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Pat Bishop
2010

Trinidad and Tobago Energy Conference 2018

Transforming the T&T Natural Gas Industry: Maximizing the Value Chain

Mark Loquan, President | The National Gas Company of Trinidad and Tobago Ltd

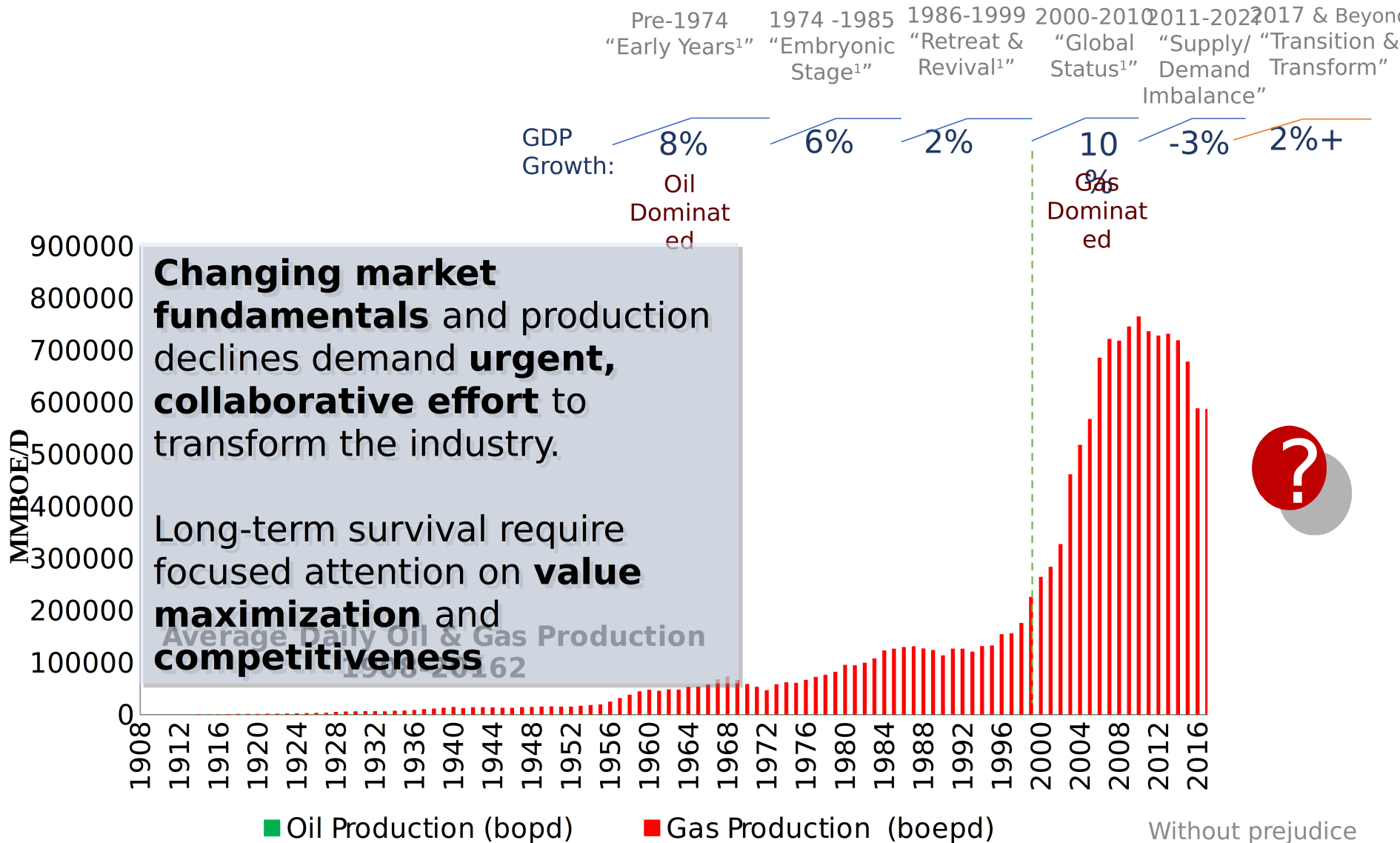
2018-Jan-22

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Where do we Grow from here?



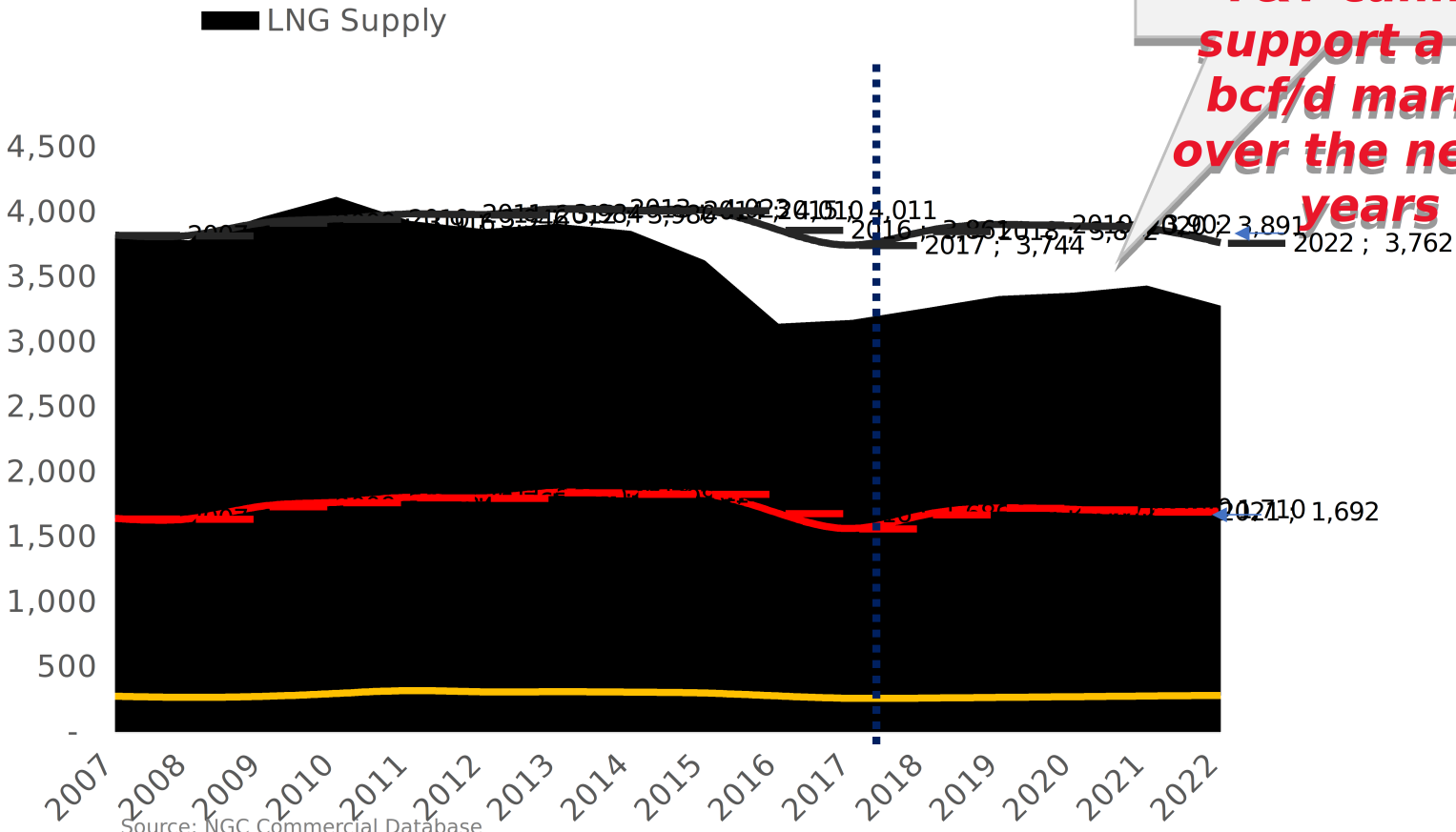
Industry y Update

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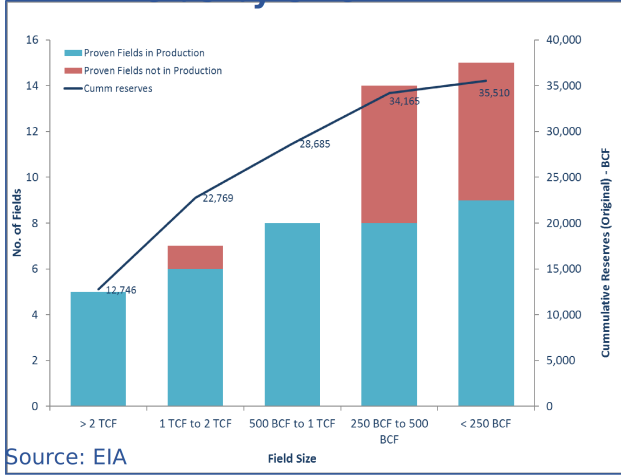
Based on current level of Upstream activity T&T cannot support a 4.2 bcf/d market over the next 5 years

2007-2022 Trinidad Gas Supply (mmscfd)

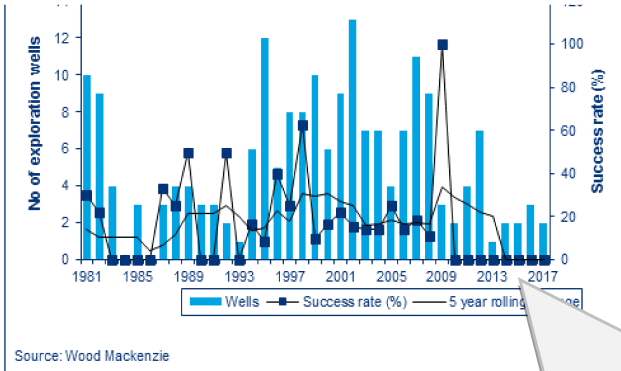


Source: NGC Commercial Database

Distribution of Proven Fields by Size

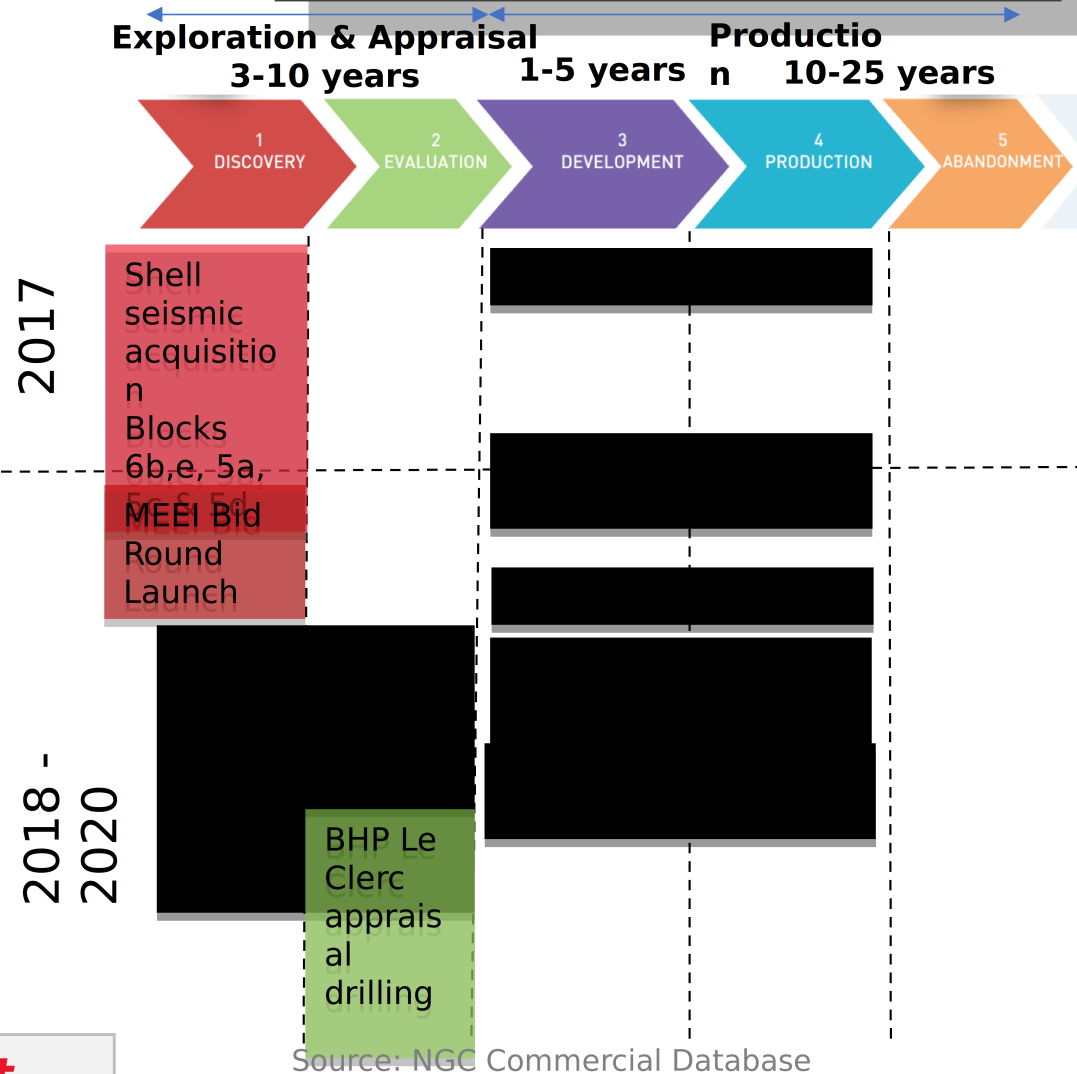


Drilling Activity and Commercial Success Rates



Supply

Offshore Exploration & Development activity increase



Exploration investment critical to finding new hydrocarbons

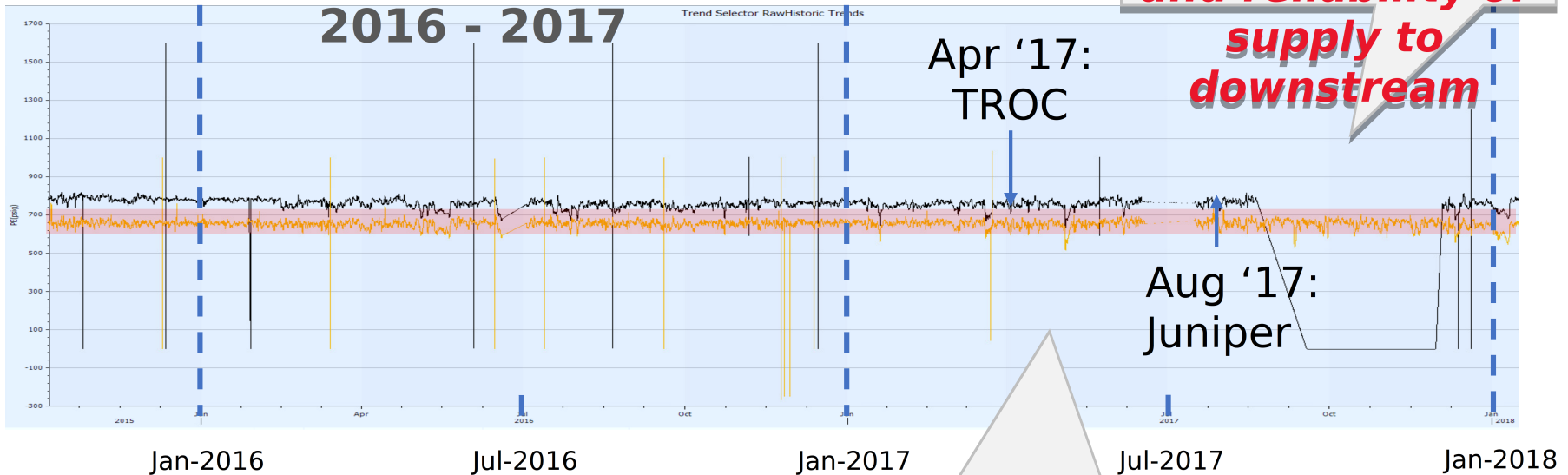
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NGC as the DOMESTIC AGGREGATOR: More than just a Transporter!

- Greater network stability and supply reliability through co-ordination of upstream and downstream work plans

TROC/Juniper added capacity (not incremental volumes); improving network stability and reliability of supply to downstream

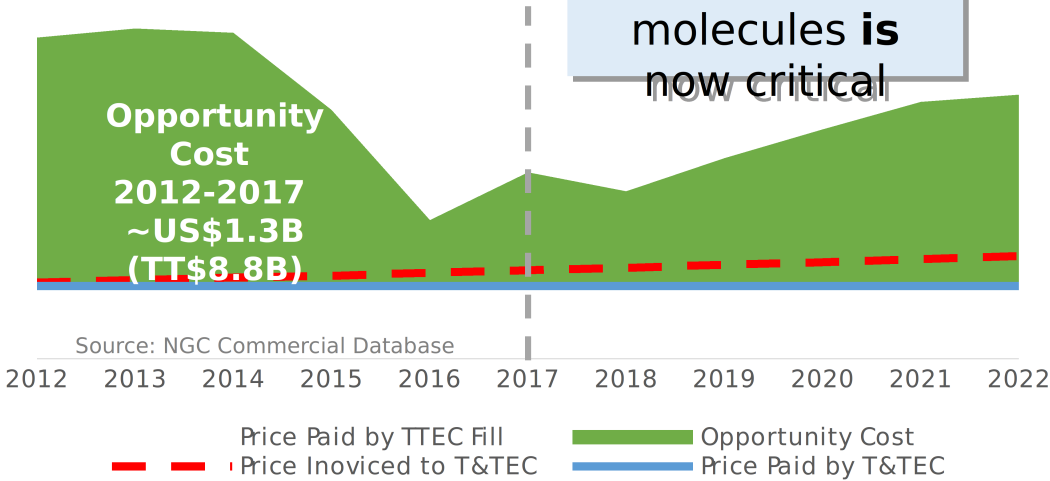
Inlet Pressure on Domestic Network



- Inlet Pressure - Upstream
- (BUD)
- Inlet Pressure - Downstream (PPVS)
- Control Range (650 psi)

Greater Co-ordination of Downtime through data sharing with TTUOG and PLEA; less unplanned downtime

Impact of Low T&TEC Price on NGC



Focus on **Energy Efficiency** and **best value** for molecules is now critical

Collaboration with T&TEC has reduced consumption by 14%, and increased output

Source: NGC Commercial Database

Gas Consumption (m³ in HJ)

Power Generation Improvement

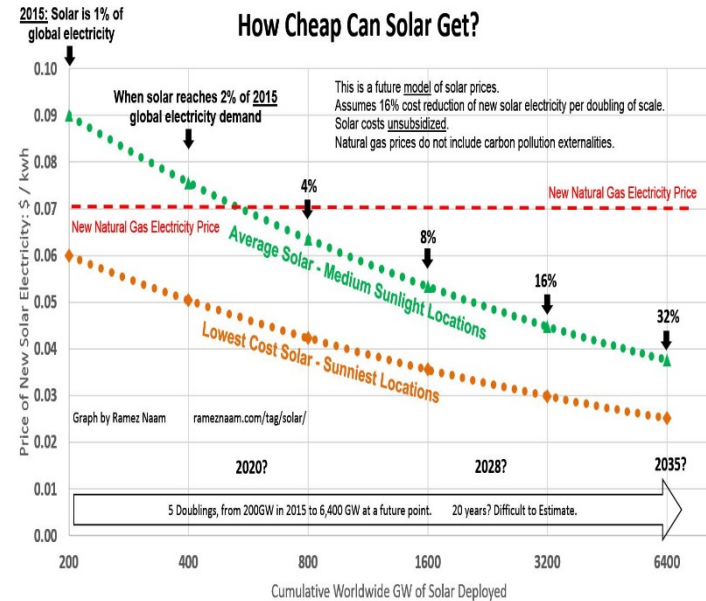
Price of NGC (MWh/ft)

T&TEC TOTAL (m³ in HJ) Linear (T&TEC TOTAL (m³ in HJ))

Demand Power

Restructuring Power Sector

- Progress made in reducing cost and consumption
- Work continues to re-structure commercial Solar Costs falling faster than predicted
- Transition to Renewals

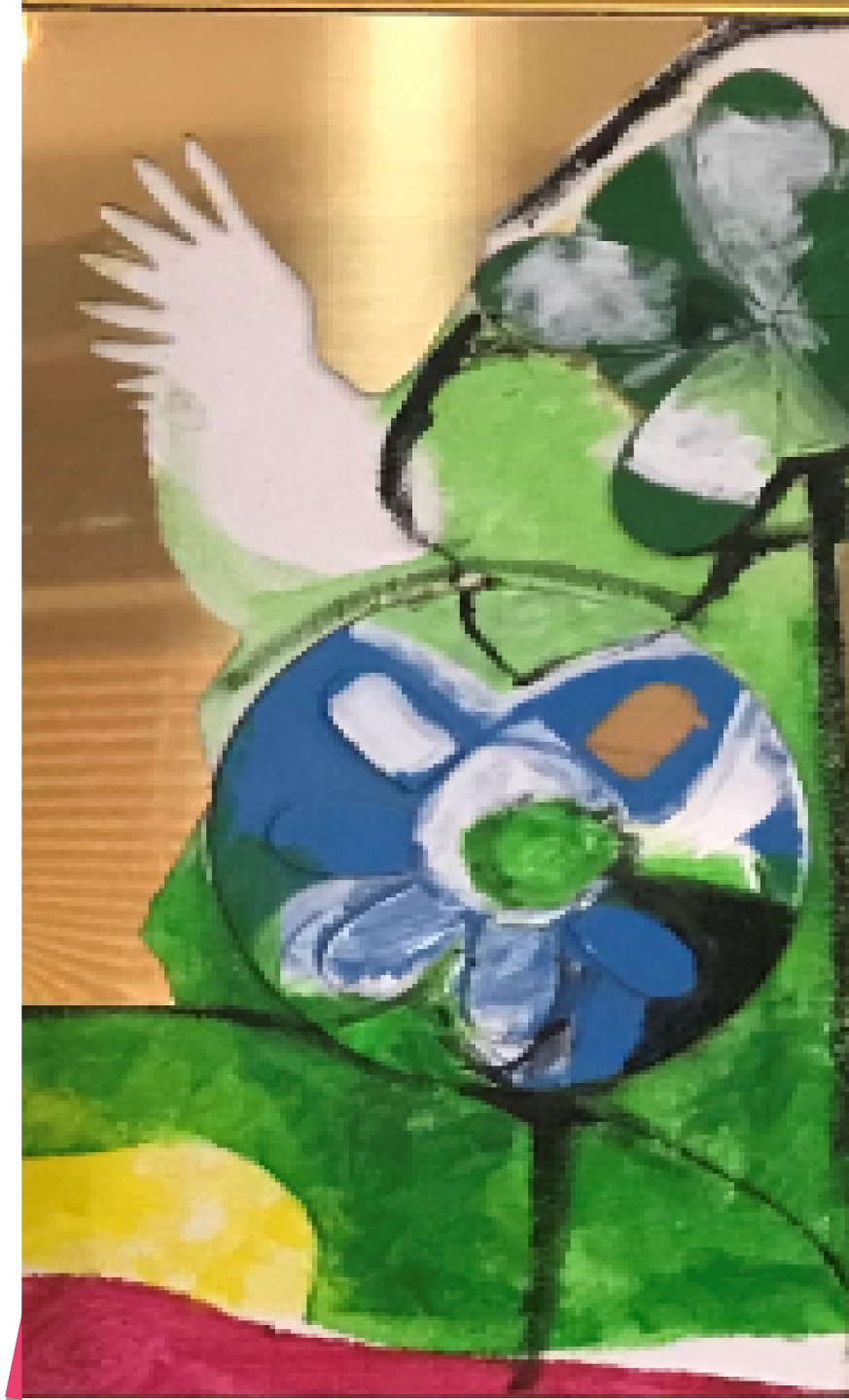


<http://rameznaam.com/2015/08/10/how-cheap-can-solar-get-very-cheap-indeed/>

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NGC Update

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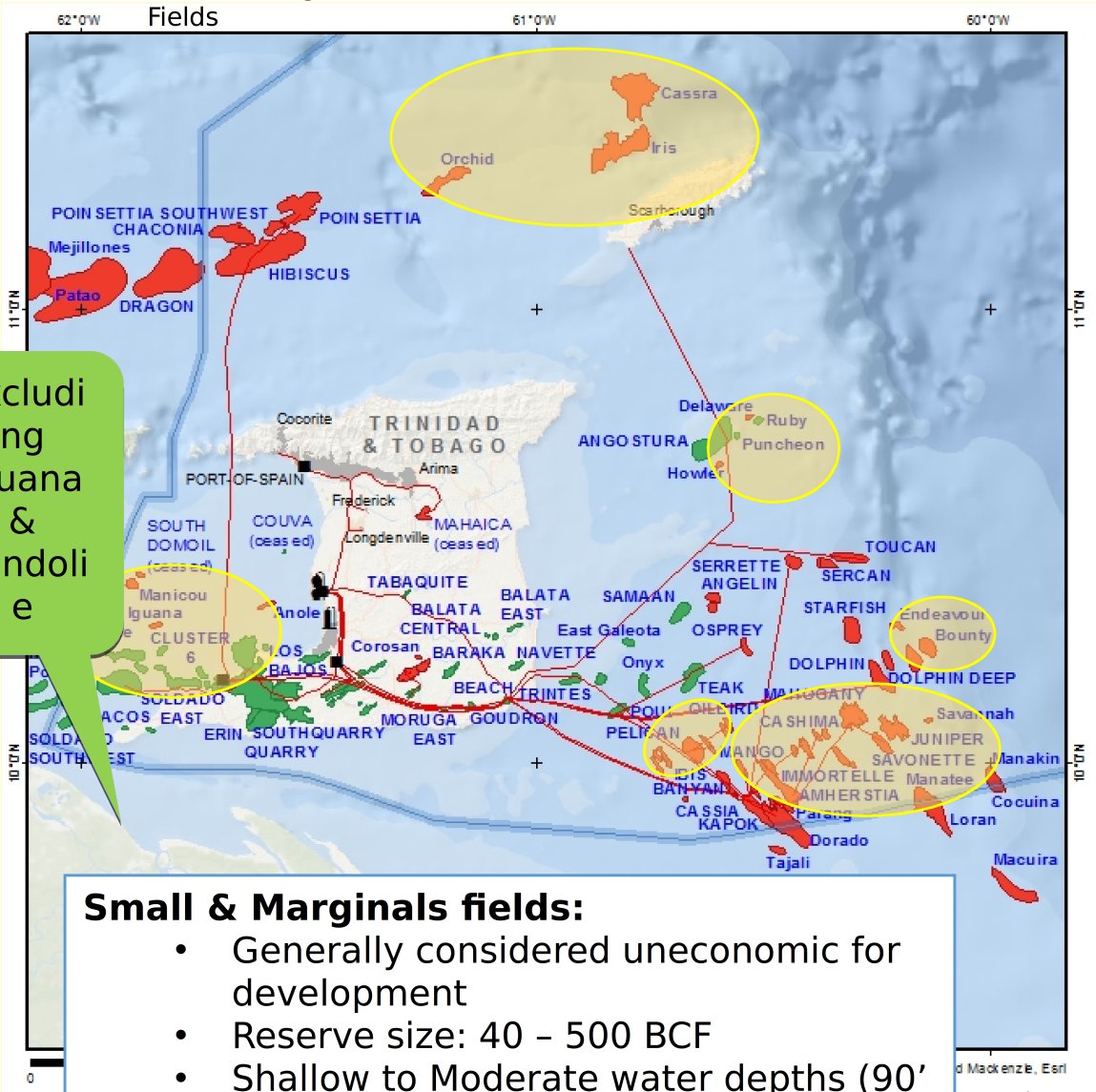


Secure Existing Business - Sanction Marginal Fields

PRIORITY DEVELOPMENT

Source: NGC Commercial Database

 Unsanctioned Small & Marginal Fields



Excluding Iguana & Zandoli

The next best option to close the supply gap!

Marginal Fields:

- MEEI to review holdings, incentives & other support approaches
- Opportunity for strategic partnerships within Upstream



Small Agile Players

Large Infrastructure Owners

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Small & Marginals fields:

- Generally considered uneconomic for development
- Reserve size: 40 - 500 BCF
- Shallow to Moderate water depths (90' - 1000')
- >80% lie in portfolios of existing

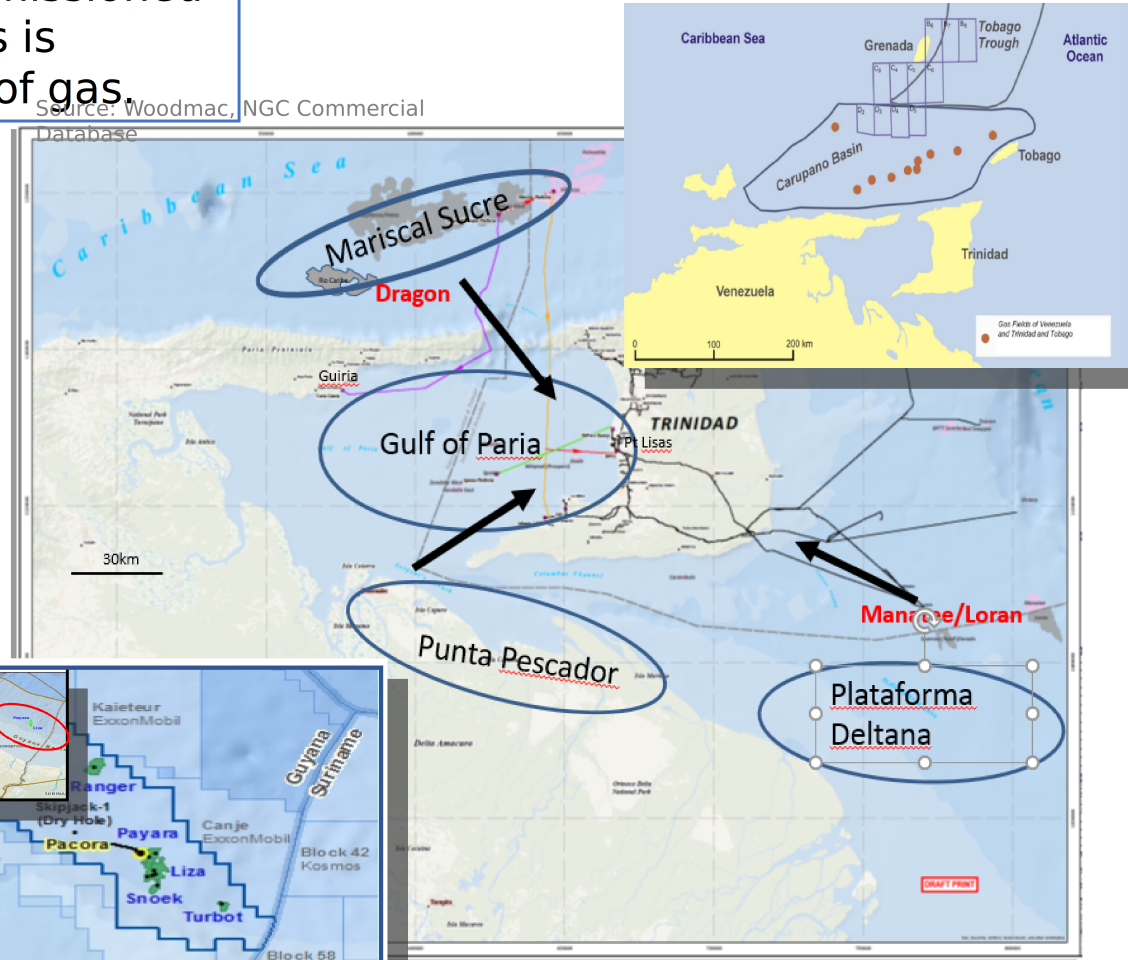
Is US Shale a Potential Alternative Supply?

- Comprehensive FSRU commissioned by NGC concluded that this is unfeasible given the price of gas.

Source: Woodmac, NGC Commercial Database

Secure alternative supply from regional sources

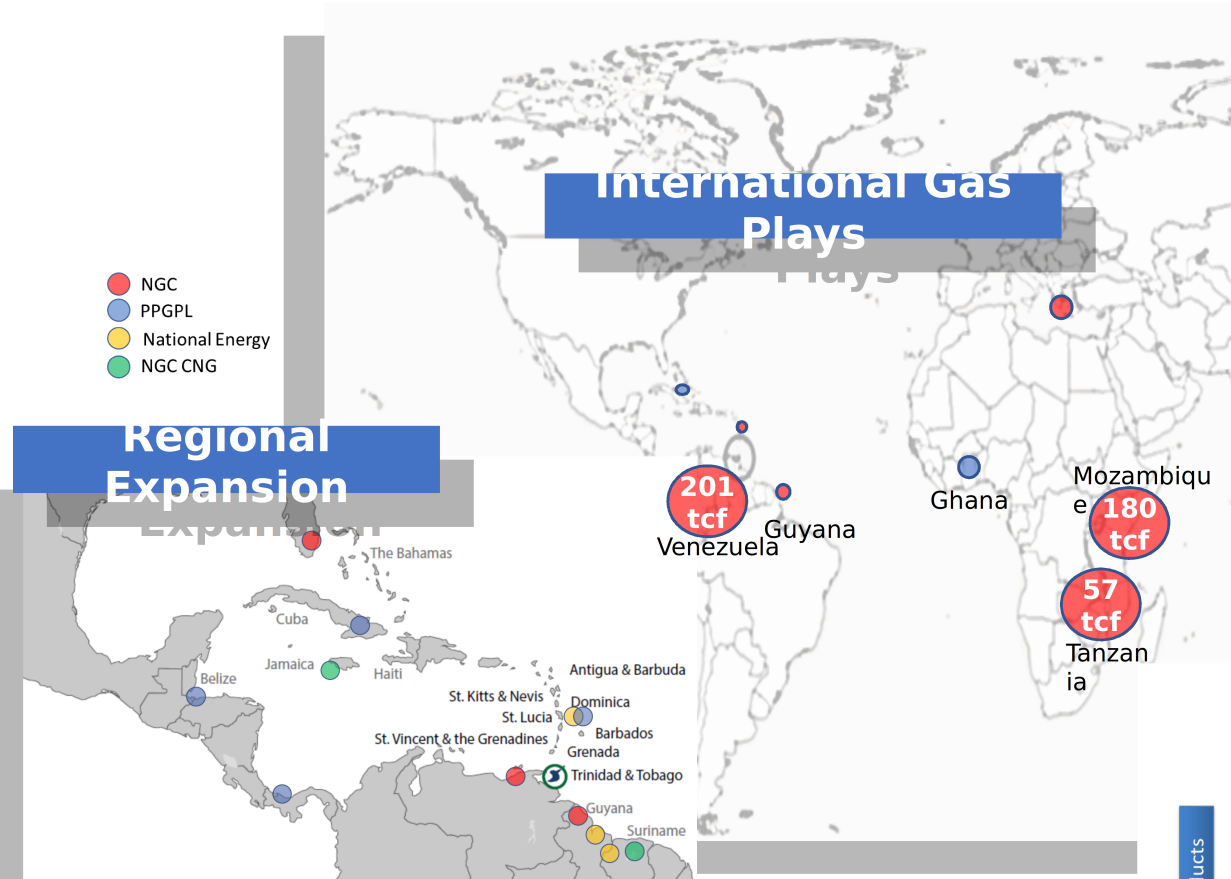
- Negotiations continue with **Venezuela** for Cross and Across Border Gas
- Watch List:** New discoveries in **Guyana** and **Grenada** offer potential supply source.



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Growth - International Collaboration; New Markets

Emerging Energy Economies and the Panama Canal will open new markets and traffic to the region, creating opportunities to export energy services and expand operations



Source: Map only: Espinasa & Humpert, 2016, Energy Dossier: Trinidad and Tobago ;

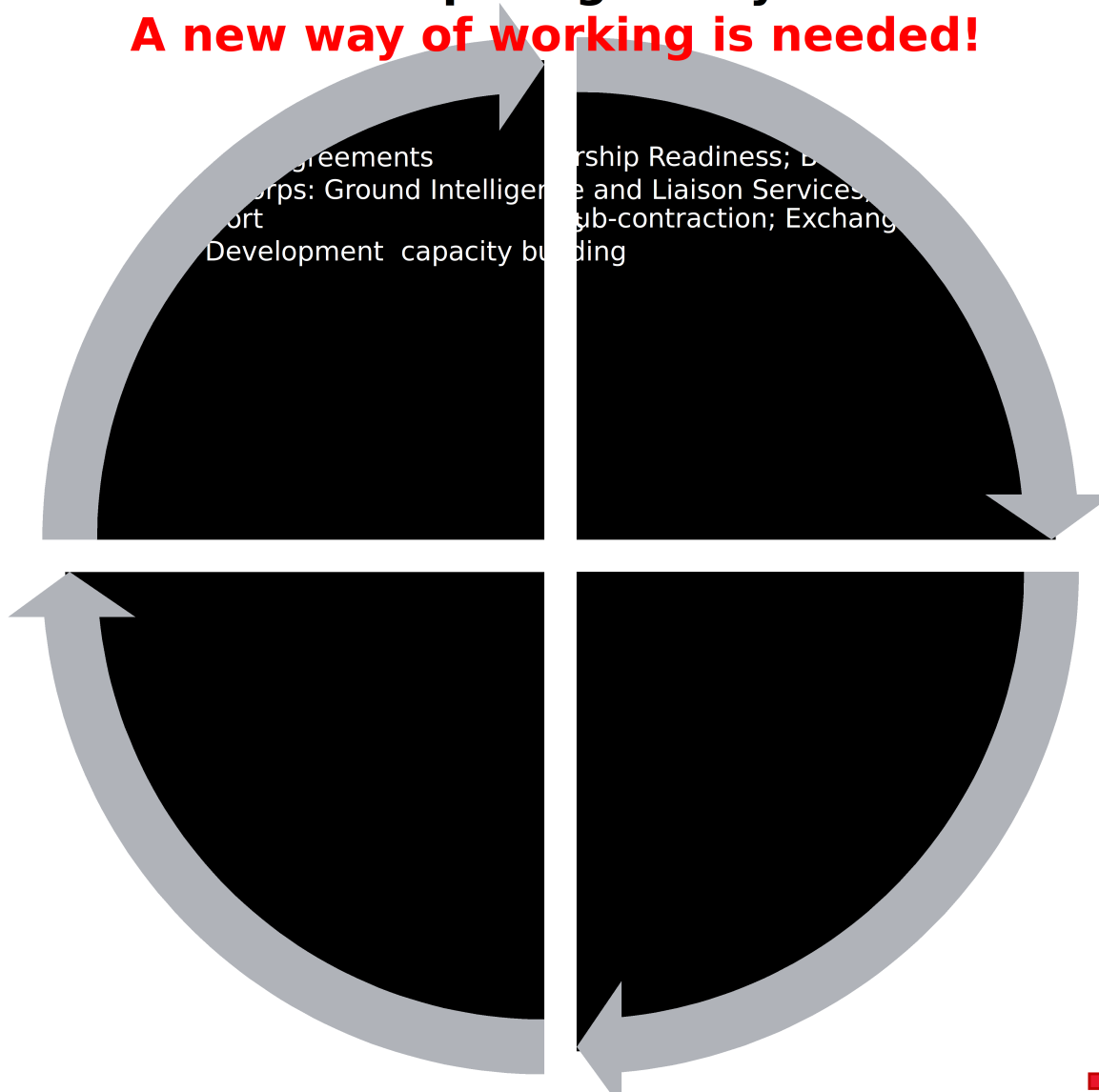
		Existing	Market	None
Products	Existing	Market Penetration <ul style="list-style-type: none"> Commodity Trading LIC Upstream 	Market Development <ul style="list-style-type: none"> Regional Micro-LNG Africa & Regional Emerging Energy Markets 	
	None	<ul style="list-style-type: none"> DME Renewable Energy 	<ul style="list-style-type: none"> Technical Advice (Negotiations, Modelling, Policy) Gas Aggregation / Process Optimization Design/ Construction (Pipeline/Plant) 	
		Product Development	Innovation	

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National Contribution: Export Local Talent

Country and Industries must reposition to compete globally.

A new way of working is needed!



Collaboration at the national level is

needed to create the next wave of growth:

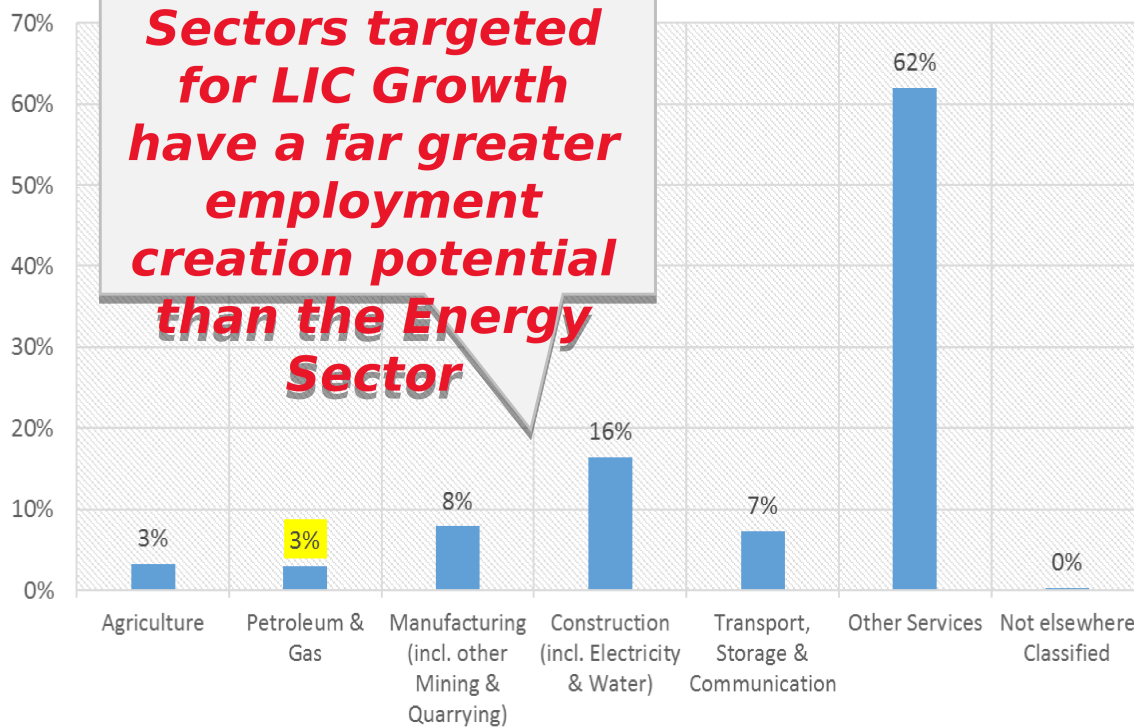
- Government Support & Backing
- Collective Industry Know-How
- Access to Local and International Capital & Development Funding
- Creativity and Innovative spirit

National Contribution: LIC Growth

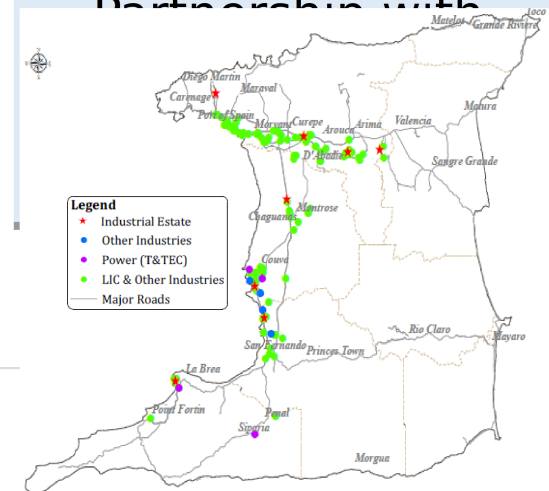
Revitalize Light Industry

- Alternative Fuel Displacement
- Not just a CSR project: Sustainable, profitable sectoral growth
- Strategic

T&T Workforce



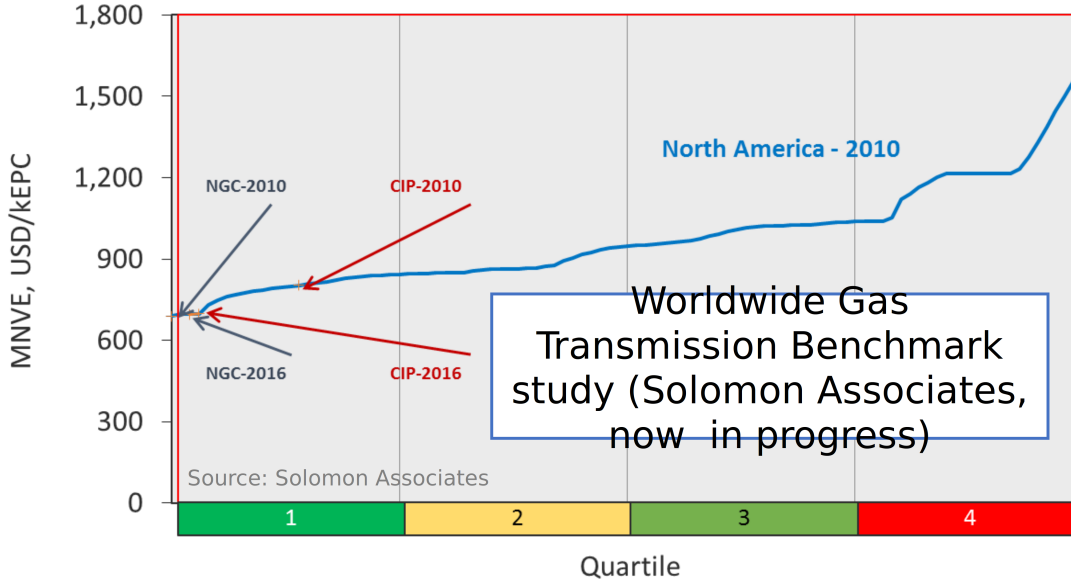
Source: CBTT, Review of the Economy 2017



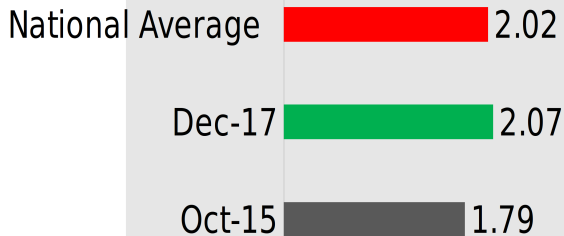
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Develop the Organisation - Operational Excellence

Manageable Non-Volume Expenditure
Efficiency 2010 vs 2016 (based on 2010 EPC)

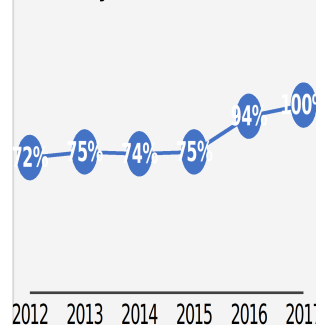


Asset Integrity System Weighted Average Dec 2017



Source: NGC Office of Strategy Management

Safety-Critical Actions: Annual Close out Rate



Source: NGC Office of Strategy Management

Commitment To Operational Excellence

NGC continues to rank in the Top Quartile of Benchmarked systems for Operational Efficiency

Current initiatives include:

Network Optimization

- Process Safety & AIM
- Debottlenecking

Process Optimization

- Upgrade ICT Platform
- Supply Chain Management
- Learning Systems

Group Synergies

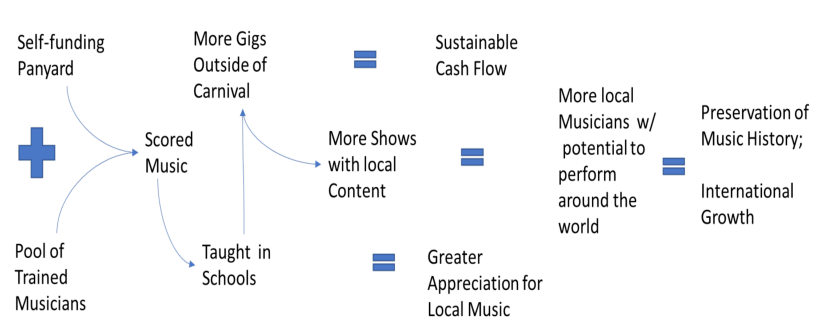
- Co-ordinating Planning
- Policy Standards
- Cost Sharing
- Talent Management

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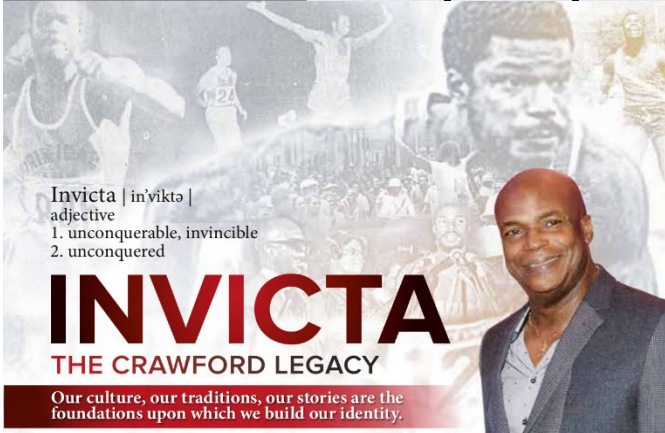
Pillar 4 **National Contribution: Corporate Social Investment**

Beyond CSR: Deeper Value by facilitating **Strategic Partnerships** between and among our **communities**



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Recognising our



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National
Contribution:
National Heroes

Recognising our National
Hero

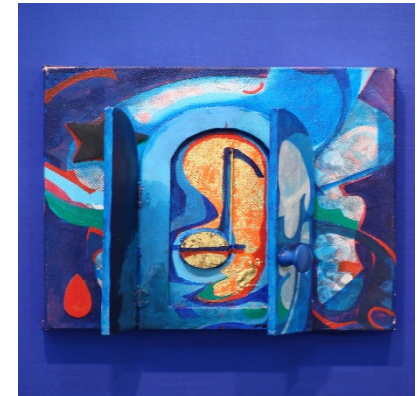
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Music



ARTIST

National
Treasure
Lecturer
Cultural
Ambassador



- Work differently and with urgency
- Maximize the value chain
- Build and leverage institutional capacity
- Harness our people potential
- Be competitive

Closing Remarks

Our survival over the next five years and into the future depends on us:

- **Collaboration**
- **Creativity**
- **Innovation**
- **Entrepreneurship**

To be here for the long term means navigation through tough times in the short to medium term.

We have the potential to do so!



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