



2017 ENERGY REPORT CARD

BAHAMAS

This document presents Bahamas' Energy Report Card (ERC) for 2017 and was prepared using multiple online resources (see list of References), as the Member State did not submit any data/information in support of the ERC. The ERC provides an overview of energy sector performance in Bahamas 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.

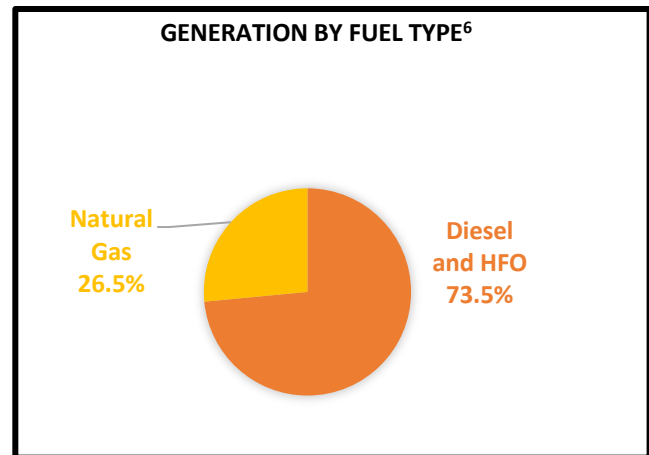
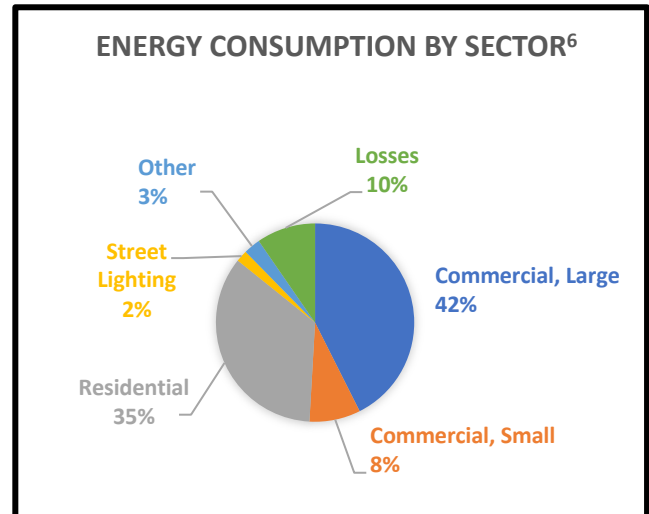
December 2018

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“AT-A-GLANCE” SUMMARY OF THE ENERGY SECTOR IN BAHAMAS

KEY DATA & INFORMATION	
Population	329,988 (2017) ¹
GDP Per Capita	32,400 (2017) ²
Debt as a % of GDP	54.6% (2017) ²
Human Development Index	0.807 (2017) ³
National Development Plan/ Overall Country Development Strategy	Yes (draft) ⁴
National Energy Policy	Yes (2013) ⁵
Renewable Energy (RE) Policy	
RE Target	30% by 2030 ^{5,6}
Energy Performance Standards/ Appliance Labelling	
Number of Persons Employed in Energy Sector	
Total Oil Import per day	
Total Oil Export (BOE) per day	
Total Installed Capacity (MW)	536 MW (NREL 2015) ⁶
Total Installed RE (MW)	
Electricity System Losses (%)	12.3% (NREL 2015) ^{6,7}
Energy Use (kWh) Per Capita	5,849 ⁸
Energy Intensity	
Fuel & Oil Imports as % of GDP	11.35% (NREL 2015) ⁶
Climate Change Policy	Yes (2005) ⁹
National Determined Contributions	Yes (2015) ¹⁰
National Repository for Energy Data	



BAHAMAS’ ENERGY SECTOR PERFORMANCE AGAINST TARGETS










Indicator	Base /Current Performance (Year)	National Target	National Target (Proposed by CARICOM – CSERMS Report) ¹¹	Typical RE Oil Displacement ^{12,13} Potential Annually**
RE as % of Installed Capacity	<0.1% ⁶	30% by 2030	55% by 2027	<ul style="list-style-type: none"> 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 (BTU/US\$1 Unit of output)				Energy Intensity (EI)¹⁴: <ul style="list-style-type: none"> 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.
% Reduction in Energy Sector Emissions		30% reduction compared to Business as Usual by 2030 ¹⁰		

*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.¹²

KEY ENERGY SECTOR STAKEHOLDERS: BAHAMAS

Key electricity stakeholders include:












<p>GOVERNMENT MINISTRIES, DEPARTMENTS AND AGENCIES¹⁵:</p>	<ul style="list-style-type: none">  Ministry of Environment and Housing <ul style="list-style-type: none"> ○ Petroleum Unit ○ The Bahamas Environment, Science & Technology (BEST) Commission  Bahamas Bureau of Standards and Quality  National Energy Policy Committee  Ministry of Finance  Ministry of Public Works
<p>ELECTRIC UTILITY(IES)⁶:</p>	<ul style="list-style-type: none">  Bahamas Electricity Corporation (BEC) <ul style="list-style-type: none"> ○ Bahamas Power & Light Company Limited (wholly owned subsidiary of BEC) ○ PowerSecure International Inc.¹⁶,  Grand Bahama Power Company (GBPC)
<p>INDEPENDENT POWER PRODUCER(S):</p>	
<p>REGULATOR:</p>	<ul style="list-style-type: none">  Utilities Regulation and Competition Authority ¹⁵  Grand Bahama Port Authority¹⁷

Key Stakeholders: Road Transportation Sub-sector¹⁵:

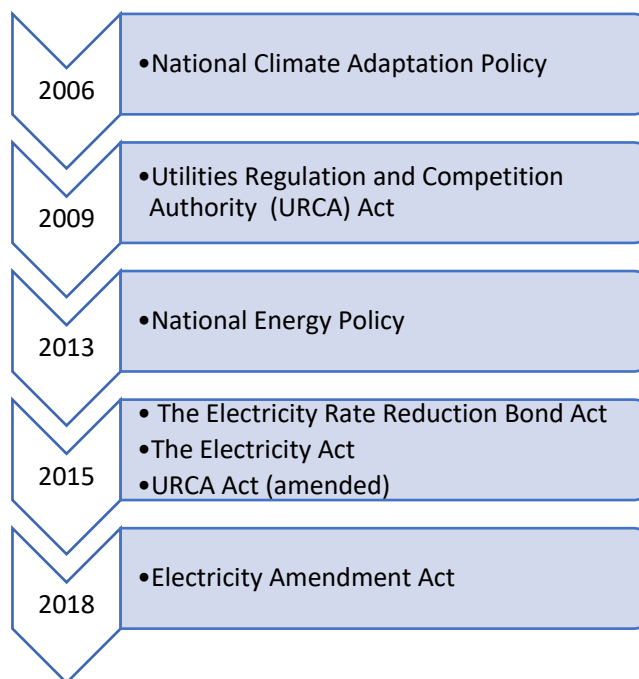
- Ministry of Transport and Local Government
- Ministry of Housing and Environment
- Ministry of Finance

POLICY, LEGAL AND REGULATORY FRAMEWORK: BAHAMAS





Electricity Sector: Policy, Legal and Regulatory (PLR) Framework^{6,11}

✓	Finalized 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	
	Not yet started/ Not established	

Key Achievements: PLR Framework Timeline for the Electricity Sector^{9,18}



Policies and Legislation Relevant to the Transportation Sector, Bahamas

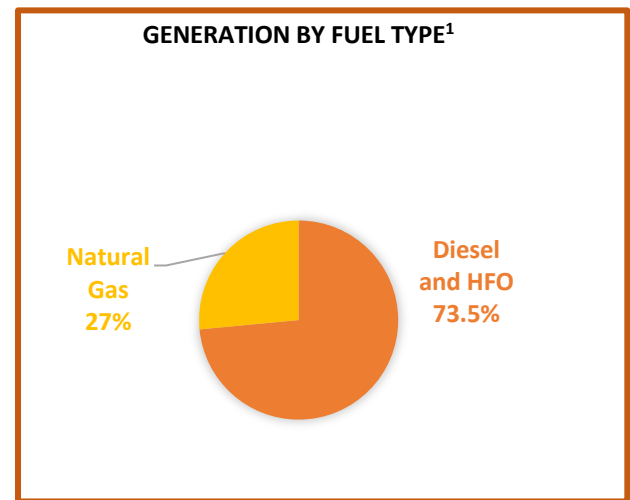
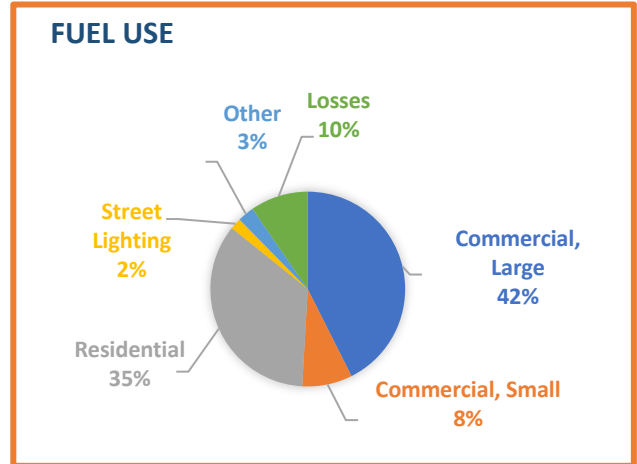
Policies	 National Energy Policy, 2013-2033
Legislation & Regulation	 Petroleum Regulations  Liquefied Petroleum Gas Regulations  Civil Aviation (Air Navigation) Regulations

Climate Change Framework - Bahamas

Climate Change Policy	Yes (2005) ⁹
National Determined Contributions	Yes (2015) ¹⁰
Emissions Reduction Target	
Priority Sectors for NDC	Energy and Forestry ¹⁰
National Communications (NC) to the UNFCC	NC1 submitted in 2001; NC2 in 2015 ¹⁹
Greenhouse Gas (GHG) Inventory	

ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: BAHAMAS

KEY DATA & INFORMATION	
CONVENTIONAL ENERGY	
1. Fuel Consumption – Electricity Subsector (BOE)	
2. Total Installed Capacity (MW)	438 MW (BEC); 98 MW (GBPC) (NREL 2015) ⁶
3. Installed Conventional Capacity – Electric Utility (MW)	
4. Installed Conventional Capacity – IPPs (MW)	
5. Base Load (MW)	
6. System Peak Demand (MW)	234 MW (BEC); 74 MW (GBPC) (NREL 2015) ⁶
7. Total Generation (MWh)	1,641 GWh (BEC); 289 GWh (GBPC) (NREL 2015) ⁶
8. Total Sales (MWh)	
9. Total Number of Customers	95,000 (BEC); 19,000(GBPC) (NREL 2015) ⁶
RENEWABLE ENERGY	
10. Total Installed RE Capacity (MW)	
11. RE Capacity – Electric Utility (MW)	
12. RE Capacity – IPPs (MW)	
13. RE as % of Total Installed Generating Capacity	<0.1% (NREL 2015) ⁶
14. RE Target	30% by 2030 ⁵
TARIFFS	
15. Residential Tariff (US\$/kWh)	0.316 (NREL 2015) ⁶
16. Commercial (US\$/kWh)	0.374 (NREL 2015) ⁶
17. Industrial/Large Power (US\$/kWh)	None (NREL 2015) ⁶
18. Street Lights (US\$/kWh)	
EFFICIENCY	
19. Electricity System Heat Rate	
20. Electricity System Losses (%)	12.3% (NREL 2015) ⁶
21. Energy Use (kWh) Per Capita	5,849 ⁸
22. Energy intensity index (EII) BTU/US\$1 Unit of output	
23. EE Target	
MANAGEMENT OF ENERGY DATA/KNOWLEDGE	
24. Name of Energy Knowledge Management System	
25. Name of Energy Data Management System	



RE Resource	Installed Capacity (MW)	Year Commissioned
Wind		
Solar		
Hydro		
Geothermal		
Biomass/ WTE		
Total		
RE as % of installed Power Capacity = 0%		

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind	200 (NREL 2015) ⁶	
Solar	60 (NREL 2015) ⁶	
Hydro		
Geothermal		
Biomass/ WTE	1 (NREL 2015) ⁶	
Total	261 MW	

TRANSPORTATION SUBSECTOR: BAHAMAS

Key Transportation Data and Information		Breakdown of Fuel Use in the Transportation Sector		
Fuel Consumption, Transportation (BOE)			Quantity (BOE)	Type of Fuel/s
Energy-related transportation targets?				
Sustainable /Alternative fuels used?				
Total Imports for Alternative Fuels				
Conventional Vehicle Stock/Vehicle Registration				
Trucks				
Cars				
Buses				
SUVs				
Hybrid vehicle stock				
Electric vehicle stock				
Fuel Quality Standards?				
		Road		
		Railway		
		Aviation		
		Marine		

WORKFORCE: ENERGY SECTOR, BAHAMAS

Number of Persons Employed in the Energy Sector

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

References

- ¹ Central Intelligence Agency. (2018). *The World Factbook 2017*. Retrieved from <https://www.cia.gov/library/publications/download/download-2017/index.html>
- ² Central Intelligence Agency. (2018). *The World Factbook: Central America – The Bahamas*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/bf.html>
- ³ United Nations Development Programme. (2018). *Human Development Reports: Table 2. Human Development Index Trends, 1990-2017*. Retrieved from <http://hdr.undp.org/en/composite/trends>
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- ⁵ Government of the Commonwealth of Bahamas (2013). *National Energy Policy, 2013-2033*. Retrieved from: <https://breef.org/wp-content/uploads/2015/07/NatlEnergyPolicy.pdf>
- ⁶ National Renewable Energy Laboratory. (2015). *Energy Transition Initiative: Islands Energy Snapshot - Bahamas*. Retrieved from <https://www.nrel.gov/docs/fy15osti/62691.pdf>
- ⁷ Transmission and distribution losses.
- ⁸ Calculated using generation of 1,930,000,000 kWh (NREL 2015) and 2017 population of 329,988.
- ⁹ Government of the Commonwealth of Bahamas. (2005). *National Policy for the Adaptation to Climate Change*. Retrieved from <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/laws/8485.pdf> <https://higgsjohnson.com/wp-content/uploads/2017/11/Electricity.pdf>
- ¹⁰ The Government of the Bahamas. (2015). *Intended Nationally Determined Contribution (INDC) Under the United Nations Framework Convention On Climate Change*. Retrieved from <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Bahamas/1/Bahamas%20INDC%20Submission.pdf>
- ¹¹ 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
- ¹² Ministry of Science, Energy, Technology and Mining. (2013). *Grid Impact Analysis and Assessment for Increased Penetration of Renewable Energy into the Jamaican Electricity Grid*. Retrieved from https://www.mset.gov.jm/sites/default/files/pdf/Grid%20Impact%20Analysis%20for%20Renewable%20Energy%20Penetration_2.pdf
- ¹³ Sustainable Energy Ireland – Renewable Energy Information Office. (2011). *Energy Unit Conversion Tool*. Retrieved from https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/make-it-be_energy_unit_conversion_tool.xlsx
- ¹⁴ J.M.K.C. Donev et al. (2018). *Energy Education - Energy intensity*. Retrieved from https://energyeducation.ca/encyclopedia/Energy_intensity.
- ¹⁵ Government of the Commonwealth of Bahamas (2013). *All Contacts*. Retrieved from <https://www.bahamas.gov.bs/wps/portal/public/gov/government/contacts/lut/p/b1/vZDLkqIwFlafxQeYJgECYRmJXOSm3>

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¹⁶ Higgs & Johnson - Counsel and Attorneys At Law. (2017). *Instituting a New Electricity Regime in the Bahamas*. Retrieved from <https://higgsjohnson.com/wp-content/uploads/2017/11/Electricity.pdf>

¹⁷ Emera Incorporated. (2018). *2017 Annual Report*. Retrieved from <http://investors.emera.com/Cache/1001235103.PDF?Y=&O=PDF&D=&fid=1001235103&T=&iid=4072693>

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¹⁹ 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>