



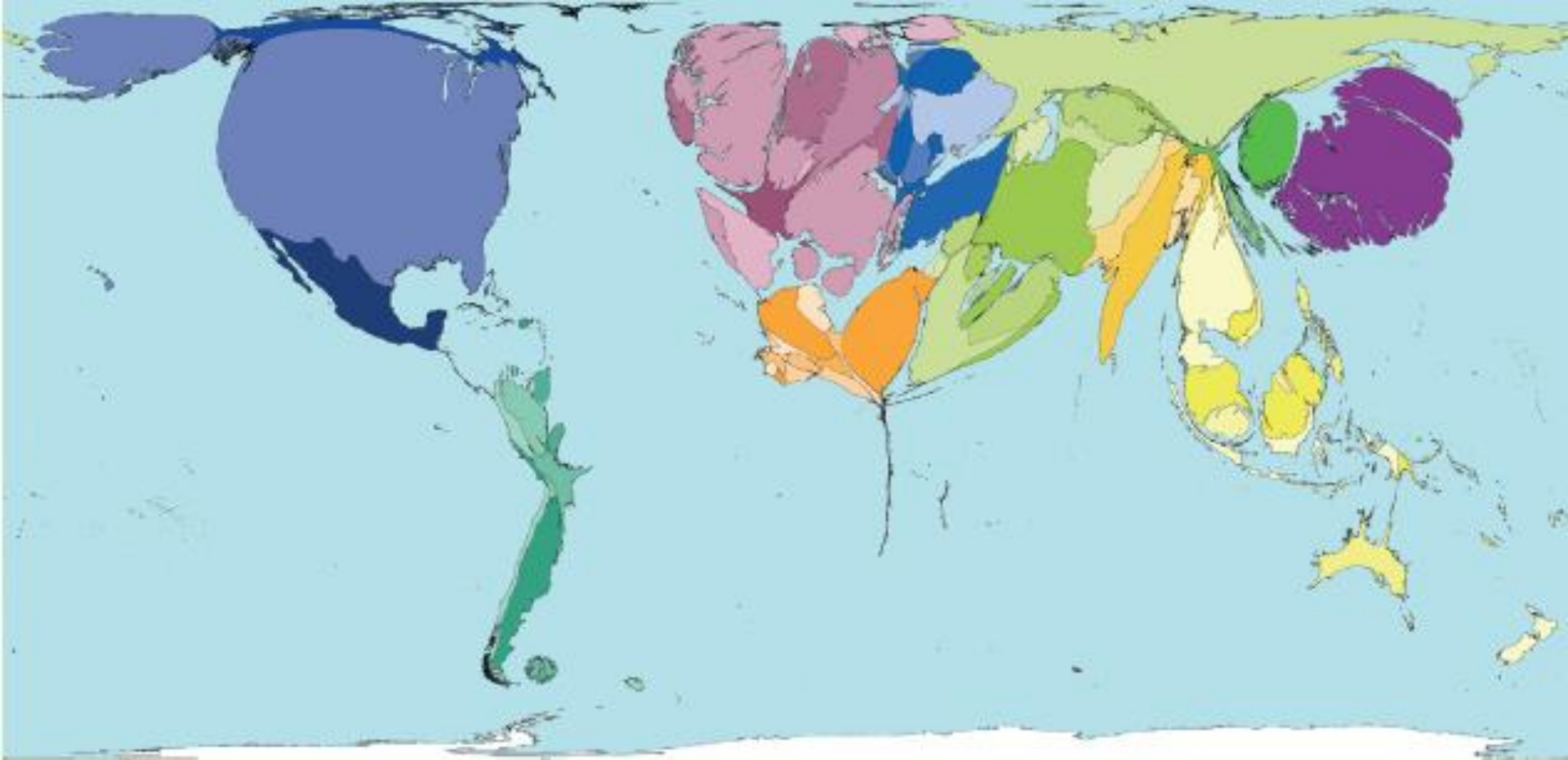
Tertiary Natural Gas Workshop : July/August 2013

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Land area

Technical notes

- The data are from the World Bank's World Development Indicators.
- *There was almost no electricity from gas recorded for 58 territories.
- Taiwan and Mongolia had missing data so the regional average for Eastern Asia was used.
- See website for further information.

MOST AND LEAST ENERGY GENERATED FROM GAS

Rank	Territory	Value	Rank	Territory	Value
1	Qatar	16838	133	Poland	56.9
2	United Arab Emirates	13388	134	Nigeria	55.7
3	Bahrain	10397	135	Serbia & Montenegro	51.3
4	Brunel Darussalam	8920	136	Norway	44.0
5	Luxembourg	6485	137	Taiwan	42.8
6	Singapore	4917	137	Mongolia	42.8
7	Trinidad & Tobago	4679	139	Peru	36.9
8	Netherlands	3542	140	Ecuador	29.2
9	Kuwait	3239	141	Israel	4.4
10	Oman	3025	142	China	3.6

*kilowatt hours of electricity generated from gas, per person per year**

What I will talk about

Overview and natural gas in the global context

History, overview, and importance of natural gas industry to
Trinidad and Tobago

Natural Gas Value Chain

Fundamentals of purchasing and pricing of natural gas

Initial Takeaways

- ▶ Trinidad and Tobago remains heavily dependent on hydrocarbon (including gas and gas-based industries)
- ▶ We've done a lot with the resources we've had due to deliberate policy decisions
- ▶ We have created a lot of value based our natural gas reserves and gas use strategies

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Overview

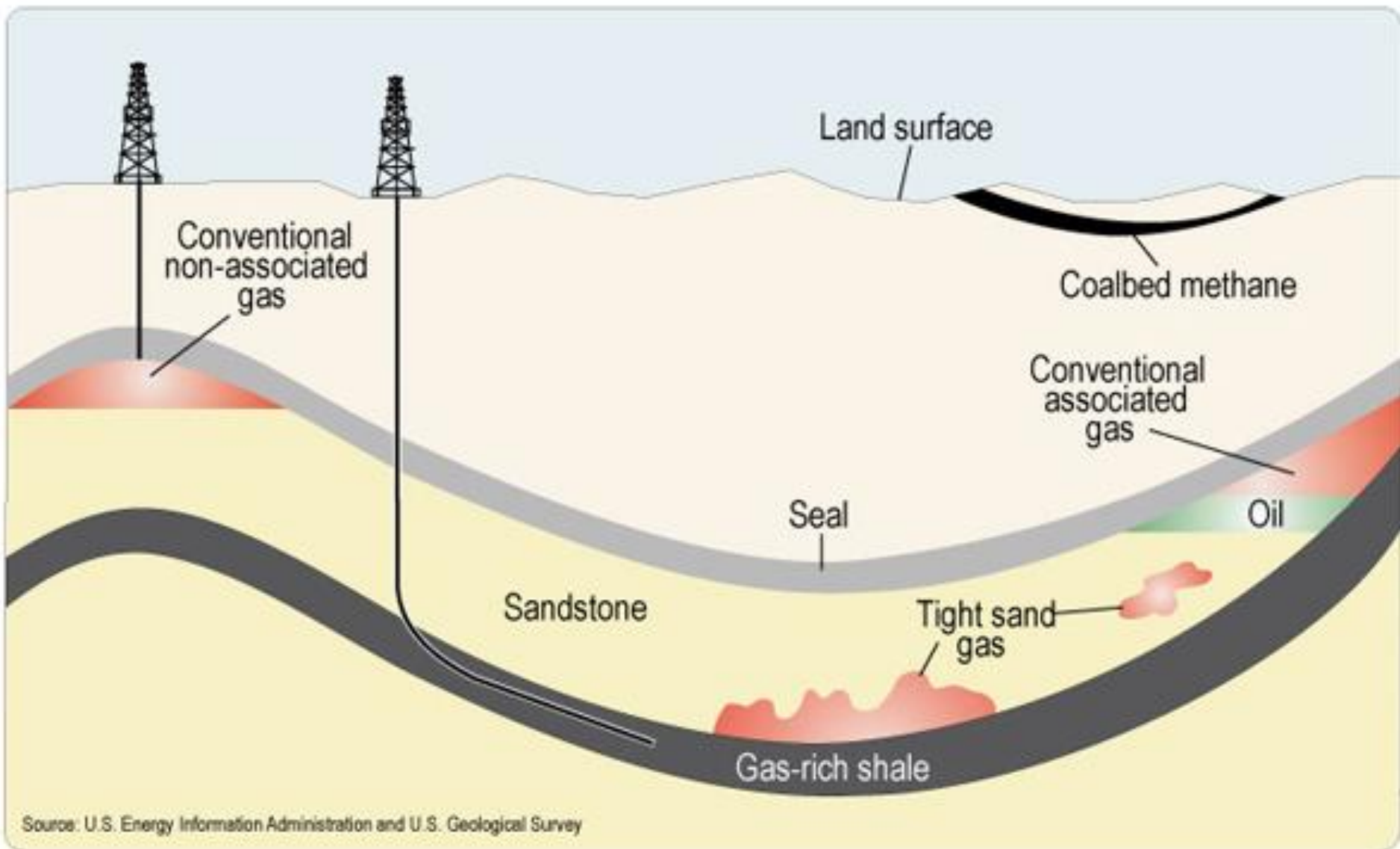
What is it?

- ▶ Colourless, shapeless & odourless gas
- ▶ clean burning (emits lower levels of potentially harmful by-products into the air)
- ▶ combustible mixture of hydrocarbon gases
- ▶ “Rotten egg” smell that we often associate with natural gas is an odorant that is added to the gas before it is delivered to the end-user.
- ▶ Natural gas is a fossil fuel. Like oil and coal, this means that it is, essentially, the remains of plants and animals and microorganisms that lived millions and millions of years ago.

Typical composition of natural gas

Methane	CH ₄	70-90%
Ethane	C ₂ H ₆	
Propane	C ₃ H ₈	
Butane	C ₄ H ₁₀	
Carbon Dioxide	CO ₂	0-20%
Oxygen	O ₂	0-8%
Nitrogen	N ₂	0-0.2%
Hydrogen sulphide	H ₂ S	0-5%
Rare gases	A, He, Ne, Xe	0-5%
		trace

Types of recoverable gas

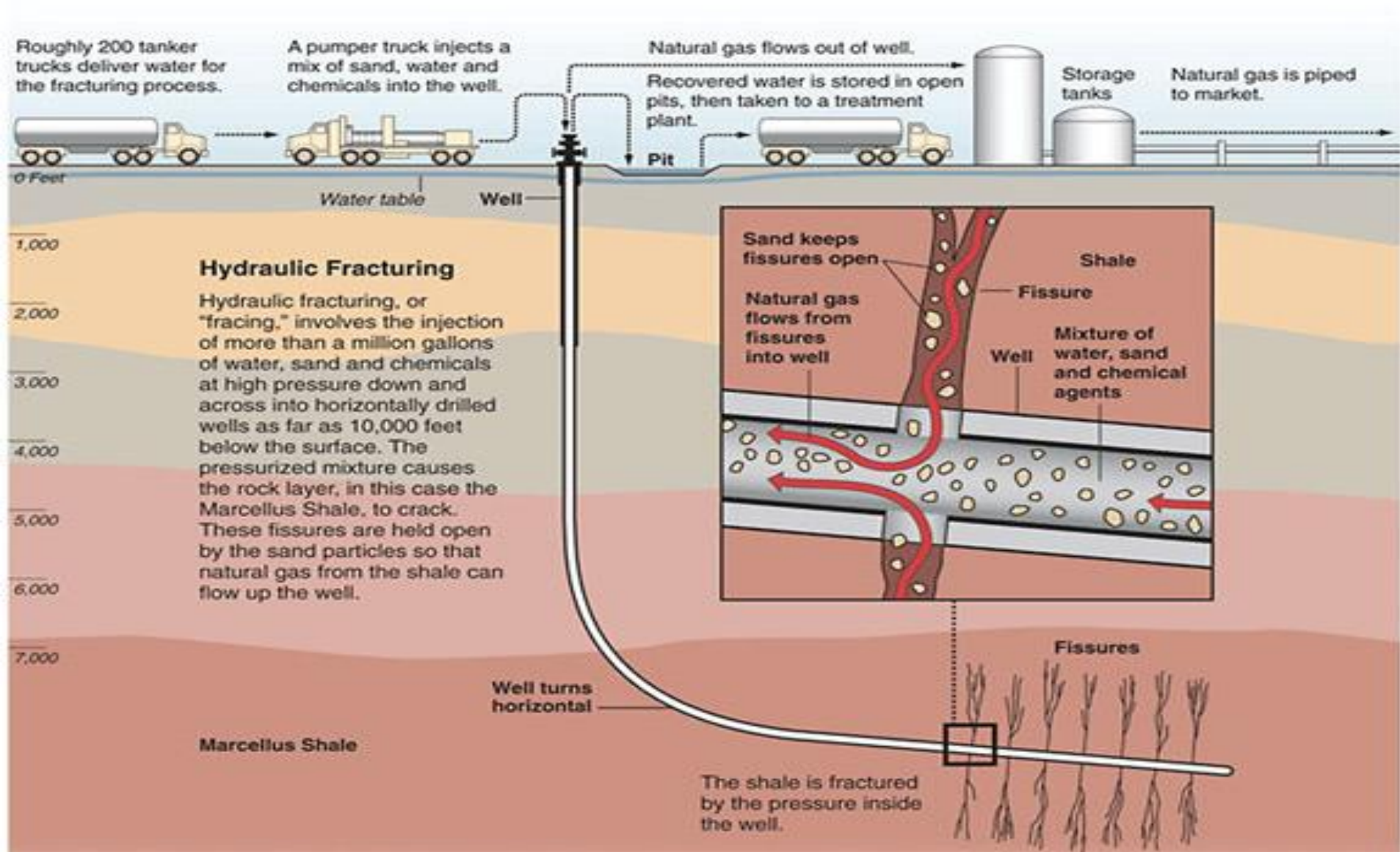


Shale

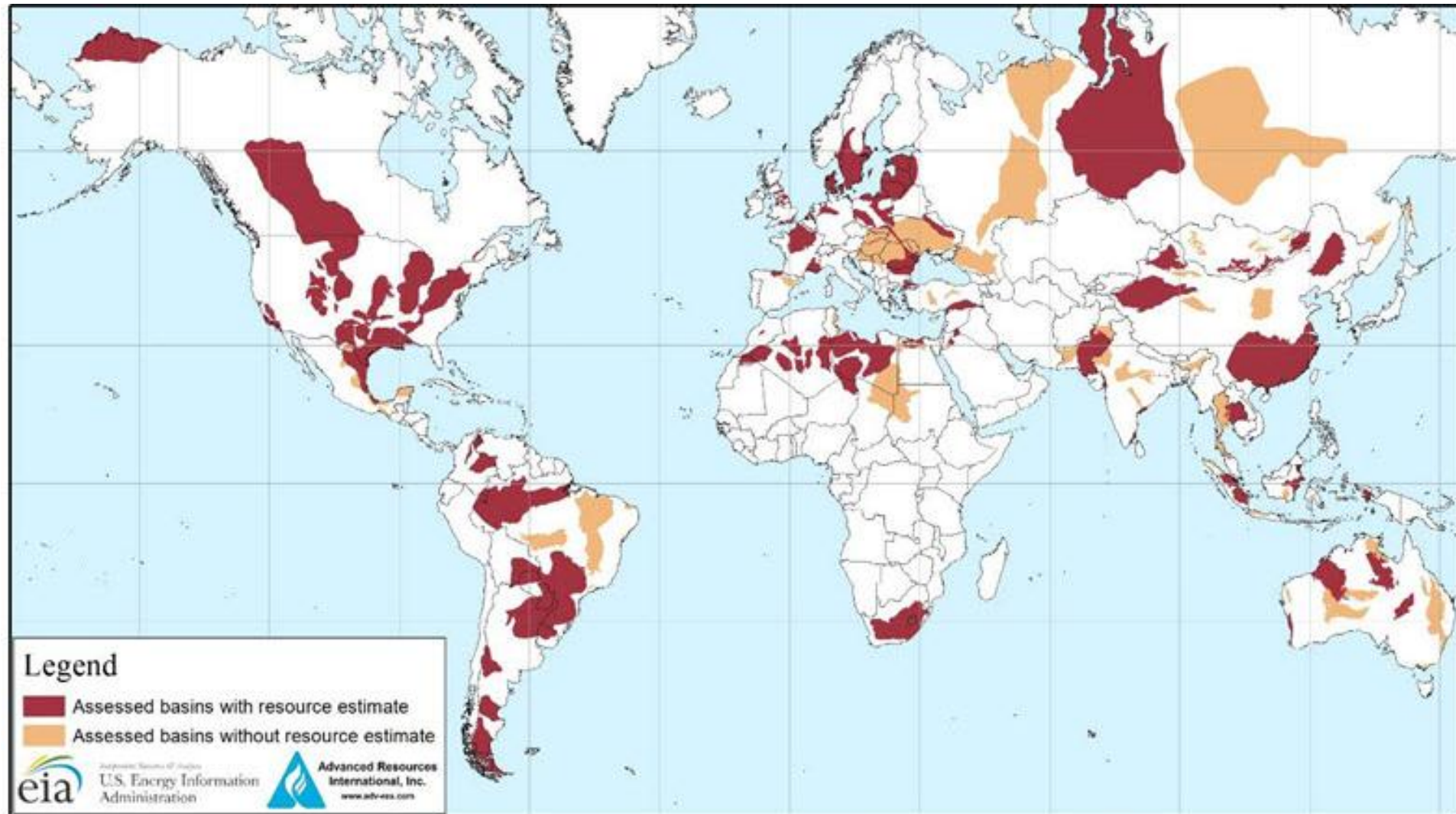
A close-up photograph of a shale rock surface. The rock exhibits a complex, layered texture with numerous small, dark, and light-colored mineral grains. The surface is highly fractured, with many small, irregular cracks and fissures. The overall appearance is that of a fine-grained, sedimentary rock.

Shale gas refers to natural gas that is trapped within shale formations. Shales are fine-grained sedimentary rocks that can be rich sources of petroleum and natural gas.

Hydraulic fracking



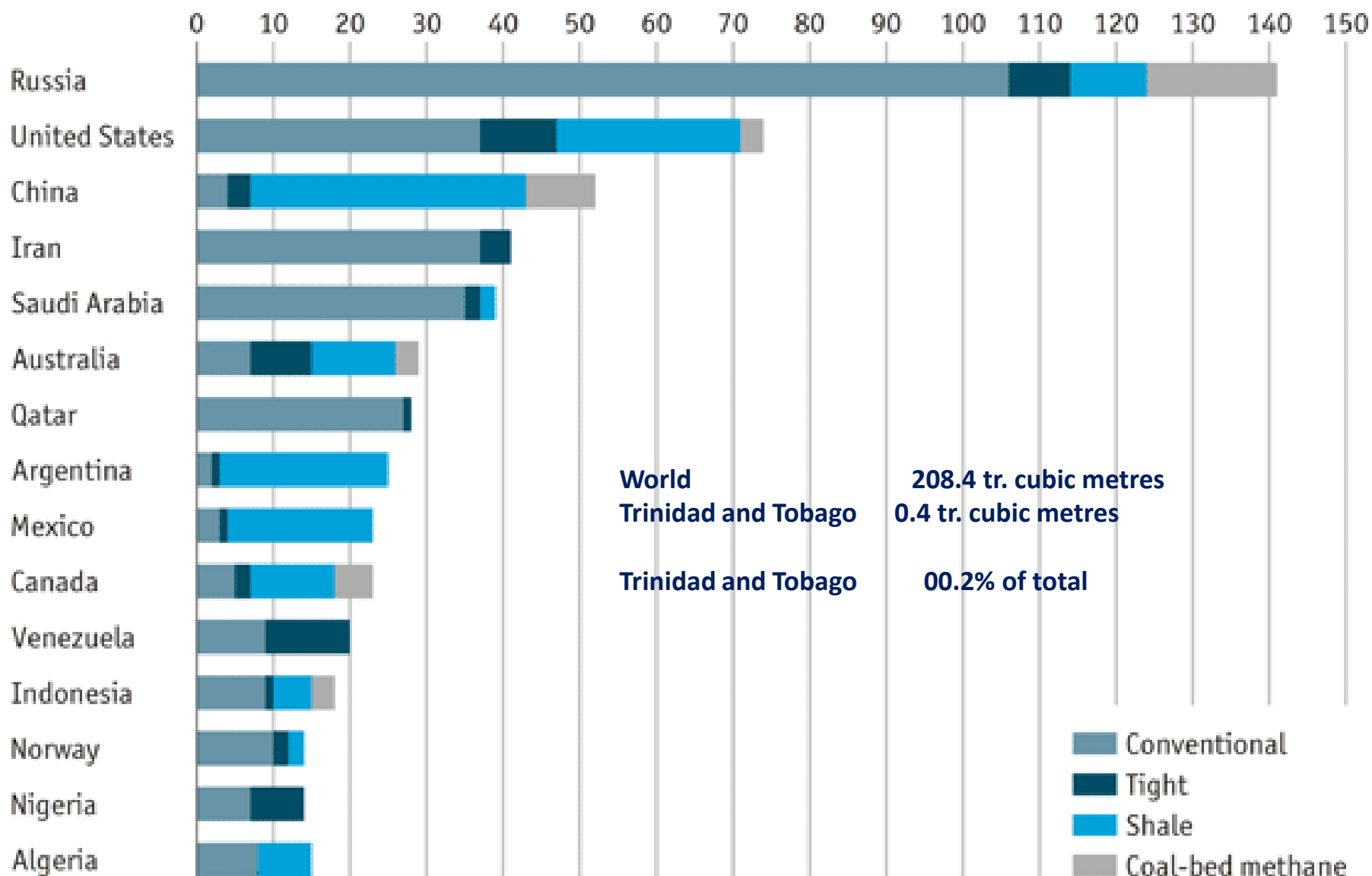
Where is shale?



Source: United States basins from U.S. Energy Information Administration and United States Geological Survey; other basins from ARI based on data from various published studies

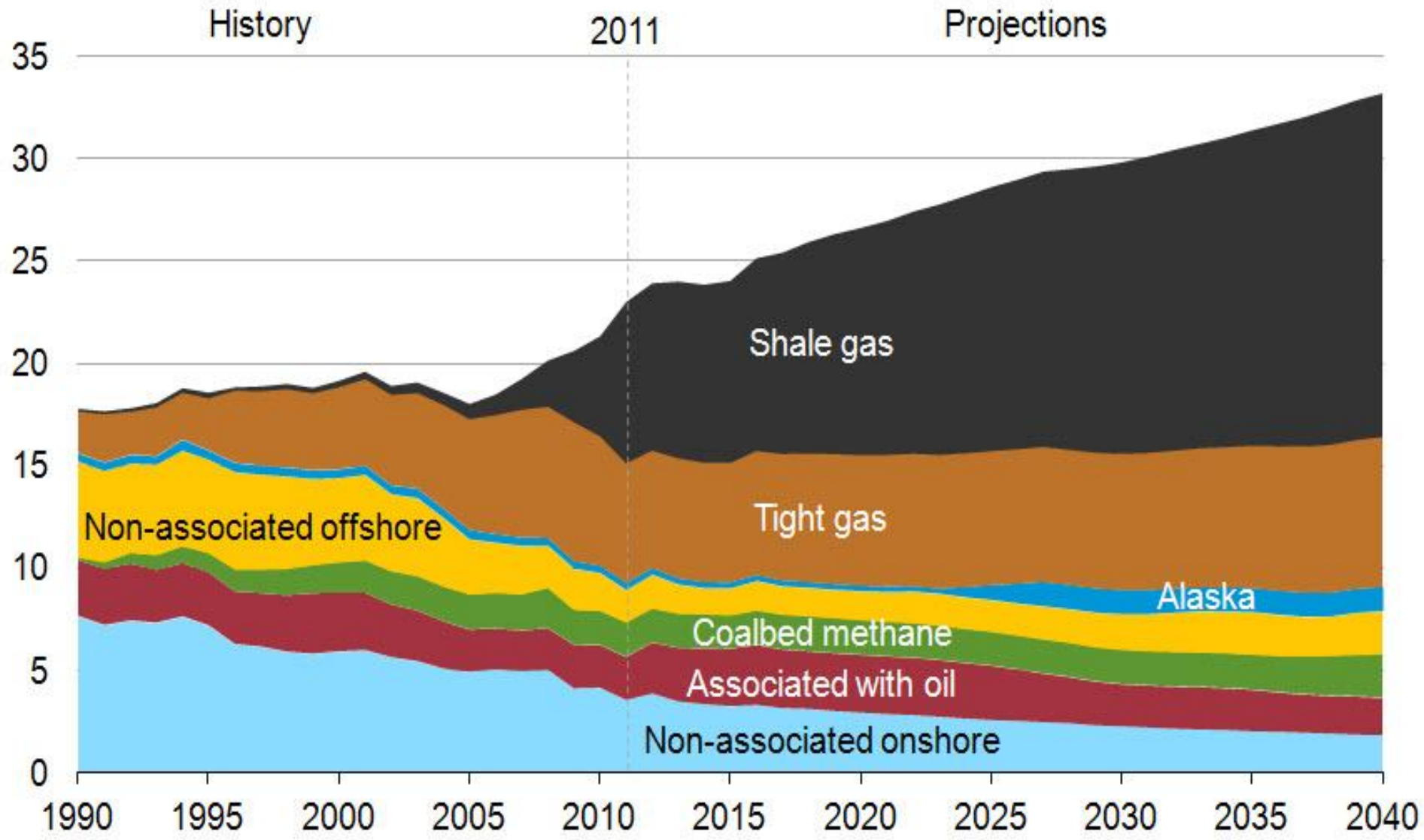
Recoverable natural-gas reserves

2011, trn cubic metres



Source: IEA

U.S. dry natural gas production trillion cubic feet



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2013 Early Release*

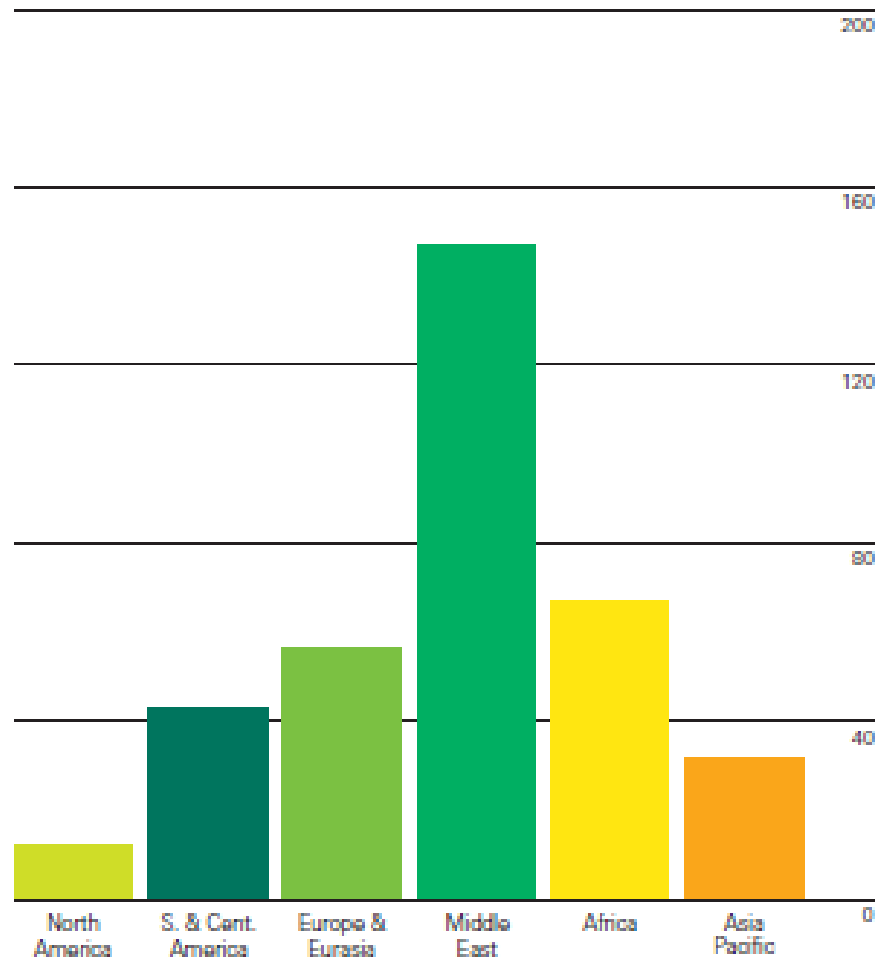
T&T Resources in Context

Trinidad and Tobago: 0.2% global proven gas reserves
0.65% of global consumption
1.2% global gas production
5.7% global LNG trade

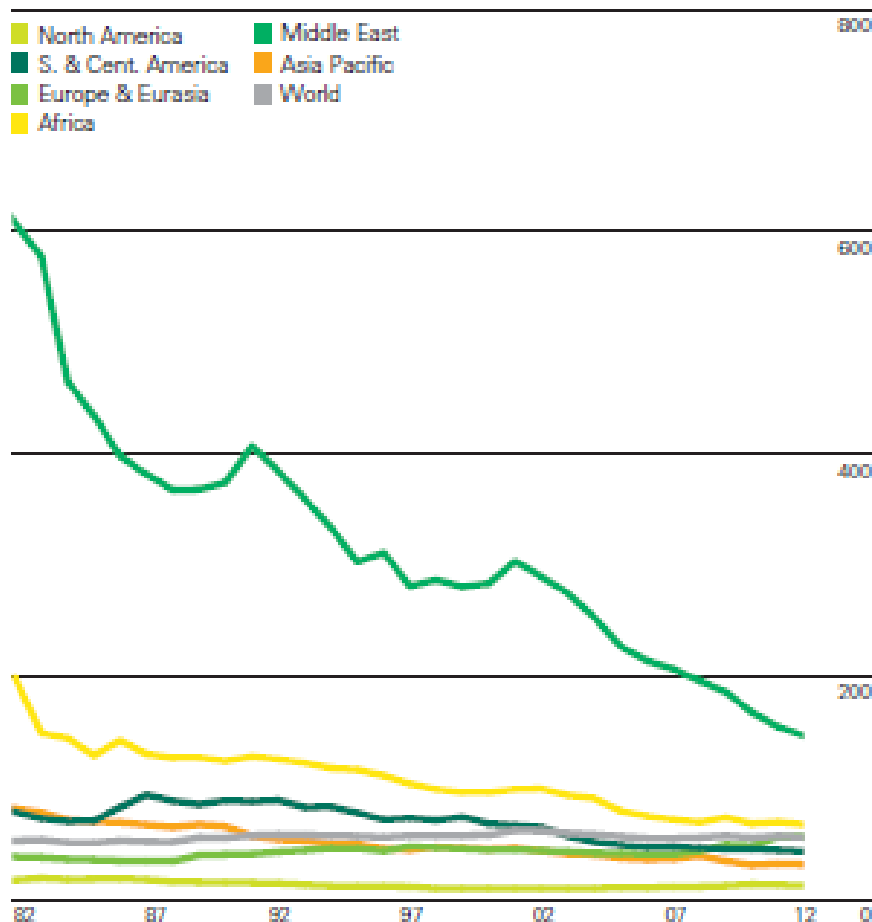
Reserves @ end 2012	Gas (tcf)	Oil ('000 mn. Bbls.)
Trinidad and Tobago	13.3	0.8
South and Central America	268.3	328.4
United States	300.0	35.0
World	6614.1	1,668.9

Reserves to production ratios

2012 by region



History



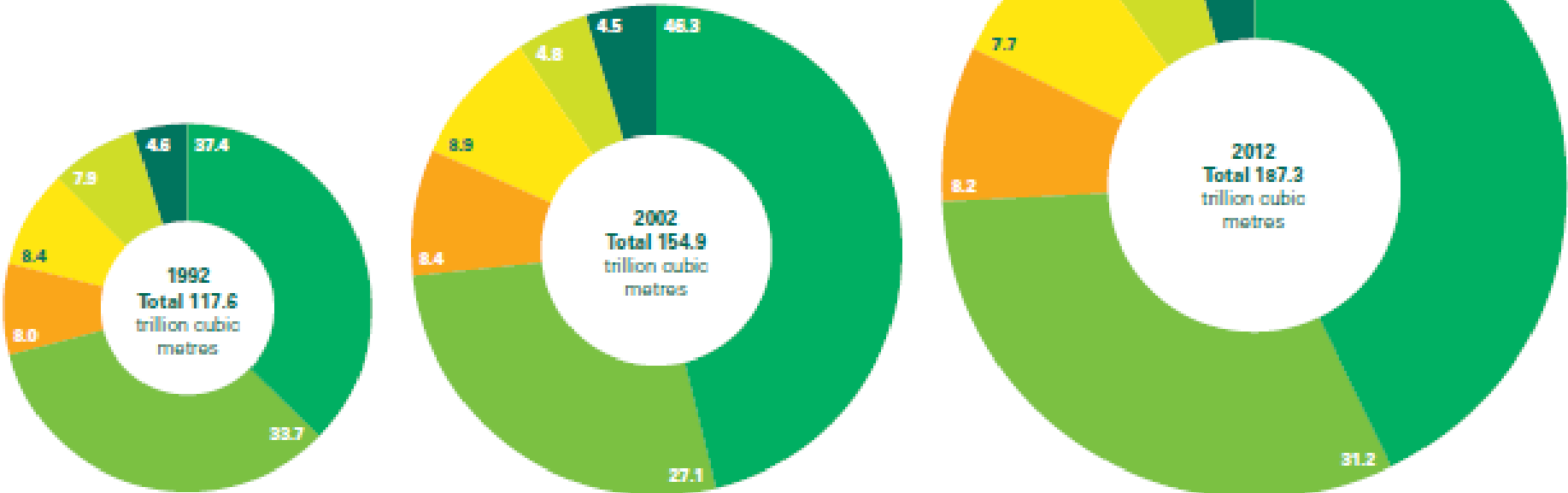
World proved natural gas reserves at end-2012 stood at 187.3 trillion cubic metres, sufficient to meet 55.7 years of global production. Proved reserves declined by 0.3% relative to end-2011 data, the first annual decline in our data set. Revisions were made to the earlier published estimates for proved reserves in the Former Soviet Union (FSU) countries, which lowered the FSU R/P ratio to 71 years, from 96.3 years at end-2011 in last year's edition.



Distribution of gas reserves

Distribution of proved reserves in 1992, 2002 and 2012
Percentage

- Middle East
- Europe & Eurasia
- Asia Pacific
- Africa
- North America
- S. & Cent. America

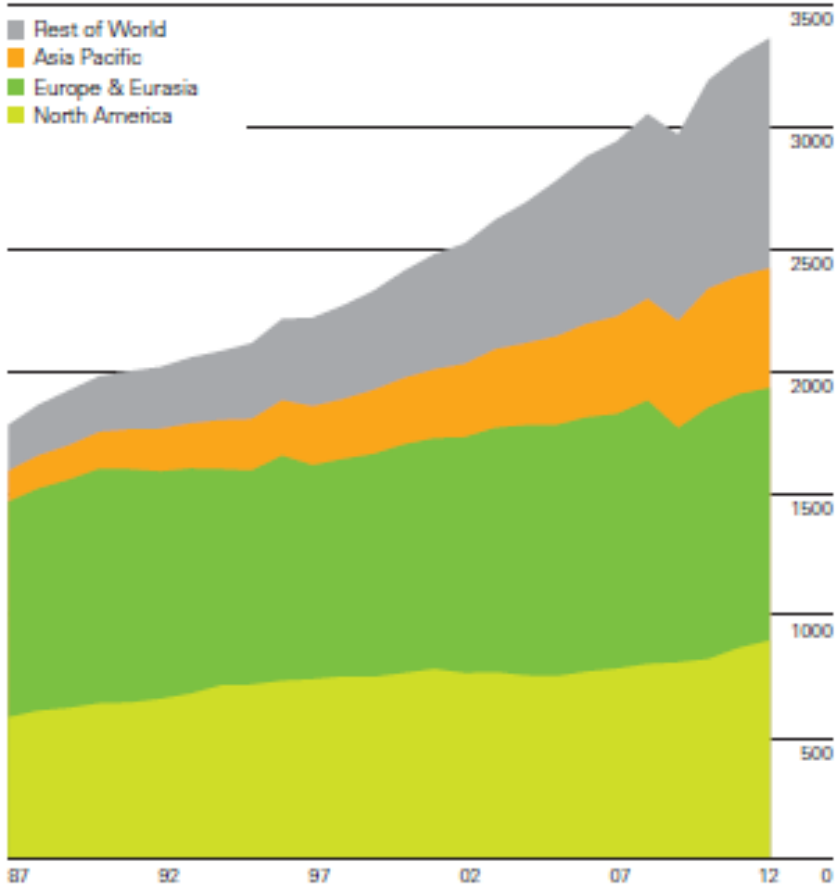


▶ Source: BP Statistical Review of World Energy 2013

Gas production and consumption

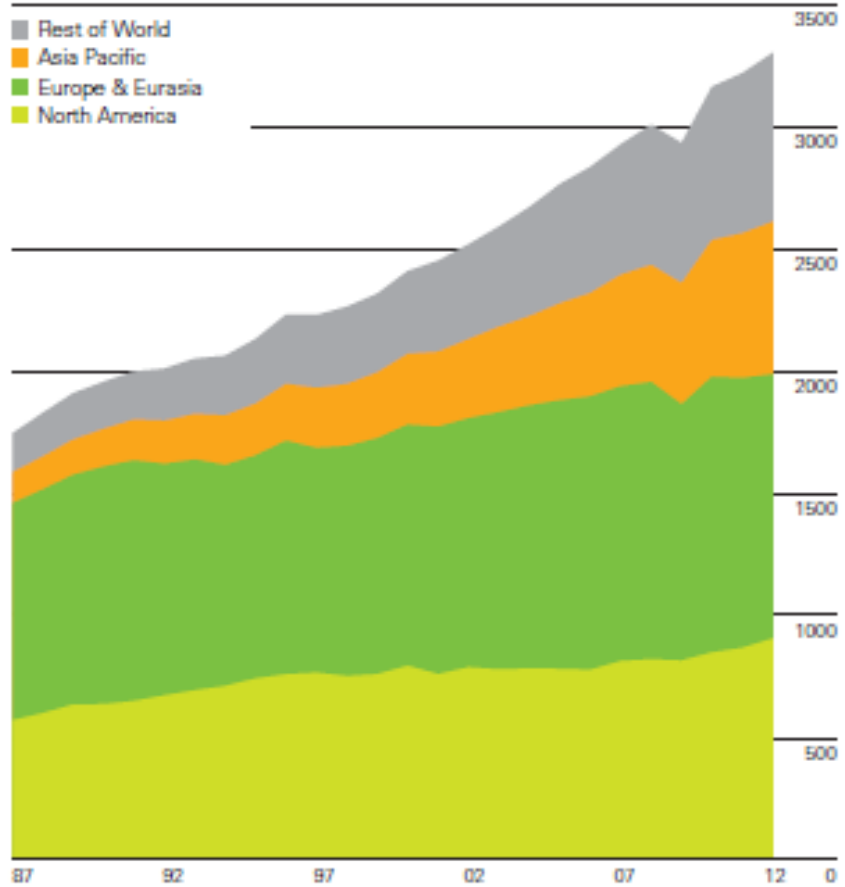
Production by region

Billion cubic metres



Consumption by region

Billion cubic metres

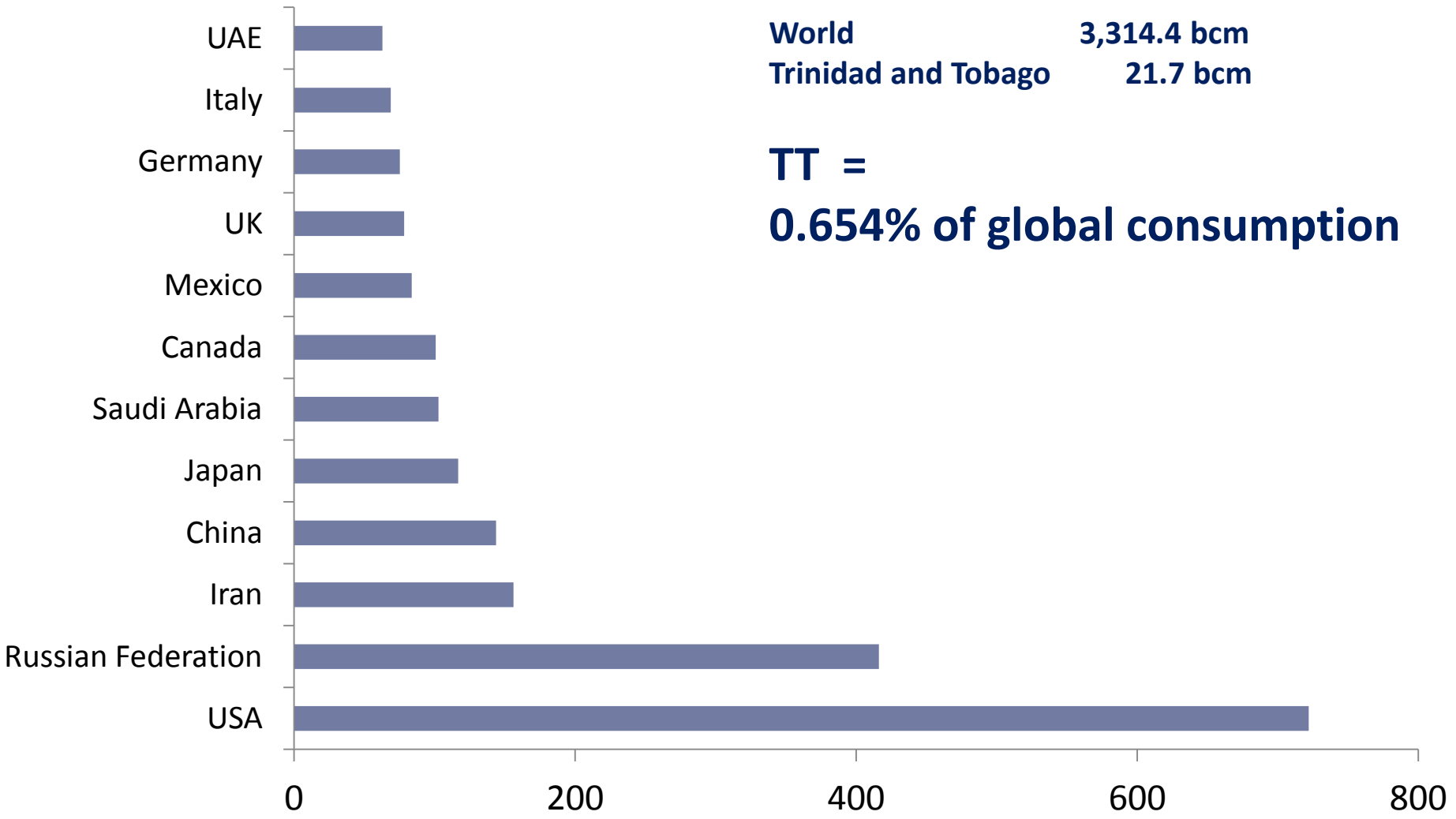


World natural gas production increased by 1.9% in 2012. The US once again recorded the largest national increase. Production grew in every region except Europe & Eurasia, where declines in Russia and the UK offset a gain in Norway. Natural gas consumption increased by a below-average 2.2%. As was the case with production, the US recorded the largest national increase and consumption rose in every region except Europe & Eurasia; EU consumption fell to the lowest level since 2000.



Source: BP Statistical Review of World Energy 2013

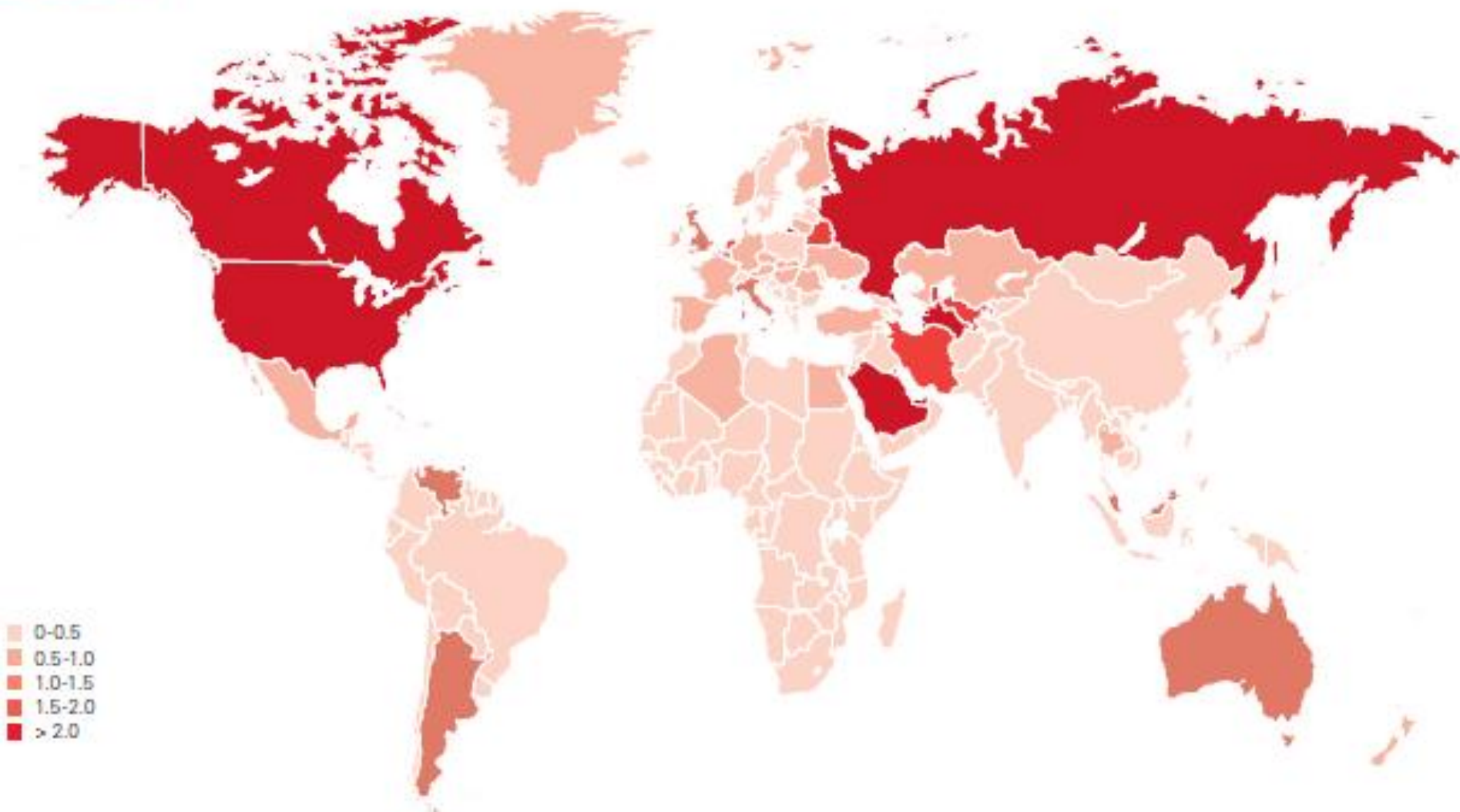
Natural Gas Consumption 2012 (bcm)



▶ Source: BP Statistical Review of World Energy 2013

Consumption per capita 2012

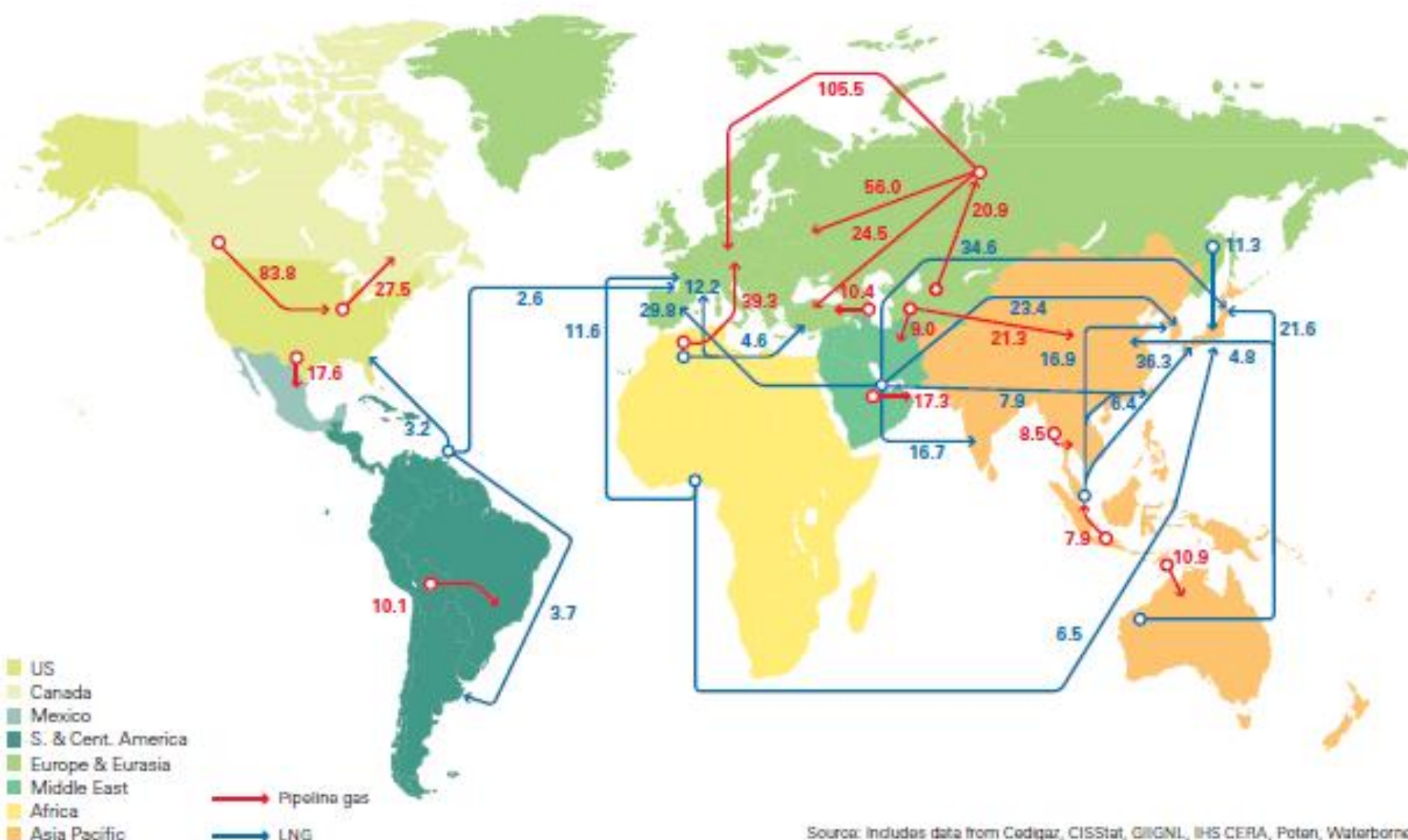
Tonnes oil equivalent



Source: Includes data from Cedigaz.

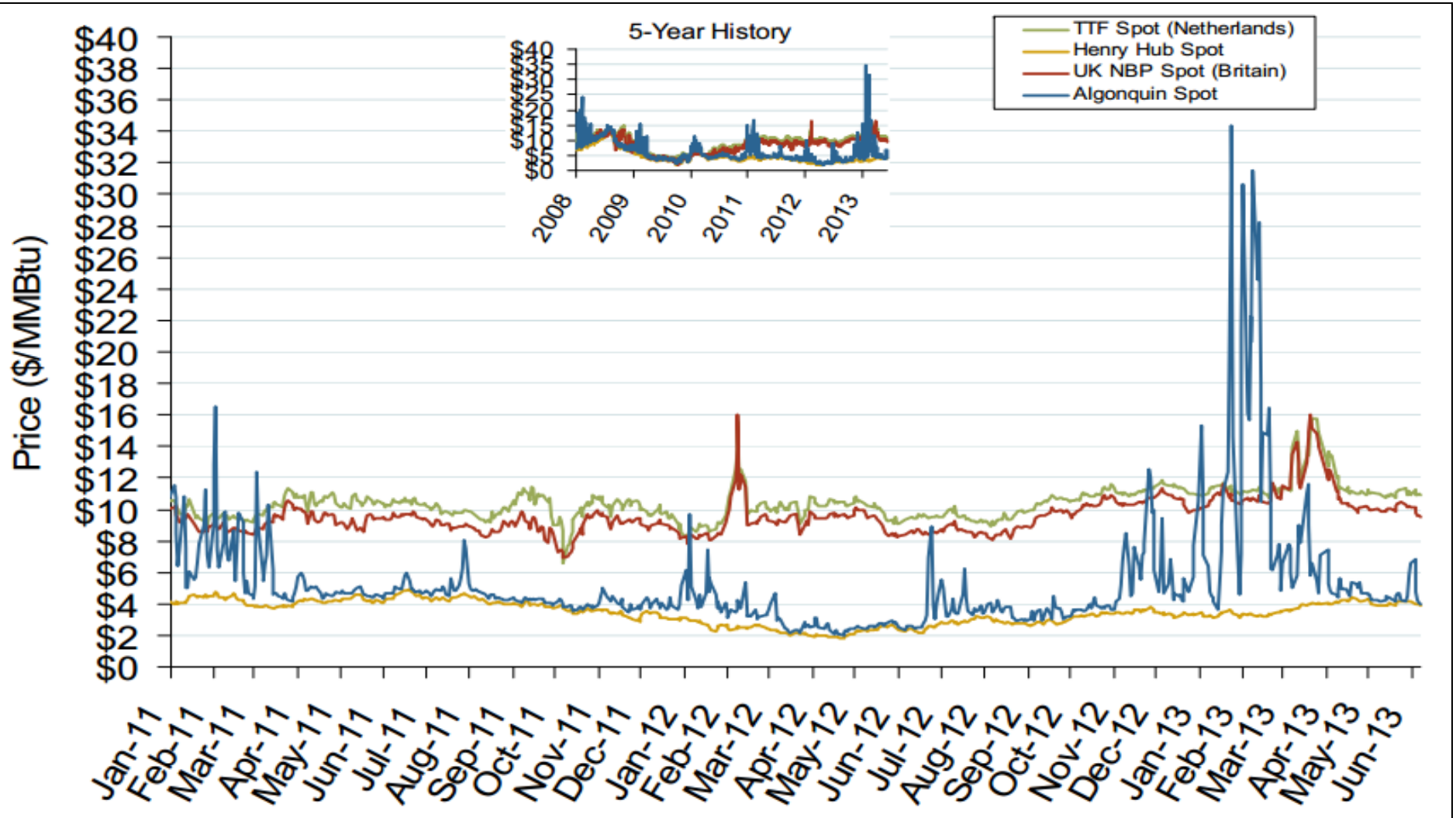
Major trade movements 2012

Trade flows worldwide (billion cubic metres)



Source: Includes data from Codigaz, CISStat, GIIGNL, IHS CERA, Poten, Waterborne.

Natural Gas Prices



What I will talk about

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Pioneers of Oil in Trinidad

Walter Darwent - John Lee Lum - Randolph Rust

Walter Darwent (*Right*) was an Englishman from Plymouth who had served as a captain in the Union Army in the American Civil War. In 1865, he drilled the first really successful oil well at Aripero in south Trinidad. His company, *Paria Petroleum Company*, did well for a time, with wells at Aripero, San Fernando and La Brea, and it exported small amounts of oil.

Darwent faced many difficulties, and following his death from yellow fever in 1868, nothing much happened to further develop Trinidad's oil industry for another 30 years.

It was not until after **John Lee Lum** (*Left*) discovered oil on his land, that events moved forward.

Born in 1842 near Canton (*now Guangdong*) in south China, John Lee Lum arrived in Trinidad in 1880. He became a successful businessman and acquired a great deal of land. Some of it was in Guayaguayare in south-east Trinidad.

Around 1900, Lee Lum took a sample of oil from his land to Randolph Rust, and together the two men formed a company to prospect the area. Lee Lum continued to finance Rust's early drilling operations in Guayaguayare.

Randolph Rust (*Right*), an Englishman who lived most of his adult life in Trinidad, secured additional money from Canada, and in 1902 he struck oil in Guayaguayare.

Though neither Rust nor Lee Lum made significant amounts of money from oil, Rust never gave up; making several trips to London to try to raise money for further oil exploration.

It was mainly because of, and through all Rusts' efforts, that the oil industry in Trinidad really took off in 1913; when two big companies were formed and large-scale production

began.

Rusts first successful well at Guayaguayare of 1902, is still maintained by *Petrotrin*, the Trinidad and Tobago national oil company, as an historic site and monument to the pioneers of the local oil industry.

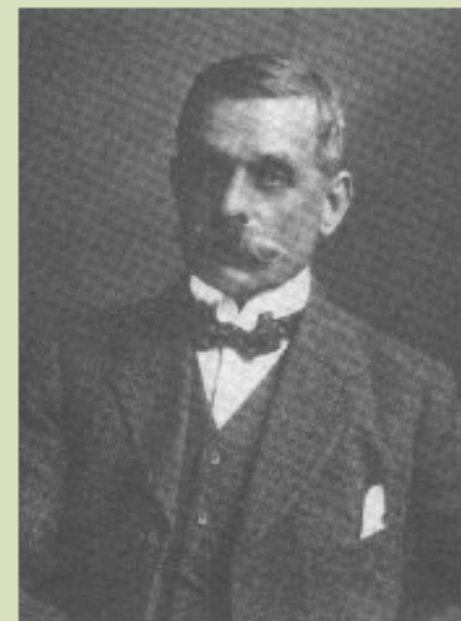
An Introduction to the History of TRINIDAD and TOBAGO; Pg 84

© Bridget Brereton (1996)

ISBN 0 435 984 748

Heinemann Educational Publishers of Reed Educational & Professional Publishing Ltd

[Abridged - eEd - tojo]



Historical Highlights

1857: First well drilled for oil in Trinidad - 61 meters deep (Merrimac Company -vicinity of the Pitch Lake)

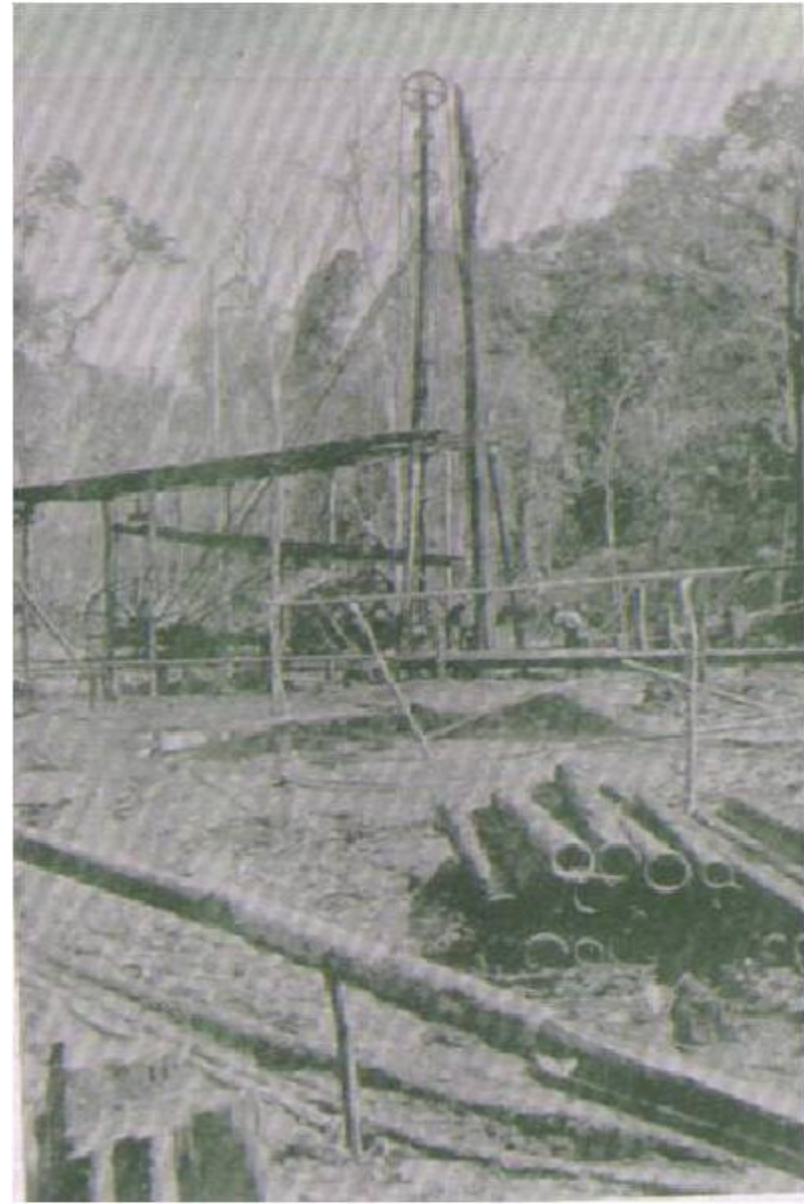
1866: First successful oil well -Walter Darwent (Aripero)

1886: Electrification

1901: Rust and Lee Lum drilled and tested well which produced 455 liters of oil in 2 hours (Guaya)

1904: Mines Department instituted as a branch of the Public Works (production of manjak)

1908: Commercial oil production begins in Trinidad (Guapo)



Historical Highlights

1953: Natural gas used for power generation in Penal

1954: Natural gas used in cement manufacturing

1959: Gas first used by Federation Chemicals (WR Grace) as feedstock for ammonia.

1963: POS Power plant begin operations with gas fired turbines.

1968: Amoco discovers large reserves of natural gas off East Coast

1975: “Best Uses of Natural Gas Resources” conference held



Historical Highlights

1975- Startup of Point Lisas; establishment of NGC; formation of

Coordinating Task Force (CTF)

1976: Construction of 24" cross country pipeline

1977: Start up TRINGEN 1.

1979: Formation of NEC to assume duties of CTF.

1980: ISCOTT established.

1981: Offshore platforms start up;

FERTRIN.

Historical Highlights

1982: Construction of 30-in line

1983: NGC –Amoco Gas Supply Contract _
Cassia Field

1984 : TTMC and TTUC

1988: Tringen 2; NGC invests in Trintomar

1990: NGC to Point Lisas

1991: PPGPL start-up; New gas supply
Contract with Amoco.

1992: NGC/NEC merger



Historical Highlights

1991: Commencement of Production at Trintomar.

1992-94: State Divestments: Fertrin; TTMC; Urea;
T&TEC

1992: New pricing regime introduced: LNG
discussions commence;

1993: New supply contracts: BG /Texaco and EOG
(then Enron)

1993-1998: Several new players: CMC; PCS Nitrogen;
Farmland MissChem; Ispat; Nucor; Cliffs

1997: New Amoco supply contract ; Direct sales to
ALNG

1999: ALNG First shipment

2000: Agreement reached on expansion of ANLG
Train 2 and 3.



Historical Highlights

2000: BP takeover of Amoco

2000-2004: Further downstream expansion

ALNG Train 2 and 3

Ammonia: Caribbean Nitrogen 1 and 2

Methanol : TTMC 4 ; M5000; Atlas and Titan (Methanex)

2005: Completion of 56 inch pipeline

2006: ALNG Train 4

2008: Union Industrial Estate (new gas supply agreements)

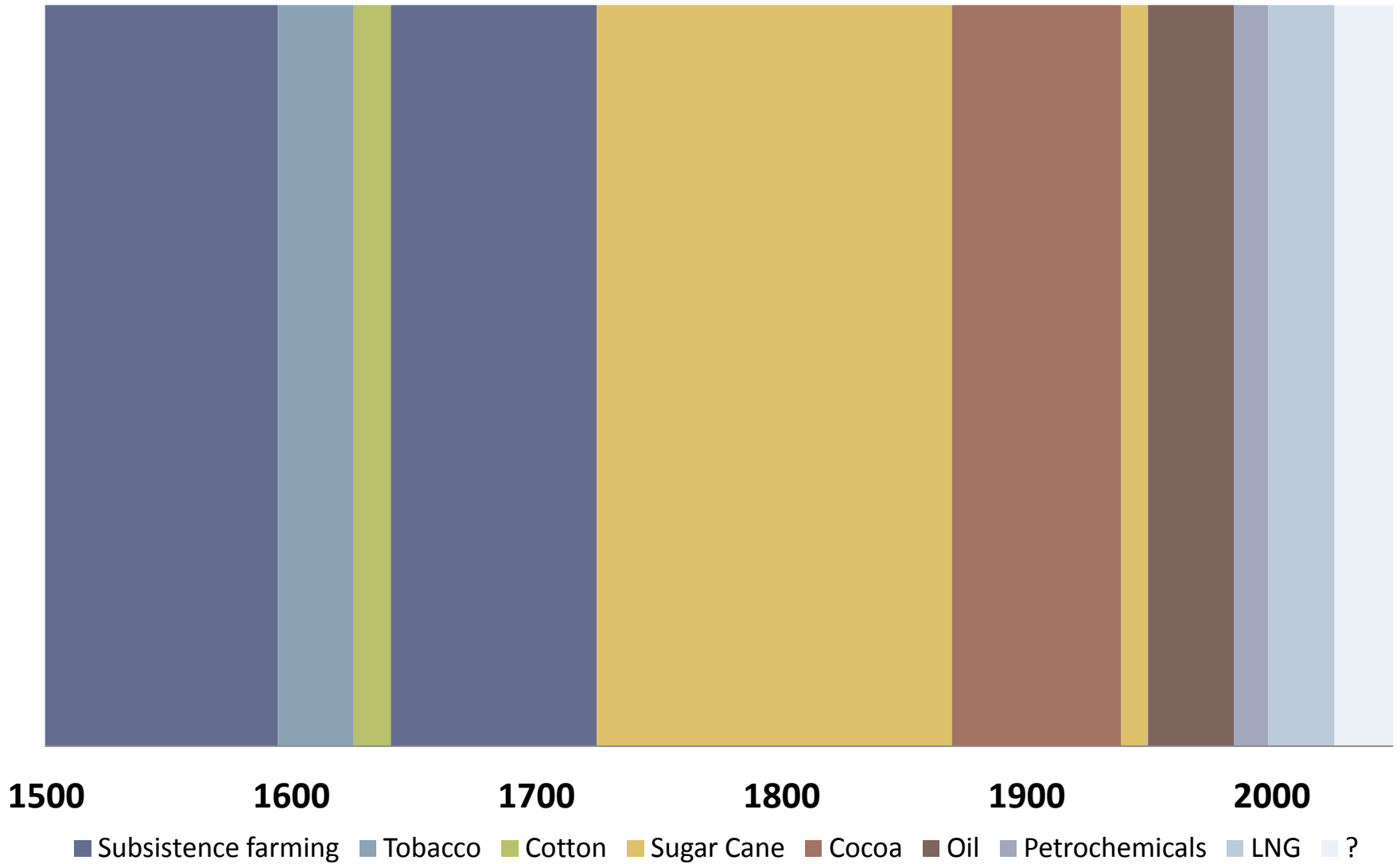
2010: AUM complex - first major secondary downstream plant

2011: Completion of NEO, UIE and Tobago pipelines

2013: NGC buys out Conoco's share of PPGPL



Dual-Sector Economy

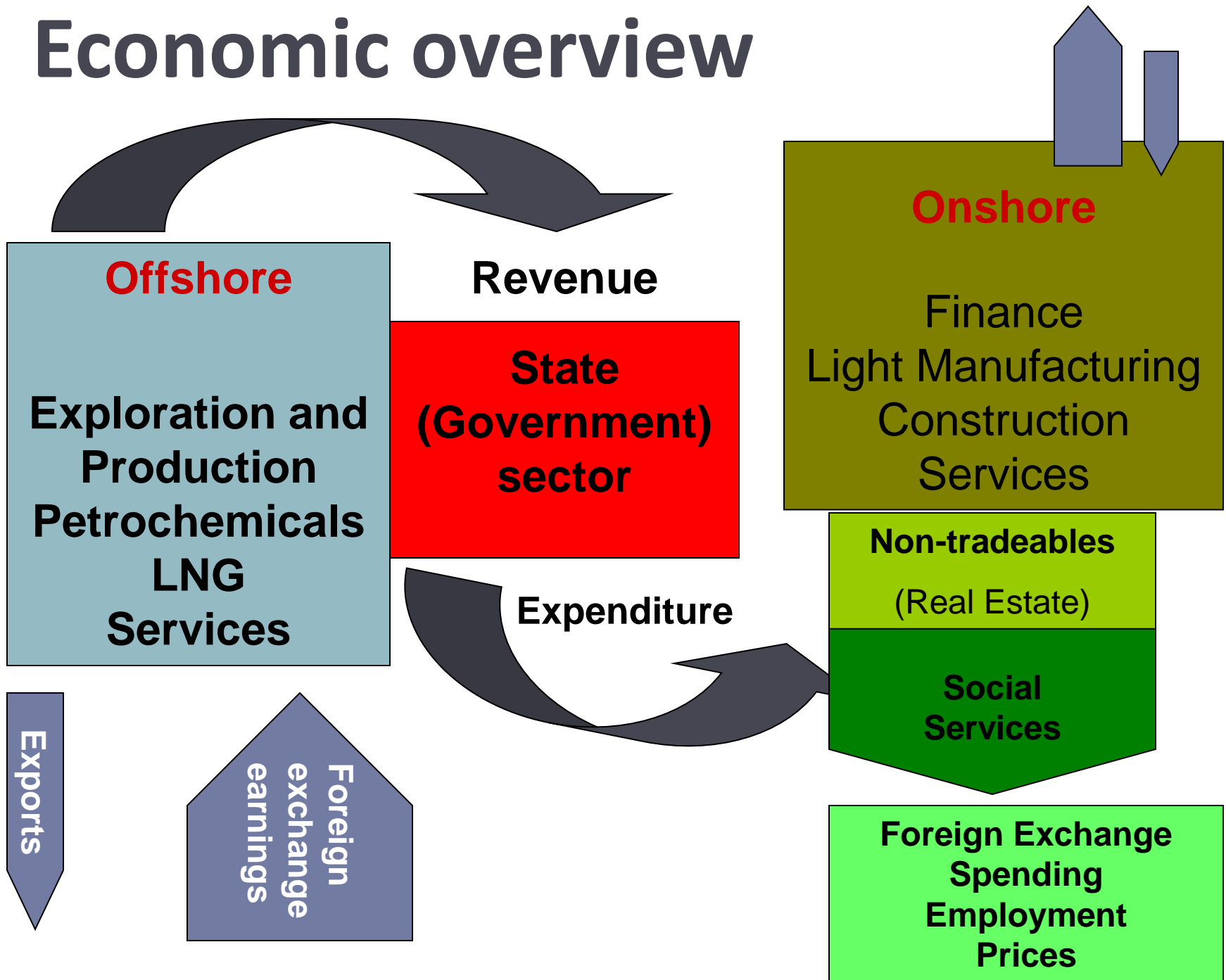


Trinidad and Tobago – an enclave?

	Export commodity concentration ratios, average 1900-1913					Export commodity concentration ratios, average 10 years after independence				
	First product	%	Second Product	%	Enclave	First product	%	Second Product	%	Enclave
Trinidad and Tobago	Bananas	50	Sugar	16.9	Yes	Petr. Products	75.1	Sugar	5.6	Yes

Source: Robinson, James A, and Jonathan H Conning. 2009. *Enclaves and Development: An Empirical Assessment*. *Studies in Comparative International Development* 44: 359-385.

Economic overview



Dual sector in TT & economic growth

Petroleum sector

Most of the investment takes place in this sector

Growth and investment dependent on exogenous factors

Growth opportunities depend on international prices for oil and gas, proven reserves

Growth possibilities in services sector related to growth in petroleum sector and petrochemical industries

Non-Petroleum sector

Growth and investment dependent on petroleum sector

Growth in non-oil sector dependent on services

Lack of autonomy (growth in non-oil sector highly dependent on oil sector)

Relatively underdeveloped non-oil tradeables sector

Previous economic diversification strategies

“Industrialization by invitation” (based on dual-sector economy work by W. Arthur Lewis) – 1950s-1970s.

Import substitution industrialization (ISI) is a trade and economic policy that advocates replacing foreign imports with domestic production (1970s-1990s)

Resource-based industrialization/ Export-oriented industrialization (1990s - ?)

trade and economic policy aiming to speed up the industrialization process of a country by exporting goods for which the nation has a comparative advantage. Export-led growth implies opening domestic markets to foreign competition in exchange for market access in other countries.

Reorienting the economy



Point Lisas is the catalyst for the fundamental reorientation in the national economy.

"Blessed as we are with hydrocarbon resources; **we had a choice to make.** There have been attempts to persuade us that the **simplest and easiest thing to do would be to sit back, export our oil, export our gas, do nothing else** and just receive the revenues derived for such exports and, as it were, lead a life of luxury—at least for some limited period.

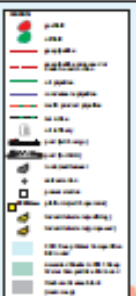
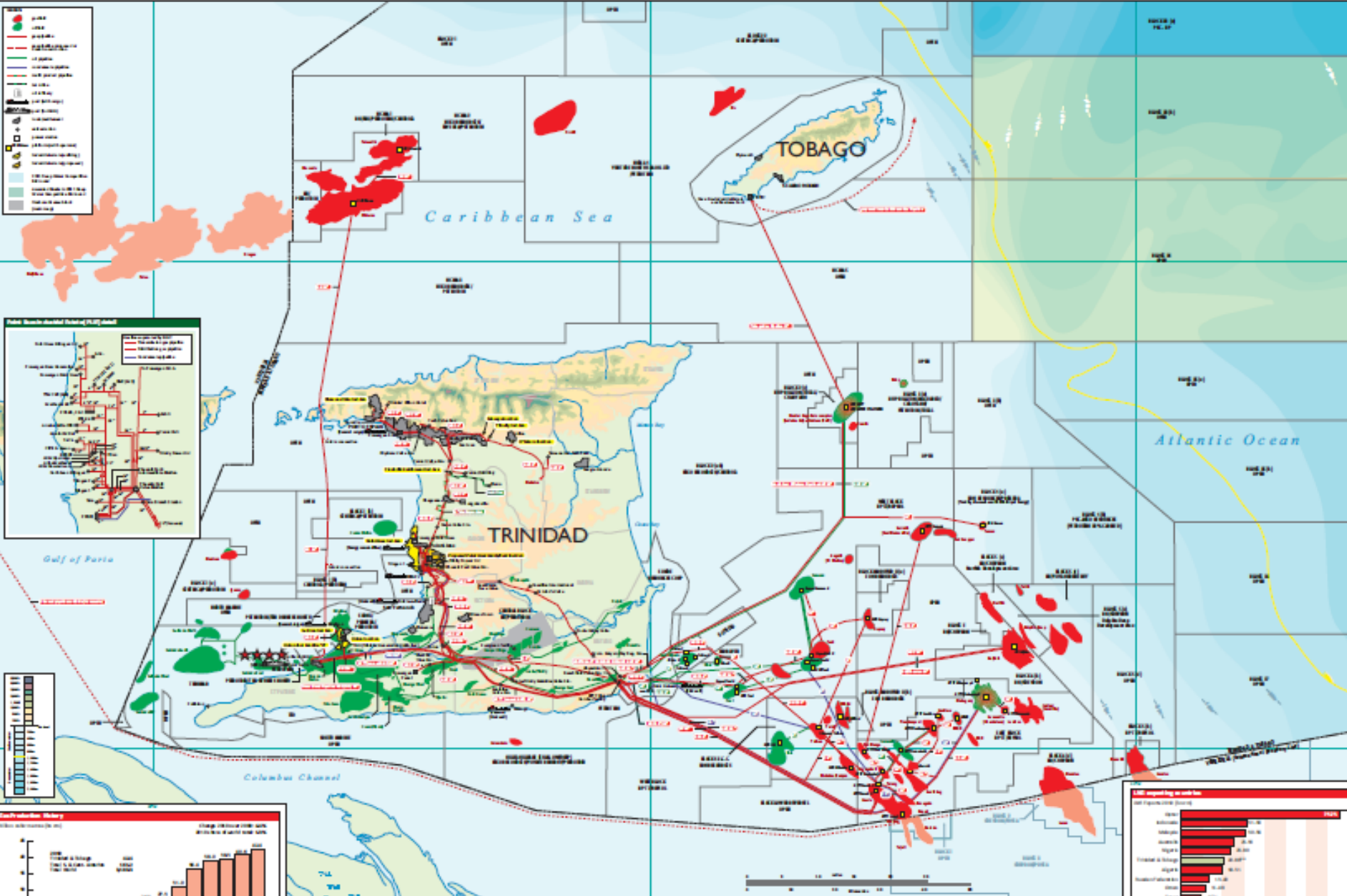
-Eric Williams, Sod Turning Ceremony, ISCOTT (1977)



This, the Government has completely rejected, for it amounts to putting the entire nation on the dole. Instead, **we have taken what may be the more difficult road** and that is—accepting the challenge of entering the world of steel, aluminium, methanol, fertiliser, petrochemicals, in spite of our smallness and in spite of our existing level of technology."



-Eric Williams, Sod Turning Ceremony,
ISCOTT (1977)



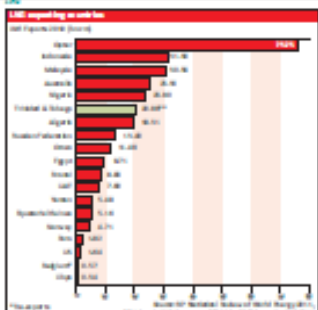
Energy

Trinidad and Tobago is a small island country with a population of approximately 1.3 million people. The country's energy sector is dominated by oil and gas, which are the primary sources of energy for the country. The energy sector is a key driver of economic growth and employment in the country.

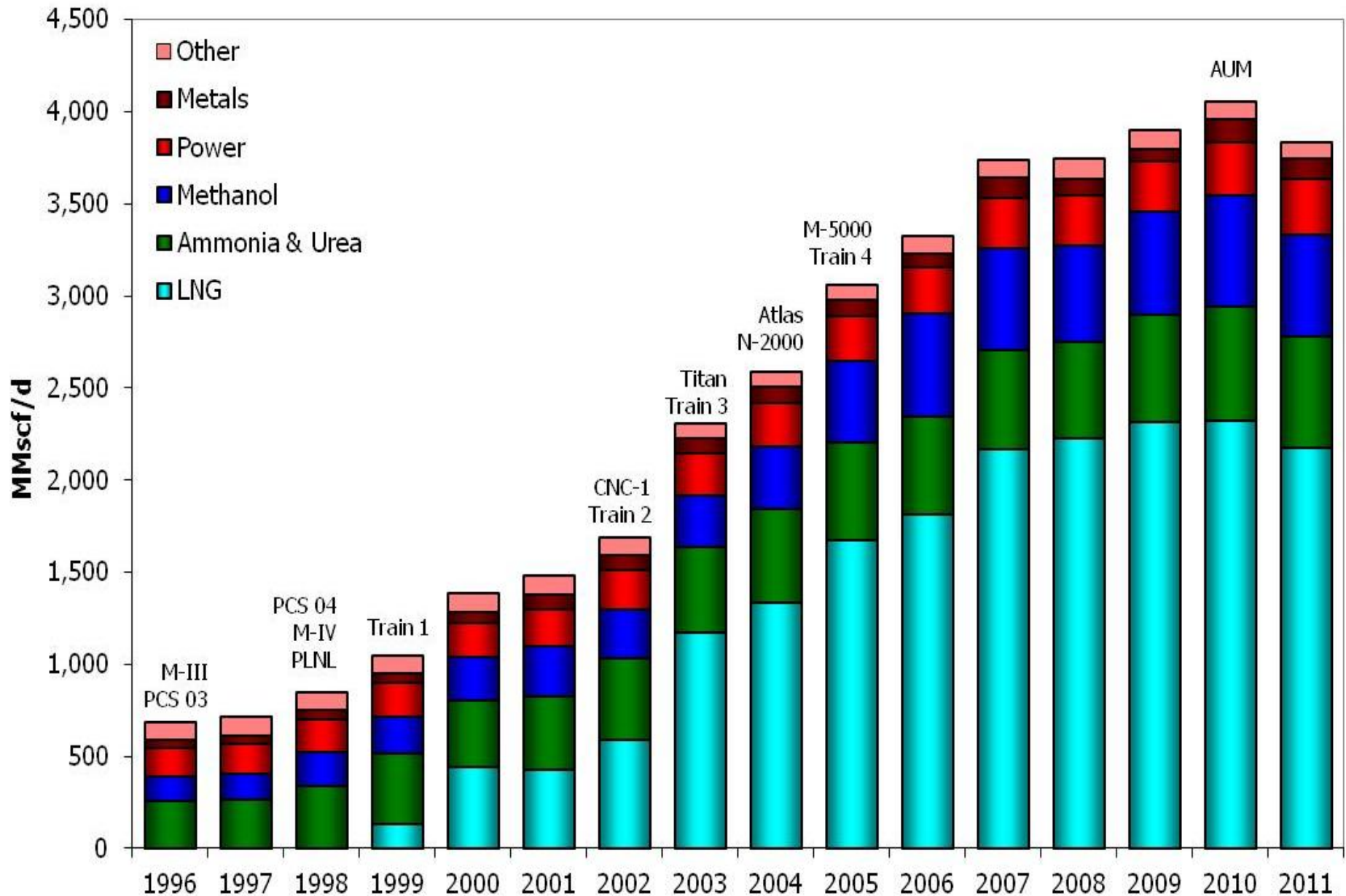
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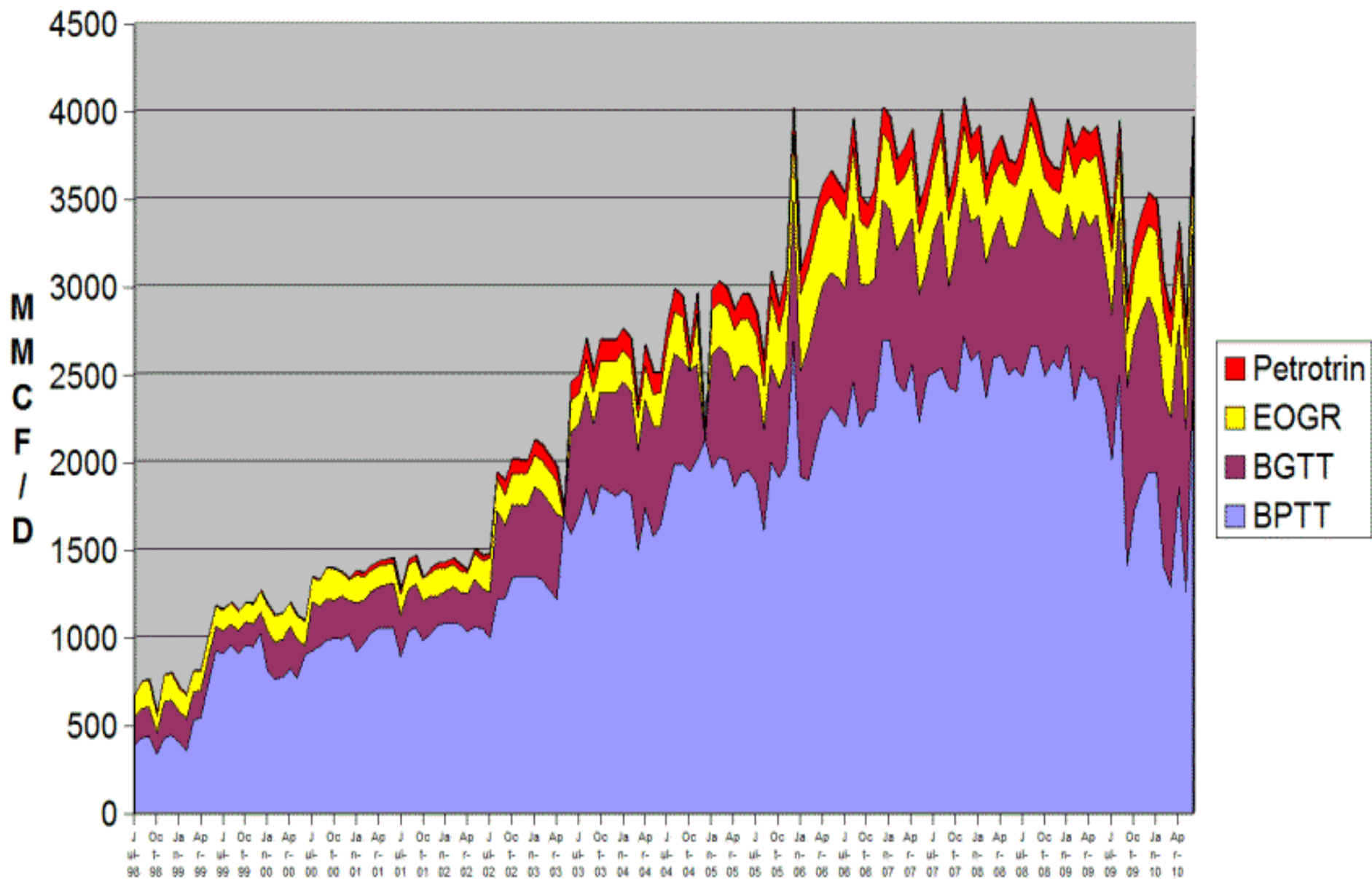
Company	Share (%)
TT-EB	45
TT-PS	35
TT-IG	20



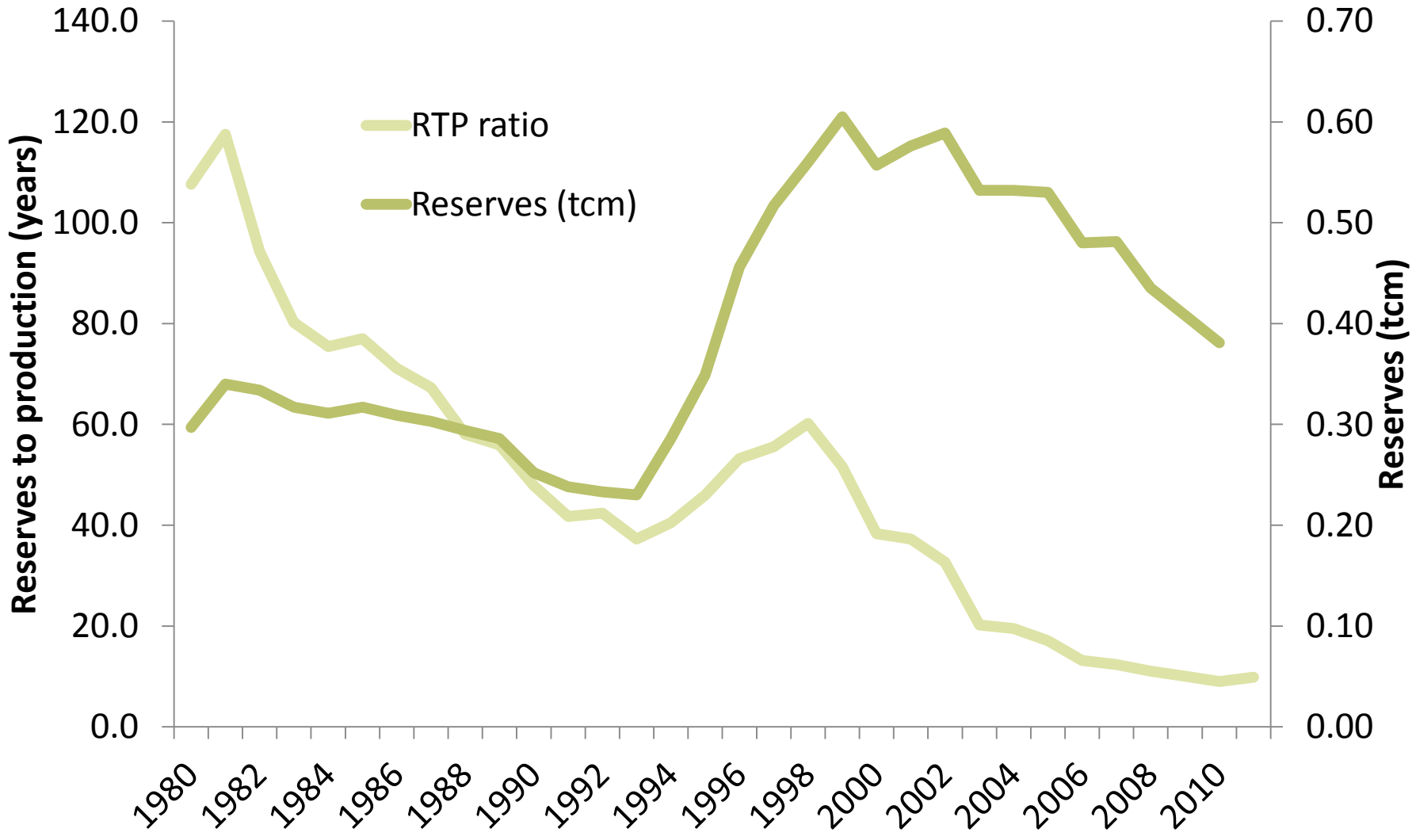
Growth in Natural Gas Utilisation



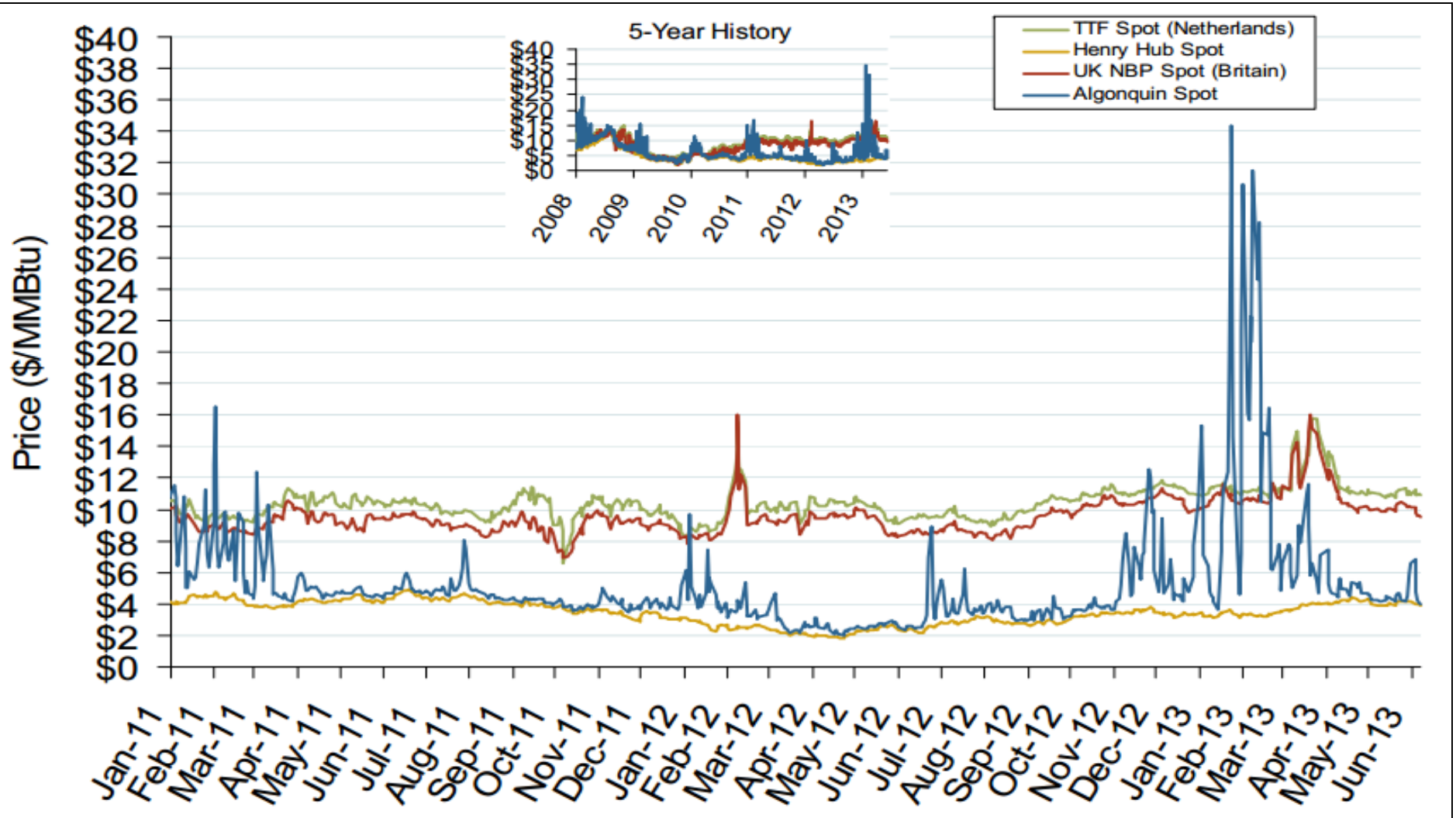
Trinidad Gas Production



Natural Gas Reserves / RTP Ratio



Natural Gas Prices



Energy Sector Impact on Economy

Selected Economic Indicators	2005	2006	2007	2008 ^r	2009 ^r	2010 ^r	2011	2012
Energy as % of GDP	45.9	47.0	45.0	50.8	35.9	35.7	45.3	43.7
Energy revenue as % of total revenue	52.7	61.9	55.5	57.1	49.5	51.8	57.5	54.3
Energy exports as % of total exports	88.9	91.1	87.0	88.2	85.4	82.8	82.3	81.4
Energy employment as % of total employment	3.4	3.5	3.7	3.4	3.3	3.2	3.0	3.5

Contribution of the Energy Sector to TT Economy
2012



- Energy sector not a major direct contributor to long term employment due to capital intensive nature of sector
- Activity in energy sector creates indirect employment in other sectors such as transportation, storage & communications

Energy Based Plants 2012



1 Natural Gas Liquids Processing Facility

4 LNG Trains

10 Ammonia Plants

1 AUM-(Ammonia, Urea Melamine)

7 Methanol Plants

1 Urea Plant

4 DRI Modules

4 Power Generation Plants

1 Petroleum Refinery

1 Cement Manufacturing Plant

Over 120 Light Industrial and Commercial Customers

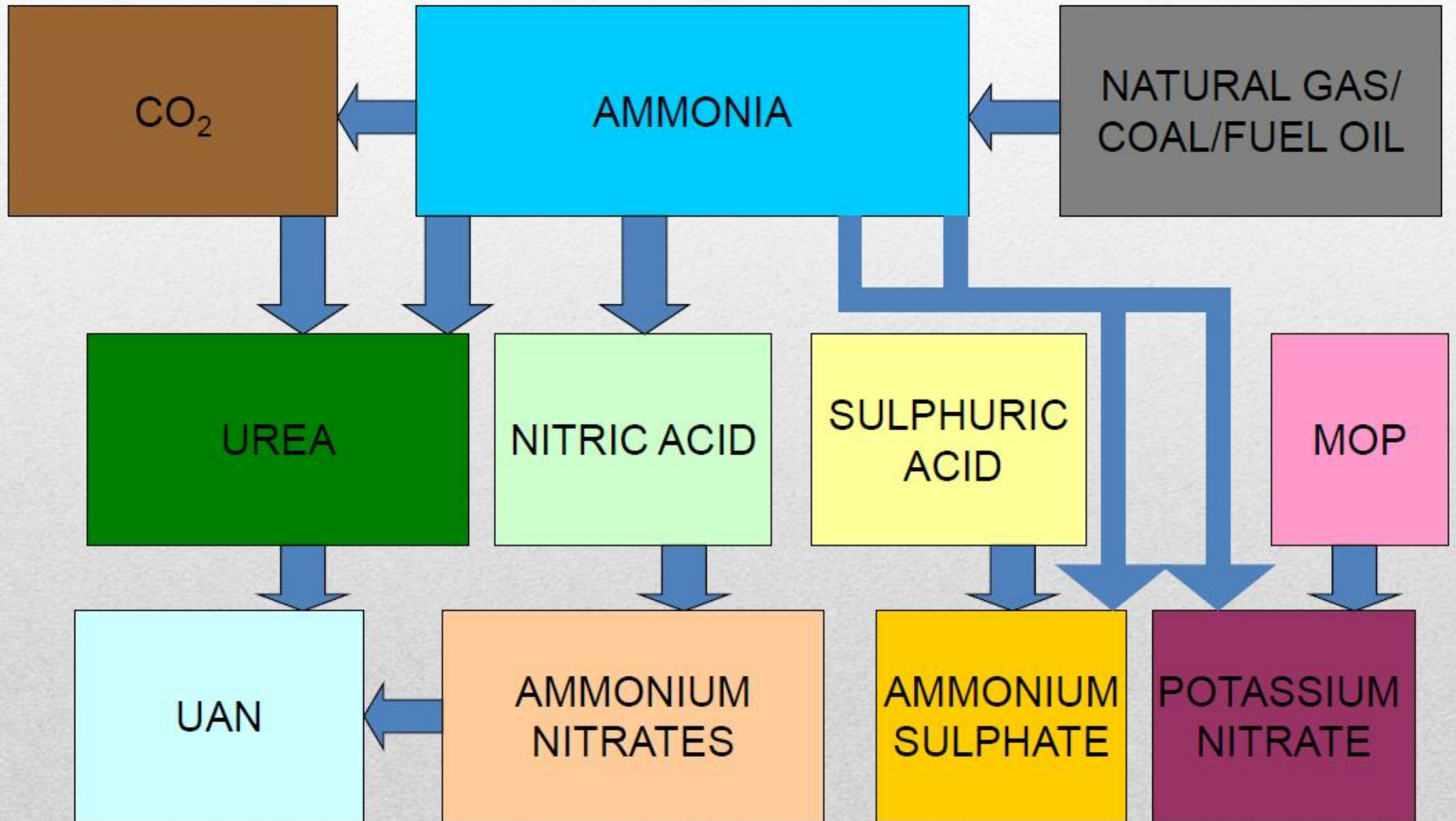
Ammonia Industry

10 Plants

#1 in Export from a
Single Site



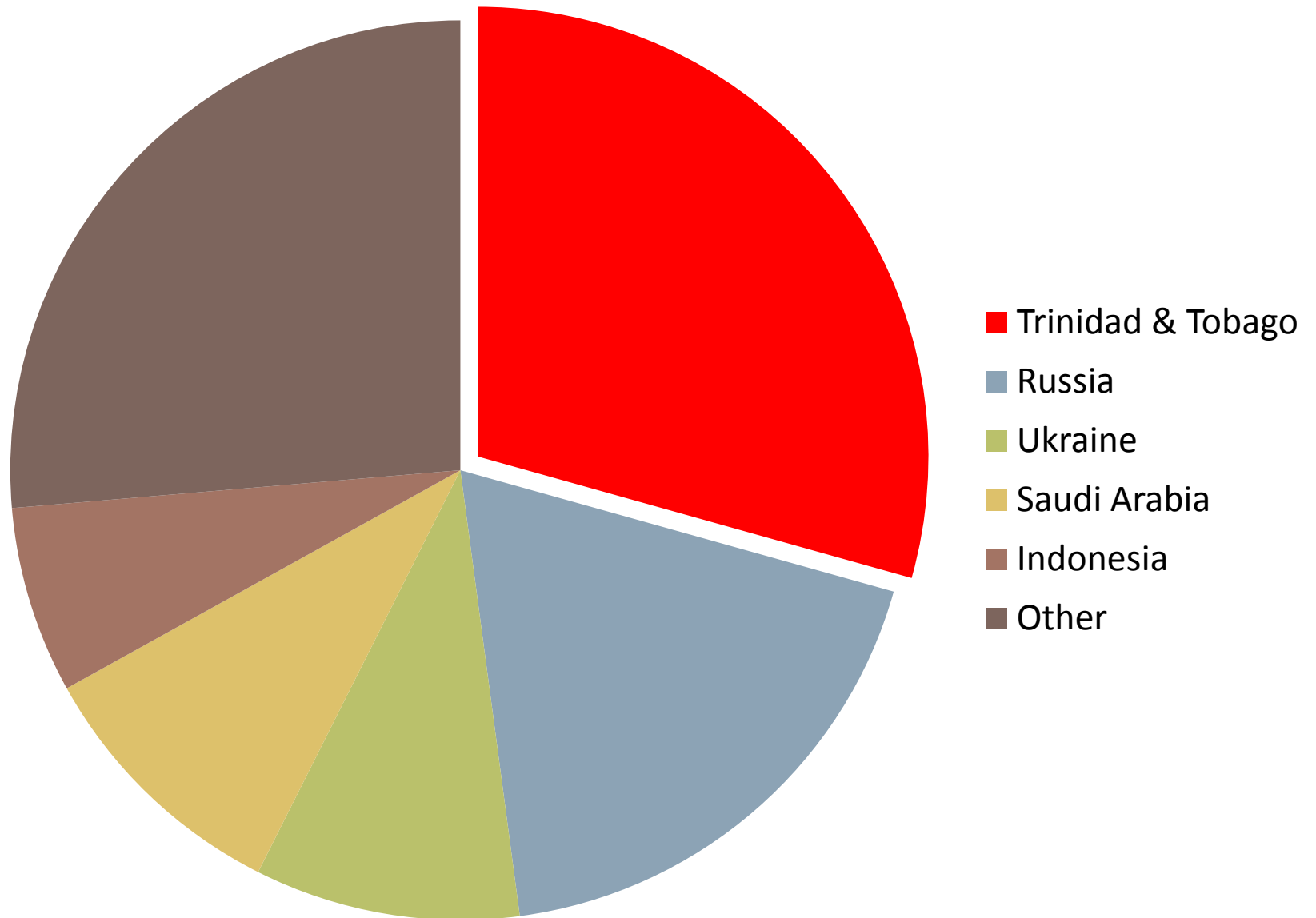
Nitrogen Production



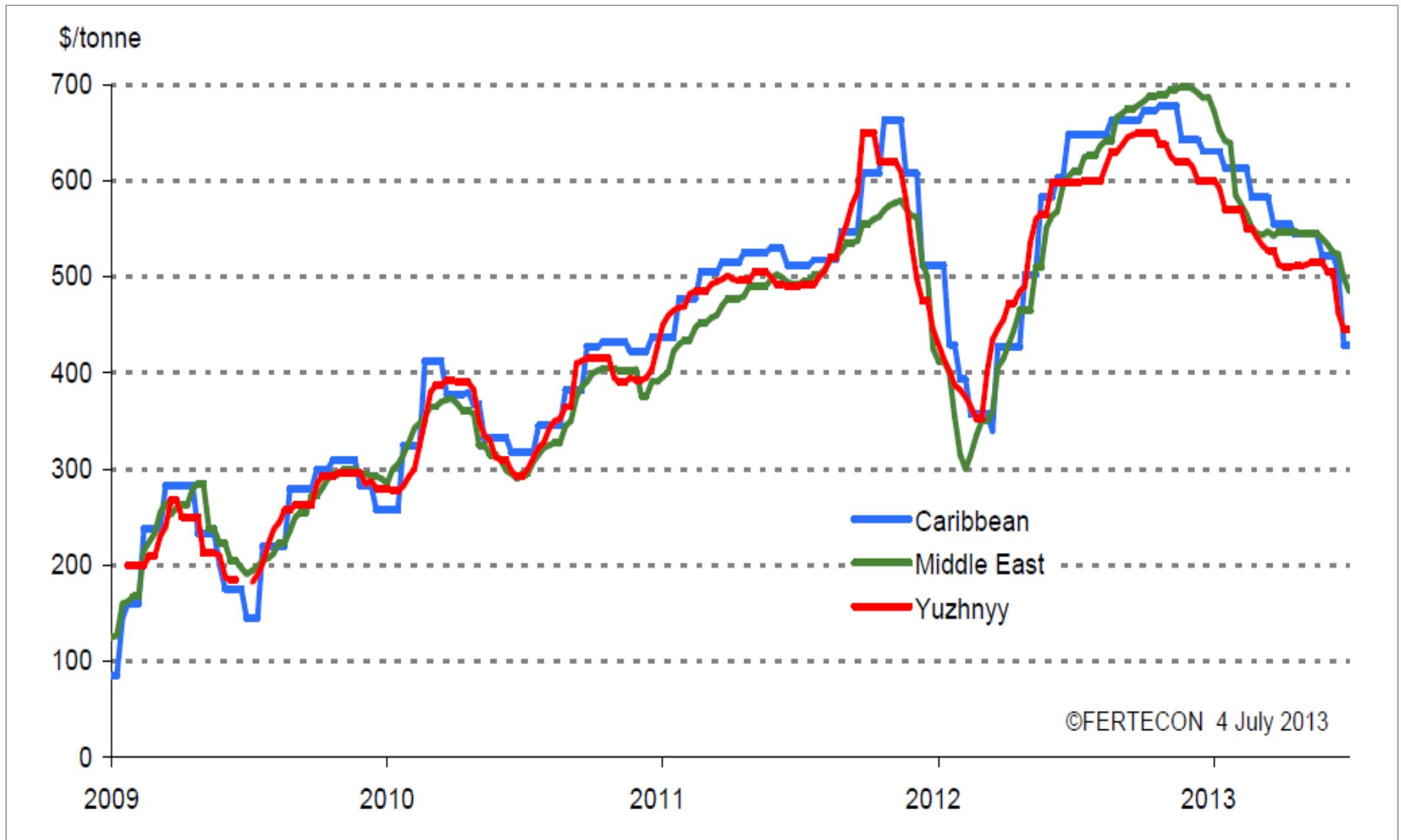
Fertilizer Companies

- Yara Trinidad Limited (formerly Hydro Agri)
- Trinidad Nitrogen (Tringen)
- PCS Nitrogen (formerly Fertrin)
- Point Lisas Nitrogen (formerly Farmland MissChem)
- Caribbean Nitrogen Company
- MHTL AUM (Ammonia Urea Melamine)

Ammonia Trade Volumes 2012



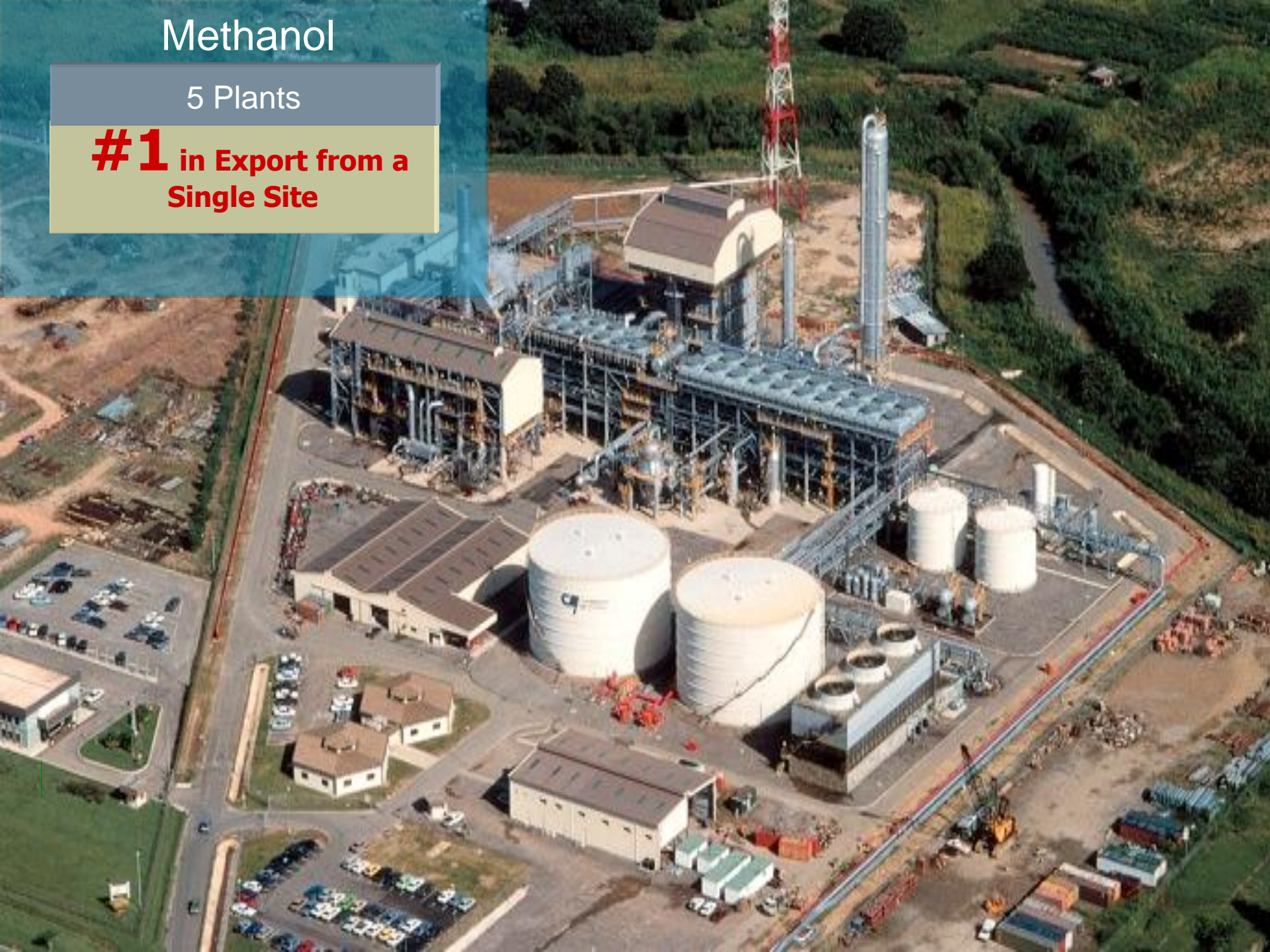
Ammonia prices 2009 - 2013



Methanol

5 Plants

#1 in Export from a
Single Site



Methanol value chain

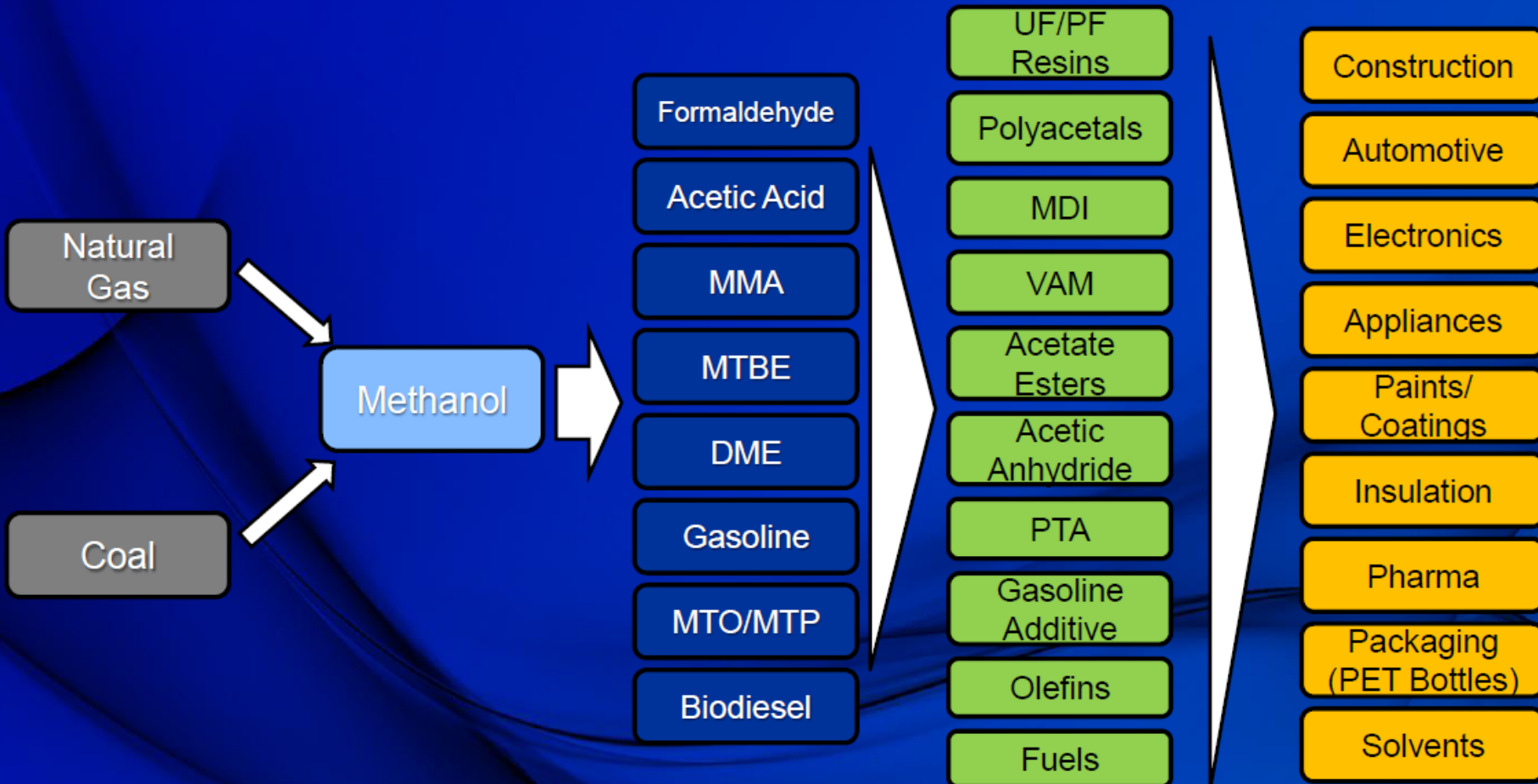
Feedstocks

Product

Derivatives

Products / End Uses

Sectors



Traditional Uses (Mature Markets)

Formaldehyde

Pharmaceuticals, Wood Industry, Automotive



Acetic Acid

Fleece, Adhesives, Paints



Dimethyl Terephthalate

Recyclable plastic bottles



Methyl Chloride

Silicones



Energy & MTO (High Growth Potential Markets)



Fuel Blending



DME

(dimethyl-ether)



BIODIESEL

MTO

Methanol-To-Olefins



Source: Methanex

Methanol Companies

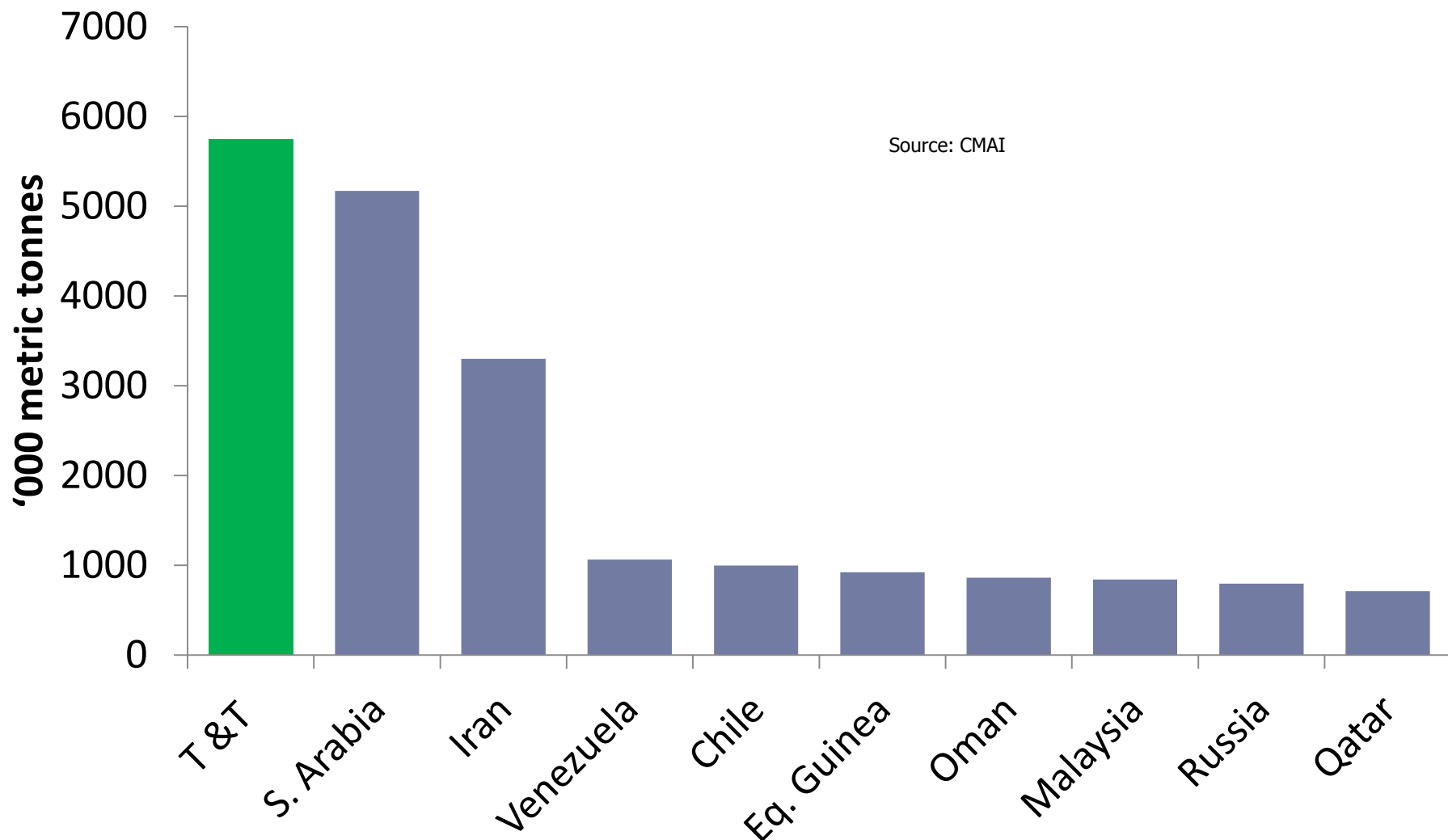
Methanol Holdings Trinidad Limited

- Caribbean Methanol Company
- Trinidad and Tobago Methanol Company.
- TTMC11
- CMC 11
- M5000

Methanex Limited

- Titan Methanol Company
- Atlas Methanol Company

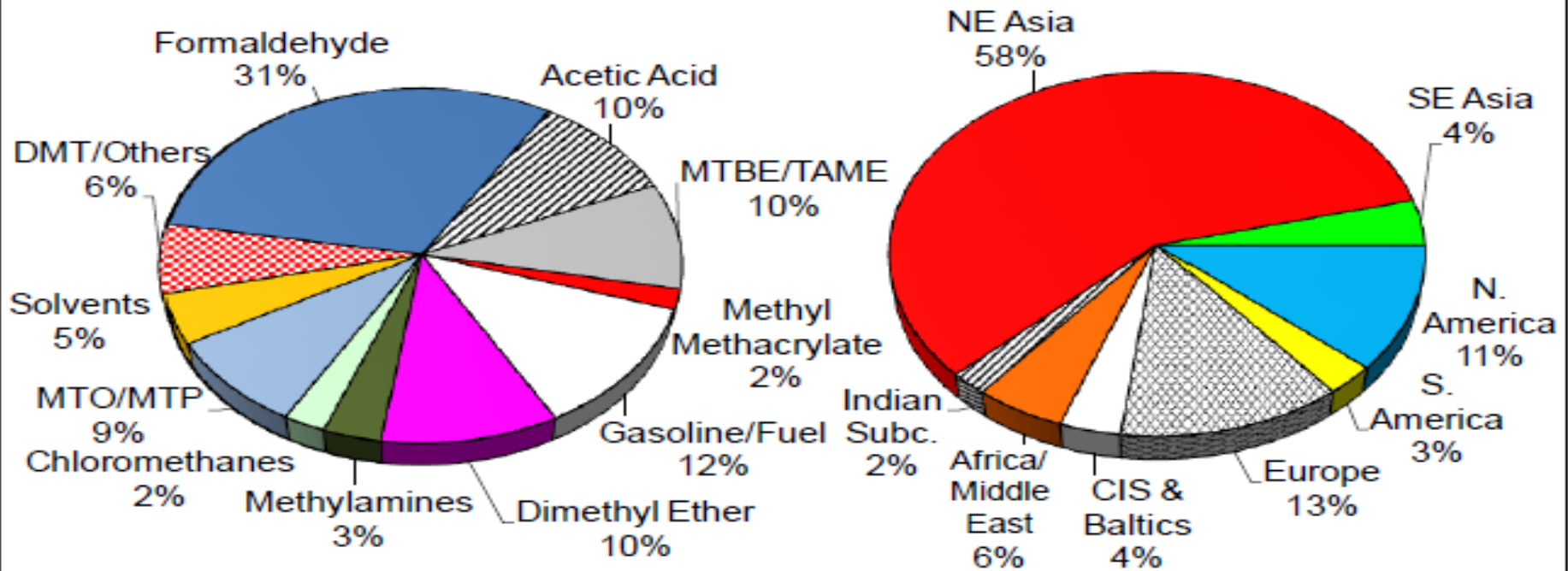
Top 10 methanol exporters 2009



Source: CMAI World Methanol Analysis 2010

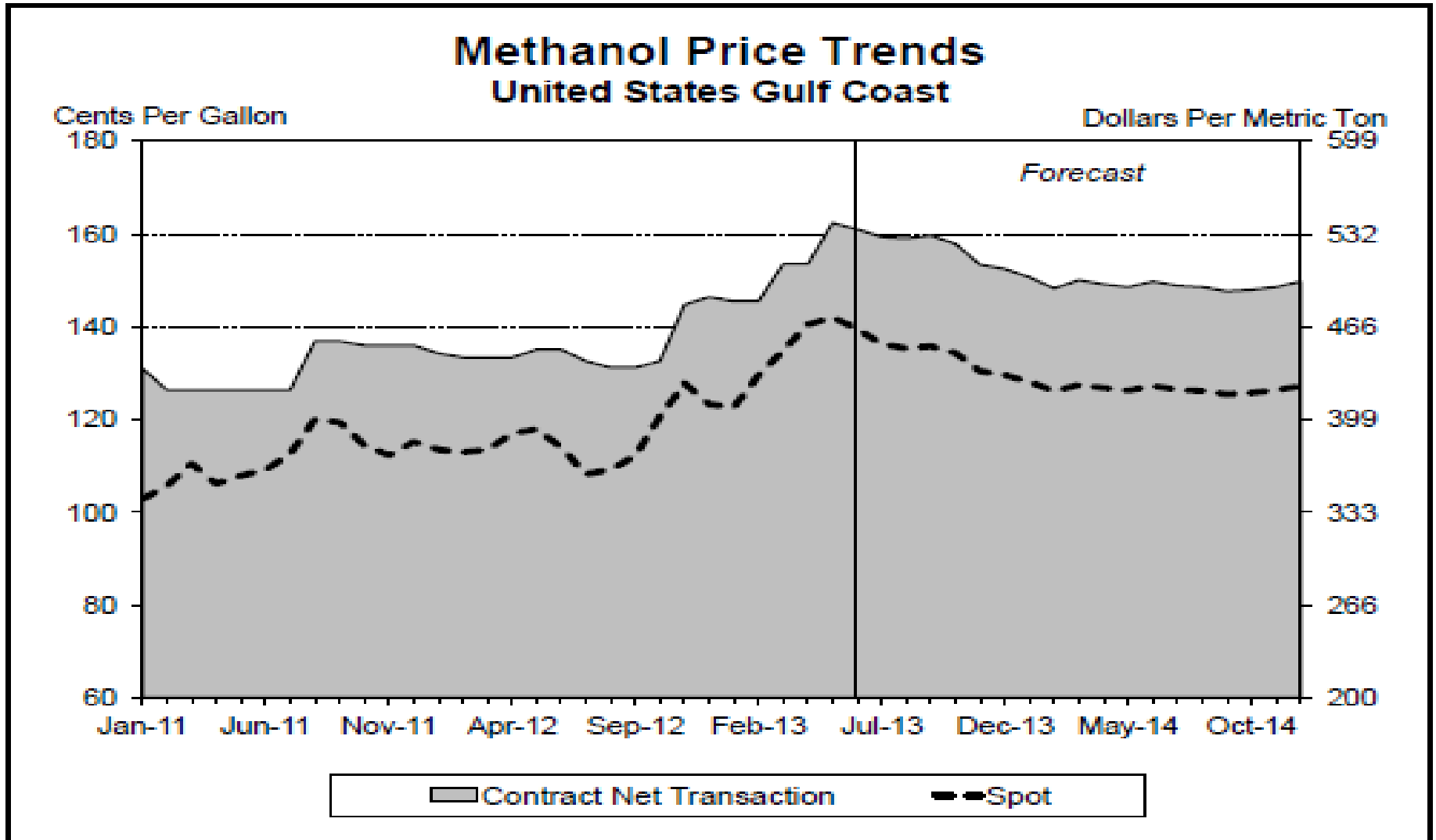
Methanol Demand

**World
2012 Methanol Demand**

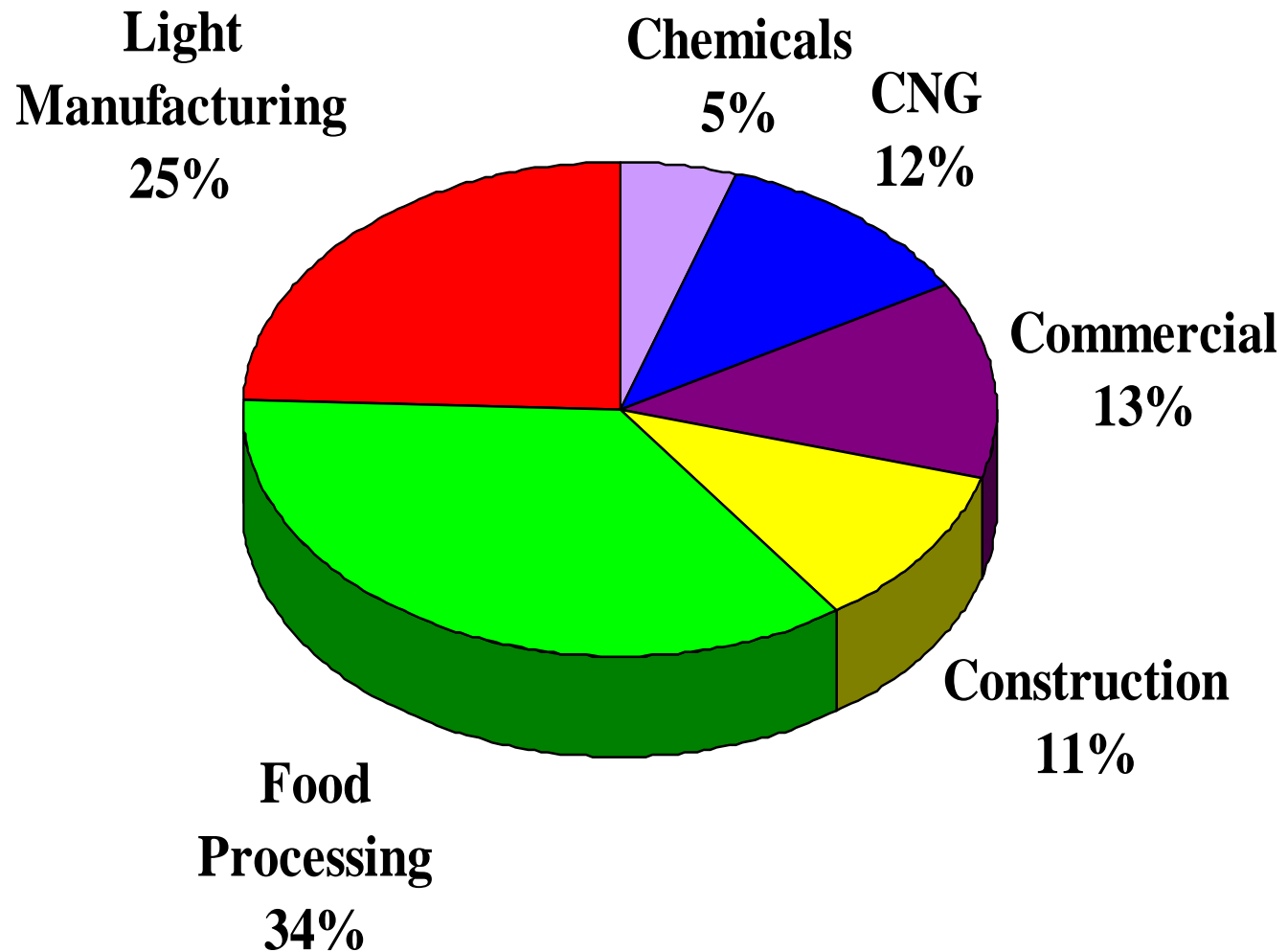


Demand = 61.4 Million Metric Tons

Methanol Prices



Light Industrial and Commercial Sector



Intermediate Petrochemical Opportunities

Methanol Based

- ▶ Formaldehyde Resins
- ▶ UF Resins
- ▶ Acetic Acid
- ▶ Vinyl Acetate Monomer

Ammonia Based

- ▶ Urea
- ▶ Melamine
- ▶ Nitric Acid
- ▶ Ammonium Nitrate
- ▶ UAN

Power Generation

T&T began using natural gas in power generation in 1963

T&TEC- Responsible for the transmission and distribution of power in T&T. Segmented in 1994

Independent Power Producers

- ▶ **Powergen** – plants at Penal, Point Lisas, Port of Spain, Cove Industrial Estate (1408 MW)
- ▶ **Trinity Power Ltd, Pt Lisas** - 1 plant (225 MW)
- ▶ **Trinidad Generation Unlimited, Union Estate** – (720 MW)





Impact of LNG on the economy

Gross Domestic Product	Slight increase in Petroleum Significant increase in Manufacturing Slight improvement in Finance, Insurance and Real Estate.
Balance of Payments	Temporary worsening of Trade account- Imports (via increased imports of machinery in the construction phase) Improvement in Terms of Trade – Exports (via LNG exports, liquids exports)
Employment	In the construction stage, net increase in temporary employment of 3,000 at peak (Civil engineers, mechanical engineers, manual labourers, etc.) In operational stage, increase in permanent employment of 140 people, of which 120 from TT. (Plant operators, shift engineers, administrative managers, maintenance personnel)
Foreign exchange generation	Significant gross earnings (exports of LNG) Conversions of foreign exchange by Atlantic LNG to Trinidad and Tobago dollars take the form of payments to local subcontractors, local wages and salaries, land and building taxes, etc.
Public Finance	Increased tax revenues from upstream sales of gas (pretax profit on BP Amoco gas sales taxed at 55 % (petroleum profits tax (PPT) and Unemployment Levy (UL)) Taxation of condensate from ALNG gas (supplemental petroleum tax (SPT) , PPT , UL) Limited royalties on gas sold to ALNG by BP Amoco. Taxation of increased NGC revenue (dividends from 10 per cent shareholding). Personal income taxation from employee payroll VAT on private consumption of local capital Taxation on personal services

Source: Richard Jobity and Sandra Racha "The Atlantic LNG Project: The State of Play". [Central Bank of Trinidad and Tobago Economic Bulletin Vol. 1 #2 August 1999.](#)

LNG Project Milestones

- 1992 Atlantic LNG Project initiated with MOU between Cabot and NGC
- 1993 Feasibility study – single train LNG plant
- 1995 Formation of Atlantic LNG Company of Trinidad and Tobago Limited
- 1996 Sod turning ceremony for ALNG project at Point Fortin site
- 1999 First shipment of LNG from Atlantic LNG Train 1 to Boston, USA.
- 2002 Start up of Train 2
- 2003 Start up of Train 3
- 2005 Start up of Train 4 – Q4 2005

Atlantic LNG Train 1

▶ Plant Owners

- ▶ Mix of gas producers, LNG buyers and state owned company:
- ▶ BP (Barbados) Holding SRL 34%,
- ▶ BG Atlantic 1 Holdings Limited 26%,
- ▶ Shell 20%,
- ▶ Summer Soca LNG Liquefaction S.A 10%
- ▶ NGC Trinidad and Tobago LNG Limited 10%

▶ Gas Supply

- ▶ bpTT - 100%

▶ Liquefaction capacity - 425 MMcf/d

Atlantic LNG Train 2 & 3

▶ Plant Owners

- ▶ bp 42.5%,
- ▶ BG 32.5%,
- ▶ Shell 25%,

▶ Gas Supply

- ▶ bp - 62.5% gas supply
- ▶ BG - 37.5% gas supply

▶ Liquefaction capacity - 450 MMcf/d

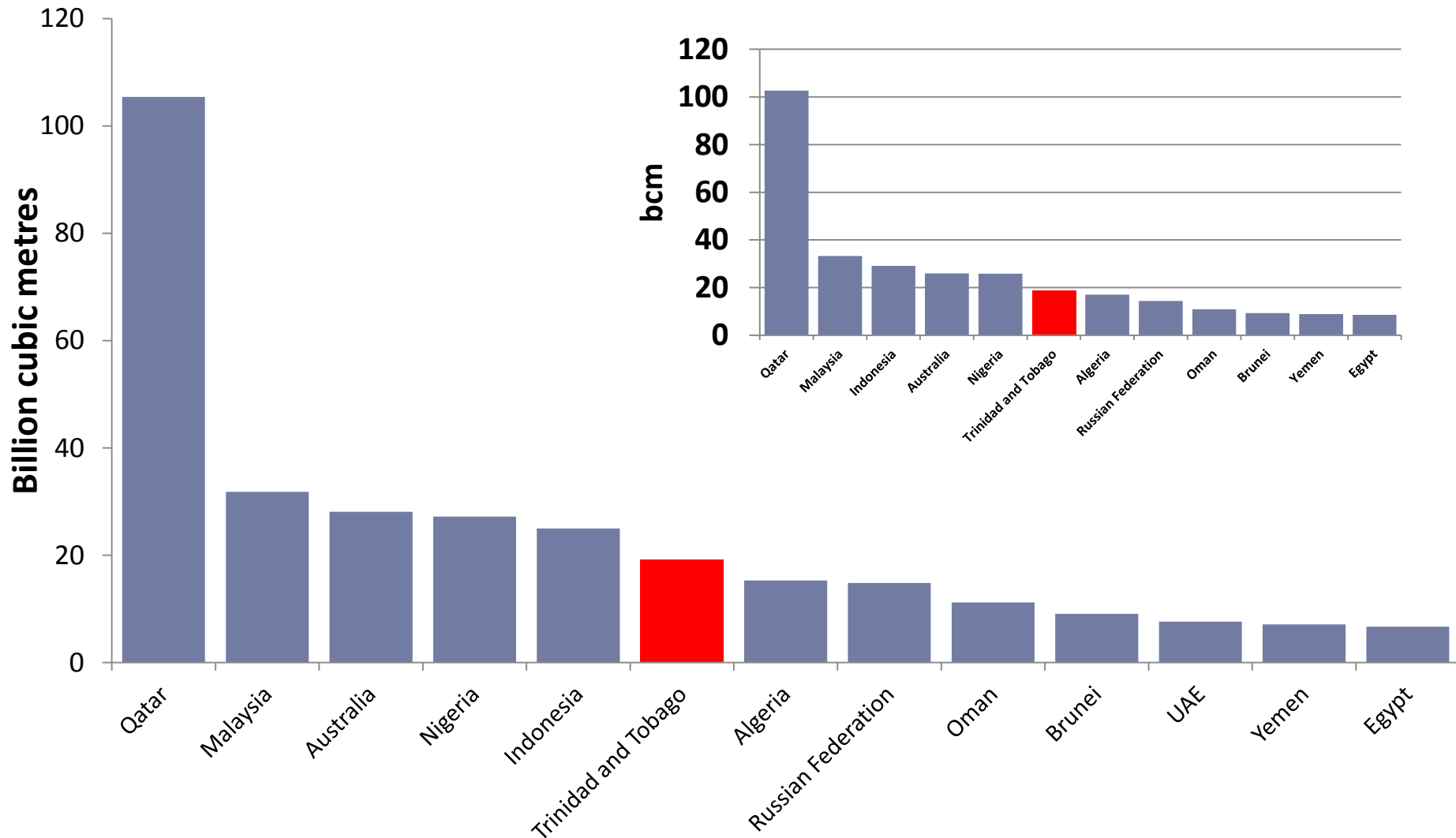
▶ LNG Sales

- ▶ bp - 62.5%, Spain
- ▶ BG - 37.5%, USA – Elba Island

Atlantic LNG Train 4

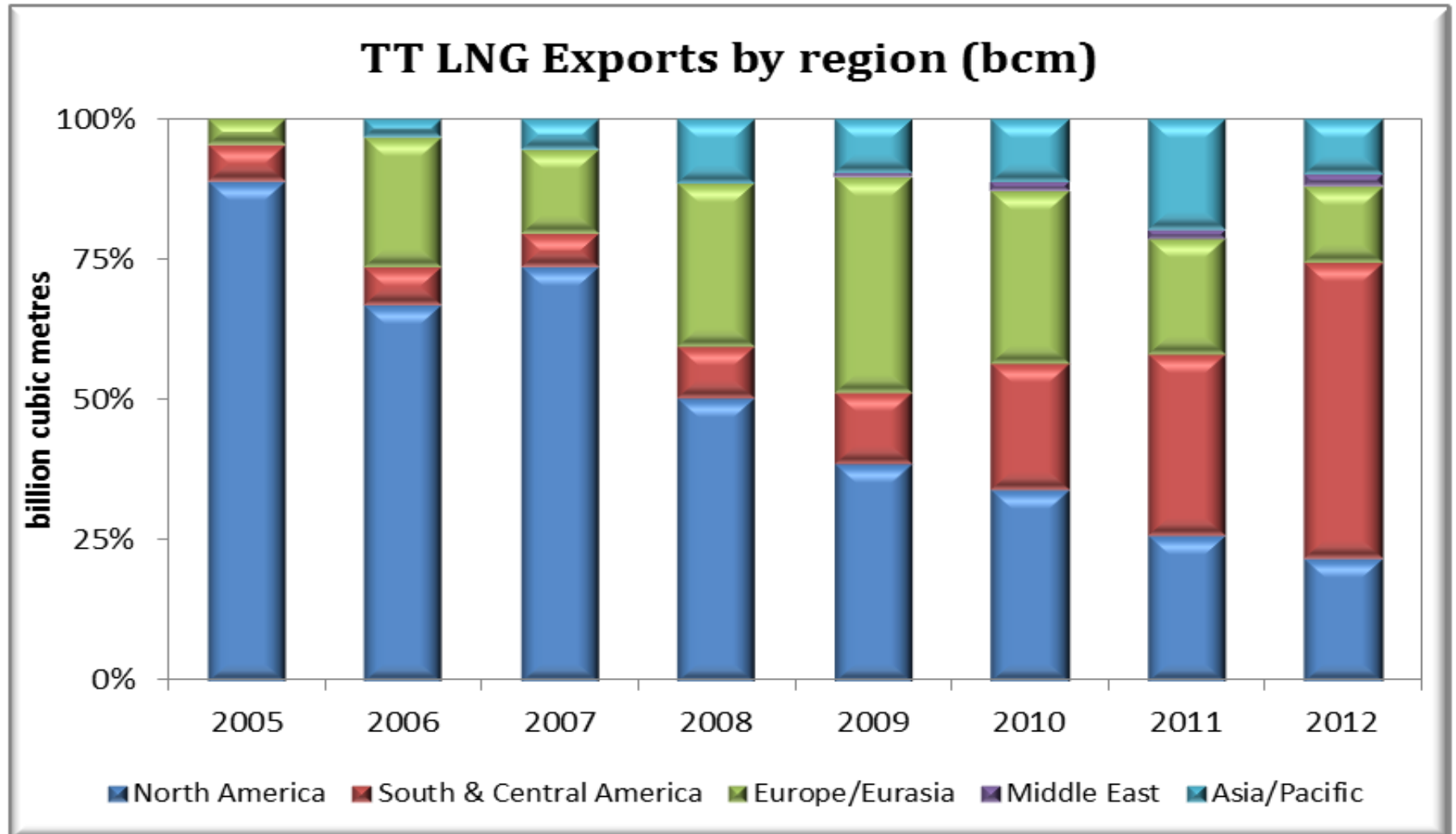
- ▶ Plant Owners / Gas Supply
 - ▶ bp - 37.78%
 - ▶ BG - 28.89%
 - ▶ Shell - 22.22%
 - ▶ NGC - 11.11%
- ▶ Liquefaction capacity - 800 MMcfd

LNG Exports by Country 2012



Source: BP Statistical Review of World Energy 2013

LNG exports by region



Natural gas imports

billion cubic feet (Bcf)

Zoom

5Y

10Y

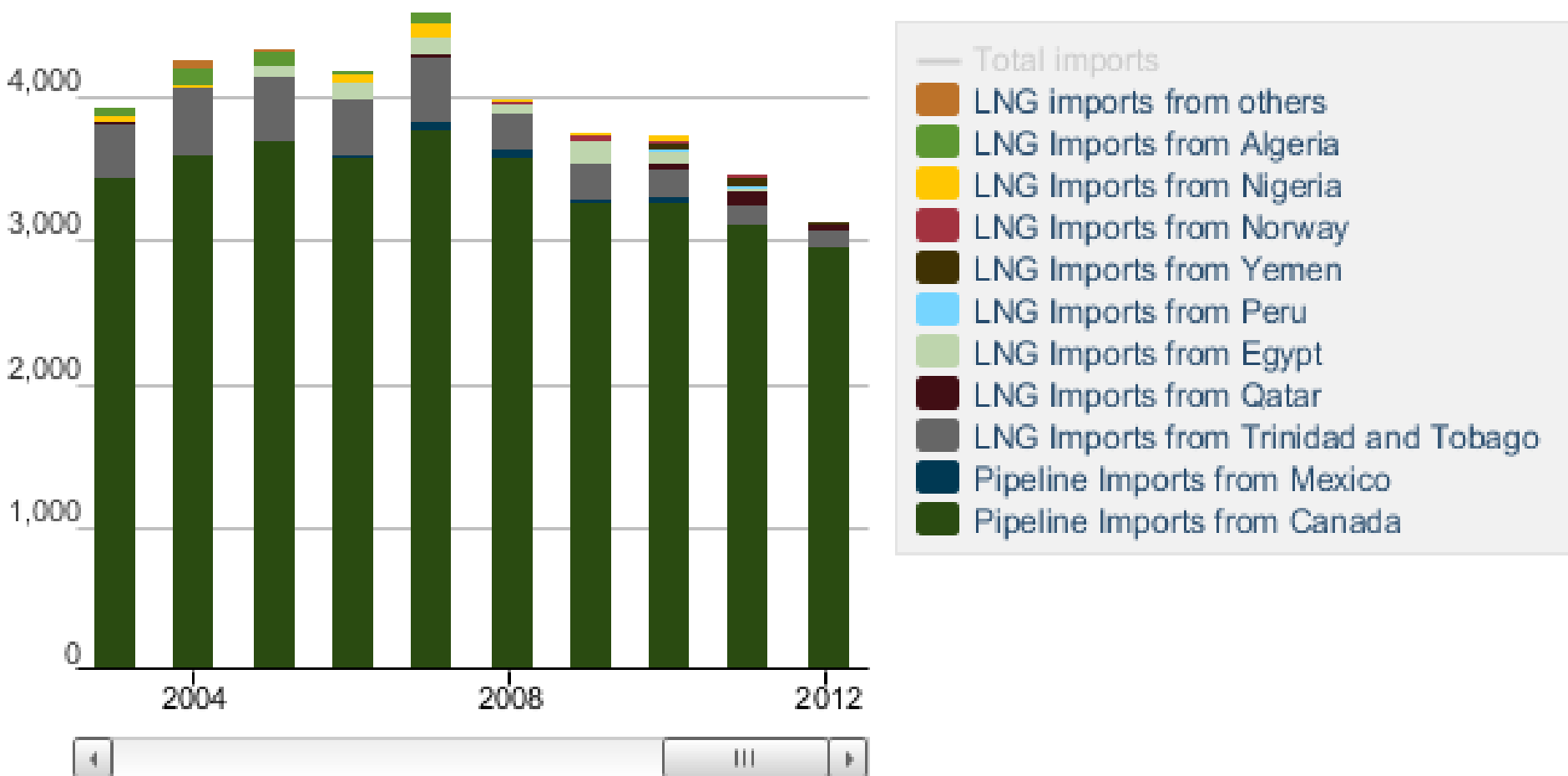
All

From

2003

To

2012



LNG Prices July 2013

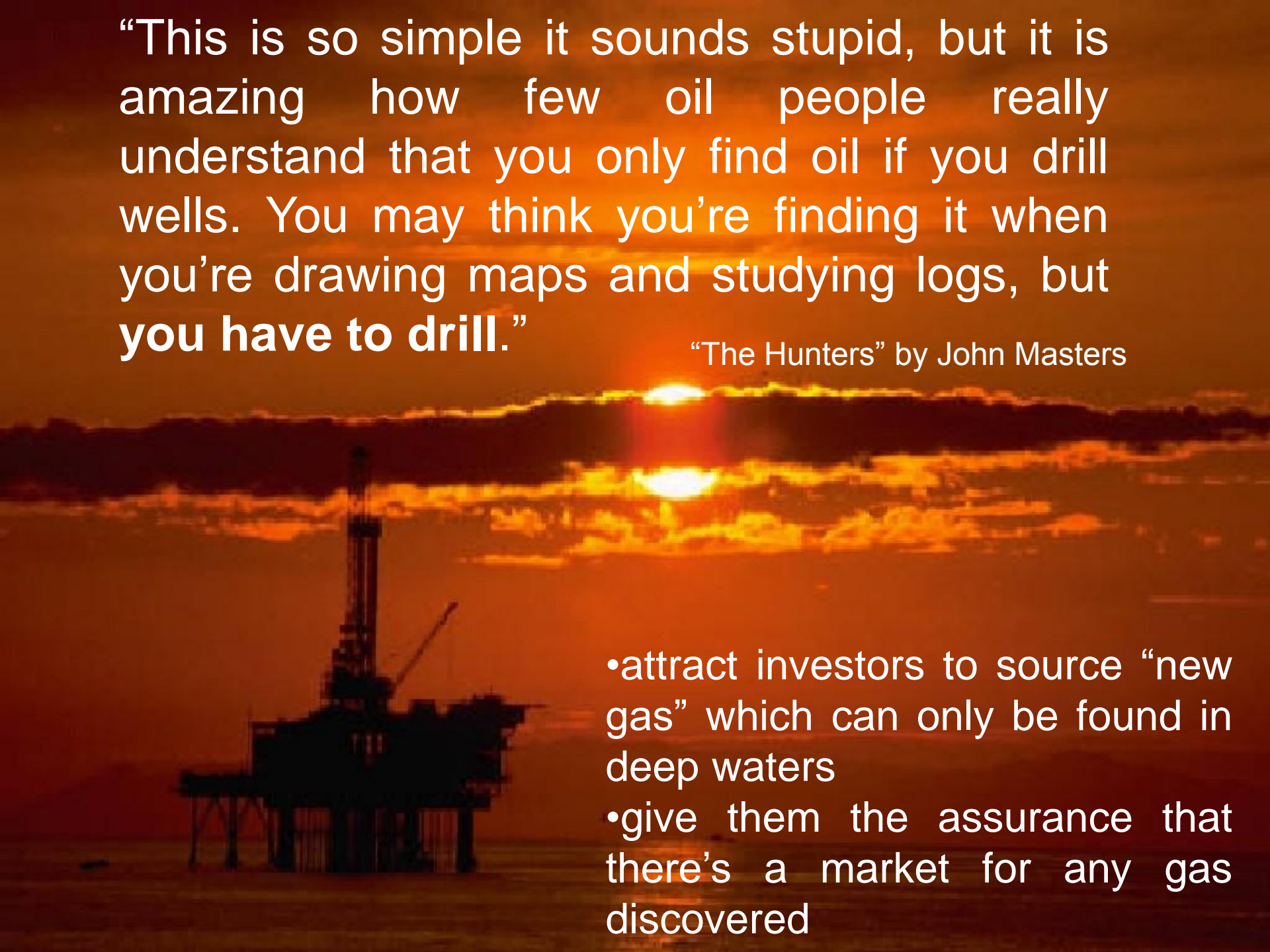




Diversification – making the basket bigger

“This is so simple it sounds stupid, but it is amazing how few oil people really understand that you only find oil if you drill wells. You may think you’re finding it when you’re drawing maps and studying logs, but **you have to drill.**”

“The Hunters” by John Masters

- 
- A silhouette of an offshore oil rig is visible on the left side of the image, set against a dramatic sunset sky with a bright sun low on the horizon. The rig's structure, including its derrick and various platforms, is clearly outlined against the warm, orange and yellow light of the setting sun. The overall scene conveys a sense of industrial activity in a natural, atmospheric setting.
- attract investors to source “new gas” which can only be found in deep waters
 - give them the assurance that there’s a market for any gas discovered

Energy policy imperatives



- **Legislative reform**
- Increase E&P: deep water, heavy oil tar sands
- Increase oil production: EOR, heavy oil, LOFO.
- Rationalization in refining sector



- Aggressive exploration to improve RTP ratio
- Market growth through value added downstream
- Diversification
- External thrust
- Reform of merchant model

A large offshore oil rig is shown in the background, featuring a tall derrick with a yellow light at the top and several cranes. The rig is situated on a platform over the ocean. The text is overlaid on a semi-transparent grey background.

Increase oil and gas activity

Signing of new production sharing contracts

Deepwater drilling initiatives

Reprocessing of existing seismic data

New bid rounds for oil and gas exploration

Onshore exploration

Redevelopment / refurbishing of TRINMAR

Energy Policy Imperatives

Power Gen.

- Efficiency, reliability, accessibility
- Legislative reform to support renewable energy

Alt. Energy

- Legislative incentives to promote use (both demand & supply side)
- Expansion of CNG as alternative vehicle fuel.

Fiscal Policy reform

- Fiscal incentives for renewable energy
- Continuous reform of gas legislation PSC framework to promote continuous exploration and development.

Energy Services

- Local content policy framework established in 2004
- Local content legislation to support services sector growth; leveraging of export potential

Initiatives: Sustainability

Upstream

- Ensure acreage is offered at regular intervals to ensure reserve replacement

Downstream

- Development of new projects and expansion of infrastructure to support industry growth

People

- Review and improvement of mechanisms to ensure increasing local value added

Competitive Bid Rounds

- Deepwater Bid Round opened in July 2013, Onshore Bid Round

New Exploration and Production

- Greater activity in sector

Development and EOR

- Focus on land and shallow water: Gulf of Paria; heavy oil deposits



Downstream imperatives

Focus on adding value to existing petrochemical base



Bidding process for targeted projects



Emphasis on future linkages to local manufacturing



Downstream gas allocation criteria

Degree of value added

Environmental impact

Capital expenditure

Degree of local content

Extent of variation with gas price

Early construction Plan

Cabinet Approved Allocation Criteria

Energy efficiency


Local content in construction and operations

Variation in terms and conditions for power

Variation on estate and pier rates

Additional benefits [CSR]

Global Strategy?

- 
- ▶ **Leveraging strengths in emerging markets**
 - ▶ **Investment possibilities across the natural gas value chain**
 - ▶ Upstream
 - ▶ Midstream - pipeline and processing
 - ▶ Downstream - Petrochemicals, other
 - ▶ Power generation

Global Initiatives

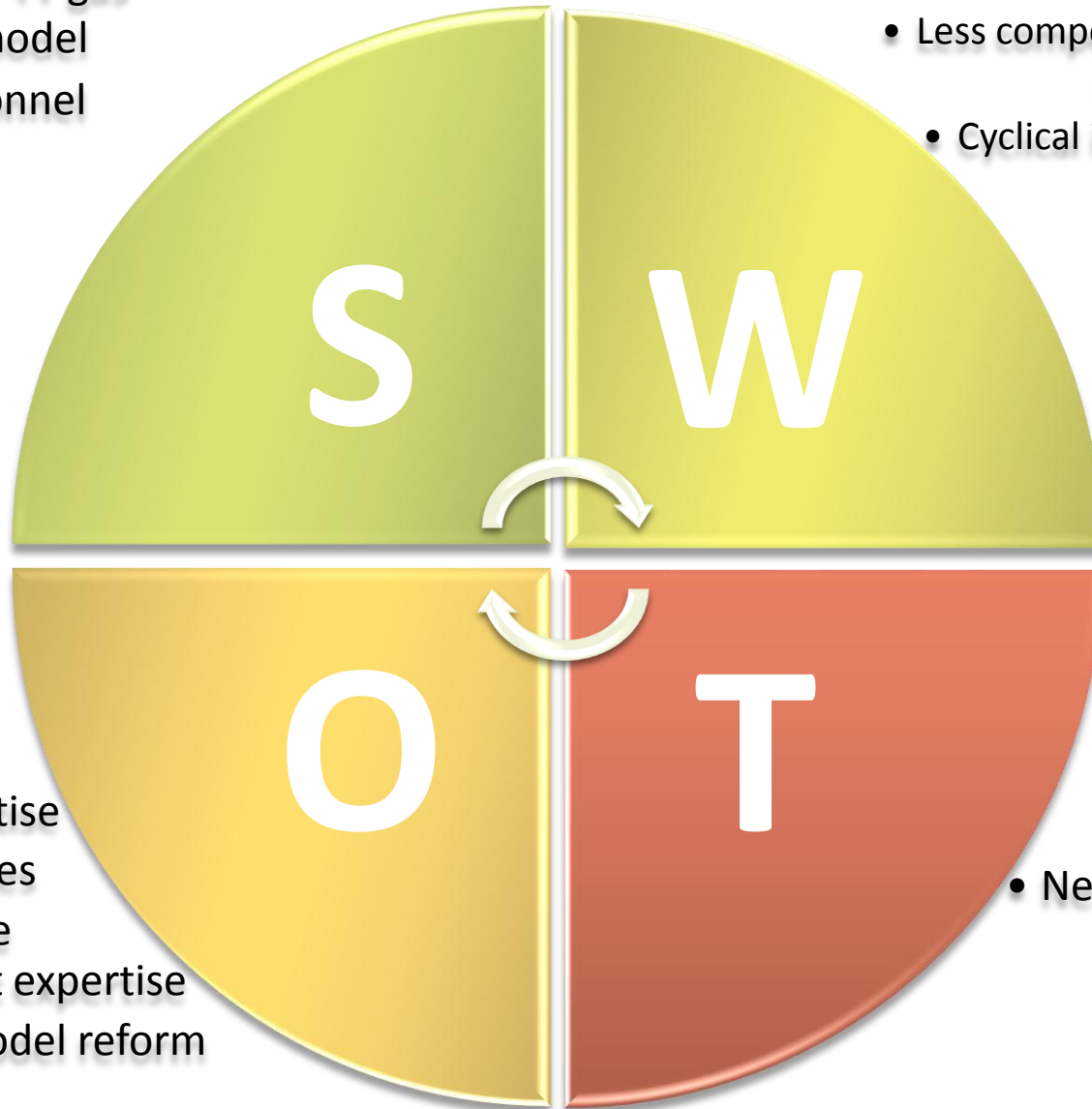
- **Caribbean gas possibilities**
 - ECGPL to Barbados, Suriname
- **African gas possibilities**
 - Tanzania , Uganda, Kenya, Mozambique, Ghana, Nigeria



SWOT

- Point Lisas /"TT gas Industry" model
- Expert personnel

- High gas prices
- Less competitive tax structure
- Mature gas fields
- Cyclical investments; sector activity cyclical



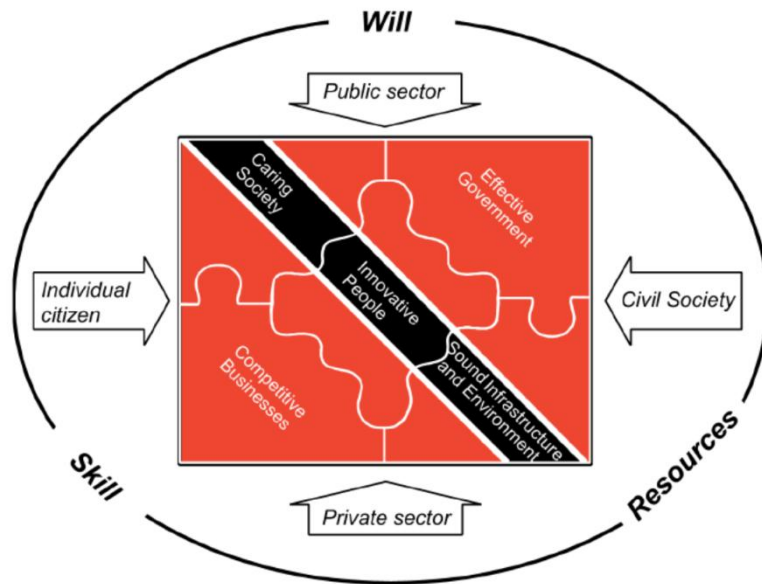
- Export expertise
- Export services
- Infrastructure development expertise
- Merchant model reform

- Shale gas
- New gas provinces
- Lack of agility



Two strategies employed in last decade

2004-2010
“Vision 2020”



2011-present
“Innovation for Lasting Prosperity”



SEVEN INTERCONNECTED PILLARS FOR SUSTAINABLE DEVELOPMENT

PILLAR 1

People-Centred Development

We Need Everyone and All Can Contribute

PILLAR 2

Poverty Eradication and Social Justice

Preference for Poor and Disadvantaged

PILLAR 3

National and Personal Security

Human Security for Peace and Prosperity

PILLAR 4

Information and Communication Technologies

Connecting T&T and Building the New Economy

PILLAR 5

A More Diversified, Knowledge Intensive Economy

Building on the Native Genius of Our People

PILLAR 6

Good Governance

People Participation

PILLAR 7

Foreign Policy

Securing Our Place in the World

Success of this
strategy based
on the
execution of a
coherent
strategy.

Time will tell.

What I will talk about

Natural gas in the global context

History, overview, and importance of natural gas industry to
Trinidad and Tobago

Natural Gas Value Chain

Fundamentals of purchasing and pricing of natural gas

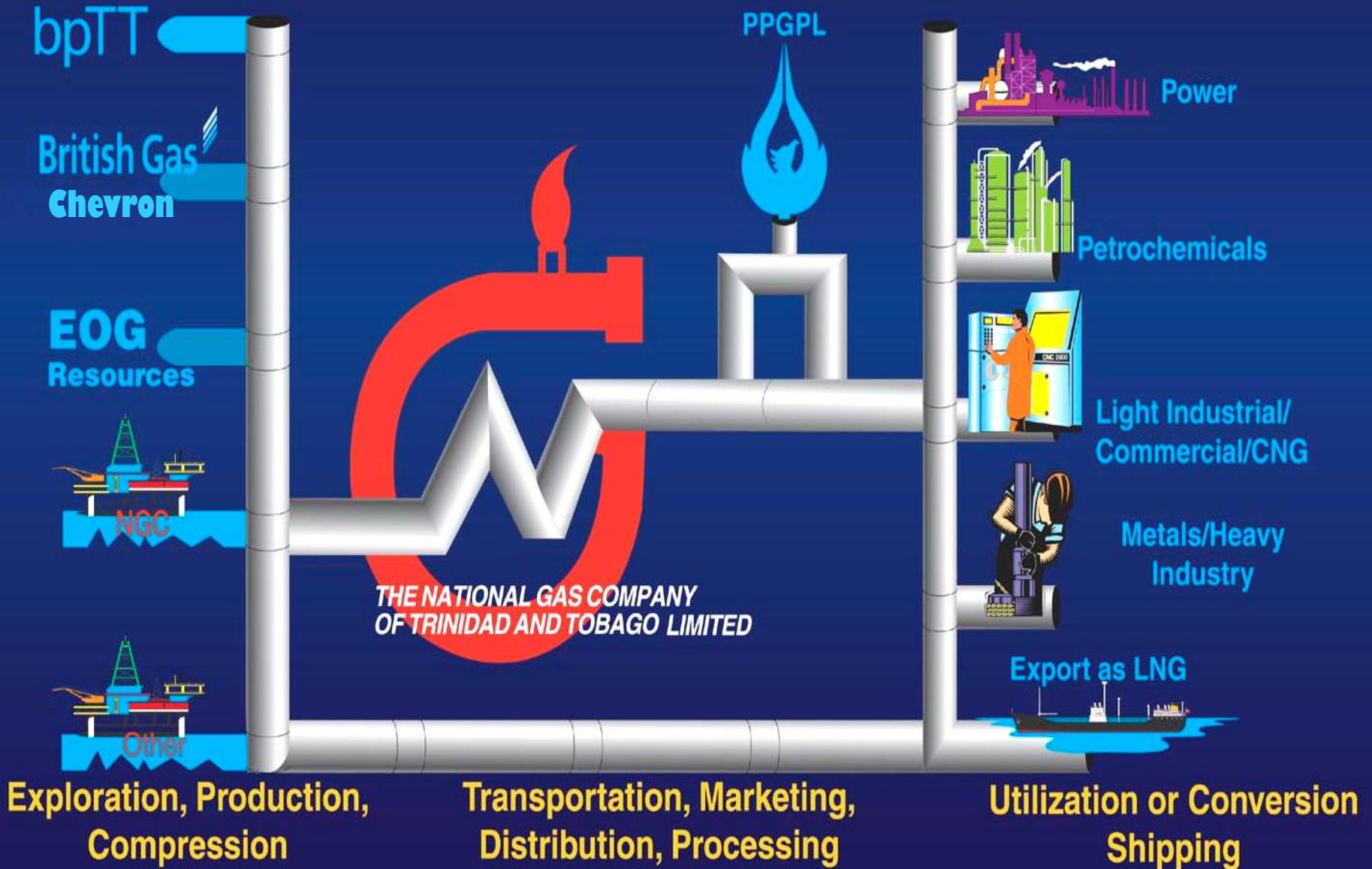
Market Development:

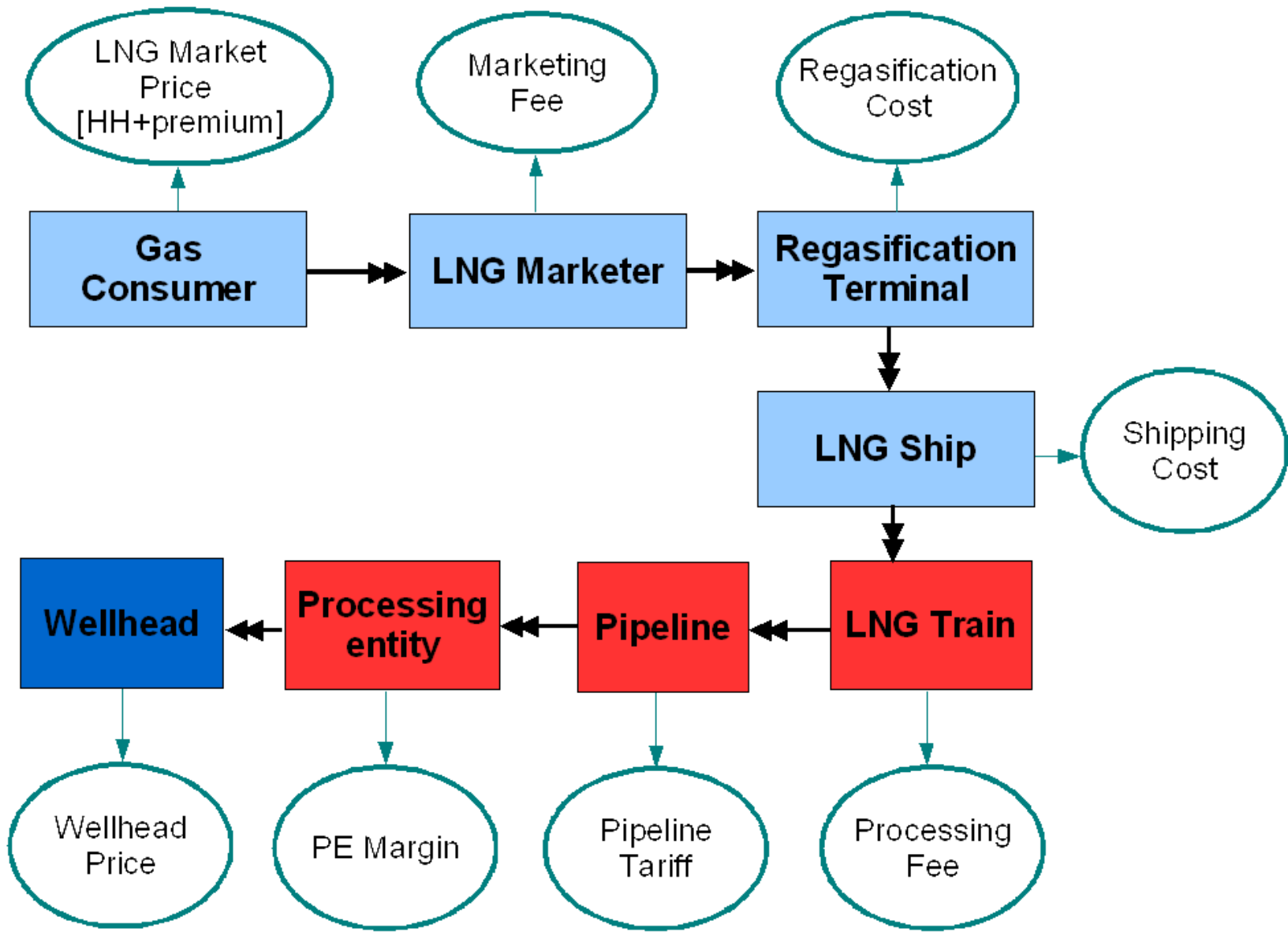
Market Research, Project Development, Project Facilitation & Investment Promotion, Infrastructure Development

Upstream

Midstream

Downstream





LNG Value Chain

Gas Production



Liquefaction



Shipping



Regas Terminal



Pipeline Distribution



Final takeaways

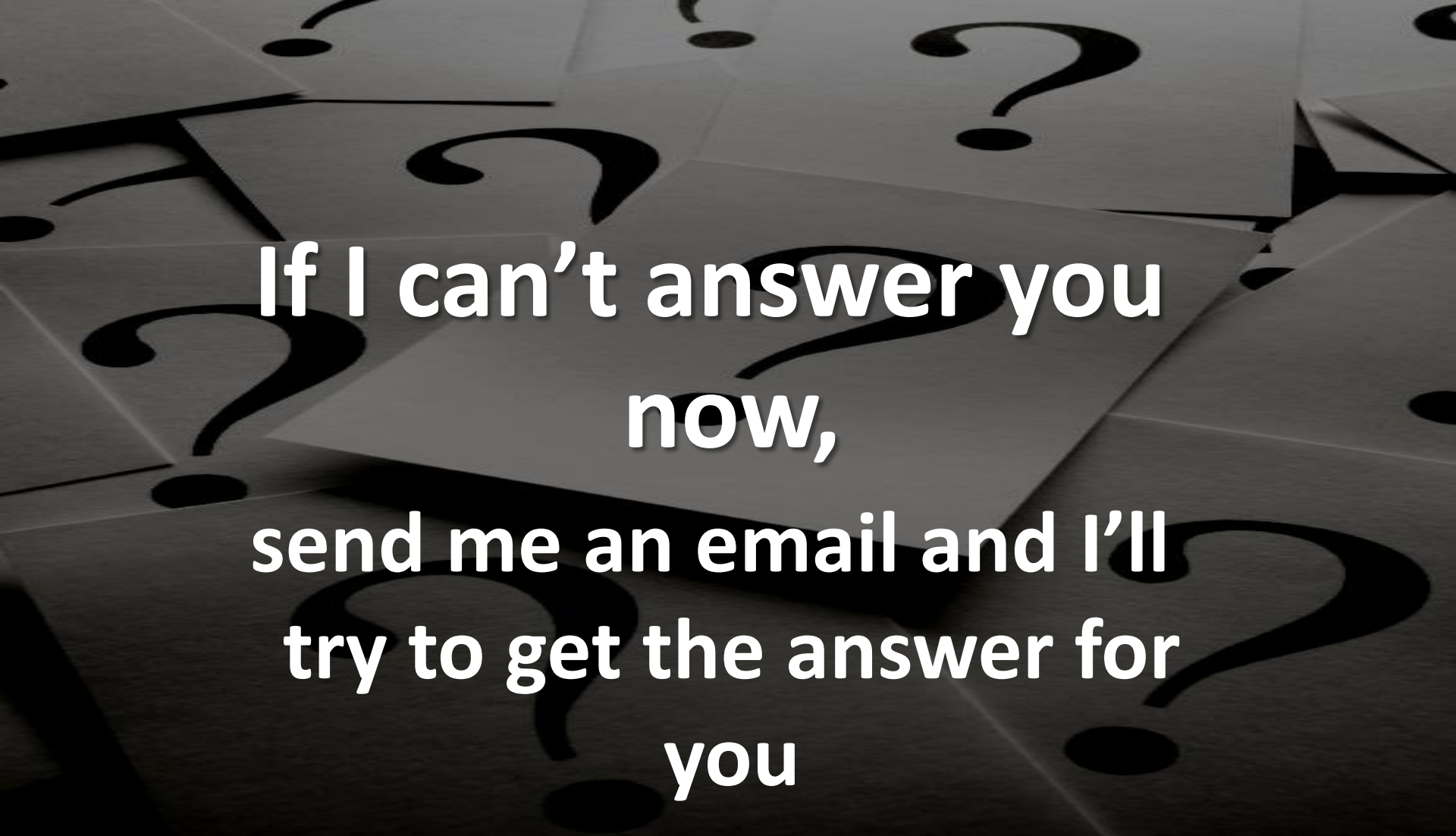
- ▶ Trinidad and Tobago **still** remains heavily dependent on gas and gas-based industries
- ▶ We're doing a lot with the resources we have and are creating value with our natural gas reserves and gas use strategies
- ▶ **what got us to where we currently are won't necessarily get us where we need to be in the future**
- ▶ Proper strategies, policies and execution are needed to get us to the next level – a multinational gas sector that sustainably extracts reserves to the mutual benefit of the investors and Trinidad and Tobago.



“... I urge you to accept that role, that challenge with the same determination, the same sense of discipline, with the same attitude towards productive, hard work that your parents and indeed your grandparents had...”



Thank you!

The background consists of several overlapping, slightly tilted rectangular papers or cards. Each paper has a large, bold, black question mark printed on it. The papers are arranged in a way that creates a sense of depth and layering, with some papers appearing to be on top of others. The overall color palette is grayscale, with the papers being a light gray and the question marks being a dark gray or black.

**If I can't answer you
now,
send me an email and I'll
try to get the answer for
you**

richardj@ngc.co.tt