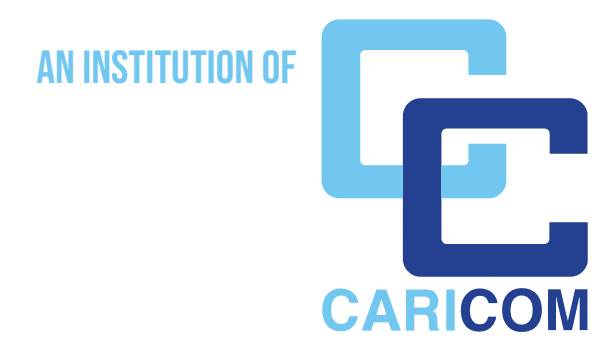




GUYANA

ENERGY REPORT CARD (ERC) FOR 2022





INTRODUCTION



This is the Energy Report Card (ERC) for 2022 for the Co-operative Republic of 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; 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.

Quality Assurance

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.

The CCREEE strives for transparency on the information and methods that are used within the production of the ERC, with a view to improve understanding on how the information should be treated and to facilitate reproducibility of the information. Nevertheless, the Centre recognizes that quality may be limited by the nature and source of the data and information disseminated.

Disclaimer

The ERC includes data and information that is contained in a variety of public sources and, though every effort is made to validate the accuracy and validity of the contents, reliance on the information herein is strictly at the user's risk.

Correction of Errors

If a substantive error is detected after the ERC is disseminated, the CCREEE will make correction and issue an **errata notice**, or other notification as appropriate. Also, the information contained within the ERC may be revised, after initial dissemination to reflect more complete information or other significant changes in the underlying data. The ERC may, **from time to time**, include information that is preliminary and is expected to be revised, or information that is revised from previously disseminated versions. In such instances, those cases are clearly noted.

Requests for Correction

The CCREEE has established administrative mechanisms to allow persons to seek and obtain, where appropriate, legitimate correction(s) to information maintained and disseminated through the ERC. Any request for corrections should be sent to: energyreportcard@ccreee.org, under the subject: **REQUEST FOR CORRECTION TO ERC 2022 FOR GUYANA**

Acknowledgements

The CCREEE acknowledges the contributions of the Guyana Energy Agency and thanks the Guyana Energy Agency team, for their supervision of the intern, Hanan Lachmansingh, who supported the preparation of the ERC.

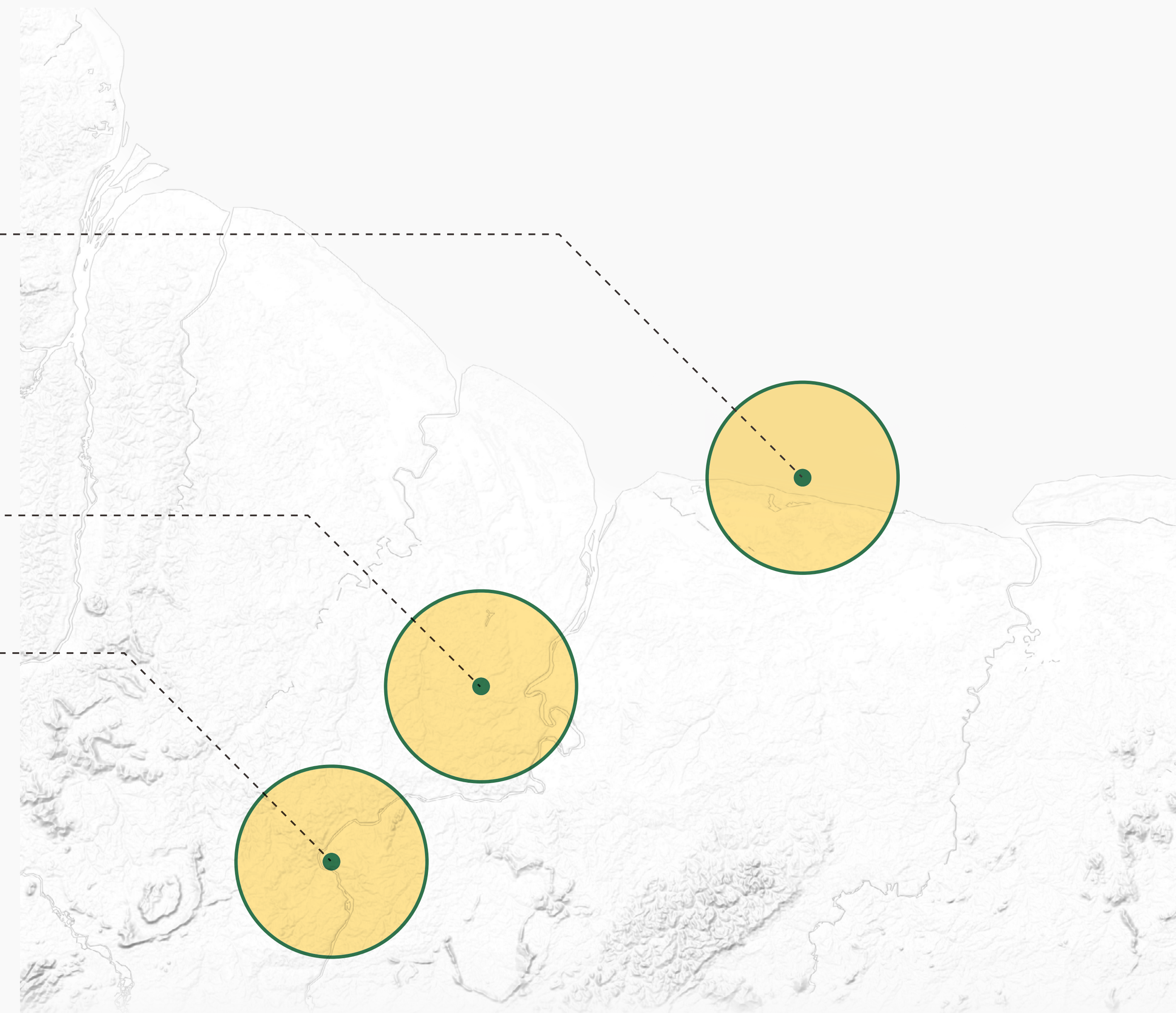


ENERGY SECTOR SUMMARY



SOCIOECONOMIC POLICIES

- Guyana's Low Carbon Development Strategy 2030 (2022)** ^[5]
National Development Plan/ Overall Country Development Strategy
- National Energy Policy (1994)** ^[6]
- Draft National Energy Policy of Guyana - Report 2 - Green Paper (2017)** ^{2 [7]}
National Energy Policy
- None**
Renewable Energy (RE) Policy



OTHER ENERGY SECTOR SUB-POLICIES

- Climate Change Policy
 - National Climate Change Policy and Action Plan 2020-2030 (2019) (Draft)** ^[8]
 - Climate Resilient Strategy and Action Plan for Guyana (Draft) (2015)** ^[9]
 - Guyana's Low Carbon Development Strategy 2030** ^[5]
- National Determined Contributions (NDC)
 - 11% annually compared to historic levels from the timber industry. *(Note that Guyana is a net carbon sink)**
- Energy Performance Standards/Appliance Labelling
 - 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**

SOCIOECONOMICS

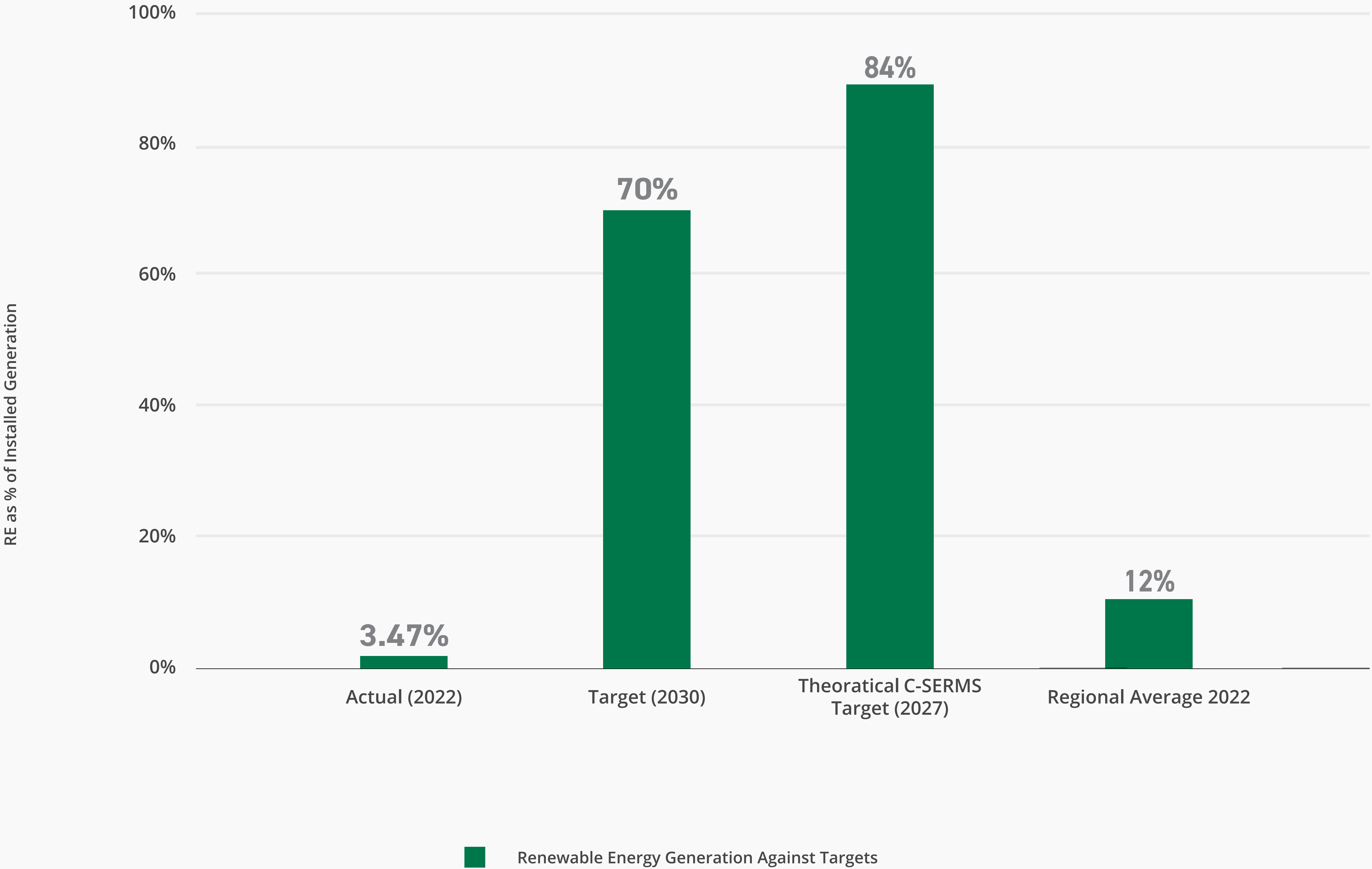
Population (Estimated)	775,800 ^{1 [1]}
GDP (USD)	\$14,831,313,113.00 ^[1]
GDP (USD) Per Capita	\$18,199.5 ^[2]
Gross National Income (GNI) Per Capita (USD)	\$ 15,050 ^[3]
Debt as % of GDP	24.6% ^[1]
Human Development Index	0.714 ^[4]
RE Target	70% by 2030 ^[5]

Total Installed Conventional Capacity (MW)	213.8 ^[12]
Total Installed RE (MW)	7.68 ^[12]
Electricity System Losses (%)	23.9% ^[12]
Energy Use (kWh) Per Capita	974.95 ³
National Repository for Energy Data	Guyana National Energy Information System
Total Oil Import (BOE) per day	21,198 ^[11]
Fuel and Oil Imports as % of GDP ⁴	35.1%

1. Estimated Mid-Year Population
 2. Revision of 1994 National Energy Policy
 3. Calculated based on the estimated mid-year population.
 4. Fuel and Lubricants



RENEWABLE ENERGY INSTALLED GENERATION AGAINST TARGETS





KEY ENERGY STAKEHOLDERS

Electricity Regulator

Public Utilities Commission ^[25]

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 ^{5 [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]

Independent Power Producer

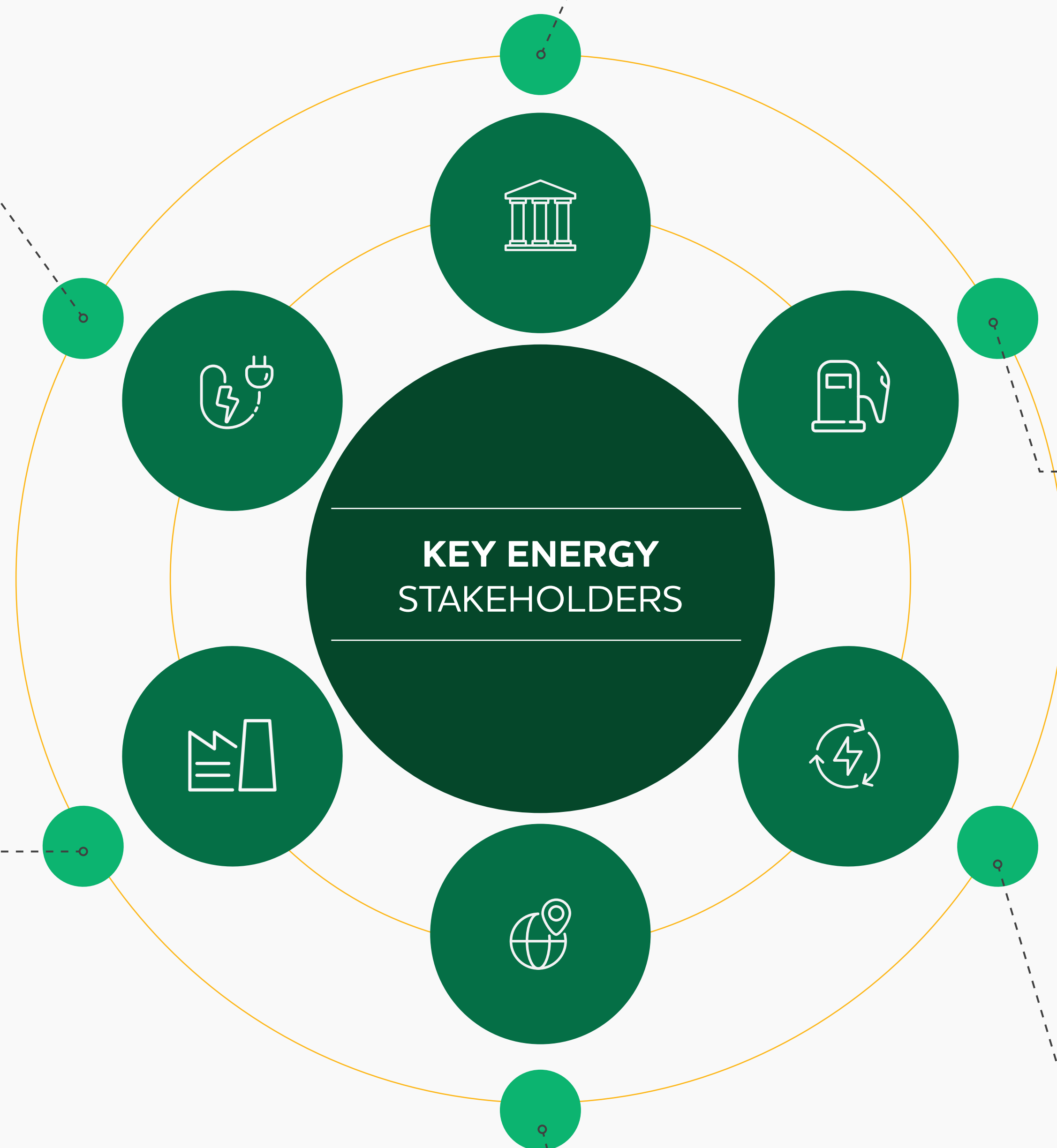
Bosai Mineral Group (Guyana) Inc. ^[24]

Other

Guyana National Bureau of Standards ^[26]

Geology and Mines Commission (GGMC) ^[27]

Environmental Protection Agency ^[28]



5. Ministry responsible for transportation.

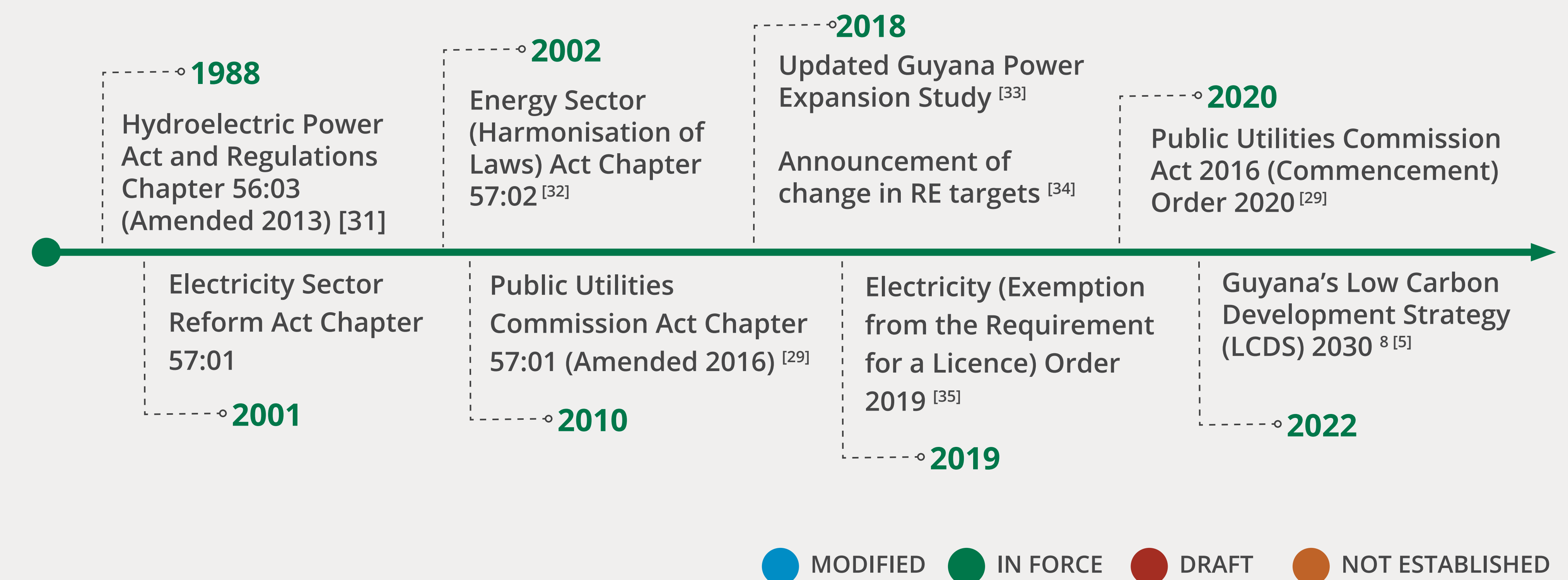
POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

+ POLICIES RELEVANT TO THE ENERGY SECTOR

	Guyana Power Generation Expansion Study⁹ [33] ●
2016	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
	National Energy Policy [7] ●
2017	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.
	Green Development Strategy [36] ●
2019	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.
	IRRP ●
2021	-
	Guyana's Low Carbon Development Strategy (LCDS) [5] (Previous editions 2010 and 2013) ●
2022	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: <ol style="list-style-type: none"> 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

	YEAR
Energy Policy and Energy Action Plan ⁶ [7]: ●	2017
RE Target ⁷ [5]: ●	2022
EE Target: ●	
Electricity Regulator [29]: ●	1990
Net Billing/Net Metering [25][26]: ●	
Interconnection Policy/Standards [25][26]: ●	
Feed-in-tariff [25]: ●	
RE/EE Act: ●	

+ KEY ACHIEVEMENTS: PLR FRAMEWORK TIMELINE FOR ELECTRICITY SUB-SECTOR



6. An updated National Energy Policy was drafted in 2017

7. The RE target was outlined in the Low Carbon Development Strategy 2030 (2022)

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

9. The Guyana Power Generation Expansion Study was updated 2018.



POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK



LEGISLATION RELEVANT TO THE ENERGY SECTOR

1956	Hydroelectric Power Act and Regulations [31] (Amended 2013) 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) 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 [37] (Amended 2011) This Act allows for the establishment of the Guyana Energy Agency and for specifying its functions.
1998	The Guyana Shipping Act [38] 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 [32] An Act to harmonize laws governing regulatory functions in the restructured electricity and energy sectors.
2014	Petroleum and Petroleum Products Regulation [39] This regulation covers the requirements for licenses for the sale of petroleum and petroleum products.

LEGISLATION RELEVANT TO THE FISCAL INCENTIVES

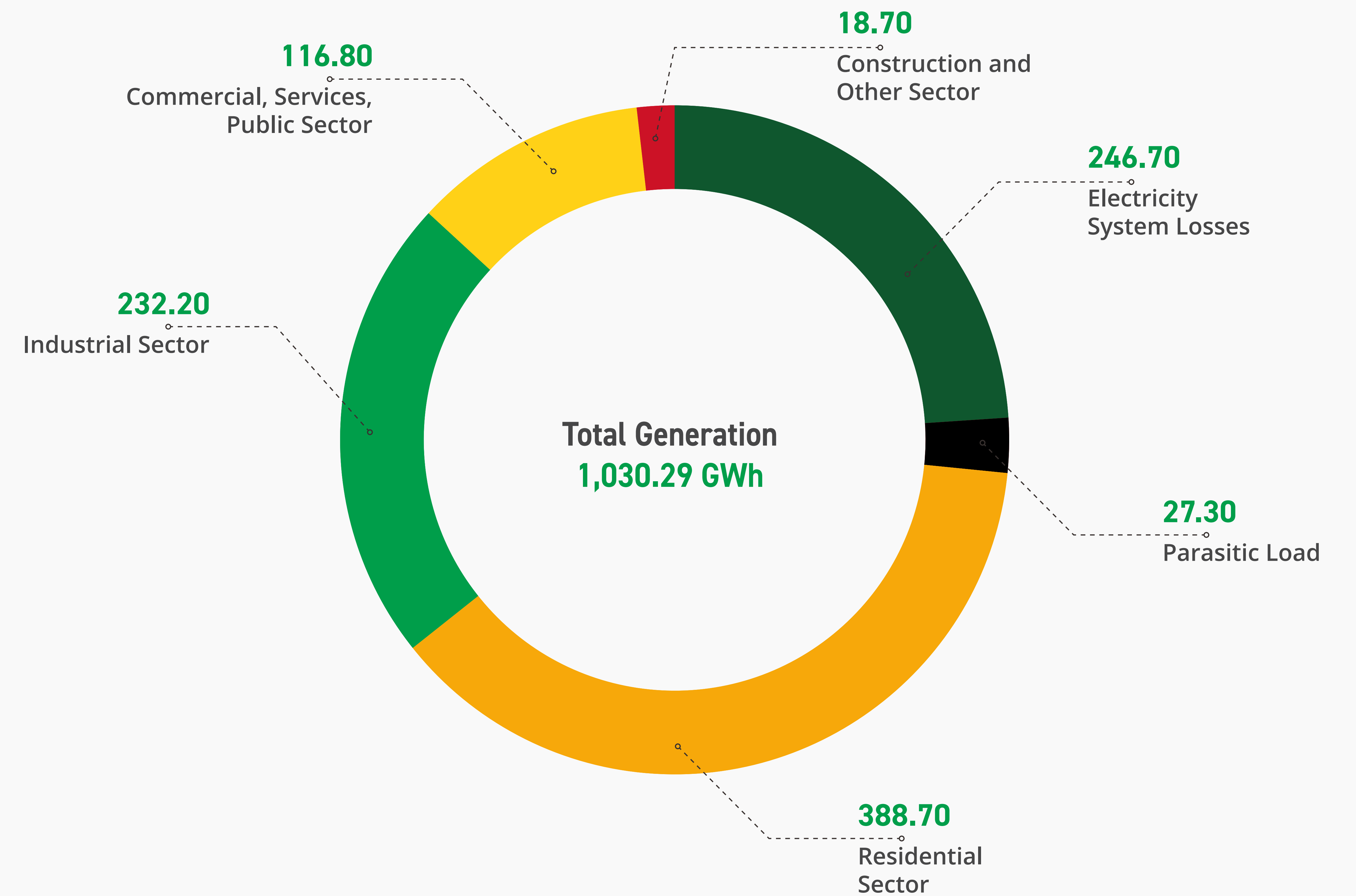
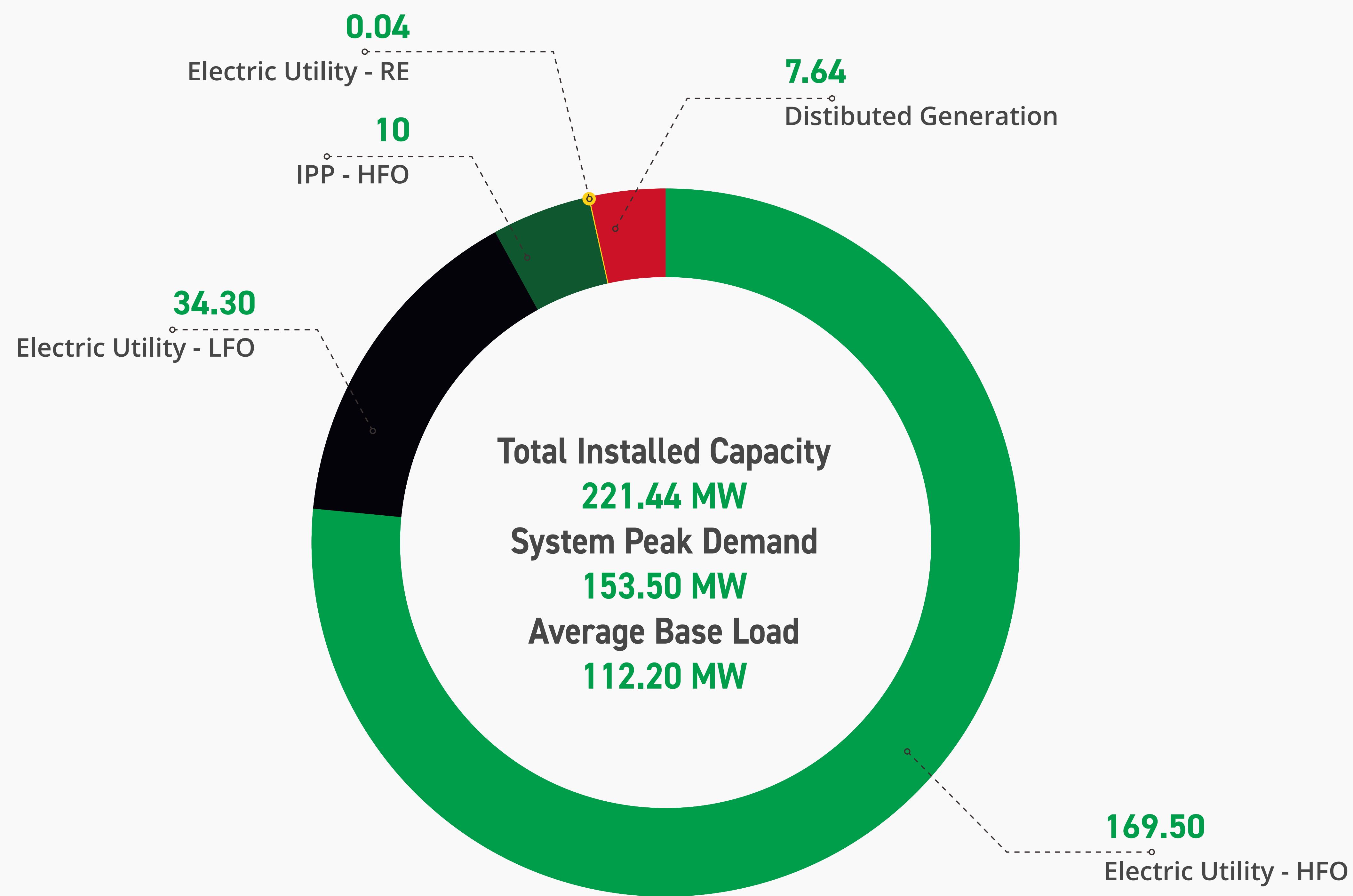
1952	Customs Act [34] This Act allows for machinery and equipment imported for the purposes of generating and utilising renewable energy are eligible Customs duty exemptions.
2005	VAT Act (Amended 2017,2018) In the 2017 amendment VAT exemptions were introduced on machinery and equipment for obtaining, 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. 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.



ELECTRICITY & ENERGY EFFICIENCY [13] [12]

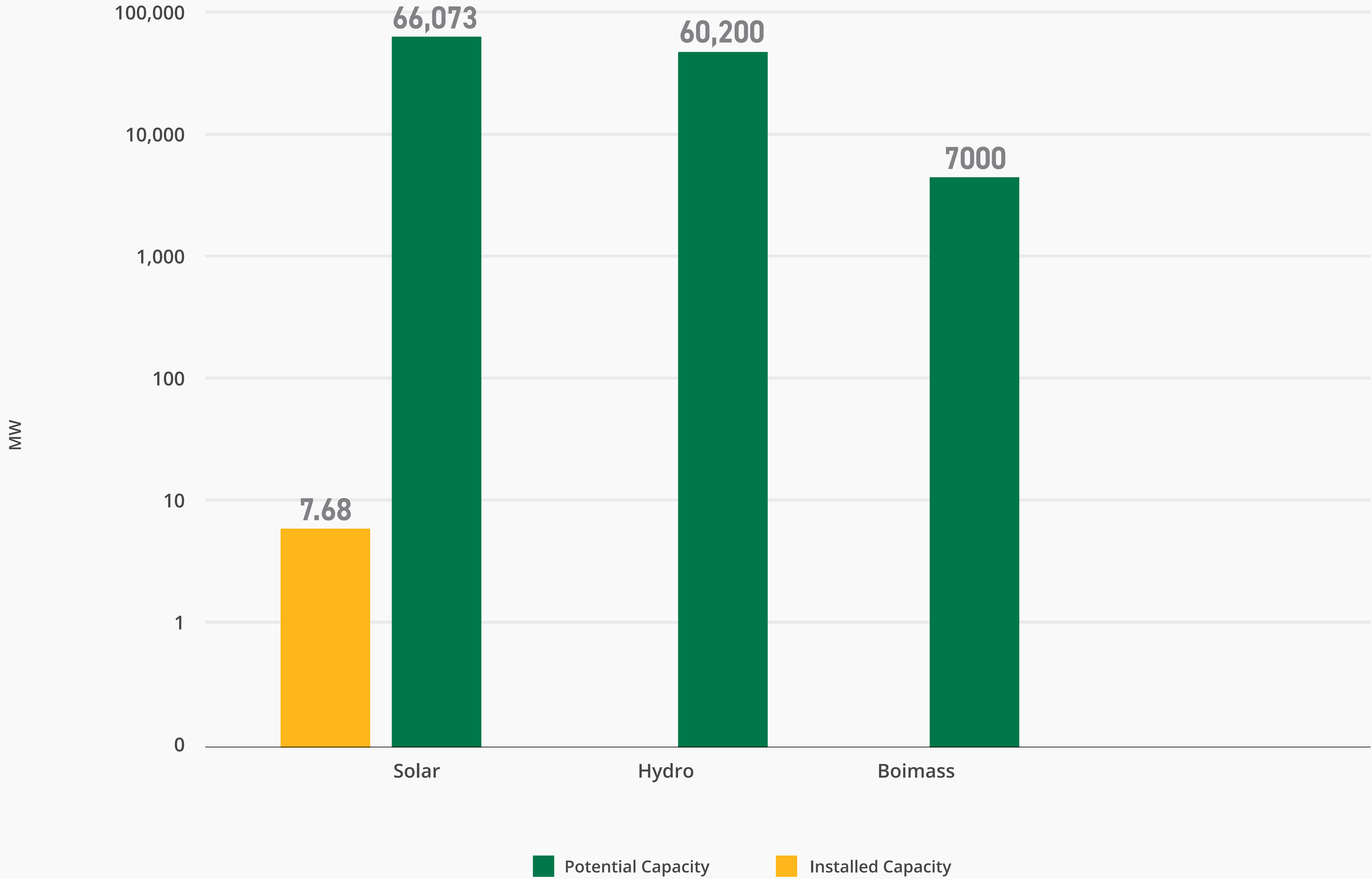
+ INSTALLED CAPACITY (MW)

+ ENERGY CONSUMPTION (GWh)





RENEWABLE ENERGY RESOURCES





+ NON-GOVERNMENT

Category		Fixed Rate/ Demand Charge (USD)	Energy Rate (USD/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

Category		Fixed Rate/ Demand Charge (USD)	Energy Rate (USD/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	\$879	\$0.24
Streetlights	GE		\$0.21



PROJECTS IN PIPELINE

+ PROGRAMMES

Programme Name	Donor Organization & Banks	Technical Assistance Providers	Funding Awards (USD)	Year
The Guyana Utility Scale Solar Photovoltaic Program (GUYSOL) [41]	Inter-American Development Bank (IDB), Norwegian Agency for Development Cooperation.	Guyana Power and Light Inc.	83.3 million	2022
Renewable Energy Actions in the Energy Matrix in Guyana [42]	Norwegian Agency for Development Cooperation.		\$1,500,000	2021
Energy Matrix Diversification and Institutional Strengthening of the Department of Energy (EMISDE) [43]	Inter-American Development Bank	Guyana Energy Agency	\$21,160,000	2019
Sustainable Energy Program for Guyana [44]	Guyana Power and Light Inc.		Total Cost - 6,250,000 Country Counterpart Financing - 1,250,000 Amount - 5,000,000	2013

+ ENERGY EFFICIENCY PROJECTS

Energy Efficiency	Old/Existing Infrastructure (Number/Size)	Change in Old/Existing Infrastructure Expected in Upcoming Calendar Year (Number/Size)	Expected Change in Technology	Relative Difference in Operating Consumption/Costs
The LED Lighting Project [45]	Change out of 36,520 inefficient incandescent bulbs and fluorescent tubes.	Yes (Hinterland Electrification Company Inc. (HECI))	Replacing inefficient lighting technology with energy efficient Light Emitting Diodes (LEDs) lamps.	The project saw a reduction in electricity consumption at the utilities where the project was implemented.



PROJECTS IN PIPELINE



RENEWABLE ENERGY PROJECTS

Renewable Energy Source	Resource and Projects Capacity	Development Partner	Total Estimated Cost	Funding Source	Ownership
Solar Photo-Voltaic [45]	Supply and delivery of 30,000 photovoltaic home systems for Hinterland and Riverain areas	India EXIM Bank	US\$8.387 million	Line of Credit (LOC)	
	Construction, installation and commissioning of a 1MW solar farm in Lethem	Inter-America Development Bank (IDB)	US\$5.266 million	Loan	Hinterland Utility (Lethem Power Company Inc.)
	Construction, installation and commissioning of a 1.5MW Solar Farm in Bartica				National Utility (Guyana Power and Light Inc.)
	Construction, installation and commissioning of a 0.65MW Solar Farm at Mahdia	Inter-America Development Bank (IDB)	US\$1.738 million	Loan	
Hydro [45]	Construction of a 1.5MW Hydropower facility at Kumu ¹⁰	Islamic Development Bank (IsDB)	US\$12.85 million	Loan	Hinterland Utility (Lethem Power Company Inc.)
	Rehabilitation and upgrade to 700kW of the defunct Moco-Moco hydropower plant				
	Kato Hydropower Project	Inter-America Development Bank (IDB)	US\$2.251 million	Loan	Hinterland Utility (Lethem Power Company Inc.)
Other [11]	Gas-to-energy project ¹¹				

^{10.} A government funded and owner project.

^{11.} Total estimated cost US\$900 million



TERTIARY PROGRAMMES OFFERED



PROGRAMMES

Name of Education Programme Provider	Vocational Certificate	Associate Degree	Bachelor's Degree	Master's Degree	Certification by a Professional Body	No. of Females	No. of Males	No. of Persons Enrolled	Programme Link
University of Guyana ¹²		Industrial Engineering ^{13 14}							https://registry.uog.edu.gy/srms/departments/72/programmes/857/details https://registry.uog.edu.gy/srms/departments/72/programmes/729/details
			Environmental Science ¹⁵						https://fees.uog.edu.gy/srms/departments/8/programmes/863/details
			Environmental Science ¹⁶						https://fees.uog.edu.gy/srms/departments/8/programmes/885/details
			Electrical Engineering ¹⁷						https://registry.uog.edu.gy/srms/departments/72/programmes/755/details
			Industrial Engineering ¹⁸						https://registry.uog.edu.gy/srms/departments/72/programmes/861/details
			Electrical Engineering ¹⁹						https://fot.uog.edu.gy/srms/departments/72/programmes/755/details
			Petroleum Engineering ²⁰						https://fot.uog.edu.gy/srms/departments/254/programmes/1000/details
				Environmental Management (Master)					https://fees.uog.edu.gy/srms/departments/8/programmes/983/details
				Natural Resources Management (Master)					https://fees.uog.edu.gy/srms/departments/8/programmes/986/details
				Oil and Gas and Renewable Energy (Master) ²³					http://www.nations.gy/school-of-business-management
				Climate Change and Disaster Risk Management (CCDRM) (Master)					
				Environmental Management (Master of Science)					
				Oil and Gas and Renewable Energy (Master of Science) ²²					
				Natural Resources Management (Master of Science)					
			Climate Change and Disaster Risk Management (CCDRM) (Master of Science)						

¹² 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.

¹³ This is also offered as a diploma programme.

¹⁴ Includes a course in Renewable Energy Technology. Also included in the Diploma programme.

¹⁵ Includes a course in Energy and the Environment

¹⁶ Includes a course in Energy and the Environment

¹⁷ Includes a course in Renewable Energy Technologies

¹⁸ Includes a course in Renewable Energy Technologies II

¹⁹ Includes a course in Renewable Energy Technologies

²⁰ Includes courses in Project and Environmental Management for Energy Systems, Renewable Energy Systems and Fundamentals of Renewable Systems Engineering.

²¹ Includes courses in Sustainable Energy and Development and Renewable Energy Simulation



TERTIARY PROGRAMMES OFFERED



PROGRAMMES

Name of Education Programme Provider	Vocational Certificate	Associate Degree	Bachelor's Degree	Master's Degree	Certification by a Professional Body	No. of Females	No. of Males	No. of Persons Enrolled	Programme Link
Nations School of Business and Management	FPSO and Oil Rig Safety Management Programme				Awarding Body of International Occupational Safety and Health (ABIOSH)	2	4	6	http://www.nations.gy/school-of-business-management
Nations School of Technology	Environment Management				National Examination Board in Occupational Safety and Health (NEBOSH)	10	6	16	
Nations School of Technology	Award in Health & Safety at Work				National Examination Board in Occupational Safety and Health (NEBOSH)	50	53	103	
Nations School of Technology	International General Certificate in Occupational Health & Safety				National Examination Board in Occupational Safety and Health (NEBOSH)	49	68	117	
Nations School of Technology	International Technical Certificate in Oil & Gas Operational Safety				National Examination Board in Occupational Safety and Health (NEBOSH)	3	1	4	
Nations School of Law	International Oil and Gas				University of Bedfordshire	6	3	9	http://www.nations.gy/school-of-law
Texila American University				Oil and Gas Management ²³					https://gy.tauedu.org/oil-and-gas-management-specialization-mba/

²². Includes courses in Sustainable Energy and Development, Energy Economics and Renewable Energy Simulation

²³. MBA programme



TRANSPORTATION SECTOR



Data was not available for the transportation sector in 2022.



+

 SUMMARY OF GUYANA'S GHG EMISSIONS AND REMOVALS (Gg) FOR 2004²⁵

Climate Change Policy	National Climate Change Policy and Action Plan 2020-2030 (Draft) (2019) ^[8] Climate Resilient Strategy and Action Plan for Guyana (2015) ^[9] Low Carbon Development Strategy (2030) ^[5]
National Determined Contributions ^[10]	11% annually compared to historic levels from the timber industry. *(Note that Guyana is a net carbon sink)
Emissions Reduction Target ^[9]	70% emission reductions by 2030 ^{24 [45]}
Priority Sectors for NDC ^[10]	<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 ^[46] Guyana Second National Communication to the United Nations Framework Convention on Climate Change ^[47]

Categories	Removals (Gg)	Emissions (Gg)								
	CO ₂	CO ₂	CH ₄	CH ₄ as CO ₂ e	N ₂ O	N ₂ O as CO ₂ e	NO _x	CO	NMVOCS	SO ₂
Energy	I/NO	1,657	I/NO	I/NO	I/NO	I/NO	10	41	11	I/NO
Industrial processes	I/NO	I/NO	I/NO	I/NO	I/NO	I/NO	I/NO	I/NO	16	I/NO
Agriculture	I/NO	I/NO	45	1,125	5	1,490	5	109	I/NO	I/NO
Land-Use Change and Forestry	-59,333	I/NO	7	175	I/NO	I/NO	2	61	I/NO	I/NO
Wastel	NE	NE	3	75	0.5	149	NE	NE	NE	I/NO
International Bunkers	NE	21	NE	NE	NE	NE	NE	NE	NE	I/NO
Biomass	NE	716	NE	NE	NE	NE	NE	NE	NE	I/NO

^{24.} The emission reduction target was announced by His Excellency Dr Mohammed Irfaan Ali during COP26, shifting from the 70% emission reduction by 2027.

^{25.} I/NO: Insignificantly Small or Not Occurring; NE: Not Estimated



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