



2019 ENERGY REPORT CARD

BELIZE



WWW.CCREEE.ORG



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



INTRODUCTION

This document presents Belize's Energy Report Card (ERC) for 2019.

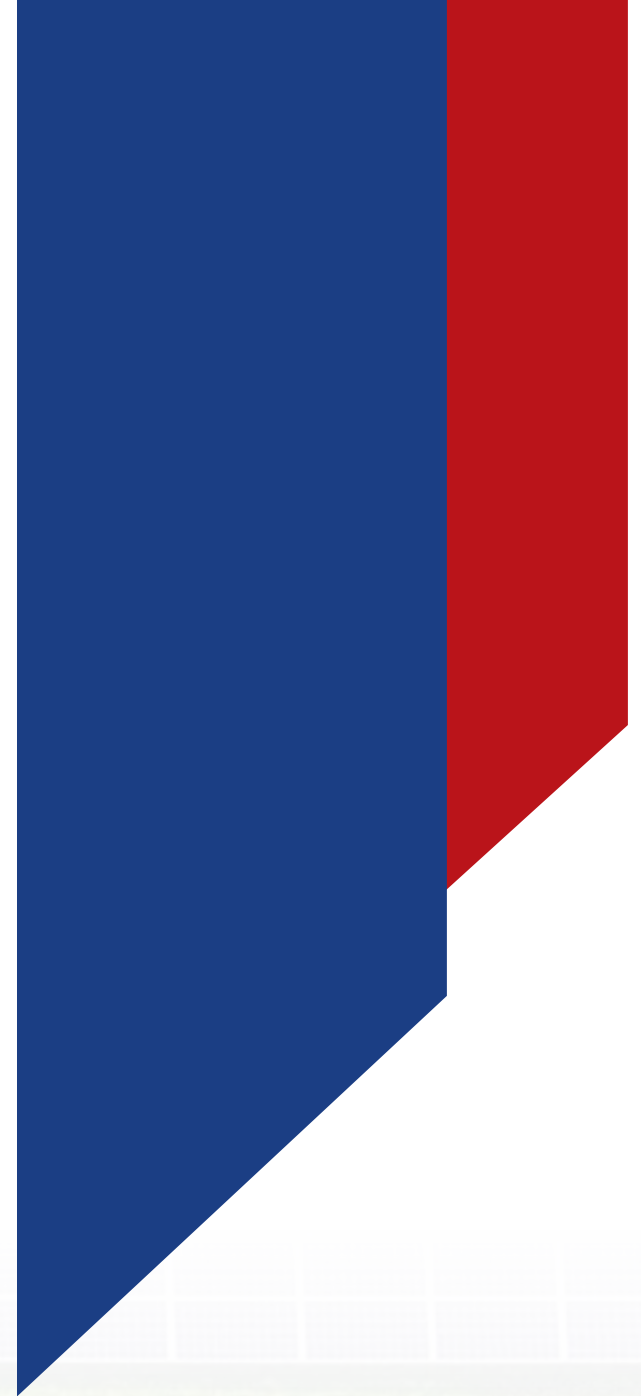
The ERC provides an overview of the energy sector performance in Belize. The ERC also includes energy efficiency, projects, technical assistance, workforce, training and capacity building information, subject to the availability of data.

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.

CONTENTS





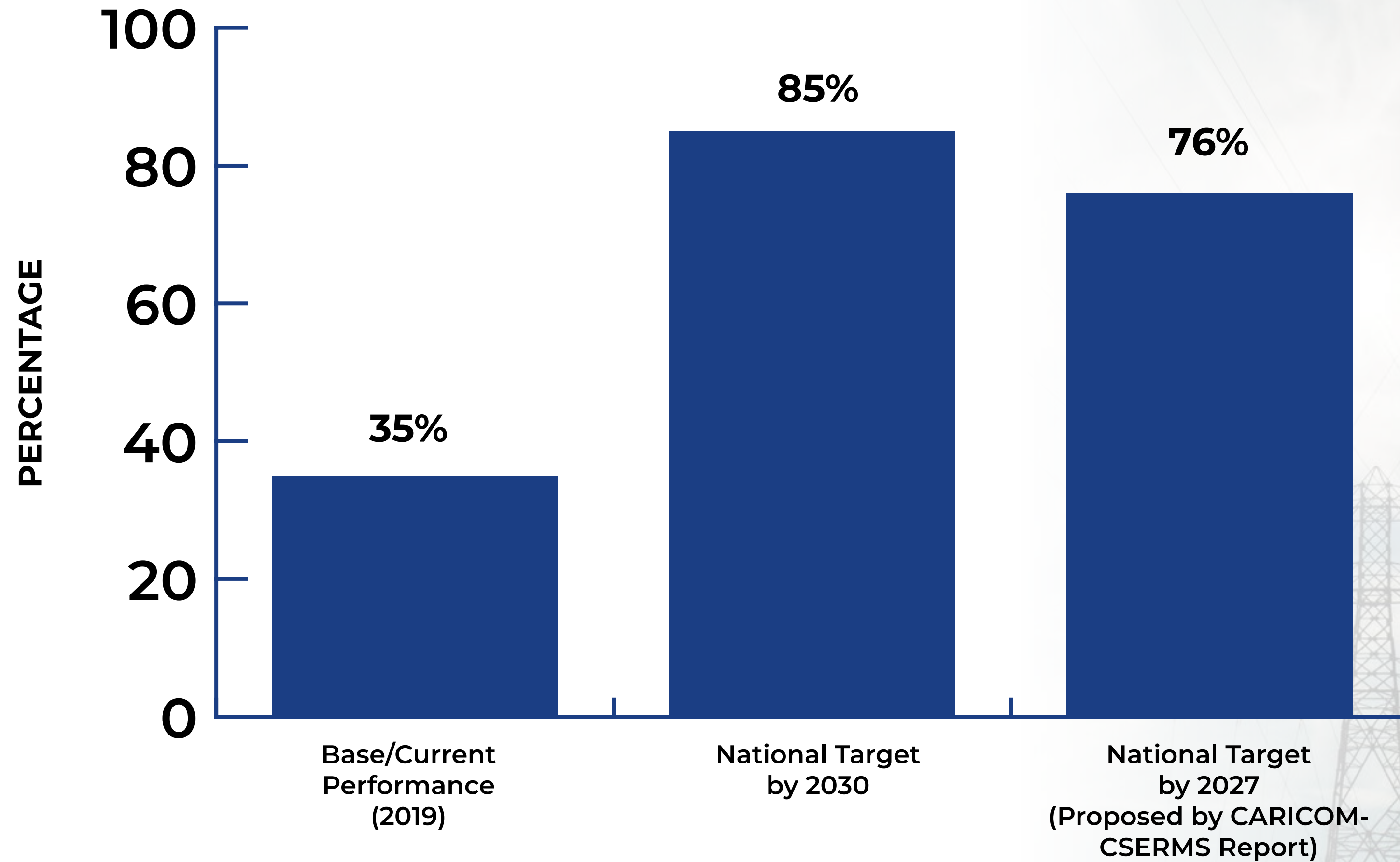
ENERGY SECTOR SUMMARY

Key Data and Information - Energy Sector	
Population	408,487 [1]
GDP (USD) Per Capita	3,507.16 [2]
Debt as % of GDP	94.2% [3]
Human Development Index	0.718 [4]
National Development Plan/Overall Country Development Strategy	Horizon 2030[5]
	Growth and Sustainable Development Strategy (2016-2019) [5]
National Energy Policy	Belize National Energy Policy Framework (2012) [6]
Renewable Energy (RE) Policy	Belize Sustainable Energy Strategy and Action Plan (2015) [7]
RE Target	85% by 2030 [8]
Energy Performance Standards/Appliance Labelling	Pilot project with the CARICOM Regional Organisation for Standards and Quality (CROSQ) to start 2020 [9]
No. of Persons Employed in Energy Sector	315 [10] [11]
Total Oil Import (BOE) per day (2018)	0 [12]
Total Oil Export (BOE) per day	576.85 [13]
Total Installed Capacity (MW)	302.38 [14]
Total Installed RE (MW)	107.03[13]
Electricity System Losses (%)	11.70% [15]
Energy Use (kWh) Per Capita	1,686.05 [16]
Energy Intensity (BTU/\$1)	9,019.13 [17]
Fuel and Oil Imports as % of GDP	7.42 [18]
Climate Change Policy	A National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize [19]
Electric Vehicle Stock	< 10 (Mainly on Islands of Belize) [12]
National Determined Contributions (NDC)	24 million metric tonnes of CO ₂ e from 2014 to 2033 [7]
National Repository for Energy Data	Belize National Energy Information System [17]



ENERGY SECTOR PERFORMANCE AGAINST TARGETS

RENEWABLE ENERGY PERFORMANCE AGAINST TARGETS





KEY ENERGY STAKEHOLDERS

Government Ministries, Departments and Agencies

- Ministry of Public Service, Energy and Public Utilities
- Geology and Petroleum Department
- Social Security Board (Shareholder in Utility company)

Fuel Importers & Suppliers

- Sol Belize
- PUMA Energy Ltd
- Belize Natural Energy
- UNO Belize

Electric Utility

- Belize Electricity Limited (BEL)

Independent Power Producer(s)

- Belize Electricity Company Limited (BECOL) (Hydro)
- Hydro Maya (Hydro)
- Belcogen (Biomass)
- Santander Sugar Energy Limited (Biomass)
- JICA/UB Solar Farm (Solar)
- BAPCOL (Fuel Oil)
- Comisión Federal de Electricidad
- Farmers Light Plant Corporation

Electricity Regulator

- Public Utilities Commission

Transportation

- Transport Department within Ministry of Transport
- Department of Civil Aviation
- Belize Port Authority
- District Municipal Bodies

Other

- Caribbean Community Climate Change Center
- National Climate Change Office
- Ministry of Finance
- Belize Bureau of Standards
- Ministry of Economic Development
- Statistical Institute of Belize





ELECTRICITY SECTOR: POLICY, LEGAL AND REGULATORY (PLR) FRAMEWORK

	Completed	Draft	In Progress	Not Completed
Energy Policy and Energy Action Plan	✓		Revision in Progress	
RE Target	✓		Revision in Progress	
EE Target	✓		Revision in Progress	
Electricity Regulator	✓			
Net Billing / Net Metering				✓
Interconnection Policy/Standards		✓		
Feed-in-tariff				✓
RE/EE Act				✓

KEY ACHIEVEMENTS: PLR FRAMEWORK TIMELINE FOR ELECTRICITY SECTOR

Name	Year
Electricity Act (Last Revision)	2003 [20]
Statutory Instrument 116 - Tariff Setting	2009 [21]
Public Utilities Commission ACT Chapter 223 (Last Revision)	2011 [22]

Policies and Legislation Relevant to the Energy Sector

Policies:

- National Energy Policy Framework 2012 [23]
- National Sustainable Energy Strategy and Action Plan 2015 [7]
- Belize Consolidated Project Plan (CPP) 2018 [24]

Legislation:

- Environment Protection Act (Last Revision 2011) [25]
- Petroleum Act Chapter 225 (Last Revision 2000) [26]

Policies and Legislation Relevant to the Transportation Sector

Policies:

- Comprehensive National Transportation Master Plan (2019) [27]

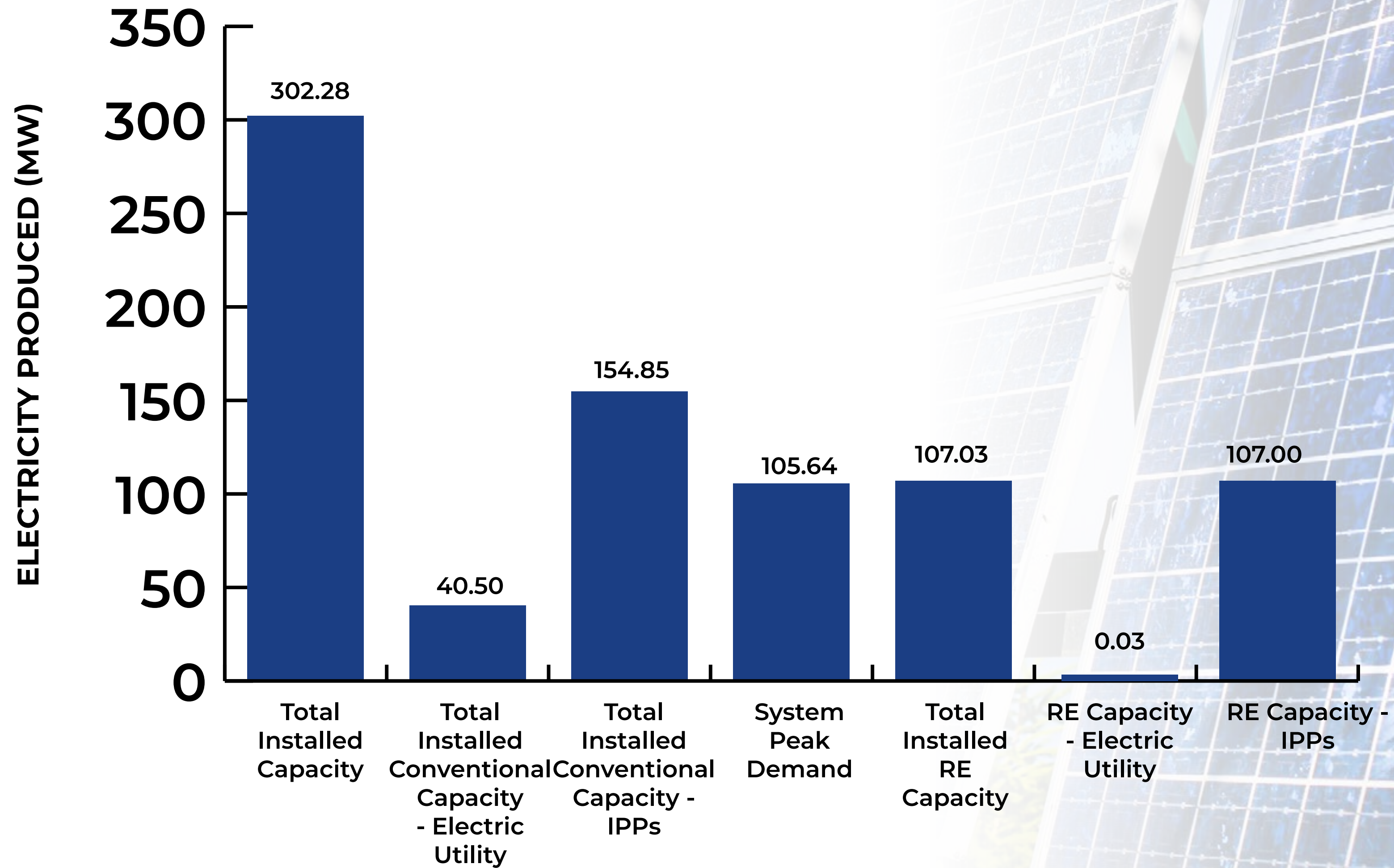
Legislation & Regulation:

- Belize Motor Vehicles and Road Traffic Act 230 (Last Revision 2000) [28]



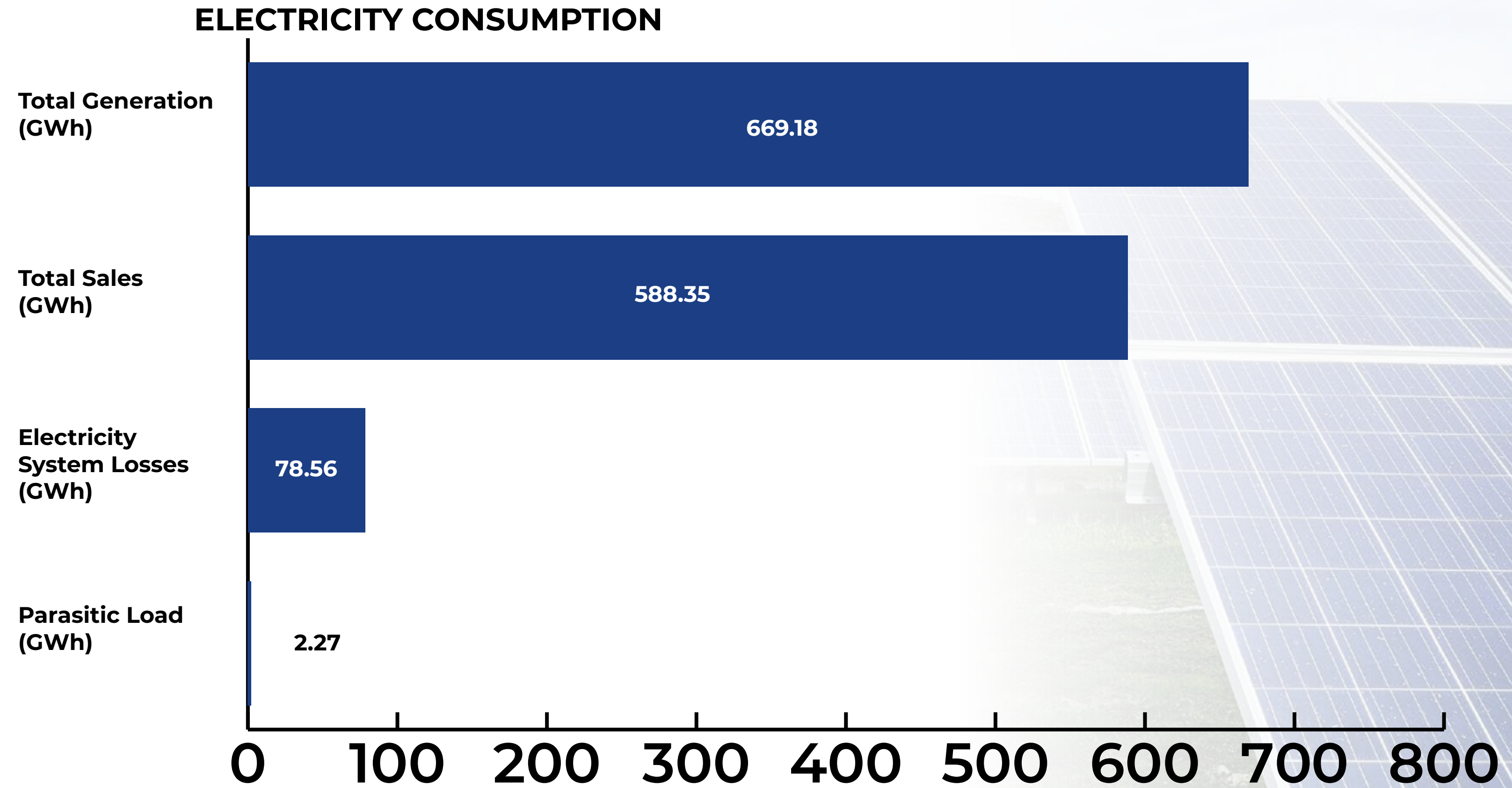
ELECTRICITY & ENERGY EFFICIENCY

ELECTRICITY GENERATION





ELECTRICITY & ENERGY EFFICIENCY (CONT'D)





ELECTRICITY & ENERGY EFFICIENCY (CONT'D)

TARRIFS

Class	Monthly Consumption kWh	Minimum charge USD/ Month	Energy Charge USD/kWh	Demand USD/kVA
Residential (Block 1)	≥ 50	5.05	0.17	
Residential (Block 2)	51 - 200	5.05	0.20	
Residential (Block 3)	≥ 201	5.05	0.222	
Small Commercial (Block 1)	≥ 50	5.05	0.17	
Small Commercial (Block 2)	51 - 200	5.05	0.20	
Small Commercial (Block 3)	≥ 201	5.05	0.222	
Large Commercial (Block 1)	≥ 10,000		0.212	
Large Commercial (Block 2)	10,001 - 20,000		0.202	
Large Commercial (Block 3)	≥ 20,001		0.20	
Small Industrial		126.26 ¹	0.152	18.10
Large Industrial		126.26 ²	0.131	12.22
Streetlights			0.227	

¹Service Charge

²Service Charge

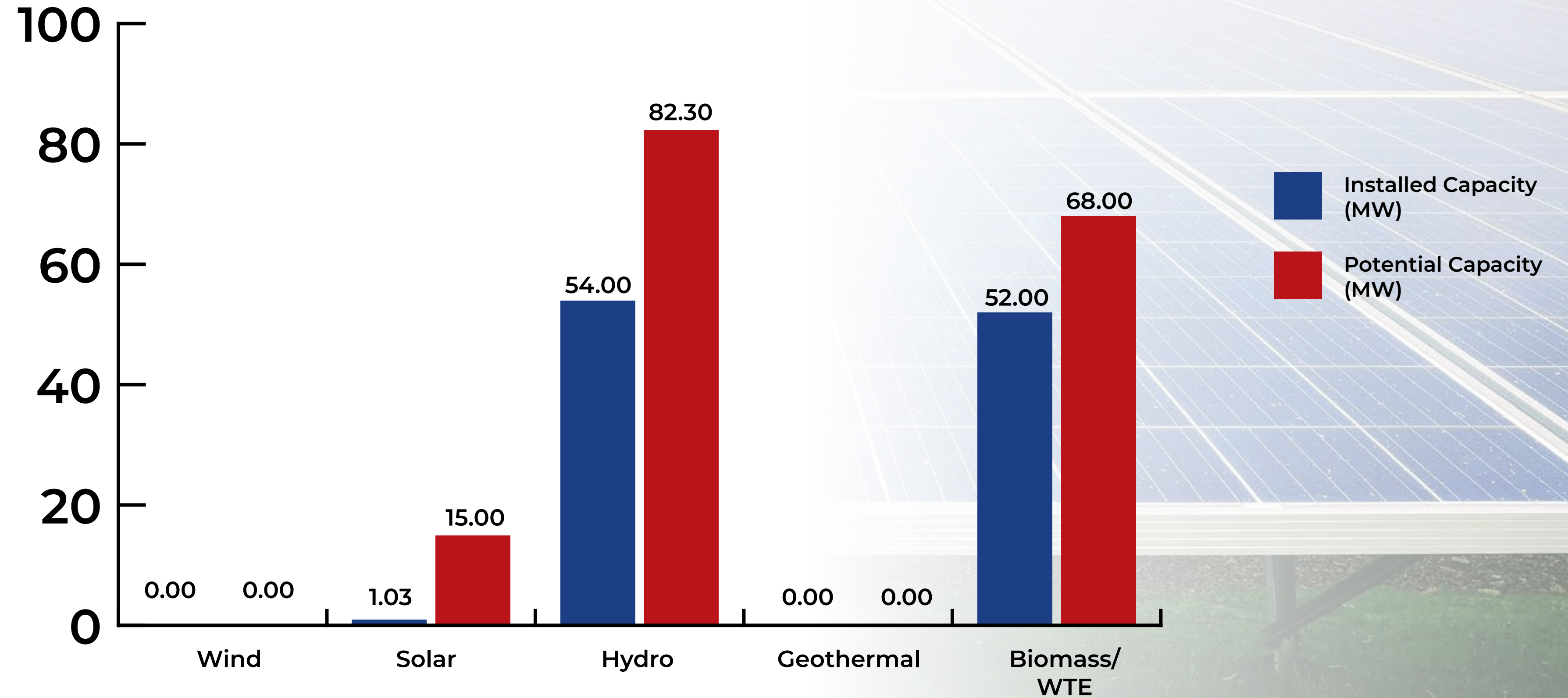
EFFICIENCY

EE Target	Reduction in energy intensity per capita by 30% by 2033
Electricity System Losses (%)	11.74%
Energy Use (kWh) Per Capita	1,440.32
Energy Intensity Index (EII) BTU/US\$1 Unit of output	9,019.13



ELECTRICITY & ENERGY EFFICIENCY (CONT'D)

RENEWABLE ENERGY RESOURCE





PROJECTS IN THE PIPELINE

TECHNICAL ASSISTANCE PROJECTS

Donor Funding and Technical Assistance Landscape	Donor Organization & Banks	Technical Assistance Providers	Funding Awards	Year
Caribbean Energy Statistics Capacity Enhancement Project	World Bank	Latin American Energy Organization	500,000 USD (shared between 5 beneficiary countries in Caribbean)	2018 - Dec 2020 [29]
European Union (European Development Fund 11)	European Union	Energy Unit	14,015,000 Euros	2015 [30]
Empower Rural Electrification Program-Renewable Energy Offgrid System	UAE	ADFD and IDSUD Energies	2.3 million USD	2018 [31]
ESD (Energy for sustainable development in the Caribbean)	UNEP and GEF	CCCCC	988,740 USD	2013-2020 [32]

RENEWABLE ENERGY PROJECTS

Renewable Energy Source	Resource and Projects Capacity	Development Partner	Total Estimated Cost	Funding Source
Solar Photo-Voltaic	350 KW	MASDAR	\$5,555,688.33 BZD	United Arab Emirates
	100KW	Solar Energy Solution Belize	To Be Determined	CDW Stiftung
Biomass	To Be Determined	(CCCCC) Caribbean Community Centre for Climate Change	\$739,700 USD	Green Climate Fund

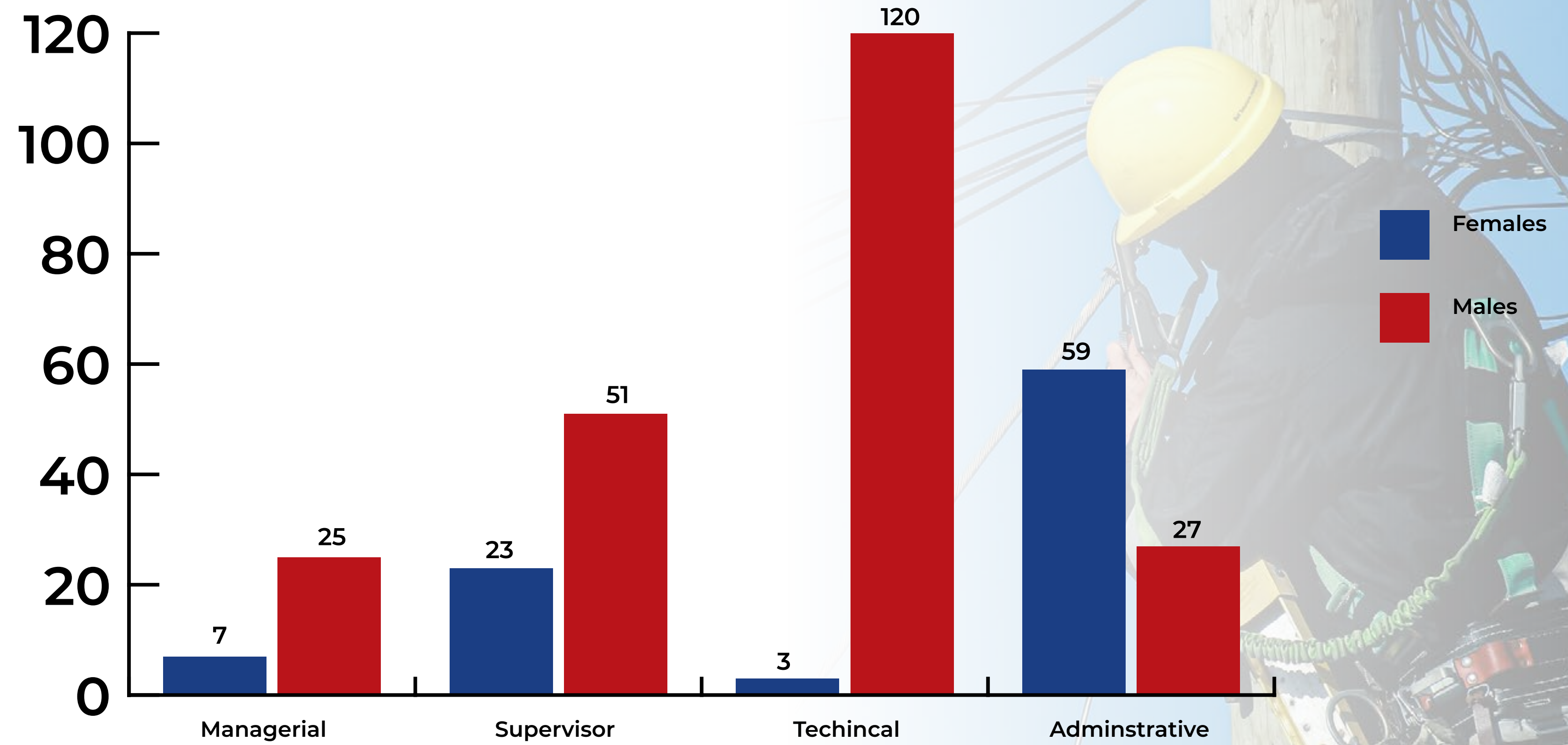


NUMBER AND TYPE OF TERTIARY LEVEL & VOCATIONAL TRAINING SUSTAINABLE ENERGY PROGRAMMES OFFERED

Name of Education Programme Provider	No. of Persons Enrolled	No. of Persons Graduated	Type of Programme		Programme Link
			Certificate	A.Sc.	
ITVET Belize City	50		Certificate in Electrical Installation		https://amandala.com.bz/news/opportunities-graduates-itvet-work-caribbean/
University of Belize	56	165		Associates in Mechanical and Electrical Engineering	https://www.ub.edu.bz/admissions/program-requirements/



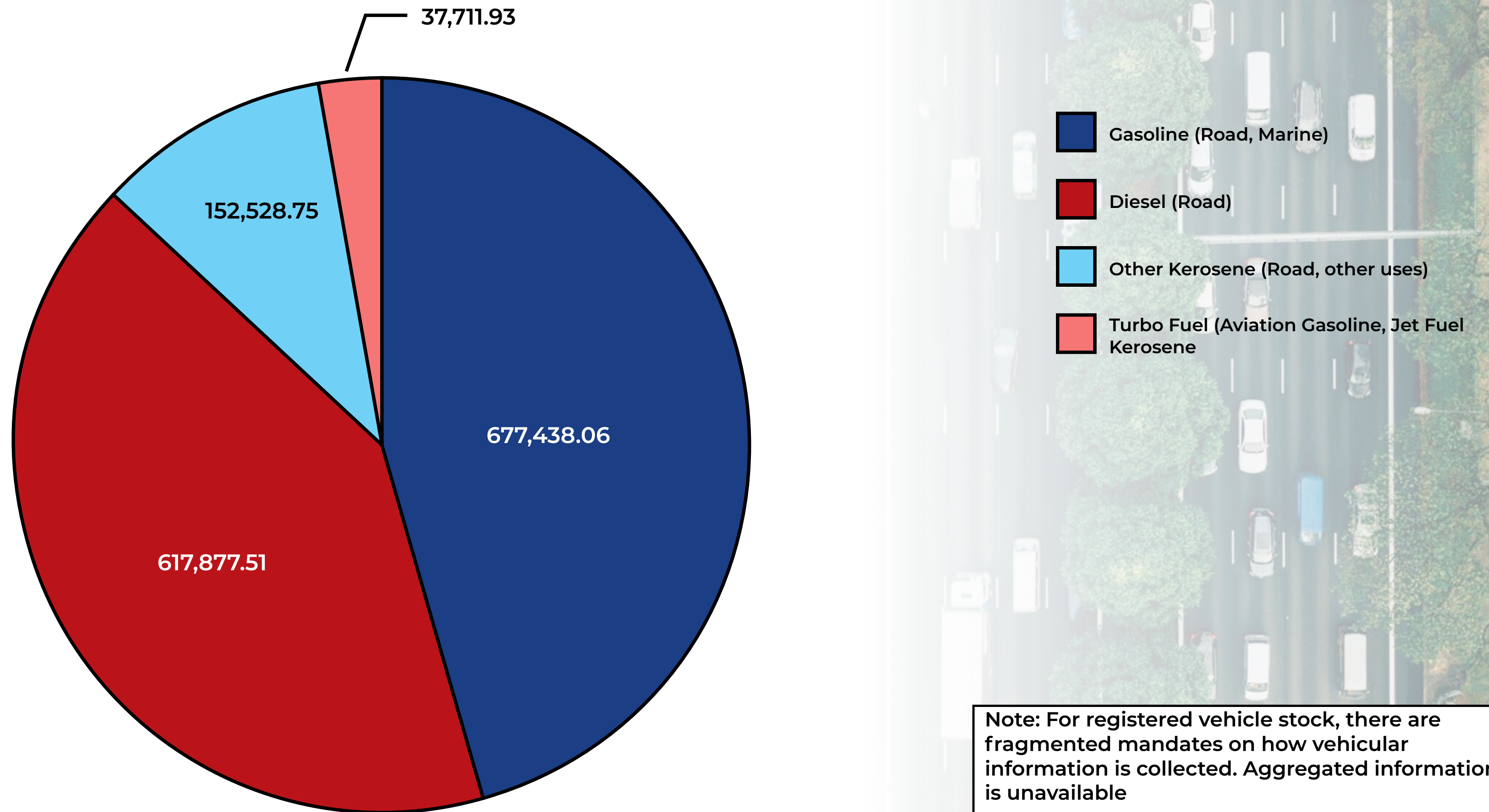
WORKFORCE





TRANSPORTATION SECTOR

TRANSPORTATION FUEL CONSUMPTION (BOE)



Note: For registered vehicle stock, there are fragmented mandates on how vehicular information is collected. Aggregated information is unavailable



CLIMATE CHANGE FRAMEWORK

Climate Change Policy	A National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize [19]
National Determined Contributions	24 million metric tonnes of CO ₂ e from 2014 to 2033 [7]
Emissions Reduction Target	199.83 Gg CO ₂ -eq from Renewable Energy Generation by 2033 123.86 Gg CO ₂ -eq from Transport by 2033 [8]
Priority Sectors for NDC	Agriculture, Forestry, Fisheries and Aquaculture, Coastal and Marine Resources, Water Resources, Human Health, Tourism
National Communications (NC) to the UNFCCC	First National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change [33]
	Second National Communication United Nations Framework Convention on Climate Change [34]
	Belize's Third National Communication to the United Nations Framework Convention on Climate Change [35]

GREENHOUSE GAS (GHG) INVENTORY BY SECTOR [35]

Greenhouse Gas Source and Sink Categories	Total Emissions (tonnes)	CO ₂ (Gg)	CO ₂ Removals (Gg)	CH ₄ (Gg CO ₂ eq)	N ₂ O (Gg CO ₂ eq)	NO _x (Gg NO ₂)	NMVOC (Gg NMVOC)	CO (Gg CO)
Energy	142.8							
Industrial Processes		2.36					0.08	
Agriculture				5.77	1.56	0.03		0.5
Land-Use Change & Forestry		13,449	-8,778	40	0	10		346
Waste				87.55				



REFERENCES

- [1] Statistical Institute of Belize, “Abstract of Statistics 2019,” 2019. [Online]. Available: http://sib.org.bz/wp-content/uploads/2019_Abstract_of_Statistics.pdf. [Accessed 14 August 2020].
- [2] Statistical Institute of Belize, “GDP by activity 1992 - 2019,” 24 February 2021. [Online]. Available: <http://sib.org.bz/statistics/gross-domestic-product/>. [Accessed May 2021].
- [3] International Monetary Fund (IMF), “IMF Staff Country Report - Belize,” 2019. [Online]. Available: <https://www.imf.org/en/Publications/CR/Issues/2019/12/09/Belize-2019-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-48866>. [Accessed August 2020].
- [4] United Nations Development Programme, “United Nations Development Programme Human Development Reports,” 2020. [Online]. Available: <http://hdr.undp.org/sites/default/files/hdr2020.pdf>. [Accessed August 2020].
- [5] Directorate General for Foreign Trade, “National Development Policies,” 2019. [Online]. Available: <https://www.dgft.gov.bz/national-development-policies/>. [Accessed August 2020].
- [6] Government of Belize, “Belize National Energy Policy Framework (2011),” 30 November 2011. [Online]. Available: <https://www.publicservice.gov.bz/index.php/8-news/56-belize-national-energy-policy-framework>. [Accessed August 2020].
- [7] Ministry of Finance, Public Service, Energy and Public Utilities, “Belize Sustainable Energy Strategy and Action Plan,” 2015. [Online].
- [8] The Government of Belize, “Intended Nationally Determined Contributions,” 10 2015. [Online]. Available: <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Belize/1/Belize%20INDCS.pdf>. [Accessed 9 7 2021].
- [9] Belize Bureau of Standards, Belmopan: Private Communication, 2020.
- [10] Belize Electricity Limited,, “Annual Report,” 2020. [Online]. Available: http://www.bel.com.bz/annual_reports/Annual%20Report%202019.pdf. [Accessed August 2020].
- [11] Ministry of Public Service, Energy and Public Utilities (Energy Unit), “About Us,” 2020. [Online]. Available: <https://www.publicservice.gov.bz/index.php/about-us/national-energy-management>. [Accessed August 2020].
- [12] T. Galvez, Interviewee, Chief Transport Officer - Ministry of Public Service, Energy and Public Utilities. [Interview]. 25 August 2020.
- [13] Ministry of Public Service, Energy and Public Utilities, 2019 Belize Energy Balance, Oil and Gas, International Crude Oil Sales, Belmopan, 2019.
- [14] Belize Electricity Limited, Electricity and Energy Efficiency Data, Belmopan: Energy Report Card Input Data Completed for Belize, 2020.



REFERENCES (CONT'D)

- [15] Belize Electricity Limited, "2019 Annual Report Belize Electricity Limited," 2019. [Online]. Available: https://www.bel.com.bz/annual_reports/Annual%20Report%202019.pdf. [Accessed August 2020].
- [16] Ministry of Public Service, Energy and Public Utilities, 2019 Belize Energy Balance, Electricity Sector, Belmopan, 2019.
- [17] Ministry of Public Service, Energy and Public Utilities, "Energy Indicator for Belize National Statistical System (BNSS)," Belmopan, 2020.
- [18] Ministry of Finance, "Fuel Imports Data," Belmopan, 2019.
- [19] Caribbean Community Climate Change Centre (CCCCC), Ministry of Forestry, Fisheries and Sustainable Development (MFFSD), "A National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize," 2014. [Online]. Available: <https://storage.googleapis.com/cclow-staging/oq|ffz2r7p0k3r6wcl3ke0s4d73i?GoogleAccessId=laws-and-pathways-staging%40soy-truth-247515.iam.gserviceaccount.com&Expires=1629918258&Signature=nPTI2KHvMJgCGaUifQ9OCAG20w62Y86%2FrCNqp1SNCDp5nqahI0Rn94pP4SwYreZMQ>. [Accessed August 2020].
- [20] The Government of Belize, "Electricity Act Chapter 221 Revised Edition 2003," 2003. [Online]. Available: <https://www.puc.bz/index.php/publications/electricity-sector/laws/electricity-act/8-electricity-subsidiary/file>. [Accessed 6 6 2021].
- [21] Government of Belize, "Electricity (Tariffs, Charges and Quality of Service Standards) Byelaws," 2009. [Online]. Available: <https://www.puc.bz/index.php/publications/electricity-sector/laws/si-116-of-2009/10-si/file>. [Accessed August 2020].
- [22] The Government of Belize, "Public Utilities Commission Act Chapter 223 Revised Edition 2011," 2011. [Online]. Available: <http://extwprlegs1.fao.org/docs/pdf/blz19665.pdf>. [Accessed 6 6 2021].
- [23] The Government of Belize, "National Energy Policy Framework," 2012. [Online]. Available: [https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/BELIZE\)%20National%20Energy%20Policy%20Framework_1.pdf](https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/BELIZE)%20National%20Energy%20Policy%20Framework_1.pdf). [Accessed 2 6 2021].
- [24] K. Bunker, R. Torbert, P. Allen, H. Armstrong,, G. C. Vasconez, R. Cobb, D. Davis, J. Locke, J. Locke, A. S. Mifsud, S. Mushegan, C. Smith, S. Teelucksingh, A. Tillett and Torbert, "Belize Consolidated Project Plan," 2018. [Online]. Available: https://www.energy.gov.bz/wp-content/uploads/2020/09/Belize_CPP_Report_20180910-1.pdf. [Accessed 6 6 2021].
- [25] The Government of Belize, "Environmental Protection Act Chapter 328 Revised Edition 2011," 2011. [Online]. Available: <http://extwprlegs1.fao.org/docs/pdf/blz6462.pdf>. [Accessed 6 6 2021].
- [26] The Government of Belize, "Petroleum Act Chapter 225," 2000. [Online]. Available: <https://med.gov.bz/wp-content/uploads/2020/08/Belize-Petroleum-Act.pdf>. [Accessed 6 6 2021].



REFERENCES (CONT'D)

- [27] Economic Development Council of the Government of Belize, “Comprehensive National Transportation Master Plan - CNTMP,” 2019. [Online]. Available: <https://edc.gov.bz/governmentpolicies/projects/cntmp/>. [Accessed 6 6 2021].
- [28] The Government of Belize, “Motor Vehicle and Road Traffic Act Chapter 230,” 2000. [Online]. Available: <http://www.belize-law.org/web/lawadmin/PDF%20files/cap230.pdf>. [Accessed 6 6 2021].
- [29] The World Bank Working, “Caribbean Energy Statistics Capacity Enhancement,” 21 September 2017. [Online]. Available: <https://projects.worldbank.org/en/projects-operations/project-detail/P155034>. [Accessed August 2020].
- [30] European Union, “European Development Fund 11,” 2014. [Online]. Available: <https://www.welcomeurope.com/programmes/fed-11eme-fonds-europeen-de-developpement/>. [Accessed August 2020].
- [31] Belize Energy Unit, “EmPOWERing Rural Electrification,” October 2018. [Online]. Available: <https://www.energy.gov.bz/wp-content/uploads/2020/09/EmPOWERing-Rural-Electrification.docx>. [Accessed August 2020].
- [32] Global Environmental Facility, “Energy for sustainable development in the Caribbean,” 2010. [Online]. Available: <https://www.thegef.org/project/energy-sustainable-development-caribbean-buildings>. [Accessed August 2020].
- [33] The Government of Belize, “First National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change,” 7 2002. [Online]. Available: <https://unfccc.int/sites/default/files/resource/Belize%20INC.pdf>. [Accessed 9 7 2021].
- [34] The Government of Belize, “Second National Communication United Nations Framework Convention on Climate Change,” 2011. [Online]. Available: <https://unfccc.int/sites/default/files/resource/blznc2.pdf>. [Accessed 9 7 2021].
- [35] The Government of Belize, “Belize’s Third National Communication to the United Nations Framework Convention on Climate Change,” 2016. [Online]. Available: <https://unfccc.int/sites/default/files/resource/blznc3.pdf>. [Accessed 9 7 2021].