



The Trini Potential
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

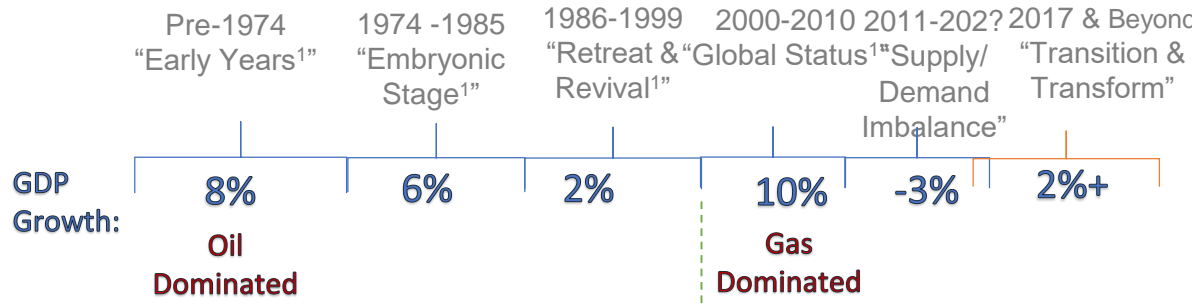
2018-Jan-22

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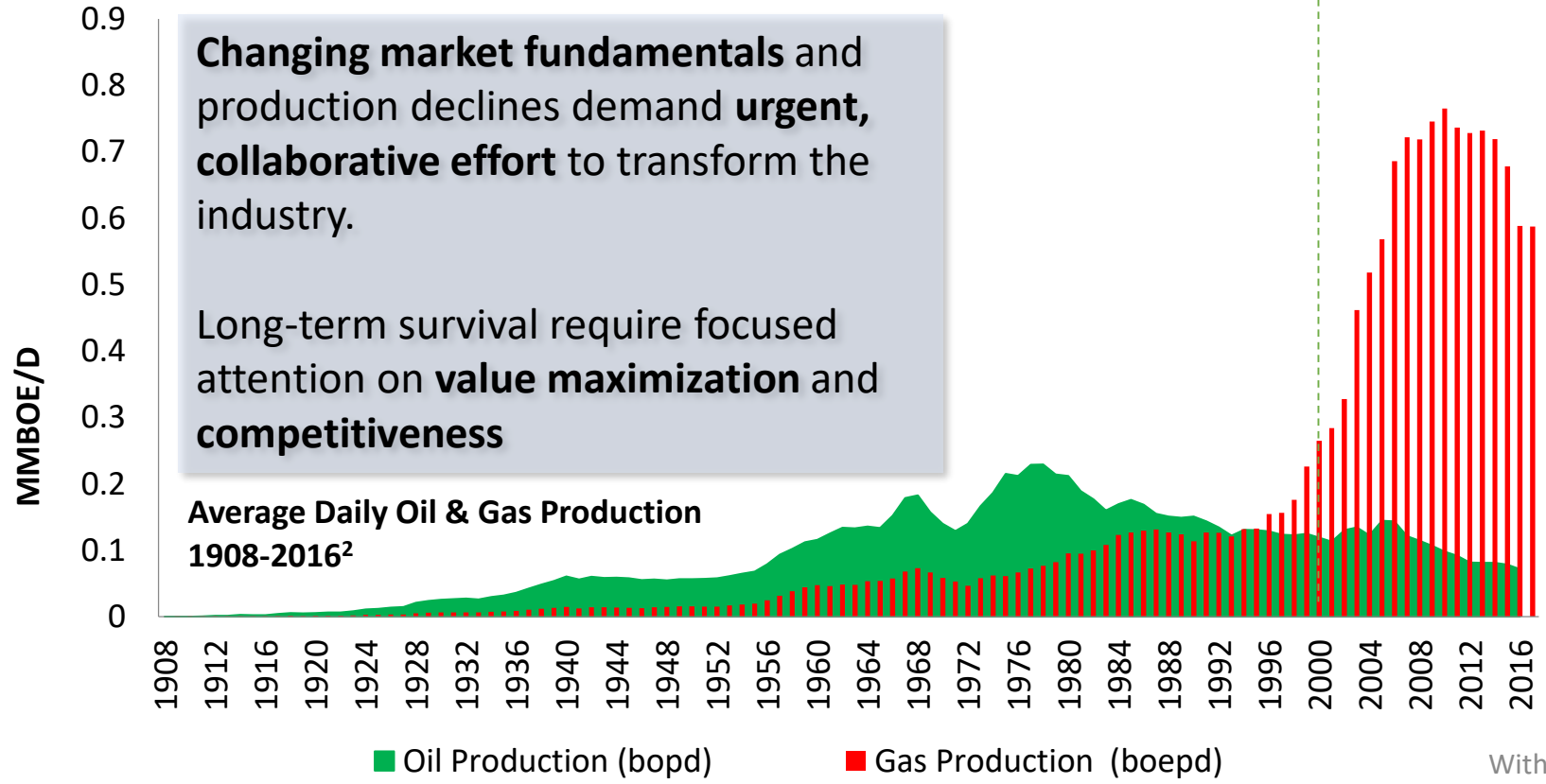
Where do we Grow from here?



Changing market fundamentals and production declines demand urgent, collaborative effort to transform the industry.

Long-term survival require focused attention on **value maximization** and **competitiveness**

Average Daily Oil & Gas Production 1908-2016²



Sources: 1)McGuire in *From Oil to Gas and Beyond*; 2) EIA

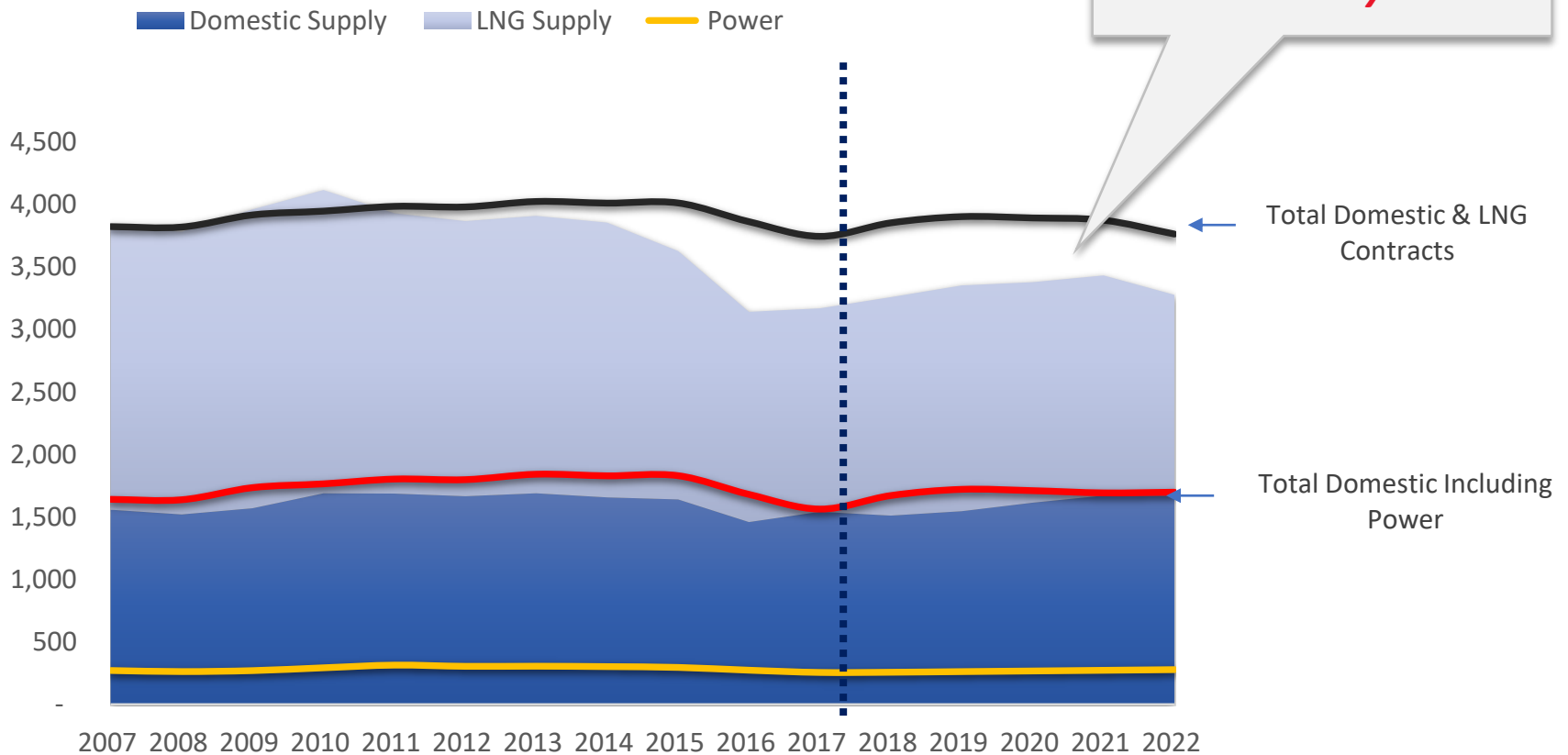
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Industry Update

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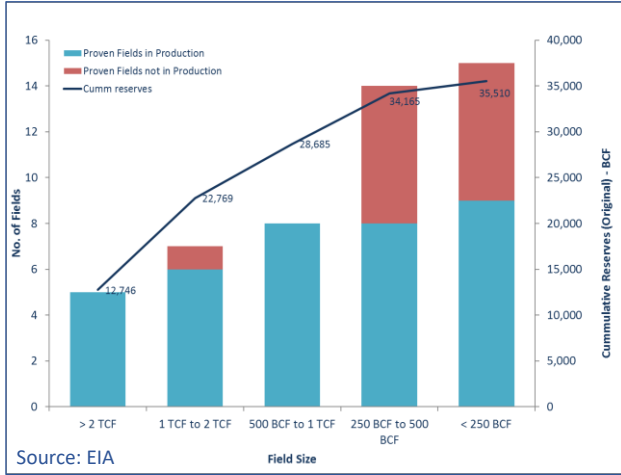
2007-2022 Trinidad Gas Supply (mmscfd)



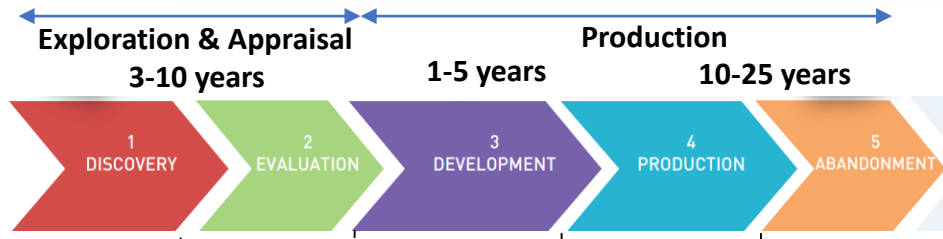
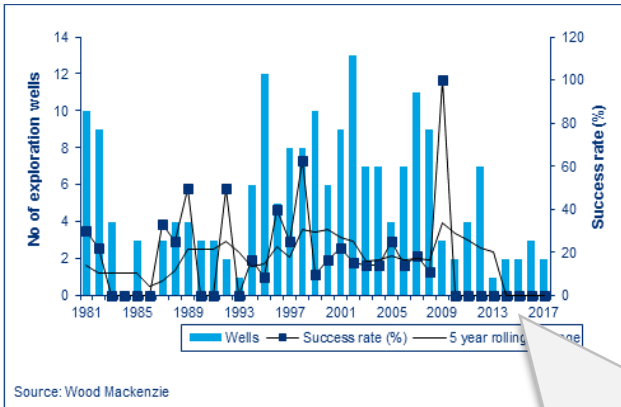
Based on current level of Upstream activity T&T cannot support a 4.2 bcf/d market over the next 5 years

Source: NGC Commercial Database

Distribution of Proven Fields by Size



Drilling Activity and Commercial Success Rates



2017

2018 - 2020

Shell seismic acquisition Blocks 6b,e, 5a, 5c & 5d	BP – TROC, Juniper
MEEI Bid Round Launch	EOG – Osprey infill drilling
BHP & EOG new OBN Seismic acquisition & processing Blocks 2c/3a & SECC	BP – Angelin
BHP Le Clerc appraisal drilling	DeNovo Block 1a Iguana development drilling
	Shell – Starfish & Dolphin infill

Source: NGC Commercial Database

Exploration investment critical to finding new hydrocarbons

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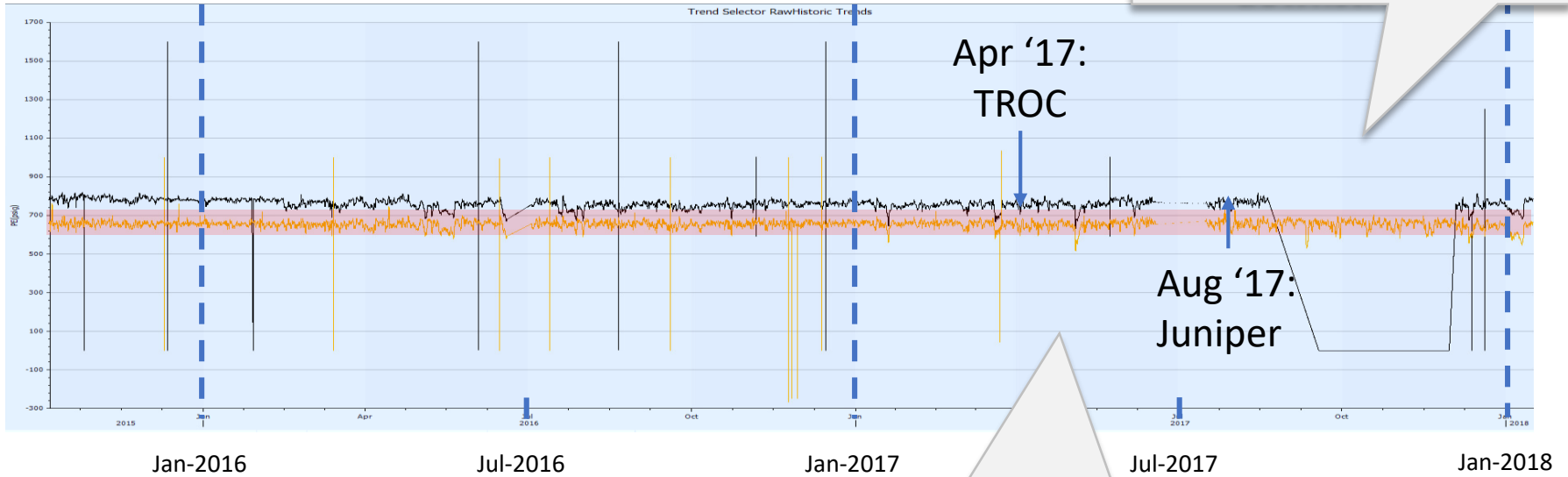
NGC as the DOMESTIC AGGREGATOR:

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

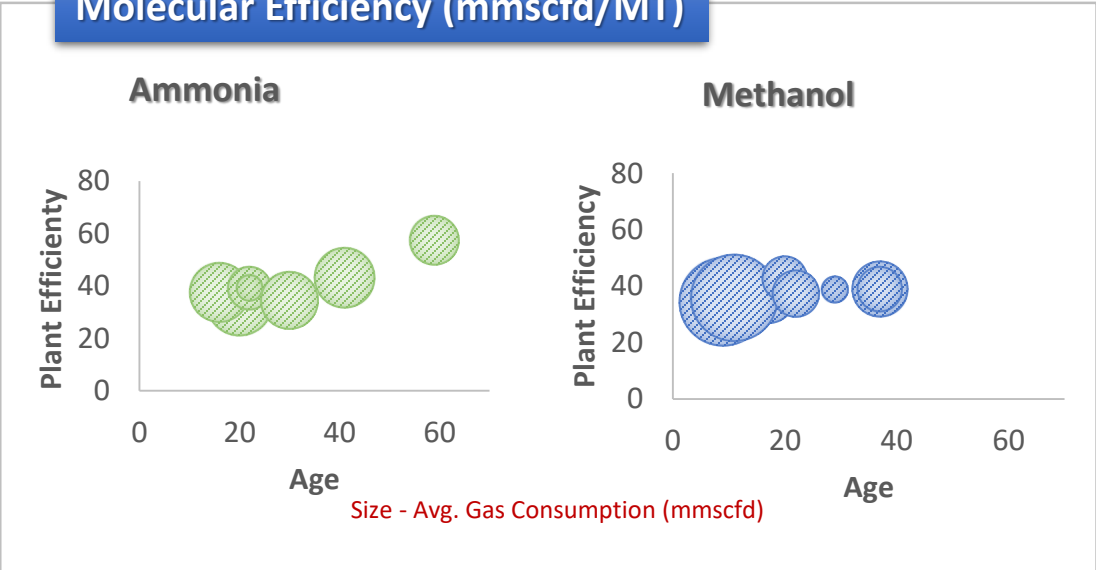
Inlet Pressure on Domestic Network 2016 - 2017



- 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

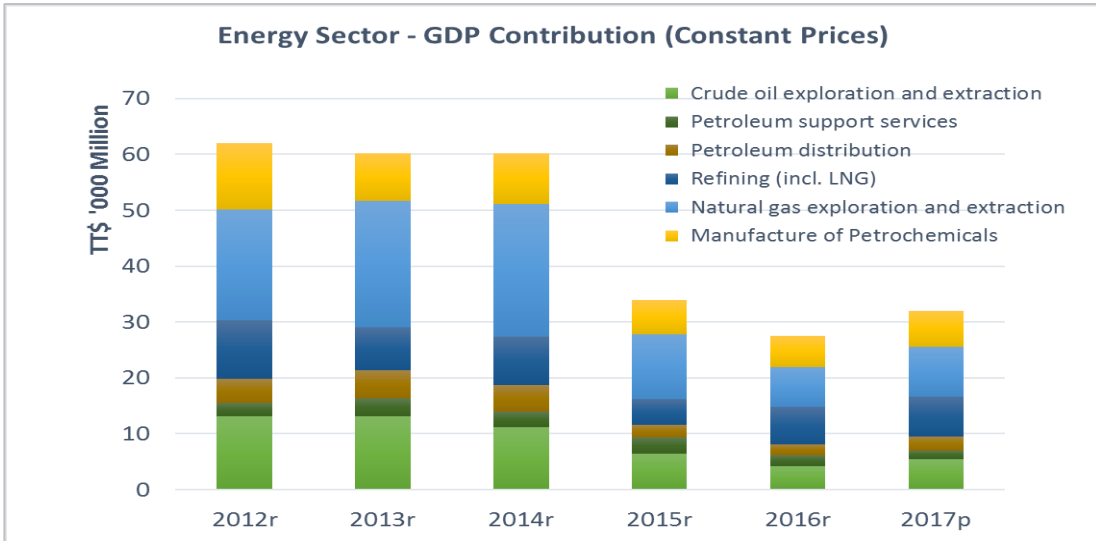
Molecular Efficiency (mmscfd/MT)



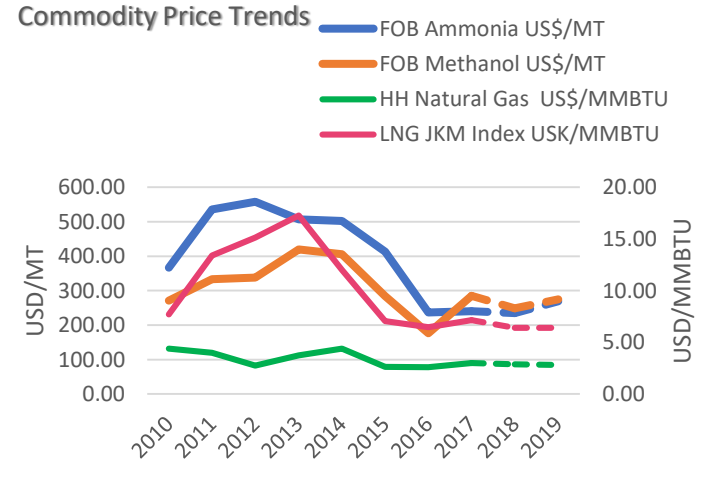
Source: NGC Commercial Database

Shifting Market Dynamics: A new equilibrium will be found

- Persistent curtailment and reduced production have undermined our global position.
- US emergence as a net exporter in 2016 continue to shift market fundamental
- Decisions on plant turnarounds stymied by uncertainty around long-term supply; prompts evaluation on best use of gas



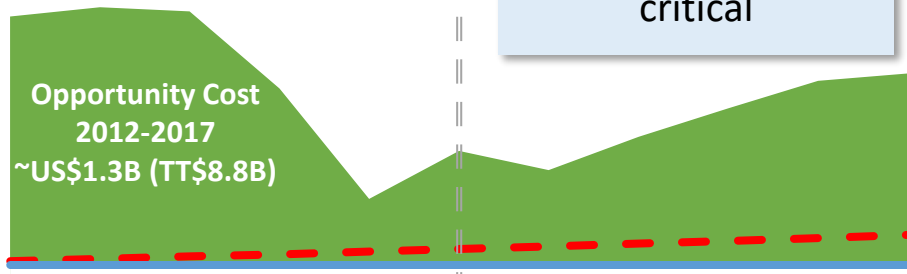
Source: CBTT, Review of the Economy 2017



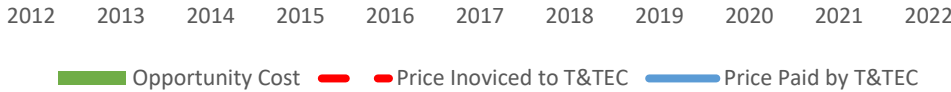
Source: Ferticon (Ammonia), IHS (Methanol), Platts (Nat Gas, LNG)

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Impact of Low T&TEC Price on NGC

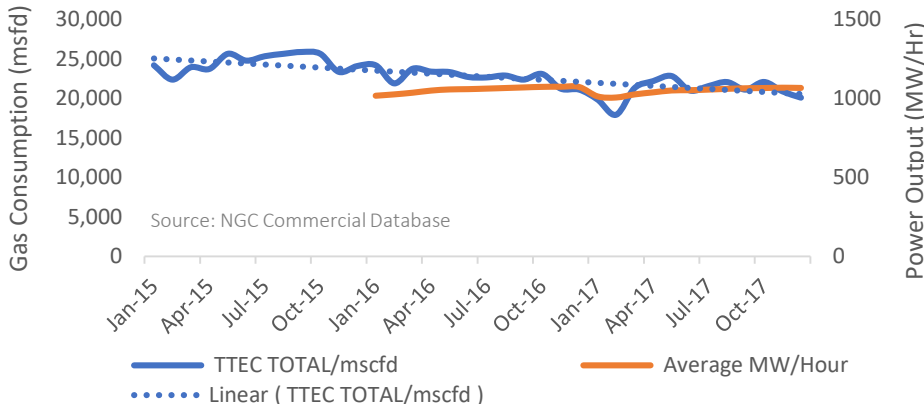


Source: NGC Commercial Database



Power Generation Improvement

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



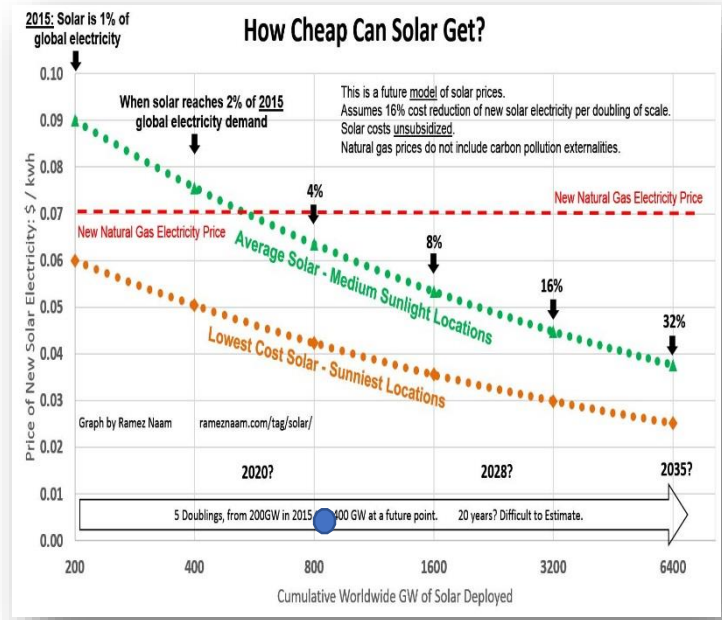
Source: NGC Commercial Database

Demand Power

Restructuring Power Sector

- Progress made in reducing cost and consumption
- Work continues to re-structure commercial Arrangement
- Transition to Renewals underway

Solar Costs falling faster than predicted



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

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NGC Update

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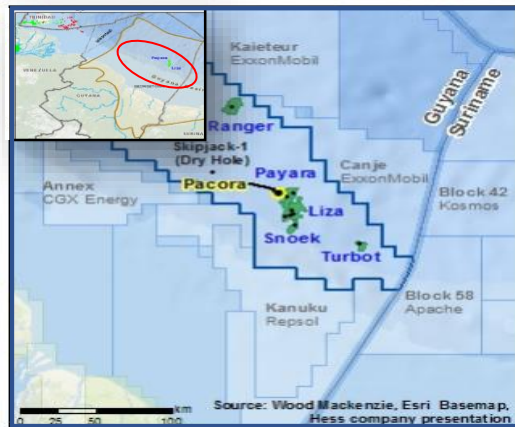
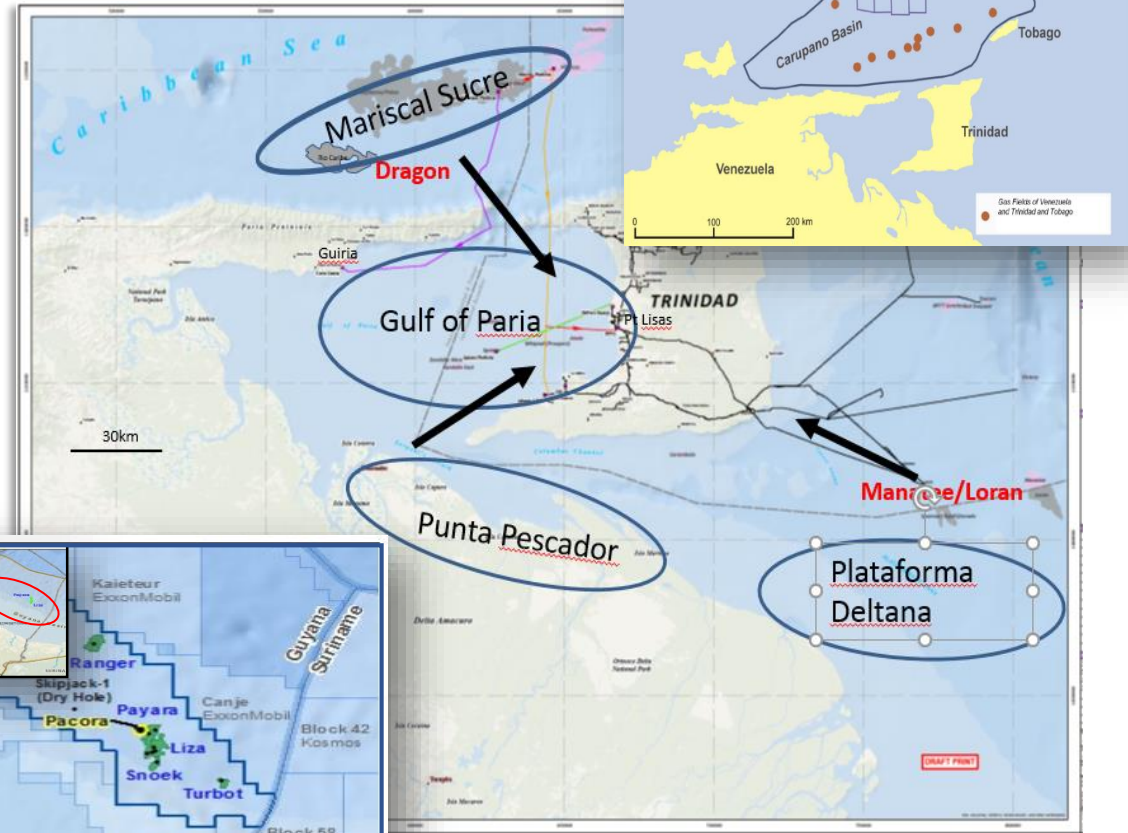
Is US Shale a Potential Alternative Supply?

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

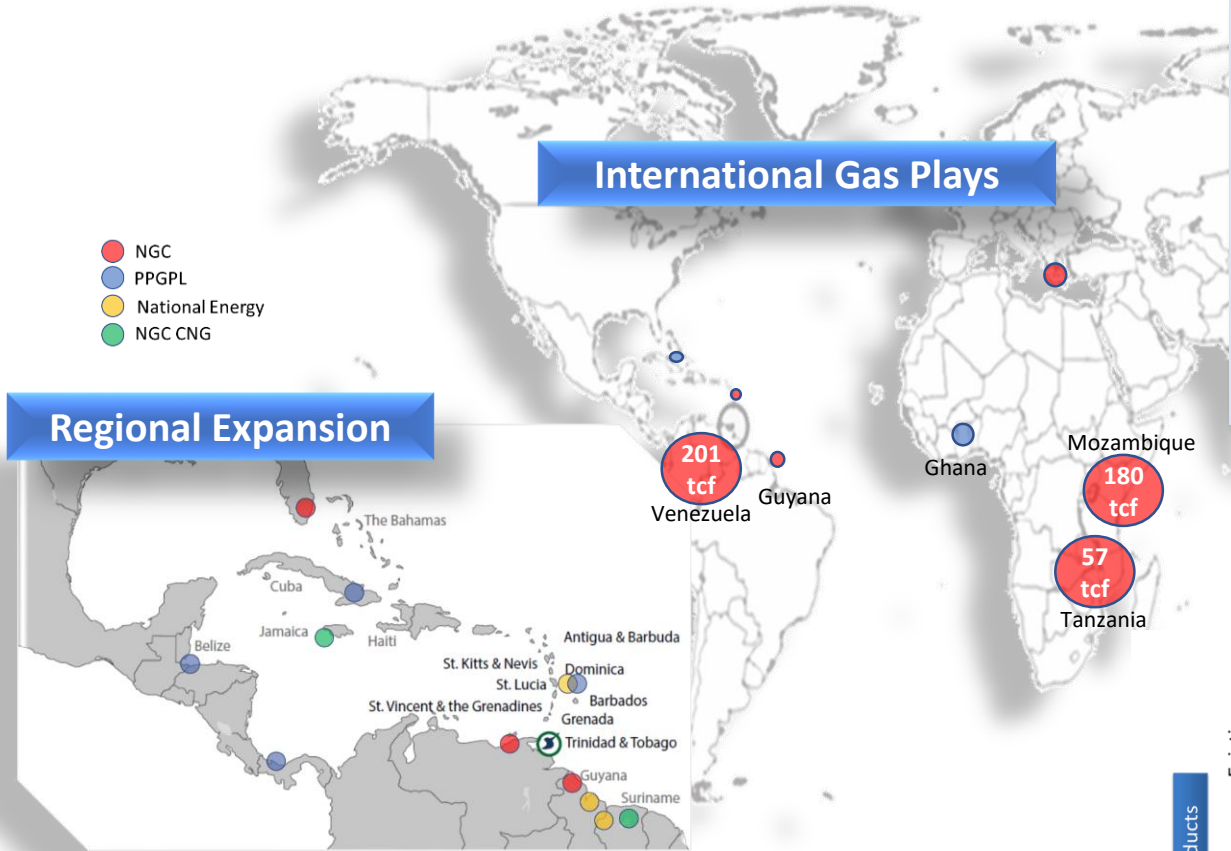
Secure alternative supply from regional sources

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

Source: Woodmac, NGC Commercial Database



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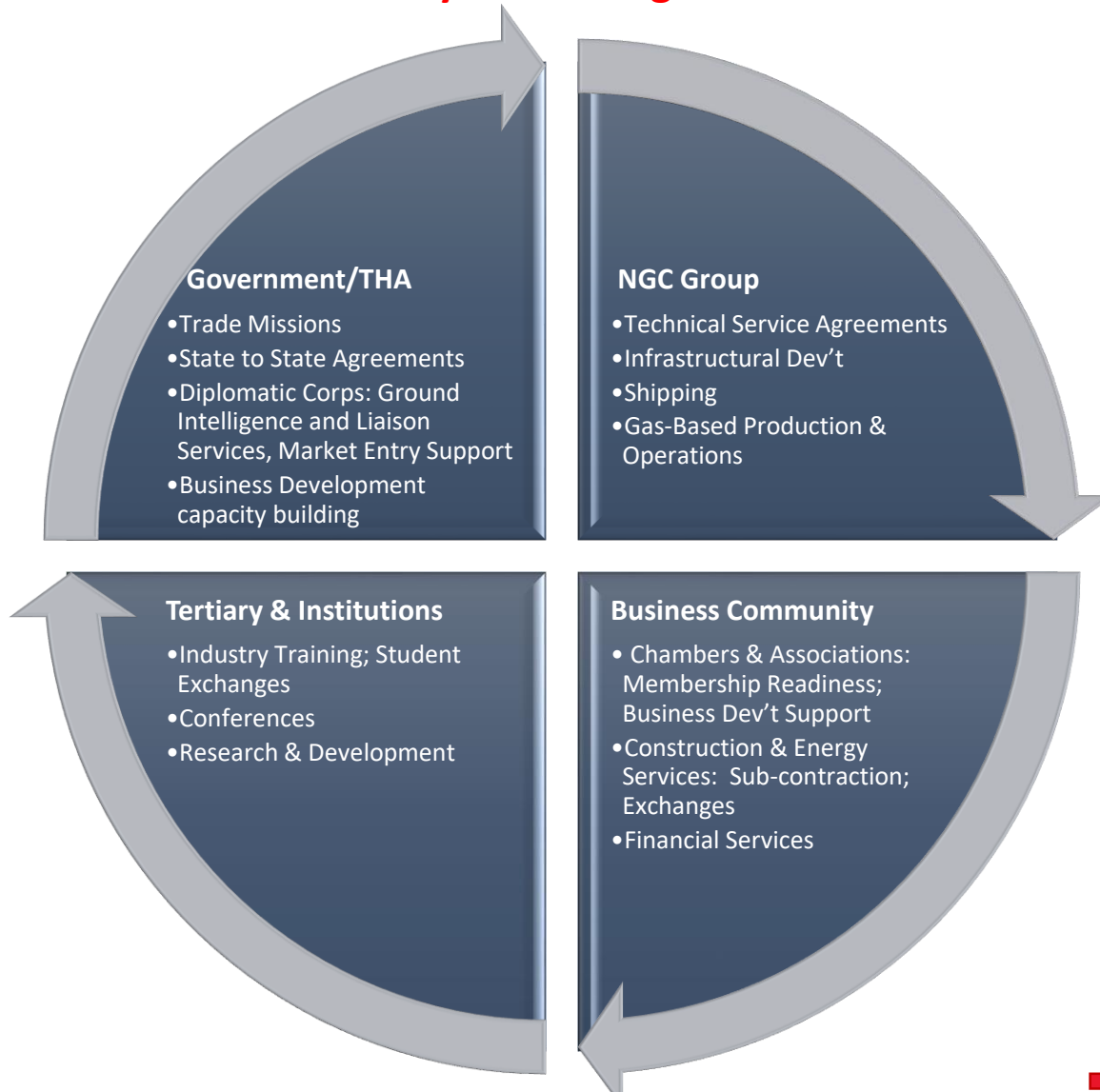
Emerging Energy Economies and the Panama Canal will open new markets and traffic to the region, creating opportunities to export energy services and expand operations

	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

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

Country and Industries must reposition to compete globally.

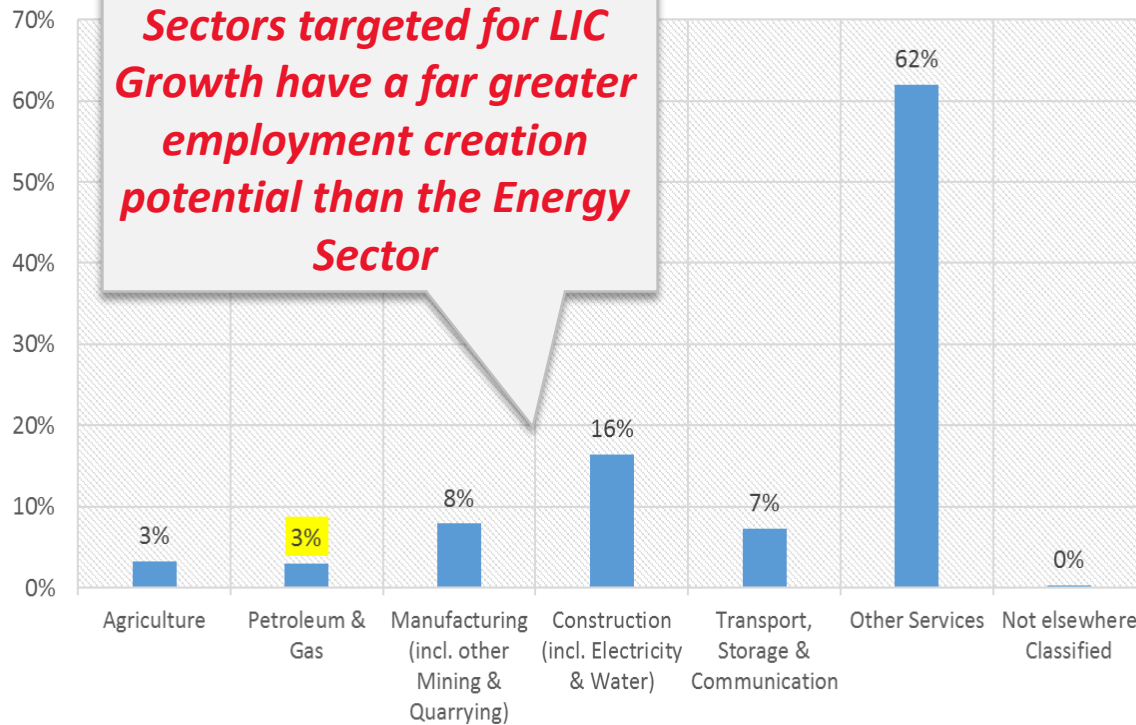
A new way of working is needed!



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

T&T Workforce

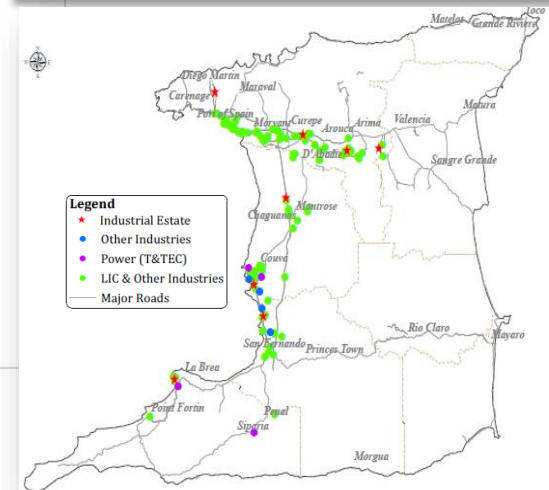


Sectors targeted for LIC Growth have a far greater employment creation potential than the Energy Sector

Source: CBTT, Review of the Economy 2017

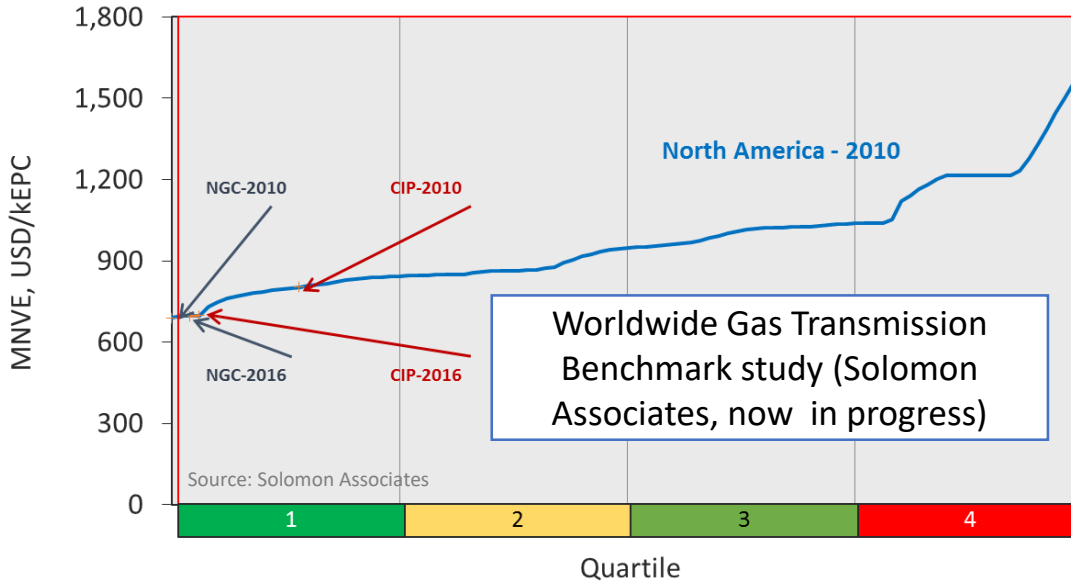
Revitalize Light Industry

- Alternative Fuel Displacement
- Not just a CSR project: Sustainable, profitable sectoral growth
- Strategic Partnership with TTCIC & TTMA
- Focus on Tobago with THA



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



**Commitment To Operational
Excellent**

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

Current initiatives include:

Network Optimization

- Process Safety & AIM
- Debottlenecking

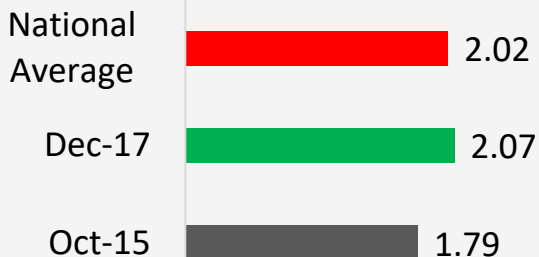
Process Optimization

- Upgrade ICT Platform
- Supply Chain Management
- Learning Systems

Group Synergies

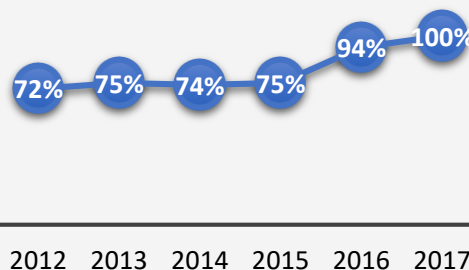
- Co-ordinating Planning
- Policy Standards
- Cost Sharing
- Talent Management

**Asset Integrity System
Weighted Average Dec 2017**



Source: NGC Office of Strategy Management

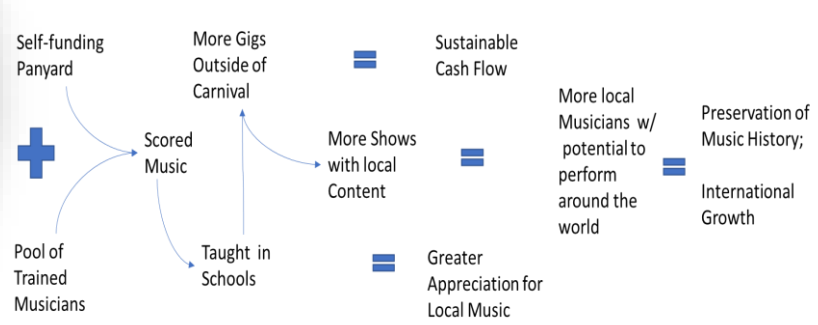
**Safety-Critical Actions:
Annual Close out Rate**



Source: NGC Office of Strategy Management

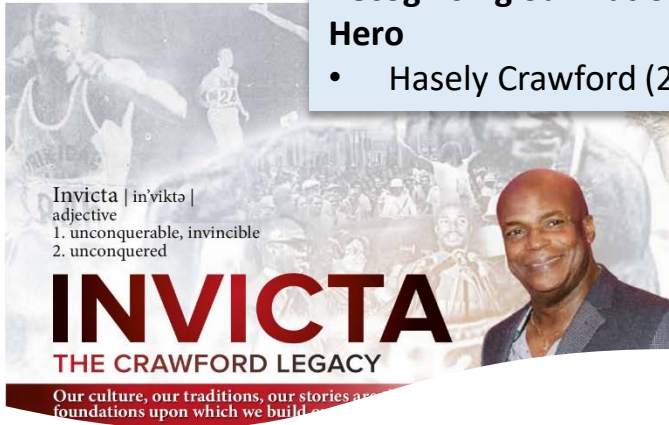


Beyond CSR:
Deeper Value by facilitating
**Strategic Partnerships between and
among our communities**



Recognising our National Hero

- Hasely Crawford (2017)



Recognising our National Hero

- Pat Bishop (2018)

Musician



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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