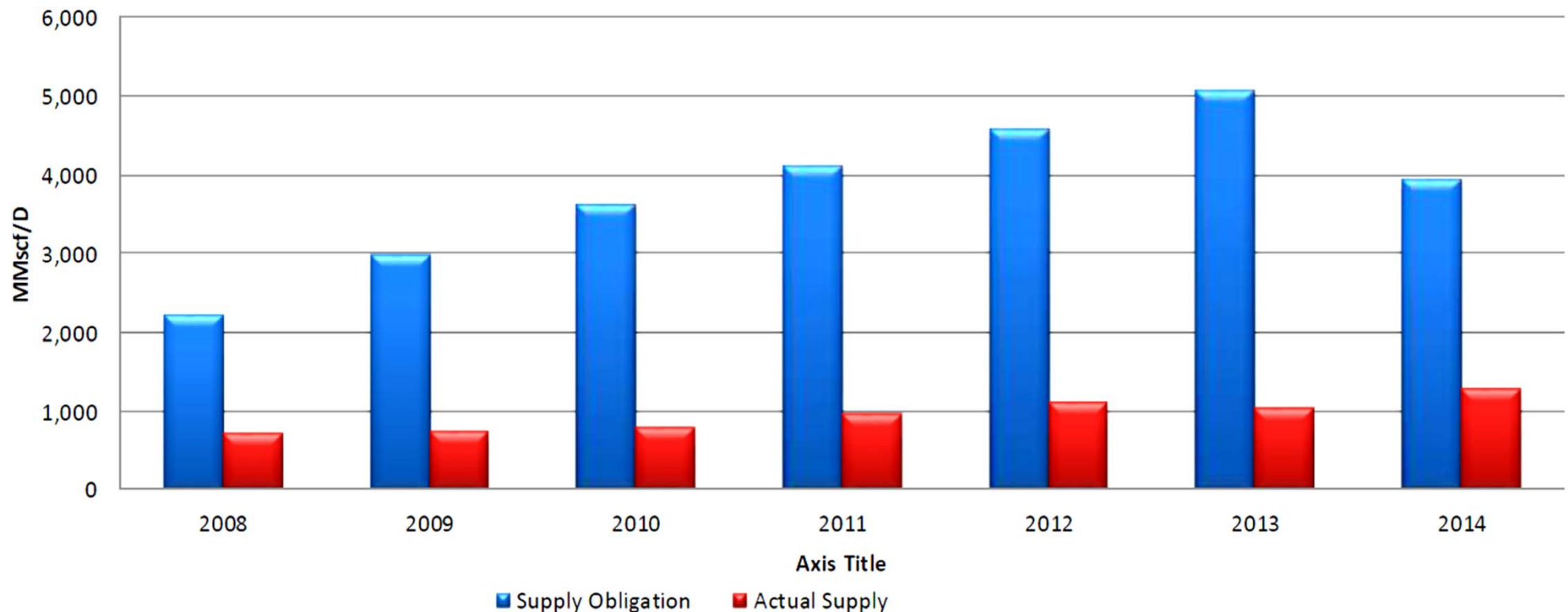
1993 PSCs may be renegotiated and revised  
Ineffective anti-gas flaring regulation

Opportunism and rent-seeking

Proposed regulatory and fiscal reforms + uncertainties

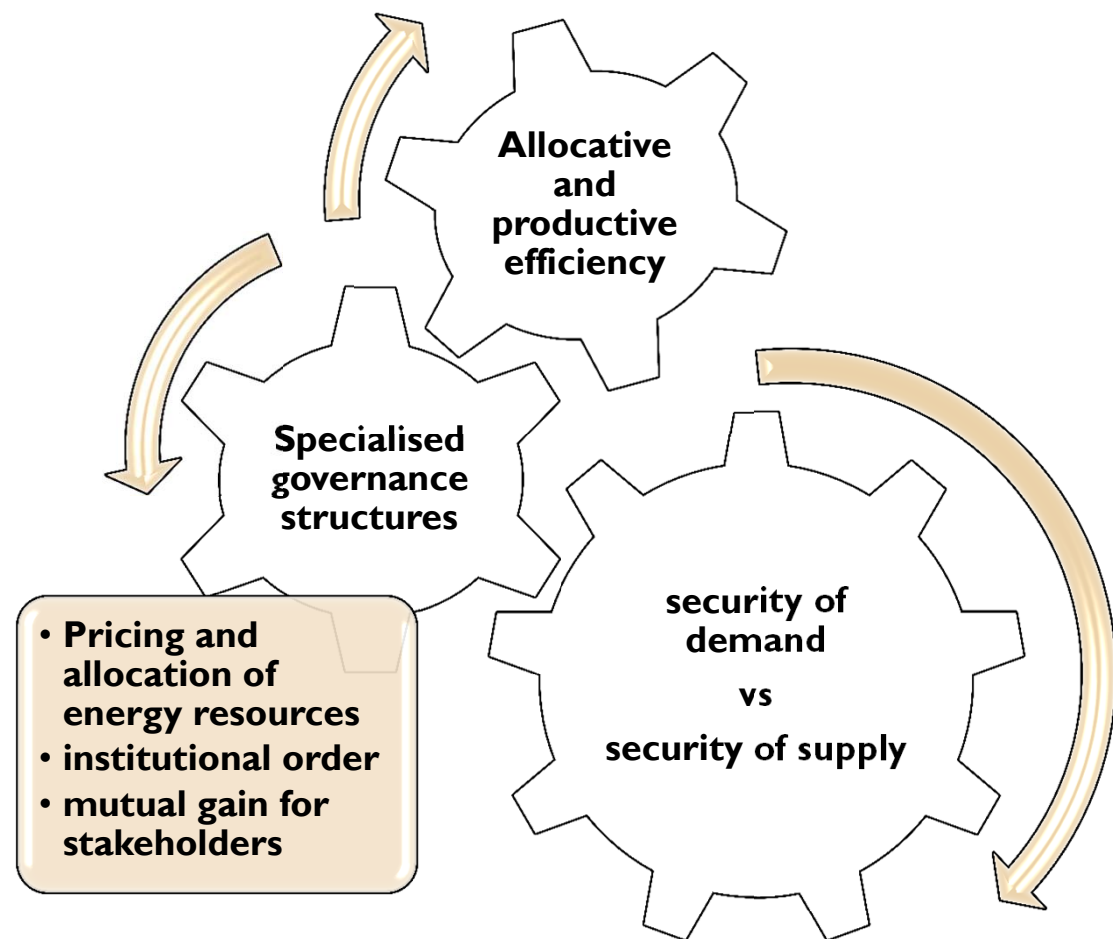
## Industry Compliance with Domestic Gas supply Obligation 2008-2014

Source: DPR 2014 National Oil and Gas Report



- National Domestic Gas Supply Obligation (DGSO)
  - An annual 20% - 35% average compliance
    - ✓ Inadequate commitment of Gas Producers - *take or pay or deliver or pay contract clauses???*
    - ✓ **DGSO at the \$1.50 or \$2.50 domestic price vs LNG netback parity price of \$4 - \$6 per MMBTU**
    - ✓ Preference for export market - inadequate pipeline infrastructure

# Evaluating Nigerian gas to power regulation and energy security



## Highlighted Issues:

- Gas to power market disequilibrium – *pricing, resource allocation and risk management*
- Inefficient pricing and resource allocation
- An ‘oversupplied’ global market
- Emerging export demand centres e.g. Ghana, Ivory Coast
- World bank intervention – PRG, MIGA
- Government sovereign guarantees?
- Transitional Electricity Market (TEM) Order, January 2015
  - ✓ Enforceability of Contracts, regulatory market rules
  - ✓ NGC and GACN as contracting parties
  - ✓ Creditworthiness of purchasers and debtors
  - ✓ take or pay vs deliver or pay provisions
  - ✓ ‘Reasonable Endeavours’ clauses

## IV. CONCLUSION

- The international gas market trends remain dynamic
- Efficient investments in essential infrastructure is crucial
- External (international) security of demand vs internal security of supply dilemma – crucial trade-offs, opportunities and risks
  - ✓ How much of Nigerian gas will be traded globally in the mid to long-term? and
  - ✓ How much of Nigeria's gas can operator's afford to supply to the domestic market?
  - ✓ Can Nigerian's afford gas supplied at locally regulated or unregulated (fully-liberalised) market prices?





**THANK YOU FOR LISTENING!**

**ANY QUESTIONS....**