



# 2017 ENERGY REPORT CARD

## CARICOM

*This document presents CARICOM's Energy Report Card (ERC) for 2017. The ERC provides data and information on CARICOM's energy sector by focusing on two priority sub-sectors: Electricity and Transportation. The ERC also presents energy efficiency, climate change, training and capacity building information for the energy sector. Further details can be found in the relevant ERCs for the individual CARICOM Member States.*

*This ERC includes data and information that was provided by government ministries, agencies or departments with responsibility for energy within CARICOM countries, and which was supplemented by internet research, author calculations and inferences.*

*December 2018*

**Disclaimer**

*The information provided in this document is for general information purposes only. While reasonable attempts were made to provide accurate data, the information provided uses data resources from other sources, including public sources. As such, no representations or warranties of any kind, express or implied, are made about the completeness, accuracy, reliability, suitability or availability with respect to the information provided in this document. Any reliance placed on such information is therefore strictly at the user's risk. In no event will the author, their affiliates or third-party sources be liable for any loss or damage including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of the information provided herein.*

## SUMMARY OF ENERGY SECTOR PERFORMANCE, CARICOM

## KEY SOCIOECONOMIC AND ENERGY DATA

| Country                            | Population (2017) | GDP per capita in 2017 (USD) | Debt as % of GDP (2017) | Human Development Index (HDI) (2017) | Total installed capacity (MW)* | Fossil-fuel based capacity (MW)* | Renewable energy capacity (MW)* |
|------------------------------------|-------------------|------------------------------|-------------------------|--------------------------------------|--------------------------------|----------------------------------|---------------------------------|
| Antigua & Barbuda (A & B)          | 94,731            | 26,400                       | 86.8                    | 0.78                                 | 112.2                          | 108.0                            | 4.2                             |
| Bahamas                            | 329,988           | 32,400                       | 54.6                    | 0.807                                | 536                            | 536.0                            | 0                               |
| Barbados                           | 292,336           | 18,600                       | 157.3                   | 0.8                                  | 249                            | 239.0                            | 10                              |
| Belize                             | 360,346           | 8,300                        | 99                      | 0.708                                | 203.68                         | 105.2                            | 98.48                           |
| Dominica                           | 73,897            | 11,000                       | 82.7                    | 0.715                                | 27                             | 20.1                             | 6.64                            |
| Grenada                            | 111,724           | 15,100                       | 70.4                    | 0.772                                | 50.87                          | 48.7                             | 2.16                            |
| Guyana                             | 737,718           | 8,100                        | 52.2                    | 0.654                                | 404                            | 347.0                            | 57.4                            |
| Haiti                              | 10,646,714        | 1,800                        | 31.1                    | 0.498                                | 310                            | 248.0                            | 62                              |
| Jamaica                            | 2,728,864         | 9,200                        | 116                     | 0.732                                | 1021                           | 869.9                            | 151.12                          |
| Montserrat                         | 5,292             | 12,044                       |                         |                                      | 5.44                           | 5.44                             | 0                               |
| St. Kitts & Nevis                  | 52,715            | 28,200                       | 62.9                    | 0.778                                | 58.9                           | 55.7                             | 3.2                             |
| St. Lucia                          | 164,994           | 14,400                       | 70.7                    | 0.747                                | 91.4                           | 88.4                             | 3                               |
| St. Vincent & the Grenadines (SVG) | 102,089           | 11,500                       | 73.9                    | 0.723                                | 52.4                           | 45.8                             | 6.59                            |
| Suriname                           | 591,919           | 14,900                       | 69.3                    | 0.72                                 | 410                            | 221.0                            | 189                             |
| Trinidad & Tobago (T & T)          | 1,218,208         | 31,300                       | 41.8                    | 0.784                                | 2094                           | 2094.0                           | 0.0044                          |
| <b>TOTAL</b>                       | <b>17,511,535</b> |                              |                         |                                      | <b>5,626</b>                   | <b>5,032</b>                     | <b>594</b>                      |

\*Various years over the period, 2011-2017; based on data availability

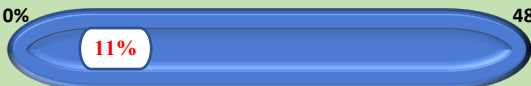
|| \*\*2016 data

## FUEL IMPORTS, TOTAL ENERGY SUPPLY AND FINAL CONSUMPTION

| Country           | Total Fuel Imports (BOE) | Value of Imports as % of GDP | Total Energy Supply (BOE) | Total/Final Energy Consumption (BOE) |
|-------------------|--------------------------|------------------------------|---------------------------|--------------------------------------|
| A & B             | 1,413,136                | 15.1% (2012)                 | 1,413,136                 | 1,215,530                            |
| Bahamas           |                          | 11% (2015)                   |                           |                                      |
| Barbados          | 3,237,550                | 7%                           | 3,467,500                 | 2,110,065                            |
| Belize            |                          | 7%                           | 2,023,255                 |                                      |
| Dominica          | 333,245                  | 5%                           | 296,709                   | 237,360                              |
| Grenada           | 949,000                  | 6%                           | 1,016,525                 | 734,015                              |
| Guyana            | 5,373,530                | 11%                          | 6,598,265                 |                                      |
| Haiti             |                          | 4%                           | 7,600,000                 |                                      |
| Jamaica           | 20,899,170               | 11%                          | 19,870,878                | 19,270,860                           |
| Montserrat        |                          | 25%                          | 60,292                    |                                      |
| St. Kitts & Nevis | 620,500                  | 5%                           | 711,568                   | 440,008                              |
| St. Lucia         | 1,095,000                | 16%                          | 1,117,265                 | 581,080                              |
| SVG               | 547,500                  | 9%                           | 574,328                   | 438,365                              |
| Suriname          |                          | 10%                          | 11,720,914                |                                      |
| T & T             | 21,900,000               |                              | 183,230,000               | 98,185,000                           |
| <b>TOTAL</b>      |                          |                              |                           |                                      |

Data availability relating to fuel imports, supply and consumption varies across the region; data years vary. Current data on fuel imports (commodity types, quantities and costs), total energy supply and final consumption (including sectoral breakdowns) are needed to accurately assess performance. Sector definitions/how data is disaggregated need to be consistently defined and tracked across the region.

## PERFORMANCE AGAINST TARGETS

| Indicator                     | CARICOM Targets (C-SERMS) <sup>1</sup>    | Indicative Progress                                                                  |
|-------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------|
| RE as % of installed Capacity | 20% by 2017<br>28% by 2022<br>48% by 2027 |  |

Performance against energy intensity target (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) and Power Sector CO<sub>2</sub> Emissions Reductions targets (18 % by 2017; 32 % by 2022; 36 % by 2027) should also be tracked, however not enough data exists to determine progress.

**KEY ENERGY SECTOR STAKEHOLDERS: CARICOM**

| COUNTRY                        | Government Ministry with Responsibility for Energy Portfolio             | Electric Utility                                                                 | Electricity Regulator                        |
|--------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------|
| ANTIGUA AND BARBUDA            | Ministry of Public Utilities, Civil Aviation, Transport and Energy       | Antigua Public Utilities Authorities                                             |                                              |
| BAHAMAS                        | Ministry of the Environment and Housing                                  | Bahamas Electricity Corporation (BEC); Grand Bahama Power Company (GBPC)         | Utilities Regulation & Competition Authority |
| BARBADOS                       | Office of the Prime Minister, Division of Energy and Telecommunications  | Barbados Light and Power Company Ltd. (BL&P Co.)                                 | Fair Trading Commission                      |
| BELIZE                         | Ministry of Finance, Public Service, Energy and Public Utilities         | Belize Electricity Ltd. (BEL)                                                    | Public Utilities Commission                  |
| DOMINICA                       | Ministry of Public Works, Energy and Ports                               | Dominica Electricity Services Ltd. (DOMLEC)                                      | Independent Regulatory Commission            |
| GRENADA                        | Ministry of Finance, Planning, Economy, Energy and Cooperatives          | Grenada Electricity Services Ltd. (GRENLEC)                                      |                                              |
| GUYANA                         | Guyana Energy Agency                                                     | Guyana Power and Light (GPL)                                                     | Public Utilities Commission                  |
| HAITI                          | Energy Cell, Ministry of Public Works, Transportation and Communications | Electricité d'Haïti (EDH)                                                        |                                              |
| JAMAICA                        | Ministry of Science, Energy and Technology                               | Jamaica Public Service Company Ltd. (JPS)                                        | Office of Utilities Regulation               |
| MONTSERRAT                     | Ministry of Communications, Works and Labour                             | Montserrat Utilities Ltd. (MUL)                                                  |                                              |
| ST. KITTS AND NEVIS            | Ministry of Housing, Public Works, Energy and Public Utilities           | St. Kitts Electricity Co. Ltd. (SKELEC); Nevis Electricity Company Ltd. (NEVLEC) | Public Utilities Commission                  |
| SAINT LUCIA                    | Ministry of Infrastructure, Ports, Energy and Labour                     | St. Lucia Electricity Services Limited (LUCELEC)                                 | Ministry of Public Utilities                 |
| ST. VINCENT AND THE GRENADINES | Ministry of National Security, Air and Sea Port Development              | St. Vincent Electricity Services Ltd. (VINLEC)                                   | Utility provider VINLEC self-regulates       |
| SURINAME                       | Ministry of Natural Resources                                            | Energie Bedrijven Suriname (EBS)                                                 |                                              |
| TRINIDAD AND TOBAGO            | Ministry of Energy and Energy Industries                                 | Trinidad and Tobago Electricity Commission (T&TEC)                               | Regulated Industries Commission              |

## POLICY, LEGAL AND REGULATORY FRAMEWORK: CARICOM

| Countries           | Finalized Energy Policy/ Action Plan?                                               | Renewable Energy (RE) /Energy Efficiency (EE)Targets?                               | RE/EE Act?                                                                        | Net Metering/ Billing?                                                              | Independent Power Producers?                                                        | Feed-in-Tariff (FIT)                                                                  | Interconnection Policy/ Standards                                                     |
|---------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Antigua and         |    |    |  |    |    |    |    |
| Bahamas             |    |    |                                                                                   |    |                                                                                     |    |                                                                                       |
| Barbados            |    |    |                                                                                   |    |    |    |    |
| Belize              |    |    |                                                                                   |                                                                                     |    |                                                                                       |                                                                                       |
| Dominica            |    |    |                                                                                   |    |    |                                                                                       |    |
| Grenada             |    |    |                                                                                   |    |    |                                                                                       |    |
| Guyana              |  |  |                                                                                   |                                                                                     |  |                                                                                       |                                                                                       |
| Haiti               |  |  |                                                                                   |                                                                                     |  |                                                                                       |                                                                                       |
| Jamaica             |  |  |                                                                                   |  |  |                                                                                       |  |
| Montserrat          |  |  |                                                                                   |  |                                                                                     |                                                                                       |                                                                                       |
| Saint Lucia         |  |  |                                                                                   |  |  |                                                                                       |  |
| St. Kitts and Nevis |  |  |                                                                                   |                                                                                     |  |                                                                                       |                                                                                       |
| SVG                 |  |  |                                                                                   |  |                                                                                     |  |  |
| Suriname            |  |                                                                                     |                                                                                   |                                                                                     |  |  |                                                                                       |
| Trinidad and Tobago |  |  |                                                                                   |  |  |                                                                                       |  |

 In place /established draft/in development

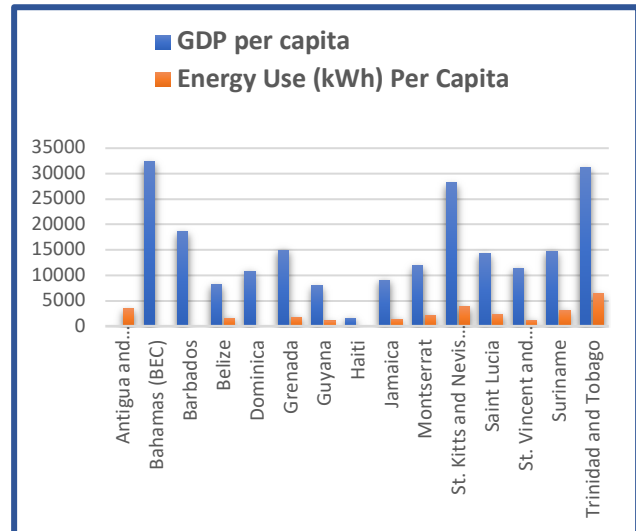
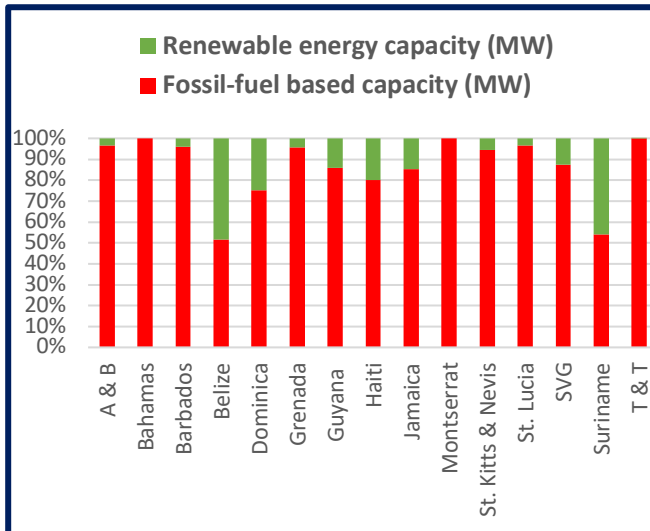
## CLIMATE CHANGE FRAMEWORK: CARICOM

| Countries           | Climate Change Policy | National Communications (NC) to the UNFCCC | National Determined Contributions (NDC)? | Energy listed as priority sector for NDC? | Emissions Reduction Targets (as outlined in NDCs)                                                        |
|---------------------|-----------------------|--------------------------------------------|------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Antigua and Barbuda |                       | NC1 (2001)<br>NC2 (2011)<br>NC3 (2016)     | Yes                                      | Yes                                       |                                                                                                          |
| Bahamas             | Yes (2005)            | NC1 (2001)<br>NC2 (2015)                   | Yes                                      | Yes                                       |                                                                                                          |
| Barbados            | Yes (draft)           | NC1 (2001)<br>NC2 (2018)                   | Yes                                      | Yes                                       | 23% below 2008 level (1,820 Gg CO <sub>2</sub> e) by 2030                                                |
| Belize              | Yes (2014)            | NC1 (2002)<br>NC2 (2011)<br>NC3 (2016)     | Yes                                      | Yes                                       |                                                                                                          |
| Dominica            | Yes                   | NC1 (2001)<br>NC2 (2012)                   | Yes                                      | Yes                                       | Reduction of 44.7% from 2014 levels                                                                      |
| Grenada             | Yes                   | NC1 (2000)                                 | Yes                                      | Yes                                       | 30% of 2010 levels (251,649 tons of CO <sub>2</sub> ) by 2025                                            |
| Guyana              |                       | NC1 (2002)<br>NC2 (2012)                   | Yes                                      | Yes                                       |                                                                                                          |
| Haiti               |                       | NC1 (2002)<br>NC2 (2013)                   | Yes                                      |                                           |                                                                                                          |
| Jamaica             | Yes                   | NC1 (2000)<br>NC2 (2011)                   | Yes                                      | Yes                                       | Reduction of 7.8% of emissions by 2030 versus business-as-usual (BAU)                                    |
| Montserrat          |                       |                                            |                                          |                                           |                                                                                                          |
| Saint Lucia         | Yes                   | NC1 (2001)<br>NC2 (2012)<br>NC3 (2017)     | Yes                                      | Yes                                       | Reduction of 23% (188 GgCO <sub>2</sub> – eq) by 2030 (against 2010 baseline: 643 GgCO <sub>2</sub> -eq) |
| St. Kitts and Nevis | Yes                   | NC1 (2001)<br>NC2 (2016)                   | Yes                                      | Yes                                       | 22% and 35% against business as usual (BAU) scenario for 2025 and 2030 respectively                      |
| SVG                 |                       | NC1 (2000)<br>NC2 (2016)                   | Yes                                      | Yes                                       | Reduction in GHG emissions of 22% compared to BAU scenario by 2025.                                      |
| Suriname            |                       | NC1 (2006)<br>NC2 (2016)                   | Yes                                      | Yes (RE)                                  |                                                                                                          |
| Trinidad and Tobago | Yes                   | NC1 (2001)<br>NC2 (2013)                   | Yes                                      | Yes                                       |                                                                                                          |

Not all countries have quantified their emissions reductions targets. Additionally, the following is needed to accurately assess and track performance: data on baselines and regular monitoring and reporting of progress.

## ELECTRICITY SUBSECTOR & ENERGY EFFICIENCY: CARICOM

### INSTALLED CAPACITY AND ENERGY USE PER CAPITA

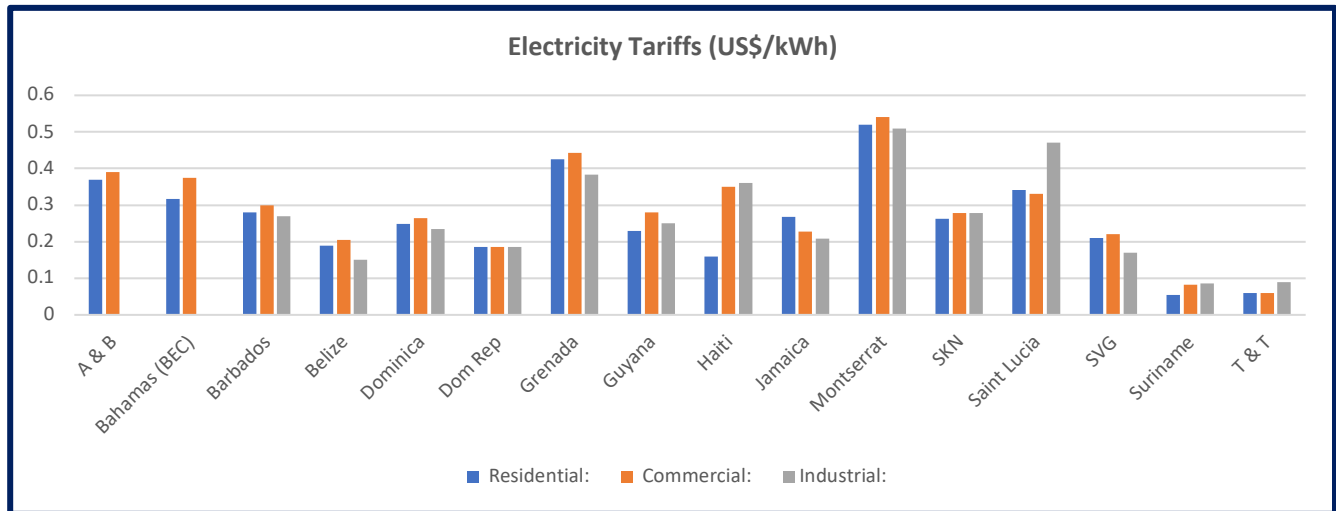


### ELECTRICITY GENERATION

| Country           | Total Generation (MWh) | Total Sales (MWh)    | Total Number of Customers | System Losses (%)                 |
|-------------------|------------------------|----------------------|---------------------------|-----------------------------------|
| A & B             | 330,000                | 270,000              | 38,000                    | 18%                               |
| Bahamas           | 1,930,000              |                      | 114,000                   | 12.3%                             |
| Barbados          | 967,800                | 915,200              | 129,000                   | 6.2%                              |
| Belize            | 630,159                | 552,500              | 94,450                    | 12%                               |
| Dominica          | 111.8                  | 99.38                | 36,467                    | 9%                                |
| Grenada           | 221,700                | 199,320              | 50,019                    | 8.12%                             |
| Guyana            | 809,411                | 555,643              | 188,664                   | 29%                               |
| Haiti             | 875,000                | 413,638              | 245,300                   | 15%                               |
| Jamaica           | 4,360,567              | 3,208,946            | 642,944                   | 26.5%                             |
| Montserrat        | 12,282                 | 11,557               | 3,590                     | 8.7%                              |
| St. Kitts & Nevis | 206,100                |                      |                           | 17% (St. Kitts);<br>20.3% (Nevis) |
| St. Lucia         | 400,300                | 359,654              | 66,784                    | 8%                                |
| SVG               | 150,664                | 135,931              | 44,522                    | 7%                                |
| Suriname          | 1,950,000              | 1,410,000            | 145,000                   |                                   |
| T & T             | 9,318,244,000          | 8,311,688,789        | 487,877                   | 11%                               |
| <b>TOTAL</b>      | <b>9,331,088,095</b>   | <b>8,319,521,957</b> | <b>2,286,617</b>          |                                   |

Data availability varied by country and in several instances 2017 data was not available.

## ELECTRICITY TARIFFS



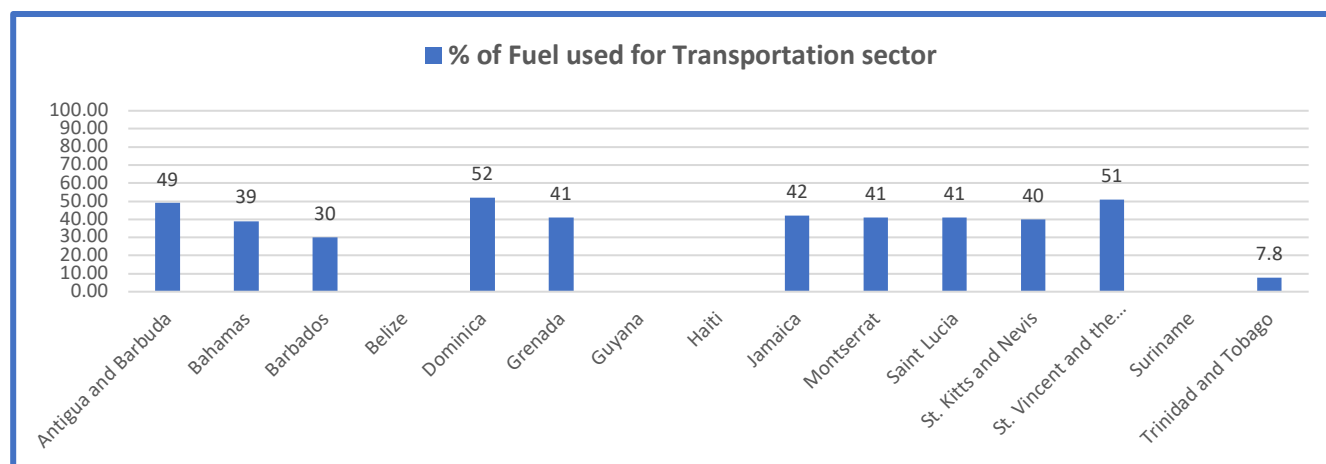
## RENEWABLE ENERGY POTENTIALS

| Countries           | Hydro (MW) | Wind (MW) | Geothermal (MW) | Solar (MW)             | Biomass/WTE (MW) |
|---------------------|------------|-----------|-----------------|------------------------|------------------|
| Antigua and Barbuda |            | 400       |                 | 27                     |                  |
| Bahamas             |            | 200       |                 | 60                     | 1                |
| Barbados            |            | 40        |                 | 39.7                   | 23.5             |
| Belize              | 70         | 20        |                 | 42                     | 40               |
| Dominica            | 17         | 30        | 300             | 45                     |                  |
| Grenada             | 0.5        | 20        | 50              | 50                     |                  |
| Guyana              | 7000       |           |                 | 575.8 million MWh/year | 60.2GWh          |
| Haiti               | 896.5      | 27.3GWh   |                 | 1.7                    | 8.2              |
| Jamaica             | 33.4       | 122       |                 | 650                    | 192              |
| Montserrat          |            |           | 940             | 1.5                    |                  |
| Saint Lucia         | 0.15       | 40        | 170             | 36                     |                  |
| St. Kitts and Nevis |            | 23.5      | 1280            | 16                     | 14               |
| SVG                 | 10         | 8         | 890             | 23                     | 4                |
| Suriname            | 1700       |           |                 |                        |                  |
| Trinidad and Tobago |            | 50        |                 | 308                    |                  |

These estimates need to be validated by resource assessments in addition to climate change impact on the resources.



## TRANSPORTATION SUBSECTOR: CARICOM



| Countries           | Fuel (BOE) Used in Transportation Sector | Sustainable Transportation Target? | Indicative Number of Conventional Vehicles Registered | Indicative Number of Hybrid & Electric Vehicles |
|---------------------|------------------------------------------|------------------------------------|-------------------------------------------------------|-------------------------------------------------|
| Antigua and Barbuda | 595,319                                  | ●                                  | 17,344                                                |                                                 |
| Bahamas             |                                          | ●                                  |                                                       |                                                 |
| Barbados            | 1,065,800                                | ●                                  |                                                       | >100 (2015)                                     |
| Belize              | 837,339                                  | ●                                  |                                                       |                                                 |
| Dominica            | 123,370                                  |                                    | 23,500                                                | 1                                               |
| Grenada             | 304,775                                  | ●                                  | 26,387                                                |                                                 |
| Guyana              | 1,931,609                                |                                    | 172,708                                               |                                                 |
| Haiti               |                                          |                                    |                                                       |                                                 |
| Jamaica             | 6,186,000                                | ●                                  | 3,304,559                                             |                                                 |
| Montserrat          |                                          |                                    | 2,642                                                 |                                                 |
| Saint Lucia         | 240,170                                  |                                    |                                                       |                                                 |
| St. Kitts and Nevis | 173,740                                  | ●                                  |                                                       |                                                 |
| SVG                 | 293,460                                  | ●                                  | 24,046                                                |                                                 |
| Suriname            |                                          | ●                                  |                                                       |                                                 |
| Trinidad and Tobago |                                          | ●                                  |                                                       |                                                 |
| <b>TOTAL</b>        | <b>11,751,582</b>                        |                                    | <b>3,571,186</b>                                      |                                                 |

Data providing a breakdown on how fuel is used within the transportation subsector is not readily available and, in some instances, may not be tracked.

\*Data years vary.

## WORKFORCE: ENERGY SECTOR, CARICOM

### Number of Persons Employed in Energy Sector Institutions

| COUNTRY          | NAME OF ENTITY                        | NUMBER OF PERSONS EMPLOYED | BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL                                                |                                                                                       |
|------------------|---------------------------------------|----------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Belize</b>    | Belize Electricity Limited            | 316 (2017)                 | <b>Females:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    | <b>Males:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    |
| <b>Barbados</b>  | Barbados Light and Power              | 330 (2015)                 | <b>Females:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    | <b>Males:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    |
| <b>Dominica</b>  | Dominica Electricity Services Limited | 500 (2017)                 | <b>Females:300</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative: | <b>Males:200</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative: |
| <b>Grenada</b>   | Grenada Electricity Services Limited  | 244 (2017)                 |                                                                                         |                                                                                       |
| <b>Guyana</b>    |                                       | 100 (2017)                 |                                                                                         |                                                                                       |
| <b>St. Lucia</b> | St. Lucia Electricity Services        | 252 (2015)                 | <b>Females:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    | <b>Males:</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative:    |
|                  |                                       |                            |                                                                                         |                                                                                       |
|                  |                                       |                            |                                                                                         |                                                                                       |

### Number of Persons Trained in the Energy Sector in 2017

| COUNTRY                    | NAME OF ENTITY                                                                                                                   | NUMBER OF PERSONS TRAINED | BREAKDOWN BY GENDER AND EMPLOYMENT LEVEL                                                |                                                                                      |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Antigua and Barbuda</b> | <ul style="list-style-type: none"> <li>Antigua and Barbuda Bureau of Standards</li> <li>Development Control Authority</li> </ul> | 18                        | <b>Females: 10</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative: | <b>Males: 8</b><br>Managerial Level:<br>Supervisor:<br>Technical:<br>Administrative: |
|                            |                                                                                                                                  |                           |                                                                                         |                                                                                      |
|                            |                                                                                                                                  |                           |                                                                                         |                                                                                      |

### Indicative Number and Type of Tertiary level and vocational training SE Programmes Offered in CARICOM

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

## References

The data and information in this report was largely taken from the individual Energy Report Cards for the CARICOM Member States: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago.

---

<sup>1</sup> 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](http://www.worldwatch.org/system/files/C-SERMS_Full_PDF.pdf)