2020 ENERGY REPORT CARD

BARBADOS

CCREEE
CARIBBEAN CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

AN INSTITUTION OF CARICOM

www.ccreee.org

CARICOM

TAPSEC
Technical Assistance Programme for Sustainable Energy in the Caribbean

Co-Funded by the European Union

Spanish Cooperation

Austrian Development Agency

UNIDO
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

german cooperation
DEUTSCHE ZUSAMMENARBEIT

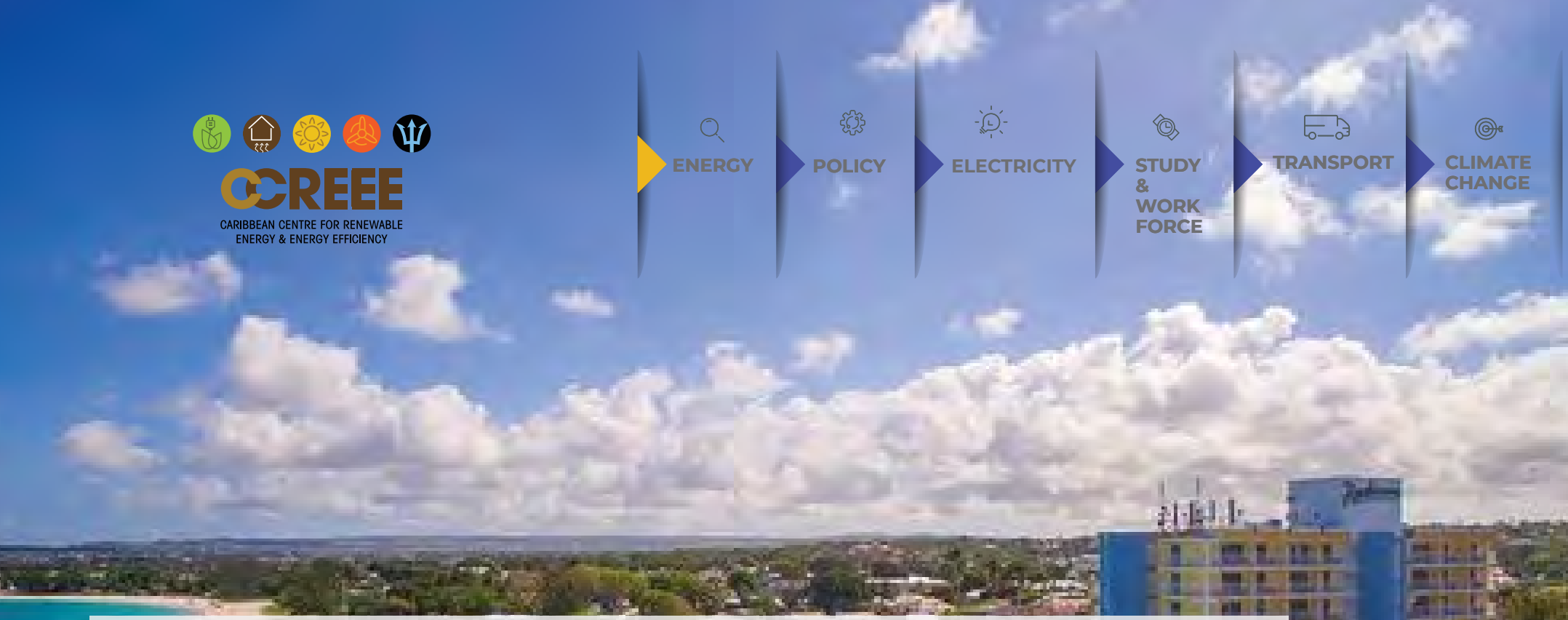
Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GNESEC
Global Network
Regional Sustainable Energy Centres

CCREEE
CARIBBEAN CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE



2020 ENERGY REPORT CARD

INTRODUCTION

This document presents Barbados' Energy Report Card (ERC) for 2020. The ERC provides an overview of the energy sector's performance in Barbados. The ERC also includes energy efficiency, 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.

ENERGY SECTOR SUMMARY

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

Population (Estimation)
287,375
[1]

GDP (USD) Per Capita
15,191.16
[2]

National Repository for Energy Data
Pi Historian / Struxware
[11]

Total Oil Import (BOE) per day
Not Available

Debt as % of GDP
144%
[3]

National Energy Policy
Barbados National Energy Policy 2019 - 2030
[7]

National Development Plan
National Strategic Plan of Barbados 2005–2025

Medium-term Growth and Development Strategy (MGDS) 2013-2020
[5][6]

Human Development Index
0.814
(2019)
[4]

RE Target
100% by 2030
[7]

Climate Change Policy
National Climate Change Policy Barbados (2012)
[12]

National Determined Contributions (NDC)
21 %, compared to 2008 by 2025
23%, compared to 2008 by 2030
[14]

Oil Imports as % of GDP
Not Available

National Repository for Energy Data
None

Fuel and Oil Imports as % of GDP
3.94%
[11]

No. of Persons Employed in Energy Sector
567
[10]

Total Installed Conventional Capacity (MW)
247.9
[9]

Renewable Energy (RE) Policy
None

Total Installed RE (MW)
51.8 [11
[11]

Total Oil Export (BOE) per day
Not Available

Energy Intensity (BTU/$)
Not Available

Energy Use (kWh) Per Capita
3,110.46
[11]

Electricity System Losses (%)
6.18%
[11]

Electric and Hybrid Vehicles
352
[13]

Energy Performance Standards/Appliance Labelling

Barbados Energy Label Standard [8]

Adopted the ISO 50002 standard for Energy Audits

Adopted ISO 50001:2011 standard to be the guide for energy management in Barbados. [9]

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ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

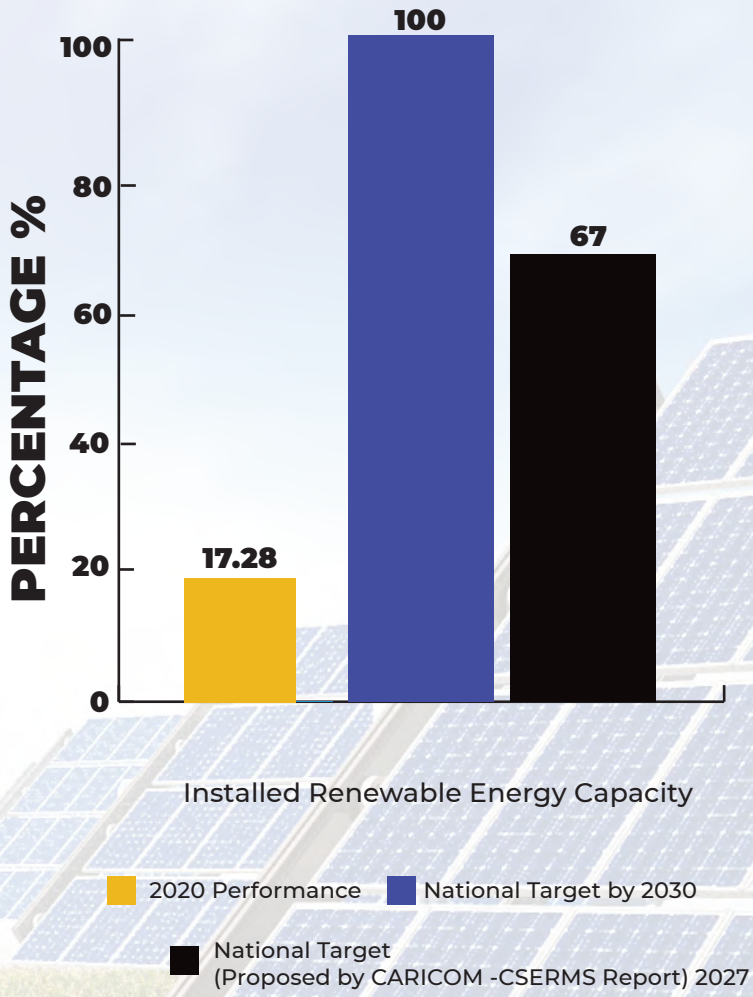
ENERGY SECTOR PERFORMANCE AGAINST TARGETS

17.28%
2020 performance

100%
National Target by 2030

67%
National Target (Proposed by CARICOM -CSERMS Report) by 2027

RENEWABLE ENERGY PERFORMANCE AGAINST TARGETS



KEY ENERGY STAKEHOLDERS

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

Government Ministries, Departments and Agencies

- Ministry of Energy, Small Business and Entrepreneurship [15]
- Government Electrical and Engineering Department [16]
- Environmental Protection Department [17]

Fuel Suppliers

- Barbados National Oil Company Limited [18]
- National Petroleum Corporation [19]
- Rubis Caribbean [20]
- Rubis Aviation [21]
- SOL (Barbados) Limited [22]

Electric Utility

- Barbados Light and Power Company Limited [23]

Electricity Regulator

- Fair Trading Commission [24]

Transportation

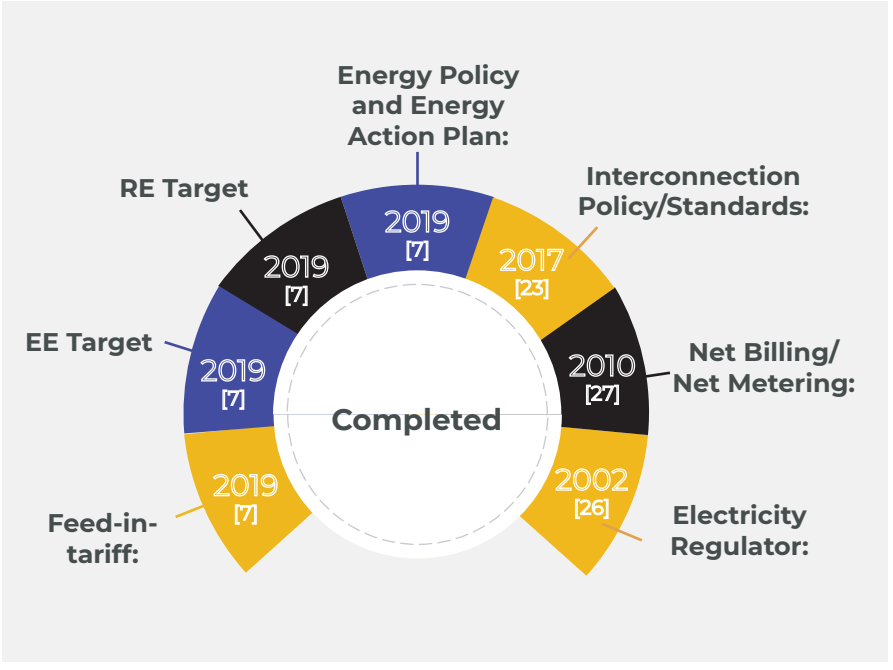
- Ministry of Transport, Works, and Maintenance [16]

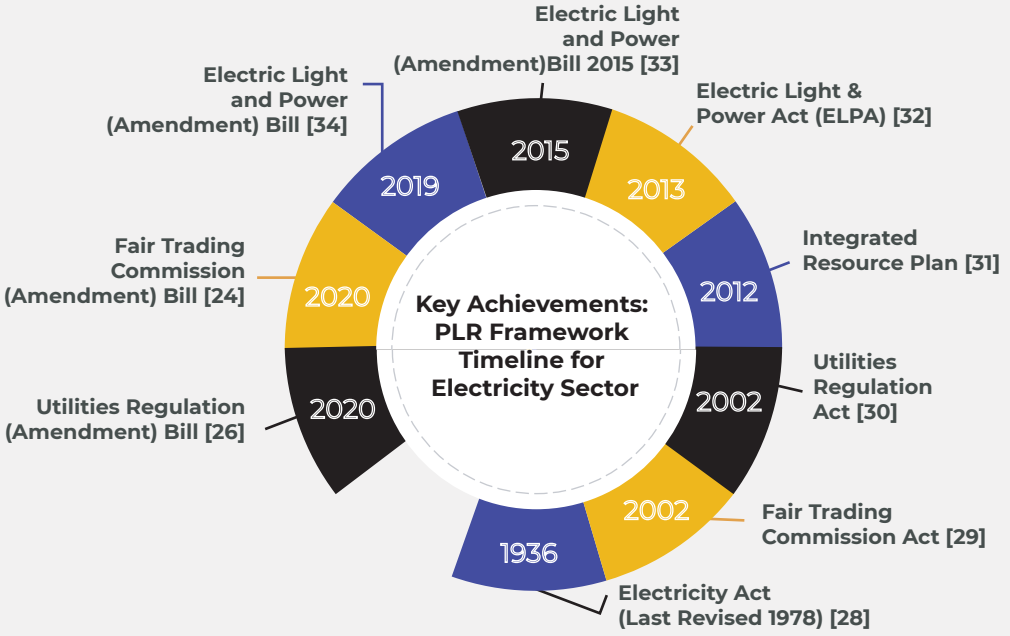
Other

- Barbados Renewable Energy Association [25]
- Ministry of Maritime Affairs and the Blue Economy (MMABE) [7]

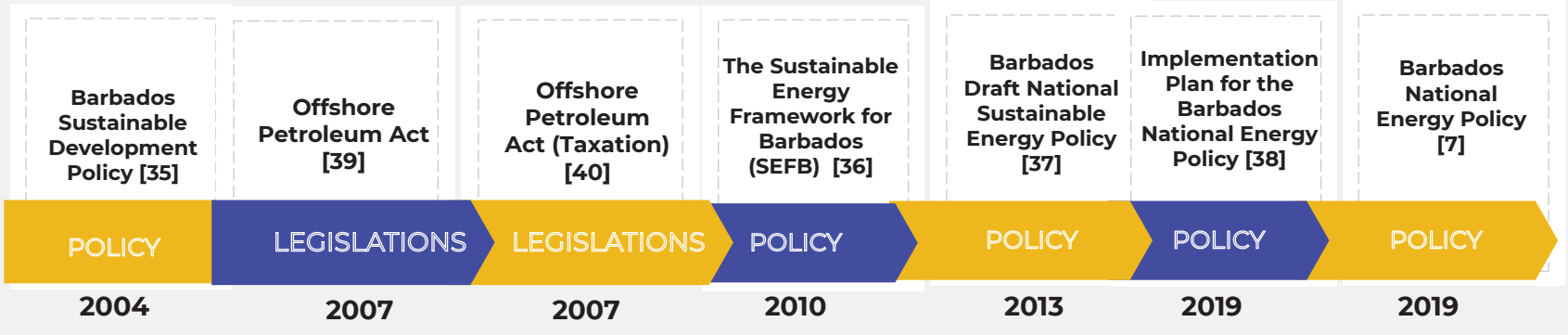
POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE





POLICIES AND LEGISLATION RELEVANT TO THE ENERGY SECTOR



POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

POLICIES AND LEGISLATION RELEVANT TO THE TRANSPORTATION SECTOR

No policies were provided

LEGISLATION & REGULATIONS

2008

Transport Board Act 1955 Last Amendment in 2008 [41]

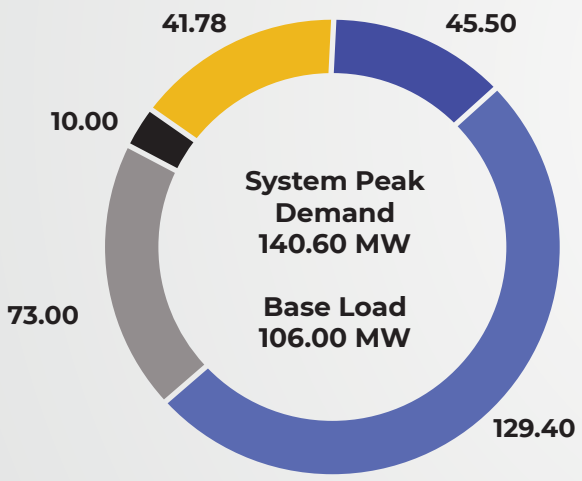
2018

Road Traffic Act (last Amendment in 2018) [42]

ELECTRICITY AND ENERGY EFFICIENCY

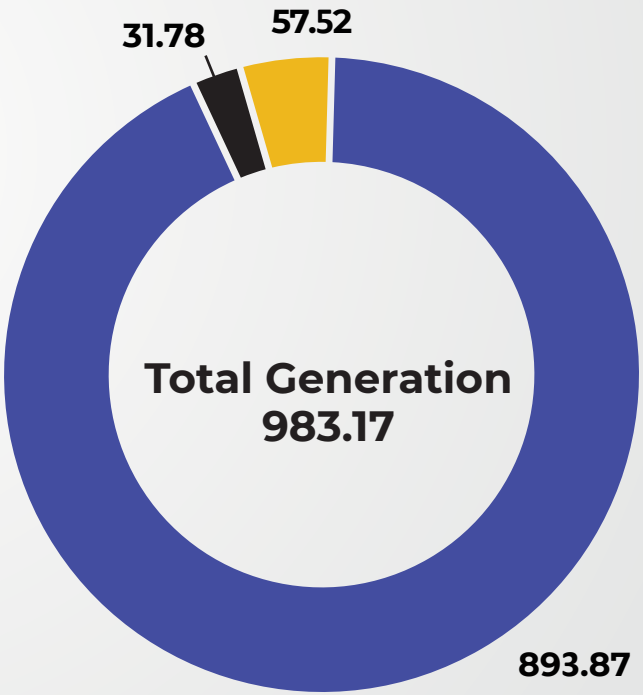
ELECTRICITY & ENERGY EFFICIENCY

Installed Capacity (MW)



- Electric Utility-Diesel
- Electric Utility-RE
- Electric Utility-AVIATION FUEL
- Electric Utility-HFO
- Residential and Commercial/ Distributed Generation-RE

ENERGY CONSUMPTION (GWh)

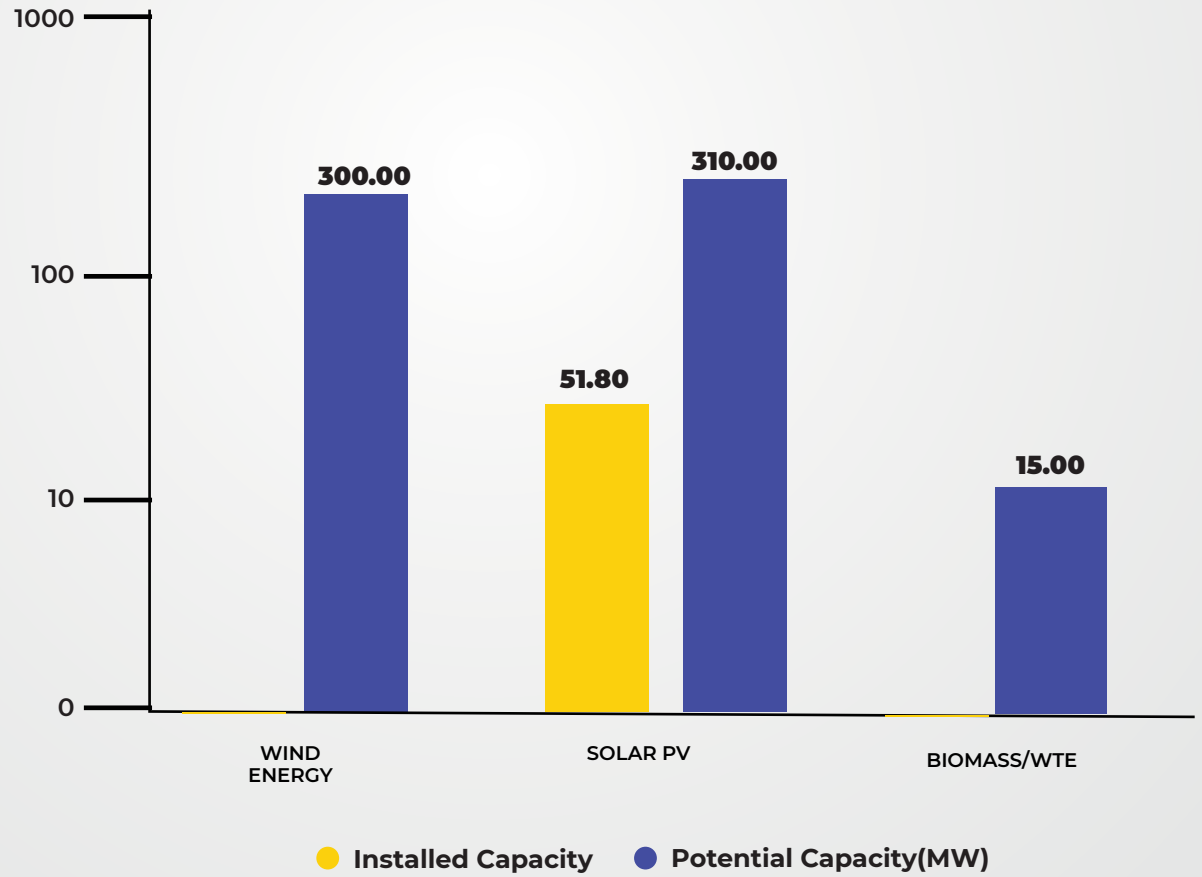


- Total Sales
- Losses
- Parasitic Load

ELECTRICITY AND ENERGY EFFICIENCY

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

RENEWABLE ENERGY RESOURCES



ELECTRICITY AND ENERGY EFFICIENCY

ELECTRICITY TARIFFS

RATE CLASS	MONTHLY CONSUMPTION /DEMAND (kWh)	FIXED CUSTOMER CHARGE (US$) PER MONTH +VAT	TARIFF EXCLUDING SURCHARGE/ (US$/kWh)	DEMAND CHARGE (US$/kVA) +VAT
RESIDENTIAL	0 - 150 151 - 500 501 – 1,500 > 1,500	2.97 4.94 6.92 6.92	0.07 0.09 0.10 0.11	
COMMERCIAL (GENERAL SERVICES)	0-100 101-500 501 – 1,500 > 1,500	3.95 5.44 6.92 6.92	0.09 0.11 0.13 0.14	
SECONDARY VOLTAGE POWER (FOR COMPANY-OWNED TRANSFORMER(S)		9.88	0.07	11.86
SECONDARY VOLTAGE POWER (FOR CUSTOMER-OWNED TRANSFORMER(S)		9.88	0.07	10.87
INDUSTRIAL/ LARGE POWER		148.27	0.06	10.87

PROJECTS IN THE PIPELINE

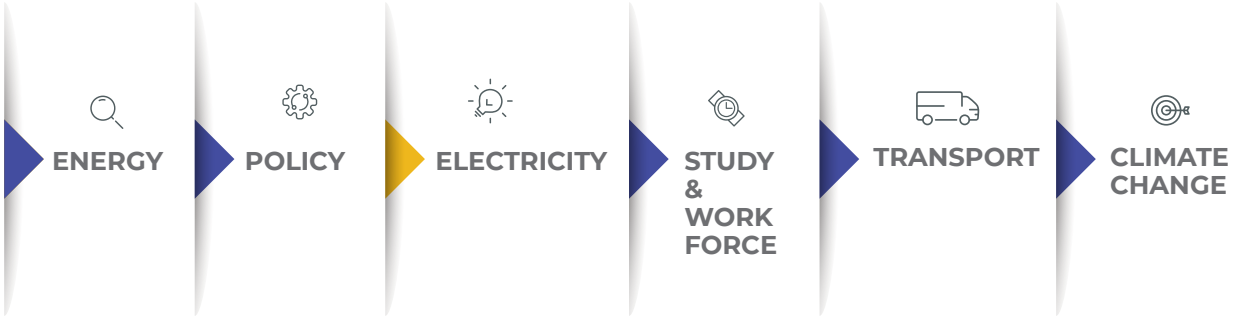
ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

TECHNICAL ASSISTANCE PROJECTS

DONOR FUNDING AND TECHNICAL ASSISTANCE LANDSCAPE	DONOR ORGANIZATION & BANKS	FUNDING AWARDS	YEAR
SUPPORT FOR THE PUBLIC SECTOR SMART ENERGY PROGRAM	INTER-AMERICAN DEVELOPMENT BANK	US$5,810,000	2012
PUBLIC SECTOR SMART ENERGY (PSSE) PROGRAM	INTER-AMERICAN DEVELOPMENT BANK EUROPEAN COMMISSION	US$17,000,000 US$17,000,000	2012
DEPLOYMENT OF CLEANER FUELS AND RENEWABLE ENERGIES IN BARBADOS	INTER-AMERICAN DEVELOPMENT BANK	US$34,000,000	2016
SUSTAINABLE ENERGY INVESTMENT PROGRAM (SMART FUND II) (LOAN)	INTER-AMERICAN DEVELOPMENT BANK EUROPEAN COMMISSION	US$30,000,000 €13,000,000.00	2019
SUSTAINABLE ENERGY INVESTMENT PROGRAM (SMART FUND II) (INVESTMENT GRANT)	INTER-AMERICAN DEVELOPMENT BANK	US$15,463,142	2019
SUPPORTING ENERGY TRANSITION IMPLEMENTATION AND SMART ENERGY TECHNOLOGY EXPANSION IN BARBADOS		US$550,000	2019
RESIDENTIAL ENERGY EFFICIENCY PROGRAMME (REEF)	CARIBBEAN DEVELOPMENT BANK	US$10,000,000	

The Residential Energy Efficiency Programme (REEF) project is currently in the planning process.

PROJECTS IN THE PIPELINE



ENERGY EFFICIENCY PROJECTS

ENERGY EFFICIENCY INITIATIVE	OLD/EXISTING INFRASTRUCTURE	ENERGY SERVICE COMPANIES	CHANGE IN OLD/EXISTING INFRASTRUCTURE EXPECTED IN UPCOMING CALENDAR YEAR	EXPECTED CHANGE IN TECHNOLOGY
STREET LIGHTING	~27,650	YES	24,600 OF 27,650	LIGHT EMITTING DIODE (LED) TECHNOLOGY
PUBLIC BUILDINGS	RETROFIT OF 15 GOVERNMENT OWNED BUILDINGS WITH ENERGY EFFICIENT TECHNOLOGIES	NO	NOT AVAILABLE	NOT AVAILABLE

RENEWABLE ENERGY PROJECTS

RENEWABLE ENERGY SOURCE		RESOURCE AND PROJECTS CAPACITY (MW)	DEVELOPMENT PARTNER	TOTAL ESTIMATED COST	FUNDING SOURCE
WIND ENERGY	THE LAMBERTS WIND FARM	10	NONE	NOT AVAILABLE	THE BARBADOS LIGHT & POWER COMPANY LIMITED

TERTIARY PROGRAMMES OFFERED

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

SAMUEL JACKMAN PRESCOD INSTITUTE OF TECHNOLOGY

VOCATIONAL/ PROFESSIONAL CERTIFICATE

PHOTOVOLTAIC INSTALLATION 1

SOLAR PHOTOVOLTAIC ELECTRIC INSTALLATION

ELECTRICAL VEHICLE (EV)
MAINTENANCE FUNDAMENTALS

http://sjpi.edu.bb/?page_id=3794

http://sjpi.edu.bb/?page_id=3796

BARBADOS VOCATIONAL TRAINING BOARD

SOLAR WATER HEATER
TECHNICIAN

https://bvtb.gov.bb/apprenticeship_programme/solar_water_heater_technician/

BARBADOS COMMUNITY COLLEGE

ASSOCIATE DEGREE

MECHANICAL ENGINEERING
(INCLUDES POWER GENERATION
AND ENERGY CONSERVATION)

https://www.bcc.edu.bb/Divisions/Technology/Academics/Programmes/TEAMEYR2FT/

THE UNIVERSITY OF THE WEST, INDIES CAVE HILL CAMPUS

B.Sc

ENVIRONMENTAL SCIENCE AND MANAGEMENT
(INCLUDES SUSTAINABLE ENERGY COURSE)

https://www.cavehill.uwi.edu/chol/deleted/2020-2021-fst-handbook-september-9-2020kb.aspx#page=176

PHYSICS
(INCLUDES SUSTAINABLE ENERGY ELECTIVE)

https://www.cavehill.uwi.edu/chol/deleted/2020-2021-fst-handbook-september-9-2020kb.aspx#page=176

THE UWI CAVE HILL DID NOT OFFER THE M.SC. RENEWABLE ENERGY MANAGEMENT OFFER FOR THE ACADEMIC YEAR 2020-2021.

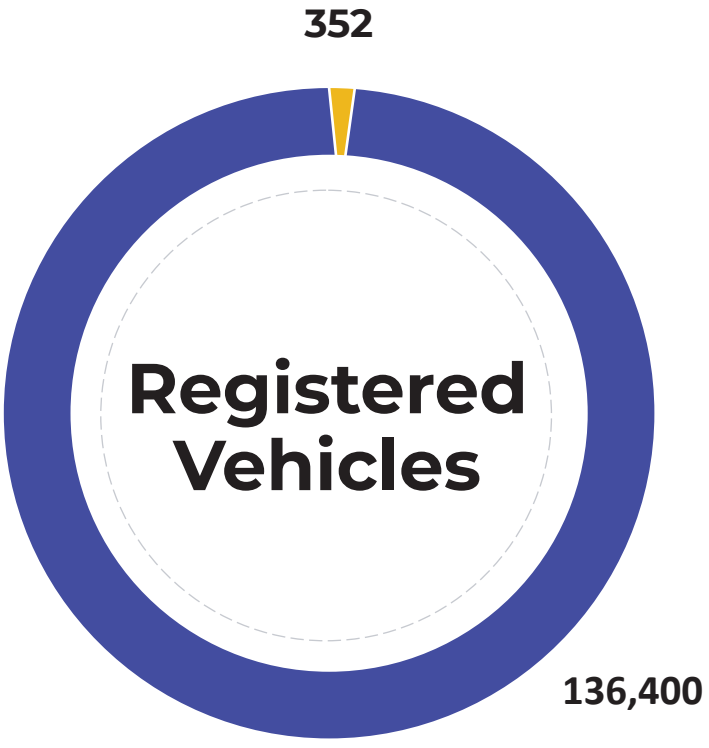
WORKFORCE

The 567 employees in the energy sector were not disaggregated by gender.

TRANSPORTATION SECTOR

ENERGY | POLICY | ELECTRICITY | STUDY & WORK FORCE | TRANSPORT | CLIMATE CHANGE

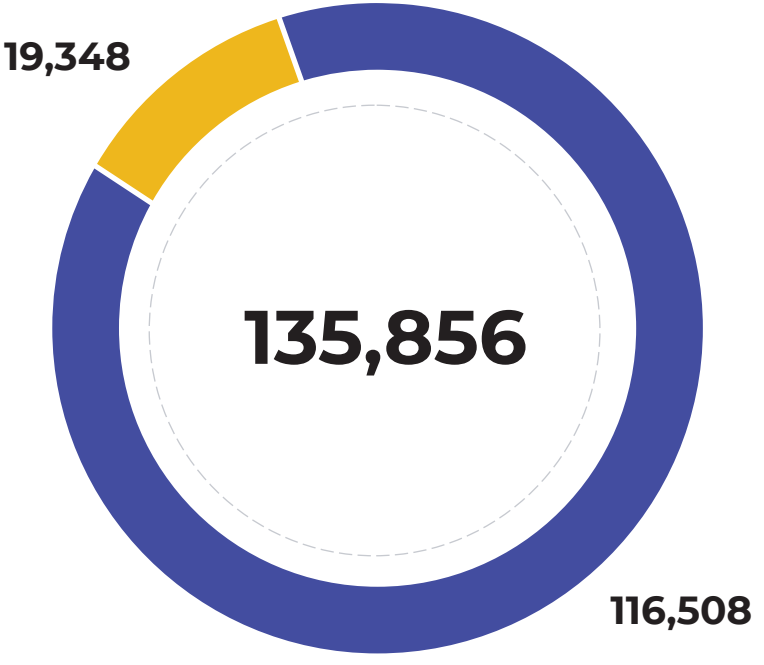
MOTOR VEHICLE STOCK



Conventional Vehicle Stock

Electric Vehicles

FUEL USE IN THE TRANSPORTATION SECTOR (BOE)



Gasoline(Road)

Diesel(Road)

BARBADOS ADDED 35 ELECTRIC BUSES TO THE NATIONAL FLEET.

CLIMATE CHANGE FRAMEWORK

ENERGY > POLICY > ELECTRICITY > STUDY & WORK FORCE > TRANSPORT > CLIMATE CHANGE

NATIONAL CLIMATE CHANGE POLICY BARBADOS (2012) [12]

NATIONAL DETERMINED CONTRIBUTIONS:

21 %, compared to 2008 by 2025

23%, compared to 2008 by 2030 [14]

EMISSIONS REDUCTION TARGET:

20% below business as usual (BAU) by 2030 [14]

PRIORITY SECTORS FOR NDCs

Agriculture, Water Resources, Fisheries, Tourism, Insurance, Human Health, Coastal Resources and Human Settlements [14]

NATIONAL COMMUNICATIONS (NC) TO THE UNFCCC:

Barbados' First National Communication Under the United Nations Framework Convention on Climate Change [43]

Barbados' Second National Communication Under the United Nations Framework Convention on Climate Change [44]

Barbados was working on the updated Nationally Determined Contributions for 2021.

CLIMATE CHANGE FRAMEWORK

ENERGY → POLICY → ELECTRICITY → STUDY & WORK FORCE → TRANSPORT → CLIMATE CHANGE

GREENHOUSE GAS INVENTORY [44]

	EMISSIONS (Gg CO_2 EQUIVALENT)		
CATEGORIES	CO_2	CH_4	N_2O
ENERGY	992.00	15.00	4.00
MANUFACTURING INDUSTRIES & CONSTRUCTION	101.00		
ROAD TRANSPORTATION	449.00		
AGRICULTURE / FORESTRY / FISHING		35.00	24.00
NAVIGATION		2.88	7.00

*Gg represents giga grams.

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