2017 ENERGY REPORT CARD SURINAME

This document presents Suriname's Energy Report Card (ERC) for 2017, which 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 Suriname 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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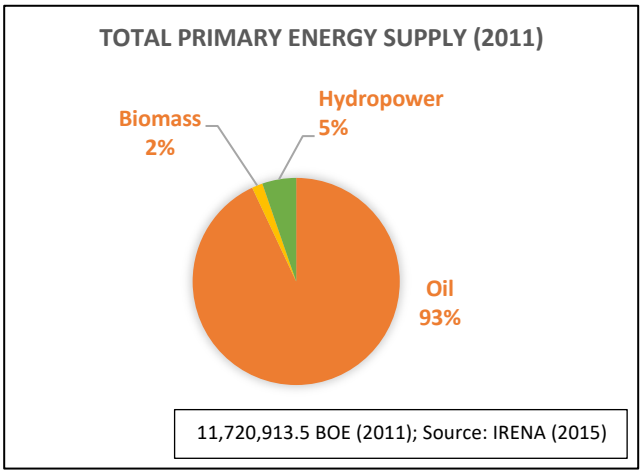
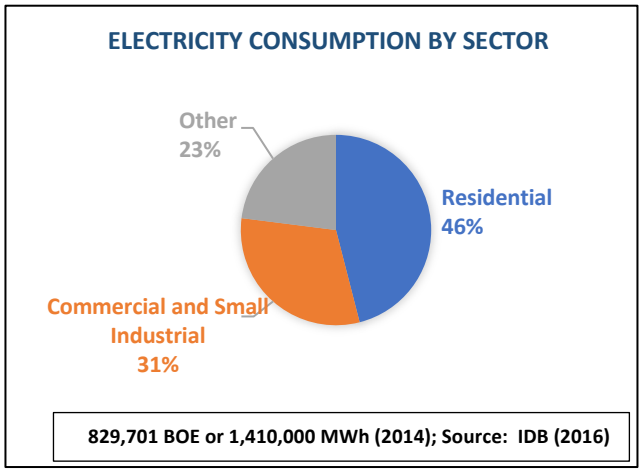
"AT-A-GLANCE" SUMMARY OF SURINAME'S ENERGY SECTOR

KEY DATA & INFORMATION – ENERGY SECTOR	
Population	591,919 (2017 est.)[1]
GDP (USD) Per Capita	$14,900 (2017 est.)[2]
Debt as % of GDP	69.3% of GDP (2017 est.)[2]
Human Development Index	0.720[3]
National Development Plan/ Overall Country Development Strategy	Yes[4]
National Energy Policy	Draft[5]
Renewable Energy (RE) Policy	
RE Target	
Energy Performance Standards/Appliance Labelling	
Number of Persons Employed in Energy Sector	
Total Oil Import (BOE) per day	
Total Oil Export (BOE) per day	
Total Installed Capacity (MW)	410 (2015)[6]
Total Installed RE (MW)	189 (2015)[6]
Electricity System Losses (%)	
Energy Use (kWh) Per Capita	3,294[7]
Energy Intensity	7,707[8]
Oil Imports as % of GDP	
Climate Change Policy	Yes[9]
National Determined Contributions (NDC)	Yes (2015)[10]
National Repository for Energy Data	





SURINAME'S ENERGY SECTOR PERFORMANCE AGAINST TARGETS

Indicator	Base /Current Performance (Year)	National Target	National Target (Proposed by CARICOM – CSERMS Report)[6]
RE as % of Installed Capacity	46%(2015)[6]		52% by 2027
*Energy Intensity (BTU/US$1 Unit of output)			
% Reduction in Energy Sector Emissions (NDC)			

Indicative RE Oil Displacement[11,12] 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)[13]:

- *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.[11]

KEY ENERGY SECTOR STAKEHOLDERS: SURINAME

Key electricity stakeholders include:

GOVERNMENT MINISTRIES, DEPARTMENTS AND AGENCIES:	Ministry of Natural Resources Suriname Energy Authority (Energie Autoriteit Suriname - EAS) Staatsolie
ELECTRIC UTILITY(IES):	Energie Bedrijven Suriname (EBS) – state-owned
INDEPENDENT/OTHER POWER PRODUCER(S):	Suriname Aluminum Company (Suralco) Staatsolie Power Company
REGULATOR:	No regulatory framework (Jharap, 2014)[14]

Key Stakeholders: Road Transportation Sub-sector
• **Staatsolie**

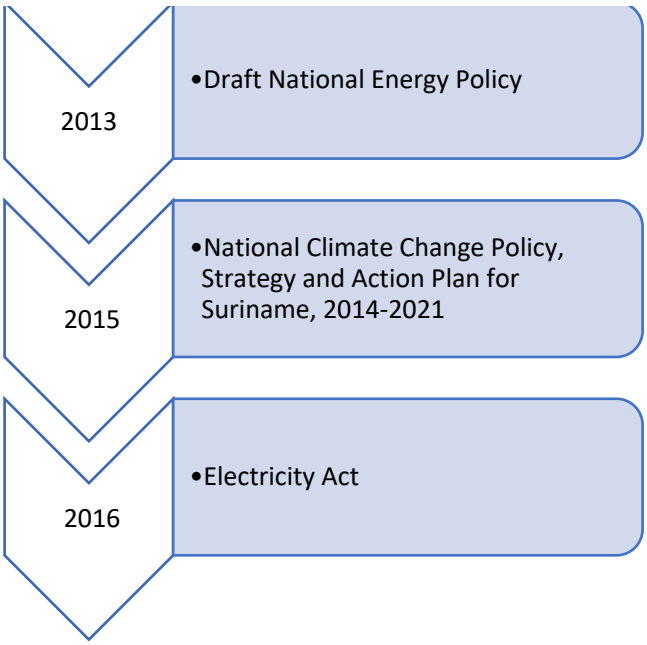
POLICY, LEGAL AND REGULATORY FRAMEWORK: SURINAME

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

✓ Energy Policy and Energy Action Plan	
✓ RE Target	
✓ EE Target	
✓ Electricity Regulator	
✓ Net billing/Net metering[15]	
✓ Interconnection Policy/Standards	
× Feed-in-tariff	
× RE/EE Act	

Completed/ In place | Draft/ In Development | Not yet started/ Not established

Key Achievements: PLR Framework Timeline for the Electricity Sector[16]



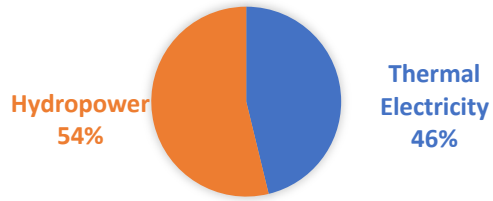
Policies and Legislation Relevant to the Transportation Sector	
Policies	
Legislation & Regulation	

Climate Change Framework - Suriname	
Climate Change Policy	Yes[9]
National Determined Contributions	Yes (2015)[10]
Emissions Reduction Target	
Priority Sectors for NDC	Forests and Renewable Energy[10]
National Communications (NC) to the UNFCCC	NC1 submitted in 2006; NC2 submitted in 2016[17]
Greenhouse Gas (GHG) Inventory	

ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: SURINAME

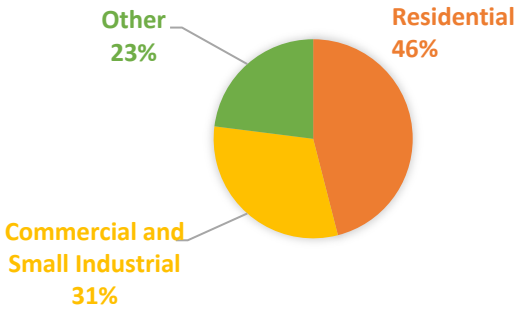
KEY DATA & INFORMATION	
CONVENTIONAL ENERGY	
1. Total Fuel Use – Electricity Subsector (barrels)	
2. Total Installed Capacity (MW)	410 (2015)[6]
3. Installed Conventional Capacity – Electric Utility (MW)	
4. Installed Conventional Capacity – IPPs (MW)	
5. Base Load (MW)	
6. System Peak Demand (MW)	
7. Total Generation (MWh)	1,950,000 (2011)[18]
8. Total Sales (MWh)	1,410,000 (2014)[19]
9. Total Number of Customers	145,000 (2014)[19]
RENEWABLE ENERGY	
10. Total Installed RE Capacity (MW)	189 (2015)[6]
11. RE Capacity – Electric Utility (MW)	
12. RE Capacity – IPPs (MW)	
13. RE as % of Total Installed Generating Capacity	46% (2015)
14. RE Target	
TARIFFS	
15. Residential Tariff (US$/kWh)	
16. Commercial (US$/kWh)	
17. Industrial/Large Power (US$/kWh)	
18. Street Lights (US$/kWh)	
EFFICIENCY	
19. Electricity System Heat Rate	
20. Electricity System Losses (%)	
21. Energy Use (kWh) Per Capita	3,294[7]
22. Energy intensity index (EII) BTU/US$1 Unit of output	7,707[8]
23. EE Target	
MANAGEMENT OF ENERGY DATA/KNOWLEDGE	
24. Name of Energy Knowledge Management System	
25. Name of Energy Data Management System	

ELECTRICITY GENERATION (2011)



1,950,000 MWH (2011)[i]; Source: IRENA (2015)

ELECTRICITY CONSUMPTION BY SECTOR



829,701 BOE or 1,410,000 MWh (2014); Source: IDB (2016)

RE Resource	Installed Capacity (MW)	Year Commissioned
Wind		
Solar		
Hydro	189[6]	
Geothermal		
Biomass/ WTE		
Total		

RE as % of installed Power Capacity = 46%

RE Resource Potentials	Potential Capacity (MW)	Assessment Conducted?
Wind		
Solar		
Hydro	1700[6]	
Geothermal		
Biomass/ WTE		
Total	1700	

TRANSPORTATION SUBSECTOR: SURINAME

Key Transportation Data and Information	
Barrels of oil used	
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?	

Breakdown of Fuel Use in the Transportation Sector

	Quantity (BOE)	Type of Fuel/s
Road		
Railway		
Aviation		
Marine		

WORKFORCE: ENERGY SECTOR, SURINAME

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 Suriname

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. (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 – Suriname.* Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ns.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]Government of the Republic of Suriname. (2017). *2017-2021 Policy Development Plan.* Retrieved from http://www.planningofficesuriname.com/wp-content/uploads/2018/02/2017-2021-DEVELOPMENT-PLAN.pdf

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[6] 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

[7] Calculated using generation and population figures.

[8] Calculated using total energy supply and GDP.

[9] Caribbean Community Climate Change Centre. (2015). *National Climate Change Policy, Strategy and Action Plan for Suriname, 2014-2021*. Retrieved from http://dms.caribbeanclimate.bz/M-Files/openfile.aspx?objtype=0&docid=6508

[10] Republic of Suriname. (2015). *Intended Nationally Determined Contribution Under UNFCCC*. Retrieved from https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx

[11]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

[12] 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

[13] J.M.K.C. Donev et al. (2018). *Energy Education - Energy intensity*. Retrieved from https://energyeducation.ca/encyclopedia/Energy_intensity.

[14] R. Jharap (Independent Consultant). (2014). *Rapid Assessment and Gap Analysis Energy Sector Suriname*. [online] Available at: https://www.seforall.org/sites/default/files/Suriname_RAGA_EN_Released.pdf

[15] Climatescope. (2016). Suriname Net Metering. Retrieved from http://2016.global-climatescope.org/en/policies/#/policy/5429

[16] Climatescope. (2016). Suriname Electricity Act. Retrieved from http://2016.global-climatescope.org/en/policies/#/policy/5429. {Note: Extract from website: Under Suriname's Electricity Act of 2016, retail

electricity consumers that own renewable energy generation systems can feed their surplus to the national grid and get credited for it.}

[17] 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

[18]International Renewable Energy Agency IRENA. (2015.) *Renewable Energy Policy Brief Suriname.* Retrieved from http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Latin_America_Policies_2015_Country_Suriname.pdf

[19] Inter-American Development Bank. (2016). Suriname: *Support To The Institutional And Operational Strengthening Of The Energy Sector III – Loan Proposal*. Retrieved from http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=40310342