

2023 ENERGY REPORT CARD TRINIDAD & TOBAGO







This is the Energy Report Card (ERC) for 2023 for Trinidad and Tobago.

The ERC provides an overview of the energy sector performance, highlighting the following areas:

- Installed Conventional and Renewable Power Generation Capacity
- Annual Electricity Generation, from Conventional and Renewable Plants
- Other Electricity Sector Metrics, such as Losses, Consumption, and Tariffs
- Renewable Energy Targets
- Renewable Energy Resource Potential

The ERC also includes sectoral data and information on policies and regulations; workforce; training and capacity building; and related areas.

The data and information that are available in the ERC were mostly provided by the government ministries, agencies, and departments, that have responsibility for statistics and planning, in general, and the energy sector and electricity subsector including the electric utilities, in particular. The data and information collected was supplemented by desk-based research and, in instances, information was generated from calculations and analyses that were performed by the CCREEE.

#### **Quality Assurance**

The collection and treatment of data and information that is produced for the ERC is consistent with the International Recommendations for Energy Statistics (IRES), which provides a comprehensive methodological framework for the collection, compilation, and dissemination of energy statistics in all countries irrespective of the level of development of their statistical system. The ERC is produced in accordance with these performance standards that seek, as far as is possible, to ensure the quality (i.e., objectivity, utility, and integrity) of data and information that it disseminates to the public.

The CCREEE strives for transparency on the information and methods that are used within the production of the ERC, with a view to improve understanding on how the information should be treated and to facilitate reproducibility of the information. Nevertheless, the Centre recognizes that quality may be limited by the nature and source of the data and information disseminated.

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The ERC includes data and information that is contained in a variety of public sources and, though every effort is made to validate the accuracy and validity of the contents, reliance on the information herein is strictly at the user's risk.

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#### **Requests for Correction**

The CCREEE has established administrative mechanisms to allow persons to seek and obtain, where appropriate, legitimate correction(s) to information maintained and disseminated through the ERC. Any request for corrections should be sent to: <a href="maintained-angle-eng-green-correction-eng-green-corre

#### Acknowledgements

The CCREEE acknowledges the contributions of the Ministry of Energy and Energy Industries, Trinidad and Tobago, and thanks Mr. Andre Boodram, Planning Officer II (Ag), in the Ministry, for his supervision of the intern, Nkosi Carter-Fisher, who supported the preparation of the ERC.





### **Energy Sector Summary**

Population (Estimation)	1,367,510 [1] <sup>1</sup>
GDP (USD)	\$ 28,140,000,000 [2]
GDP (USD) Per Capita	\$ 18,333 [2]
Gross National Income (GNI) Per Capita (USD)	\$ 30,400 [3]
Debt as % of GDP	54.5% [4]
Human Development Index	0.814 [5]
National Development Plan/Overall Country Development Strategy	Vision 2030: The National Development Strategy of Trinidad and Tobago (Draft) [6]
National Energy Policy	None
Renewable Energy (RE) Policy	Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago [7]
Renewable Energy Target	30% Electricity Generation from Renewable Energy by 2030[8] <sup>2</sup>
Energy Efficiency Target	None
Total Installed Conventional Capacity (MW)	2,103 MW [12] <sup>3</sup>
Total Installed RE (MW)	0.7 MW [12] <sup>3</sup>
Electricity System Losses (%)	7.2% [12] <sup>3</sup>
	· ·

Energy Use (kWh) Per Capita	5,707 kWh <sup>3 4</sup>		
National Repository for Energy Data <sup>5</sup>	None		
Climate Change Policy	National Climate Change Policy (NCCP) (2011) [9]		
National Determined Contributions (NDC)	Unconditional: 30% reduction in GHG emissions by December 31, 2030, in the public transportation sector compared to a business as usual (BAU)scenario (reference year 2013).		
	Conditional: Additional reduction achievable under certain conditions which would bring the total GHG reduction to 15% below BAU emission levels by December 31, 2030. [10]		

<sup>2 -</sup> This Renewable Energy target was announced in 2021 Public Sector Investment Programme by the Ministry of Planning and Development.

<sup>3 -</sup> The information presented reflects the most recent year—2022—for which complete and verified energy data is available.
4 - The Energy Use per Capita for Trinidad and Tobago is higher than other CARICOM Member States because 51% of all energy is consumed by the Industrial sector which is more energy intensive than other countries in CARICOM 5 - A National Energy Data Repository (NEDR) is currently being developed by the Ministry of Energy and Energy Industries...





### Energy Performance Standards/Appliance Labelling [11]

#### Compulsory energy labelling standards:

- TTCS 11:2021 Energy Labelling- Compact fluorescent lamps and lights emitting diode lamps-compulsory requirements
- TTS/EN 12975-1:2012 Thermal Solar Systems and Components Solar Collectors Part 1: General Requirements

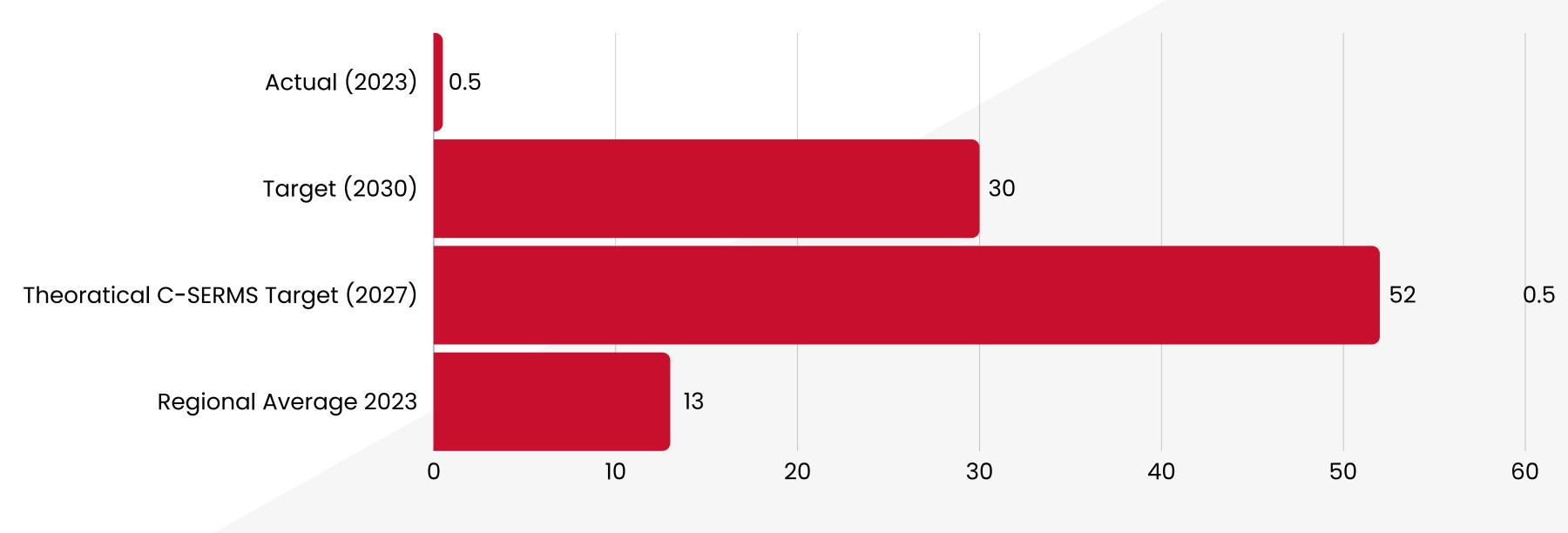
#### Voluntary energy labelling standards:

- TTS/CRS 57, Energy Labelling- Refrigerators and freezers- Requirements
- TTS/CRS 57:2021 Energy Labelling Refrigerating Appliances Requirements
- TTS/CRS 59:2021 Energy Labelling- Air conditioners- Requirements
- TTS 171-3:2011 Trinidad and Tobago Electrical Wiring Code Part 3: Renewable Energy Systems and Interconnection Requirements
- TTS 106:2012 Solar Water Heater Systems Design and Installation Requirements
- TTEEBC 2023 Trinidad and Tobago Energy Efficiency Building Code
- TTS/ISO 50001:2012 Energy Management Systems Requirements with Guidance for Use
- TTS/UL 1703:2015 Flat-plate photovoltaic modules and panels
- TTS/UL 1741:2015 Inverters, converters, controllers and interconnection system equipment for use with distributed energy resources





### Renewable Energy Capacity Against Targets



RE as % of Installed Capacity

<sup>6 -</sup> The information presented reflects the most recent year—2022—for which complete and verified energy data are available.



### **Independent Power Producer**

Power Generation Company of Trinidad and Tobago[24]

Trinity Power Limited (TPL) [25]

Trinidad Generation Unlimited (TGU) [26]

### **Fuel Importers & Suppliers**

Trinidad and Tobago National Petroleum Marketing Company Limited (NPMC) [21]

National Gas Company of Trinidad and Tobago Limited [20]

United Independent Petroleum Marketing Company Limited (UNIPET) [21]

Trinity Exploration and Production [22]

Trinidad Petroleum Holdings Limited (Trinidad Petroleum)

- Heritage Petroleum Company Limited
- Paria Fuel Trading Company [18]

### **Electric Utility**

Trinidad and Tobago Electricity Commission (T&TEC) [23] 10



### **Electricity Regulator**

**Regulated Industries Commission** (RIC) [27]

### **Government Ministries, Departments and Agencies**

Ministry of Energy and Energy Industries [14]

- Energy Research and Planning Division
- Renewable Energy Division
- Downstream Petroleum Management

Ministry of Public Utilities [16]

Ministry of Planning and Development [17]

Ministry of Works and Transport [15]

• Public Transport Service Cooperation (PTSC)

National Energy Corporation of Trinidad and Tobago Limited

NGC Green Company Limited

### **Other**

Energy Chamber of Trinidad and Tobago [28]

<sup>7 -</sup> Trinidad Petroleum Holdings Limited (Trinidad Petroleum), a state-owned enterprise vested with the responsibility of managing Trinidad and Tobago's oil and related assets. 8 -Heritage Petroleum Company Limited (Heritage) is a state-owned oil and gas company.

<sup>9 -</sup> Paria Fuel Trading Company imports refined petroleum products, stores and distributes them domestically as well as regionally

<sup>10 - 51%</sup> of shares is owned by T&TEC which is state owned







	Year	Status
Energy Policy		Not Established
Energy Action Plan		Not Established
RE Target [7] <sup>3</sup>	2021	In Force
EE Target		Not Established
Electricity Regulator [29]	1998	In Force
Net Billing/Net Metering		Not Established
Interconnection Policy/Standards	2011	Draft
Feed-In-Tariff		Not Established
Integrated Resource and Resilience Plan		Not Established
RE/EE Act		Not Established

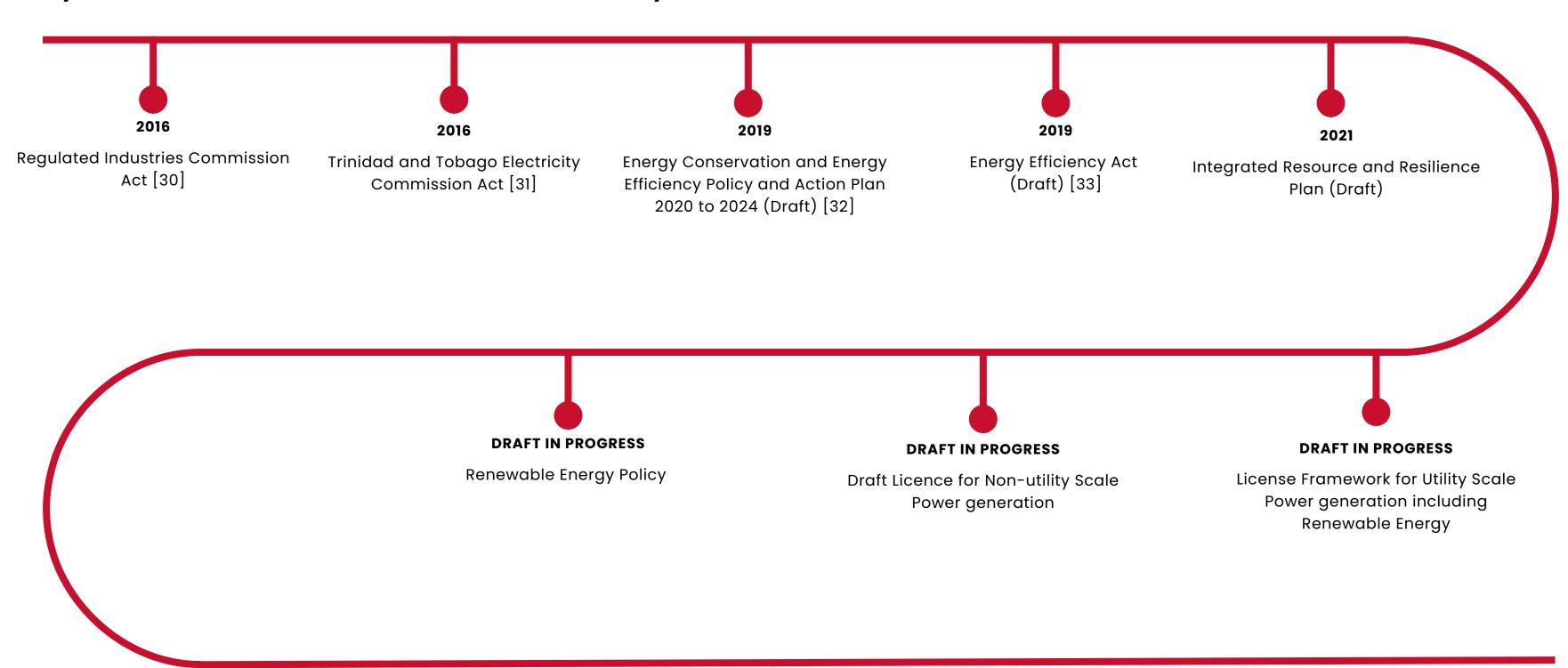
<sup>11 -</sup> This Renewable Energy target was announced in 2021 Public Sector Investment Programme by the Ministry of Planning and Development.





## Policy, Legal and Regulatory (PLR) Framework

<u>Key Achievements: PLR Framework Timeline for Electricity Sub-Sector</u>







# Policy, Legal and Regulatory (PLR) Framework Policies Relevant to the Energy Sector

Year	Name	Status	Description
2011	Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago [7]	In Force	Notwithstanding the continued importance of the country's petroleum resources, this framework outlines the pathway for development of an RE strategy, RE policy and RE technologies of choice, that is, wind, solar, and energy efficiency towards more sustainable development.
2015	Strategy for Reduction of Carbon Emissions in Trinidad and Tobago, 2040 [34]	In Force	This Strategy is designed to create the necessary conditions and capacities for multidisciplinary implementation of climate change action based on the policies of the Government, while strengthening inter-governmental coordination.
2016	Vision 2030: The National Development Republic of Trinidad and Tobago 2016-2030 [6]	In Force	The Plan establishes the vision and broad framework for Trinidad and Tobago's development to 2030 and defines the key priorities for the first planning period 2016-2020. It includes goals to improve energy efficiency and incorporate renewable energy into the energy supply.
2021	Integrated Resource and Resilience Plan	Draft	

### Legislation Relevant to the Energy Sector

Year	Name	Status	Description
1933	Motor Vehicles Insurance (Third- Party Risks) Act (Last Amended 2015) [42]	In Force	An Act to make provision for the protection of third parties against risks arising out of the use of motor vehicles.
1934	Motor Vehicles and Road Traffic Act (Last Amended 2016) [44]	In Force	Tax removal on hybrid motor vehicles and motor vehicles manufactured to use compressed natural gas





## Policy, Legal and Regulatory (PLR) Framework

### Legislation Relevant to the Energy Sector

Year	Name	Status	Description
1945	The Regulated Industries Commission (RIC) Act (Last Amended 2001) [30]	In Force	An Act to provide for a Regulated Industries Commission to perform certain functions respecting service providers; for the licensing of service providers and to make consequential amendments to related Acts
1945	The Trinidad and Tobago Electricity Commission (T&TEC) (Last Amended 2009) [39]	In Force	An act to establish an electricity commission for Trinidad and Tobago, to enable the commission to generate and supply electrical energy and for other purposes in connection therewith.
1969	The Petroleum Act (Last Amended 2019) [41]	In Force	An Act to consolidate and amend the law relating to petroleum so as to make better provision for the exploration for, and the development and production of, petroleum, and for matters consequential or incidental thereto
1974	Petroleum Production Levy and Subsidy Act [38] (Last Amended 2012) [36]	In Force	An Act respecting the provision for petroleum products and the imposition of a levy on persons carrying on production business.
1974	The Petroleum Taxes Act (Last Amended 2016) [43]	In Force	An Act respecting taxation of businesses carried on in the course of certain petroleum operations.
1992	Maxi Taxi Act (Amended in 2010) [40]	In Force	An Act to guide the licensing, permitting and administration of the maxi-taxi system i.e. public service motor vehicles with seating accommodation for not less than nine nor more than twenty-five passengers.
1995	Environmental Management Act (Revised 2000) [37]	In Force	An Act to promote and encourage a better understanding and appreciation of the environment, encourage the integration of environmental concerns into private and public decisions, and the establishment of an integrated environmental management system which effectively harmonises activities designed to protect, enhance and conserve the environment.
2004	Occupational Safety and Health Act [38]	In Force	An Act respecting the safety, health and welfare of persons at work.





## Policy, Legal and Regulatory (PLR) Framework

### Renewable Energy and Energy Efficiency Incentives

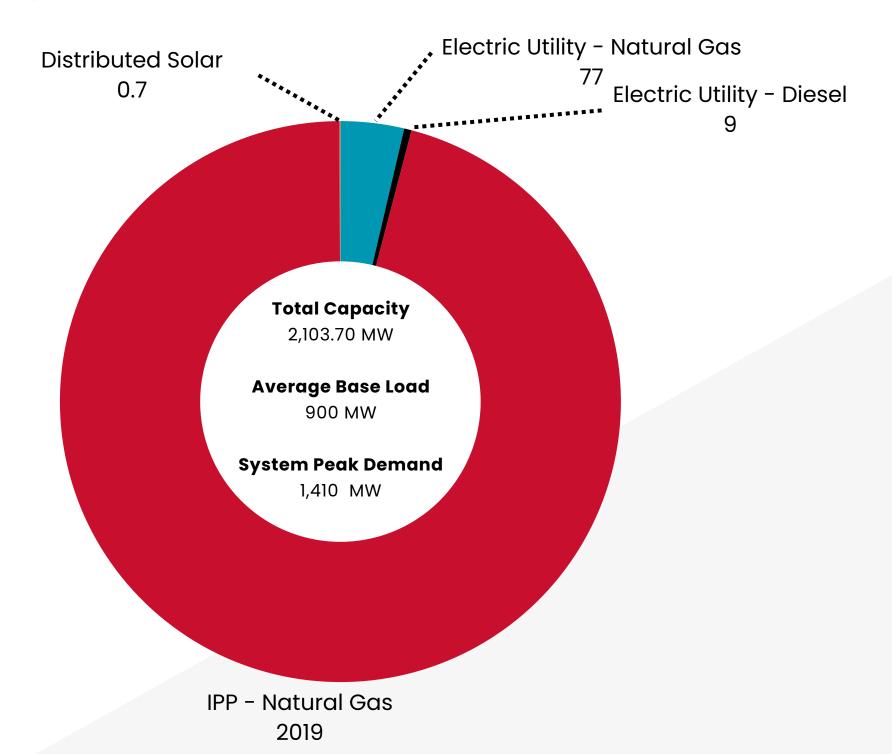
Year	Name	Status	Description
2010	Finance Act [45]	In Force	An Act to provide fiscal incentives in Trinidad and Tobago to encourage the adoption of renewable energy technologies and alternative fuel vehicles. The Act allow for individuals and companies with solar water heaters, solar photovoltaic (PV) systems, or wind turbines to benefit from a 150% wear and tear allowance on related equipment and materials. Individuals who install solar water heating systems at home can claim a 25% tax credit, up to TT\$10,000.  The Act also offers incentives for Compressed Natural Gas (CNG) vehicles and equipment. Businesses installing CNG kits or offering installation services are entitled to a 130% wear and tear allowance on plant and machinery. Individuals with CNG vehicles can claim a 25% tax credit, also capped at TT\$10,000. There are also exemptions from motor vehicle tax and VAT for new and certain used CNG vehicles.  Under the Act, Energy Service Companies (ESCOs) benefit from a 75% allowance on the cost of equipment used to conduct energy audits, and companies hiring certified ESCOs to design and install energy-saving systems are allowed to deduct 150% of those costs from their taxable income. On the import side, the Act exempts solar water heaters, PV cells, LEDs, and wind turbines from VAT and customs duties, reducing the upfront cost for consumers and businesses alike.



## Electricity and Energy Efficiency [12] 13

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Installed Capacity (MW)



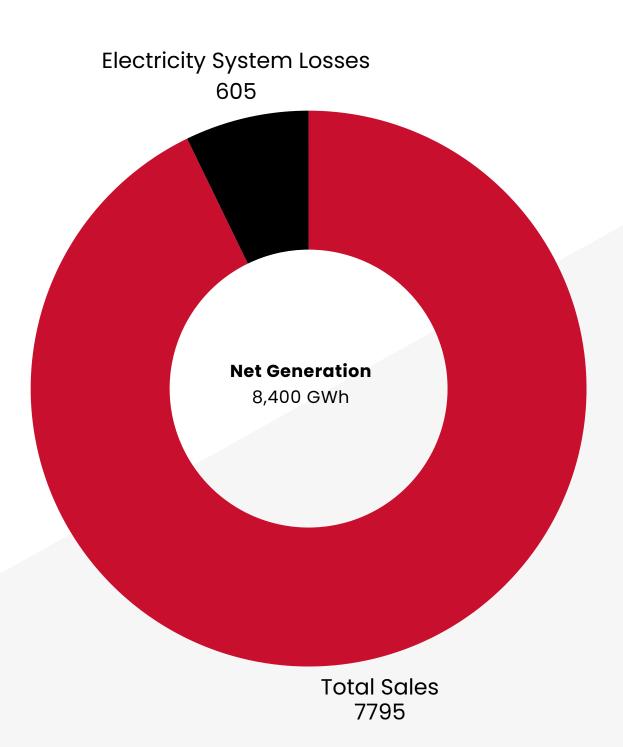
- Electric Utility Natural Gas
- Electric Utility Diesel
- IPP Natural Gas
- Distributed Generation

<sup>13 -</sup> The information presented reflects the most recent year -2022 - for which complete and verified energy data are available.





Energy Generation (GWh)



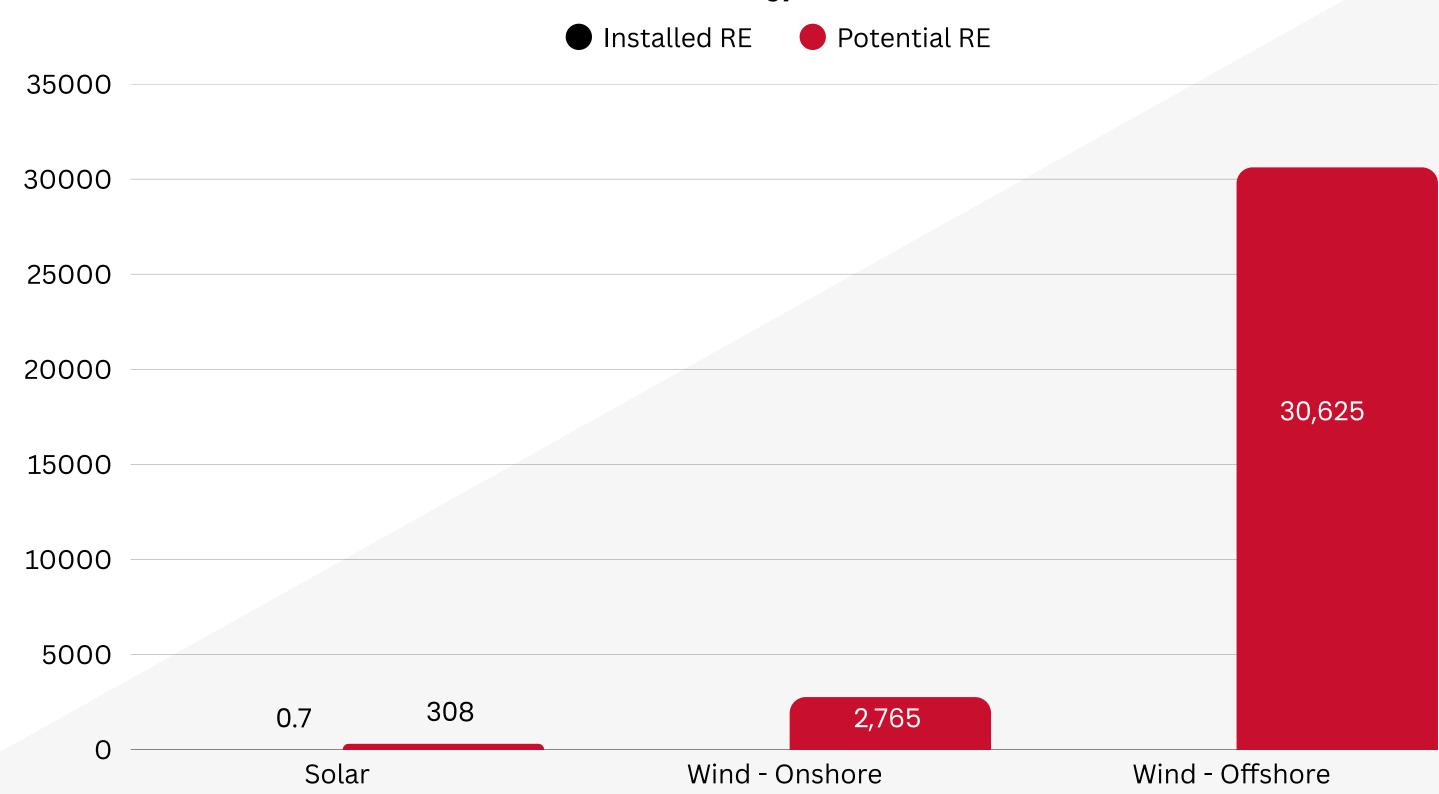
Total Sales
 Electricity System Losses





## Electricity and Energy Efficiency [12] [13] 15

### Renewable Energy Resources







	Rate Class	Rate (US\$/kWh)	Rate (US\$/kVA)
	1-400	US\$ 0.04	
Residential <sup>16</sup>	401-1,000	US\$ 0.05	
	> 1,000	US\$ 0.06	
Commercial		US\$ 0.06	
Industrial		US\$ 0.09	
	Industrial Rate D1 (Small Industrial)	US\$ 0.03	US\$ 7.36
	Industrial Rate D2 (Medium Industrial)	US\$ 0.03	US\$ 7.36
	Industrial Rate D3 (Large Industrial)	US\$ 0.03	US\$ 6.26
Industrial (Large Loads)	Industrial Rate D4 (Large Industrial)	US\$ 0.03	US\$ 5.89
	Industrial Rate D5 (Large Industrial - Standby)	US\$ 0.02	US\$ 5.45
	Industrial Rate El (Very Large Load)	US\$ 0.02	US\$ 6.55
	Industrial Rate E2 (Very Large Load)	US\$ 0.02	US\$ 6.48
	·	US\$/year	
	S1-1	US\$ 127.31	
l	S1-2	US\$ 84.87	
Street Lights	S1-3	US\$ 61.73	
	S1-4	US\$ 55.94	





### <u>Programmes</u>

Programme Name	Funding Awards	Funding Source
EcoMicro - Central Finance Facility - Green Finance to Build Climate Resilience of Low-Income Households [47]	Total - US\$ 487,840.00 Country Counterpart Financing - US\$ 187,840.00	Inter-American Development Bank
Decarbonization Initiatives in the Energy, Power and Transport Sectors in T&T [48]	US\$ 350,000.00	Inter-American Development Bank

### **Energy Efficiency Projects**

There were no Renewable Energy Projects reported for 2023.

### Renewable Energy Projects

Renewable Energy Source	Project Name	Programme Name	System Size (kW)	Implementing Partner	Total Estimated Cost	Funding Source
Solar Photo-	Support to The Implementation of Trinidad And Tobago's Nationally Determined Contribution [51] [52]	Not Applicable	108	Ministry of Planning and Development, United Nations Development Programme (UNDP)	€ 2,400,000	The European Union's Global Climate Change Alliance Plus (GCCA+) United Nations Development Programme (UNDP)
Voltaic [13]	Piarco Solar Park: To construct a solar park at the Piarco International Airport [49] [50]	Not Applicable	500	Airports Authority of Trinidad and Tobago, Ministry of Works and Transport, Ministry of Energy and Energy Industries, Ministry of Planning and Development and the European Union.	€ 1.5 million	The European Union's Global Climate Change Alliance Plus (GCCA+)







### **Tertiary Programmes Offered**

# **Augustine Campus Campus**

### **Bachelor's Degree**

- Environmental Science and Sustainable
- Mechanical Engineering 19
- Physics <sup>17</sup>

#### Master's Degree

- Renewable Energy Technology

### Mphil/PhD

- Physics

- Chemical Engineering <sup>24</sup>

## School of Business and

### **Associate Degree**

- Implementing Solar Power Systems for Power Generation: Photovoltaic Installer (Level 1)
- Vehicles A Practical Approach

#### **Professional Certificate**

Vehicles

## University of the West Indies, St.

- [53] [54]
- Technology (Special) 18

- Chemical Engineering

- Mechanical Engineering<sup>20</sup>
- Chemistry <sup>23</sup>

## Computer Science [55]

- Servicing and Repairing Hybrid & Electric

• Servicing and Repairing Hybrid & Electric



The University of Trinidad and

- Renewable Energy Engineering Technology <sup>21</sup>
- Petroleum Engineering

#### **Bachelor's Degree**

- Energy Engineering 22
- Utilities Engineering

#### Master's Degree

• Energy Engineering with Specialisation In Renewable Energy <sup>25</sup>

The College of Science, **Technology and Applied Arts of** Trinidad and Tobago [57]

#### **Vocational Certificate**

• Business and Energy Reporting

CTS College of Business and **Computer Science [58]** 

#### **Vocational Certificate**

• Introduction to Solar Power Systems

17 - Offers a focus areas under Electronics - Renewable energy Integration with the electrical grid and Renewable Energy (Solar, wind, geothermal, BioEnergy, and Fuel Cell) 18 -Includes a course in Fundamentals of Renewable.

**Education Provider** 

- 19 Includes electives in Renewable Energy, Energy Engineering and Power Plant Engineering
- 20 Offers research focus in Thermodynamics, Heat Transfer and Renewable Energy Resources
- 21 A National Engineering Technical Diploma (NETD) is awarded
- 22 Offers specialisations in Oil and Gas or Renewable Energy

23 - Offers research focus in Solar cell materials, Bio-renewable chemicals from agricultural waste; Petroleum Chemistry - production and refining

24 - Includes research focus on Energy Studies

25 - Offers specialisations in Oil and Gas or Renewable Energy





## Climate Change Framework

Climate Change Policy	National Climate Change Policy (NCCP) (2011) [9]
Nationally Determined Contributions	Unconditional: 30% reduction in GHG emissions by December 31, 2030, in the public transportation sector compared to a business as usual (BAU)scenario (reference year 2013).
Summary [10]	Conditional: Additional reduction achievable under certain conditions which would bring the total GHG reduction to 15% below BAU emission levels by December 31, 2030.
Emissions Reduction Target [10]	• 15% below BAU by 2030
Priority Sectors for NDC [10]	<ul> <li>Power Generation</li> <li>Transportation</li> <li>Industry</li> </ul>
	Initial National Communication of the Republic of Trinidad and Tobago under the United Nations Framework Convention on Climate Change [59]
National Communications (NC) to the UNFCCC	Second National Communication of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change [60]
	Third National Communication of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change [61]

In 2025 the Government of St. Lucia updated its National Determined Contributions





### Summary of Trinidad and Tobago's GHG Emissions and Removals (Gg) for 2015

		Emissions (Gg)						
Sources	Net Carbon Dioxide (CO <sub>2</sub> )	Methane (CH <sub>4</sub> )	Nitrous Oxide (N <sub>2</sub> O)	Nitrogen Oxide (NO <sub>x</sub> )	Carbon Monoxide (CO)			
Energy	17057.18	78.09	0.16	0	0			
Industrial Processes and Product Use	20668.78	12.48	3.87	0	0			
Agriculture, Forestry, and Other Land Use	-2674.42	5.26	0.04	0.35	22.79			
Waste	0	88.13	0	0	0			
Other	0	0	0	0	0			
Total	35051.54	183.96	4.07	0.35	22.79			



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