



CCREEE
CARIBBEAN CENTRE FOR RENEWABLE
ENERGY & ENERGY EFFICIENCY



2018 ENERGY REPORT CARD TRINIDAD & TOBAGO

This document presents Trinidad and Tobago's Energy Report Card (ERC) for 2018. The ERC provides an overview of energy sector performance in Trinidad and Tobago. The ERC also includes energy efficiency, projects, technical assistance, workforce, training and capacity building information, subject to the availability of data.

This ERC includes data and information that was provided by government ministries, agencies or departments with responsibility for energy and was supplemented by internet research, author calculations and inferences

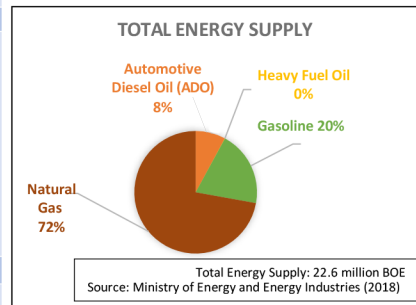
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"AT-A-GLANCE"

Summary of the Energy Sector

KEY DATA & INFORMATION – ENERGY SECTOR	
Population	1,359,193 ¹
GDP (USD) Per Capita	\$ 28 647.10 ²
Human Development Index	0.799 ³
National Energy Policy	
Renewable Energy (RE) Policy	
RE Target	10 % by 2021 ⁴
Energy Performance	No
Standards/Appliance Labelling	
Total Oil Imports (BOE) per day	N/A
Total Oil Export (BOE) per day	1837 ⁵
Total Installed Capacity (MW)	2114 ⁶
Total Installed RE (MW)	0.0044 ⁵
Fuel & Oil Imports as % of GDP	Trinidad & Tobago normally does not import fuels. However, at the end of 2018, the national oil refinery (Petrotrin) was closed down and began importing its fuels from Venezuela. ⁵
Electric vehicle stock	N/A
National Repository for Energy Data	No



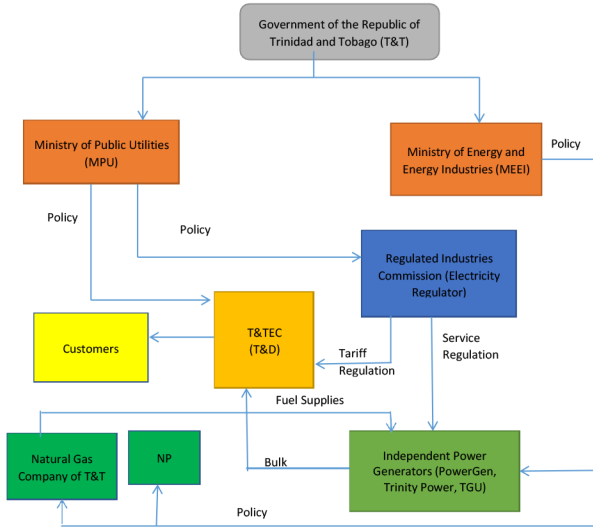
ENERGY SECTOR PERFORMANCE AGAINST TARGETS

<i>Indicator</i>	<i>Base /Current Performance (Year)</i>	<i>National Target</i>	<i>National Target (Proposed by CARICOM – CSERMS Report)⁷</i>	<i>Indicative RE Oil Displacement^{8,9} Potential Annually**</i>
RE as % of Installed Capacity	0% ¹¹	10% RE by 2021 ⁴	52 % by 2027	<ul style="list-style-type: none"> • 1 MW wind displaces 1,760 barrels of oil equivalent (BOE) • 1 MW hydro displaces 3,300 BOE • 1 MW solar displaces 1,210 BOE
*Energy Intensity (BTU/US\$1 Unit of output)				<p><i>Energy Intensity (EI)¹⁰:</i></p> <ul style="list-style-type: none"> • <i>EI measures how energy benefits the economy and is calculated by taking the ratio of total primary energy use (all of the fuels and flows that a country uses to get energy) to GDP (the total money made in a country). EI indicates how effectively an economy uses their fuels and flows.</i>

*The energy efficiency target for CARICOM is 33% reduction in energy intensity by 2027, compared to a reference of Average Annual Energy Intensity of ~13,000 BTU per USD of GDP in 2015.

**Based on capacity factors of 0.32 for wind. 0.6 for hydro and 0.22 for solar.

KEY ENERGY SECTOR STAKEHOLDERS⁵



OTHER KEY STAKEHOLDERS:

Trinidad and Tobago Bureau of Standards

Ministry of Works and Transport (Transportation Regulator)

Ministry of Energy and Energy Industries (Fuel Regulator)

Petroleum Company of Trinidad and Tobago

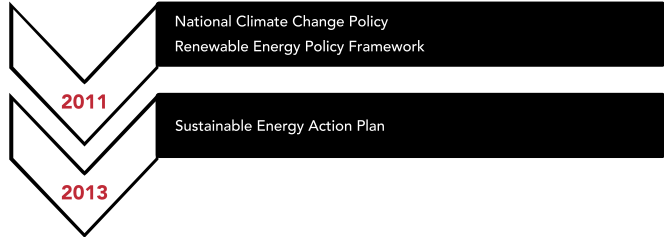
The Trinidad & Tobago National Petroleum Marketing Company Limited

POLICY, LEGAL AND REGULATORY FRAMEWORK

Electricity Sector : Policy, Legal and Regulatory (PLR) Framework⁵

✓ Energy Policy and Energy Action Plan	●
✓ RE Target	●
✓ EE Target	●
✓ Electricity Regulator	●
✗ Net billing/Net metering	●
✓ Interconnection Policy/Standards	●
✗ Feed-in-tariff	
✗ RE/EE Act	●
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">● Completed/ In place</div> <div style="text-align: center;">● In progress/ Draft</div> <div style="text-align: center;">● Not yet started/ Not established</div> </div>	

Key Achievements: PLR Framework Timeline for the Electricity Sector⁵

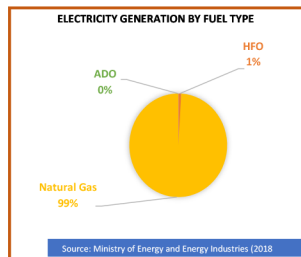


ELECTRICITY & ENERGY EFFICIENCY

KEY DATA & INFORMATION	
1. Fuel Consumption – Electricity Subsector (BOE)	
2. Installed Conventional Capacity – Electric Utility (MW)	95 ⁵
3. Installed Conventional Capacity – IPPs (MW)	2019 ⁵
4. Base Load (MW)	1064 ⁶
5. System Peak Demand (MW)	1319 ⁵
6. Total Generation (MWh)	9,324,416, ¹²
7. Total Sales (MWh)	8,463,084,132 ¹²
8. Total Number of Customers	487,877 ⁶
9. Residential Tariff (US\$/kWh)	0.05 ⁶
10. Commercial (US\$/kWh)	0.06 – 0.09 ⁶
11. Industrial/Large Power (US\$/kWh)	0.06 ⁶
12. Street Lights (US\$/kWh)	0.10 ⁶

EFFICIENCY	
13. EE Target	15% reduction in greenhouse gas emissions from industry, power generation and transportation sector by 2030 ⁴
14. Electricity System Losses (%)	11% ⁵
15. Energy Use (kWh) Per Capita	6320 (2017) ¹³
16. EE Initiative and Impact	<p>The UN ECLAC Regional BIEE Programme (Energy Efficiency Indicators Database for Latin America and the Caribbean) will be implemented.</p> <p>The project aims to promote capacity building on energy efficiency indicators, and to enhance regional coordination on energy efficiency issues in the regional and global agenda.⁵</p>

RE Resource	Installed Capacity (MW) ⁵
Wind	0
Solar PV	0.0044
Hydro	0
Geothermal	0
Biomass/ WTE	0
Total	0.0044
RE as % of installed Power Capacity = 0%	



PROJECTS IN THE PIPELINE

Donor Organisation & Banks	Technical Assistance Providers	Funding Awards	Year
UAE Caribbean Renewable Energy Fund	Application was made to the United Arab Emirates (UAE) Caribbean Renewable Energy Fund	US\$3 Million two proposed projects are being finalized. These projects will be based at the Queen's Park Savannah and at the Piarco International Airport	2019

Source:

Trinidad and Tobago Newsday: <https://newsday.co.tt/2019/06/11/us3-million-for-renewable-energy/>

NUMBER AND TYPE OF TERTIARY LEVEL SUSTAINABLE ENERGY PROGRAMMES OFFERED ¹⁴

Name of Education Programme Provider	Name of Programme	Type of Programme			
		Certificate	B.Sc	M.Sc	Ph.D
The University of the West Indies, St. Augustine, Trinidad	Renewable Energy Technology		X		

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- ¹Government of Trinidad and Tobago: Review of the Economy 2018: <https://www.finance.gov.tt/wp-content/uploads/2018/10/Review-Of-The-Economy-2018.pdf>
- ²Trading Economics 2018: <https://tradingeconomics.com/trinidad-and-tobago/gdp-per-capita-ppp>
- ³United Nations Development Programme: Human Development Report 2019 : <http://hdr.undp.org/en/countries/profiles/TTO>
- ⁴The Energy Chamber of Trinidad and Tobago: <https://energynow.tt/blog/target-10-renewables-by-2021>
- ⁵Trinidad and Tobago Ministry of Energy and Energy Industries
- ⁶Trinidad and Tobago Electricity Commission (T&TEC)
- ⁷Worldwatch Institute (2015). Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) Baseline Report and Assessment. Retrieved from http://www.worldwatch.org/system/files/C-SERMS_Full_PDF.pdf
- ⁸Ministry of Science, Energy, Technology and Mining. (2013). Grid Impact Analysis and Assessment for Increased Penetration of Renewable Energy into the Jamaican Electricity Grid. Retrieved from https://www.mset.gov.jm/sites/default/files/pdf/Grid%20Impact%20Analysis%20for%20Renewable%20Energy%20Penetration_2.pdf
- ⁹Sustainable Energy Ireland – Renewable Energy Information Office. (2011). Energy Unit Conversion Tool. Retrieved from https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/make-it-be_energy_unit_conversion_tool.xlsx
- ¹⁰J.M.K.C. Donev et al. (2018). Energy Education - Energy intensity. Retrieved from https://energyeducation.ca/encyclopedia/Energy_intensity.

REFERENCES

¹¹Calculated

¹²Regulated Industries Commission: Energy Roadmap Series: Towards Renewable Energy Deployment in the Electricity Sector of Trinidad and Tobago: p 20:

<http://www.ric.org.tt/wp-content/uploads/2019/07/Towards-Renewable-Energy-Deployment-in-the-Electricity-Sector-of-Trinidad-FINAL-9-7-2019.pdf>

¹³Regulated Industries Commission: T&TEC Annual Performance Indicator Report for 2017:

<http://www.ric.org.tt/wp-content/uploads/2018/12/TTEC-2017-Annual-Performance-Indicator-Report.pdf>

¹⁴Rapid Scan Assessment of the Capacity Requirements for Sustainable Energy Development for CARICOM Countries (Professor Dr. Olav Hohmeyer, International Energy Consulting) (2019)