

Energy in Economic and National Development

- Some Governance Issues

by

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Petroleum Policy NOC Seminar

Timor Leste

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The Dawn of Exploration

- *The Early Years*



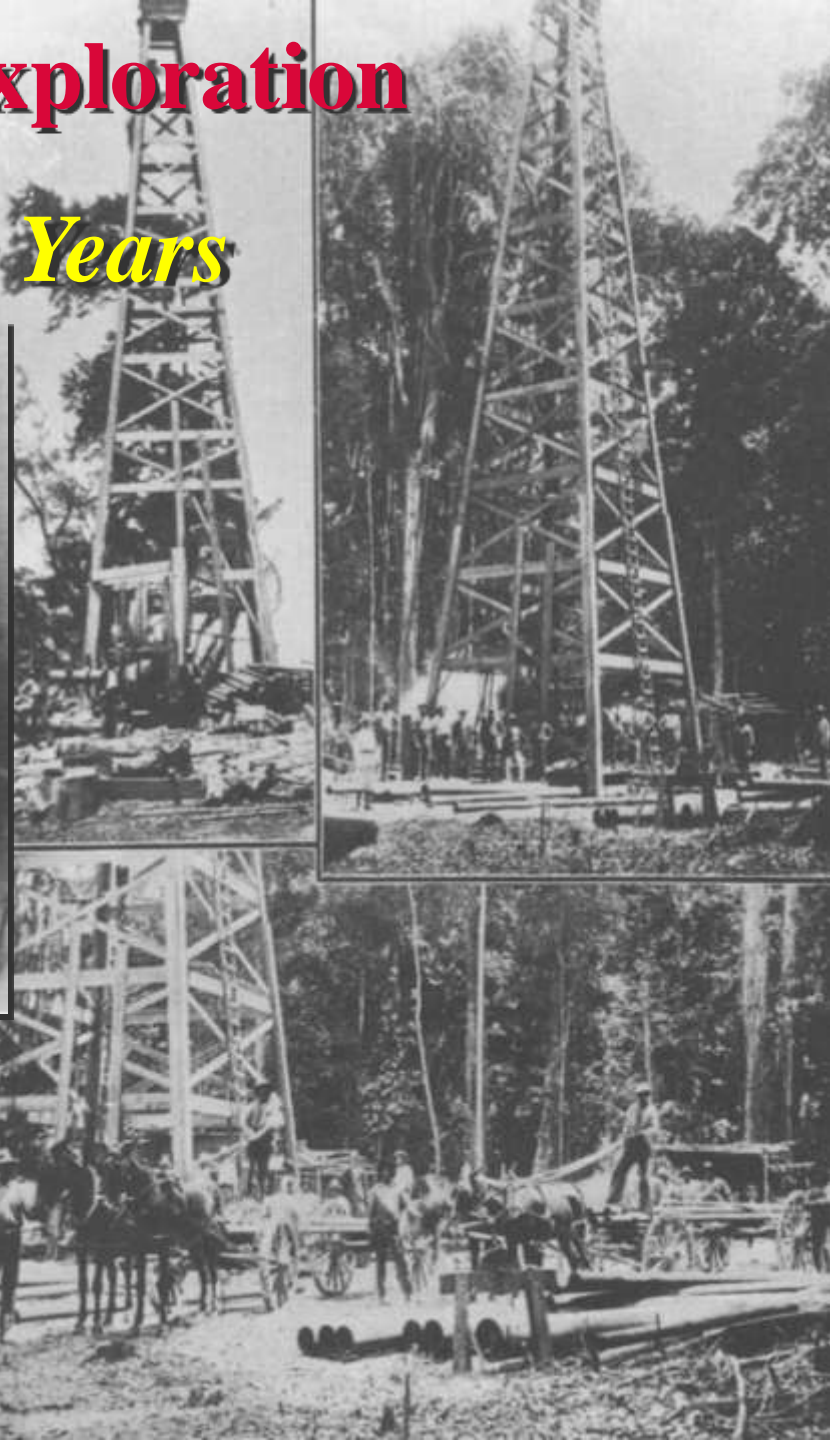
Randolph Rust



John Lee Lum

1910

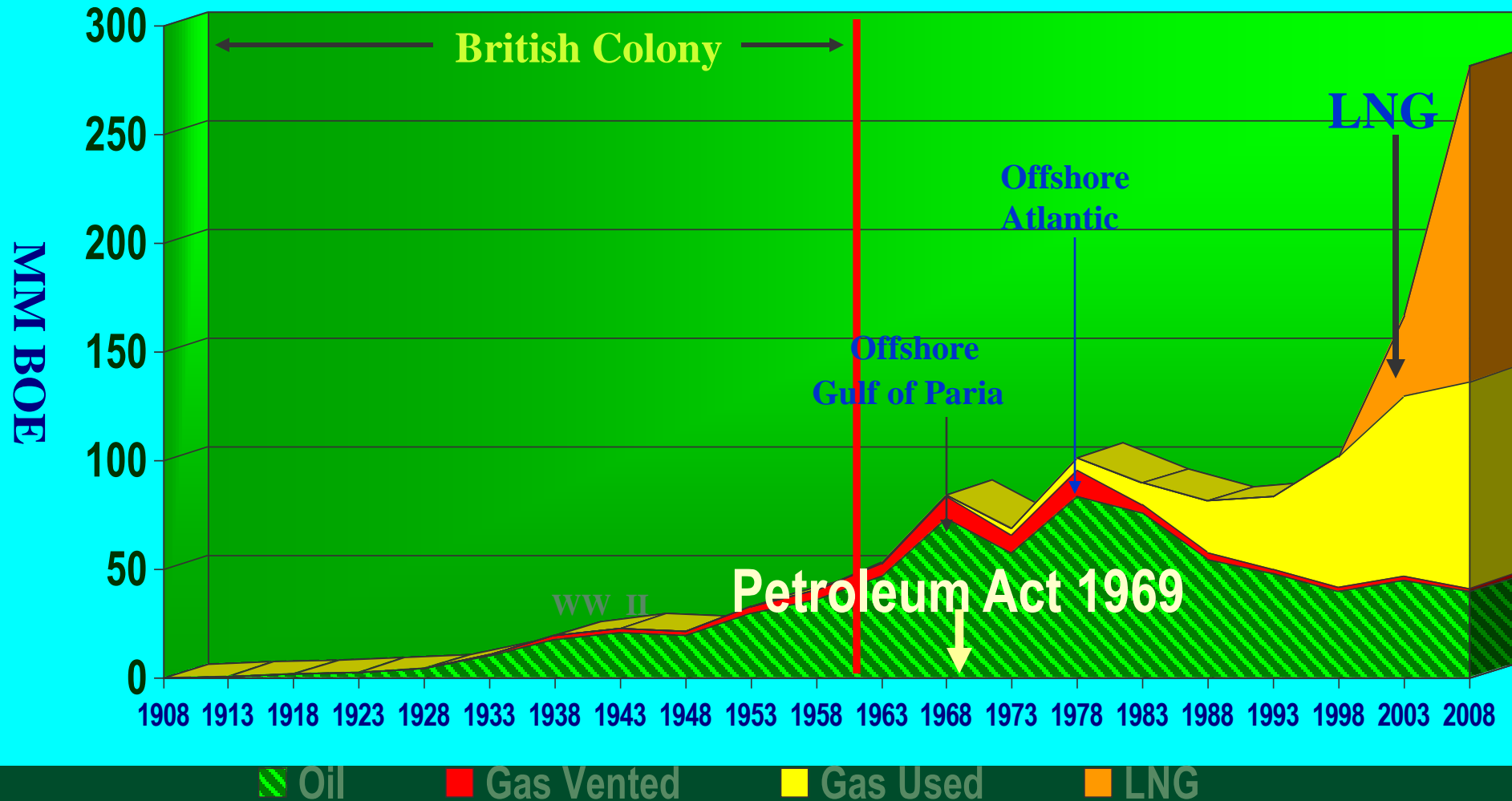
Rust Wells Guayaguayare
(1903-1904)



T & T Oil and Gas Production

1908 - 2008

Barrels of Oil Equivalent (millions)



Trinidad and Tobago G D P

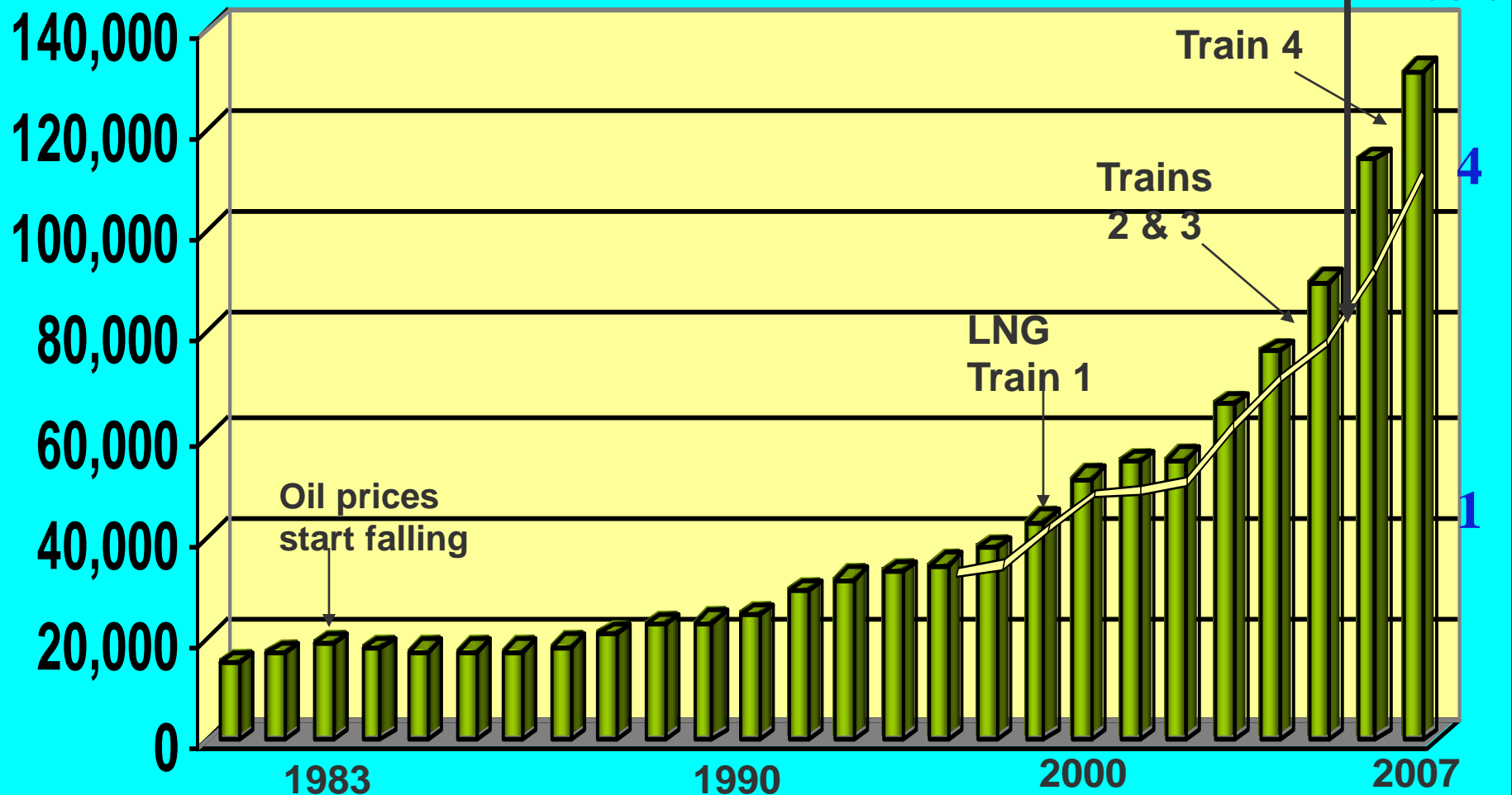
6.25 TT = 1 US \$

\$ TT Millions

1981 - 2007

Natural Gas Sales

bcfd



Source: Central Bank of Trinidad and Tobago Annual Economic Survey Various Issues, and G. McGuire.

CONCLUSIONS

- National/State Companies are critical to National development in Energy
- The use of private International Capital may be crucial in natural gas development
- The correct Legal and Regulatory Framework is another essential requirement.
- Developing technically trained nationals is a key element for developing the correct systems

How did T&T get here

50 years of increasing output &

*A 30 Year track record of initiating and innovating in
developing gas based industries*

- *Flexible Gas pricing*
- Getting the correct Fiscal Incentives and Tax regimes so that T&T continued attracting investment in Energy
- *Allocating Acreage expeditiously and encouraging enhanced Exploratory Activity*
- Working with the International Community
 - *National and International Human resources and Systems*

Independence in 1962

- ➔ **The Commission of Enquiry into Petroleum**
- ➔ **A Ministry of Petroleum and Mines**
- ➔ **The Petroleum Act and Regulations**
- ➔ **The UNDP and Acreage Evaluation**
- ➔ *Federation Chemicals turns Gas to ammonia*
- ➔ *Texaco - The STAR of the Nation*
- ➔ *The New Oil Finds off the East Coast*

The Contractual and Tax Framework

Applicable Laws

- Petroleum Act (1969) and Regulations
- Petroleum Taxes Act (1974) & Amendments
- Income Tax Act (1965) & Amendments
- Nitrogenous Industries Act (1959)
- Environmental Management Act (1995)
 - *Oil in Waters of the Colony*
- Others, e.g. *Customs, Land use, T&C Planning, Work Permits, etc*

Contract Forms

➤ Exploration and Production Licenses

- 1) *In use since 1908 and taxes paid out of profits as any other business until 1974.*
- 2) *New Petroleum Tax Legislation, & The Oil Audit Section formed in 1974*

➤ Production Sharing Contracts

Introduced in 1974 in TT for the first time, in order to reduce tax avoidance.
First gas - 1995; First Oil - 2005

• Joint Ventures

Licenses vs P. S. C's

Administration

- Licenses require less oversight
Transfer price, Tax avoidance and Cost manipulation are likely
- Production Sharing Contracts require much greater supervision and technical knowhow and capacity.
- Joint Ventures spread risk, facilitate audits but can be costly

Participation

Managing Risk

Exploration vs Development

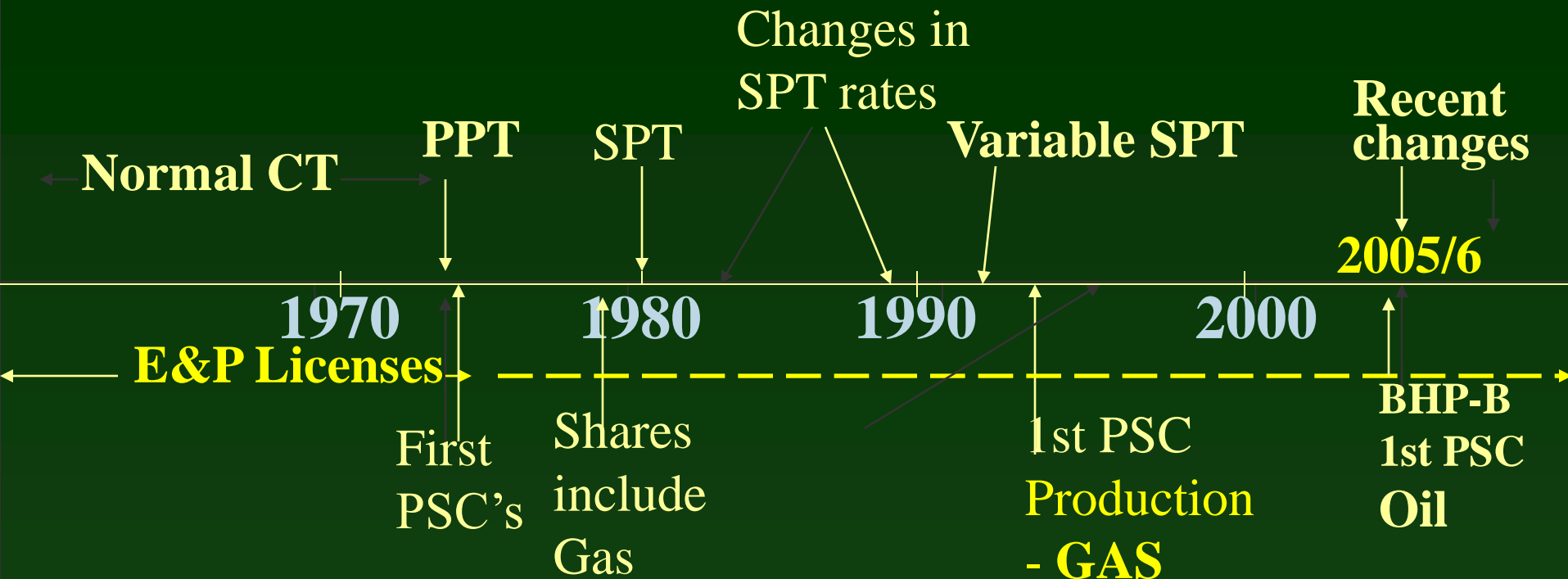
- Carried and Non-Carried Interests
- Peruvian vs Indonesian PSC's

Taking Charge of Petroleum in TT



Tracking the Changes

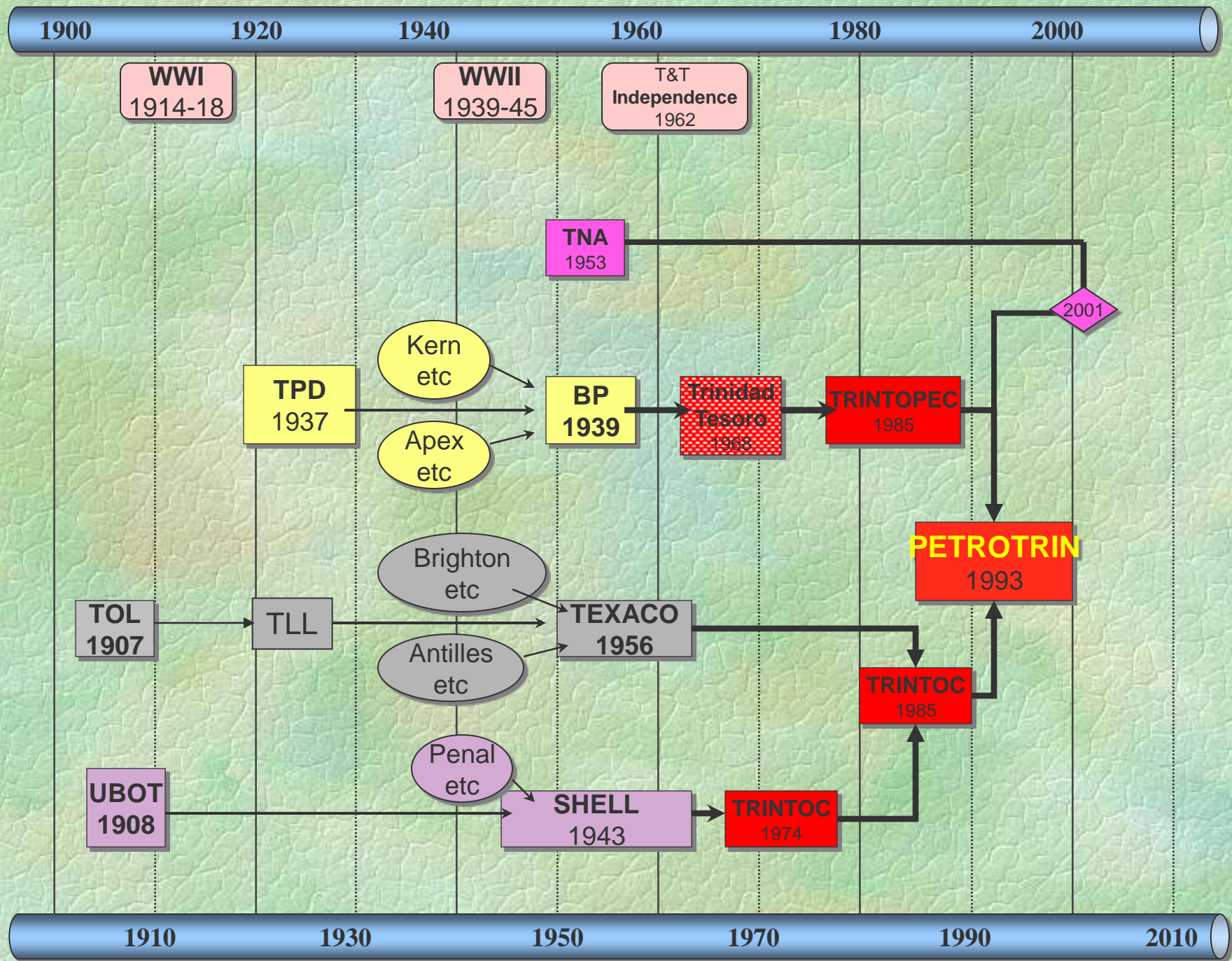
CHANGES in TAX LAWS



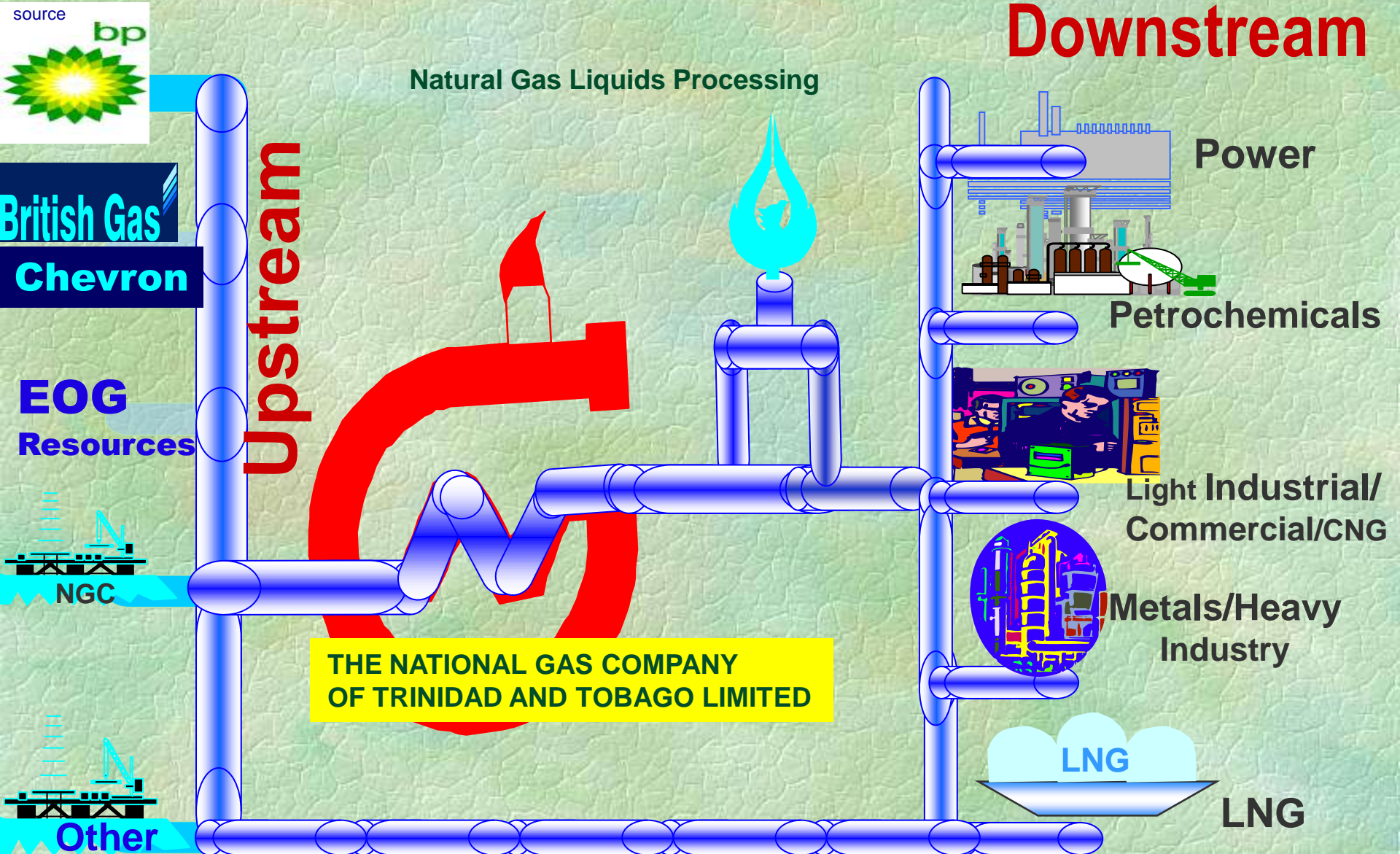
CONTRACT EVOLUTION

The Key State Enterprises

- **Trinidad – Tesoro - 1968**
- The creation of **Trintoc – 1974**
- The **National Gas Company -1975**
- The **National Energy Corporation -1976**
- **Petrotrin – the National Oil Company – 1993**
- **National Petroleum Marketing Company**
- **T & T Electricity Commission , etc.**



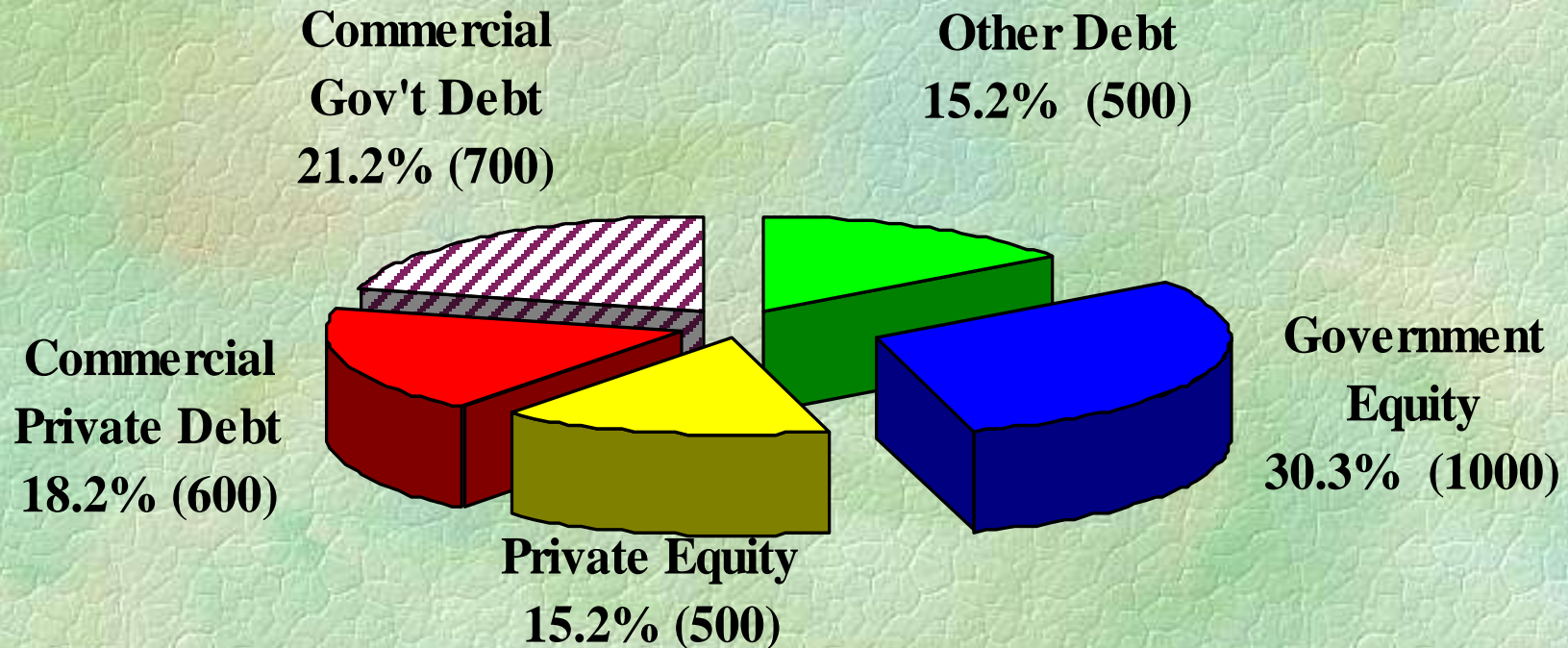
The National Gas Company



Capital Expenditure on Energy

1975-1985

US \$ 3.3 BILLION



Point Lisas

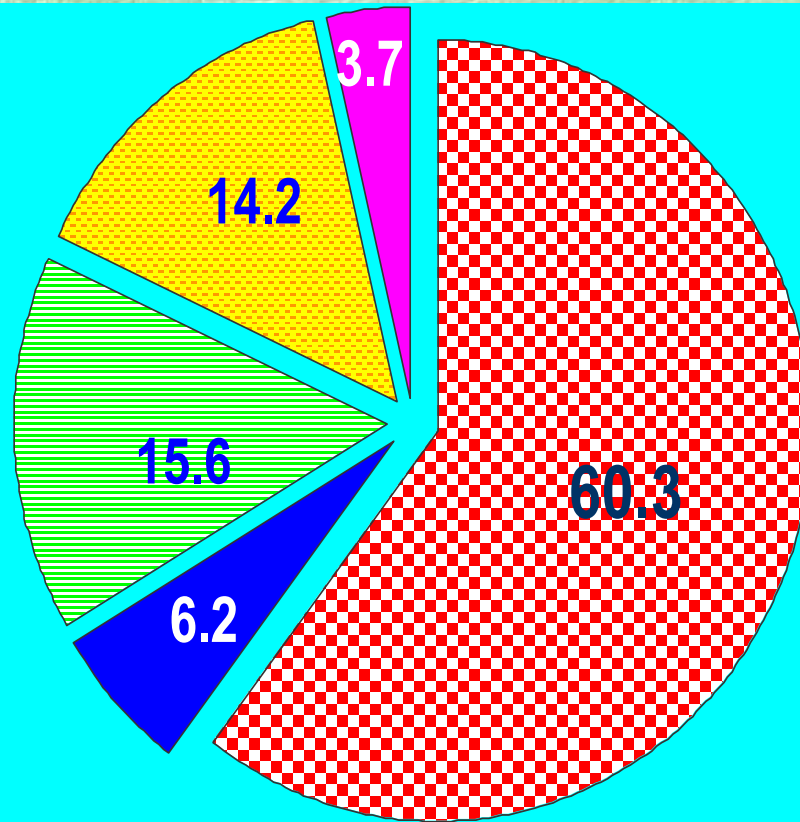


T&T - Existing Gas Based Plants

- 1 Natural Gas Liquids Processing Facility
- 4 LNG Trains (2300 MMscfd)
- 9 Ammonia Plants (4,485 MTPA)
- 1 Urea Plant (550 MTPA)
- 6 Methanol Plants (3,560 MTPA)
- 4 Iron and Steel Mills (2,560 MTPA)
- 4 Power Generation Plants - *Powergen (3) & Inncogen*
- 1 Offshore Platform Fabrication Yard
- Other
 - Refinery -175 MBOPD
 - Cement Manufacture
 - Light Industrial/Commercial Consumers - 105
 - 2 Gas Fired Air Cooling Projects
 - 4000 CNG powered vehicles

% Natural Gas Usage by Sector *

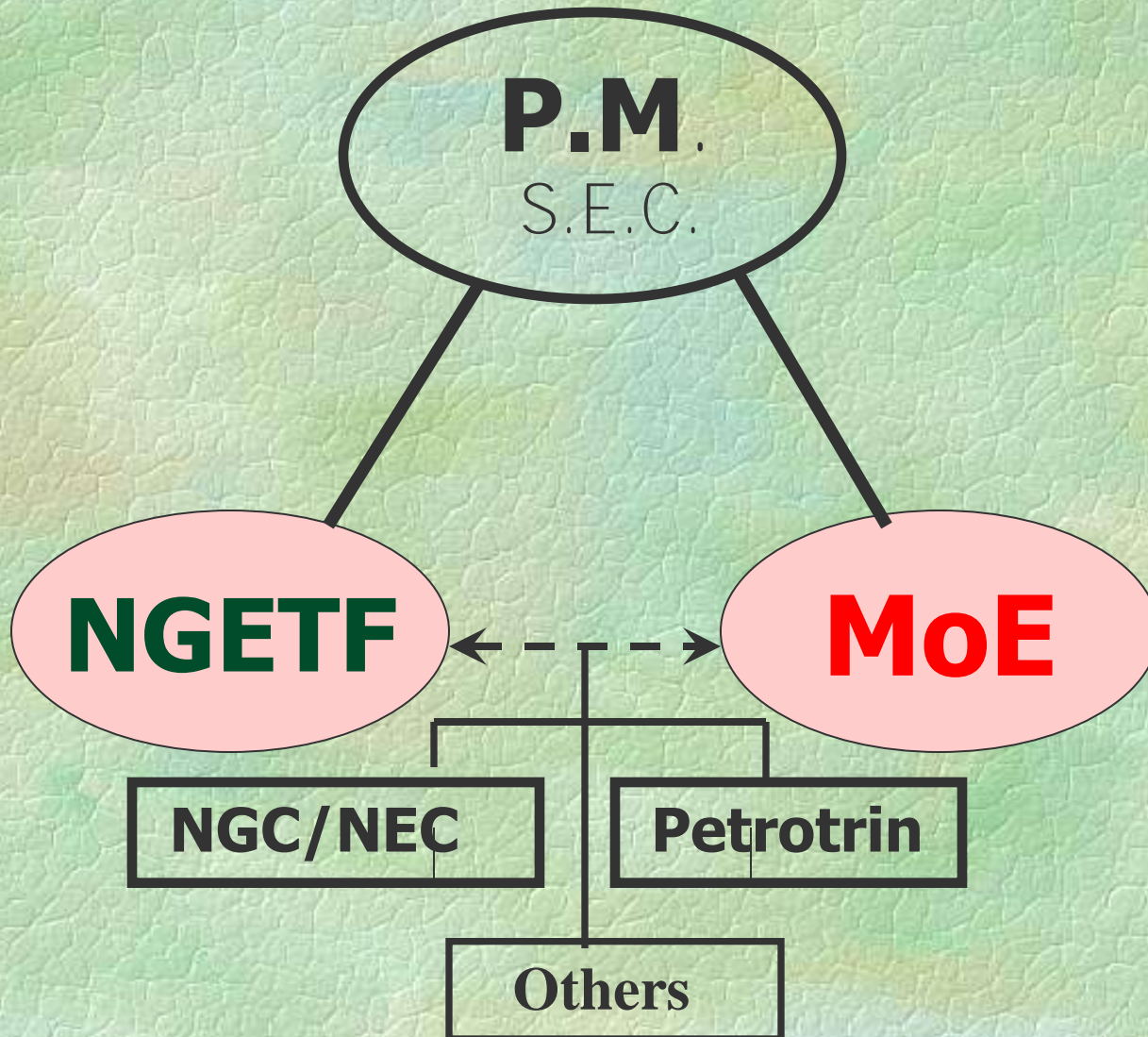
2008 (4.1bcfd)



■ LNG ■ Power ■ Ammonia ■ Methanol ■ Other

* *Estimated*

THE KEY DECISION NODES



The Role of the Ministry of Energy

- **Regulation of Industry**

Drilling and Other Activity, Prices, Royalties, Policy etc.

- **Oversight of International Companies**

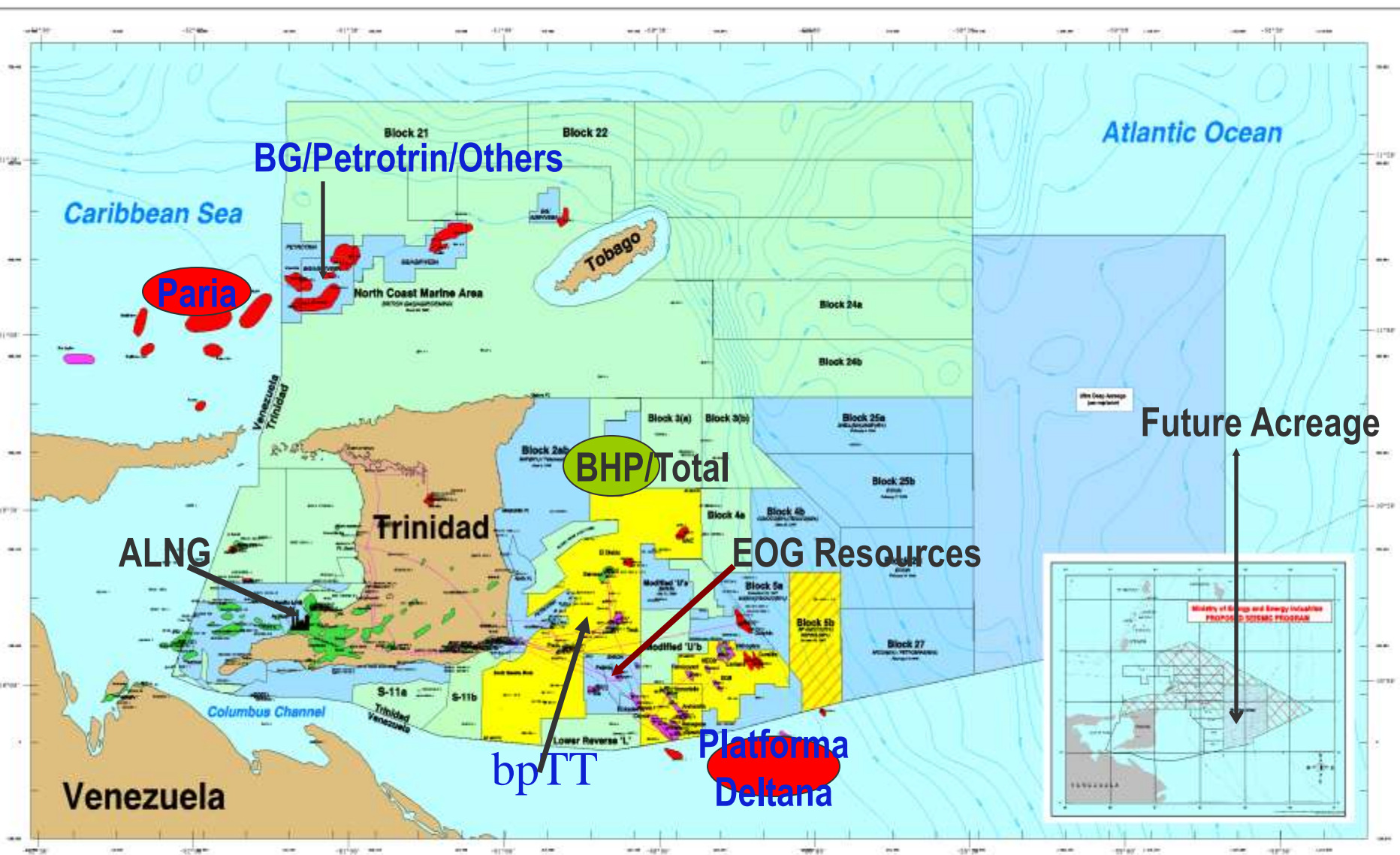
- **Allocating Acreage**

- **Oversight** of the Energy State Enterprises

- **Advising the Ministry of Finance**

STATE ENTERPRISES

- **The COMPANIES Act**
The Corporation Sole
- **Boards and the Ministry of Energy**
- **Boards and the Government**
- **Boards and Partners (Joint Ventures)**



LEGEND

| | | |
|---------------------------|-----------------------|-------------------|
| BP Amoco License Areas | Oil Fields | Water Depth (ft.) |
| BP Amoco/Repsol PSC Areas | Gas Fields | Pipelines |
| Other License/PSC Areas | Gas/Condensate Fields | LNG Pipeline |
| Open Blocks | | |

* Production Sharing Contracts (1995-1996) Effective Date

Map Projection Parameters

| | |
|----------------|---------------|
| Source: Datum | 1984 (WGS 84) |
| Projection | UTM |
| Zone | 18N |
| Scale Factor | 0.9996 |
| False Easting | 500,000 |
| False Northing | 10,000,000 |
| Units | Meters |

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2008

BP Amoco Energy Company of Trinidad and Tobago
Port of Spain

Trinidad Exploration Activity Map

Revised: January 6, 2008 Scale: 1:500,000

Share of Oil & Gas in Government Revenue

1999 - 2007

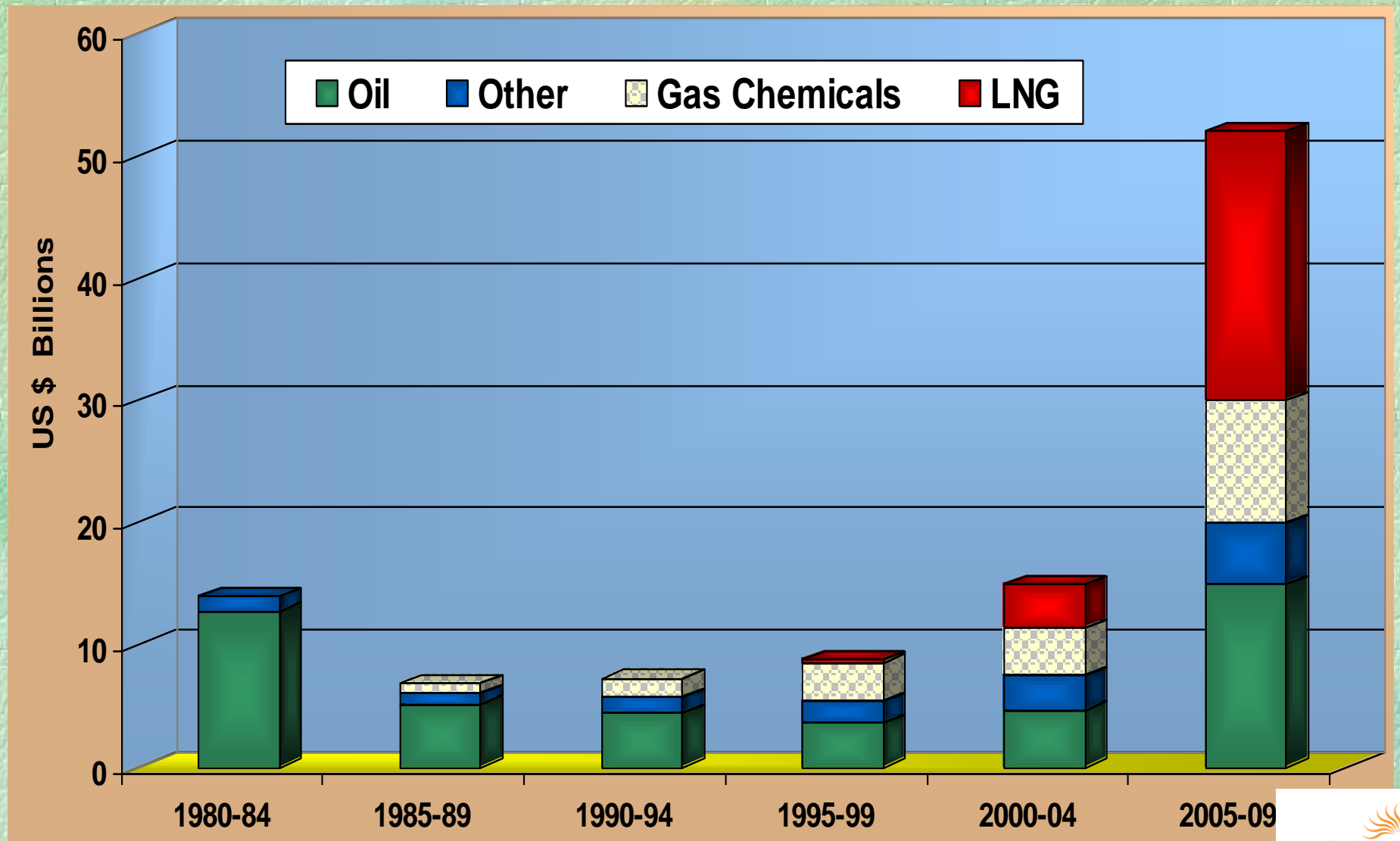
(\$mm)

| Year | Total Current Revenue TT\$M | Hydro-Carbon Revenue TT\$M | Hydro-Carbon Rev as % of Current Revenue |
|-------|-----------------------------|----------------------------|--|
| 1999 | 9613.2 | 1999.7 | 20.8 |
| 2000 | 13006.7 | 4475.6 | 34.4 |
| 2001 | 13379.9 | 3693.5 | 27.6 |
| 2002 | 14517.2 | 3931 | 27.1 |
| 2003 | 17852.6 | 6904.7 | 38.7 |
| 2004 | 20624.7 | 7641.1 | 37.0 |
| 2005 | 29008.7 | 13360.4 | 46.1 |
| 2006e | 38479.6 | 21385.3 | 55.6 |
| 2007e | 40034.0 | 20079.2 | 50.1 |

Source: Central Bank of Trinidad and Tobago Annual Economic Survey Various Issues, and G. McGuire.

Gross Forex Earnings

1980 - 2009



CONCLUSIONS

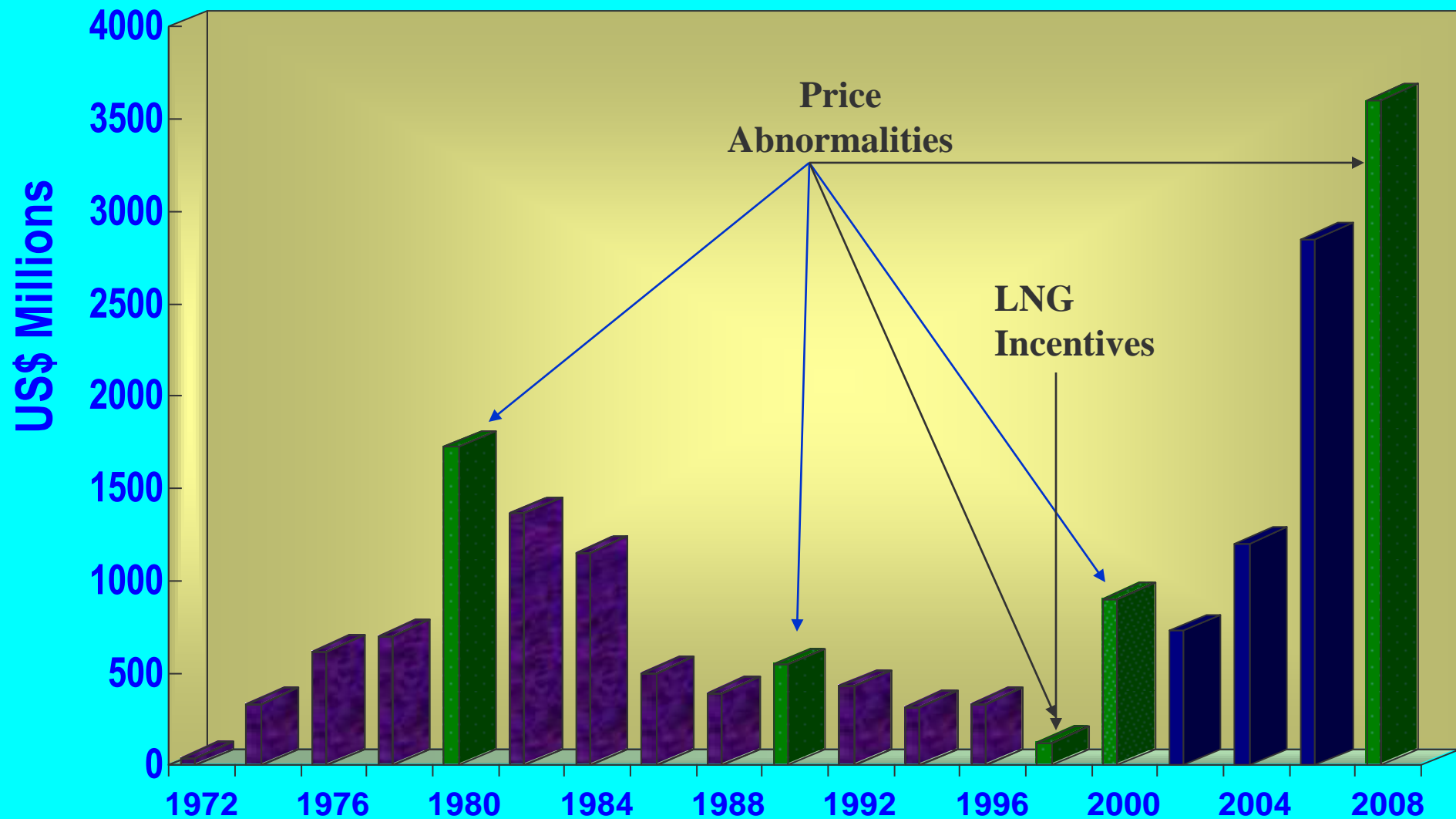
- ✓ National/State Companies are critical to National development in Energy
- ✓ The use of private International Capital may be crucial in natural gas development
- ✓ The correct Legal and Regulatory Framework is an essential requirement.
- ✓ Developing technically trained nationals is a key step in developing the correct systems
- ✓ Assessing and Managing Risk is a key competency

A photograph of an oil pumpjack in silhouette against a bright orange sunset sky. The sun is low on the horizon, creating a strong glow and long shadows. The pumpjack's structure is dark and detailed, with its counterweight and walking beam visible. In the background, other industrial structures and a body of water are faintly visible.

Sunrise for many, Sunset for some

Thank you for your attention

GOTT Petroleum Revenue 1972 - 2008



The PSC vs E&P License

Price, Reserves and Costs as key variables

- Prices of oil and gas influence the relative attractiveness of the PSC vs the E&P regime, all other assumptions being equal
- In a low oil or gas price scenario, the PSC is better for the Gov't because it guarantees some “profit” take even at low prices
- At high oil prices, the E&P License is better for the Gov't because it affords a higher marginal rate of take than the PSC
- The flexible terms of the PSC better facilitates smaller revenues and/or increased capital costs, thereby stimulating investment.