

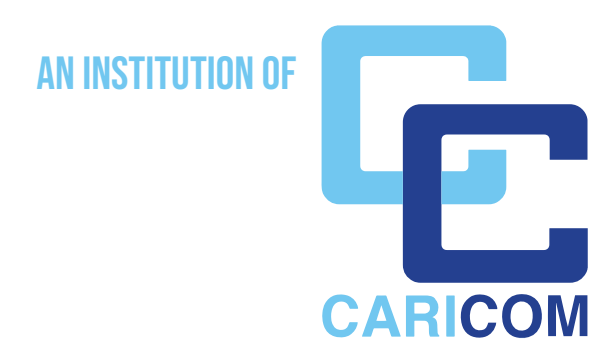


# TRINIDAD & TOBAGO

ENERGY REPORT CARD (ERC) FOR 2022



PORT OF SPAIN



## This is the Energy Report Card (ERC) for 2022 for the Republic of 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
- Energy Efficiency Metrics, including Energy Intensity

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.

### Disclaimer

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### Acknowledgements

The CCREEE acknowledges the contributions of the Ministry of Energy and Energy Industries, the Republic of Trinidad and Tobago and thanks Andre Boodram, Planning Officer II (Ag) in the Energy Unit of the Ministry, for his supervision of the intern, Gabrielle Motilal, who supported the preparation of the ERC.

# ENERGY SECTOR SUMMARY

## + SOCIOECONOMIC POLICIES

**Vision 2030: The National Development Strategy of Trinidad and Tobago** <sup>[7]</sup>

National Development Plan/ Overall Country Development Strategy

**None**

National Energy Policy

**Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago** <sup>[8]</sup>

Renewable Energy (RE) Policy



## + SOCIOECONOMICS

|  |  |
|--|--|
| Population Census/ Projection                | <b>1,367,510</b> <sup>1 [1]</sup>  |
| GDP (USD)                                    | <b>\$29,894,822,846.51</b> <sup>[2]</sup>                                    |
| GDP (USD) Per Capita                         | <b>\$22,005.50</b> <sup>[3]</sup>  |
| Gross National Income (GNI) Per Capita (USD) | <b>\$16,190</b> <sup>[4]</sup>   |
| Debt as % of GDP                             | <b>66.5%</b> <sup>[5]</sup>  |
| Human Development Index                      | <b>0.810</b> <sup>[6]</sup>  |
| RE Target                                    | <b>30% Electricity Generation from Renewable Energy by 2030</b> <sup>2</sup> |

|  |                                       |
|--|---------------------------------------|
| Total Installed Conventional Capacity (MW) | <b>2,103MW</b> <sup>[11]</sup>        |
| Total Installed RE (MW)                    | <b>0.7MW</b> <sup>[11]</sup>          |
| Electricity System Losses <sup>4</sup> (%) | <b>7.2%</b> <sup>[10]</sup>           |
| Energy Use (kWh) Per Capita                | <b>5,707kWh</b> <sup>3</sup>          |
| National Repository for Energy Data        | <b>None</b> <sup>4</sup>              |
| Total Oil Import (BBLs) per day            | <b>Not Applicable</b> <sup>[12]</sup> |
| Total Oil Export (BBLs) per day            | <b>56,593.30</b> <sup>[12]</sup>      |

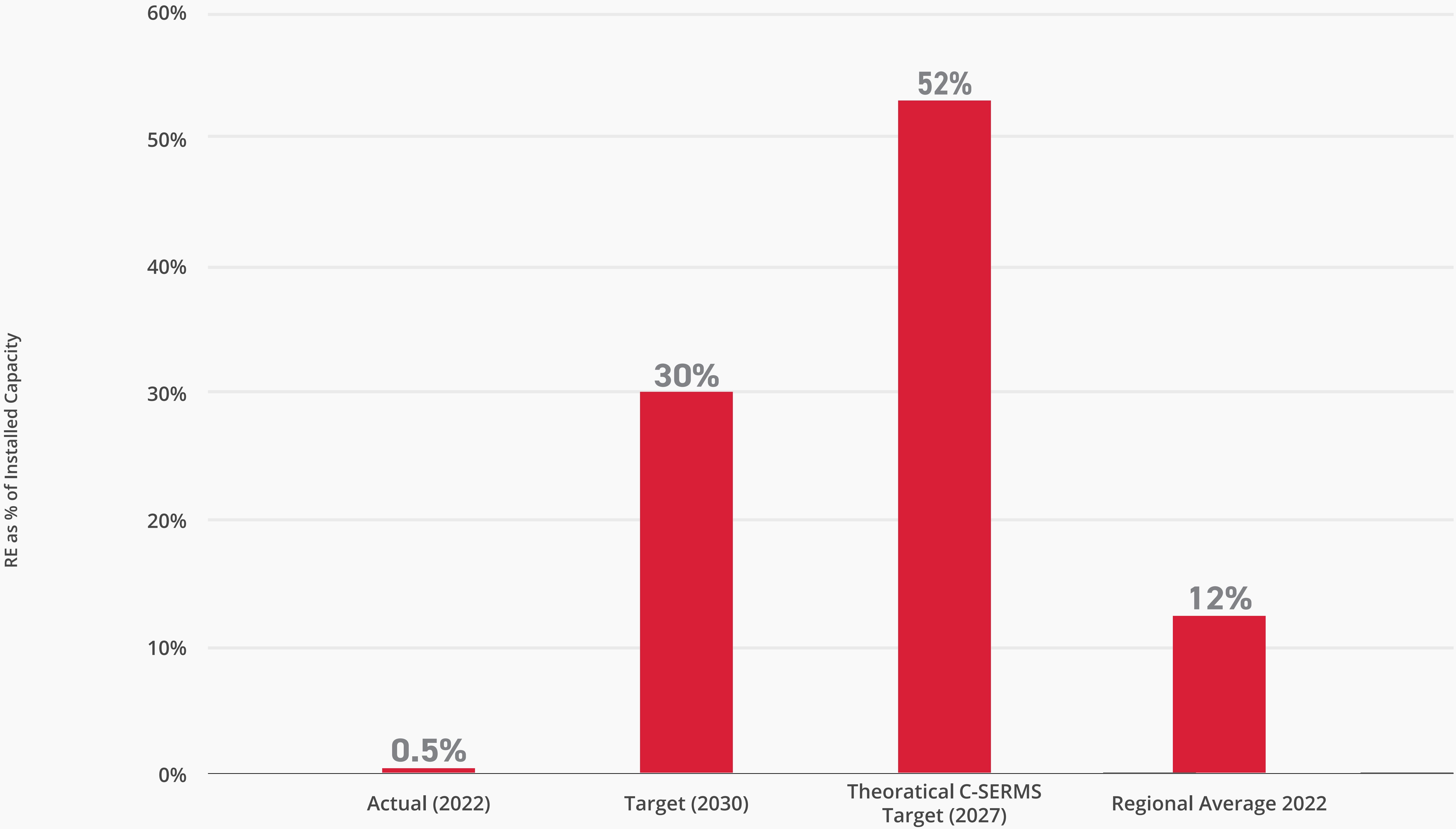
## + OTHER ENERGY SECTOR SUB-POLICIES

|  |   |
|--|---|
| Climate Change Policy                            | <b>National Climate Change Policy (NCCP) (2011)</b> <sup>[9]</sup>  |
| National Determined Contributions (NDC)          | <b>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).</b><br><b>Conditional: Additional reduction achievable under certain conditions which would bring the total GHG reduction to 15% below BAU emission levels by December 31, 2030.</b> <sup>[10]</sup>   |
| Energy Performance Standards/Appliance Labelling | <b>Compulsory energy labelling:</b> <ul style="list-style-type: none"> <li>• <b>TTCS 11:2021 - Energy Labelling- Compact fluorescent lamps and lights emitting diode lamps-compulsory requirements</b></li> </ul> <b>Voluntary energy labelling standards:</b> <ul style="list-style-type: none"> <li>• <b>TTS/CRS 57, Energy Labelling- Refrigerators and freezers- Requirements</b></li> <li>• <b>TTS/CRS 59, Energy Labelling- Air conditioners- Requirements</b></li> </ul> |

1. Mid-year population estimates  
 2. This Renewable Energy target has not yet been written into policy.  
 3. The Energy Use per Capita for Trinidad and Tobago is higher than other CARICOM Member States because 51% of all energy is allocated to Industrial sector; 11% to Commercial and Business Sector; 36% to Residential Sector; and 2% to Streetlighting  
 4. A Proposed National Energy Data Repository (NEDR) is currently being developed by the Ministry of Energy and Energy Industries.



## RENEWABLE ENERGY INSTALLED CAPACITY AGAINST TARGETS





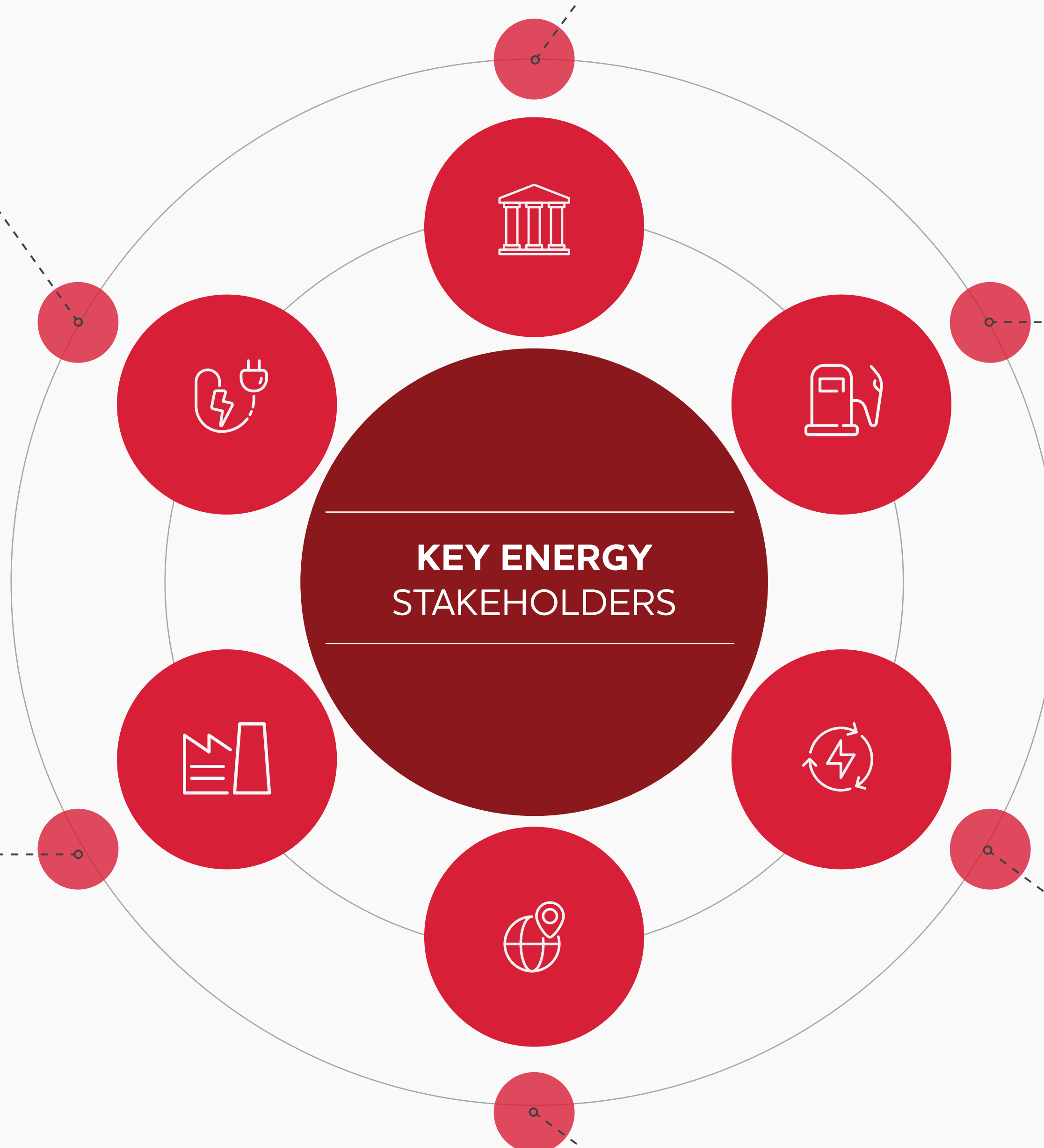
# KEY ENERGY STAKEHOLDERS

## Electricity Regulator

Regulated Industries Commission (RIC) [30]

## Independent Power Producer

Power Generation Company of Trinidad and Tobago [27]  
 Trinity Power Limited (TPL) [28]  
 Trinidad Generation Unlimited (TGU) [29]



## Government Ministries, Departments and Agencies

Ministry of Energy and Energy Industries [14]  
 • Energy Research and Planning Division [15]  
 • Renewable Energy Division  
 • Downstream Petroleum Management [16]

Ministry of Public Utilities [17]  
 Ministry of Planning and Development [18]  
 Ministry of Works and Transport [19]  
 Public Transport Service Cooperation (PTSC) [20]

## Fuel Importers & Suppliers

Trinidad and Tobago National Petroleum Marketing Company Limited (NPMC) [21]  
 National Gas Company of Trinidad and Tobago Limited [22]  
 United Independent Petroleum Marketing Company Limited (UNIPET) [23]  
 Trinity Exploration and Production [24]  
 Trinidad Petroleum Holdings Limited<sup>5</sup> (Trinidad Petroleum)  
 • Heritage Petroleum Company Limited<sup>6</sup> [25]  
 • Paria Fuel Trading Company<sup>7</sup>

## Electric Utility

Trinidad and Tobago Electricity Commission (T&TEC)<sup>8</sup> [26]

## Other

The Energy Chamber of Trinidad and Tobago [31]

5. Trinidad Petroleum Holdings Limited (Trinidad Petroleum), a state-owned enterprise vested with the responsibility of managing Trinidad and Tobago's oil and related assets.  
 6. Heritage Petroleum Company Limited (Heritage) is a state-owned oil and gas company.  
 7. Paria Fuel Trading Company imports refined petroleum products, stores and distributes them domestically as well as regionally.  
 8. 51% of shares is owned by T&TEC which is state owned



# POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK



## + POLICIES RELEVANT TO THE ENERGY SECTOR

### Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago [8]

**2011** 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.

### Strategy for Reduction of Carbon Emissions in Trinidad and Tobago, 2040 [37] ●

**2015** 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.

### Vision 2030: The National Development Republic of Trinidad and Tobago 2016-2030 [7] ●

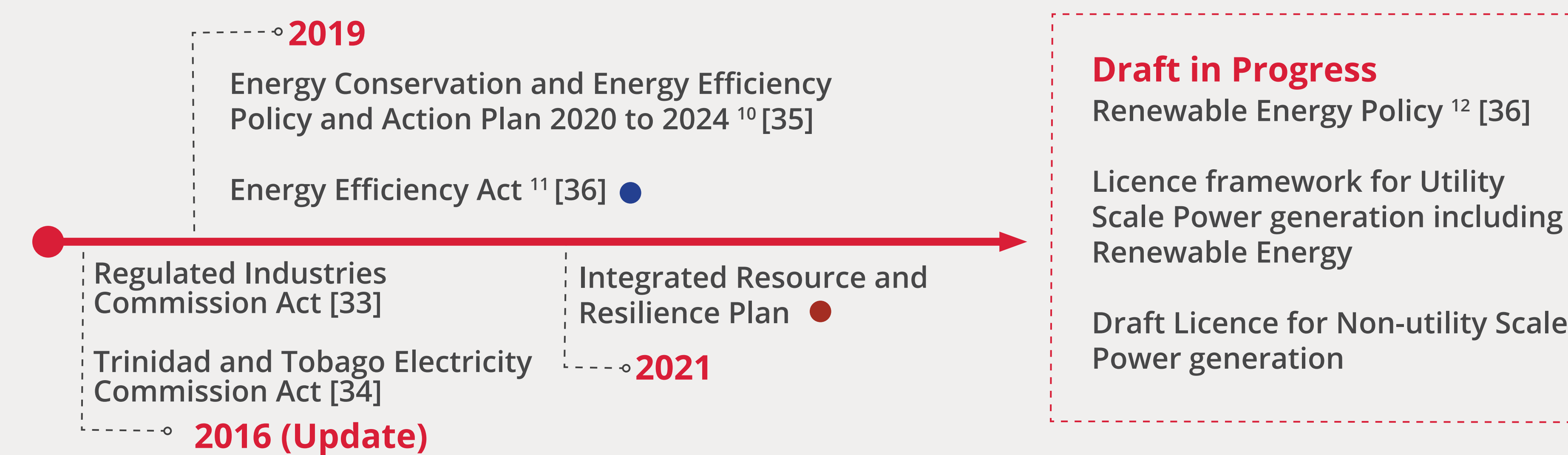
**2016** The Plan establishes the vision and broad framework for Trinidad and Tobago's development to 2030 and defines the key priorities for the first planning period 2016-2020. It includes goals to improve energy efficiency and incorporate renewable energy into the energy supply.

### Integrated Resource and Resilience Plan ●

**2021** Medium-term electricity sector plan.

|   | YEAR              |
|---|-------------------|
| Energy Policy and Energy Action Plan [6]: ● |                   |
| RE Target:                                  | 2021 <sup>9</sup> |
| EE Target: ●                                |                   |
| Electricity Regulator [32]: ●               | 1998              |
| Net Billing/Net Metering: ●                 |                   |
| Interconnection Policy/Standards: ●         | 2011              |
| Feed-in-tariff: ●                           |                   |
| RE/EE Act: ●                                |                   |

## + KEY ACHIEVEMENTS: PLR FRAMEWORK TIMELINE FOR ELECTRICITY SUB-SECTOR



● IN FORCE ● DRAFT ● DRAFT IN PROGRESS ● NOT YET ESTABLISHED

9. This Renewable Energy target has not yet been written into policy.  
 10. In 2021 it was indicated by the Prime Minister that the EC&EE policy Action Plan has to be reviewed by Cabinet before implementation.  
 11. Name subject to change.  
 12. Name subject to change

## LEGISLATION RELEVANT TO THE ENERGY SECTOR

### **Motor Vehicles Insurance (Third-Party Risks) Act (Last Amended 2015) [45]** ●

1933

An Act to make provision for the protection of third parties against risks arising out of the use of motor vehicles.

### **Motor Vehicles and Road Traffic Act (Last Amended 2016) [47]** ●

1934

Tax removal on hybrid motor vehicles and motor vehicles manufactured to use compressed natural gas

### **The Regulated Industries Commission (RIC) Act (Last Amended 2001) [33]** ●

1945

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

### **The Trinidad and Tobago Electricity Commission (T&TEC) (Last Amended 2009) [42]** ●

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.

### **The Petroleum Act (Last Amended 2019) [44]** ●

1969

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.

### **Petroleum Production Levy and Subsidy Act [38] (Last Amended 2012) [39]** ●

1974

An Act respecting the provision for petroleum products and the imposition of a levy on persons carrying on production business

### **The Petroleum Taxes Act (Last Amended 2016) [46]** ●

An Act respecting taxation of businesses carried on in the course of certain petroleum operations.

### **Maxi Taxi Act (Amended in 2010) [43]** ●

1992

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.

### **Environmental Management Act (Revised 2000) [40]** ●

1995

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.

### **Occupational Safety and Health Act [41]** ●

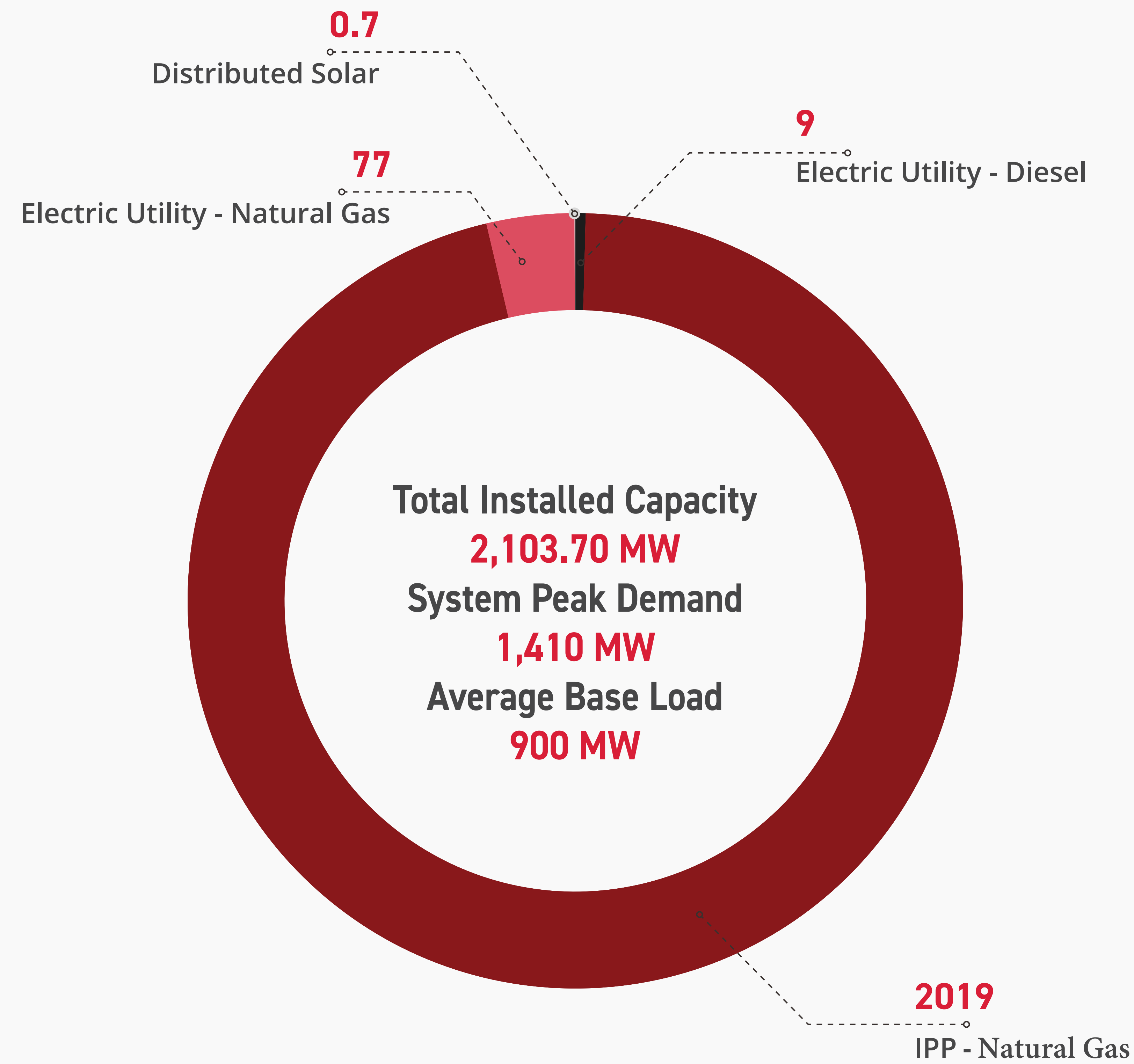
2004

An Act respecting the safety, health and welfare of persons at work.

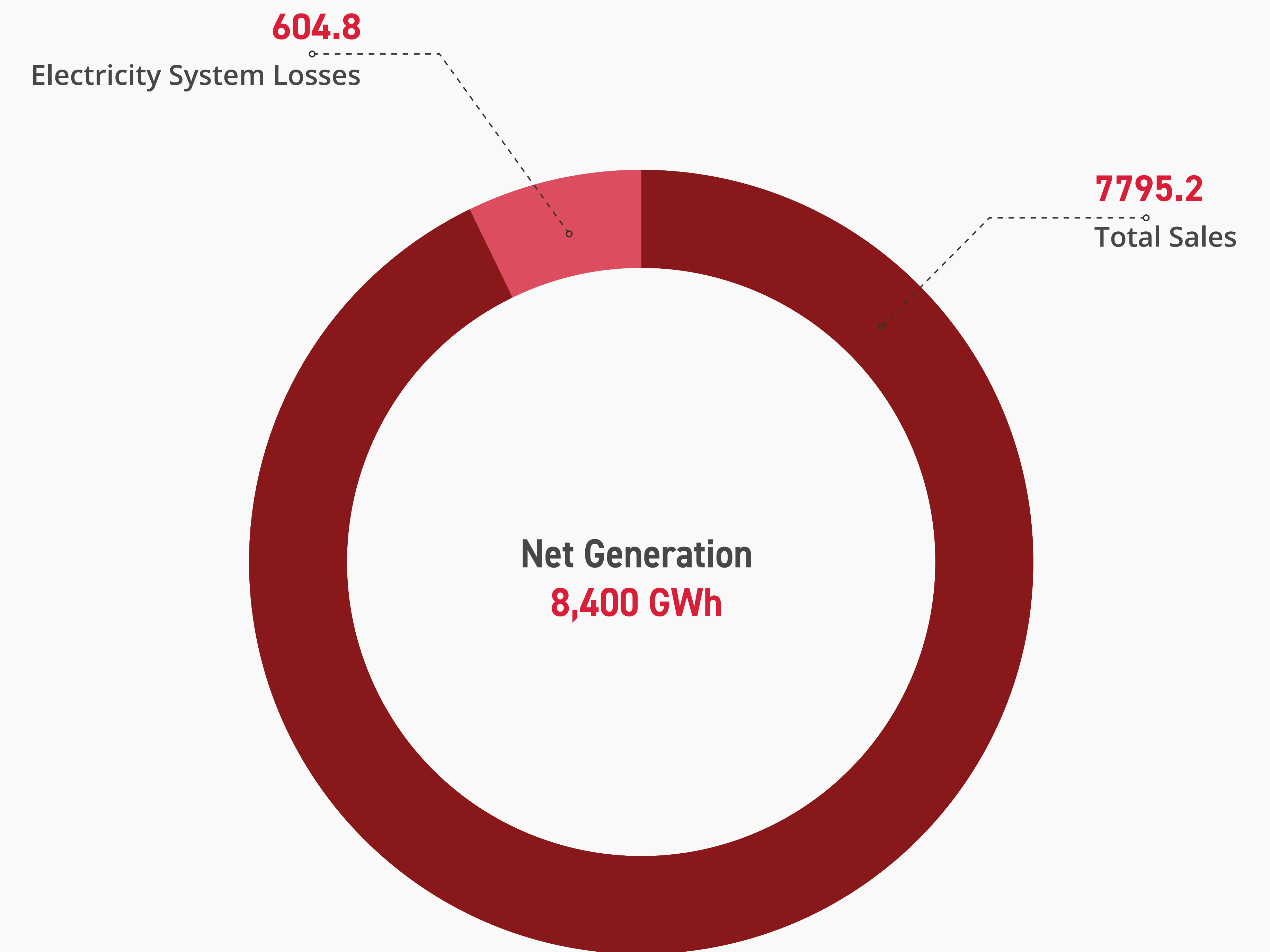


# ELECTRICITY & ENERGY EFFICIENCY <sup>13</sup> [13] [11]

## + INSTALLED CAPACITY (MW)



## + ENERGY CONSUMPTION (GWh)

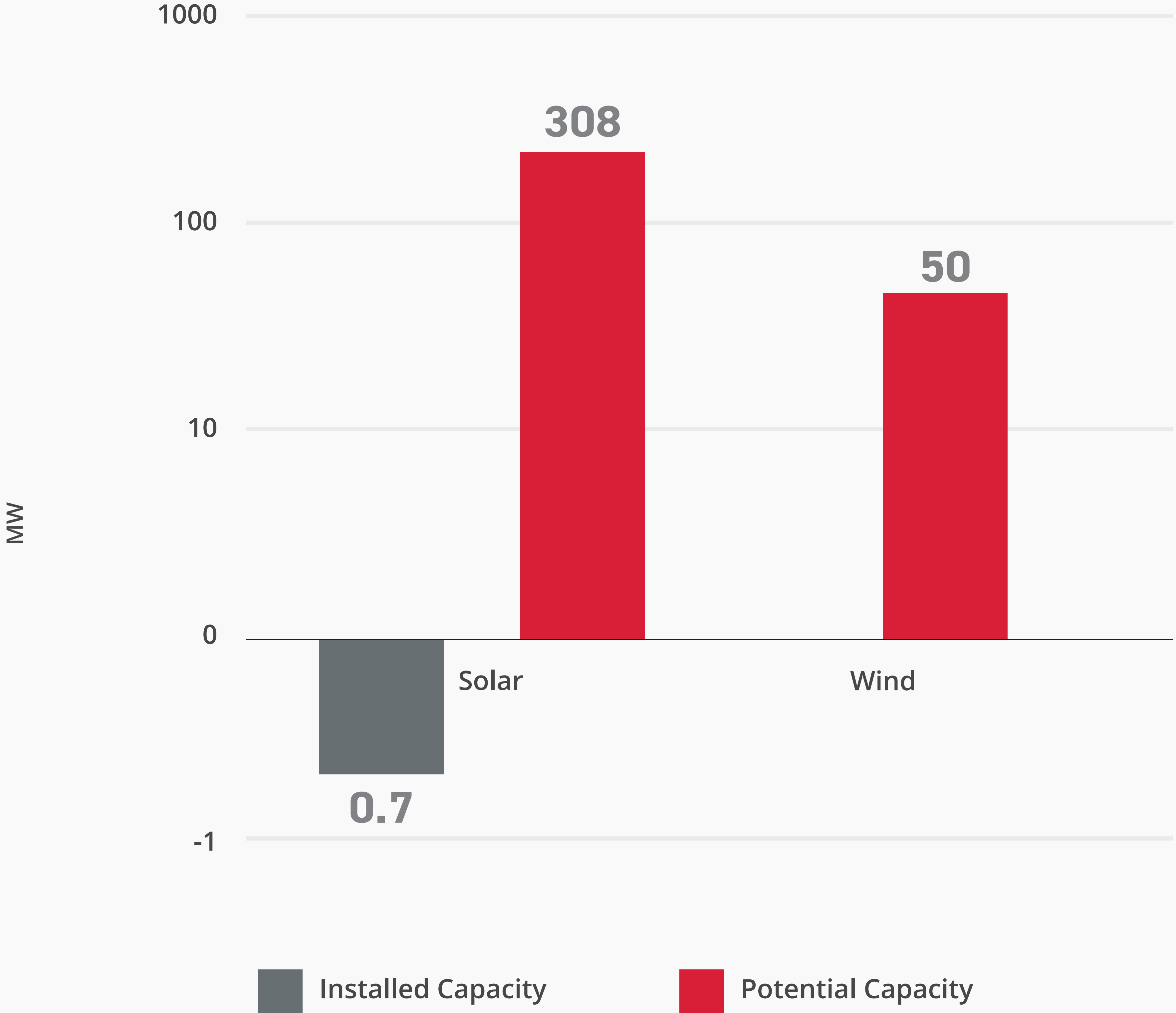


13. Diesel generators are used for black start and back up only.





## RENEWABLE ENERGY RESOURCES



| Rate Class                |   | US\$/kWh  | US\$/kVA |
|---------------------------|---|-----------|----------|
| Residential <sup>14</sup> | 1-400   | 0.04      |          |
|                           | 401-1,000                                       | 0.05      |          |
|                           | > 1,000   | 0.06      |          |
| Commercial                |   | 0.06      |          |
| Industrial (B1)           |   | 0.09      |          |
| Industrial (Large Loads)  | Industrial Rate D1 (Small Industrial)           | 0.03      | 7.36     |
|                           | Industrial Rate D2 (Medium Industrial)          | 0.03      | 7.36     |
|                           | Industrial Rate D3 (Large Industrial)           | 0.03      | 6.26     |
|                           | Industrial Rate D4 (Large Industrial)           | 0.03      | 5.89     |
|                           | Industrial Rate D5 (Large Industrial - Standby) | 0.02      | 5.45     |
|                           | Industrial Rate E1 (Very Large Load)            | 0.02      | 6.55     |
|                           | Industrial Rate E2 (Very Large Load)            | 0.02      | 6.48     |
|                           |   | US\$/year |          |
| Street Lights             | S1-1  | 127.31    |          |
|                           | S1-2  | 84.87     |          |
|                           | S1-3  | 61.73     |          |
|                           | S1-4  | 55.94     |          |

14. Residential customers are billed based on a 60-day cycle



# PROJECTS IN THE PIPELINE

## + PROGRAMMES

| Donor Funding and Technical Assistance Landscape  | Donor Organization & Banks      | Funding Awards  | Year |
|---|---------------------------------|---|------|
| Decarbonization Initiatives in the Energy, Power and Transport Sectors in T&T [49]                            | Inter-American Development Bank | US\$ 350,000  | 2022 |
| EcoMicro - Central Finance Facility - Green Finance to Build Climate Resilience of Low-Income Households [50] | Inter American Development Bank | Canada Cooperation Frame - \$187,840<br>IADB - \$300,000<br>Total \$487,840 | 2021 |

## + ENERGY EFFICIENCY PROJECTS

There were no Energy Efficiency projects reported for 2022.



# PROJECTS IN THE PIPELINE

## + PROJECTS

| Renewable Energy Source | Resource and Projects Capacity  | Partners  | Total Estimated Cost | Funding Source  |
|-------------------------|---|---|----------------------|---|
| Solar Photo-Voltaic     | Solar Photovoltaic (PV): To construct a solar PV installation at the Queen’s Park Savannah with electric vehicle (EV) charging stations installation at the Queen’s Park Savannah | Trinidad and Tobago Electricity Commission, Ministry of Public Utilities, Ministry of Energy and Energy Industries, planned by UAE and renewables company Masdar                        | US\$ 3,000,000       | United Arab Emirates (UAE) - Caribbean Renewable Energy Fund (CREF) |
|                         | Piarco Solar Park: To construct a solar park at the Piarco International Airport [51]   | Trinidad and Tobago Electricity Commission, Ministry of Public Utilities, Ministry of Energy and Energy Industries, Airport Authority of Trinidad and Tobago (AATT)                     | US\$ 1.7 million     | The European Union’s Global Climate Change Alliance Plus (GCCA+)    |
|                         | Installation of solar energy systems in public utilities and remote communities with increased capacity to maintain solar power systems [52]                                      | Ministry of Planning and Development, Ministry of Energy and Energy Industries, United Nations Development Programme (UNDP), EU Delegation to Trinidad & Tobago and implemented by UNDP | € 2,400,000          | The European Union’s Global Climate Change Alliance Plus (GCCA+)    |
|                         | Project Lara: To develop solar farm installations in Orange Grove and Brechin Castle that will have a combined output power capacity of 112 MW [53]                               | Trinidad and Tobago Electricity Commission, Ministry of Energy and Energy Industries  | US\$147,051.60       | Lightsource BP; BP; Shell   |
| Other                   | Development of Green Hydrogen Production Facility in Point. Lisas, Trinidad   | NewGen Energy Limited (NewGen), National Gas Company of Trinidad and Tobago, HDF Energy, Kenesjay Green Limited (KGL)   | US\$200,000,000      | Fisterra Energy, consortium of local and international investors    |

# TERTIARY PROGRAMMES OFFERED



| Name of Education Programme Provider                                       | Vocational Certificate  | Associate Degree/ Diploma                             | Bachelor's Degree  | Master's Degree                  | MPhil/PhD                            | Certification by a Professional Body | Programme Link  |
|--|---|---|--|----------------------------------|--------------------------------------|--------------------------------------|---|
| The University of The West Indies, St. Augustine Campus                    |   |   | Environmental Science and Sustainable Technology (Special) <sup>15</sup> |                                  |                                      |                                      | <a href="https://sta.uwi.edu/fst/lifesciences/bsc-environmental-science-and-sustainable-technology-special-course-listing">https://sta.uwi.edu/fst/lifesciences/bsc-environmental-science-and-sustainable-technology-special-course-listing</a> |
|  |   |   |  |                                  | Physics <sup>16</sup>                |                                      | <a href="https://sta.uwi.edu/fst/physics/research-at-physics">https://sta.uwi.edu/fst/physics/research-at-physics</a>   |
|  |   |   | Mechanical Engineering <sup>17</sup>                                     |                                  |                                      |                                      | <a href="https://sta.uwi.edu/eng/mechanical/bsc-mechanical-engineering">https://sta.uwi.edu/eng/mechanical/bsc-mechanical-engineering</a>   |
|  |   |   |  |                                  | Mechanical Engineering <sup>18</sup> |                                      | <a href="https://sta.uwi.edu/eng/mechanical/personnel-and-resources">https://sta.uwi.edu/eng/mechanical/personnel-and-resources</a>   |
|  |   |   |  | Renewable Energy Technology      |                                      |                                      | <a href="https://sta.uwi.edu/fst/physics/master-science-renewable-energy-technology">https://sta.uwi.edu/fst/physics/master-science-renewable-energy-technology</a>   |
|  |   |   |  |                                  |                                      | Chemistry <sup>19</sup>              | <a href="https://sta.uwi.edu/fst/chemistry/pg-programmes">https://sta.uwi.edu/fst/chemistry/pg-programmes</a>   |
|  |   |   |  |                                  | Chemical Engineering                 | Chemical Engineering <sup>20</sup>   | <a href="https://sta.uwi.edu/eng/chemical/research-publications">https://sta.uwi.edu/eng/chemical/research-publications</a>   |
| The University of Trinidad and Tobago                                      |   | Renewable Energy Engineering Technology <sup>21</sup> |  |                                  |                                      |                                      | <a href="https://utt.edu.tt/?wk=8&amp;programmes=1&amp;utt_programme_key=166">https://utt.edu.tt/?wk=8&amp;programmes=1&amp;utt_programme_key=166</a>   |
|  |   |   | Energy Engineering <sup>22</sup>   |                                  |                                      |                                      | <a href="https://utt.edu.tt/?wk=1&amp;programmes=1&amp;utt_programme_key=177">https://utt.edu.tt/?wk=1&amp;programmes=1&amp;utt_programme_key=177</a>   |
|  |   |   |  | Energy Engineering <sup>23</sup> |                                      |                                      | <a href="https://utt.edu.tt/?wk=1&amp;programmes=1&amp;utt_programme_key=171">https://utt.edu.tt/?wk=1&amp;programmes=1&amp;utt_programme_key=171</a>   |
| School of Business and Computer Science                                    | Implementing Solar Power Systems for Power Generation: Photovoltaic Installer (Level 1) |   |  |                                  |                                      |                                      |   |
|  | Servicing and Repairing Hybrid & Electric Vehicles - A Practical Approach               |   |  |                                  |                                      |                                      |   |
| CTS College of Business and Computer Science                               | Introduction to Solar Power Systems   |   |  |                                  |                                      |                                      | <a href="https://www.ctscollege.com/certifications/do-it-yourself/introduction-solar-power-systems">https://www.ctscollege.com/certifications/do-it-yourself/introduction-solar-power-systems</a>   |
| The College of Science, Technology and Applied Arts of Trinidad and Tobago | Business and Energy Reporting   |   |  |                                  |                                      |                                      | <a href="https://www.costaatt.edu.tt/course/business-and-energy-reporting/">https://www.costaatt.edu.tt/course/business-and-energy-reporting/</a>   |

15. Includes a course in Fundamentals of Renewable.

16. Offers a focus areas under Electronics - Renewable energy Integration with the electrical grid and Renewable Energy (Solar, wind, geothermal, BioEnergy, and Fuel Cell).

17. Includes electives in Renewable Energy, Energy Engineering and Power Plant Engineering

18. Offers research focus in Thermodynamics, Heat Transfer and Renewable Energy Resources

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

20. Includes research focus on Energy Studies.

21. A National Engineering Technician Diploma

22. Offers specialisations in Oil and Gas or Renewable Energy

23. Offers specialisations in Oil and Gas or Renewable Energy



# TRANSPORTATION SECTOR



No data was available for the transportation sector for 2022.

## +

### SUMMARY OF TRINIDAD AND TOBAGO GHG EMISSIONS AND REMOVALS (Gg) FOR 2015. <sup>[56]</sup>

|  |   |
|--|---|
| <b>Climate Change Policy</b>                       | National Climate Change Policy (NCCP) (2011) [9]  |
| <b>National Determined Contributions [10]:</b>     | 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.        |
| <b>Emissions Reduction Target [10]:</b>            | 15% below BAU by 2030   |
| <b>Priority Sectors for NDC [10]</b>               | <ul style="list-style-type: none"> <li>• Power Generation</li> <li>• Transportation</li> <li>• Industry</li> </ul>  |
| <b>National Communications (NC) to the UNFCCC:</b> | Initial National Communication of the Republic of Trinidad and Tobago under the United Nations Framework Convention on Climate Change [54]                                    |
|  | Second National Communication of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change [55]  |
|  | Third National Communication of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change [56]   |

|   | Emissions (Gg)      |                 |                  |                 |              |
|---|---------------------|-----------------|------------------|-----------------|--------------|
|   | Net CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | NO <sub>x</sub> | 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            |
| <b>Total</b>                              | <b>35051.54</b>     | <b>183.96</b>   | <b>4.07</b>      | <b>0.35</b>     | <b>22.79</b> |

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