

JAMAICA

ENERGY REPORT CARD (ERC) FOR 2021



INTRODUCTION

This document presents Jamaica's Energy Report Card (ERC) for 2021.

The ERC provides an overview of the energy sector performance in Jamaica. 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.



Vision 2030 Jamaica: National Development Plan ^[5]

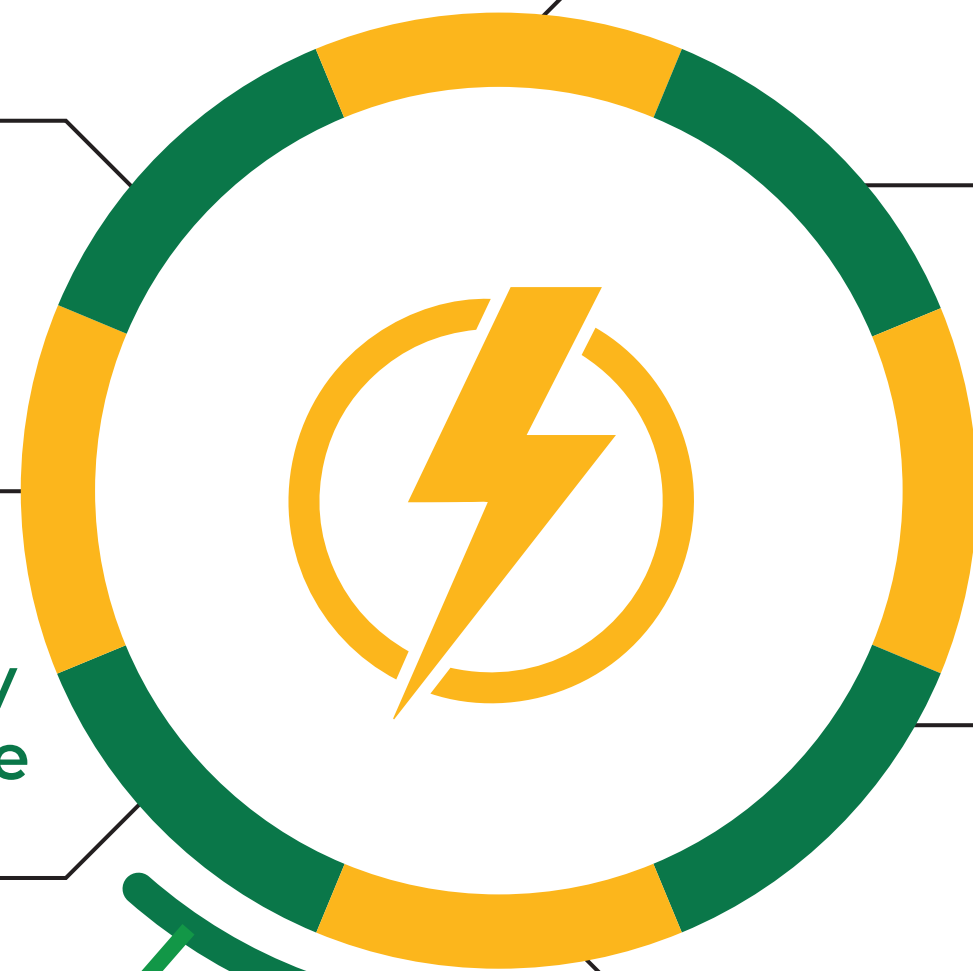
National Development Plan/
Overall Country Development Strategy

Jamaica's National Energy Policy 2009 - 2030 ^[6]

National Energy Policy

National Renewable Energy Policy 2009 - 2030 Creating a Sustainable Future (Draft) ^[7]

Renewable Energy (RE) Policy



2,736,800 ^[1]
POPULATION (CENSUS/PROJECTION)

\$4,586.70 ^[2]
GDP (USD) PER CAPIT

96.3% ^[3]
Debt as % of GDP

0.709 ^[4]
Human Development Index

50% ^{[8][9]}
RE Target














National Determined Contributions (NDC) ^[14]

25.4% reduction by 2030 (unconditional)
28.5% reduction by 2030 (conditional)

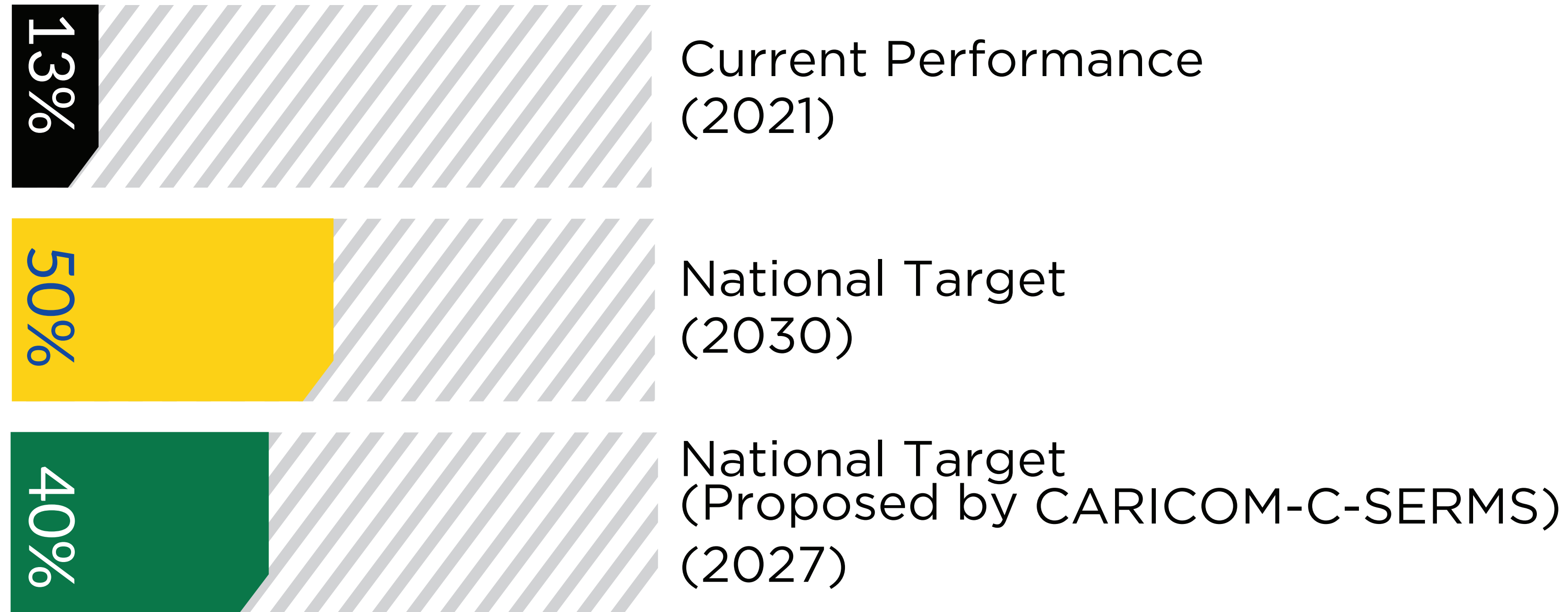
ENERGY PERFORMANCE STANDARDS/ APPLIANCE LABELLING

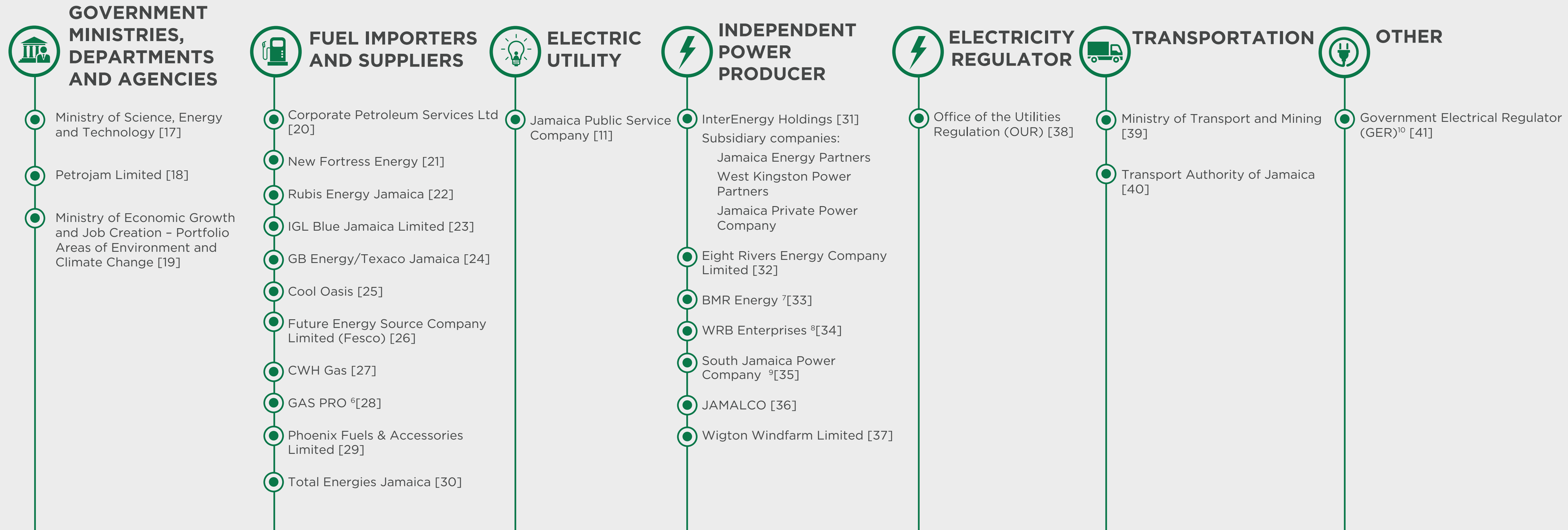
Energy Efficiency Testing and Labelling Programme using the Jamaican Standards ^[9]

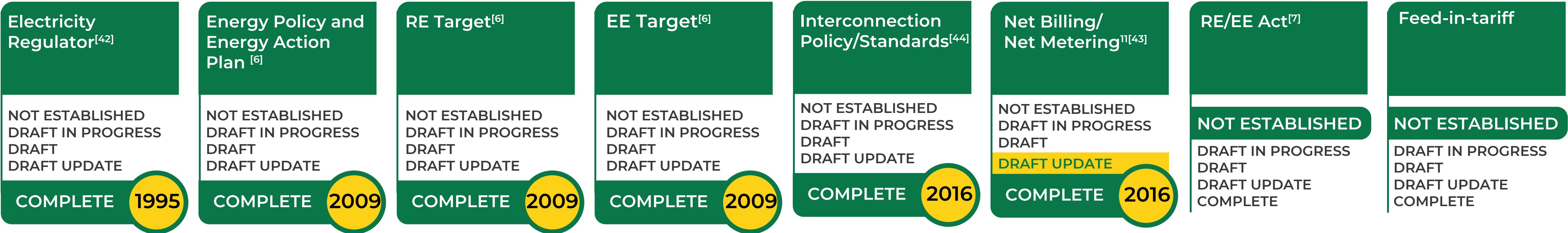
- JS178
- JS179
- JS1 Part 21

| | | |
|---|--|--|
|  | No. of Persons Employed in Energy Sector | Not Available |
|  | Total Installed Conventional Capacity (MW) | 915 ^[8] |
|  | Total Installed RE (MW) | 185 ^[8] |
|  | Electricity System Losses (%) | 28.40% |
|  | Energy Use (kWh) Per Capita | 1,833 |
|  | Fuel and Oil Imports as % of GDP | 10% ^[8] |
|  | Oil Imports as % of GDP | 4% ^[8] |
|  | Electric Vehicle Stock | 83 ^[12] |
|  | Climate Change Policy | Climate Change Policy Framework for Jamaica (2021) ^[13] |
|  | Total Oil Import (BOE) per day | 49,356.75 ² ^[10] |
|  | Total Oil Export (BOE) per day | 12,283.26 ³ ^[10] |
|  | Energy Intensity (BTU/\$) | 12,058 ⁴ ^[11] |
|  | National Repository for Energy Data | Energy Information System of Jamaica (sieJamaica) ⁵ ^[8] |

Performance Against Targets







11. Under review by Parliament in 2021 [90]

Policies and Legislation Relevant to the Energy Sector

KEY ACHIEVEMENTS

PLR Framework Timeline For Electricity Sector



| | |
|------|---|
| 1890 | The Electric Lighting Act ^[45] |
| 1977 | The Electric Lighting Act (Amended) |
| 1995 | Office of Utilities Regulator Act ^[42] |
| 2015 | Office of Utilities Regulation (Amendment) Act ^[46] |
| 2015 | The Electricity Act ^[47] |
| 2015 | Establishment of Government Electrical Regulator ^[41] |
| 2016 | Net Billing and Electric Power Wheeling Programme Implemented ^[48] |
| 2018 | Jamaica Integrated Resource Plan (Draft) ^[49] |
| 2020 | The Electricity (Electrical Work, Registration and Licensing) Regulations (2020) ^[8] |
| 2021 | Full Operation of Government Electrical Regulator ^[41] |



LEGISLATION

- Transport Authority Act 1987 (Last Amended 2015) ^[61]
- The Toll Roads Act 2013 (Last Amended 2002) ^[62]
- The Civil Aviation Act 1966 (Last Amended 2017) ^[63]
- Airports Authority Act 1974 (Last Amended 2002) ^[64]
- Jamaica Railway Corporation Act 1960 (Last Amended 1988) ^[65]
- Motor Vehicle Emissions Standard (Draft 2015) ^[66]

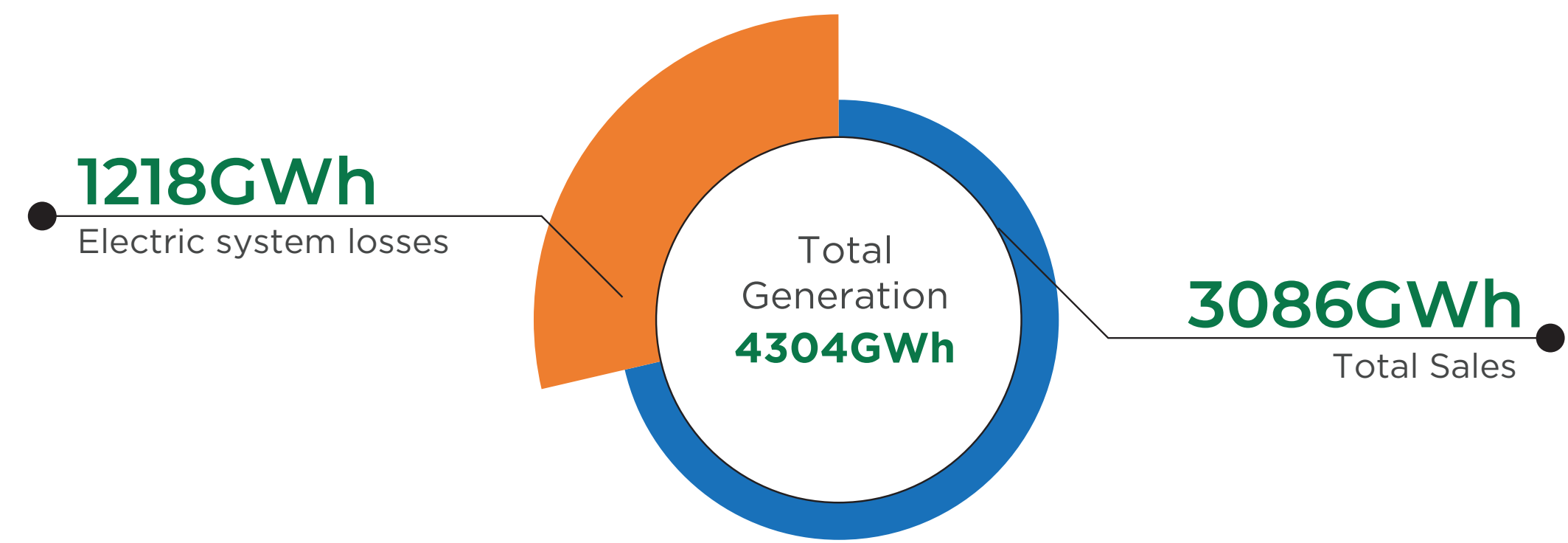
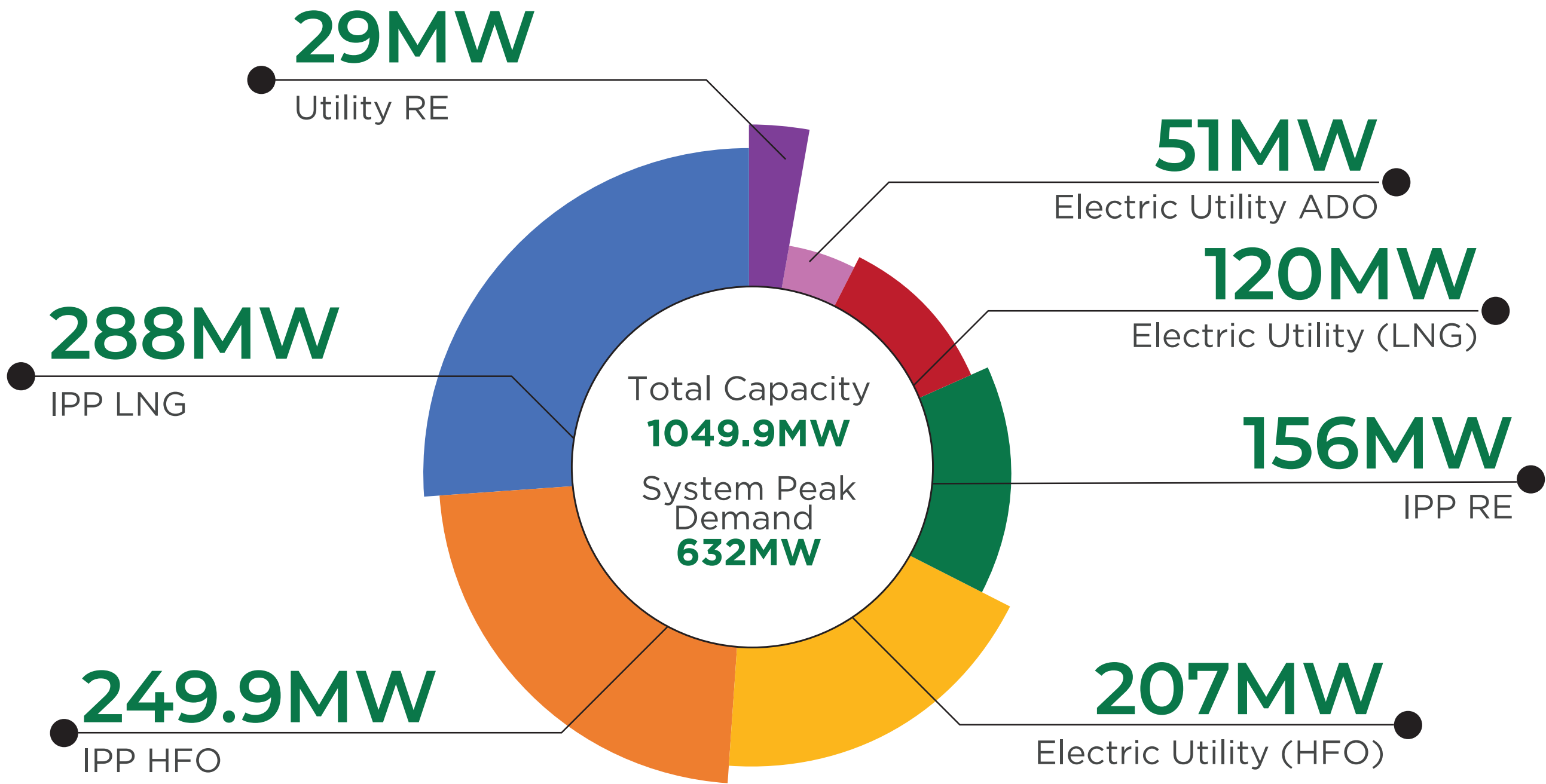


POLICIES

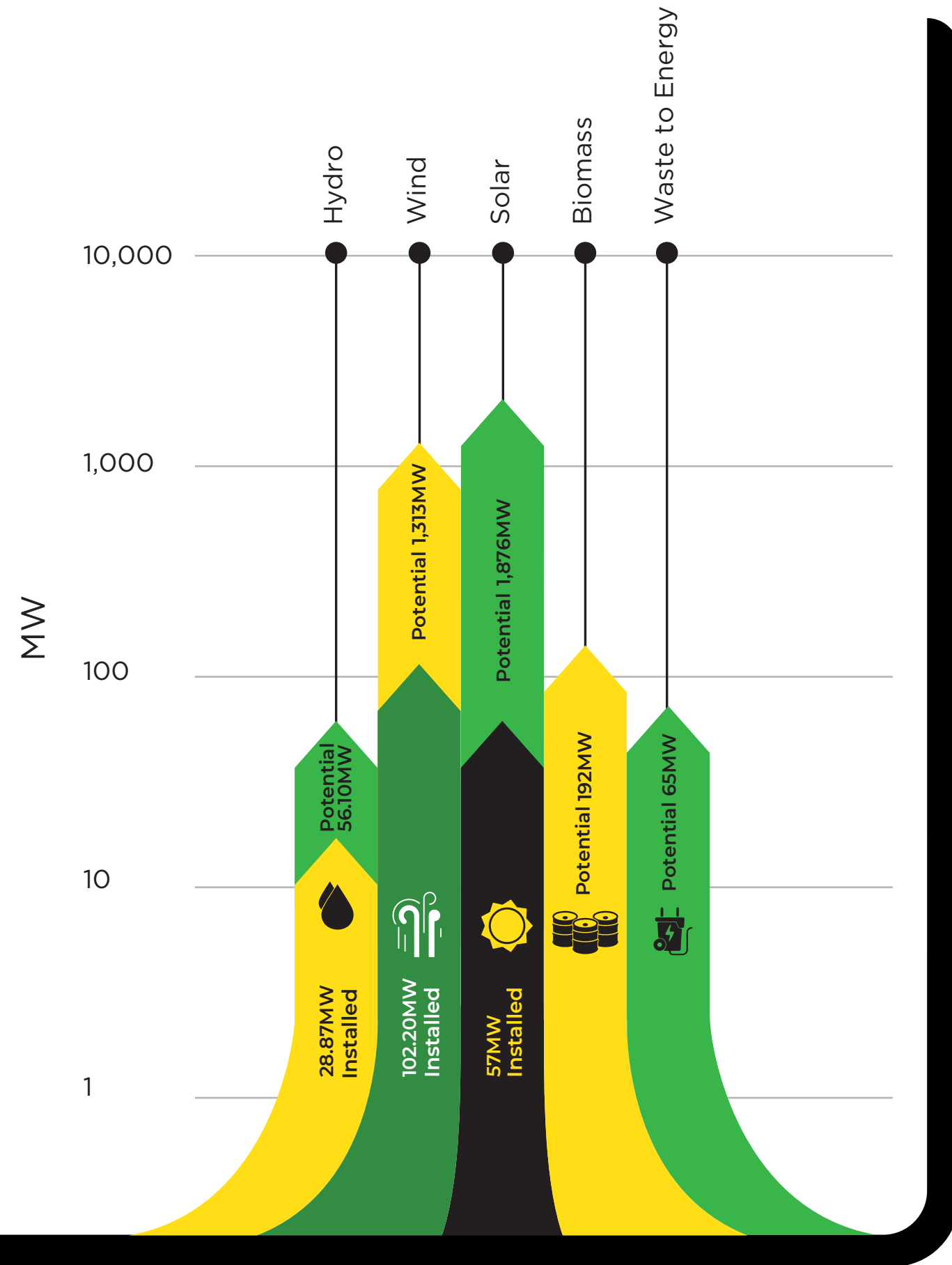
- National Transport Policy (Draft) ^[58]
- National Road Safety Policy ^[59]
- The Electric Mobility Framework ^[60]

Installed Capacity (MW)

Energy Consumption (GWh)



Renewable Energy Capacity (MW)



Electricity Tariffs^[67]

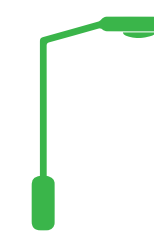
| RATE CATEGORY | USAGE | MONTHLY CHARGE (US\$) | ENERGY CHARGE (US\$/KWH) | | | | DEMAND CHARGE (US\$/KVA) | | | | |
|---|---------------|-----------------------|--------------------------|------|--------------|----------|--------------------------|-------|--------------|----------|--|
| | | | STD | PEAK | PARTIAL PEAK | OFF PEAK | STD | PEAK | PARTIAL PEAK | OFF PEAK | |
| RATE 10 - STD (RESIDENTIAL TARIFF) | 0-100 | 3.51 | 0.05 | | | | | | | | |
| | >100 | 3.51 | 0.14 | | | | | | | | |
| RATE 10 - PRE-PAID (RESIDENTIAL TARIFF) | 0-117 | | 0.09 | | | | | | | | |
| | > 117 | | 0.14 | | | | | | | | |
| RATE 10 - TOU (RESIDENTIAL TARIFF) | 0 - 300 kWh | 3.51 | | 0.37 | 0.07 | 0.06 | | | | | |
| | 300 - 500 kWh | 5.35 | | | | | | | | | |
| | 500 - 800 kWh | 13.52 | | | | | | | | | |
| | > 800kWh | 23.53 | | | | | | | | | |
| RATE 20 - STD (SMALL COMMERCIAL) | | 7.48 | 0.06 | | | | | | | | |
| RATE 20 - PRE-PAID (SMALL COMMERCIAL) | 0 - 10 | | 0.81 | | | | | | | | |
| | > 10 | | 0.06 | | | | | | | | |
| RATE 20 - TOU (SMALL COMMERCIAL) | | 9.67 | | 0.22 | 0.04 | 0.02 | | | | | |
| RATE 40 - STD (LARGE COMMERCIAL) | | 52.70 | 0.04 | | | | 18.05 | | | | |
| RATE 40 - TOU (LARGE COMMERCIAL) | | 52.70 | | 0.04 | 0.03 | 0.03 | | 10.07 | 7.43 | 2.16 | |
| RATE 50 - STD (SMALL INDUSTRIAL) | | 52.70 | 0.03 | | | | 12.51 | | | | |
| RATE 50 - TOU (SMALL INDUSTRIAL) | | 52.70 | | 0.03 | 0.03 | 0.03 | | 7.76 | 5.75 | 2.05 | |
| RATE 60 (STREET LIGHTS) | | 21.25 | 0.08 | | | | | | | | |
| RATE 60 (TRAFFIC SIGNAL) | | 21.25 | 0.08 | | | | | | | | |
| RATE 70 - STD (LARGE INDUSTRIAL) | | 52.70 | 0.03 | | | | 16.58 | | | | |
| RATE 70 - TOU (LARGE INDUSTRIAL) | | 52.70 | | 0.04 | 0.03 | 0.03 | | 8.80 | 5.74 | 2.06 | |
| ELECTRIC VEHICLES | | | | 0.39 | 0.08 | 0.06 | | | | | |

Technical Assistance Projects

| | Donor Funding and Technical Assistance Landscape | Donor Organization & Banks | | Funding Awards |
|------|--|--|---|--|
| 2022 | Project eDrive | International Development Bank Lab | JPS | |
| 2019 | Supporting Sustainable Transportation through the Shift to Electric Mobility in Jamaica [68] | Global Environment Facility / United Nations Development Programme | Global EV Programme; Ministry of Economic Growth & Job Creation; Ministry of Transport, Works & Mining | 1,784,862.00 |
| 2017 | Energy Management and Efficiency Program [69] | Inter-American Development Bank | Petroleum Corporation of Jamaica | 10,000,000.00 |
| | Energy Management and Efficiency Program [70] | Inter-American Development Bank | | 15,000,000.00 |
| 2016 | Implementation and Technical Support for the Energy Sector in Jamaica | Inter-American Development Bank | Government of Jamaica | 400,000.00 ¹² |
| 2022 | Modernizing Jamaica's Transport Sector to Improve Sustainability, Safety and Efficiency [71] | Inter-American Development Bank | Ministry of Transport and Mining | 200,000.00 |
| 2020 | Supporting the Recovery of the Energy Sector in Jamaica from the COVID-19 Pandemic [72] | Inter-American Development Bank | Ministry of Science, Energy and Technology (MSET) and Jamaica Public Service (JPS) | 200,000.00 |
| 2020 | Building a Sustainable Electric Mobility Ecosystem for Inclusion and Access [73] | Inter-American Development Bank | JPS Foundation | Total Funding: \$1,920,000 Country Counterpart Financing IDB Funding: \$995,000 |
| 2019 | Sustainable Transport and Renewable Energy-Powered Electromobility Support to Jamaica | Inter-American Development Bank | Ministry of Science, Energy and Technology [MSET] the Ministry of Transport and Mining [MTM] and the Ministry of Economic Growth and Job Creation [MEGJC] | Total Funding: \$565,000 Country Counterpart Financing: 65,000 IDB Funding: \$500,000 |
| 2018 | EcoMicro - COK Sodality Green Finance for Renewable Energy and Energy Efficiency for MSMEs and Low-Income Households | Inter-American Development Bank / Global Affairs Canada | COK Sodality Credit Union Co-operative Credit Union Ltd. (COK) | Total Funding: \$500,000 Country Counterpart Financing: 150,000 IDB Funding: \$350,000 |
| 2019 | Government of Jamaica (GOJ) Electric Vehicle (EV) Trial Programme | Inter-American Development Bank, Government of Japan | Flash-Motors Jamaica, Stewart's Automotive Group, Government of Jamaica | \$1.5 million |
| 2021 | Evergo Jamaica | InterEnergy | EVPower Jamaica Limited | |

Energy Efficiency Projects

ENERGY EFFICIENCY PROJECTS



STREET LIGHTING^[77]



PUBLIC BUILDINGS^[78]




PUBLIC BUILDINGS^[79]



TRAFFIC SIGNALS^[80]

| | | | | |
|--|--|--|---|---|
| Old/Existing Infrastructure | 105,000 legacy high pressure sodium streetlight | | | 161 Traffic Signals |
| Consumption (KW) | N/A | | | |
| Annual Costs (USD) | | Five-year USD 1.2 Million project | \$629 million over the time of 2017 - 2023 | US\$3.4 million |
| Energy Audits | No | No | No | No |
| Energy Efficiency Legislation or Regulations | No | No | No | |
| Energy Service Companies | Yes | No | No | |
| Change in Old/Existing Infrastructure Expected in Upcoming Calendar Year | Expected to complete all the streetlights by the end of 2023 | Completed 2021 | Continuation of energy retrofitting of the Falmouth, Mandeville, Kingston Public and Victoria Jubilee Hospitals; commencement of energy retrofitting at seven hospitals island wide; conducting a lighting audit of 50 public buildings; and recommending facilities for upgrade. | Automation of 161 Traffic Signals in Kingston Metropolitan Area and Upgrade of National Works Agency's Central Traffic Control Centre |
| Expected Change in Technology | June 2022, hit 100% of target of changing 105000 streetlights to smart LED lights | Grid-tied solar PV systems and LED lighting solutions have been commissioned at May Pen Hospital; National Chest Hospital; and Sir John Golding Rehabilitation Centre, while LED lightbulbs have been installed at Savanna La Mar Hospital, Black River Hospital and Bellevue Hospital | | The UTMS includes a centrally controlled Intelligent Transportation System, detectors, an integration platform for traffic monitoring, operation, planning and modelling, traffic controllers, training and coaching of NWA, and other data detection equipment to provide real-time traffic counts and patterns. |
| Relative Difference in Operating Consumption/Costs | The LED lights are more energy efficient, have a longer service life and added intelligent capabilities. | Jamaica's public health energy consumption bill is expected to decline 22% annually | | Reduce Travel Times and Fuel Consumption by 30%. The new system will lower fuel imports by 618,608 barrels of oil, leading to savings for motorists and the country. |

Renewable Energy Projects



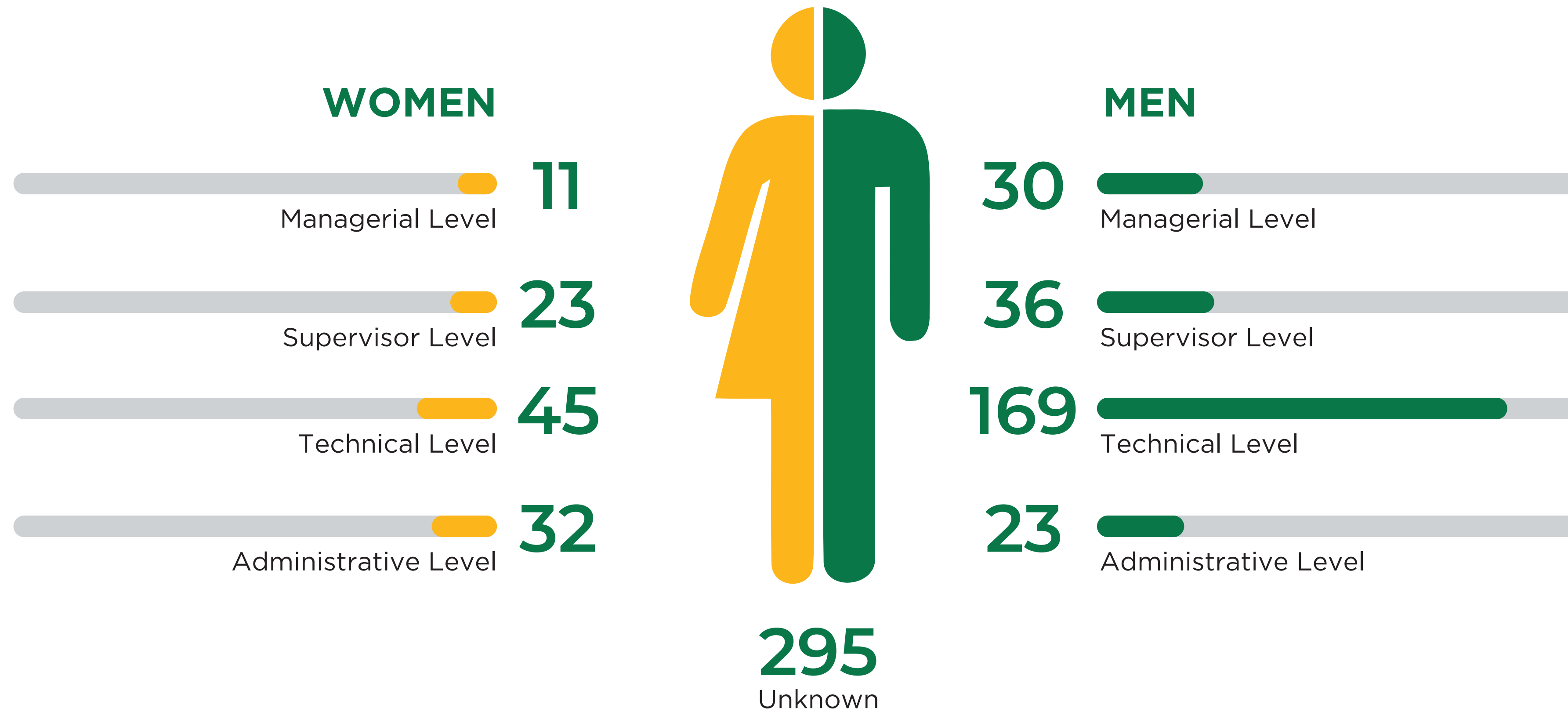
RENEWABLE ENERGY PROJECTS
There were no Renewable Energy Projects reported in 2021

Tertiary Programmes Offered

| Name of Education Programme Provider | Vocational Certificate | Associate Degree | Bachelors | Post Graduate Certificate | Masters | MPhil/PhD | Professional Certification |
|---|--------------------------------------|-----------------------------|--|--|---|---------------------------------|---|
| University of the West Indies, Mona Campus | | | Electrical Power Engineering ¹³ | | | | |
| | | | Energy and Environmental Physics ¹⁴ | | | | |
| | | | Renewable Energy Management ¹⁵ | | | | |
| | | | | | Renewable Energy Management ¹⁶ | | |
| | | | | | Renewable Energy Technology | | |
| University of Technology Jamaica | | | Agricultural Engineering ¹⁷ | | | | |
| | | | | | Engineering ¹⁸ | | |
| | | | | | Sustainable Energy and Climate Change | | |
| | | | | | | Built Environment ¹⁹ | |
| | | | | Wind Turbine Operation & Maintenance Introduction to Energy Efficiency Audits | | | |
| Excelsior Community College | | Renewable Energy | | | | | |
| Vector Technology Institute | Solar Photovoltaic Installer Level 1 | | | | | | |
| HEART NTA / National Tool and Engineering Institute | Renewable Energy Level 1 - 4 | | | | | | |
| Jamaica Society of Energy Engineers | | | | | | | AEE Certified Energy Management Certification |
| University of the Commonwealth Caribbean | | | Sustainable Energy | | | | |
| | | Renewable Energy Technology | | | | | |
| Wigton Renewable Energy Training Lab ²⁰ | | | | | | | Solar Thermal |
| | | | | | | | Photovoltaics |
| | | | | | | | Wind Power |
| | | | | | | | Fuel Cells |
| | | | | | | | Concentrated Solar Power |
| | | | | | | | Energy Consumption and Measurement |
| | | | | | | | Small Hydro |
| | | | | | | | Bioenergy |

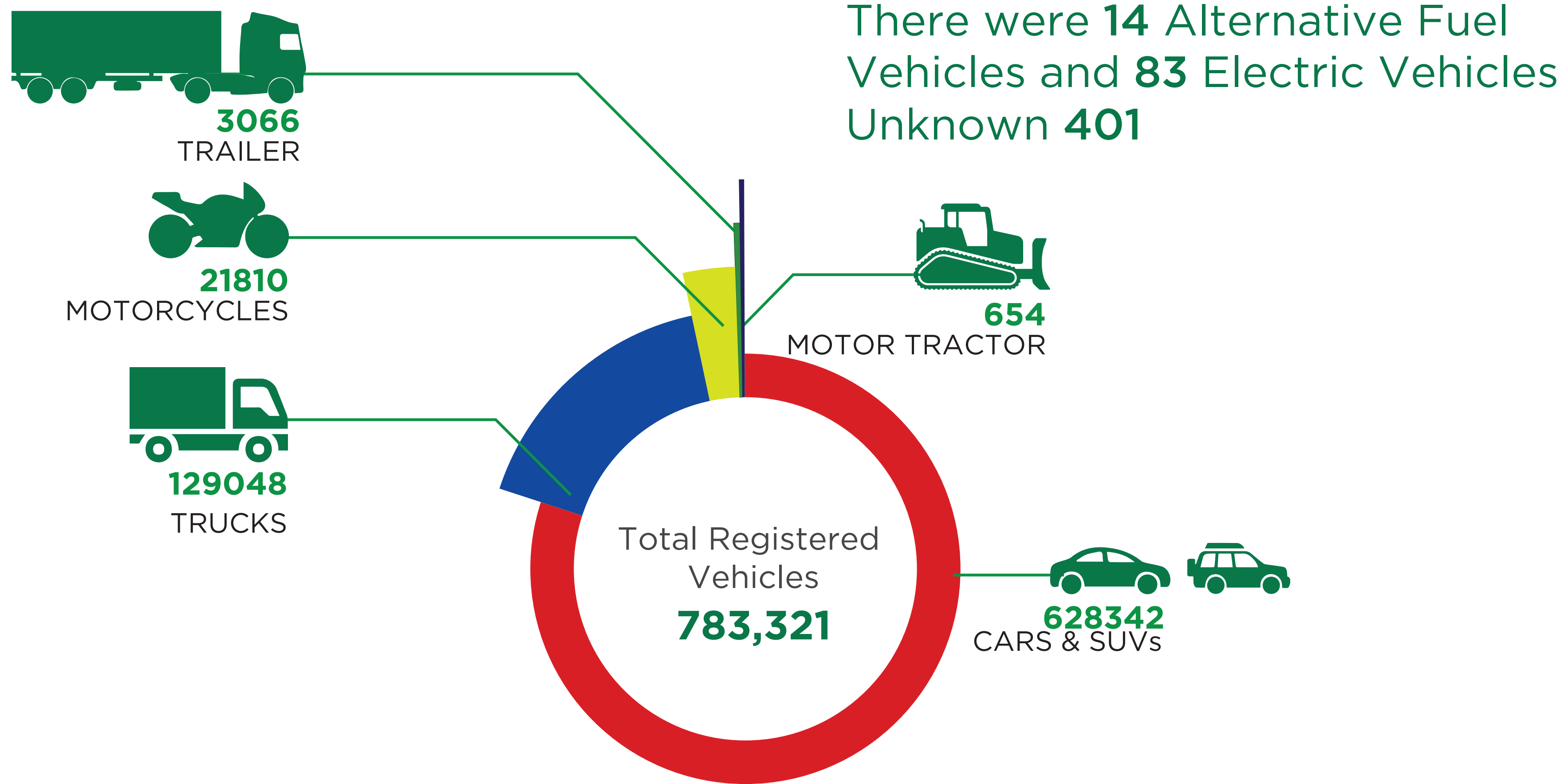
13. Includes courses on Renewable Energy Systems and Integration of Renewable Energy Systems
 14. Offered as a major and minor.
 15. This is offered as a minor.
 16. No new cohorts accepted since 2020
 17. Includes an option that focuses on Water, Waste, Energy, and the Environment
 18. Includes specialisation in Renewable Energy Engineering
 19. Includes Environmental Sustainability and Climate Change as an area of specialisation.
 20. Training Courses are certified by City & Guilds

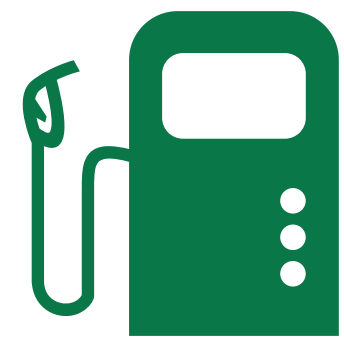
Persons Employed in the Energy Sector



21. Workforce data was not aggregated by gender for all of the entities provided.
22. [76] [81] [82] [83] [84]
23. The workforce from Fresco Gas Stations was not disaggregated.

Registered Vehicles





The total amount of fuel used for Road and Transportation, Shipping and Aviation was 10,742,030 BOE. The data did not present the fuel types(s).

Climate Change Policy

Climate Change Policy Framework for Jamaica^[13]

National Determined Contributions/ Emissions Reduction Target^[14]

25.4% reduction relative to business-as-usual emissions in 2030 without international support (unconditional)

28.5% reduction relative to business-as-usual emissions in 2030 conditional upon international support

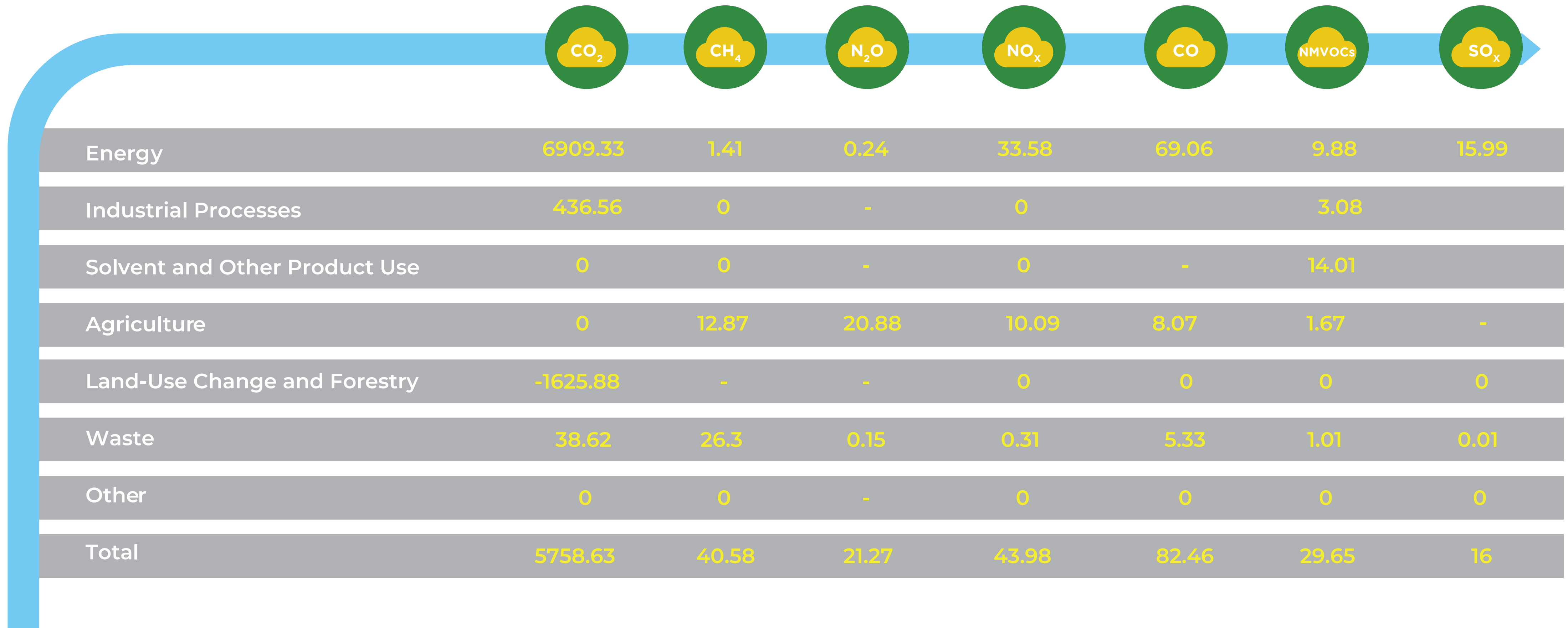
Priority Sectors for NDC

Land-use and forestry
- Agriculture^[14]
Waste to energy

National Communications (NC) to the UNFCCC

Jamaica National Communication to the United Nations Framework Convention on Climate Change (2000)^[86]
The Second National Communication of Jamaica to the United Nations Framework Convention on Climate Change (2011)^[87]
Third National Communication of Jamaica to the United Nations Framework Convention on Climate Change (2018)^[88]

Summary of Jamaica GHG Emissions and Removals (Gg) for 2012



- [1] Planning Institute of Jamaica, “Economic and Social Survey Jamaica 2021: Selected Indicators & Overview,” Planning Institute of Jamaica, Kingston, Jamaica, 2022.
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- [15] A. Ochs , M. Konold, K. Auth, E. Musolino and P. Killeen, “Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) Baseline Report and Assessment,” Worldwatch Intitue, Washington, D.C., 2015.
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