

GUYANA

ENERGY REPORT CARD (ERC) FOR 2021



INTRODUCTION

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

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



Green State Development Strategy: Vision 2040 (2019)^[5]

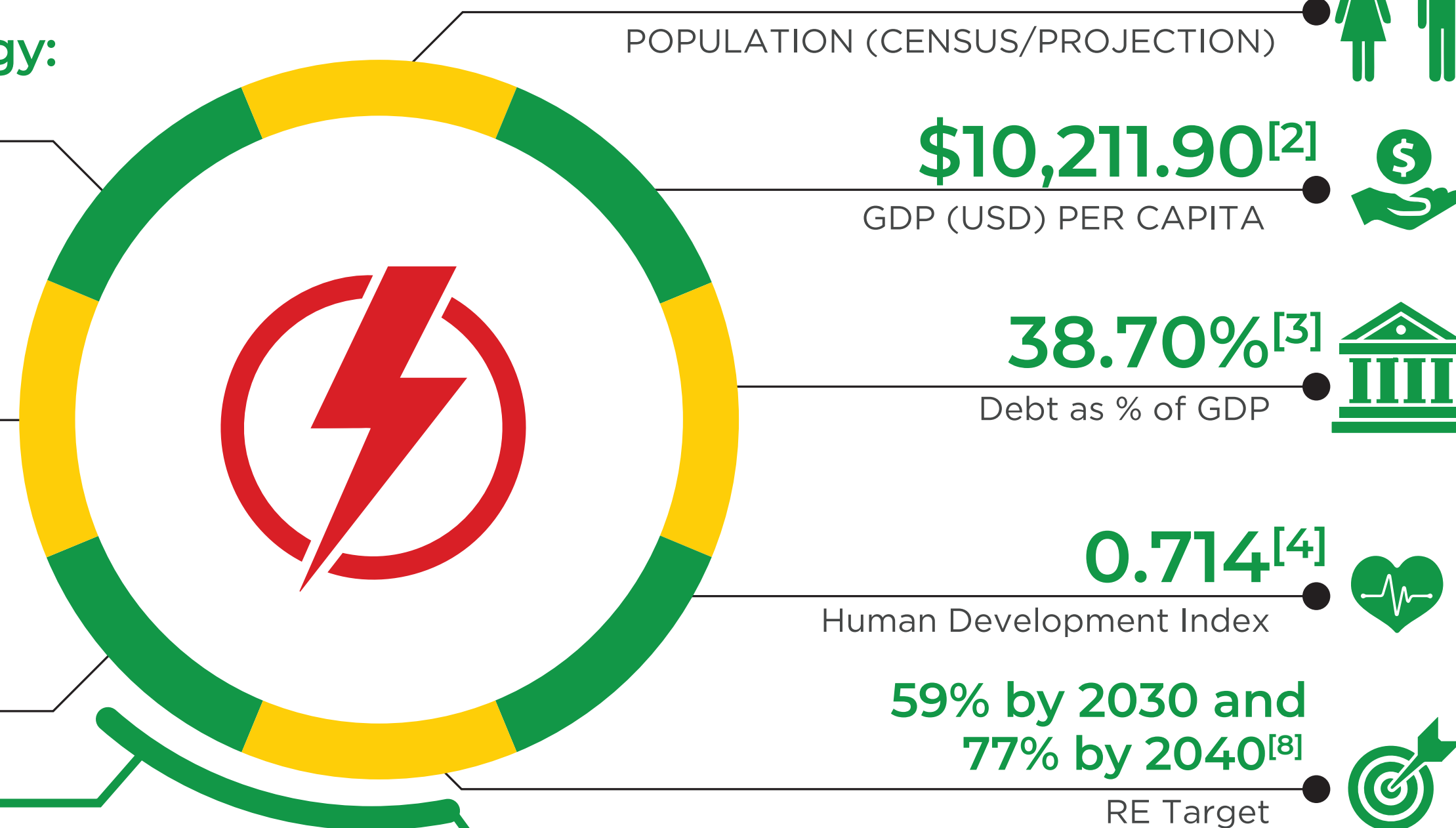
National Development Plan/
Overall Country Development Strategy

National Energy Policy (1994)^[6]
Draft National Energy Policy of
Guyana - Report 2 - Green Paper
(Revision of 1994 National Energy Policy)^[7]

National Energy Policy

None²

Renewable Energy (RE) Policy



National Determined Contributions (NDC)

11% annually compared to historic levels from the timber industry.
*(Note that Guyana is a net carbon sink)^[15]



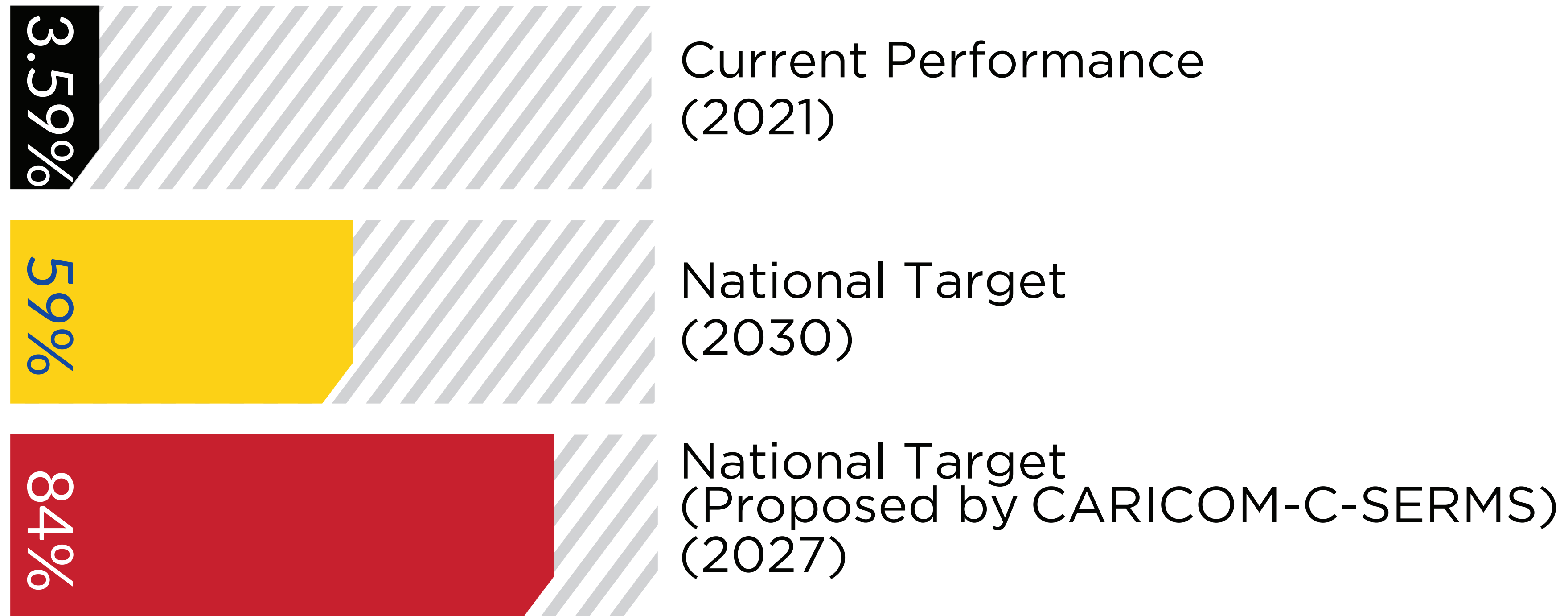
ENERGY PERFORMANCE STANDARDS/ APPLIANCE LABELLING

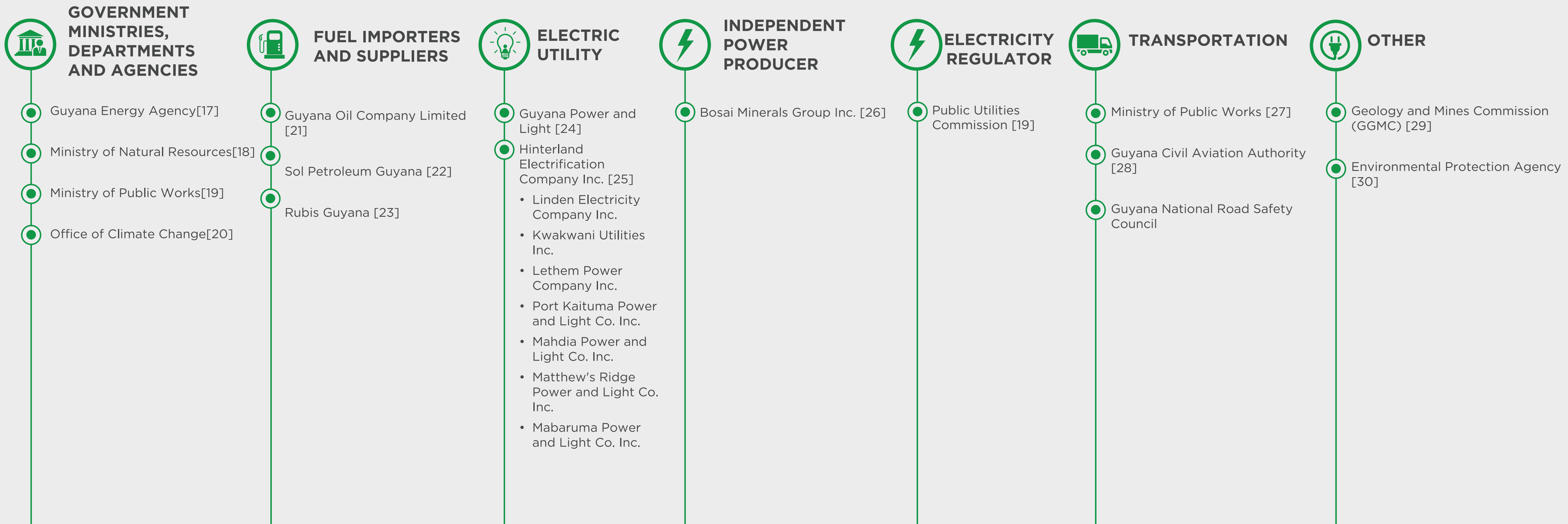
- CFLs and LEDs (GYS 577 – 2021)
- Air Conditioners (GYS 578 – 2021)^[9]

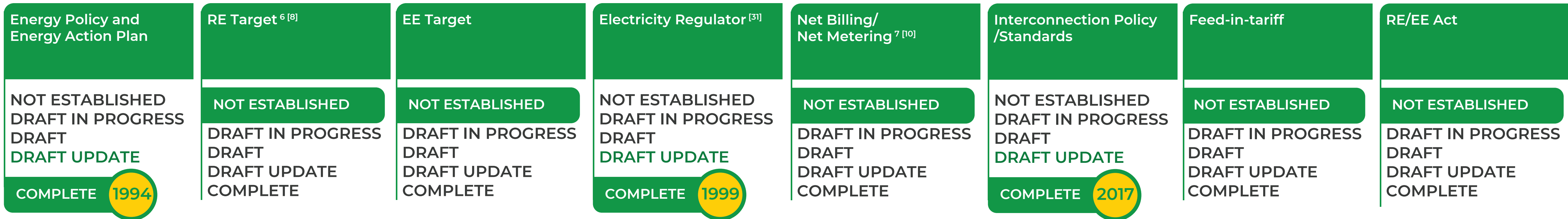
	No. of Persons Employed in Energy Sector	1533 ³
	Total Installed Conventional Capacity (MW)	200.16 ^[10]
	Total Installed RE	6.97MWac
	Electricity System Losses (%) ⁴	31.67% ^[11]
	Energy Use (kWh) Per Capita	1,225 ^[11]
	Fuel and Oil Imports as % of GDP	18.90 ^[12]
	Oil Imports as % of GDP	Not Available
	Electric Vehicle Stock	116 ^[13]
	Climate Change Policy	Draft National Climate Change Policy and Action Plan 2020-2030 ^{5[14]}
	Total Oil Import (BOE) per day	20,303 ^[10]
	Total Oil Export (BOE) per day	11,562 ^[10]
	Energy Intensity (BTU/\$)	Not Available
	National Repository for Energy Data	Guyana National Energy Information System ^[10]

1. In 2022 the Green State Development Strategy: Vision 2040 was replaced with the Guyana's Low Carbon Development Strategy 2030 (2022) [8]
2. The Low Carbon Development Strategy 2030 (2022) is the guiding document towards renewable energy.
3. [10] [11]
4. Losses for Guyana Power and Light, Bosai, Ituni and Lethem.
5. The Low Carbon Development Strategy 2030 (2022) is the guiding document towards climate change replacing the Draft National Climate Change Policy and Action Plan 2020-2030

Performance Against Targets







Policies and Legislation Relevant to the Energy Sector

KEY ACHIEVEMENTS

PLR Framework Timeline For Electricity Sector



1988

Hydroelectric Power Act and Regulations Chapter 56:03 (Amended 2013) [32]

1999

Electricity Sector Reform Act Chapter 57:01 [33]

2010

Public Utilities Commission Act Chapter 57:01 (Amended 2016)⁹ [34]

2002

Energy Sector (Harmonisation of Laws) Act Chapter 57:02¹⁰ [35]

2016

Guyana Power Generation Expansion Study

2018

Updated Guyana Power Expansion Study [37]

2019

Electricity (Exemption from the Requirement for a Licence) Order 2019 [38]

2022

Low Carbon Development Strategy (LCDS) 2030 [8]

2022

IRRP



LEGISLATION & REGULATION

Civil Aviation Act Chapter 53:01, 2018 [42]

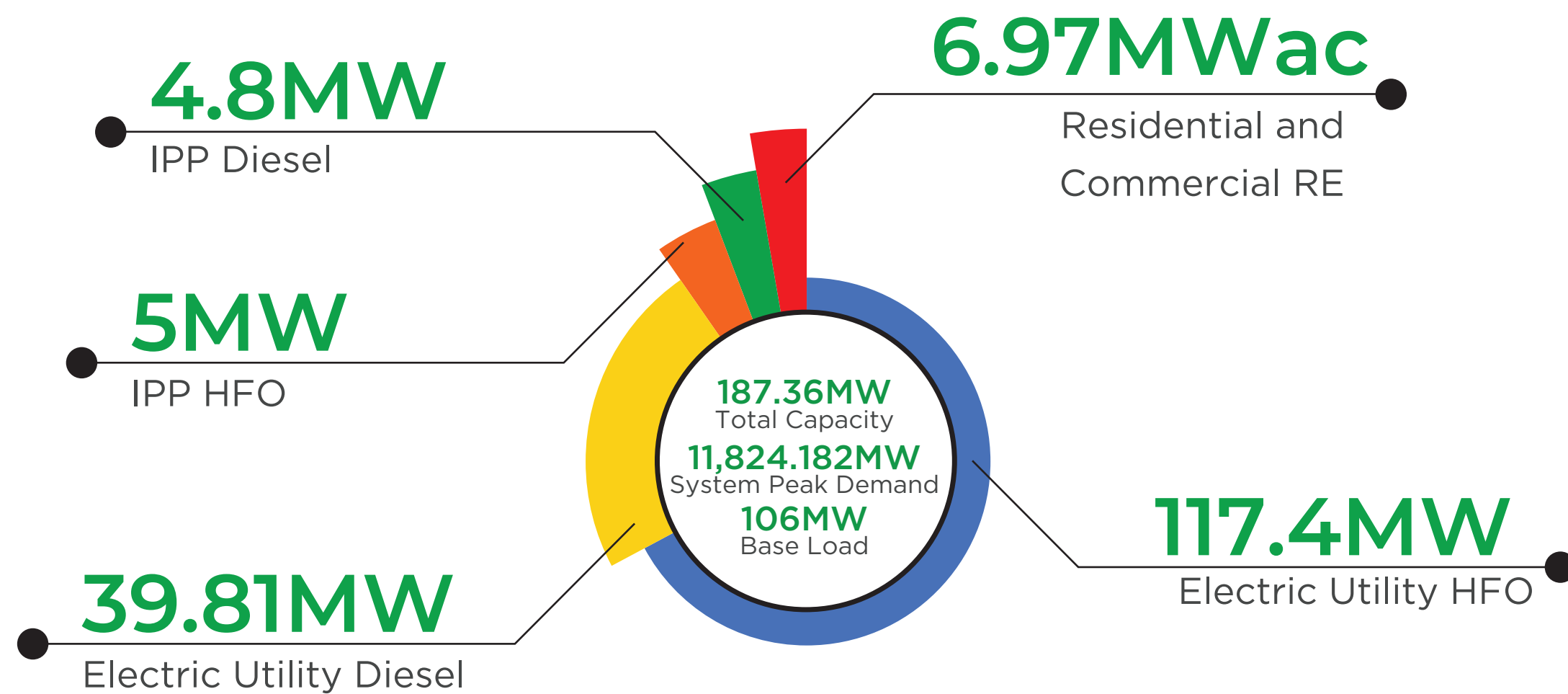
Guyana Shipping Act Chapter 49:01 1998 [43]

Petroleum and Petroleum Products Regulation 2014

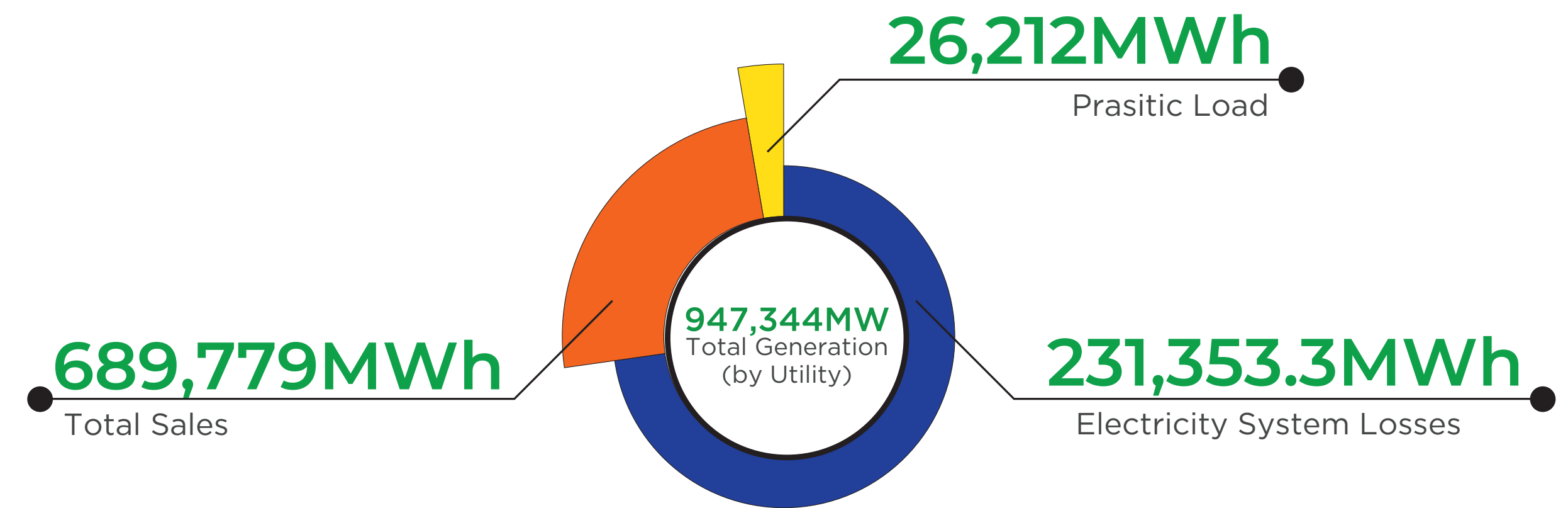
Customs Act Amended 2019 [45]

Value Added Tax Act Amended 2019 [46]

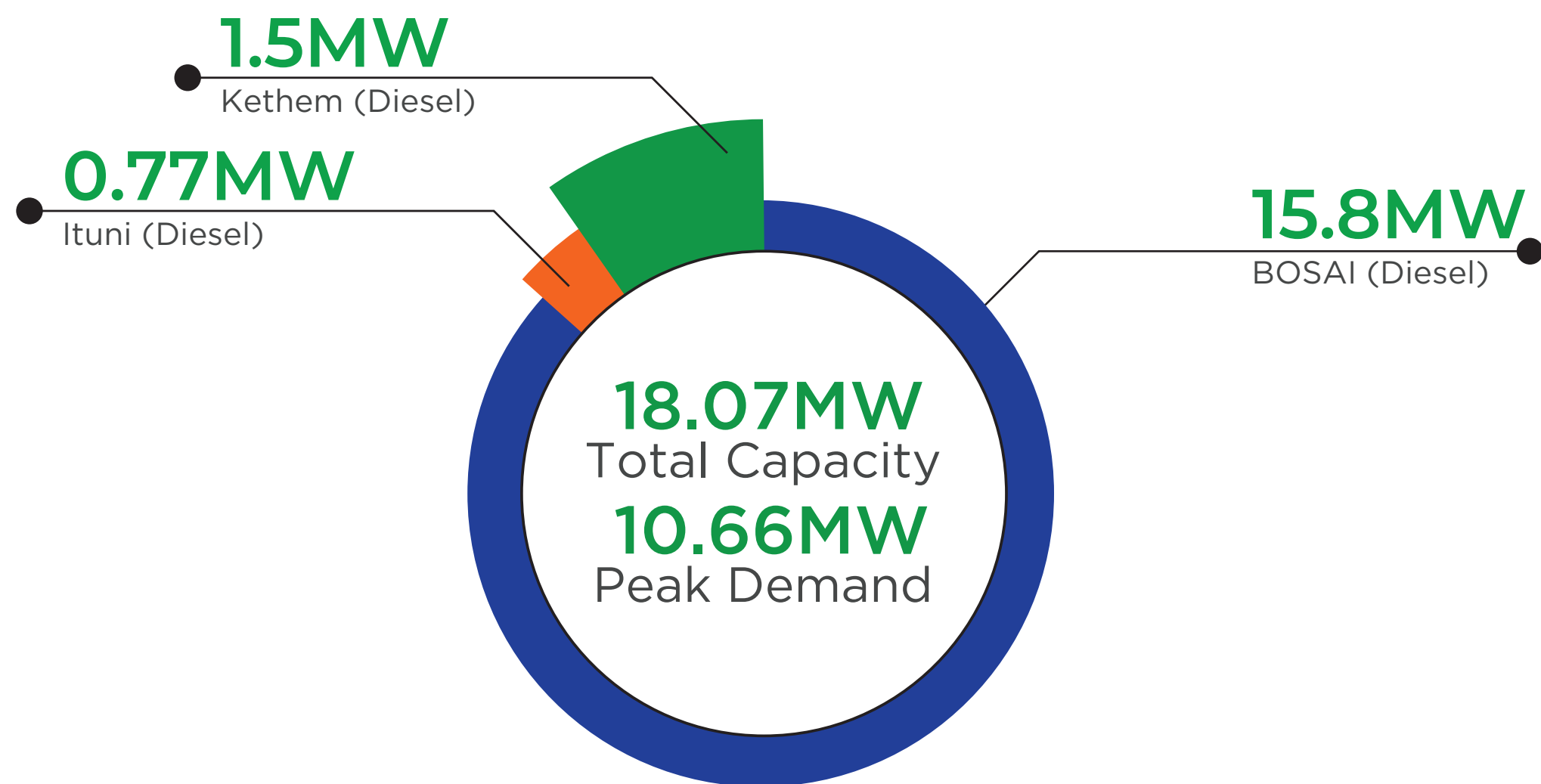
Guyana Power and Light Installed Capacity (MW)



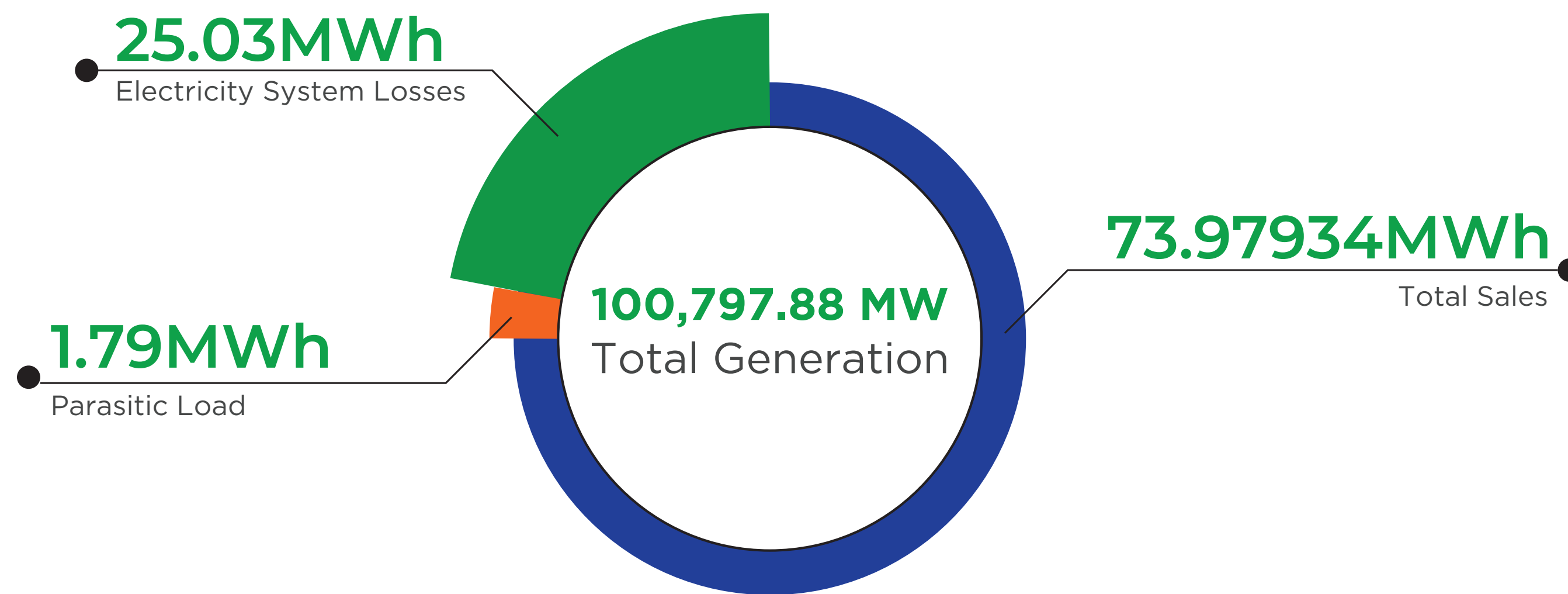
Guyana Power and Light Energy Consumption (MWh)



Hinterland Electrification Company Inc. Installed Capacity (MW)

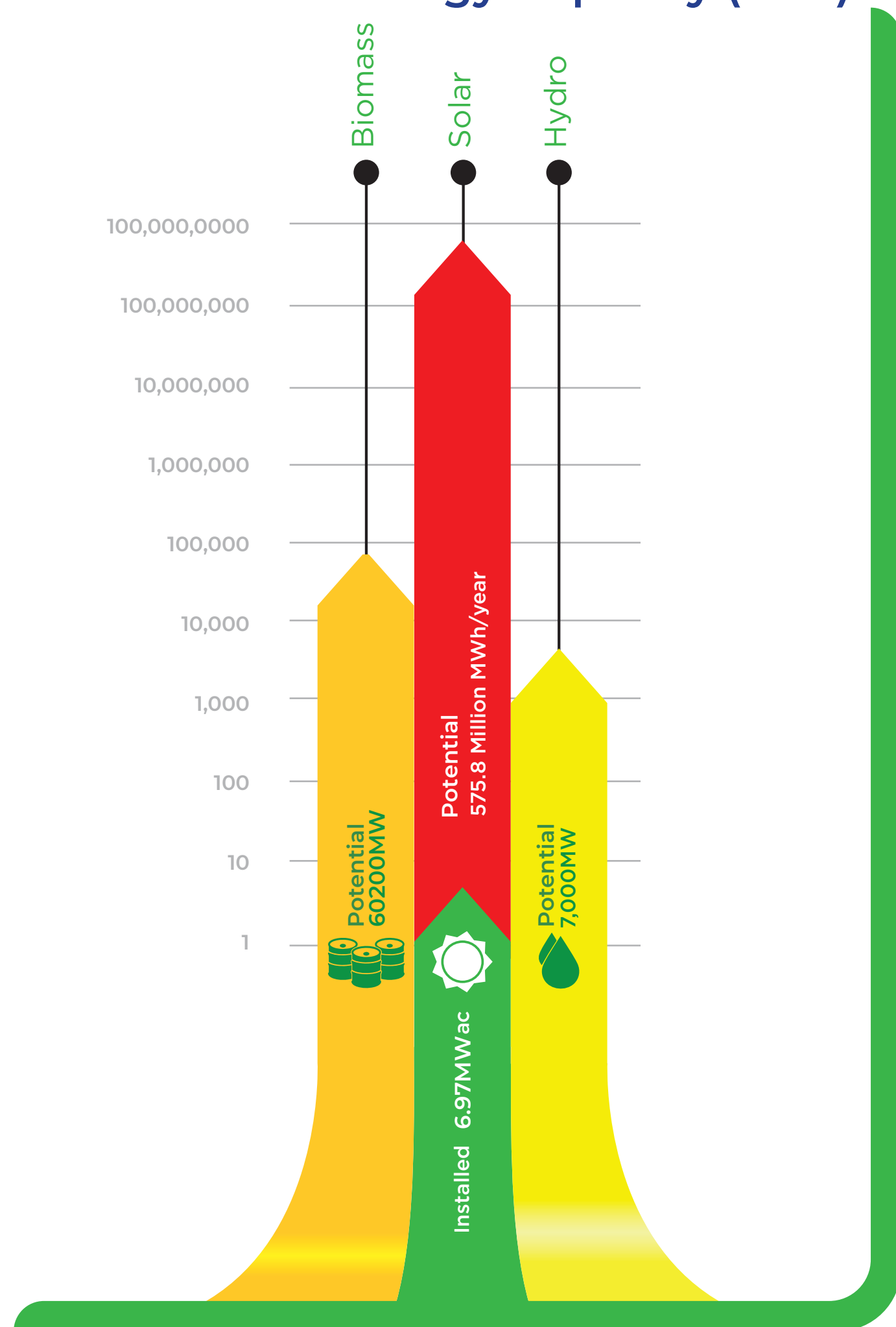


Hinterland Electrification Company Inc. Energy Consumption (MWh)



11. Bosai is an independent power producer.
 12. The Hinterland Electrification Company Inc. data includes BOSAI, Linden Electricity Company Inc., Kwakwani Utilities Inc., Lethem Power Company Inc., Port Kaituma Power and Light Co. Inc., Mahdia Power and Light Co. Inc., Matthew's Ridge Power and Light Co. Inc., Mabaruma Power and Light Co. Inc. and Ituni
 13. No data was provided for Kwakwani Utilities Inc. and Mahdia Power and Light Co. Inc.
 14. The Hinterland Electrification Company Inc. generated 11.95 GWh of electricity during 2021 and the Bosai generated 93.70 GWh with an installed capacity of 15.80 MW. The Hinterland Electrification Company Inc. excluding for Kwakwani Utilities Inc. and Mahdia Power and Light Co. Inc. and Matthew's Ridge Power and Light Co. Inc. had an installed capacity of 4.56 MW.

Renewable Energy Capacity (MW)



Electricity Tariffs: Guyana Power and Light Company [47]

Non-Government

CATEGORY	FIXED RATE/ DEMAND CHARGE (USD)	ENERGY RATE (USD)	
RESIDENTIAL: LIFELINE	A <75 kWh	1.64	0.18
RESIDENTIAL	A >75 kWh	1.68	0.20
COMMERCIAL	B	11.85	0.27
INDUSTRIAL	C	8.45	0.24
	D	8.45	0.23
STREETLIGHTS	E	-	0.20

Government


CATEGORY	FIXED RATE/ DEMAND CHARGE (USD)	ENERGY RATE (USD)	
RESIDENTIAL: LIFELINE	GA <75 kWh	1.85	0.22
RESIDENTIAL	GA >75 kWh	1.85	0.23
COMMERCIAL	GB	12.37	0.28
INDUSTRIAL	GC	8.83	0.28
	GD	8.83	0.24
STREETLIGHTS	GE	-	0.21

10. A monthly fuel surcharge rate is applied to the final monthly bill for all rate classes and 16% VAT on all units consumed over 150 kWh for domestic customers while 16% VAT on all units for all other rate classes.
11. Rate per month
12. Rate per month

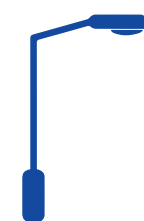
Electricity Tariffs: Hinterland Electrification Company Inc ^[10]

COMPANY	CONSUMPTION (KWh)	TARIFF (US\$/KWh)
LETHEM POWER CO. INC.	≤15	0
	16 to 50kWh	0.28
	≥51	0.38
MAHDIA POWER & LIGHT INC.	≤15	0
	>15	0.47
PORT KAITUMA POWER & LIGHT INC.	≤15	0
	>15	0.47
LINDEN ELECTRICITY CO. INC.	Residential	0.02
	Commercial	0.05
	Pensioners ≤300	0
KWAKWANI UTILITIES INC.	Electricity supply is free, except for four customers	0
	Western Union, Digicel, GT&T, & Rusal	0.28
MATTHEW'S RIDGE POWER & LIGHT INC.	≤15	0
	>15	0.47

Technical Assistance Projects

	 Donor Funding and Technical Assistance Landscape	 Donor Organization & Banks	 Technical Assistance Provider	 Funding Awards (USD)
2021 - 2023	33MWp of Solar PV with Battery Energy Storage Systems in Region 2, 5, 6 & 10 under the Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)	Guyana - Norway Partnership The Guyana REDD+ Investment Fund (GRIF)		
2021 - 2022	750 kWp Wakenaam Solar PV + 1151 kWh Battery Energy Storage System Project	United Arab Emirates The Caribbean Renewable Energy Fund (CREF)	MASDAR Renewable Energy Company	
2021	Renewable Energy Actions in the Energy Matrix in Guyana	Inter-American Development Bank		\$1,500,000.00
2019	Strengthening the Technical Functions of the Department of Energy	Inter-American Development Bank		\$606,062.00
2018	Strategic Communications & Knowledge Sharing Support for Guyana's Oil & Gas Sector	Inter-American Development Bank		\$582,682.00
2018	Strengthening the Capacity of the Department of Energy	Inter-American Development Bank		\$1,000,000.00
2018	Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE)	Inter-American Development Bank		\$21,160,000.00
2018	EcoMicro - IPED Green Finance for Renewable Energy and Energy Efficiency for MSMEs	Inter-American Development Bank		\$350,000.00
2014	Power Utility Upgrade Program	Inter-American Development Bank		\$37,641,750.00
2014	Power Utility Upgrade Program	Inter-American Development Bank		\$26,931,250.00
2013	Sustainable Energy Program for Guyana	Inter-American Development Bank		\$5,000,000.00

Energy Efficiency Projects



STREET LIGHTING

ENERGY EFFICIENCY

Old/Existing Infrastructure (Number/Size)

Consumption (kW) Ask if estimated or measured

Annual Costs (USD)

Energy Audits (Yes/No)

Energy Efficiency Legislation or Regulations

Energy Service Companies (Yes/No)

Change in Old/Existing Infrastructure Expected in Upcoming Calendar Year (Number/Size)

Expected Change in Technology

Relative Difference in Operating Consumption/Costs

Annual Costs (USD)	0.15 million
Change in Old/Existing Infrastructure Expected in Upcoming Calendar Year (Number/Size)	
Expected Change in Technology	34,450 LED

Renewable Energy Projects



SOLAR PHOTO-VOLTAIC^[48]

OWNERSHIP

Public

CAPACITY

Three (3) solar photovoltaic (PV) systems (9.48 kWp), twelve (12) deep cycle batteries and eighteen (18) solar PV panels for Sustainable energy interventions at community/public buildings in the Hinterland

DEVELOPMENT PARTNER

United Nations Development Programme (UNDP)

COST (\$GY)

\$8,200,000

FUNDING SOURCE

United Nations Development Programme (UNDP)

UNIVERSITY OF GUYANA

Environmental Science¹⁸
No. of Persons Enrolled **46**
No. of Persons Graduated **3**

UNIVERSITY OF GUYANA

Environmental Studies¹⁹
No. of Persons Enrolled **115**
No. of Persons Graduated **24**

UNIVERSITY OF GUYANA

Electrical Engineering²⁰
No. of Persons Enrolled **25**
No. of Persons Graduated **21**

UNIVERSITY OF GUYANA

Mechanical Engineering²¹
No. of Persons Enrolled **57**
No. of Persons Graduated **12**

UNIVERSITY OF GUYANA

Petroleum Engineering²²
No. of Persons Enrolled **None**
No. of Persons Graduated **None**

UNIVERSITY OF GUYANA

Chemistry
No. of Persons Enrolled **95**
No. of Persons Graduated **20**

UNIVERSITY OF GUYANA

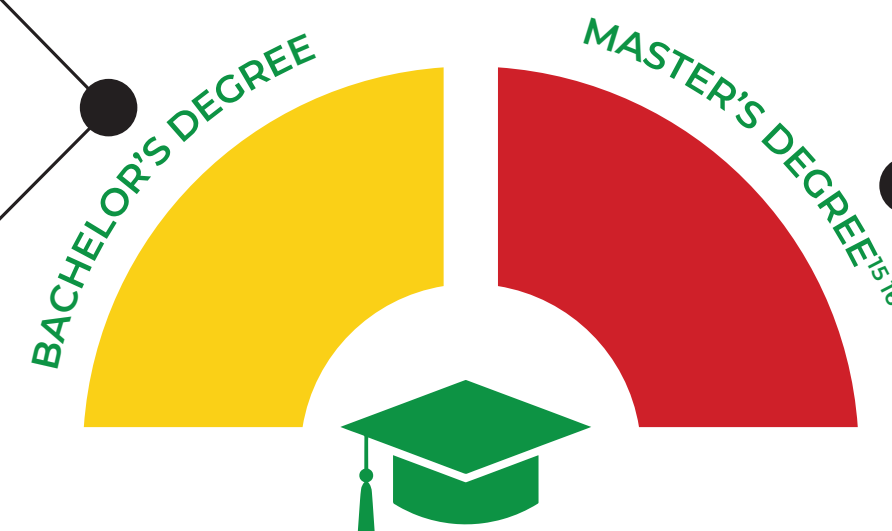
Environmental Management²³
No. of Persons Enrolled **5**
No. of Persons Graduated **0**

UNIVERSITY OF GUYANA

Natural Resources Management
No. of Persons Enrolled **7**
No. of Persons Graduated **0**

UNIVERSITY OF GUYANA

Oil and Gas and Renewable Energy²⁴
No. of Persons Enrolled **11**
No. of Persons Graduated **0**



15. The programmes listed under Masters are offered as either a Master of Science programme, which requires a research project or a Master's programme, which does not require a research project.
16. The Masters programmes began in 2021.
17. The Environmental Management and Technology course from the Institute of Distance and Continuing Education is no longer being offered.
18. Includes an elective in Energy and the Environment.
19. Includes an elective in Energy and the Environment.
20. Includes an elective in Renewable Energy Technologies
21. Includes an elective in Alternative Energy Management
22. Includes electives in Renewable Energy Systems, Project and Environmental Management for Energy Systems, Fundamentals of Renewable Systems Engineering.
23. Includes an elective in Sustainable Energy and Development
24. Includes electives in Sustainable Energy and Development, Energy Economics, Renewable Energy Simulation

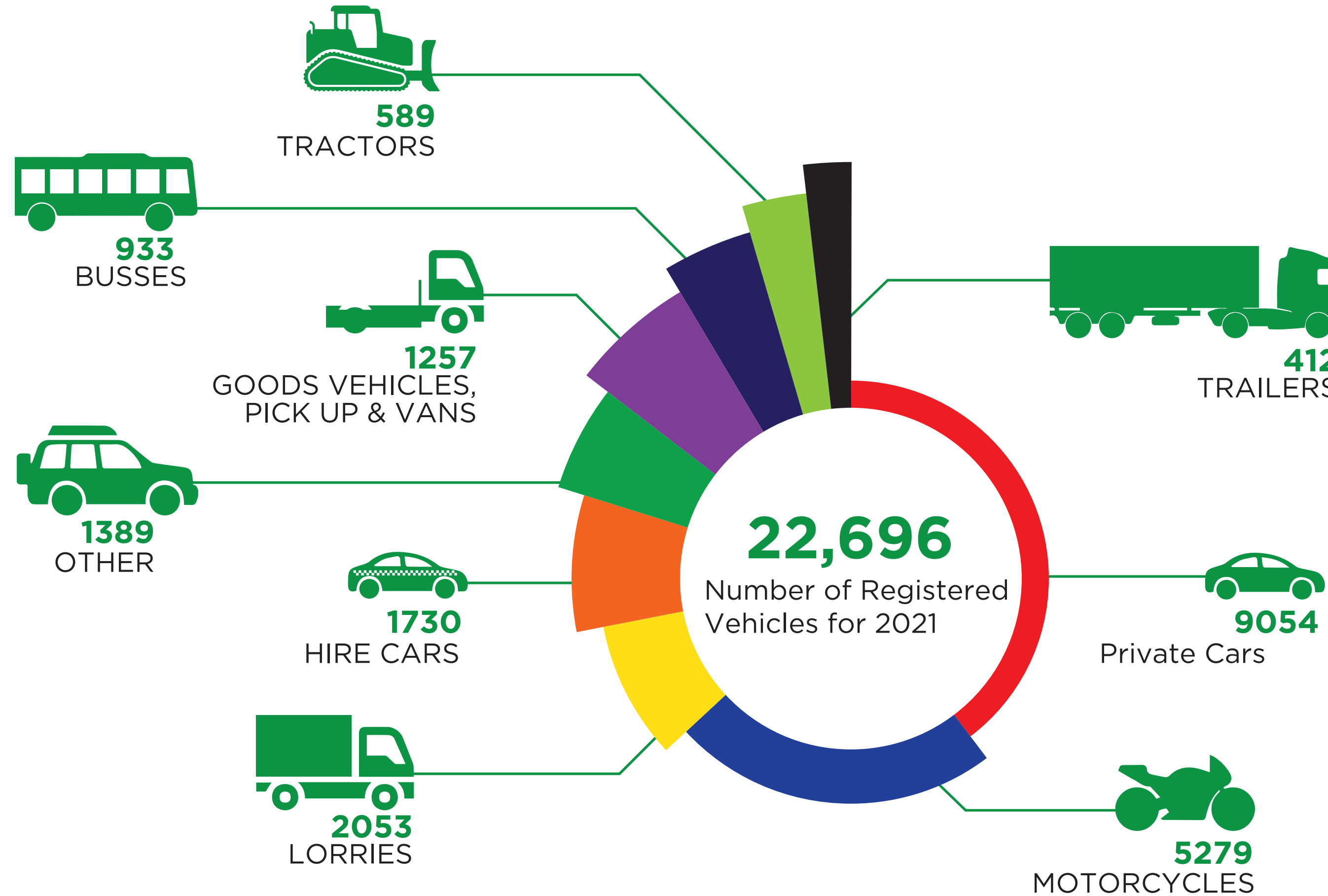
Persons Employed in the Energy Sector



WORKFORCE

There were 1,533 persons reported for the energy sector, however, for the most part they were not disaggregated by gender.

Registered Vehicles



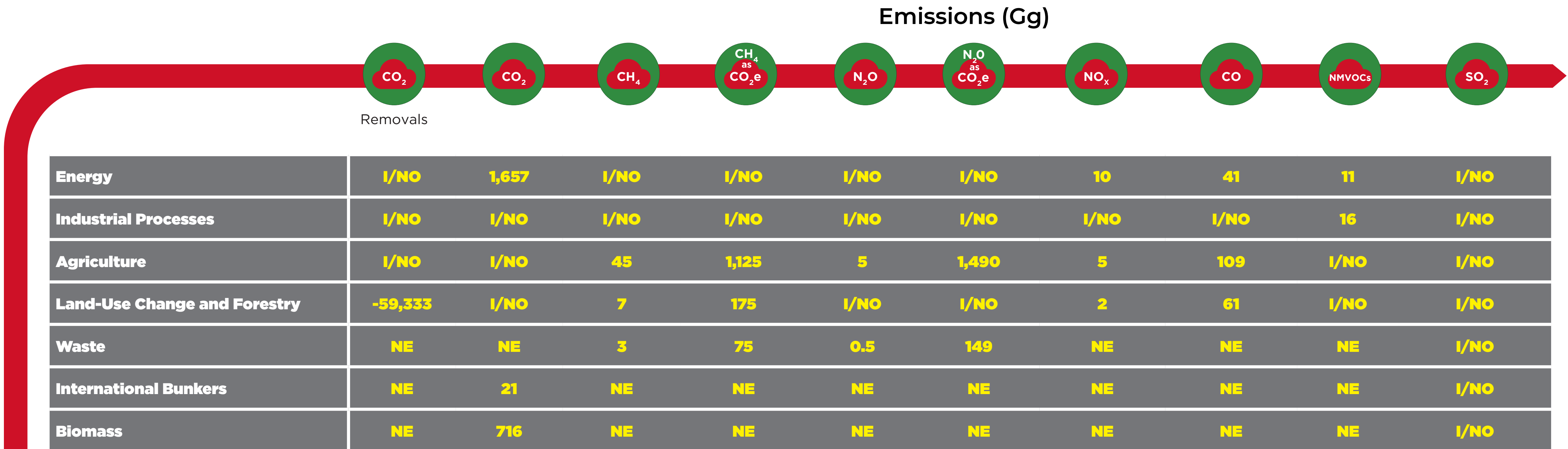
116 Electric Vehicles reported in 2021.

25. Other vehicles include Trucks, Jeeps, Articulated Vehicles, Water Tenders, and Hearses

<p>Climate Change Policy</p>	<p>Draft National Climate Change Policy and Action Plan 2020-2030 ^[14] Climate Resilient Strategy and Action Plan for Guyana (2015) [50] Low Carbon Development Strategy (2030) ^{26 [8]}</p>
<p>National Determined Contributions ^[12]</p>	<p>11% annually compared to historic levels from the timber industry. *(Note that Guyana is a net carbon sink) ^[15]</p>
<p>Emissions Reduction Target ^[12]</p>	<p>70% emission reductions by 2030 ^{27 [51]}</p>
<p>Priority Sectors for NDC ^[15]</p>	<p>Forestry (including Avoided Deforestation) Energy</p>
<p>National Communications (NC) to the UNFCCC</p>	<p>Guyana Initial National Communication in Response to its Commitments to the UNFCCC ^[52] Guyana Second National Communication to the United Nations Framework Convention on Climate Change ^[53]</p>

26. The Guyana Low Carbon Development Strategy was updated in 2020
 27. The emission reduction target was announced by His Excellency Dr Mohammed Irfaan Ali during COP26, shifting from the 70% emission reduction by 2027.

Summary of Guyana's GHG Emissions and Removals (Gg) for 2004 ^[53]



*I/NO: Insignificantly Small or Not Occurring

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