2017 ENERGY REPORT CARD

THE FEDERATION OF ST. CHRISTOPHER AND NEVIS

This document presents the 2017 Energy Report Card (ERC) for The Federation of St. Christopher (St. Kitts) and Nevis, and was prepared primarily using data and information submitted by the Member State, with supplemental data from online online resources (see list of References). The ERC provides an overview of energy sector performance in St. Kitts and Nevis 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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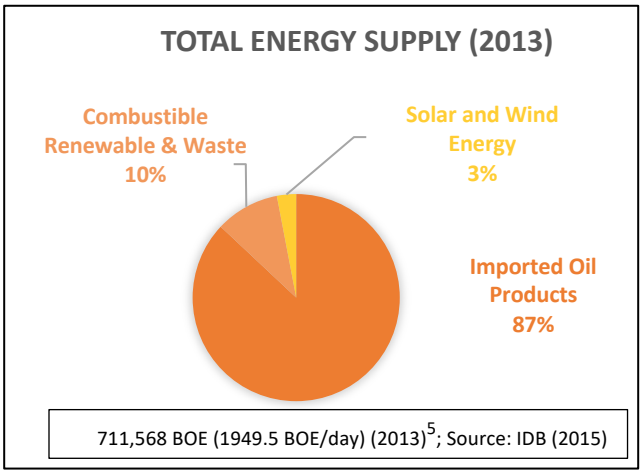
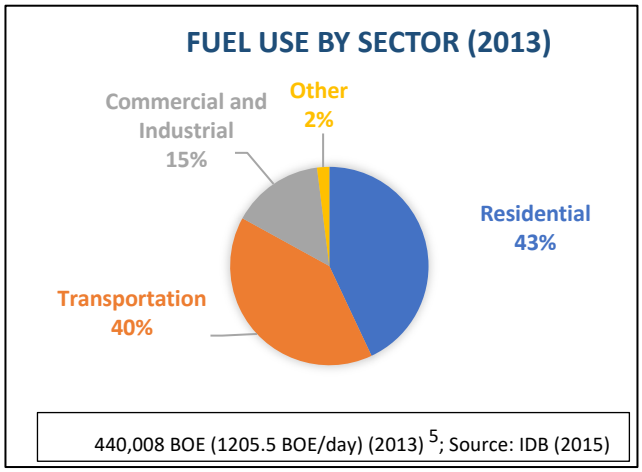
"AT-A-GLANCE" SUMMARY OF ST. KITTS AND NEVIS' ENERGY SECTOR

KEY DATA & INFORMATION – ENERGY SECTOR	
Population	52,715 (2017 est.)[1]
GDP (USD) Per Capita	$28,200 (2017 est.)[2]
Debt as % of GDP	62.9% (2017)[2]
Human Development Index	0.778[3]
National Development Plan/ Overall Country Development Strategy	
National Energy Policy	Yes (2011)[4]
Renewable Energy (RE) Policy	
RE Target	20% by 2015[5]
Energy Performance Standards/Appliance Labelling	
Number of Persons Employed in Energy Sector	
Total Oil Import (BOE) per day	1,700 (2013)[5]
Total Oil Export (BOE) per day	
Total Installed Capacity (MW)	58.9 (2014)[5]
Total Installed RE (MW)	3.2 MW[6]
Electricity System Losses (%)	17% (St. Kitts); 20% (Nevis)[6]
Energy Use (kWh) Per Capita	3,910[7]
Energy Intensity	2,776[8]
Oil Imports as % of GDP	4.9% (2013)[5]
Climate Change Policy	Yes (2018) [9]
National Determined Contributions (NDC)	Yes (2015) [10]
National Repository for Energy Data	





ST. KITTS AND NEVIS' ENERGY SECTOR PERFORMANCE AGAINST TARGETS

Indicator	Base /Current Performance (Year)	National Target	National Target (Proposed by CARICOM – CSERMS Report) [11]
RE as % of Installed Capacity	5.4% (2014)	20% by 2015	57% (St. Kitts) and 67% (Nevis) by 2027
*Energy Intensity (BTU/US$1 Unit of output)			
% Reduction in Energy Sector Emissions (NDC)		22% and 35% against business as usual (BAU) scenario for 2025 and 2030, respectively[10]	

Indicative RE Oil Displacement Potential Annually**[12,13]

- *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)**[14]:**

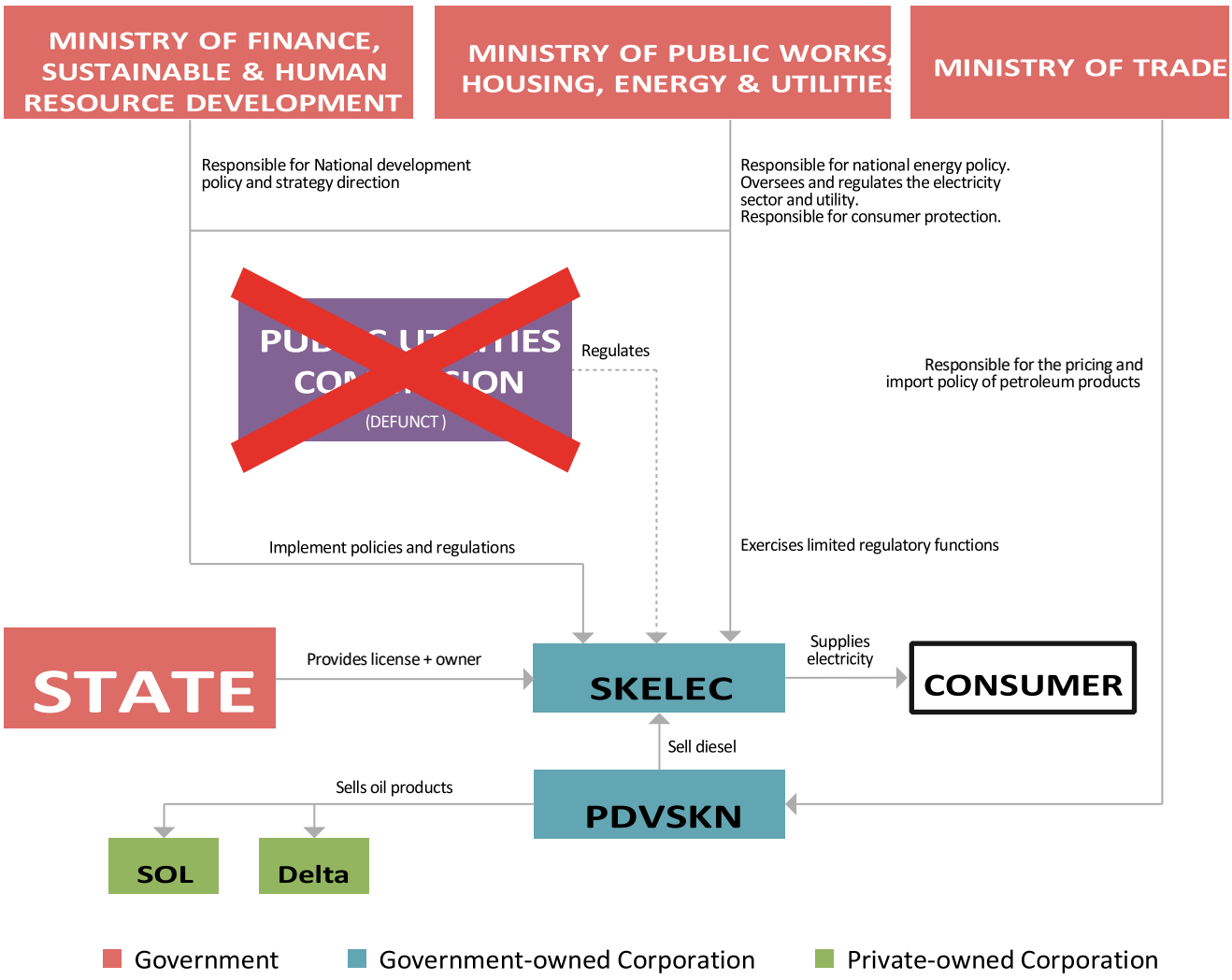
- *EI measures how energy benefits the economy and is calculated by taking the ratio of total primary energy use (all of the fuels and flows that a country uses to get energy) to GDP (the total money made in a country). EI indicates how effectively an economy uses their fuels and flows.*

*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: ST. KITTS AND NEVIS

Governance Structure for the Electricity Sector (2014)[5]



Key Stakeholders: Road Transportation Sub-sector

POLICY, LEGAL AND REGULATORY FRAMEWORK: ST. KITTS AND NEVIS

Electricity Sector: Policy, Legal and Regulatory (PLR) Framework [4, 5, 6, 11]

✓ 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/ In Development ● Not yet started/ Not established

Key Achievements: PLR Framework Timeline for the Electricity Sector [4, 5, 6, 9, 11]

2008
- Nevis Geothermal Resources Development Ordinance

2011
- National Energy Policy and Action Plan
- Electricity Supply Act

2018
- National Climate Change Policy

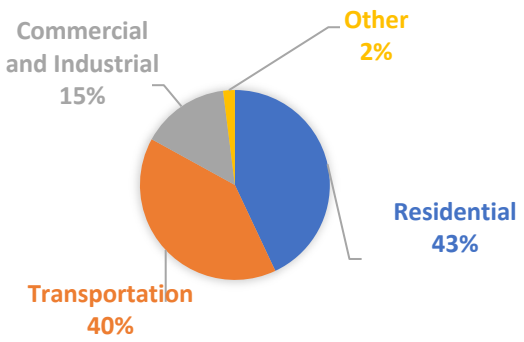
Policies and Legislation Relevant to the Transportation Sector	
Policies	National Energy Policy
Legislation & Regulation	

Climate Change Framework - St. Kitts and Nevis	
Climate Change Policy	Yes (2018)[9]
National Determined Contributions	Yes (2015)[10]
Emissions Reduction Target	22% and 35% against business as usual (BAU) scenario for 2025 and 2030, respectively[10]
Priority Sectors for NDC	Energy and transport[10]
National Communications (NC) to the UNFCCC	NC1 submitted in 2001; NC2 in 2016[15]
Greenhouse Gas (GHG) Inventory	Yes[16]

ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: ST. KITTS AND NEVIS

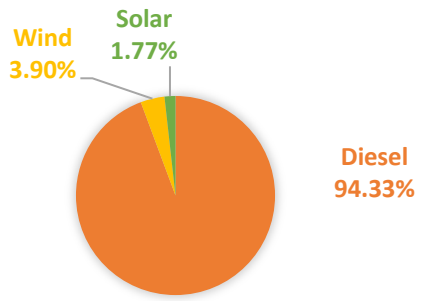
KEY DATA & INFORMATION	
CONVENTIONAL ENERGY	
1. Fuel Consumption – Electricity Subsector (BOE)	
2. Total Installed Capacity (MW)	58.9 (2014)[5]
3. Installed Conventional Capacity – Electric Utility (MW)	43 (SKELEC); 13.4 NEVLEC)[6]
4. Installed Conventional Capacity – IPPs (MW)	
5. Base Load (MW)	14MW(SKELEC); 5MW(NEVLEC)[5]
6. System Peak Demand (MW)	24.0 MW (SKELEC) 10.4 MW (NEVLEC)[6]
7. Total Generation (MWh)	150,000 (SKELEC); 56,100 (NEVLEC)[6]
8. Total Sales (MWh)	
9. Total Number of Customers	
RENEWABLE ENERGY	
10. Total Installed RE Capacity (MW)	3.2MW[6]
11. RE Capacity – Electric Utility (MW)	1[6]
12. RE Capacity – IPPs (MW)	2.2[6]
13. RE as % of Total Installed Generating Capacity	5.4%
14. RE Target	20% by 2015; 100% by 2010 (Nevis)[11]
TARIFFS	
15. Residential Tariff (US$/kWh)	$0.234 –$0.262 (2015)[6]
16. Commercial (US$/kWh)	$0.279 (2015)[6]
17. Industrial/Large Power (US$/kWh)	$0.279 (2015)[6]
18. Street Lights (US$/kWh)	
EFFICIENCY	
19. Electricity System Heat Rate	
20. Electricity System Losses (%)	17% (St. Kitts); 20.3% (Nevis)[6]
21. Energy Use (kWh) Per Capita	3,910[7]
22. Energy intensity index (EII) BTU/US$1 Unit of output	2,776[8]
23. EE Target	20% reduction in projected electricity demand by 2015[11]
MANAGEMENT OF ENERGY DATA/KNOWLEDGE	
24. Name of Energy Knowledge Management System	
25. Name of Energy Data Management System	

FUEL USE BY SECTOR



440,008 BOE (1205.5 BOE/day) (2013) [5]; Source: IDB (2015)

ELECTRICITY GENERATION BY FUEL TYPE



Source: NREL(2015)

RE Resource	Installed Capacity (MW)	Year Commissioned
Wind	2.2[6]	
Solar	1[6]	
Hydro		
Geothermal		
Biomass/ WTE		
Total	3.2	

RE as % of installed Power Capacity =5.4 %

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind	6 – 23.4[5]	
Solar	16[5]	
Hydro		
Geothermal	300 – 1280[5]	
Biomass/ WTE	4.2 – 14[5]	
Total	326.2 –1,333.4	

TRANSPORTATION SUBSECTOR: ST. KITTS AND NEVIS

Key Transportation Data and Information	
Fuel Consumption, Transportation (BOE)	173,740 (2013)
Energy-related transportation targets?	15% reduction in fossil fuel consumption by 2015[11]
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?	

Breakdown of Fuel Use in the Transportation Sector		
Type of Fuel/s	**Quantity (BOE)**	**Purpose** (Road, Railway, Aviation, Marine)
Gasoline		
Diesel		
Turbo Fuel		
HFO Bunker and ADO Bunker		

WORKFORCE: ENERGY SECTOR, ST. KITTS AND NEVIS

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:

Indicative Number and Type of Tertiary level and vocational training SE Programmes Offered in-Country

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

References

[1]Central Intelligence Agency. (2017). *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 – Saint Kitts and Nevis.* Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/vc.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

[4] Federation of St Kitts and Nevis. (2011). *National Energy Policy St Kitts and Nevis*. Retrieved from http://www.oas.org/en/sedi/dsd/Energy/Doc/NationalEnergyPolicyStKittsandNevis.pdf

[5] Inter-American Development Bank. (2015). *Challenges and Opportunities for the Energy Sector in the Eastern Carib*bean: *Saint Kitts and Nevis Energy Dossier*. Retrieved from https://publications.iadb.org/bitstream/handle/11319/7295/IDB-TN-854%20Energy%20Dossier%20Saint%20Kitts%20and%20Nevis.pdf

[6] National Renewable Energy Laboratory. (2015). *Energy Transition Initiative: Island Energy Snapshot – St. Kitts and Nevis.* Retrieved from https://www.nrel.gov/docs/fy15osti/62706.pdf

[7] Calculated using generation and population figures.

[8] Calculated using total energy supply and GDP.

[9] Caribbean Natural Resources Institute CANARI. (2018). *The National Climate Change Adaptation Strategy for St. Christopher and Nevis (Draft).* Retrieved from http://www.canari.org/wp-content/uploads/2018/07/draft-skn-national-cca-strategy-22.6.18.docx

[10]Federation of St Kitts and Nevis. (2015). *The Intended National Determined Contributions for The Federation Of St. Kitts And Nevis.* Retrieved from https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Saint%20Kitts%20and%20Nevis%20First/St.%20Kitts%20and%20Nevis%20INDC.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] .M.K.C. Donev et al. (2018). *Energy Education - Energy intensity*. Retrieved from https://energyeducation.ca/encyclopedia/Energy_intensity.

[15] United Nations Framework Convention On Climate Change. (2018). *Process and Meetings: National Communication submissions from Non-Annex I Parties.* [online] Available at: 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 [Accessed: 13 Oct. 2018]

[16] Federation of St. Kitts and Nevis. (2015.) *The 2nd National Communication Report of St Christopher and Nevis under the United Nationals Framework Convention for Climate Change UNFCCC*. [online] Available at: https://unfccc.int/sites/default/files/resource/Knanc2.pdf [Accessed: 13 Oct. 2018]