



**CREEE**

CARIBBEAN CENTRE FOR RENEWABLE  
ENERGY & ENERGY EFFICIENCY



## 2018 ENERGY REPORT CARD **BELIZE**

This document presents Belize's Energy Report Card (ERC) for 2018. The ERC provides an overview of 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 and was supplemented by internet research, author calculations and inferences.



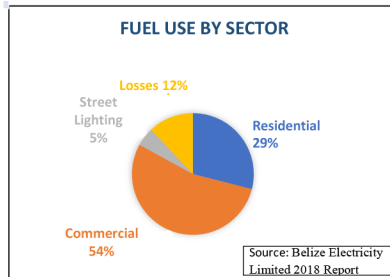
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# "AT-A-GLANCE"

## Summary of the Energy Sector

KEY DATA & INFORMATION – ENERGY SECTOR	
Population	398,050 <sup>1</sup>
GDP (USD) Per Capita	\$8,300 (2017) <sup>2</sup>
Human Development Index	0.708 (2017) <sup>3</sup>
National Energy Policy	Yes <sup>4</sup>
Renewable Energy (RE) Policy	Yes <sup>4</sup>
RE Target	> 85% by 2030 <sup>5</sup>
Energy Performance Standards	N/A
Total Oil Imports (BOE) per day	0
Total Oil Export (BOE) per day	731.7 (2017) <sup>6</sup>
Total Installed Capacity (MW)	203.68 (2017) <sup>6</sup>
Total Installed RE (MW)	98.48 (2017) <sup>6</sup>
Fuel & Oil Imports as % of GDP	7 % (2017) <sup>6</sup>
Electric vehicle stock	N/A
National Repository for Energy Data	No



# ENERGY SECTOR PERFORMANCE AGAINST TARGETS

<i>Indicator</i>	<i>Base /Current Performance (Year)</i>	<i>National Target</i>	<i>National Target (Proposed by CARICOM – CSERMS Report)<sup>7</sup></i>	<u><i>Indicative RE Oil Displacement<sup>8,9</sup> Potential Annually**</i></u> <ul style="list-style-type: none"> <li>1 MW wind displaces 1,760 barrels of oil equivalent (BOE)</li> <li>1 MW hydro displaces 3,300 BOE</li> <li>1 MW solar displaces 1,210 BOE</li> </ul>
<b>RE as % of Installed Capacity</b>	48% (2017) <sup>6</sup>	85% by 2030 <sup>5</sup>	76% by 2027	<u><i>Energy Intensity (EI)<sup>10</sup>:</i></u> <ul style="list-style-type: none"> <li>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.</li> </ul>
<b>*Energy Intensity (BTU/US\$1 Unit of output)</b>	3,923 <sup>11</sup>			

\*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.<sup>8</sup>

# KEY ENERGY SECTOR STAKEHOLDERS

<p><b>GOVERNMENT MINISTRIES, DEPARTMENTS AND AGENCIES<sup>13</sup>:</b></p>	<ul style="list-style-type: none"> <li>• Ministry of Labour, Local Government and Rural Development, Public Service, Energy &amp; Public Utilities</li> <li>• Ministry of Education, Science &amp; Technology, Culture, Youth and Sports</li> <li>• Ministry of Economic Development, Petroleum, Investment, Trade and Commerce</li> <li>• Ministry of Finance and Natural Resources</li> <li>• Ministry of Transport (Transportation Regulator – licensing of vehicles and regulation of public transportation system<sup>9</sup>)</li> <li>• Ministry of Works</li> </ul>
<p><b>ELECTRIC UTILITY:</b></p>	<ul style="list-style-type: none"> <li>• Belize Electricity Limited (BEL)</li> </ul>
<p><b>INDEPENDENT POWER PRODUCER(S)<sup>13</sup>:</b></p>	<ul style="list-style-type: none"> <li>• Hydro Maya Limited (hydro facility)</li> <li>• BELCOGEN Limited (using bagasse fuel)</li> <li>• BAPCOL (using No. 6 HFO fuel oil)</li> <li>• Commission of Federal Electricity (CFE) - Mexico</li> </ul>
<p><b>REGULATOR:</b></p>	<ul style="list-style-type: none"> <li>• Public Utilities Commission</li> </ul>

## OTHER KEY ELECTRICITY STAKEHOLDERS:

Belize Bureau of Standards

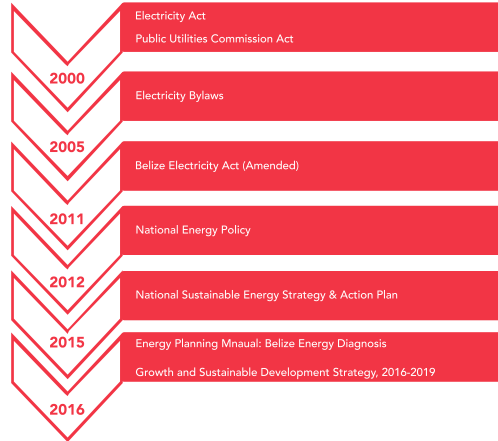
Belize Natural Energy

# POLICY, LEGAL AND REGULATORY FRAMEWORK

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

✓	Energy Policy and Energy Action Plan	●
✓	RE Target	●
✓	EE Target	●
✓	Electricity Regulator	●
✗	Net billing/Net metering	●
✗	Interconnection Policy/Standards	●
✗	Feed-in-tariff	●
✗	RE/EE Act	●
●	Completed/ In place	
●	In progress/ Draft	
●	Not yet started/ Not established	

## Key Achievements: PLR Framework Timeline for the Electricity Sector



# POLICY, LEGAL AND REGULATORY FRAMEWORK

## Policies and Legislation Relevant to the Transportation Sector <sup>15</sup>

### Policies

- National Energy Policy Framework

### Legislation & Regulation

- Motor Vehicles and Road Traffic Act, 2000

# ELECTRICITY AND ENERGY EFFICIENCY

KEY DATA & INFORMATION			
1. Fuel Consumption – Electricity Subsector (BOE)	90625269.3 <sup>18</sup>	11. Industrial/Large Power (US\$/kWh)	0.27 – 0.31 <sup>20</sup>
2. Installed Conventional Capacity – Electric Utility (MW)	26.6 <sup>19</sup>	12. Street Lights (US\$/kWh)	0.47 <sup>20</sup>
3. Installed Conventional Capacity – IPPs (MW)	80.2 (2017) <sup>6</sup>	<b>EFFICIENCY</b>	
4. Base Load (MW)		13. EE Target	<p>Transport</p> <p>20% reduction in conventional transportation fuel by 2030<sup>5</sup></p> <p>Industry/Buildings/Public Sector</p> <p>28-30% reduction in energy intensity per capita by 2033<sup>4</sup></p>
5. System Peak Demand (MW)	104.2 <sup>6</sup>	14. Electricity System Losses (%)	11.9 <sup>18</sup>
6. Total Generation (MWh)	648,899.9 <sup>6</sup>	15. Energy Use (kWh) Per Capita	1392.79 <sup>18</sup>
7. Total Sales (MWh)	570,323.14 <sup>6</sup>		
8. Total Number of Customers	97,714 <sup>6</sup>		
<b>TARIFFS</b>			
9. Residential Tariff (US\$/kWh)	0.34 – 0.45 <sup>20</sup>		
10. Commercial (US\$/kWh)	0.34 – 0.45 <sup>20</sup>		



## ELECTRICITY AND ENERGY EFFICIENCY

RE Resource	Installed Capacity (MW) <sup>18</sup>
Wind	N/A
Solar	0.48
Hydro	51.3
Geothermal	N/A
Biomass/ WTE	43.5

RE Resource Potentials	Potential Capacity (MW) <sup>18</sup>
Wind	N/A
Solar (PV)	28.1
Hydro	71.4
Geothermal	N/A
Biomass/ WTE	4.3

## REFERENCES

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<sup>10</sup>Calculated using 2015 Total Energy Supply and GDP.

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<sup>16</sup>Inter-American Development Bank. (2014). The Energy Sector in Belize. Retrieved from <https://publications.iadb.org/bitstream/handle/11319/6742/The-Energy-Sector-in-Belize.pdf?sequence=1>

<sup>17</sup>Belize Energy Unit (2018) Belize Energy balance

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<sup>19</sup>Rapid Scan Assessment of the Capacity Requirements for Sustainable Energy Development for CARICOM Countries (Professor Dr. Olav Hohmeyer, International Energy Consulting) (2019)