



## 2019 ENERGY REPORT CARD

# TRINIDAD & TOBAGO



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UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

# INTRODUCTION

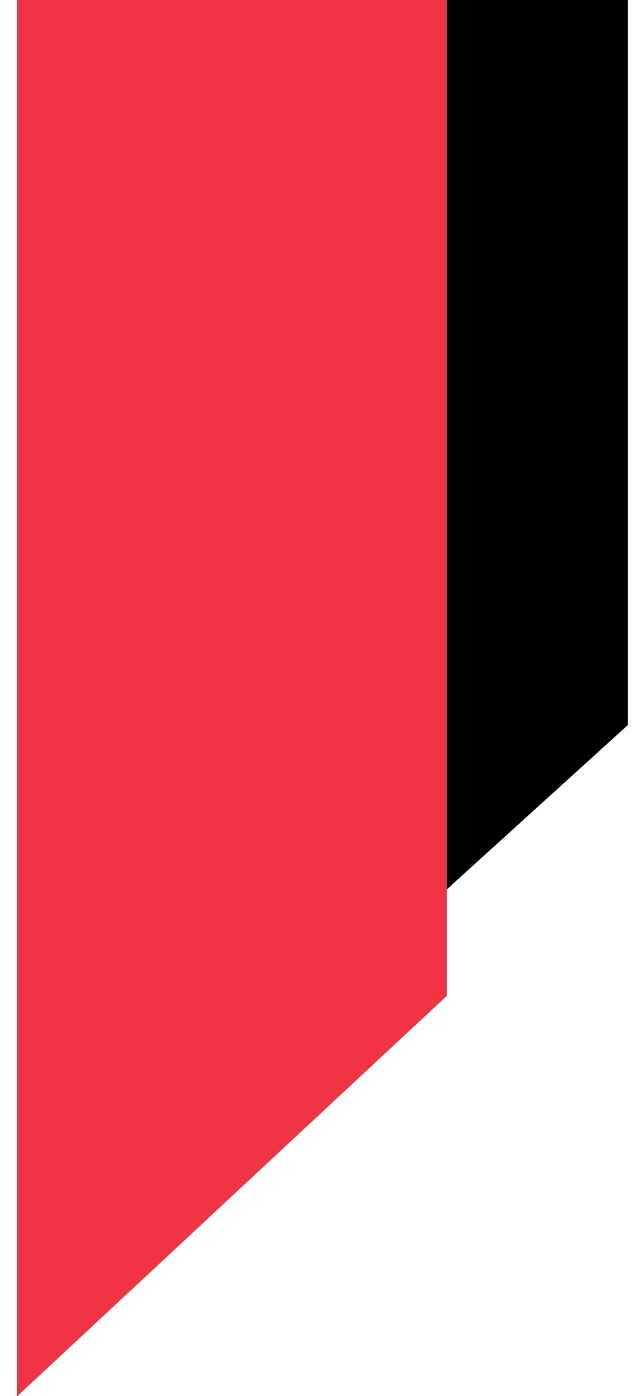
This document presents the Trinidad & Tobago's Energy Report Card (ERC) for 2019. The ERC provides an overview of the energy sector performance in the Trinidad & Tobago. The ERC also includes energy efficiency, projects, technical assistance, workforce, training and capacity building information, subject to the availability of data.

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

This data is a collection from a variety of public sources and as such, is for general information only. It is not intended for decision-making purposes and therefore reliance placed on the information herein is strictly at the user's risk.

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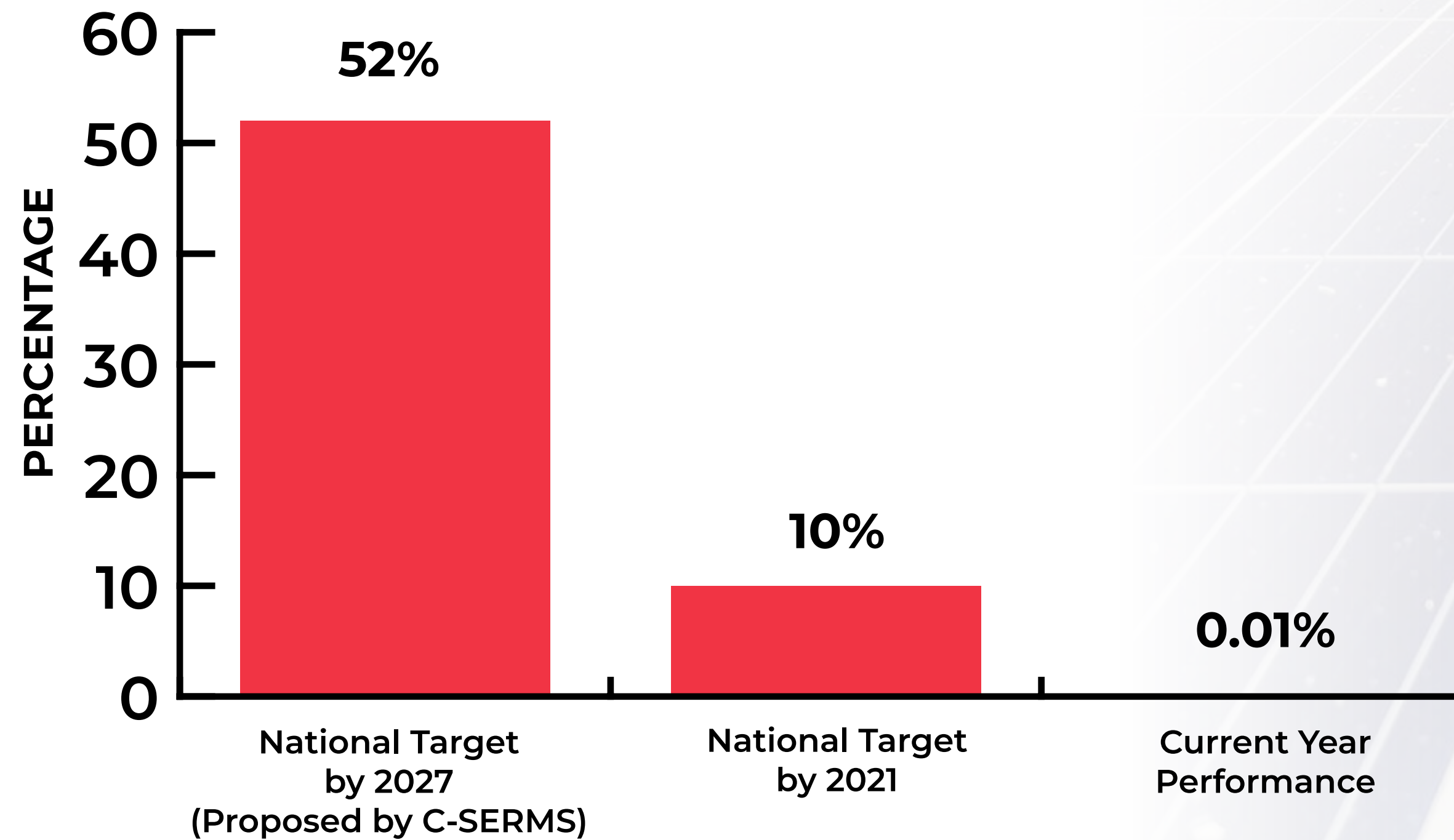
# ENERGY SECTOR SUMMARY

Key Data and Information - Energy Sector	
Population	1,363,985 [1]
GDP (USD) Per Capita	\$16,688.02 [2]
Debt as % of GDP	62% [3]
Human Development Index (2018)	0.799 [4]
National Development Plan/Overall Country Development Strategy	Vision 2030 - The National Development Strategy of Trinidad and Tobago 2016-2030 [5]
National Energy Policy	In Progress
Renewable Energy (RE) Policy	Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago [6]
RE Target	10% by 2021 [6]
No. of Persons Employed in Energy Sector (Ministry of Energy and Energy Industries)	411 [6]
Total Oil Import (BOE) per day	0 [8]
Total Oil Export (BOE) per day	58,352 [8]
Total Installed Capacity (MW)	2,019 [8]
Total Installed RE (MW)	0.0065 [8]
Electricity System Losses (%)	9.6% [8]
Energy Use (kWh) Per Capita	6300 – 6500 [8]
Fuel and Oil Imports as % of GDP	0 [8]
Climate Change Policy	National Climate Change Policy (2011) [9]
Electric Vehicle Stock	0 [8]
National Determined Contributions (NDC)	15% [10]
National Repository for Energy Data	Ministry of Energy and Energy Industries Central Statistical Office [7]



# ENERGY SECTOR PERFORMANCE AGAINST TARGETS

## RENEWABLE ENERGY AS A PERCENTAGE OF INSTALLED CAPACITY



## ENERGY INTENSITY

Current year Performance (BTU/ USD)	National Target
	No National Target set [6]

## % REDUCTION IN ENERGY SECTOR EMISSIONS

Current year Performance	National Target
-	4.56% by 2030 [6]



# KEY ENERGY STAKEHOLDERS

## Government Ministries, Departments and Agencies

- Ministry of Energy and Energy Industries
- Ministry of Public Utilities
- National Gas Company of Trinidad and Tobago Limited
- National Energy Corporation of Trinidad and Tobago
- NGC CNG Company Limited

## Fuel Importers & Suppliers

- Paria Fuel Trading Company Limited
- National Petroleum Marketing Company Limited (NPMC)
- United Independent Petroleum Marketing Company Limited (UNIPET)
- Ramco Industries Limited

## Electric Utility

- Trinidad and Tobago Electricity Commission (T&TEC)

## Independent Power Producer(s)

- Power Generation Company of Trinidad and Tobago (POWERGEN)
- Trinity Power Limited
- Trinidad Generation Unlimited

## Regulator

- Regulated Industries Commission

## Transportation

- Ministry of Works and Transport
- Public Transport Service Corporation (PTSC)



# ELECTRICITY SECTOR: POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

	Completed	Draft	In Progress	Not Completed
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				✓

## Policies and Legislation Relevant to the Energy Sector

### Policies:

- Vision 2030: The National Development Republic of Trinidad and Tobago 2016-2030 [5]

### Legislation:

- The Petroleum Act and Regulations [11]
- Petroleum Production Levy and Subsidy Act [12]
- The Petroleum Taxes Act [13]
- The Trinidad and Tobago Electricity Commission (T&TEC) Act [14]
- The Regulated Industries Commission (RIC) Act [15]
- Environmental Management Act [16]
- Occupational Safety and Health Act [17]

## KEY ACHIEVEMENTS: PLR FRAMEWORK TIMELINE FOR ELECTRICITY SECTOR

Name	Year
Framework for the Development of a Renewable Energy Policy for Trinidad and Tobago [7]	2011

## Policies and Legislation Relevant to the Transportation Sector

### Policies:

- Vision 2030: The National Development Republic of Trinidad and Tobago 2016-2030 [5]

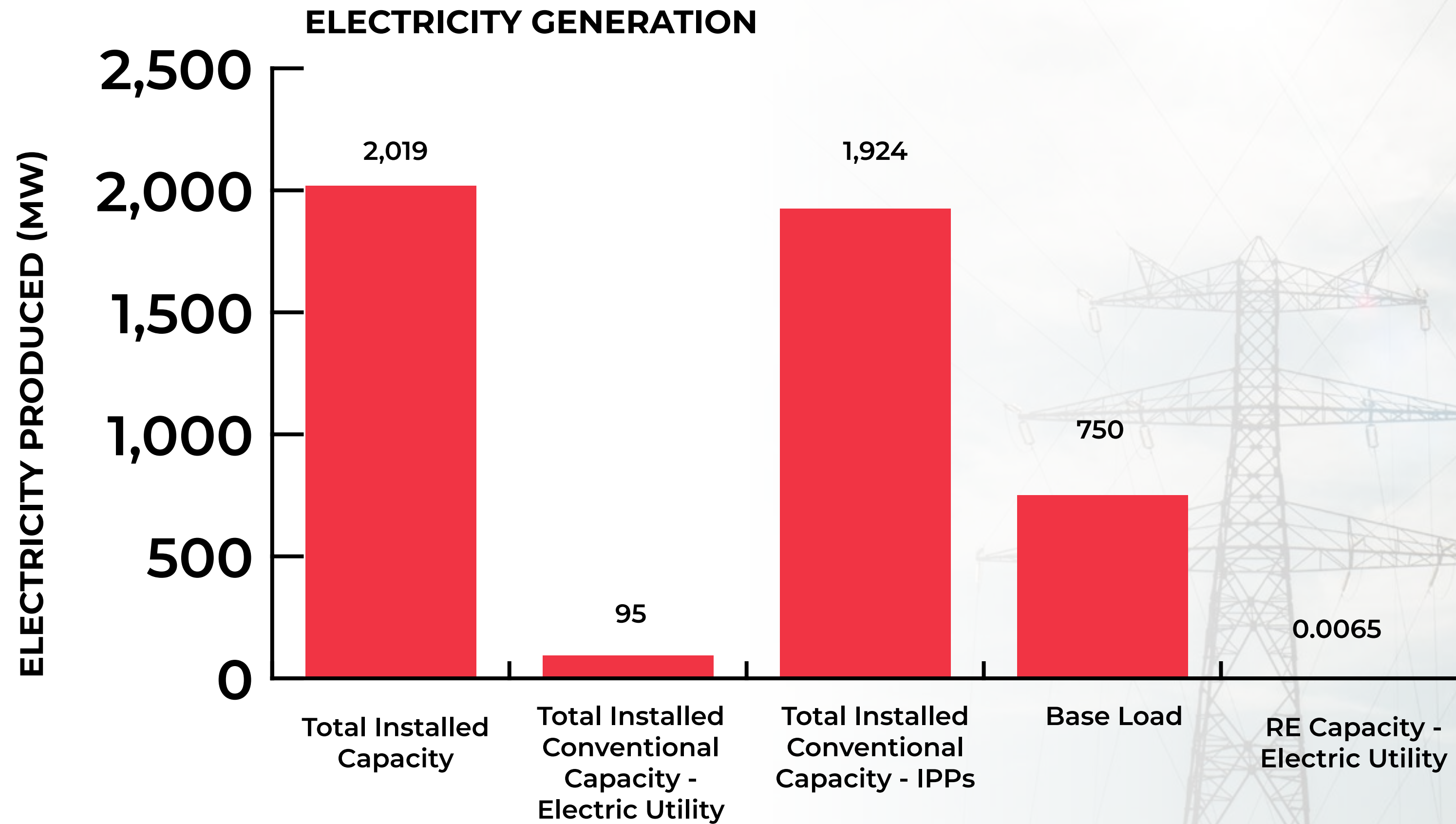
### Legislation & Regulation:

- Motor Vehicles and Road Traffic Act [18]
- Motor Vehicles Insurance (Third-Party Risks) Act [19]
- Maxi Taxi Act [20]





# ELECTRICITY & ENERGY EFFICIENCY

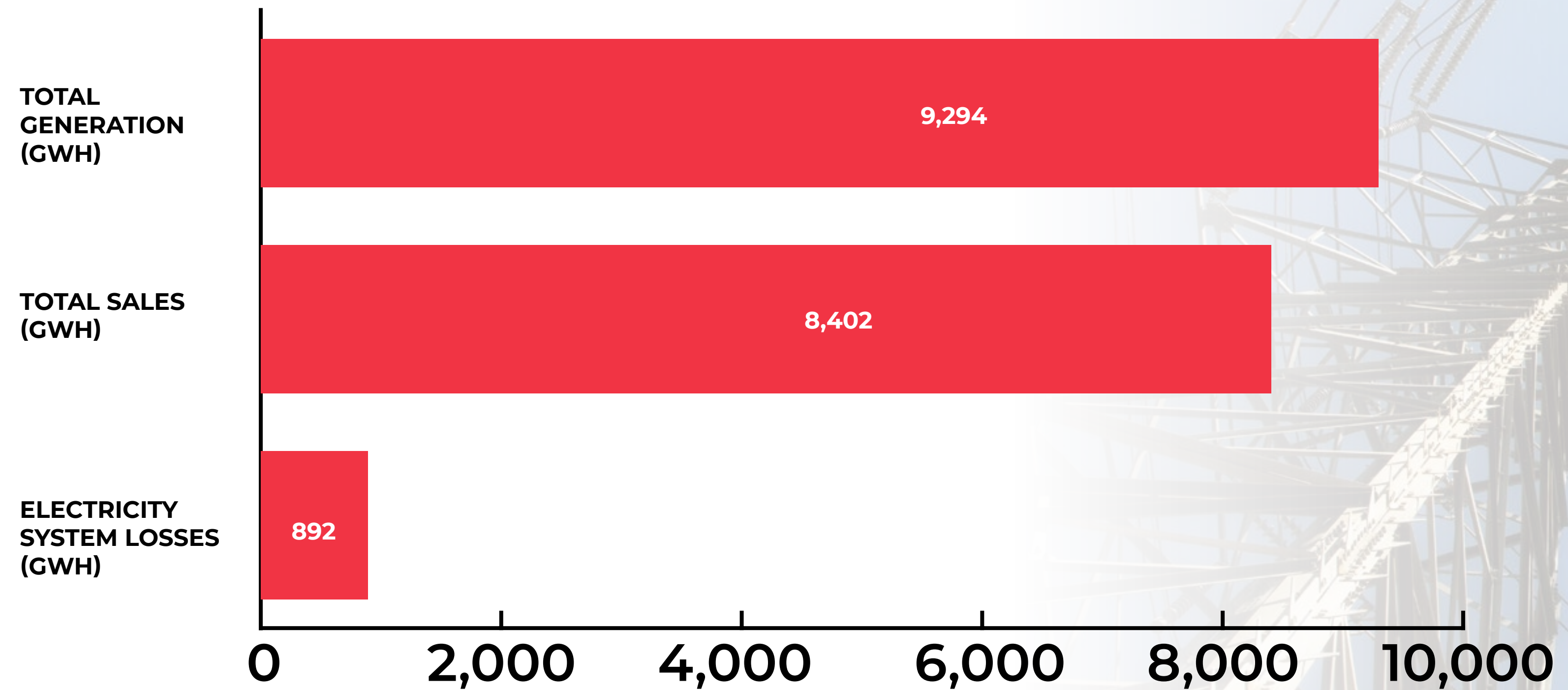






# ELECTRICITY & ENERGY EFFICIENCY (CONT'D)

## ELECTRICITY CONSUMPTION





# ELECTRICITY & ENERGY EFFICIENCY (CONT'D)

## TARRIFS

Rate	Monthly Consumption / Demand	Tarrif / (US\$/kWh)
Residential	0 – 400 kWh	0.038
	401 – 1,000 kWh	0.047
	> 1,000 kWh	0.055
Commercial		0.061
Industrial/Large Power	4000 - 25000 kVA at 6.6 kV, 12kV or 33 kV	0.027
	4000 - 25000 kVA at 66kV or 132 kV	0.025
	Standby	0.025
Streetlights		0.050

## EFFICIENCY

Electricity System Heat Rate (kJ/kWh)	10,937
EE Target	10% by 2024
Electricity System Losses (%)	9.60%
Electricity System Losses (MWh)	892,202
Energy Use (kWh) Per Capita	6,400
Energy Intensity Index (EII) BTU/US\$1 Unit of output	



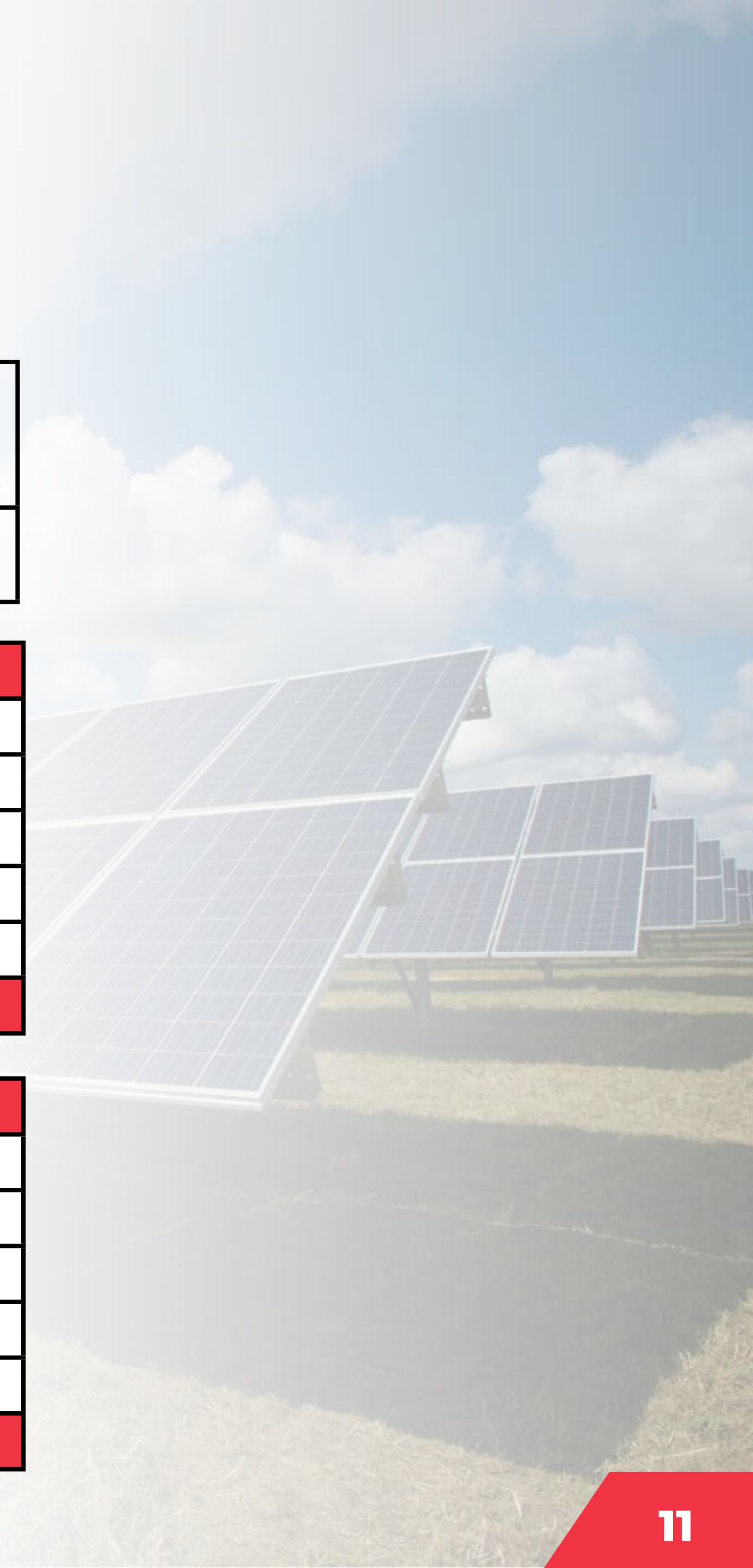
# ELECTRICITY & ENERGY EFFICIENCY (CONT'D)

## MANAGEMENT OF ENERGY DATA/KNOWLEDGE

<b>Name of Energy Knowledge Management System</b>	The Knowledge Management System (KMS) for the country's National Climate Mitigation Monitoring, Reporting and Verification (MRV) System which will be managed by the Environmental Management Authority (MRV KMS)
<b>Name of Energy Data Management System</b>	The MRV KMS

RE Resource	Installed Capacity (MW)	Year Commissioned
Wind	-	
Solar	0.0065	2010 - 2012
Hydro	-	
Geothermal	-	
Biomass/WTE	-	
<b>Total</b>	<b>0.0065</b>	

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind	> 100	No
Solar PV	> 200	Partial (focused on Piarco Airport)
Hydro	0	No
Geothermal	0	No
Biomass/WTE	12	Yes (for Waste to Energy)
<b>Total</b>	<b>&gt; 312</b>	





# PROJECTS IN THE PIPELINE

Donor Funding and Technical Assistance Landscape	Donor Organization & Banks	Technical Assistance Providers	Funding Awards	Year
Construction of a solar PV Carport at the Queens Park Savannah	United Arab Emirates (UAE) – Caribbean Renewable Energy Fund (CREF)	MASDAR	USD 3 million	2019
Construction of a solar park at the Piarco International Airport	European Union		€1.5 million (12 million TT)	2019
Installation of small - scale roof-mounted, off grid, solar photovoltaic (PV) installations at 12 sites across the country	European Union's Global Climate Change Alliance Plus (GCCA+), and the United Nations Development Programme (UNDP)		€2.4 million	2019

## ENERGY EFFICIENCY PROJECTS

Energy Efficiency	Energy Audits (Yes/No)	Energy Service Companies (Yes/No)
Improve the efficient use of energy in public buildings	Yes (6 buildings)	Yes





# NUMBER AND TYPE OF TERTIARY LEVEL & VOCATIONAL TRAINING SUSTAINABLE ENERGY PROGRAMMES OFFERED

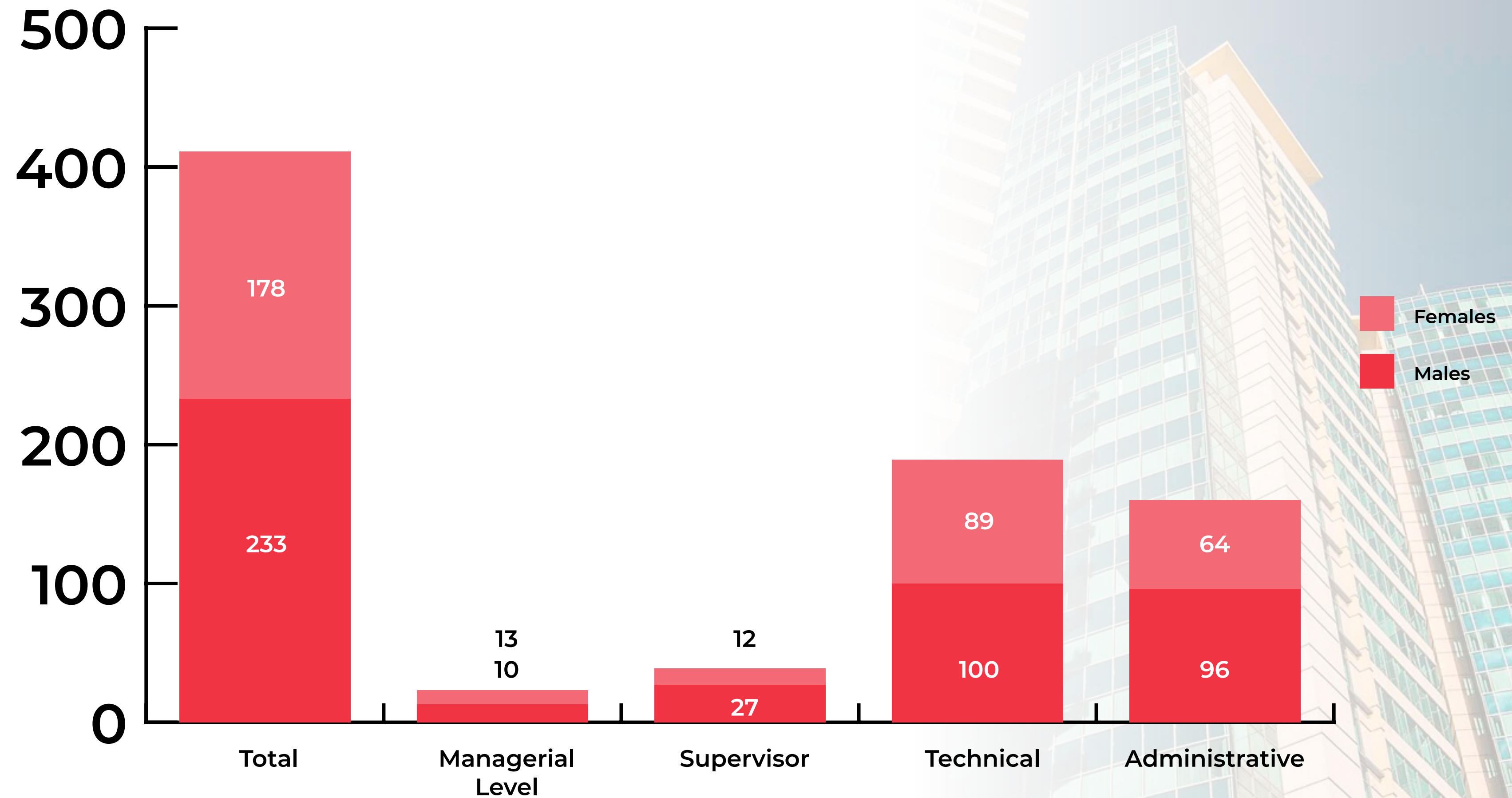
Name of Education Programme Provider	No of Persons Graduated	Types of Programme			Programme Link
		Certificate	Undergraduate	Postgraduate	
The University of the West Indies, St. Augustine Campus	35 (2017 - 2019)			MSc in Renewable Energy Technology	<a href="https://sta.uwi.edu/fst/physics/master-science-renewable-energy-technology">https://sta.uwi.edu/fst/physics/master-science-renewable-energy-technology</a>
Arthur Lok Jack School of Business	45 (2013, 2017 - 2019)			MBA in Sustainable Energy Management (Program discontinued)	<a href="https://www.lokjackgsb.edu.tt/programmes/postgraduate/mba-in-sustainable-energy-management/">https://www.lokjackgsb.edu.tt/programmes/postgraduate/mba-in-sustainable-energy-management/</a>
SBCS Global Learning Institute		Implementing Solar Power Systems for Power Generation: Photovoltaic Installer (Level 1)			<a href="http://www.sbcs.edu.tt/programme/eta-pv-level-1/">http://www.sbcs.edu.tt/programme/eta-pv-level-1/</a>
		Implementing Wind Power Systems for Residential Use			<a href="http://www.sbcs.edu.tt/programme/windpower/">http://www.sbcs.edu.tt/programme/windpower/</a>
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>





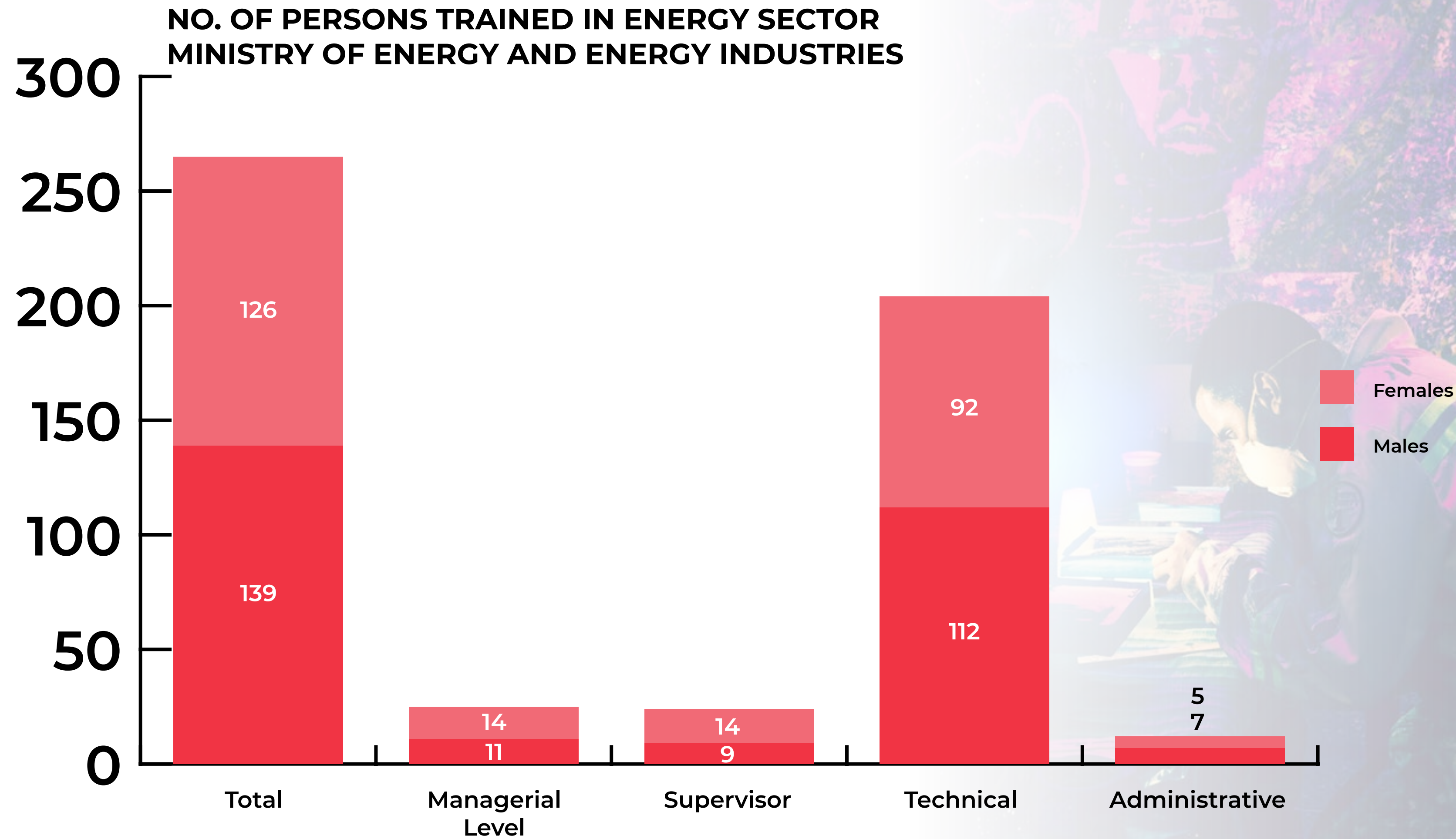
# WORKFORCE

NO. OF PERSONS EMPLOYED IN ENERGY SECTOR  
MINISTRY OF ENERGY AND ENERGY INDUSTRIES





# WORKFORCE (CONT'D)



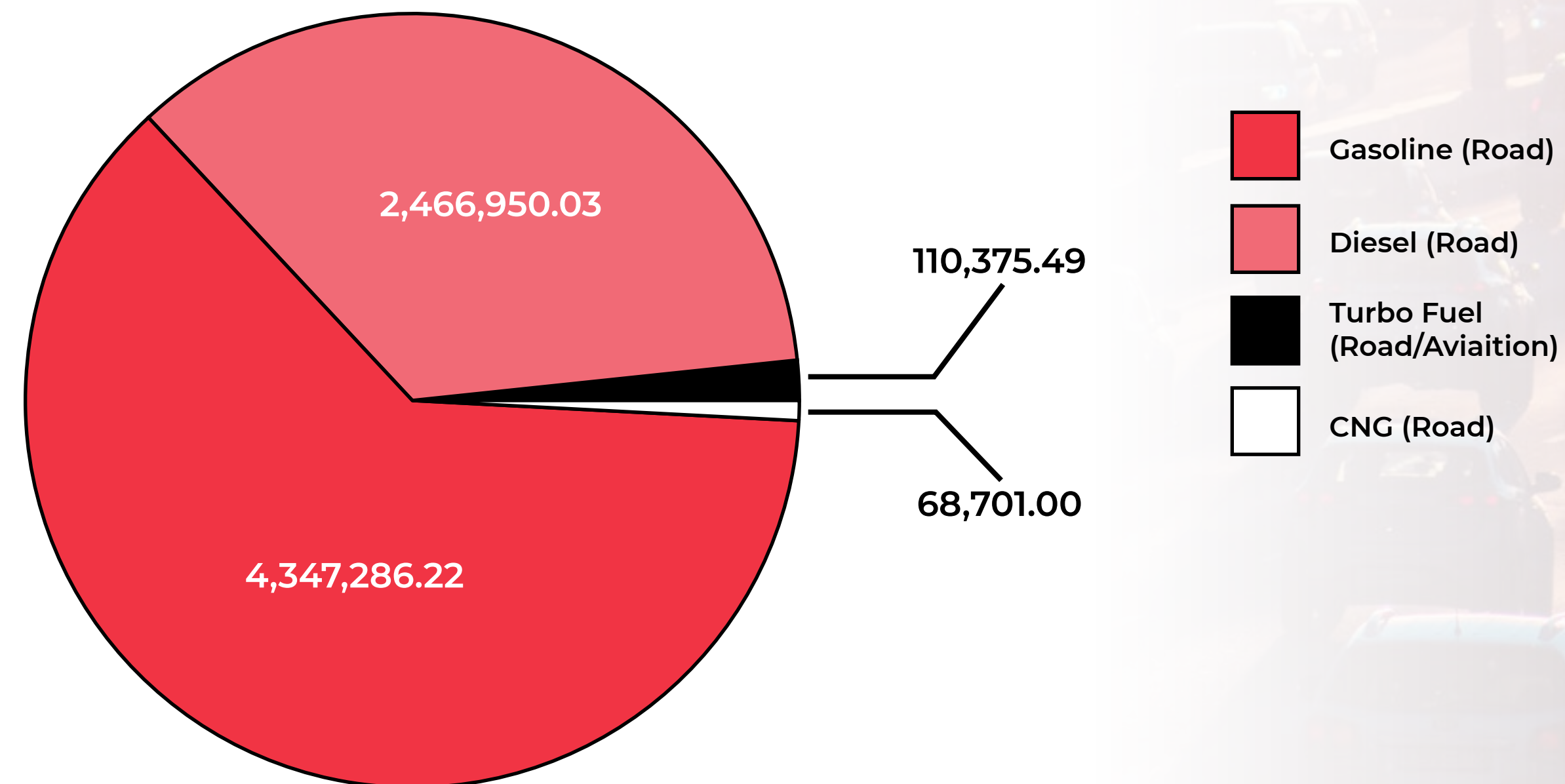


# TRANSPORTATION SECTOR

## KEY TRANSPORTATION DATA AND INFORMATION

Fuel consumption, Transportation (BOE)	6,993,312.74
Energy Related Transportation targets	Convert/add 17500 CNG vehicles and add 22 CNG refuelling stations by 2021
Sustainable/Alternative fuels used	CNG
Total Imports for Alternative fuels	Not imported
Conventional Vehicle Stock/Vehicle Registration	925,366.00
Fuel Quality Standards	Trinidad and Tobago Bureau of Standards National Standards for unleaded gasoline and diesel

## BREAKDOWN OF FUEL USE IN THE TRANSPORTATION SECTOR (BOE)

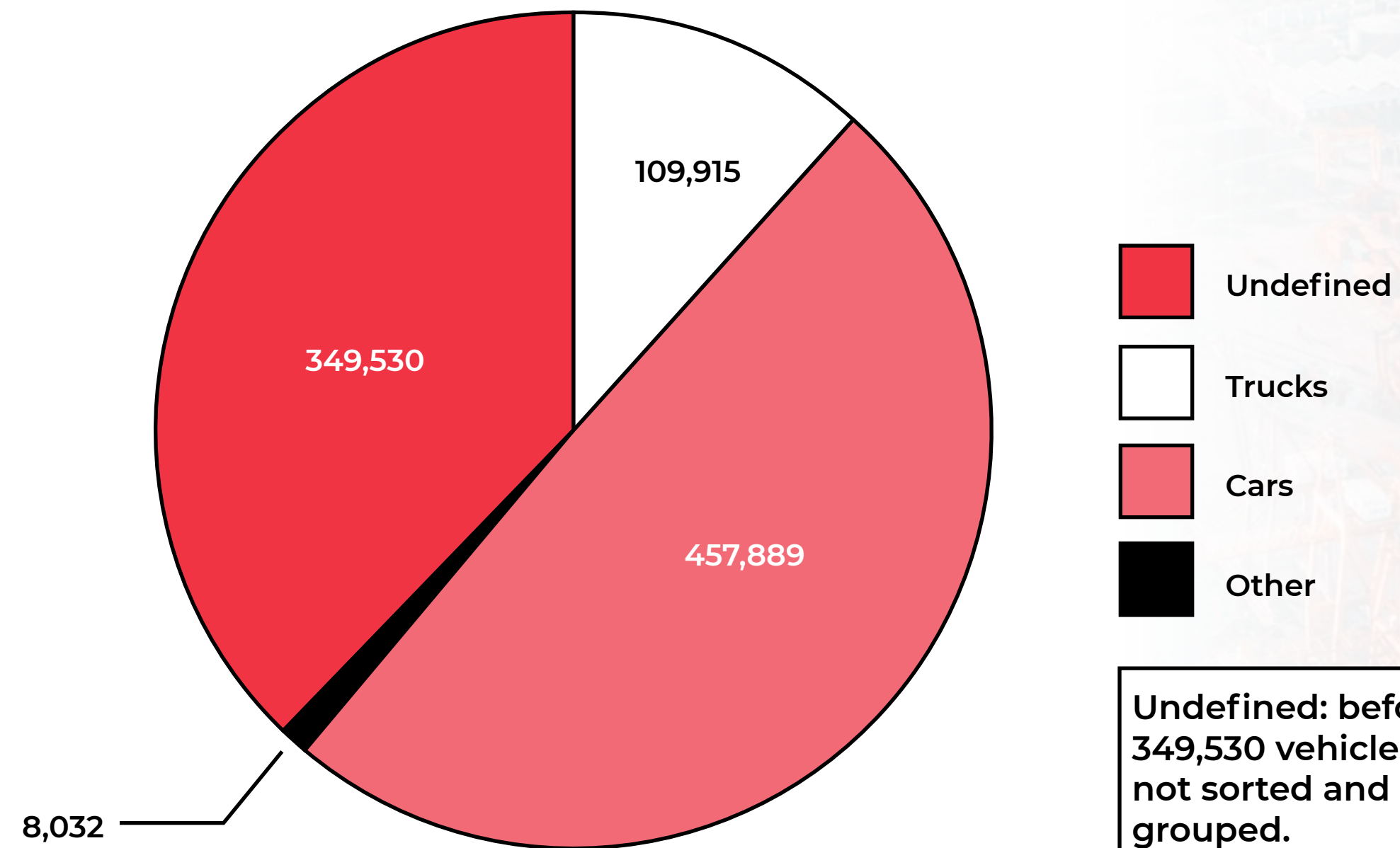






# TRANSPORTATION SECTOR (CONT'D)

CONVENTIONAL VEHICLE STOCK / VEHICLE REGISTRATION



Undefined: before 1995, 349,530 vehicles were not sorted and are not grouped.



# CLIMATE CHANGE FRAMEWORK

Climate Change Policy	National Climate Change Policy [9]
National Determined Contributions	Yes [10]
Emissions Reduction Target	15% [10]
Priority Sectors for NDC	Transportation, Power Generation, Industry
National Communications (NC) to the UNFCCC	Initial National Communication of the Republic of Trinidad and Tobago under the United Nations Framework Convention on Climate Change (2001) [21] Second National Communication of the Republic of Trinidad and Tobago (2013) [22]

## GREENHOUSE GAS (GHG) INVENTORY [22]

Gas	Sector	Volume / Gg CO <sub>2</sub> equivalent
Carbon Monoxide (CO)	Industrial Processes	~70
	Agriculture	5.48
Carbon Dioxide (CO <sub>2</sub> )	Energy	63,455
	Road Transport	3,617
	Power Generation	2,488
	Industrial Processes	10,785
Methane (CH <sub>4</sub> )	Industrial Processes	~300
	Agriculture	3.57
	Waste	~ 47.16
Non-Methane Volatile Organic Compounds (NMVOC)	Fugitive Emissions	~200
Nitrogen Oxides (NO <sub>x</sub> )	Agriculture	0.31
Nitrous Oxide (N <sub>2</sub> O)	Agriculture	0.83
Other (nitrous oxide, nitrogen monoxide, nitrogen dioxide and sulphur dioxide)	Industrial Processes	~0.8
	Land Use Land-use Change and Forestry	Net Carbon sink



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