



# 2017 ENERGY REPORT CARD

## TRINIDAD AND TOBAGO

*This document presents Trinidad and Tobago's Energy Report Card (ERC) for 2017, which was prepared using data and information submitted by the Member State as well as supplemental data extracted from online resources (see list of References). The ERC provides an overview of energy sector performance in Trinidad and Tobago by focusing on two priority sub-sectors: Electricity and Transportation. The ERC also includes energy efficiency, climate change, energy sector workforce, training and capacity building information, subject to the availability of data.*

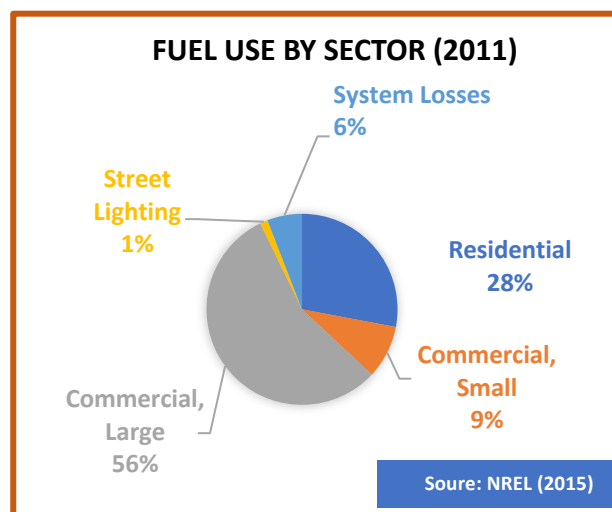
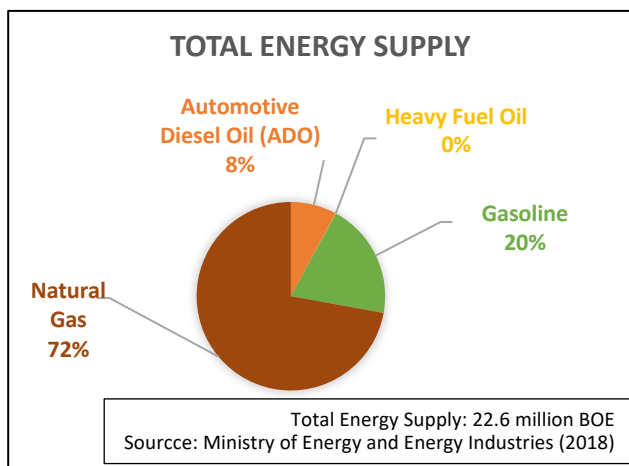
*December 2018*

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## “AT-A-GLANCE” SUMMARY OF TRINIDAD AND TOBAGO’S ENERGY SECTOR

KEY DATA & INFORMATION – ENERGY SECTOR IN DOMINICA	
Population	1,218,208 <sup>1</sup>
GDP (USD) Per Capita	31,300 <sup>2</sup>
Debt as a % of GDP	41.3% of GDP (2017 est.) <sup>2</sup>
Human Development Index	0.784 (2017) <sup>3</sup>
National Development Plan/ Overall Country Development Strategy	
National Energy Policy	
Renewable Energy (RE) Policy	
RE Target	10% by 2021 <sup>4</sup>
Energy Performance Standards/Appliance Labelling	
Number of Persons Employed in Energy Sector	
Total Oil Import (BOE) per day	
Total Oil Export (BOE) per day	
Total Installed Capacity (MW)	2094 (2017) <sup>4</sup>
Total Installed RE (MW)	0.0044 (2017) <sup>4</sup>
Electricity System Losses (%)	11% (2017) <sup>4</sup>
Energy Use (kWh) Per Capita	6,510 <sup>5</sup>
Energy Intensity	
Oil Imports as % of GDP	
Climate Change Policy	Yes (2011) <sup>6</sup>
National Determined Contributions (NDC)	Yes (2015) <sup>7</sup>
National Repository for Energy Data	



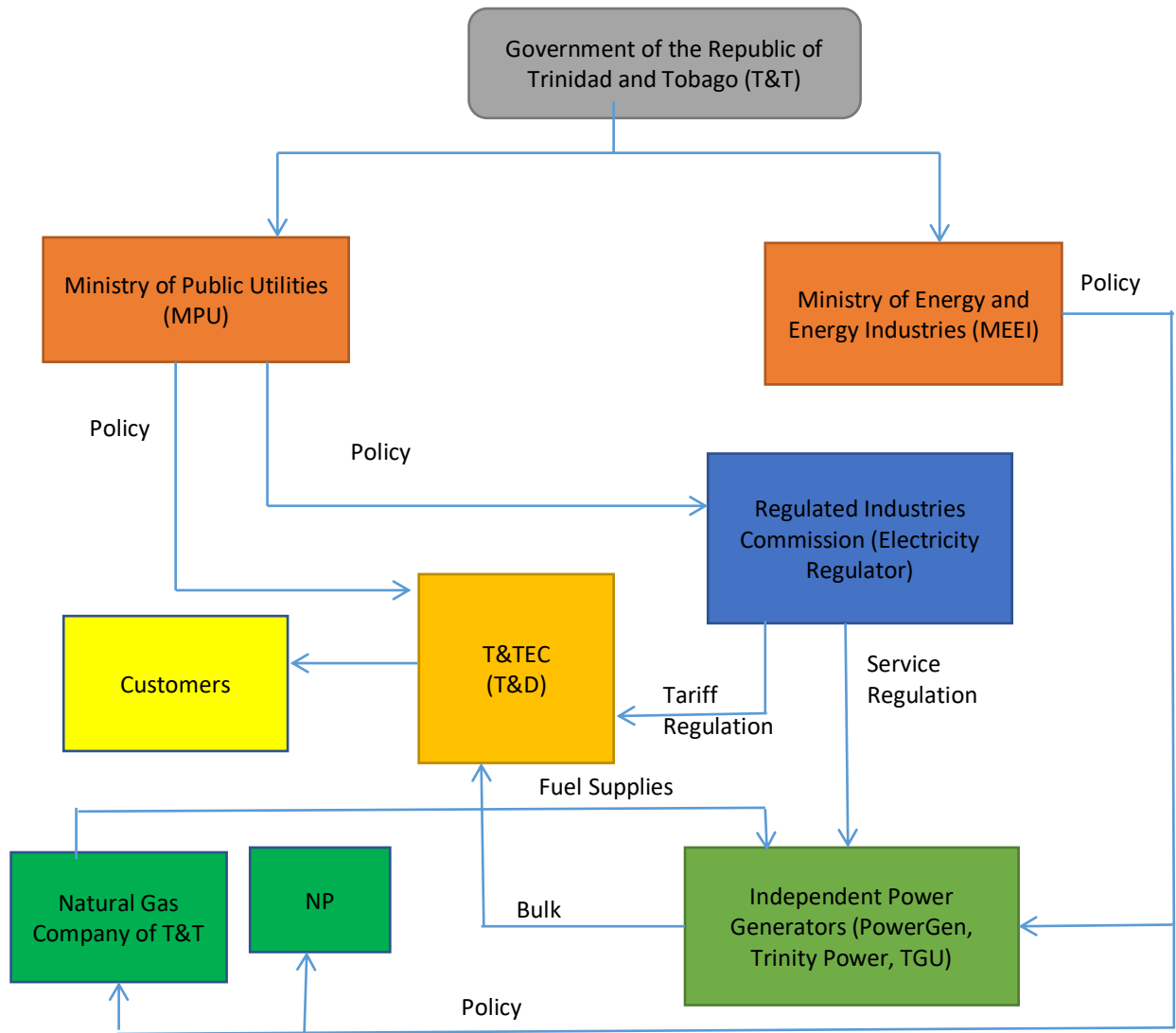
### TRINIDAD AND TOBAGO’S ENERGY SECTOR PERFORMANCE AGAINST TARGETS

Indicator	Base /Current Performance (Year)	National Target	National Target (Proposed by CARICOM – CSERMS Report) <sup>8</sup>	<u>Indicative RE Oil Displacement<sup>9,10</sup> Potential Annually**</u>
RE as % of Installed Capacity	0% (2017)	10% by 2021	52% by 2027	<ul style="list-style-type: none"> <li>1 MW wind displaces 1,760 barrels of oil equivalent (BOE)</li> <li>1 MW hydro displaces 3,300 BOE</li> <li>1 MW solar displaces 1,210 BOE</li> </ul>
*Energy Intensity (BTU/US\$1 Unit of output)				<b>Energy Intensity (EI)<sup>11</sup>:</b>
% Reduction in Energy Sector Emissions (NDC)	34,234,032 tCO <sub>2</sub> -e (2013) <sup>7</sup>	15% reduction in overall emissions, against BAU <sup>7</sup>		<ul style="list-style-type: none"> <li>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.</li> </ul>

\*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.<sup>9</sup>

## KEY ENERGY SECTOR STAKEHOLDERS: TRINIDAD AND TOBAGO

### Governance Structure for the Electricity Sector



**Other key electricity stakeholders include:**

- Trinidad and Tobago Bureau of Standards

**Key Stakeholders: Road Transportation Sub-sector<sup>4</sup>**

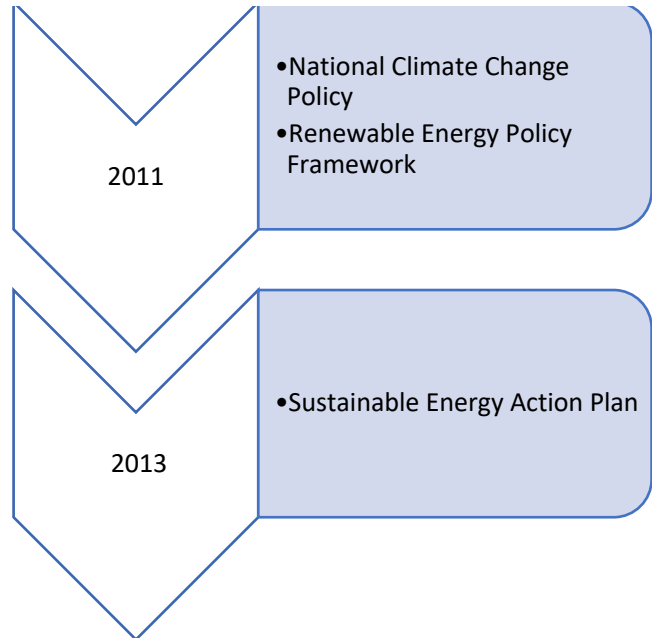
- Ministry of Works and Transport (Transportation Regulator)
- Ministry of Energy and Energy Industries (Fuel Regulator)
- Petroleum Company of Trinidad and Tobago
- The Trinidad & Tobago National Petroleum Marketing Company Limited

## POLICY, LEGAL AND REGULATORY FRAMEWORK: TRINIDAD AND TOBAGO

### Electricity Sector: Policy, Legal and Regulatory (PLR) Framework <sup>4, 8</sup>

✓ 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		
Completed/ In place	In progress/ Draft	Not yet started/ Not established

### Key Achievements: PLR Framework Timeline for the Electricity Sector



### Policies and Legislation Relevant to the Transportation Sector

Policies	
Legislation & Regulation	

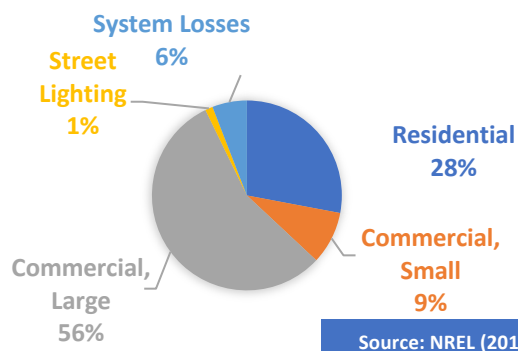
### Climate Change Framework - Trinidad and Tobago

Climate Change Policy	Yes (2011) <sup>6</sup>
National Determined Contributions	Yes (2015) <sup>7</sup>
Emissions Reduction Target	
Priority Sectors for NDC	Transportation, power generation and industry <sup>7</sup>
National Communications (NC) to the UNFCCC	NC1 submitted in 2001; NC2 in 2013 <sup>12</sup>
Greenhouse Gas (GHG) Inventory	Yes

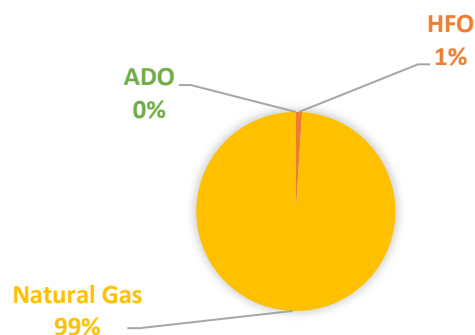
## ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: TRINIDAD AND TOBAGO

KEY DATA & INFORMATION	
<b>CONVENTIONAL ENERGY</b>	
1. Fuel Consumption – Electricity Subsector (BOE)	
2. Total Installed Capacity (MW)	2,094 (2017) <sup>4</sup>
3. Installed Conventional Capacity – Electric Utility (MW)	75 (2017) <sup>4</sup>
4. Installed Conventional Capacity – IPPs (MW)	2,019 <sup>4</sup>
5. Base Load (MW)	1,064 (2017) <sup>4</sup>
6. System Peak Demand (MW)	1,355 (2017) <sup>4</sup>
7. Total Generation (MWh)	9,318,244,000 (2017) <sup>4</sup>
8. Total Sales (MWh)	8,311,688,789 (2017) <sup>4</sup>
9. Total Number of Customers	487,877 (2017) <sup>4</sup>
<b>RENEWABLE ENERGY</b>	
10. Total Installed RE Capacity (MW)	0.0044 (2017) <sup>4</sup>
11. RE Capacity – Electric Utility (MW)	0.0044 (2017) <sup>4</sup>
12. RE Capacity – IPPs (MW)	0
13. RE as % of Total Installed Generating Capacity	0%
14. RE Target	10% RE by 2021 <sup>4</sup>
<b>TARIFFS</b>	
15. Residential Tariff (US\$/kWh)	\$0.04 - \$0.06 <sup>4</sup>
16. Commercial (US\$/kWh)	\$0.06 <sup>4</sup>
17. Industrial/Large Power (US\$/kWh)	\$0.02-\$0.09 <sup>4</sup>
18. Street Lights (US\$/kWh)	
<b>EFFICIENCY</b>	
19. Electricity System Heat Rate	
20. Electricity System Losses (%)	11% (2017) <sup>4</sup>
21. Energy Use (kWh) Per Capita	6,510 <sup>5</sup>
22. Energy intensity index (EII) BTU/US\$1 Unit of output	
23. EE Target	
<b>MANAGEMENT OF ENERGY DATA/KNOWLEDGE</b>	
24. Name of Energy Knowledge Management System	
25. Name of Energy Data Management System	

### FUEL USE BY SECTOR (2011)



### ELECTRICITY GENERATION BY FUEL TYPE



RE Resource	Installed Capacity (MW)	Year Commissioned
Wind	0	
Solar	0.0044	
Hydro	0	
Geothermal	0	
Biomass/ WTE	0	
<b>Total</b>	<b>0.0044</b>	

**RE as % of installed Power Capacity = 0%**

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind	50 <sup>8</sup>	
Solar	308 <sup>8</sup>	
Hydro		
Geothermal		
Biomass/ WTE		
<b>Total</b>	<b>358</b>	

## TRANSPORTATION SUBSECTOR: TRINIDAD AND TOBAGO

Key Transportation Data and Information		Breakdown of Fuel Use in the Transportation Sector		
Fuel Consumption, Transportation (BOE)		<i>Type of Fuel/s</i>	<i>Quantity (BOE)</i>	<i>Purpose (Road, Railway, Aviation, Marine)</i>
Energy-related transportation targets?	17,500 vehicles converted to CNG by 2017; 100,000 vehicles by 2020; 10–15% reduction in sector's CO <sub>2</sub> emissions (no date given) <sup>8</sup>			
Sustainable /Alternative fuels used?		<i>Gasoline</i>		
Total Imports for Alternative Fuels		<i>Diesel</i>		
Conventional Vehicle Stock/Vehicle Registration				
Trucks				
Cars				
Buses				
SUVs				
Hybrid vehicle stock				
Electric vehicle stock				
Fuel Quality Standards?				

## WORKFORCE: ENERGY SECTOR, TRINIDAD AND TOBAGO

### Number of Persons Employed in the Energy Sector

NAME OF ENTITY	PRIVATE OR PUBLIC?	NUMBER OF PERSONS EMPLOYED	BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL	
			Females: Managerial Level: Supervisor: Technical: Administrative:	Males: Managerial Level: Supervisor: Technical: Administrative:

### Number of Persons Trained in the Energy Sector in 2017

NAME OF ENTITY	PRIVATE OR PUBLIC?	NUMBER OF PERSONS TRAINED	BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL	
			Females: Managerial Level: Supervisor: Technical: Administrative:	Males: Managerial Level: Supervisor: Technical: Administrative:

Energy Report Card 2017: Trinidad and Tobago


**Indicative Number and Type of Tertiary level and vocational training SE Programmes Offered in-Country**

Name of Education Programme Provider	Name of Programme	Number of persons enrolled	Type of Programme			
			Certificate	B.Sc	M.Sc	Ph.D
The University of the West Indies <sup>4</sup>	Masters of Science in Renewable Energy Technology				√	



## References

- <sup>1</sup> Central Intelligence Agency. (2017). *The World Factbook 2017*. Retrieved from <https://www.cia.gov/library/publications/download/download-2017/index.html>
- <sup>2</sup> Central Intelligence Agency. (2018). *The World Factbook: Central America – Trinidad and Tobago*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/td.html>
- <sup>3</sup> United Nations Development Programme. (2018). *Human Development Reports: Table 2. Human Development Index Trends, 1990-2017*. Retrieved from <http://hdr.undp.org/en/composite/trends>
- <sup>4</sup> Ministry of Energy and Energy Industries (Focal Point: Mrs. Penelope Bradshaw-Niles). (2018). CARIFORUM Energy Report Card Input Data 2017 (completed for Trinidad and Tobago).
- <sup>5</sup> Calculated using generation an population.
- <sup>6</sup> Government of the Republic of Trinidad and Tobago. (2011). *National Climate Change*. Retrieved from [http://www.oas.org/en/sedi/dsd/Biodiversity/Sustainable\\_Cities/Sustainable\\_Communities/Events/SC%20Course%20Trinidad%202014/ModuleIII/Climate%20Change%20Policy%20FINAL%20doc%20\(1\).pdf](http://www.oas.org/en/sedi/dsd/Biodiversity/Sustainable_Cities/Sustainable_Communities/Events/SC%20Course%20Trinidad%202014/ModuleIII/Climate%20Change%20Policy%20FINAL%20doc%20(1).pdf)
- <sup>7</sup> Government of Trinidad and Tobago. (2018). *Intended Nationally Determined Contribution (INDC) Under The United Nations Framework Convention On Climate Change*. Retrieved from <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Trinidad%20and%20Tobago%20First/Trinidad%20and%20Tobago%20Final%20INDC.pdf>
- <sup>8</sup> Worldwatch 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](http://www.worldwatch.org/system/files/C-SERMS_Full_PDF.pdf)
- <sup>9</sup> Ministry 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](https://www.mset.gov.jm/sites/default/files/pdf/Grid%20Impact%20Analysis%20for%20Renewable%20Energy%20Penetration_2.pdf)
- <sup>10</sup> Sustainable 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](https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/make-it-be_energy_unit_conversion_tool.xlsx)
- <sup>11</sup> J.M.K.C. Donev et al. (2018). *Energy Education - Energy intensity*. Retrieved from [https://energyeducation.ca/encyclopedia/Energy\\_intensity](https://energyeducation.ca/encyclopedia/Energy_intensity)
- <sup>12</sup> United Nations Framework Convention on Climate Change. (2018). *Process and Meetings: National Communication submissions from Non-Annex I Parties*. Retrieved from <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-update-reports-non-annex-i-parties/national-communication-submissions-from-non-annex-i-parties>