

2023 ENERGY REPORT CARD GUYANA





Introduction

This is the Energy Report Card (ERC) for 2023 for Guyana.

The ERC provides an overview of the energy sector performance, highlighting the following areas:

- Installed Conventional and Renewable Power Generation Capacity
- Annual Electricity Generation, from Conventional and Renewable Plants
- Other Electricity Sector Metrics, such as Losses, Consumption, and Tariffs
- Renewable Energy Targets
- Renewable Energy Resource Potential

The ERC also includes sectoral data and information on policies and regulations; workforce; training and capacity building; and related areas.

The data and information that are available in the ERC were mostly provided by the government ministries, agencies, and departments, that have responsibility for statistics and planning, in general, and the energy sector and electricity subsector including the electric utilities, in particular. The data and information collected was supplemented by desk-based research and, in instances, information was generated from calculations and analyses that were performed by the CCREEE.

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The collection and treatment of data and information that is produced for the ERC is consistent with the International Recommendations for Energy Statistics (IRES), which provides a comprehensive methodological framework for the collection, compilation, and dissemination of energy statistics in all countries irrespective of the level of development of their statistical system. The ERC is produced in accordance with these performance standards that seek, as far as is possible, to ensure the quality (i.e., objectivity, utility, and integrity) of data and information that it disseminates to the public.

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Energy Sector Summary

Population (Estimation)	778,400 [1] ¹
GDP (USD)	\$ 16,060,192,685.15 [1]
GDP (USD) Per Capita	\$ 20,632.31
Gross National Income (GNI) Per Capita (USD)	\$ 33,240 [2]
Debt as % of GDP	27% [1]
Human Development Index	0.742 [3]
National Development Plan/Overall Country Development Strategy	Guyana's Low Carbon Development Strategy 2030 (2022) [4]
National Energy Policy	National Energy Policy (1994) [5] Draft National Energy Policy of Guyana - Report 2 - Green Paper (2017)[6] ²
Renewable Energy (RE) Policy	None
Renewable Energy Target	70% by 2030 [4]
Energy Efficiency Target	None
Total Installed Conventional Capacity (MW)	218.1 MW [12]
Total Installed RE (MW)	9.75 MW [12]

Electricity System Losses (%)	24% [12]
Energy Use (kWh) Per Capita	1,116 kWh
National Repository for Energy Data	None [14]
Climate Change Policy	National Climate Change Policy and Action Plan 2020-2030 (2019) (Draft) [7] Climate Resilient Strategy and Action Plan for Guyana (Draft) (2015) [8] Guyana's Low Carbon Development Strategy 2030 [9]
Nationally Determined (NDC) Summary [10]	Green Economy through a low-emission development pathway, achieving improved human well-being and social equity while significantly reducing environmental risks. By 2025, Guyana intends to: <ul style="list-style-type: none">• Increase its share of renewable energy by 100%.• Maintain and enhance its role as a net carbon sink.

1 - Estimated mid-Year Population
2 - Revision of 1994 National Energy Policy



Energy Sector Summary

Energy Performance Standards/Appliance Labelling [11]

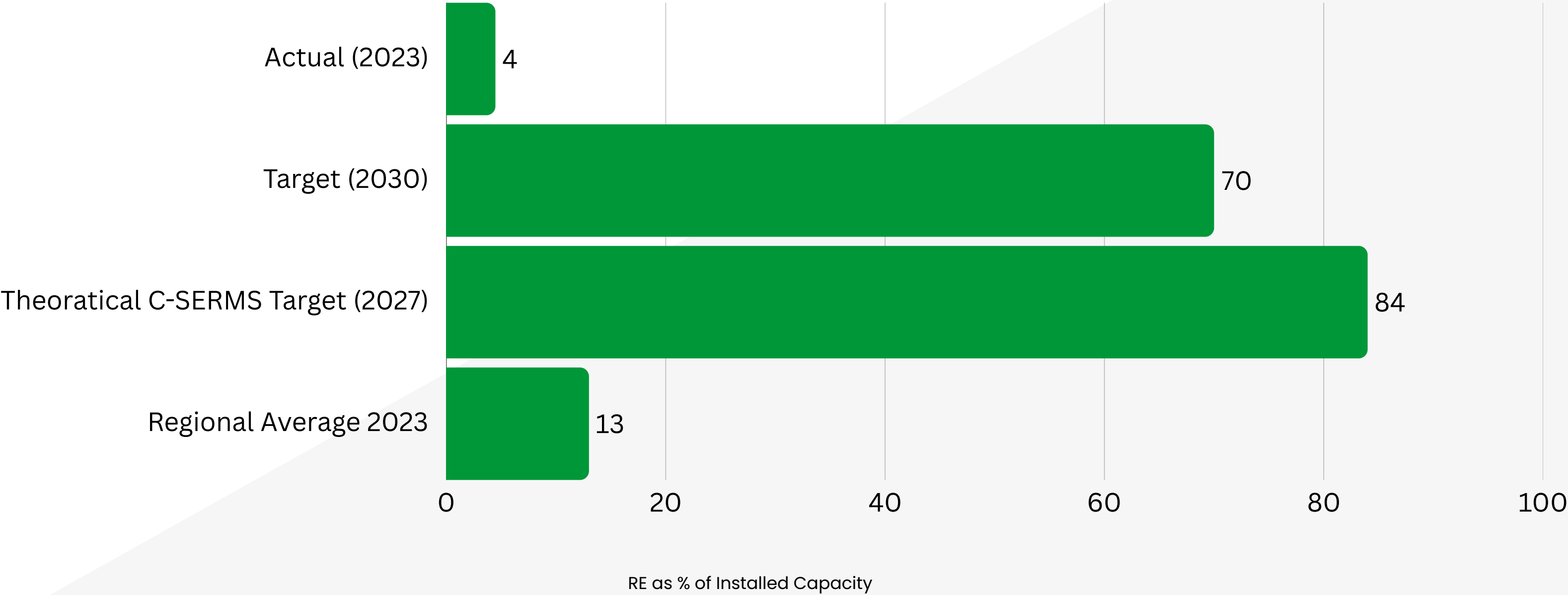
- CARICOM 2018-2018: Regional Energy Efficiency Building Code
- GYS 503-2019 - Energy Management Systems – Requirements with guidance for use
- GYS 577-2021 - Energy labelling - Compact fluorescent lamps and light emitting diode lamps - Requirements Consumer Products Labelling Energy
- GYS 578 -2021 - Energy labelling - Air conditioners - Requirements
- GYS 576-2021 - Energy labelling – Refrigerating appliances – Requirements
- GYS 558-2019 - Safety for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources
- GYS 61970-1-2005 - Energy management system application program interface (EMS-AP) -Part 1 : Guidelines and general requirements)
- GYS 561-2019 - Safety for connectors for use in photovoltaic systems
- GYS 564 -2020 - Safety for solar trackers
- GYS IEC 61400-1-2005 - Wind turbines- Part 1 Design requirements
- GYS IEC 61400-1-2005 - Wind turbines - Part 12-1 : Power performance measurement of electricity producing wind turbines
- GYS IEC 61400-2-2006 - Wind turbines -Part 2 : Design requirements for small wind turbines
- GYS IEC 61400-11-2002 - Wind turbine generator systems - Part 11 : Acoustic noise measurement techniques
- GYS IEC 61400-14-2005 - Wind turbines - Part 14 : Declaration of apparent sound power level and tonality values
- GYS IEC 61400-21-2001 - Wind turbine generator systems - Part 21 : Measurement and assessment of power quality characteristics of grid connected wind turbines
- GYS IEC 61400-23-2001 - Wind turbine generator systems - Part 23 : Full-scale structural testing of rotor blades
- GYS IEC 61400-24-2002 - Wind turbine generator systems - Part 24 : Lighting protection
- GYS IEC TC 61400-13-2001 - Wind turbine generator systems - Part 13: Measurement of mechanical loads



Energy Sector Performance [12][13]



Renewable Energy Capacity Against Targets





Electricity Regulator

Public Utilities Commission [26]

Independent Power Producer

Bosai Mineral Group (Guyana) Inc. [24]

Other

Guyana National Bureau of Standards [26]

Geology and Mines Commission (GGMC) [27]

Environmental Protection Agency [28]

Electric Utility

Guyana Power and Light [22]

Hinterland Electrification Company Inc. [23]

- 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.

Government Ministries, Departments and Agencies

Ministry of Natural Resources [14]

Guyana Energy Agency [15]

Department of Environment and Climate Change

Guyana Civil Aviation Authority [16]

Ministry of Public Works [17]

- Transport and Harbours Department

Government Electrical Inspectorate [18]

Fuel Importers & Suppliers

The Guyana Oil Company Limited [19]

Sol Guyana Inc [20]

Rubis Guyana [21]

Key Energy Stakeholders



Policy, Legal and Regulatory (PLR) Framework

	Year	Status
Energy Policy [5] [6] ³	2017	Draft
Energy Action Plan		Not Established
RE Target [4] ⁴	2022	In Force
EE Target		Not Established
Electricity Regulator [29]	1990	In Force
Net Billing/Net Metering	2022	In Force
Interconnection Policy/Standards [30]	2017	In Force
Feed-In-Tariff		Draft
Integrated Resource and Resilience Plan		Draft
RE/EE Act		Not Established

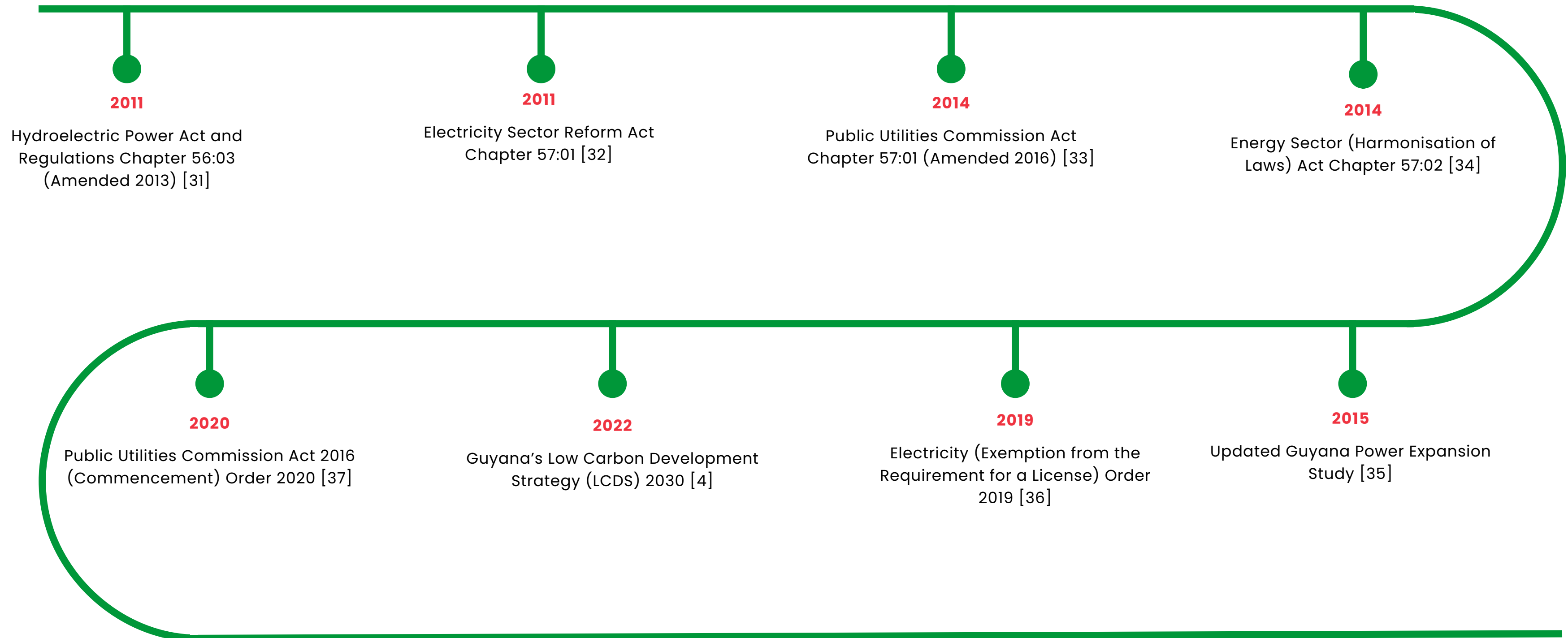
3 - . An updated National Energy Policy was drafted in 2017

4 - The RE target was outlined in the Low Carbon Development Strategy 2030 (2022)



Policy, Legal and Regulatory (PLR) Framework

Key Achievements: PLR Framework Timeline for Electricity Sub-Sector





Policy, Legal and Regulatory (PLR) Framework

Policies Relevant to the Energy Sector

Year	Name	Status	Description
2016	Guyana Power Generation Expansion Study [38] ⁵	Draft	This update of the 2016 Guyana Power Generation Expansion Study, includes an in-depth revision and analysis of renewable energy technologies and natural gas-fired generation options.
2017	National Energy Policy [6]	Draft	This Policy will update the 1994 National Energy Policy and address continuing concerns related to the dependence on imported fossil fuels, the need to address the efficiency and sustainability of energy supply and demand, and the need to address climate change issues. It also includes considerations for the recent discovery of offshore petroleum reserves in 2014.
2019	Green Development Strategy [39]	In Force	A plan to transition to near 100% renewable energy sources by 2040, which includes a sector investment plan and conducting feasibility studies. Current estimates put the transition rate to renewable sources at about 63% by 2035.
2021	IRRP	Draft	Supports the Energy Policy and provides a framework to promote the integration of renewable energy into the grid.
2022	Guyana's Low Carbon Development Strategy (LCDS) [9] (Previous editions 2010 and 2013) ⁶	In Force	The 2022 updated LCDS 2030 sets out four inter-linked objectives for Guyana, the first three were included in the basic objectives of the LCDS since 2009 and the fourth which was added to reflect new local and global realities: 1.Value Ecosystem Services 2.Invest in Clean Energy and Stimulate Low Carbon Growth 3.Protect Against Climate Change and Biodiversity Loss 4.Align with Global Climate and Biodiversity Goals

5 – The Guyana Power Generation Expansion Study was updated 2018

6 – Established in 2010 the Low Carbon Development Strategy was updated in 2013 and 2022.



Policy, Legal and Regulatory (PLR) Framework

Legislation Relevant to the Energy Sector

Year	Name	Status	Description
1956	Hydroelectric Power Act and Regulations [40] (Amended 2013)	In Force	The Hydroelectric Power Act was amended to ensure that the environmental and technological standards were compliant with international standards and regulations.
1990	Public Utilities Commission Act [29] (Amended 1999, 2007, 2010, 2016)	In Force	An Act to make provision for the establishment, function, and procedure of the Public Utilities Commission and matters connected therewith.
1997	Guyana Energy Agency Act [41] (Amended 2011)	In Force	This Act allows for the establishment of the Guyana Energy Agency and for specifying its functions.
1998	The Guyana Shipping Act [42]	In Force	An Act to provide for the regulations of ships, owners and operators of the various rights and duties as well as the liabilities that can incur including the transportation of passengers and goods by ship.
2002	Energy Sector (Harmonization of Laws) Act [43]	In Force	An Act to harmonize laws governing regulatory functions in the restructured electricity and energy sectors.
2014	Petroleum and Petroleum Products Regulation [44]	In Force	This regulation covers the requirements for licenses for the sale of petroleum and petroleum products.



Policy, Legal and Regulatory (PLR) Framework

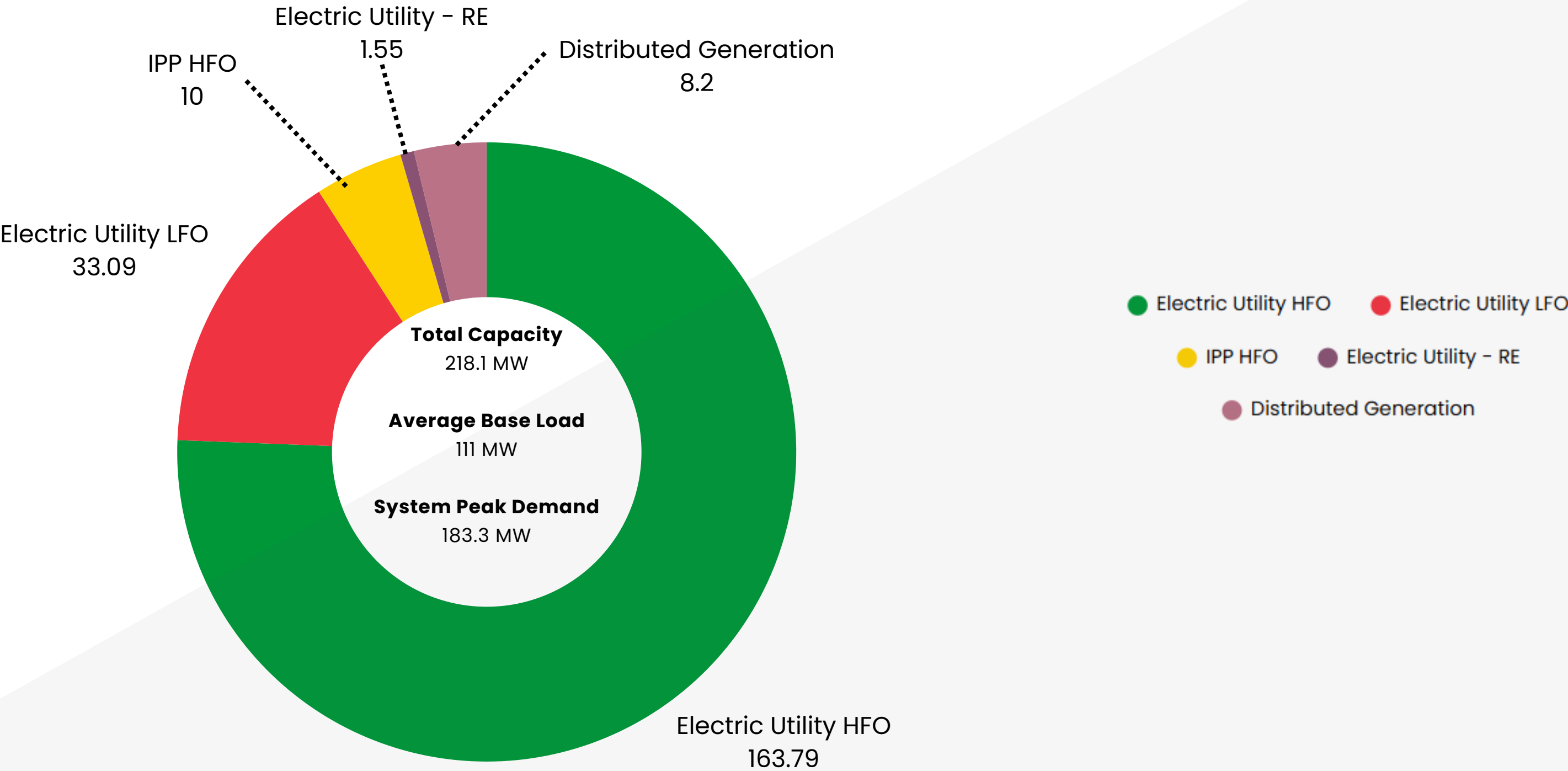
Renewable Energy and Energy Efficiency Incentives

Year	Name	Status	Description
1952	Customs Act [45]	In Force	This Act allows for machinery and equipment imported for the purposes of generating and utilising renewable energy are eligible Customs duty exemptions. This Act allows for Allows for duty-free importation of renewable energy equipment and energy-efficient appliances and zero Zero-rating of VAT on certain renewable energy products (e.g., solar panels, batteries, inverters).
2005	VAT Act [46] (Amended 2017,2018)	In Force	<p>In the 2017 amendment VAT exemptions were introduced on machinery and equipment for obtaining, generating, and utilizing electricity from renewable energy sources, including solar modules, solar lamps, deep-cycle batteries, solar generators, solar cookers, solar water heaters, direct current (DC) solar refrigerators, DC solar freezers, DC solar air-conditioners, power inverters, water turbines, wind turbines, energy-efficient lighting, including compact fluorescent lamps and light-emitting diode (LED) lamps.</p> <p>In the 2018 amendment, VAT exemptions were introduced on items including machinery and equipment for utilising alternate energy technologies, renewable energy options such as gasifiers to use biomass, and harnessing renewable energy through wind, solar, and water, as determined by the Commissioner.</p>



Electricity and Energy Efficiency [12] [13]

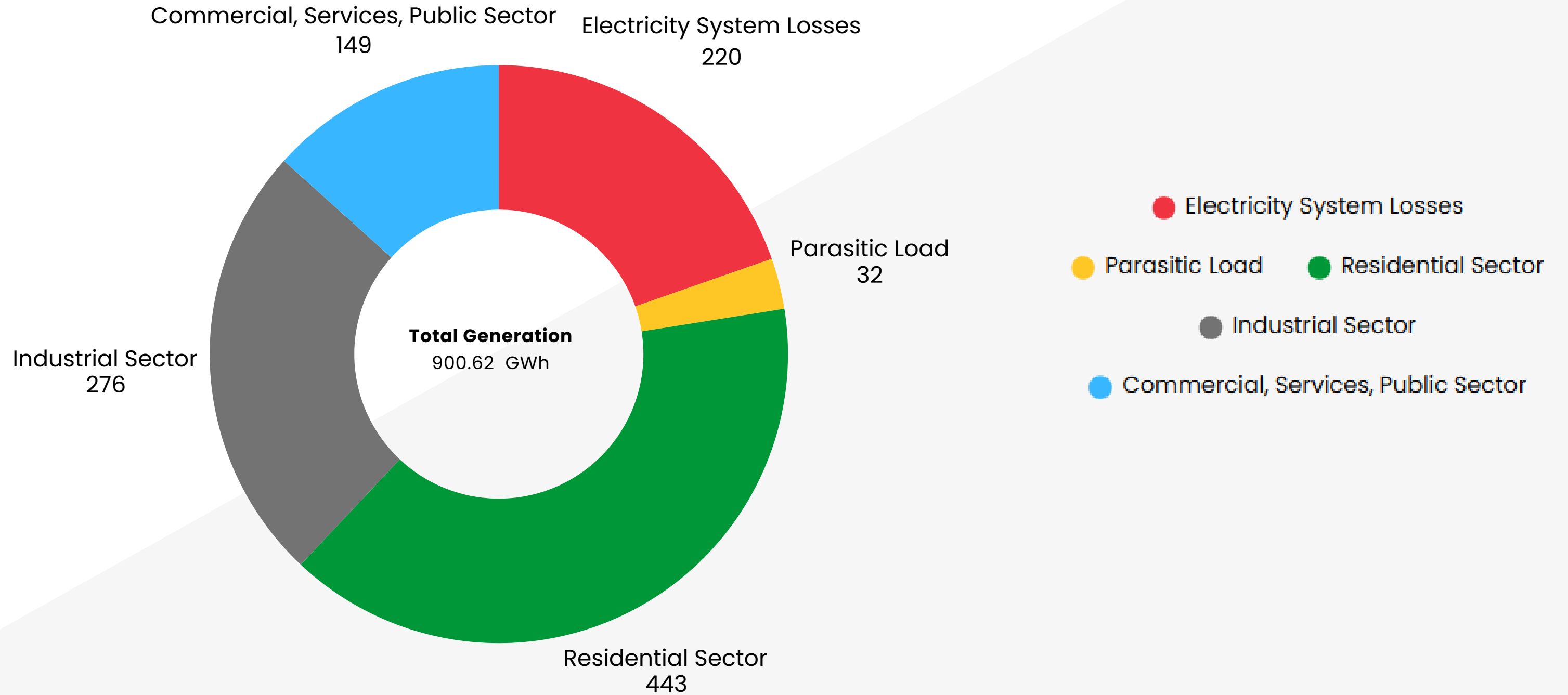
Installed Capacity (MW)





Electricity and Energy Efficiency [12] [13]

Energy Generation (GWh)

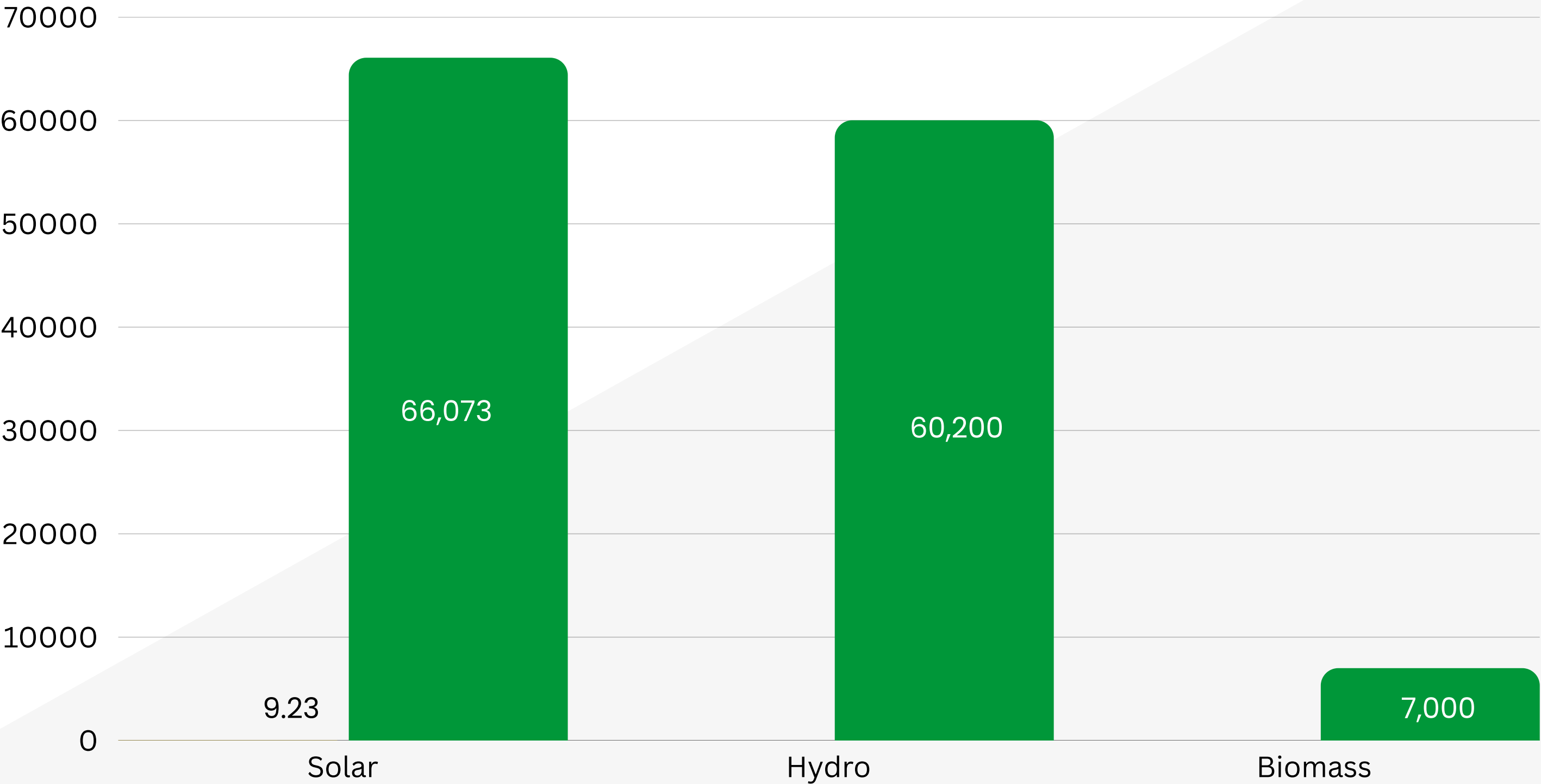




Electricity and Energy Efficiency [12] [13]

Renewable Energy Resources

● Installed RE ● Potential RE





Electricity and Energy Efficiency

Electricity Tariffs [47]



Non-Government

Rate Class	Monthly Consumption/Demand	Fixed Rate/Demand Charge (US\$)	Tariff (US\$/kWh)
Residential: Lifeline	A <75 kWh	1.63	0.18
Residential	A >75 kWh	1.68	0.20
Commercial	B	11.80	0.26
Industrial	C	8.42	0.24
	D	8.42	0.23
Streetlights	E		0.20

Government

Rate Class	Monthly Consumption/Demand	Fixed Rate/Demand Charge (US\$)	Tariff (US\$/kWh)
Residential: Lifeline	GA <75 kWh	1.86	0.22
Residential	GA >75 kWh	1.86	0.22
Commercial	GB	12.32	0.28
Industrial	GC	8.79	0.25
	GD	8.79	0.24
Streetlights	GE		0.21



Projects in the Pipeline

Programmes

Programme Name	Executing Agencies	Funding Awards	Funding Source
Guyana Utility Scale Solar Photovoltaic Program (Guysol) [48]	Guyana Power and Light Inc	US\$ 83,300,000.00	Inter-American Development Bank (IDB), Fund: Norwegian Grant to Guyana
Renewable Energy Actions in the Energy Matrix in Guyana [49]		US\$ 1,500,000.00	Inter-American Development Bank (IDB), Fund: Norwegian Grant to Guyana

Energy Efficiency Projects

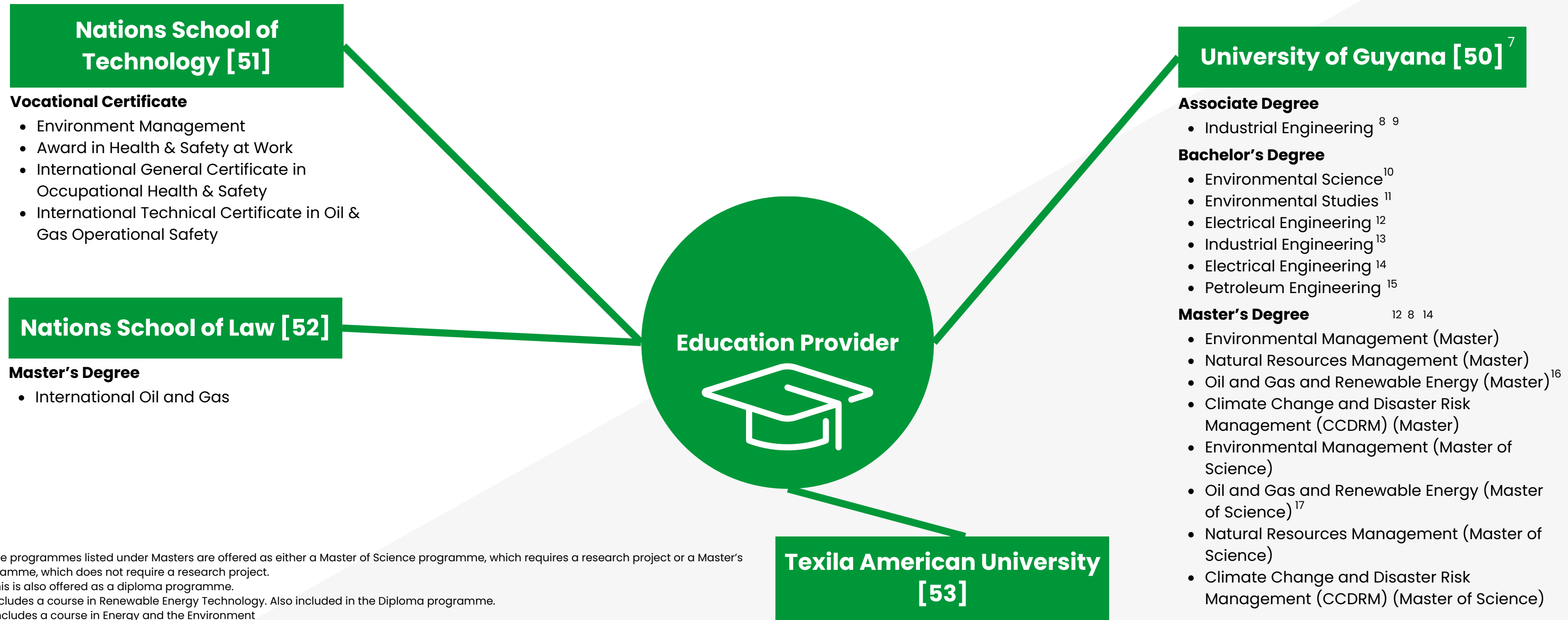
There were no Energy Efficiency Projects reported for 2023.

Renewable Energy Projects

Renewable Energy Source	Project Name	System Size (MW)	Implementing Partner	Total Estimated Cost (USD)	Funding Source
Solar Photo-Voltaic [57]	Solar PV Plant at Leguan	0.60	Guyana Energy Agency	\$ 1,899,000	Government of Guyana
	Solar PV Plant for Cheddi Jagan International Airport	3	Guyana Energy Agency	\$ 3,500,000	Government of India/EXIM Bank India Government of Guyana



Tertiary Programmes Offered



7 - 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.
8 - This is also offered as a diploma programme.
9 - Includes a course in Renewable Energy Technology. Also included in the Diploma programme.
10 - Includes a course in Energy and the Environment
11 - Includes a course in Energy and the Environment
12 - Includes a course in Renewable Energy Technologies
13 - Includes a course in Renewable Energy Technologies II
14 - Includes a course in Renewable Energy Technologies
15 - Includes courses in Project and Environmental Management for Energy Systems, Renewable Energy Systems and Fundamentals of Renewable Systems Engineering.
16 - Includes courses in Sustainable Energy and Development and Renewable Energy Simulation
17 - Includes courses in Sustainable Energy and Development, Energy Economics and Renewable Energy Simulation
18- MBA programme



Climate Change Framework

Climate Change Policy	National Climate Change Policy and Action Plan 2020–2030 (Draft) (2019) [7]
	Climate Resilient Strategy and Action Plan for Guyana (2015) [8]
	Low Carbon Development Strategy (2030) [9]
Nationally Determined Contributions Summary [10]	<p>Green Economy through a low-emission development pathway, achieving improved human well-being and social equity while significantly reducing environmental risks.</p> <p>By 2025, Guyana intends to:</p> <ul style="list-style-type: none">• Increase its share of renewable energy by 100%.• Maintain and enhance its role as a net carbon sink.
Green House Reduction Target	70% emission reductions by 2030
Priority Sectors for NDC	<ul style="list-style-type: none">• Forestry (including Avoided Deforestation)• Energy
National Communications (NC) to the UNFCCC	Guyana Initial National Communication in Response to its Commitments to the UNFCCC [55]
	Guyana Second National Communication to the United Nations Framework Convention on Climate Change [56]

The emission reduction target was announced by His Excellency Dr Mohammed Irfaan Ali during COP26, shifting from the 70% emission reduction by 2027.



Climate Change Framework

Summary of Guyana’s GHG Emissions and Removals (Gg) for 2018 [56]

		Sources						
		Energy	Industrial Processes	Agriculture	Land-Use Change and Forestry	Waste	International Bunkers	Biomass
Removals (Gg)	Carbon Dioxide (CO ₂)	I/NO	I/NO	I/NO	-59,333	NE	NE	NE
Emissions (Gg)	Carbon Dioxide (CO ₂)	6909.33	I/NO	I/NO	I/NO	NE	21	716
	Methane (CH ₄)	I/NO	I/NO	45	7	3	NE	NE
	Methane (CH ₄) as Carbon Dioxide (CO ₂ e)	I/NO	I/NO	1,125	I/NO	75	NE	NE
	Nitrous Oxide (N ₂ O)	I/NO	I/NO	5	I/NO	0.5	NE	NE
	Nitrous Oxide (N ₂ O) as Carbon Dioxide (CO ₂)	I/NO	I/NO	1,490	I/NO	149	NE	NE
	Nitrogen Oxide (NO)	10	I/NO	5	2	NE	NE	NE
	Carbon Monoxide(CO)	41	I/NO	109	61	NE	NE	NE
	NMVOCs	11	16	I/NO	I/NO	NE	NE	NE
	Sulphur Oxide (SO ₂)	I/NO	I/NO	I/NO	I/NO	I/NO	I/NO	I/NO

NE stands for Not Estimated

i/NO means Included but Not Occurring (I/NO)



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