



2017 ENERGY REPORT CARD

GUYANA

This document presents Guyana's Energy Report Card (ERC) for 2017 and was prepared using data and information submitted by the Member State, which was supplemented by several online resources (see list of References). The ERC provides an overview of energy sector performance in Guyana by focusing on two priority sub-sectors: Electricity and Transportation. The ERC also includes energy efficiency, climate change, energy sector workforce, training and capacity building information, subject to the availability of data.

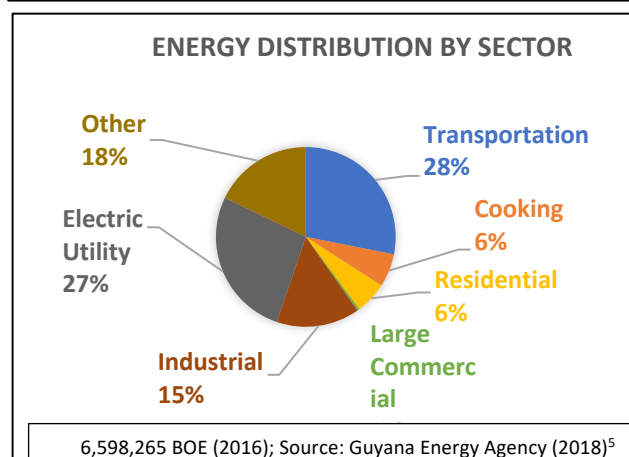
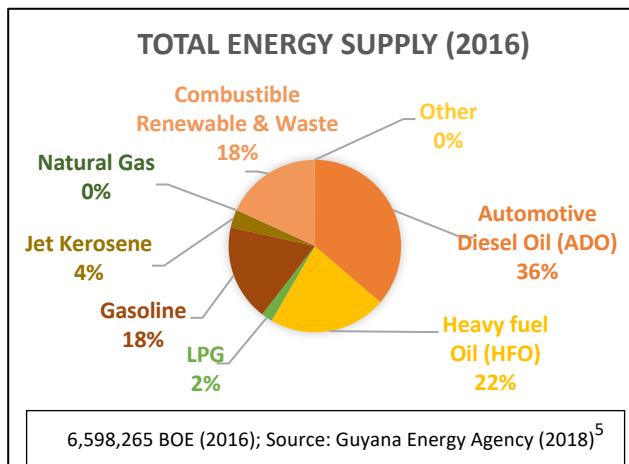
December 2018

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“AT-A-GLANCE” SUMMARY OF GUYANA’S ENERGY SECTOR

KEY DATA & INFORMATION – ENERGY SECTOR IN GUYANA	
Population	737,718 (2017) ¹
GDP Per Capita	8,100 (2017) ²
Debt: GDP Ratio	52.2% (2017) ²
Human Development Index	0.654 (2017) ³
National Development Plan/ Overall Country Development Strategy	Yes (1997) ⁴
National Energy Policy	Yes (1994 and 2016) ⁵
Renewable Energy (RE) Policy	
RE Target	100% RE power supply by 2025 ⁵
Energy Performance Standards	In development ⁵
Appliance Labelling	
Number of Persons Employed in Energy Sector	100 (Public Sector) (2017) ⁵
Total Oil Import per day	14,772 (2017) ⁵
Total Installed Capacity (MW)	404 MW (2017) ⁵
Total Installed RE (MW)	57.4 (2017) ⁵
Electricity System Losses (%)	29% (2017) ⁵
Energy Use (kWh) Per Capita	1,097 (2017) ⁶
Energy Intensity	6,403 (2017) ⁷
Oil Imports as % of GDP	11% (2017) ⁵
Climate Change Policy	
National Determined Contributions	Yes (2015) ⁸
National Repository for Energy Data	Guyana Energy Agency



GUYANA’S ENERGY SECTOR PERFORMANCE SUMMARY

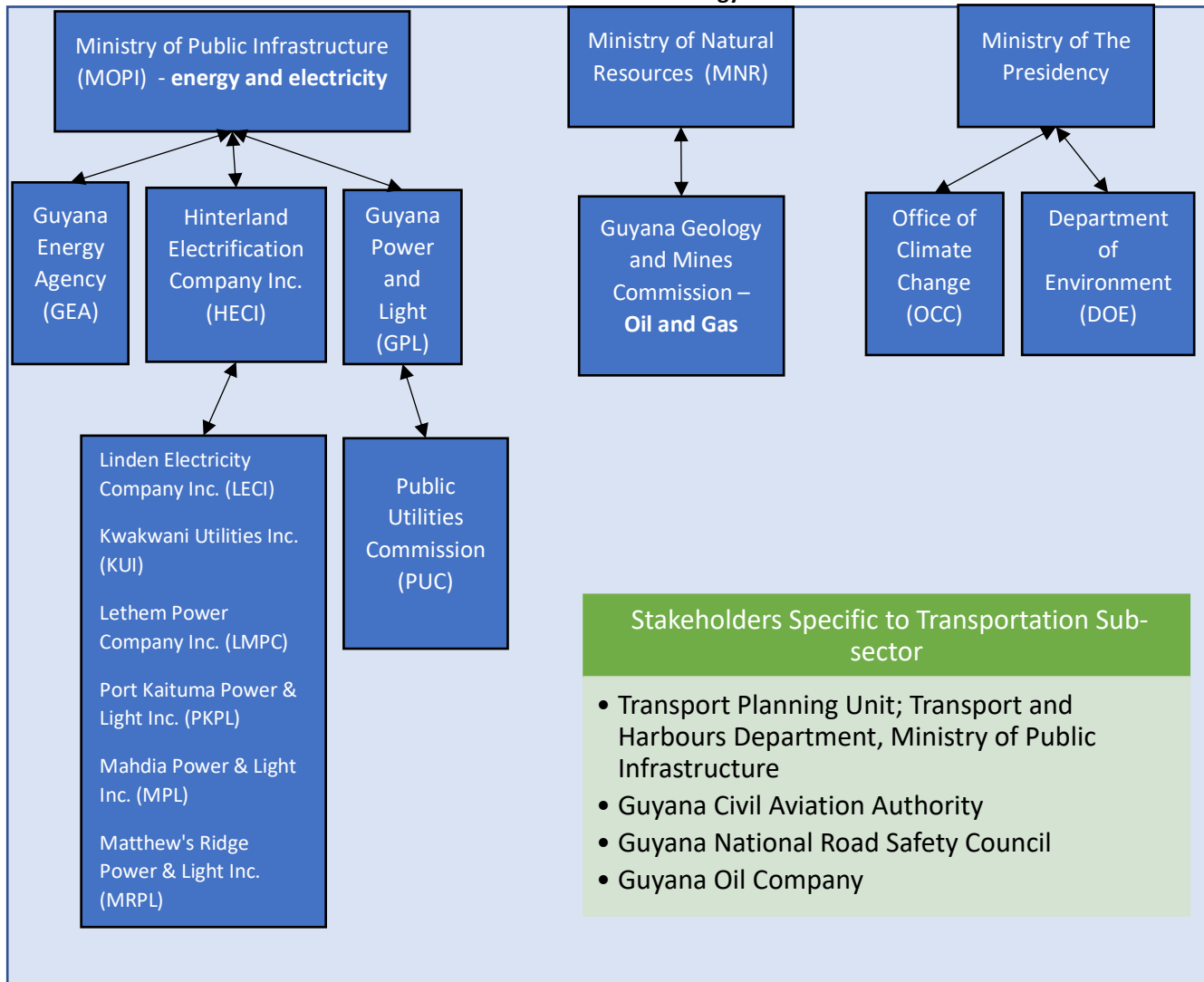
Indicator	Base /Current Performance (Year)	National Target	National Target (Proposed by CARICOM – CSERMS Report) ⁹	Typical RE Oil Displacement^{10,11} Potential Annually** 1 MW wind displaces 1,760 barrels of oil equivalent (BOE) 1 MW hydro displaces 3,300 BOE 1 MW solar displaces 1,210 BOE Energy Intensity (EI)¹²: - EI measures how energy benefits the economy and is calculated by taking the ratio of total primary energy use (all of the fuels and flows that a country uses to get energy) to GDP (the total money made in a country). EI indicates how effectively an economy uses their fuels and flows.
RE as % of Installed Capacity	14% (2016)	100% by 2025 ⁵	84% by 2027	
*Energy Intensity (BTU/US\$1 Unit of output)	6,403 (2017) ⁷			
% Reduction in Energy Sector Emissions (NDC)				

*The energy efficiency target for CARICOM is 33% reduction in energy intensity by 2027, compared to a reference of Average Annual Energy Intensity of ~13,000 BTU per USD of GDP in 2015.

**Based on capacity factors of 0.32 for wind, 0.6 for hydro and 0.22 for solar.¹⁰

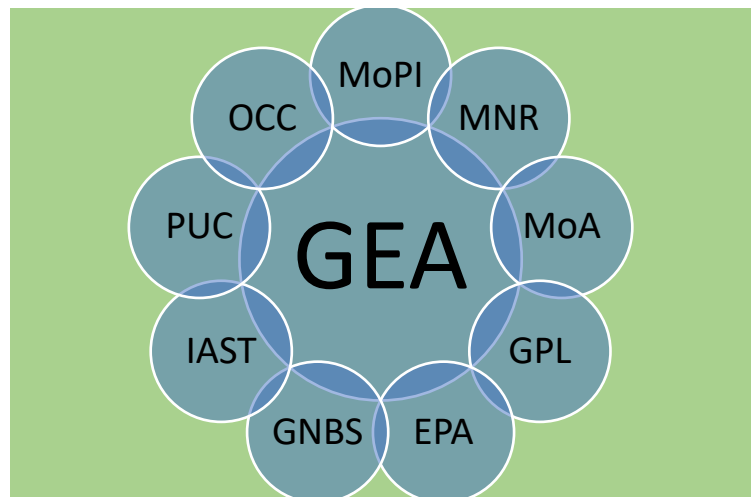
KEY ENERGY SECTOR STAKEHOLDERS: GUYANA

Governance Structure for the Energy Sector^{5, 13}



Other key energy sector stakeholders include:

-  Agencies and Departments of the Ministry of Public Infrastructure as well as the Guyana Energy Agency.
-  The Ministry of Agriculture (MoA): leads on bio-energy and is responsible for articulating Guyana's agro-energy policy.
-  Environmental Protection Agency (EPA)
-  Government Electrical Inspectorate
-  Guyana National Bureau of Standards (GNBS)
-  Institute of Applied Science and Technology (IAST)
-  Guyana Sugar Corporation Inc.

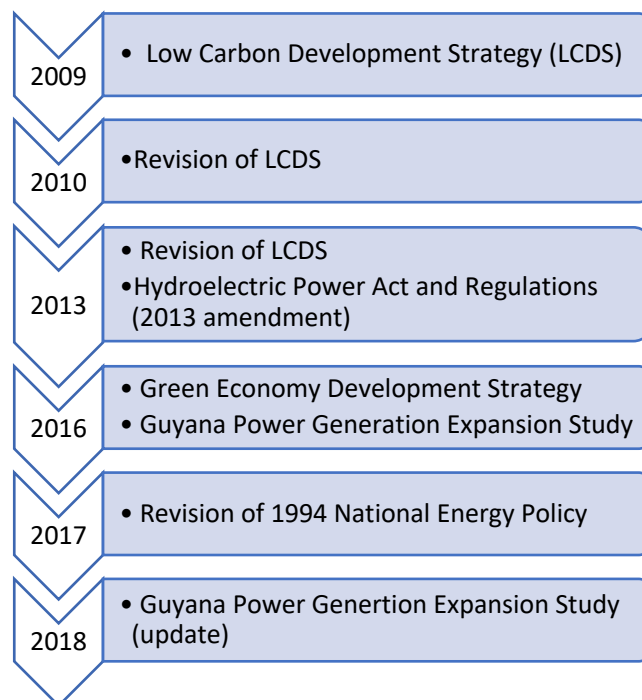


POLICY, LEGAL AND REGULATORY FRAMEWORK: GUYANA

Electricity Sector: Policy, Legal and Regulatory (PLR) Framework

✓	Finalized Energy Policy and Energy Action Plan	
✓	RE Target	
✓	EE Target	
✓	Independent Regulator	
✓	Net billing	
✗	Feed-in-tariff	
✗	RE/EE Act	
		
Completed/ In place		
In progress		
Not yet started/ Not established		
Note: Guyana's energy policy was finalized in 1994, but is currently being revised.		

Key Achievements: PLR Framework Timeline for the Electricity Sector¹⁴



Policies and Legislation Relevant to the Transportation Sector⁵

Policies	 National Energy Policy, 1994  Draft National Energy Policy of Guyana - Green Paper, 2017 (update to 1994 Policy)  Climate Resilience Strategy and Action Plan (CRSAP), 2015 (draft)
Legislation & Regulation	 Guyana Energy Agency Act, 1997 (as well as the 2004, 2005 and 2011 amendments)  Energy Sector (Harmonization of Laws) Act, 2002  Customs (Amendment) Act; Value Added Tax Act  Petroleum and Petroleum Products Regulation 2014  Public Utilities Commission Act 1999 (and 2010 amendment)

Climate Change Framework - Guyana

Climate Change Policy	LCDS (2013) and CRSAP (2015)
National Determined Contributions	Yes (2015) ⁸
Emissions Reduction Target	
Priority Sectors for NDC	Forest and energy ⁸
National Communications (NC) to the UNFCC	NC1 submitted in 2002, NC2 in 2012 ¹⁵
Greenhouse Gas (GHG) Inventory	Yes ⁸

ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: GUYANA

KEY DATA & INFORMATION

CONVENTIONAL ENERGY

1. Fuel Consumption – Electricity Subsector (BOE)	1,851,825(2016) ⁵
2. Total Installed Capacity (MW)	404 (2017) ⁵
3. Installed Conventional Capacity – Electric Utility (MW)	188 (2017) ⁵
4. Installed Conventional Capacity – (IPPs) (MW)	
5. Base Load (MW)	132(2017) ⁵
6. System Peak Demand (MW)	127.26(2017) ⁵
7. Total Generation (MWh)	809,411 (2017) ⁵
8. Total Sales (MWh)	555,643 (2017) ⁵
9. Total Number of Customers	188,664 (2017) ⁵

RENEWABLE ENERGY

10. Total Installed RE Capacity (MW)	57.4 (2017) ⁵
11. RE Capacity – Electric Utility (MW)	
12. RE Capacity – IPPs (MW)	
13. RE as % of Total Installed Generating Capacity	14% (2017) ⁵
14. RE Target	

TARIFFS

15. Residential Tariff (US\$/kWh)	0.19-0.23 (2016) ⁵
16. Commercial (US\$/kWh)	0.27-0.28 (2016) ⁵
17. Industrial/Large Power (US\$/kWh)	0.23-0.25 (2016) ⁵
18. Street Lights (US\$/kWh)	0.20-0.21 (2016) ⁵

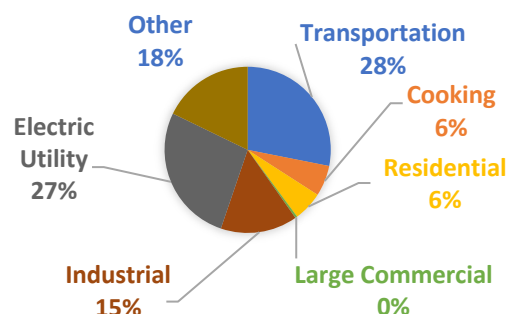
EFFICIENCY

19. Electricity System Heat Rate	
20. Electricity System Losses (%)	29 (2017) ⁵
21. Energy Use (kWh) Per Capita	1,097 (2017) ⁶
22. Energy intensity index (EII) BTU/US\$1 Unit of output	6,403 (2017) ⁷
23. EE Target	

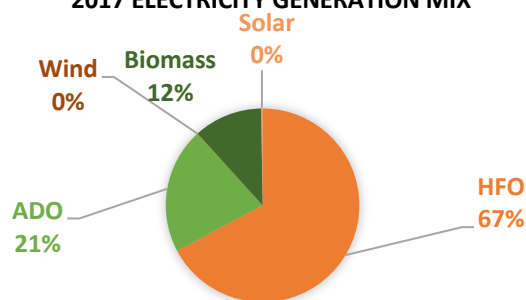
MANAGEMENT OF ENERGY DATA/KNOWLEDGE

24. Name of Energy Knowledge Management System	
25. Name of Energy Data Management System	

ENERGY DISTRIBUTION BY SECTOR

6,598,265 BOE (2016); Source: Guyana Energy Agency (2018)⁵

2017 ELECTRICITY GENERATION MIX

1,083, 831 barrels; Source: Guyana Energy Agency (2018)⁵

RE Resource	Installed Capacity (MW)	Year Commissioned
Wind	0.4	
Solar	2.97	
Hydro		
Geothermal		
Biomass/ WTE	54.03	
Total	57.4	

RE as % of installed Power Capacity = 14%

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind		
Solar	575,800 GWh/year ⁹	
Hydro	7000 ⁵	Yes
Geothermal		
Biomass/WTE	60.2GWh ⁹	
Total		

TRANSPORTATION SUBSECTOR: GUYANA

Key Transportation Data and Information	
Fuel Consumption, Transportation (BOE)	1,931,609 (2016) ⁵
Energy-related transportation targets?	
Sustainable /Alternative fuels used?	
Total Imports for Alternative Fuels	
Conventional Vehicle Stock/Vehicle Registration	172,708 (1998-2017) ⁵
Trucks	16,120 ⁵
Cars	65,739 ⁵
Buses	10,111 ⁵
SUVs	11,542 ⁵
Motor Cycles	45,154 ⁵
Tractors	4,489 ⁵
Other	19,193 ⁵
Hybrid vehicle stock	
Electric vehicle stock	
Fuel Quality Standards?	

Breakdown of Fuel Use in the Transportation Sector		
Type of Fuel/s	Quantity (BOE)	Purpose (Road, Railway, Aviation, Marine)
Gasoline (mogas)	1,478,518	Road
Diesel (gasoil)		
Avjet, Avgas	132,875	Aviation
Diesel (gasoil)	320,215	Marine
TOTAL	1,931,609	

WORKFORCE: ENERGY SECTOR, GUYANA

Number of Persons Employed in the Energy Sector

NAME OF ENTITY	PRIVATE OR PUBLIC?	NUMBER OF PERSONS EMPLOYED	BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL	
	Public	100	Females: Managerial Level: Supervisor: Technical: Administrative:	Males: Managerial Level: Supervisor: Technical: Administrative:

Number of Persons Trained in the Energy Sector in 2017

NAME OF ENTITY	PRIVATE OR PUBLIC?	NUMBER OF PERSONS TRAINED	BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL	
		97	Females: Managerial Level: Supervisor: Technical: Administrative:	Males: Managerial Level: Supervisor: Technical: Administrative:

Name of Education Programme Provider	Name of Programme	Number of persons enrolled	Type of Programme			
			Certificate	B.Sc	M.Sc	Ph.D

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- ⁵ Guyana Energy Agency (Focal Point: Dr. Mahender Sharma). (2018). *CARIFORUM Energy Report Card Input Data 2017* (completed for Guyana).
- ⁶ Calculated using Generation and population figures.
- ⁷ Calculated using total energy supply and GDP.
- ⁸ Government of Guyana. (2015). *Guyana's Revised Intended Nationally Determined Contribution*. Retrieved from <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Guyana%20First/Guyana%27s%20revised%20NDC%20-%20Final.pdf>
- ⁹ Worldwatch Institute. (2015). *Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) Baseline Report and Assessment*. Retrieved from http://www.worldwatch.org/system/files/C-SERMS_Full_PDF.pdf
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- ¹⁴ International Trade Administration, US Department of Commerce. (2018). *Export.gov: Guyana-Energy*. Retrieved from <https://www.export.gov/article?id=Guyana-Energy>
- ¹⁵ United Nations Framework Convention on Climate Change. (2018). *Process and Meetings: National Communication submissions from Non-Annex I Parties*. Retrieved from <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-update-reports-non-annex-i-parties/national-communication-submissions-from-non-annex-i-parties>