

# Manufacturing / Renewable Energy

Choosing the Right Nearshore Manufacturing

Opportunities to Invest In

3<sup>rd</sup> November, 2021

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## PRESENTATION OUTLINE

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⑩ NGC Group Green Energy Agenda

3

⑩ Attractiveness of T&T for  
Manufacturing/ Renewable Energy  
Investments

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⑩ Investment Opportunities in the  
Renewable Energy/Clean Energy Space



# 01

## CORPORATE OVERVIEW

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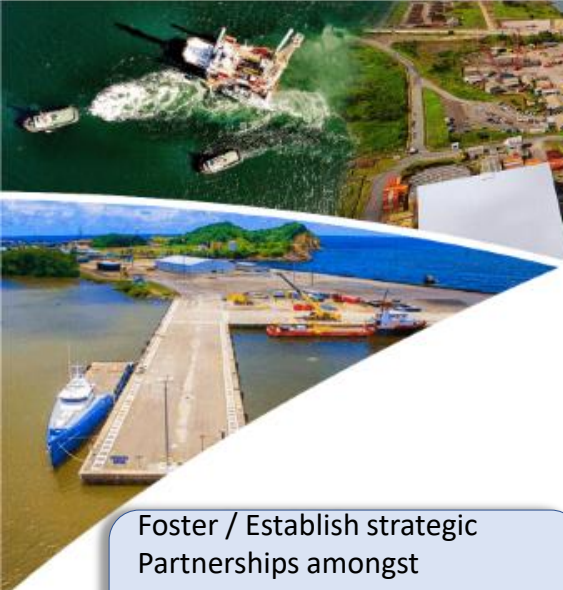




# 02

## NGC GROUP GREEN ENERGY AGENDA

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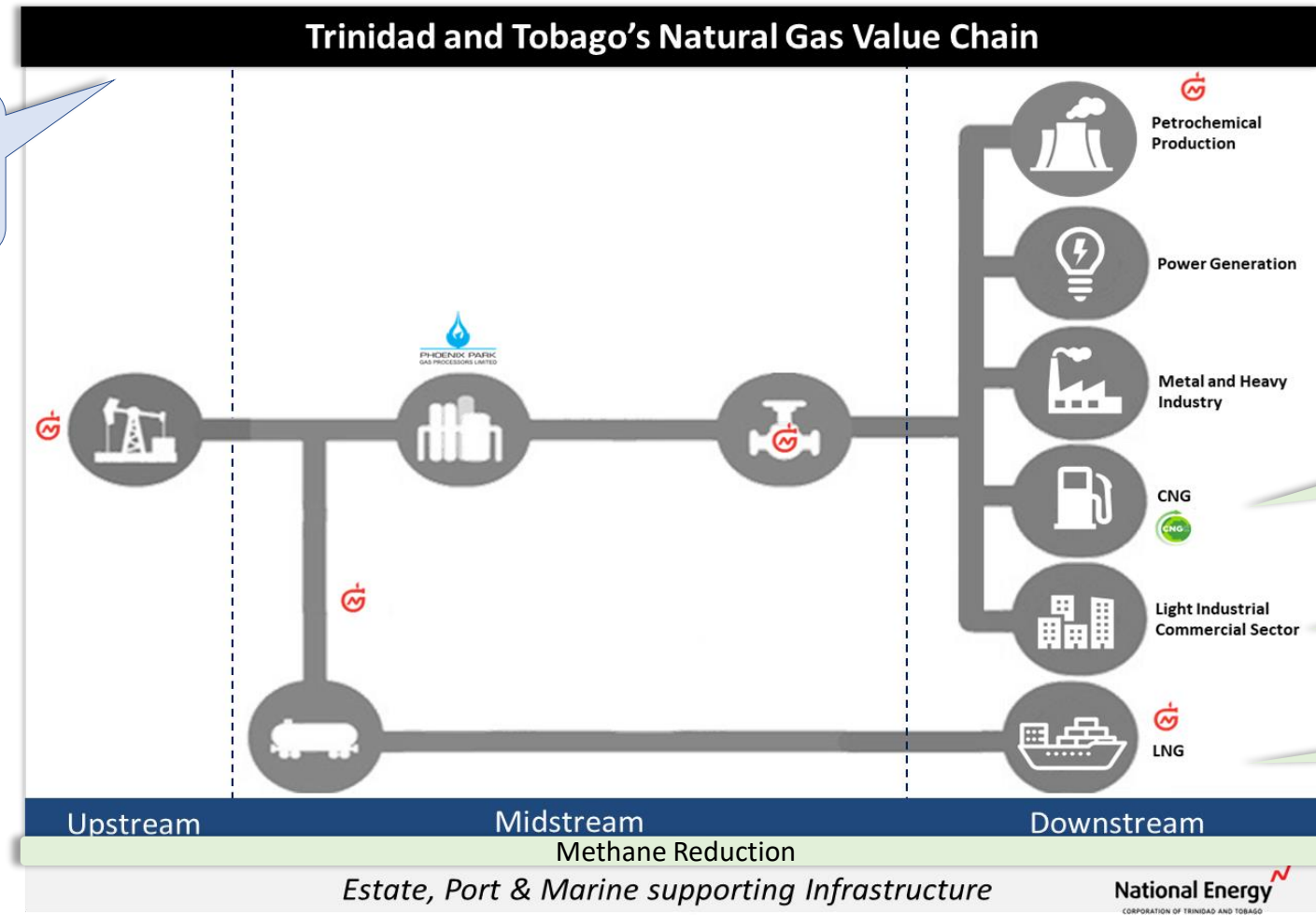


# THE NGC GROUP GREEN ENERGY AGENDA

## Transitioning towards a Sustainable Energy Future

Foster / Establish strategic Partnerships amongst

- Universities
- Stakeholders &
- Multinationals



- Green Ammonia
- Green Methanol
- Green & Blue Hydrogen

- Renewables
- Energy Efficiency

- Green & Blue Hydrogen

- Conversion of existing fleet until EV
- Micro LNG
- Biogas

- Renewables
- Micro LNG
- Biogas

- Small Scale LNG to the Caribbean
- ALNG GHG Reduction

- Bunkering
- Super ESCOs



# THE NGC GROUP GREEN ENERGY AGENDA

## Key Elements

### GHG CSRU

- Group GHG Audit
- Carbon Sequestration
- Water Conservation
- Waste Management
- NGC and NGC Group Sustainability Report
- Green Energy Information Hub

### Renewable Energy

- BP/Shell/BP Lightsource Solar Opportunity
- Solar Park Project
- Educational Programmes on Solar Energy
- Clean Energy Strategic Partnerships
- Onshore/Offshore Wind Resource Assessment
- Support RE integration into LIC Sector

### Energy Efficiency

- Promotion and Enhancement of Energy SmartTT App
- National Energy Efficiency Action Plan for Trinidad and Tobago
- Energy Audit Pilot Study/Lights Off
- SuperESCO Programme
- Reduce 2019 Energy Consumption by 10% by 2022

### Methane Focus

- Leak Detection and Repair Program
- Methane Satellite Monitoring
- Membership with GHG/Methane Bodies

### Fuel Switching

- CNG / EV's
- Hydrogen Economy
- Micro LNG for the Caribbean
- Fuel Bunkering
- Bio-Methane
- Renewable gas integration into NGC System
- Natural Gas for Cooking

## Initiatives



# 03

## ATTRACTIVENESS OF T&T FOR MANUFACTURING/ RENEWABLE ENERGY INVESTMENTS

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## RENEWABLE ENERGY POWER GENERATION POTENTIAL IN TRINIDAD AND TOBAGO

### Untapped Renewable Energy Market in Trinidad and Tobago

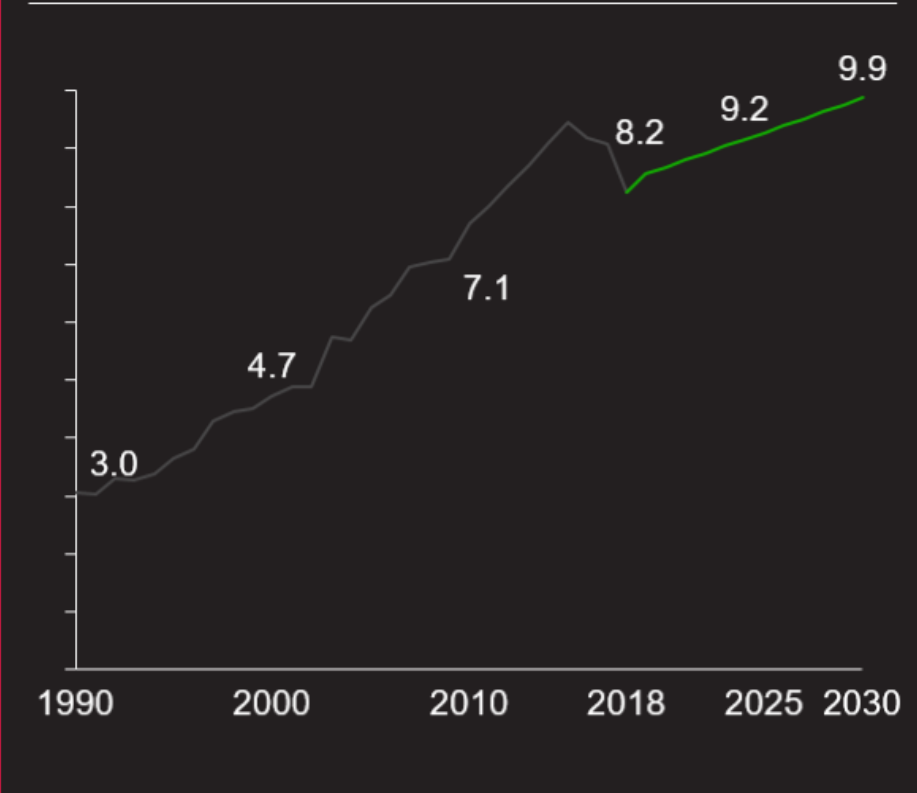
The Government of Trinidad and Tobago has a target for 30% of electricity generation to be from renewable energy by 2030

As the first renewable energy projects in Trinidad and Tobago only started in 2021, there is a major first-mover opportunity for investors.

#### Promising outlook:

- Attractive **solar irradiation and wind power** potential
- **650MW** of **installed renewable energy** capacity required by 2030 in Trinidad and Tobago.
- **\$7Bn** of **Solar PV renewable energy investment** projects is estimated to be required in Trinidad and Tobago by 2027 assuming 100% of generation is provided by solar PV (as guided by the country's final Integrated Resource Plan).
- Trinidad and Tobago's market share is expected to be **15%** renewable energy capacity needed in the Caribbean by 2027.

**Trinidad and Tobago electricity consumption<sup>1</sup>**  
million megawatt hours







# LOGISTICS/ELECTRICITY SUPPORT INFRASTRUCTURE



## Transport infrastructure

**Strong and stable logistics infrastructure** with advanced road networks, major industrial ports and an efficient air transport system

**5th** in market access and infrastructure in Latin America & Caribbean

(Source: FDI Benchmark based on Legatum Institute, 2019)

**16th** globally in quality of electricity supply & accessibility

(Source: Global Competitiveness Report, World Economic Forum, 2019)

## Electricity infrastructure

Trinidad and Tobago ranks **2nd** among countries in Latin America & Caribbean for its performance in electricity access and electricity supply quality.



(Source: Global Competitiveness Report, World Economic Forum, Switzerland, 2019)

# PORTS MARITIME INFRASTRUCTURE & INDUSTRIAL ESTATES



**Point Lisas**

- Six multi-user piers
- Oil and gas logistics support services
- Berthing and unberthing of vessels

**La Brea**

Union Industrial & Labidco Estates, Brighton Port

- New energy-based projects
- Energy Services
- Port Facilities
- Warehousing



**Galeota Port**

- Energy Services
- Port Facilities
- Warehousing
- Office Space



## RENEWABLE ENERGY INCENTIVES

Incentive	Description	Act
Import Duty Exemptions	Import Duty Exemptions are granted for “machinery, equipment materials and parts for the manufacture or assembly of Solar Water Heaters”.	
Zero-Rated Vat	Zero-Rated Vat granted for complete Solar Water Heaters, solar PV systems and wind turbines.	Valued Added Tax Act
Tax Credit for Solar Water Heaters	Tax Credit for Solar Water Heaters: Where an individual, in a year of income commencing 1st January, 2011, purchases solar water heating equipment for household use, that individual shall be entitled to a tax credit of 25% of the cost of the solar water heating equipment, up to a maximum of TT \$10,000 (maximum tax credit of TT \$2500.00)	Income Tax Act
150% Wear and Tear Allowance	A 150% wear and tear allowance of the expenditure incurred on: <ol style="list-style-type: none"> <li>1. The acquisition of plant, machinery, parts, and materials for use in the manufacture of Solar Water Heaters; or</li> <li>2. The acquisition of: wind turbines and supporting equipment; solar photovoltaic systems and supporting equipment; or Solar Water Heaters.</li> </ol>	Finance Act No. 13 of 2010
Customs and Excise Duty Exemptions	According to the Act, several items “will be allowed for importation free of customs and excise duties as long as they are not manufactured in the desired quantities and quality in Trinidad and Tobago.” The list of items includes “environmentally-friendly and/or energy-saving devices such as solar panels, heating equipment.	Trinidad and Tobago Tourism Development Act, 2000



# MANUFACTURING INCENTIVES

Incentive	Description	Act
<b>Fiscal Incentives</b>	(i) Customs duties on the construction of an approved project; (ii) Value Added Tax; and (iii) Income tax on dividends or other distribution, other than interest, out of profits or gains derived from the manufacture of the approved product during the tax holiday period.	Fiscal Incentives Act, Chapter 85:01
<b>Import Duty Concessions</b>	Exemptions from Customs Duties on raw materials, machinery and equipment and in some cases packaging material based upon the provisions of the Third Schedule of the Customs Act, Chapter 78:01 (as amended).	Third Schedule of the Customs Act, Chapter 78:01
<b>Approved Small Company Status</b>	Approved Small Company Status is a designation granted to a Limited Liability Company, allowing it to derive a tax relief for a period of five (5) years.	Corporation Tax Act, Chapter 75:02
<b>Free Trade Zones</b>	Free Zone activities that qualify for approval include manufacturing for export, international trading in products, services for export and development and management of free zones. Sales into the customs territory are treated as extra regional imports.	Free Zones Act, Chapter 81:07
<b>Allowances to the manufacturing sector</b>	Where a person carrying on a trade incurs capital expenditure on the provision of machinery or plant for the purposes of that trade, there shall be made to him, for the year of assessment in the basis period for which the expenditure is incurred, an allowance (in this Part referred to as "an initial allowance") equal to 90% of the expenditure incurred in the provision of machinery and plant for the purposes of that trade.	Chap. 85:04 Income Tax (In Aid of Industry) Act
<b>Tax exemptions for the Housing Sector</b>	There shall be exempt from income tax until the year ending 31st December 2018, the gains or profits derived from the initial sale of a residential house site, being part of a land development project, provided the owner of the land produces a certificate from the Minister with responsibility for housing in support of the claim for exemption	Section 45C (1) of the Income Tax Act, Chapter 75:01



## ACROSS SECTOR INCENTIVES

Incentive	Description	Act
Research and Development Facility (RDF)	(i) for a single company project is TT \$500,000; (ii) for a business alliance of two or more companies is TT \$1,000,000; and (iii) for patent registration is TT \$300,000.	
Co-Financing	Companies can enjoy reimbursement, through exportTT, for a portion of the costs associated with entry into selected export markets. A company shall receive financial support on pre-approved investments, purchases, costs or expenses.	
Importation of Goods for temporary use	The Comptroller may give permission to any person to import any goods without payment of duty thereon, upon being satisfied that the goods are so imported for temporary use only. Special conditions are applicable	Chapter 78:01 Customs Act

# 04

## INVESTMENT OPPORTUNITIES IN THE RENEWABLE ENERGY/ CLEAN ENERGY SPACE

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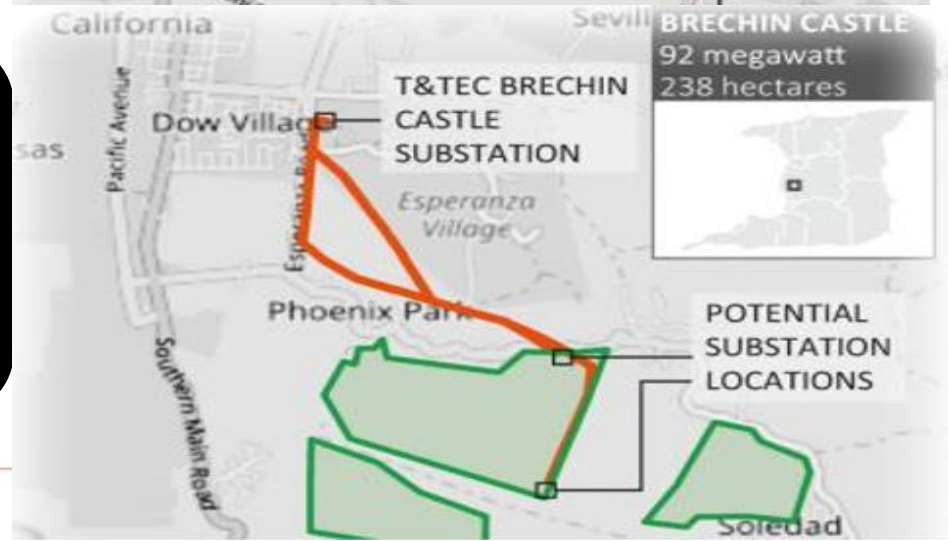
# INVESTMENT OPPORTUNITY RENEWABLE ENERGY POWER GENERATION

**Project Background**

- **Description:** Two solar projects will be built in Trinidad during the period **2021-2022** led by a **consortium** comprised of **bp, Shell and Lightsource bp**
- **Location:** Brechin Castle and Orange Grove
- **Impact:** Among the **largest energy generation projects** in the region contributing heavily towards national renewable energy targets and reduction of carbon emissions

**Project Specifications**

- **Brechin Castle:** 587 acres over three sites; 92MW facility generating 225,303 MWh per year
- **Orange Grove:** one location on 148 acres of land; 20MW solar farm expected to supply 50,417 MWh per year





# INVESTMENT OPPORTUNITY SOLAR PV MANUFACTURING

## *Solar PV and Associated Component Manufacturing*

**Float Glass Manufacturing** – previous research ranked Trinidad and Tobago as having the ability to be a top tier producer given our cost structure

**Solar PV Module Assembly** – Manufacturing powerhouse of the Caribbean. Ability to leverage market size and skillsets

**Aluminum Components** – Fabrication capabilities available locally to support sectors







# INVESTMENT OPPORTUNITY CARIBBEAN SOLAR ASSEMBLY

## The Opportunity:

Establishment of a Solar Photovoltaic Plant in Trinidad and Tobago to serve the Caribbean Region.

## Objective:

To serve the Solar PV needs of the region while providing jobs and Foreign Direct Investment.

## Specifics:

- Total Investment Estimate: USD\$100 million
- Type of Investment: Operator with Equity
- Timeline for establishment: 12-18 months
- Asset Ownership Structure: TBD

**Overarching Goal: Creation of a new industry for self-sufficiency and energy independence in the Caribbean**

## Enabling Caribbean Market:

- Current renewable energy implementation is at 17%. Goal - 90% by 2050
- New policy developments to support solar proliferation
- Need for distributed solar to supply reliable and affordable power to island states

*At the Special Strategic Session - **Achieving Regional Energy Security Through Enhanced Cooperation and Integration: Considerations for a Regional Approach to Energy Security**, CARICOM “Endorsed the Caribbean Solar Assembly Concept presented by the Caribbean Climate-Smart Accelerator, recognising the value proposition and benefits that Member States can derive from the venture”.*



# INVESTMENT OPPORTUNITY CARIBBEAN SOLAR ASSEMBLY

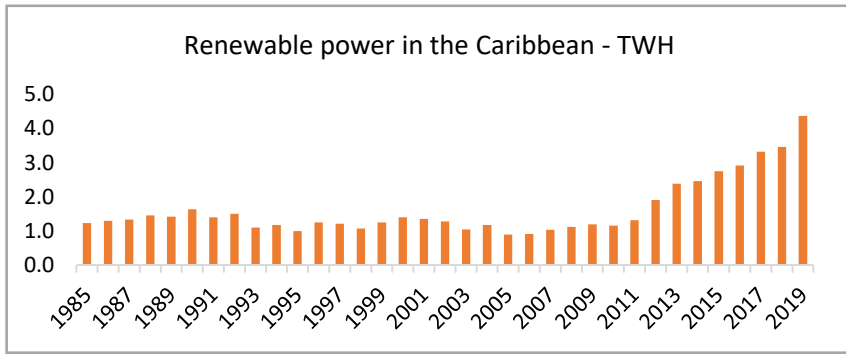
## Strong Drivers for Solar Module Exports to the Caribbean

Unsubsidized solar market

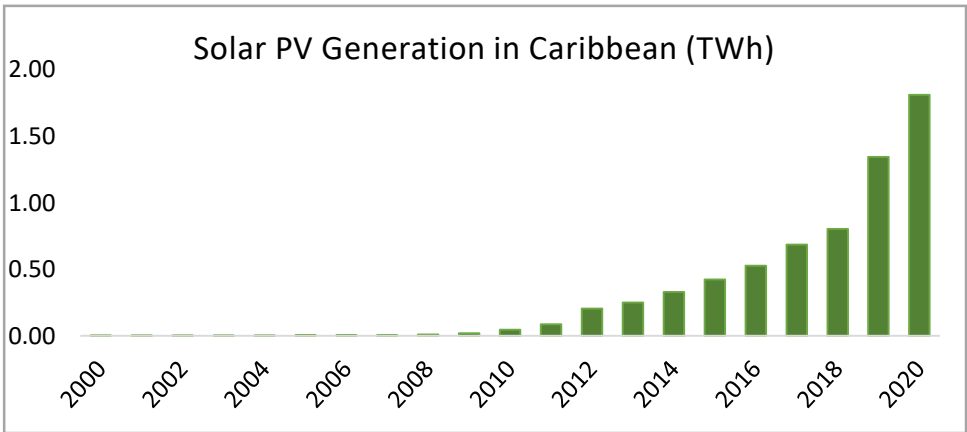
High insolation levels

Growing Demand

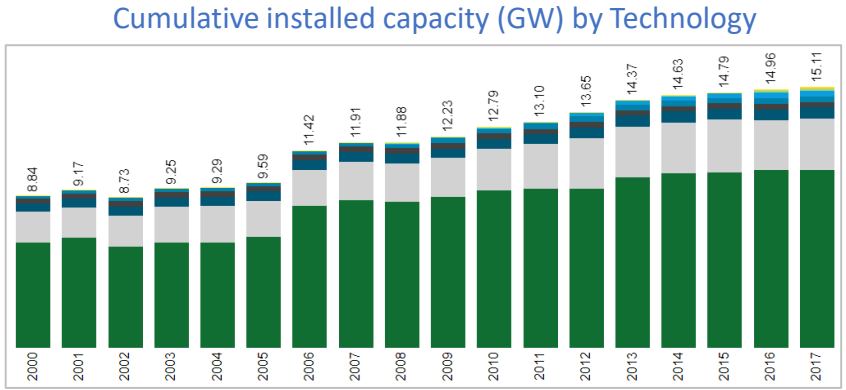
- US\$18.4 BILLION**
  - Net benefits to renewable energy investments in Caribbean to 2040 (IDB 2019).
- US\$16 BILLION**
  - To meet the RE targets set out in Caribbean NDC's by 2030 (IRENA 2019).



Bp Stats 2020



Bp Stats 2021



Source: BNEF



## INVESTMENT OPPORTUNITY ENERGY STORAGE, BATTERY ASSEMBLY & BATTERY RECYCLING

*To successfully utilize energy from renewable sources, energy storage systems are important for ensuring a continued supply of energy is available*

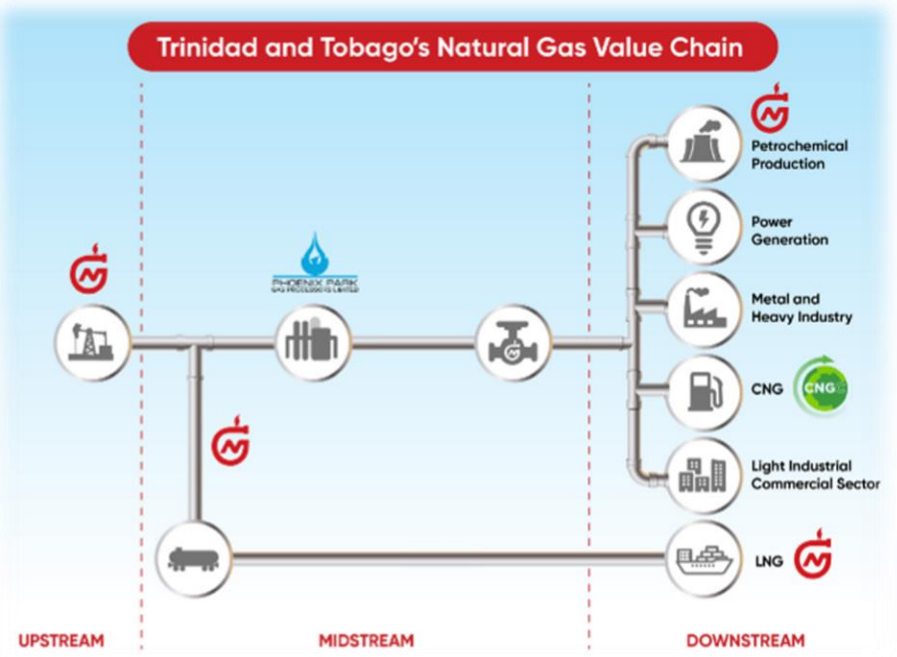
### **Strength of T&T as a Location for Energy Storage, Battery Assembly & Battery Recycling**

- Presence of resources for solar and wind power generation
- Experience in large scale production of energy products that fit into an established industry cluster for energy storage, battery assembly, and battery recycling
- Experience in setting up large scale projects
- Export-ready infrastructure
- Ownership of relevant assets (ports, maritime infrastructure, industrial estates)
- Country-set targets signal government's commitment to renewable energies: 10% renewable energy target by 2021 and 30% by 2030. Trinidad and Tobago is a signatory to the Paris Agreement adopted at COP 21.
- Government's commitment to renewable energy generation in Trinidad and Tobago

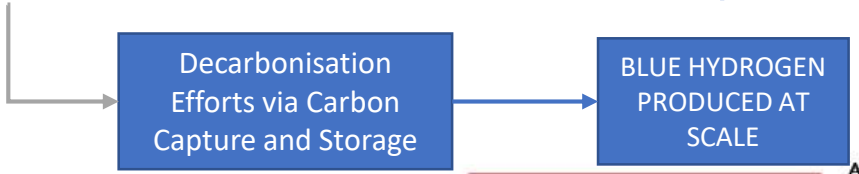
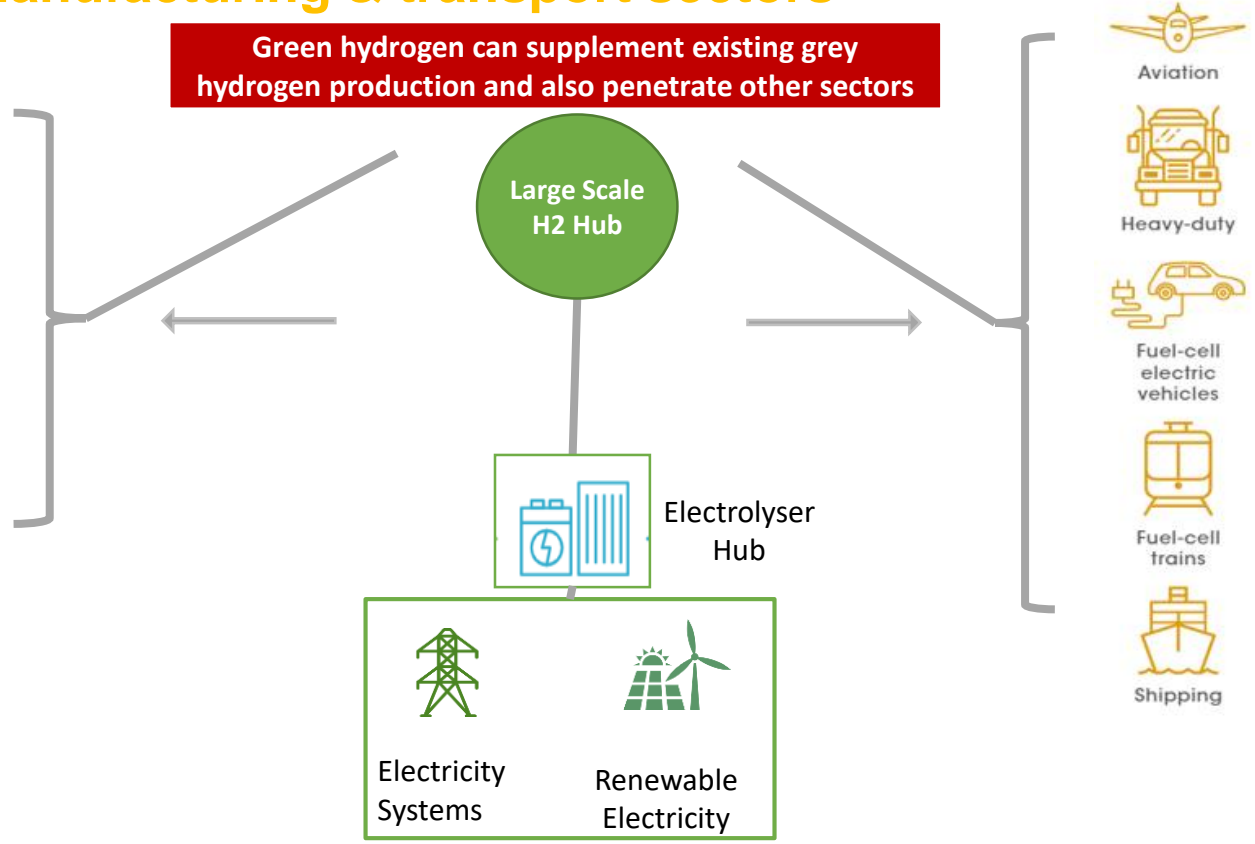


# INVESTMENT OPPORTUNITY GREEN HYDROGEN DEVELOPMENT

**Opportunity for T&T to Leverage Infrastructure and Expertise in the petrochemical, power, manufacturing & transport sectors**



**Green hydrogen can supplement existing grey hydrogen production and also penetrate other sectors**





# DEVELOPMENT OF HYDROGEN ROADMAP

Assessment of T&T's green hydrogen potential and identification of opportunities to leverage the current natural gas infrastructure to produce both green and blue hydrogen.

EOI  
Completed in March 2021



RFP Process  
Completed in July 2021



Study in Progress



Final Report Q12022

**Hydrogen Demand**  
Potential demand of GH2 from different sectors and adaptability to integrate GH2

**Hydrogen Supply & Competitiveness**  
Assess potential green hydrogen supply and competitiveness.

**Next Steps & Pilot Plant Configuration**  
Next actions for the development of GH2 and suggest a pilot project to confirm its feasibility.

**Enabling Factors**  
Identify synergies with the natural gas and petrochemical infrastructure to support the development of the H2 market.

**1. Readiness Evaluation**  
2. Identify technology options and conduct a cost-benefit analysis for repurposing current infrastructure.

**1. Implementation Road Map**  
2. Develop a technology implementation Road Map to leverage the current infrastructure in T&T.

We want to hear from you!

Let's Engage!



| Engage

A National Effort for Investment Facilitation

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THANK YOU

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