SPOTLIGHT ON ENERGY
OUR OIL, OUR GAS, OUR FUTURE
HYATT Regency, Port of Spain Ballroom
March 14, 2018
### Key Economic Indicators 2017

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (current)</td>
<td>TT$149,684.7 million</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>US$16,340</td>
</tr>
<tr>
<td>Energy Contribution to GDP</td>
<td>32 %</td>
</tr>
<tr>
<td>Inflation</td>
<td>1.3% - Headline inflation</td>
</tr>
<tr>
<td>Unemployment</td>
<td>4.5 %</td>
</tr>
<tr>
<td>Contribution to Employment</td>
<td>2.4 %</td>
</tr>
<tr>
<td>Contribution to For Ex</td>
<td>US$2.4 bn*</td>
</tr>
<tr>
<td>FDI</td>
<td>58% *</td>
</tr>
</tbody>
</table>

Source: MOF - Ministry of Finance of Trinidad and Tobago – Review of the Economy 2016

* CBTT – Central Bank of Trinidad and Tobago Economic Bulletin March 2018
<table>
<thead>
<tr>
<th>Production</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil Production</td>
<td>71,824 bpd</td>
</tr>
<tr>
<td>Oil Refining Throughput</td>
<td>135,000 bpd</td>
</tr>
<tr>
<td>Natural Gas Production</td>
<td>3.4 Bcf/d</td>
</tr>
<tr>
<td>LNG Production</td>
<td>11.0 MTPA</td>
</tr>
<tr>
<td>NGL Production</td>
<td>9.8 MMbbls</td>
</tr>
<tr>
<td>Ammonia Production</td>
<td>5.04 million MT</td>
</tr>
<tr>
<td>Methanol Production</td>
<td>4.97 million MT</td>
</tr>
</tbody>
</table>
From Oil to a Gas-based Economy

Average Daily Oil & Gas Production (bopd or boepd)
1908-2017

- Oil Production (bopd)
- Gas Production (boepd)

Gas production outstripped oil production - 1994
Structure of the Gas Industry

Upstream
- bpTT
- Shell
- BHP
- EOG
- Others

Midstream
- PPGPL

Downstream
- Power
- Petrochemicals
- Light Industrial/Commercial/CNG
- Metals/Heavy Industry
- Export as LNG
- Utilization or Conversion Shipping

Exploration, Production, Compression
Transportation, Marketing, Distribution, Processing
T&T Onshore and Offshore Assets

Ministry of Energy and Energy Industries
Upstream Petroleum Arrangements

Ministry of Energy and Energy Industries
Legislative Framework

- Petroleum Act and Regulations (62:01)
- Petroleum Production Levy & Subsidy Act (62:02)
- Petroleum Taxes Act Chap. 75:04
- Unemployment Levy Act Chap 75:03
- Income Tax Act Chap 75:01
- Income Tax (In-Aid of Industry) Act Chap. 85:04
- Miscellaneous Taxes Act Chap. 77.01
Royalties Paid for Fiscal 2010 - 2017 and Projections for Fiscal 2018

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Royalties Paid (TT$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1,800.00</td>
</tr>
<tr>
<td>2011</td>
<td>2,200.00</td>
</tr>
<tr>
<td>2012</td>
<td>2,300.00</td>
</tr>
<tr>
<td>2013</td>
<td>2,300.00</td>
</tr>
<tr>
<td>2014</td>
<td>2,500.00</td>
</tr>
<tr>
<td>2015</td>
<td>2,000.00</td>
</tr>
<tr>
<td>2016</td>
<td>500.00</td>
</tr>
<tr>
<td>2017</td>
<td>700.00</td>
</tr>
<tr>
<td>2018 P</td>
<td>3,000.00</td>
</tr>
</tbody>
</table>
Crude Oil & Condensate Reserves

**Oil reserves - Trinidad and Tobago**

- **As at end 2011**
  - Possible: 124.77 million barrels (30.45%)
  - Probable: 85.46 million barrels (20.86%)
  - Proven: 199.54 million barrels (48.70%)
  - Gross prospective resources:
    - High estimate: 811.5 mmbl
    - Best estimate: 368.2 mmbl
    - Low estimate: 194.7 mmbl


**Condensate reserves - Trinidad and Tobago**

- **As at end 2011**
  - Possible: 30.83 million barrels (31.25%)
  - Probable: 24.39 million barrels (24.72%)
  - Proven: 98.67 million barrels (44.04%)


Cumulative Crude /condensate Production - 3.68 Billion BOE as at January 1, 2018
Natural Gas Reserves

Unrisked Gas Reserved and Resources (BCF)

YEAR

2010 2011 2012 2013 2014 2015

Proven 5,995 6,158 5,987 6,116 5,721 4,933
Probable 7,642 6,035 6,142 5,526 5,470 5,274
Possible 13,460 13,257 13,106 12,240 11,503 10,601
Exploration 25,978 30,452 31,616 39,867 43,753 43,052

Cumulative Gas Production - 5.54 Billion BOE as at January 1, 2018
Gas Utilisation by Sector - 2017

INSTALLED PLANTS:
- 4 Liquefied Natural Gas Trains
- 1 Crude Oil Refinery
- 11 Ammonia Plants
- 1 +1 Urea Plants
- 7 Methanol Plants
- 5 Major Power Generation Sites
- 1 Ammonia-Urea Ammonium Nitrate-Melamine (AUM) Complex

Power Generation, 8%
Ammonia Manufacture, 17%
Methanol Manufacture, 15%
Refinery, 2%
Cement, Heavy Manufacture & Small Consumers, 2%
Location of Key On Shore Facilities

Pointe-a-Pierre

Atlantic

Pt Lisas

Beachfield Facility

San Fernando

Union Industrial Estate

Point Fortin

Cap de Ville

La Brea Industrial Estate

Point Lisas Industrial Estate

Wallerfield

Piarco

Port of Spain

Galeota
Point Lisas

**AMMONIA**

2016
Prod: 4.90 million MT
Exp: 4.62 million MT

2017
Prod: 5.04 million MT
Exp: 4.56 million MT

**METHANOL**

2016
Prod: 4.66 million MT
Exp: 4.66 million MT

2017
Prod: 4.97 million MT
Exp: 4.96 million MT
Train I - 3 mpta
Train II - 3.3 mpta
Train III - 3.3 mpta
Train IV - 5.2 mpta

- Powergen (Penal), 236
- Powergen (Point Lisas), 842
- TGU, 720
- Tobago Cove, 64
- Tobago Scarborough, 21.7
- Trinity Power, 225
Diversification of the Energy Mix

COP 21 (Paris 2015) was ratified February 2018

Initiatives:

- Waste to Energy (WTE) at the Beetham Landfill
- Expression of Interest for Utility Scale Renewable Energy power generation for grid integration
- Electric and Hybrid vehicles
- CNG
Switch to CNG
Planned Activities

2018 Drilling:

- bpTT – Five (5) development wells
- Shell - Seven (7) development wells
- BHP - Three (3) exploration wells

Upstream Companies are projected to spend US$10 billion in the next 5 years
Future Natural Gas Development
T&T – Venezuela Opportunities
Competitive Bid Round
Offshore Map 2018

Ministry of Energy and Energy Industries
The T&T Energy Value Chain

Capital Build Projects
- Platforms
- Refineries
- Primary Petrochemicals (Ammonia & Methanol)
- Downstream Petrochemicals

OIL & GAS

Upstream (Exploration and Production)
- (Exploration) Seismic, Geological, & Drilling
- (Develop Field) and (Produce) Wells & Facilities
- (Decommission) Wells & Facilities

Downstream
- Storage Facilities
- Ammonia & Methanol Plants
- Melamine, UAN, Polyolefin
- Plastics & Speciality Chemicals

End Users

Operators
- bp
- PERENCO
- Shell
- Petrolium
- Atlantic
- Trinicon
- Nippon
- Unipet

Service Providers
- Schlumberger
- Inspector Technologies Ltd
- PRO-Com
- CARIDOC
- TUC
carryon

Regulatory Agencies:
- Ministry of Energy and Energy Industries
- CARIDOC
- Ammonia & Methanol Plants

Indirect Support
- NESC
- PUPDECO
- Republic Bank
- PKF
- Ernst & Young
- Illuminat
- IBM
- PriceWaterHouseCoopers
- Trinidad and Tobago Bureau of Standards
Key Characteristics of T&T’s Success

1. Strategic Location
2. Stable Democracy
3. Legal System
4. Competitive Gas Price
5. Fiscal Regime
6. Transparent Decisions
7. Liberalized Currency
8. Skilled Workforce
9. Trade Liberalization
10. Strategic Alliances

*Distances in Miles*
THANK YOU