



# Opportunities for Regional and Domestic use of Associated Gas in Nigeria

OPEC/World Bank Workshop on Global Gas Flaring Reduction

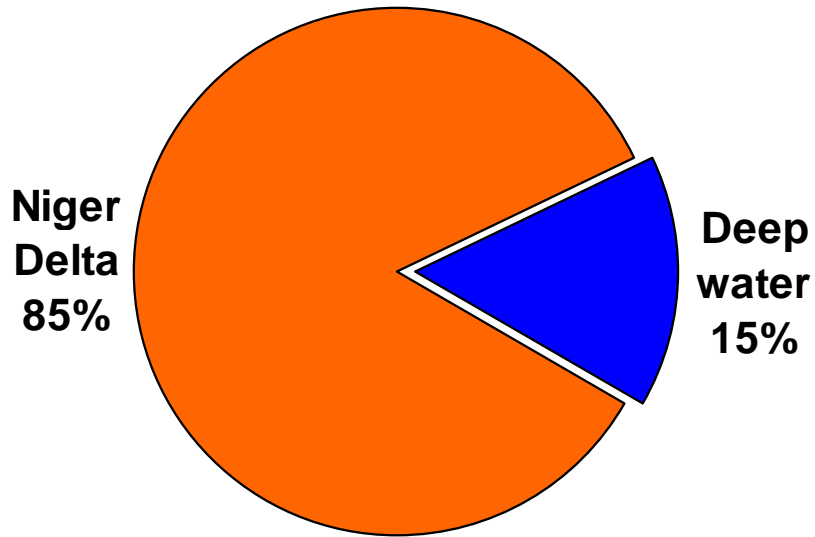
Vienna Austria - July 1, 2005



# Nigeria Oil and Gas Reserves

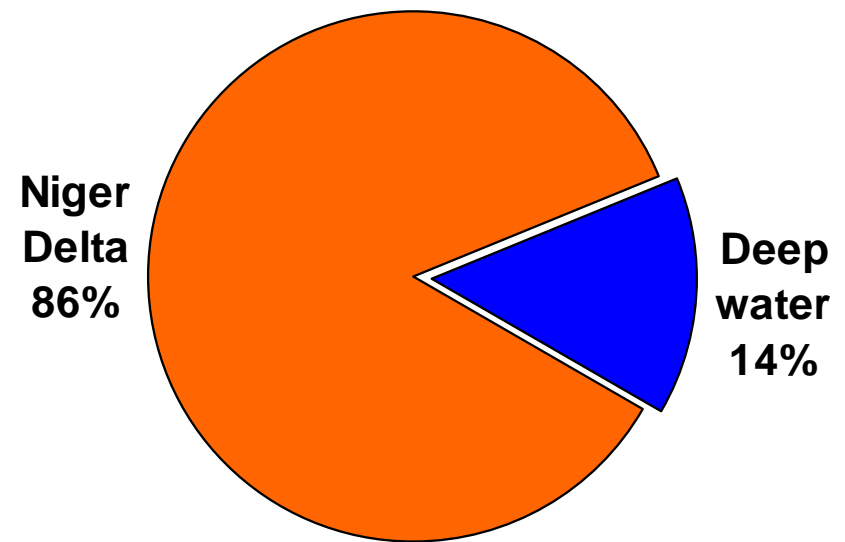
## Oil Reserves

Total - 35 billion bbls



## Gas Reserves

Total - 187Tcf



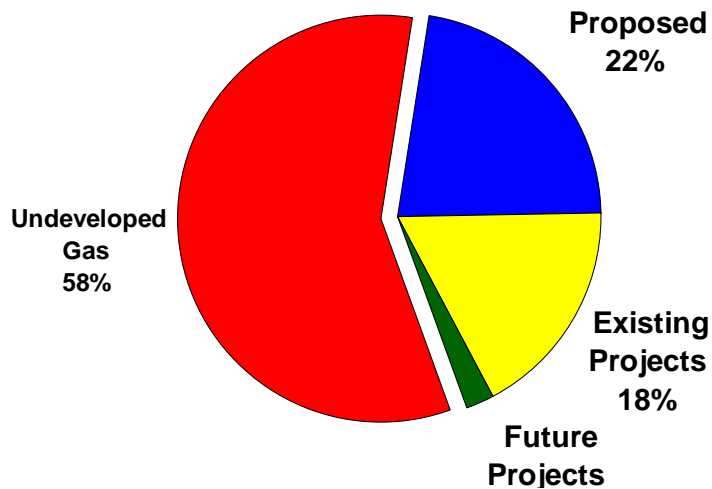
@ Dec. 2004



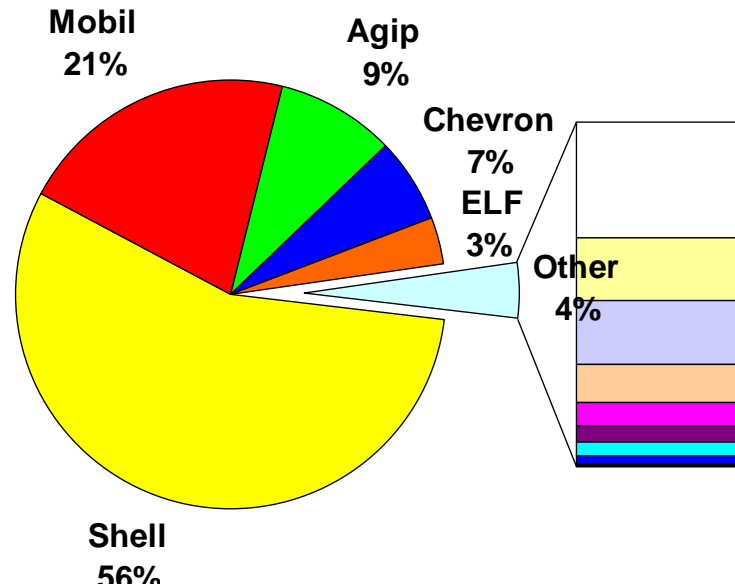
# Gas Reserves

## TOTAL RESERVES 187 TCF

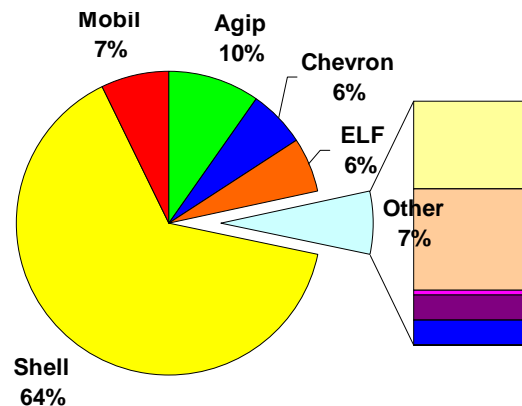
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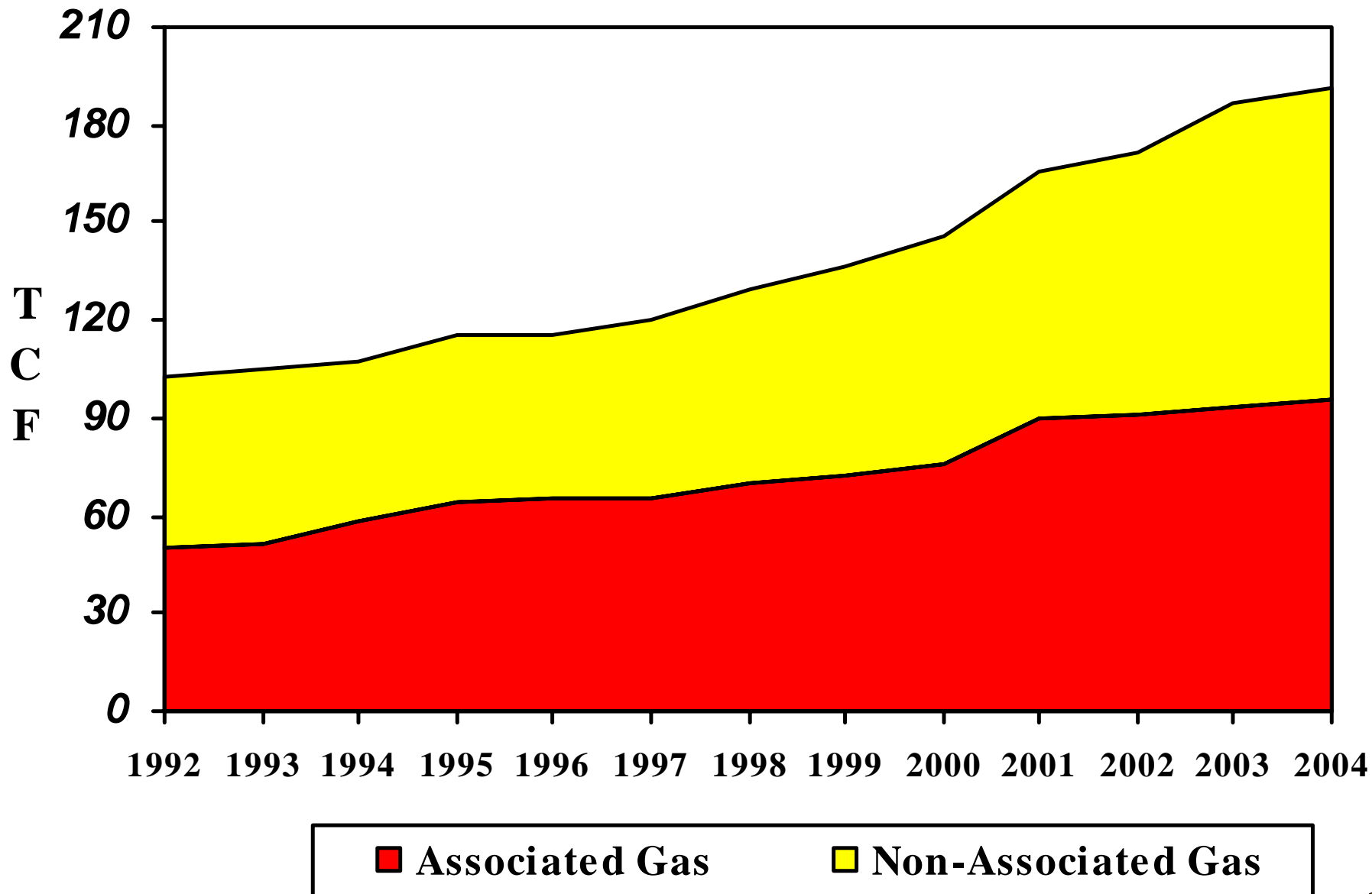
## Associated Gas Reserves By Company



## Non - Associated Gas Reserves By Company

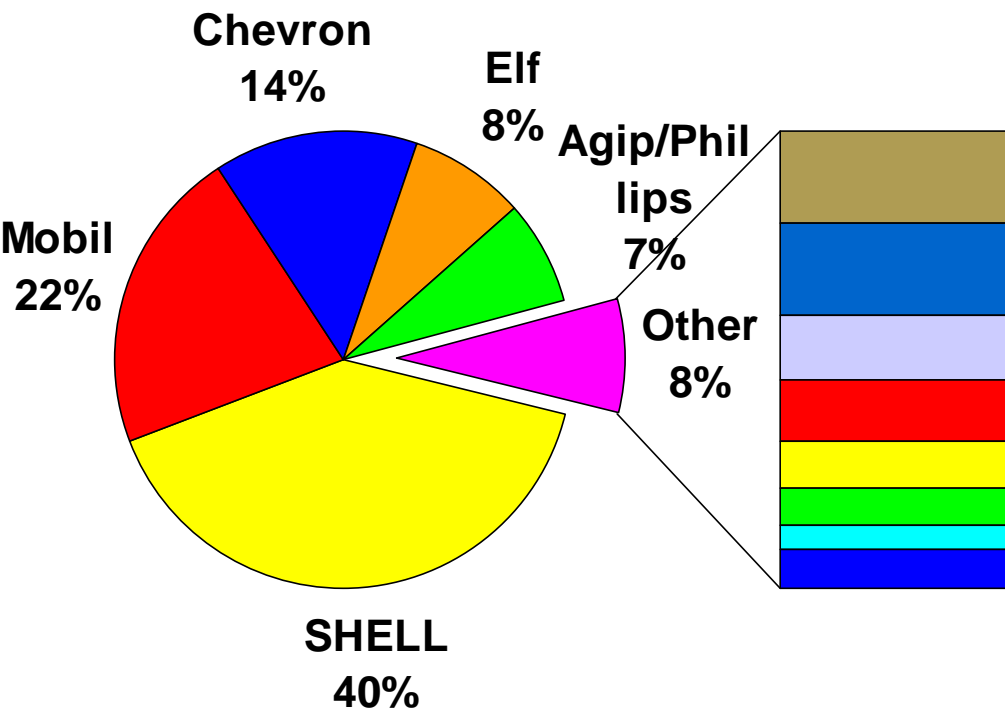


# Natural Gas Reserves

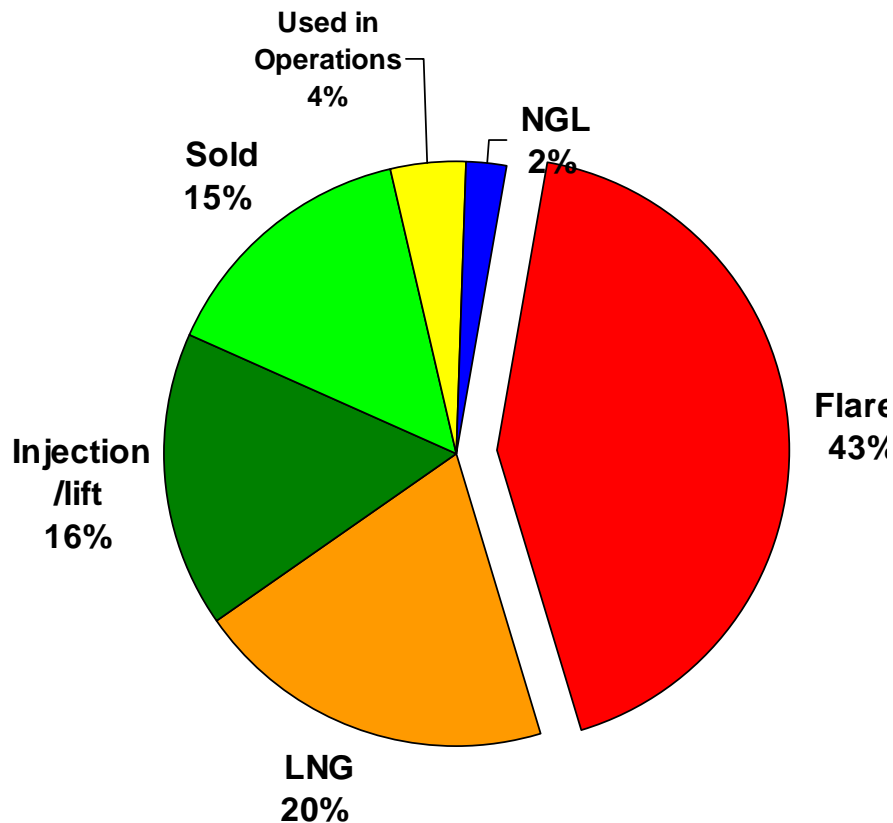


# Average Crude Oil Production 2004

Avg. Prod. 2.5 million bopd



Avg. Production 5.7mmscfd



# Nigerian Oil Industry - National Goals

- 2003 -2007 National Objectives
  - 36 Billion Bbls Reserves and 4 million b/d production
  - Maximizing sector value and fair share for Nigeria
  - Improving Nigerian capacity and content
- Year 2010 Aspiration
  - 40 billion bbls reserves and 4.5 million b/d production
  - Zero flaring by 2008
  
- Current Reserve                      33.5 Billion as @ Dec. 2004
- Current production                2.5mbd
- Production Capability    3 mbd



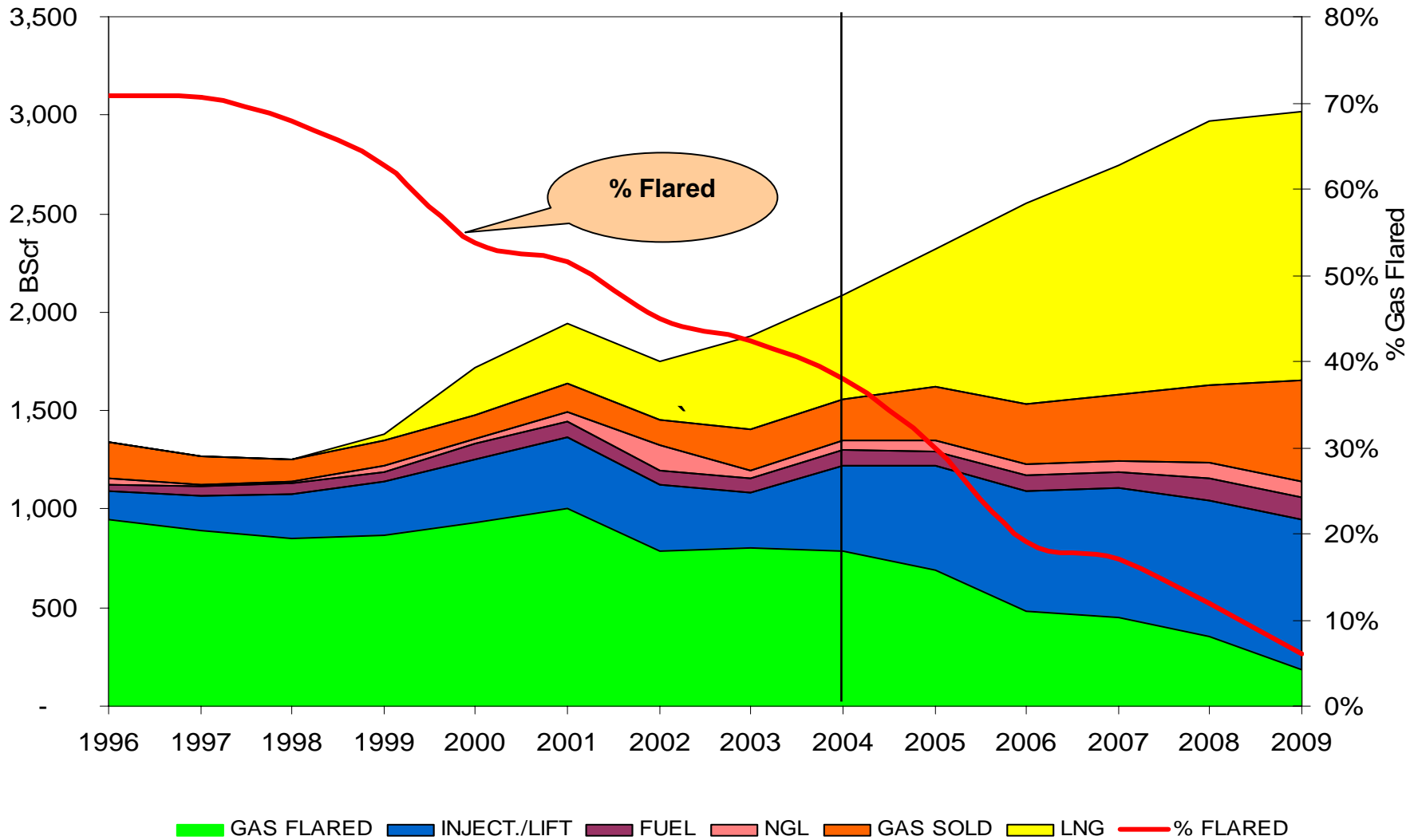
# National Natural Gas Goals

- Eliminating gas flaring and addressing the attendant environmental issues
- facilitating development of the domestic power sector
- Develop domestic market
- Increasing private sector participation
- Capturing economic value of gas thereby generating as much revenue from gas (as oil) within the decade



# Gas Flaring Reduction

Gas Produced: Utilised and Flared



**Gas flare ratio reduced by 25% point in 5 years from 1999**



## GAS FLARING REDUCTION

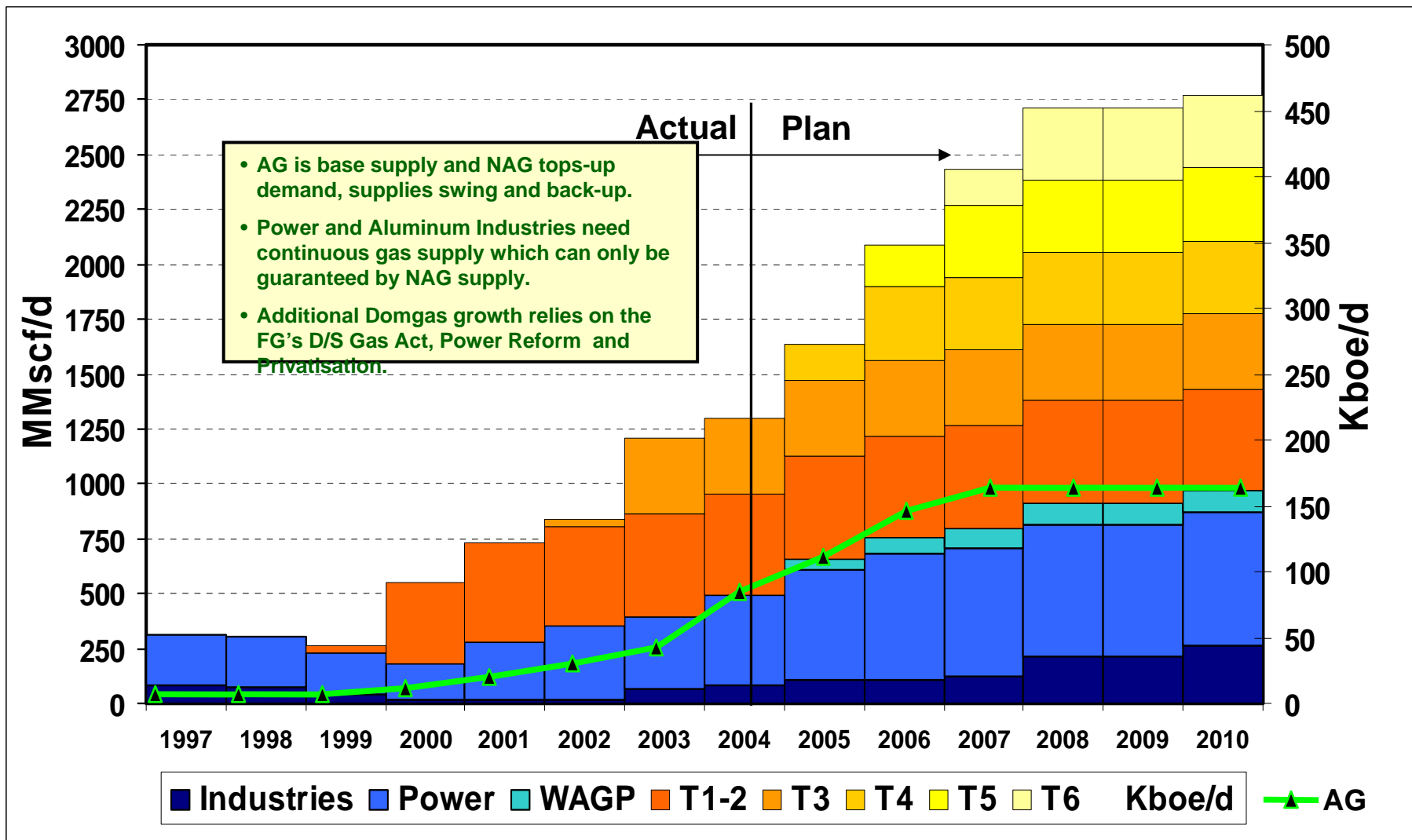
- Petroleum Act of 1962
- Pet. (Drilling and Production) Regulation, Decree No. 51 Of 1969
- Petroleum Amendment Decree of 1973
- Associated Gas Re-injection Decree 99 of 1979
- Ass. Gas Re-injection Amend. Decree 7 of 1985
- Associated Gas Framework Agreement (1991/1992)



- LNG
- Gas Injection Project
- Gas As Feedstock To Fertilizer Plants
- GTL
- Gas As Feed To Power Plants
- LPG
- Export Through Trans National Pipelines



# Gas Supply Domestic and Export



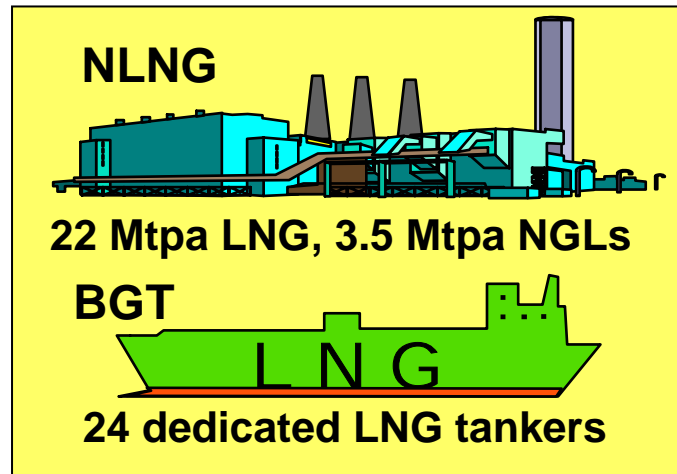
# Nigeria LNG Limited

## Highlights

- T12 FID 11/95
- T3 FID 2/98
- T12 started 10/99
- T45 FID 03/02
- T3 started 12/02
- T6 FID 07/04
- T45 RFSU 2005
- T6 RFSU 2008
- 14 ships owned for T12345
- 10 ships chartered for T456
- ~\$1.5 bn 3<sup>rd</sup> Party financed
- USD 569million dividend
- Over 500 cargoes delivered
- 10million man hours without LTI achieved in T4/5 construction twice in 2004

## Total Investment - \$11.4 bn

(\$bn)	T1&2	T3	T4&5	T6
Plant	3.3	1.4	2.1	1.7
Ships	0.3	0.4	1.4	0.8

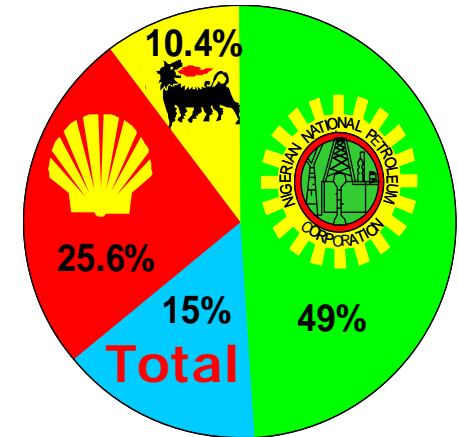


## LNG Customers – Europe/USA

T123 (9Mtpa) : Gas Natural, Transgas, ENEL, GdF, Botas

T45 (8 Mtpa): Transgas, Iberdrola, ENI, Endesa, Shell, BG, Total

T6 (4 Mtpa): Shell & Total

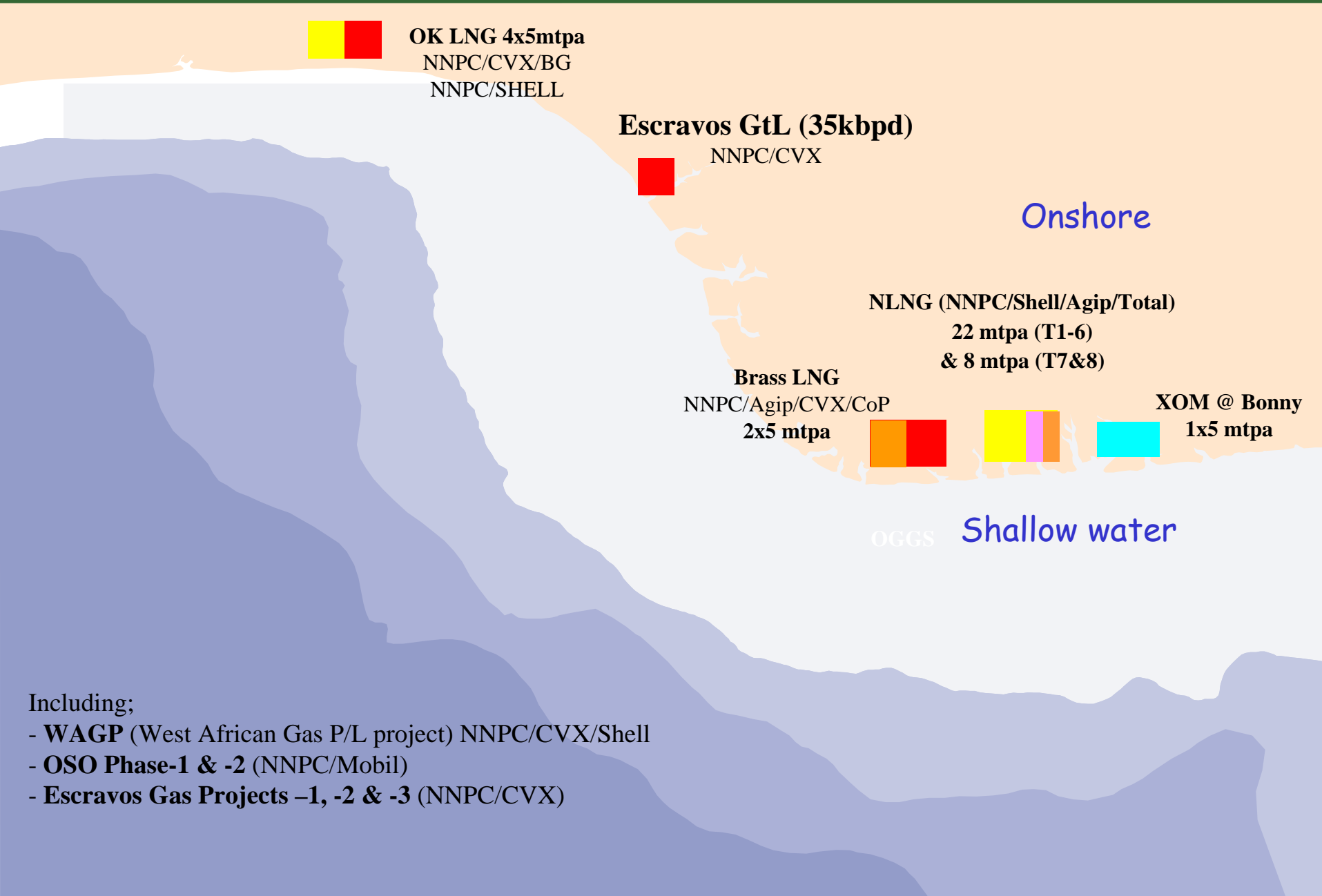


## Gas Supply – 3.5 Bcf/d

Gas Supply	%	MMscf/d
SPDC	56%	1,945
EPNL	20%	686
NAOC	24%	857



# Major Integrated Gas Export Projects

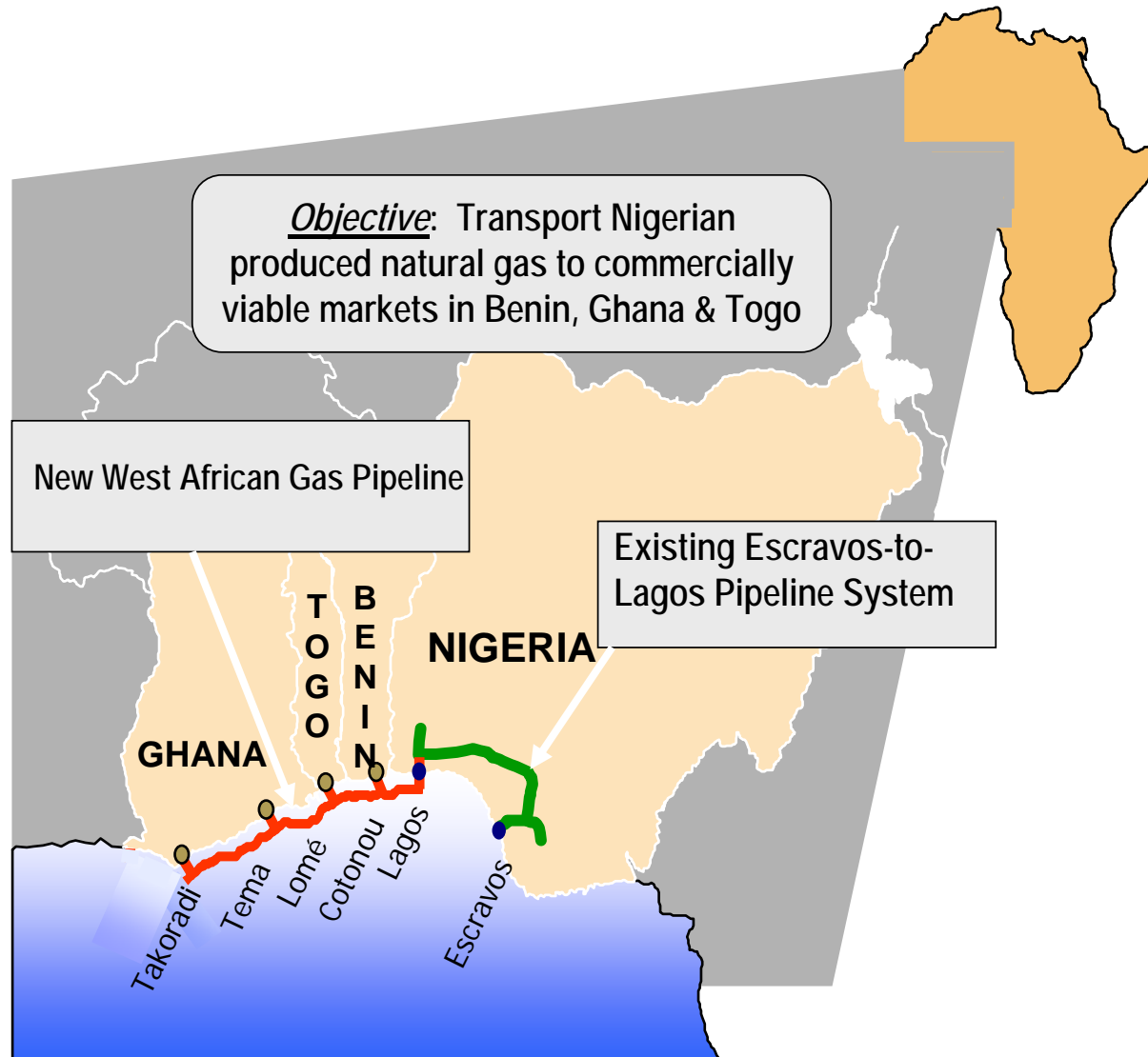


Including;

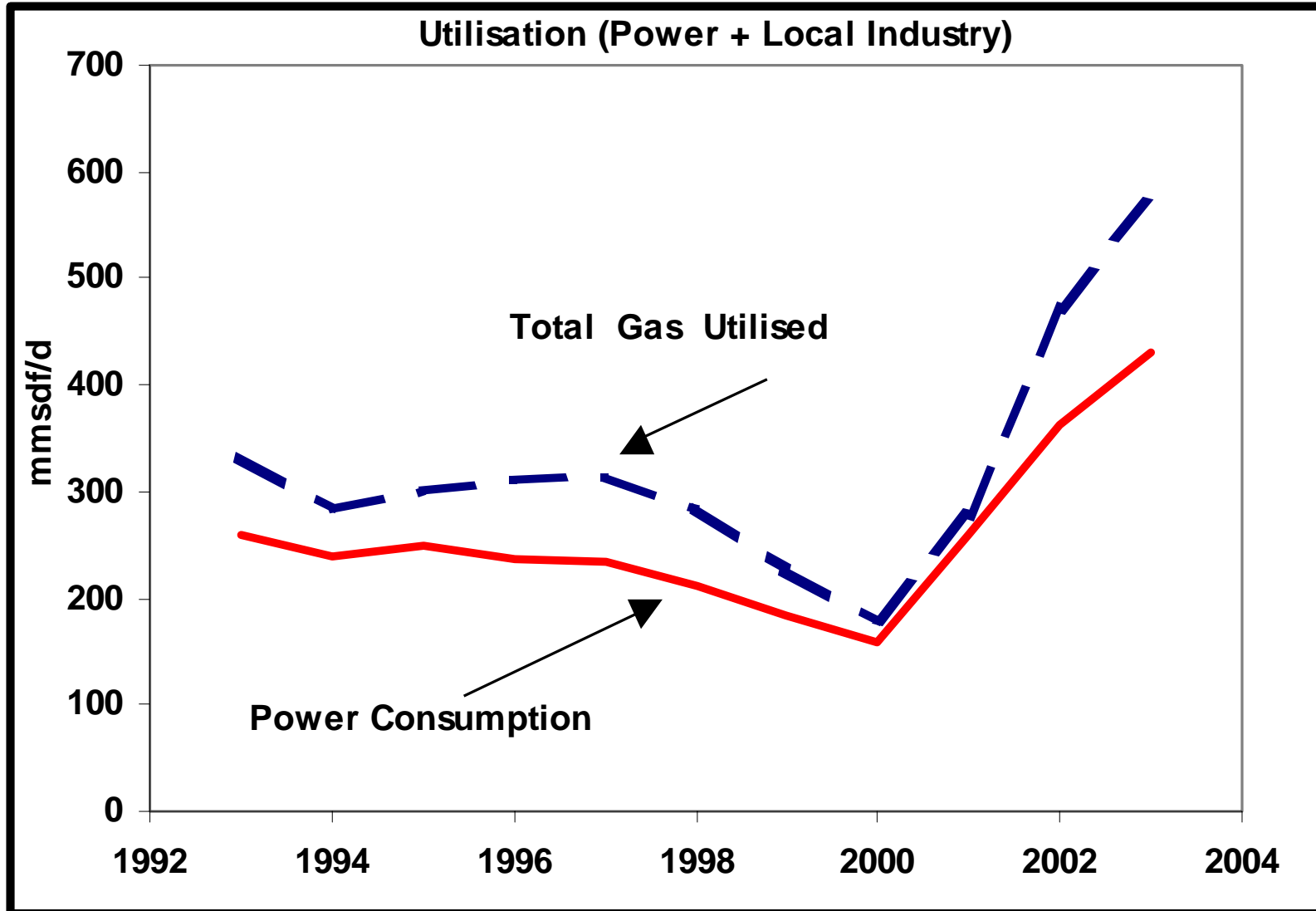
- **WAGP** (West African Gas P/L project) NNPC/CVX/Shell
- **OSO Phase-1 & -2** (NNPC/Mobil)
- **Escravos Gas Projects -1, -2 & -3** (NNPC/CVX)

# OPPORTUNITIES FOR MONETIZING GAS

- West African Gas Pipeline Project
  - To transport Nigerian produced natural gas to commercially viable markets in Benin, Ghana & Togo
  - \* FID for the project was taken 16<sup>th</sup> December 2004
  - \* Strategic importance to participating countries as a way of fostering sub-regional cooperation and economic development in the spirit of ECOWAS
  - \* In consonance with the philosophy of NEPAD



# Domestic Gas Utilization Historical Trend



# Future Of The Gas Industry

- **Opportunities exist for further investments in the sector as not all the discovered gas has been allocated**
- **Gas flare out target of 2008 is achievable with the implementation of the downstream gas act**
- **New PSC does not permit gas flaring**
- **Investment opportunities still exist as a sizeable level of reserves are unallocated**



# New Opportunities For Monetizing Gas

## Domestic

- **Domestic demand currently 400 MMSCFD with potential for growth in:**
  - **Power**
    - 85 Kwh/capita < 425 Kwh/capita (for developing economies)
  - **Cement**
  - **Fertilizer**
    - 6 Kg/hectare about 40% of current demand of 800,000 t/yr imported
  - **Iron and Steel**
    - Most of domestic demand currently imported



# New Opportunities For Monetizing Gas

## **Africa and Regional**

- **West African Gas Pipeline Project**
- **Trans-Saharan Gas Pipeline Project**

## **Export**

- **LPG**
- **GTL**
- **LNG:**
  - **Bonny NLNG**
  - **West Niger Delta LNG**
  - **Brass GBS LNG**
  - **Statoil Floating LNG**
  - **Shell Floating LNG**



# Concluding Remarks

- **Nigeria has abundant gas resources**
- **Current fiscal terms are very generous to encourage investment in the sector**
- **Nigeria's location vis a vis the market provides opportunity for the monetization of her abundant gas resources**
- **Domestic consumption of gas will increase, particularly in the electricity generation sector, and more when the Trans-Saharan Gas Pipeline is put in place**
- **Government and operators are making efforts to drastically reduce incidences of community disturbances and vandalisation of facilities**
- **Gas is the energy of the future and Nigeria will play a leading role in its supply**



# Thank You

