



- GDP (Real) has grown at an annual rate of 6% in 2019.^{16,17}
- GDP (Real) growth accelerated to 6.5% in 2018 driven by a recovery in agriculture, tourism, construction and trade. However, due to delays in budget support disbursements, it then fell to 6% in 2019.¹



- The Government of Gambia has set an objective to increase electricity generation and enhance fuel diversity with 30% share envisaged from renewable energy sources by 2030.⁵
- The Renewable Energy Act seeks to promote renewable energy development, provide incentives and access to grid for RE projects.⁵
- Gambia has also provided tax exemption for imports and 15 years corporate tax exemption for newly registered renewable energy projects.⁵



- Owing to relatively high average solar irradiation levels of 5.748 kWh/m²/day and specific yield of 4.57 kWh/kWh, strong technical feasibility is envisaged for solar projects in Gambia.²
- Gambia has high dependence on costly fuel imports which makes a strong business case for increasing solar contribution in the energy mix.⁶



- As of 2018, 65% of rural population has no access to electricity, hence off-grid solar systems can be a viable solution to improve access to electricity in rural areas.⁹
- The Power sector in Gambia is regulated by Public Utilities Regulatory Authority (PURA). However, the generation, transmission and distribution utilities are bundled and managed by a sole entity, National Water and Electricity Company (NAWEC).⁸



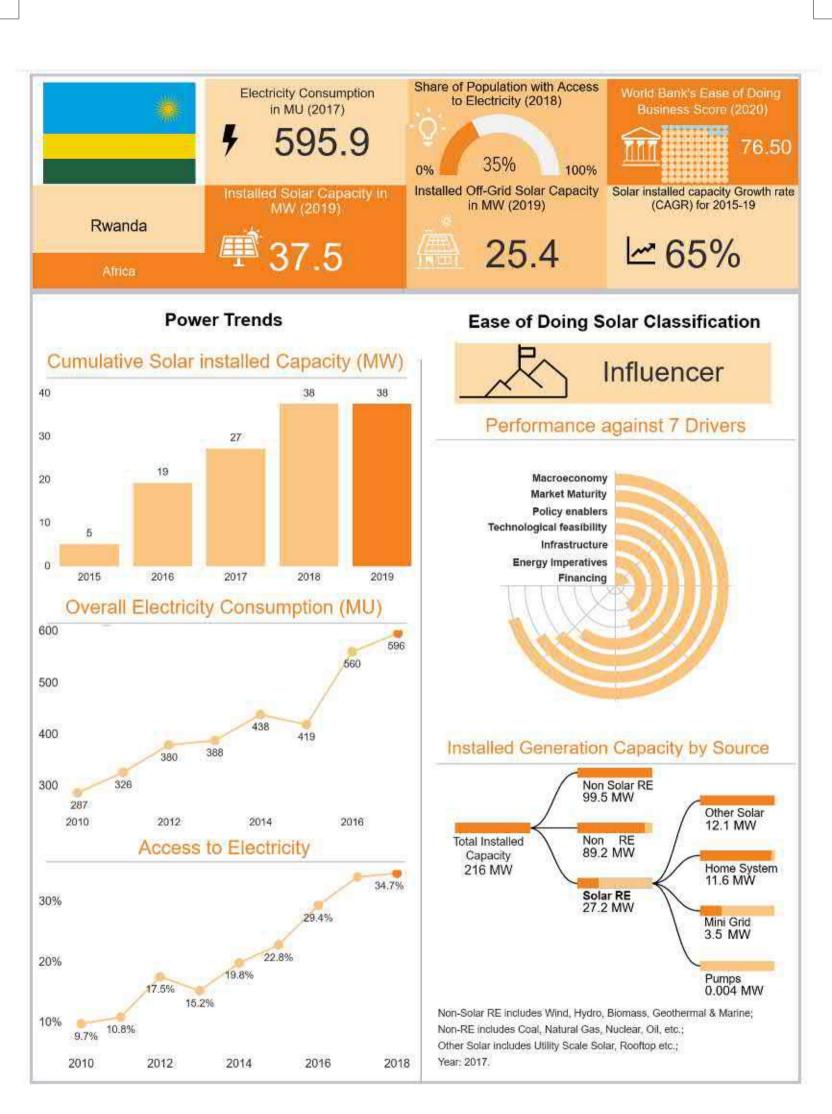
- Investments of EUR 142 million are planned for grid extensions and harnessing solar energy. European Investment Bank, World Bank and European Union are major contributors.¹⁵
- With 60% share of agricultural land in total land area, identification of suitable land for developing utility scale solar projects may pose a key challenge.⁴

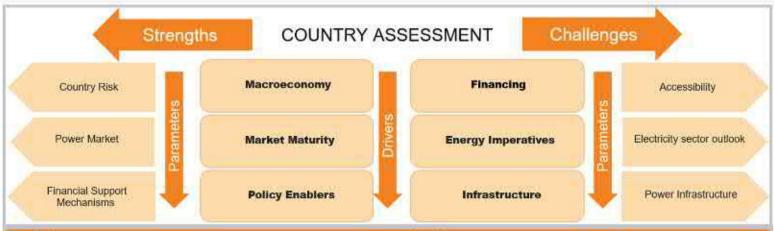


- The Gambia aims to transition to competitively tendered process for Independent Power Producers (IPPs) to attract private sector investments in the power sector.⁶
- International financial flows, in support of clean and renewable energy, to Gambia was USD 24.8 million in 2017 which was nil in 2011.⁹



- · Per capita electricity consumption of 132 kWh is significantly lower in comparison to the global average.18
- The generation mix of Gambia is nearly 100% percent from Heavy fuel oil (HFO) and Diesel (LDO), exposing the power sector to the volatility in oil prices.³
- Considerable improvements were observed in power sector performance as blackouts dropped from 15-20 per day to 2-3 per day in 2017.¹⁴
- Improved operational performance led to a reduction in transmission and distribution losses from 28% in 2015 to 19% in 2019.¹⁴





Insights



- GDP (at current prices) has grown at an annual rate of 10.1% in 2019.¹⁰
- In the last two decades, Rwanda has made reasonable economic growth with GDP (at current prices) rising from USD 8.58 billion in 2015 to 10.12 billion in 2019 with a CAGR of 4.2%.^{2,3}



- In 2015, the Government had announced an 18% VAT exemption for renewable energy products with a special focus on wind and solar to boost renewable energy.¹⁸
- Government has a strong enabling environment to attract investment in the energy sector through instruments in place such as Investment code, PPP law, favourable tax incentive, electricity law, simplified licensing framework for isolated grids, Ministerial guideline for standards for solar home systems etc.²⁰
- Government of Rwanda aims to ramp up its generation capacity to 512 MW by 2023-24 with an objective to increase the share of solar in the energy mix.¹
- Rwanda has set a a target of having 60% of the generation mix from renewables.



- Owing to relatively high levels of average solar irradiation level (GHI) of 5.08 kWh/m²/day and specific yield of 4.08 kWh/kWp, strong technical feasibility is envisaged for solar projects in Rwanda.⁴
- The "National Electricity Strategy" (2008-20) aims to install 30,000 solar water heaters to reduce annual wood consumption as fuel for water heating.¹



- The Power sector is regulated by Rwanda Utilities Regulatory Authorities (RURA). The Power utilities are partially unbundled and managed by state-owned utility Rwanda Energy Group through its subsidiaries Energy Development Corporation Limited and Energy Utility Corporation Limited.¹⁴
- Rwanda is an active member of the Eastern African Power Pool which aims to optimize the available energy resources and reduce electricity cost in the region.⁶
- The Electricity Access Rollout Programme (EARP) aims to achieve universal electricity access by 2024.
 Currently, 54% of the population has access to electricity of which 14% is electrified using off-grid solutions dominated by solar home systems. 15,16
- Solar constituted 5.5% of the total installed capacity of 216 MW in 2016.1



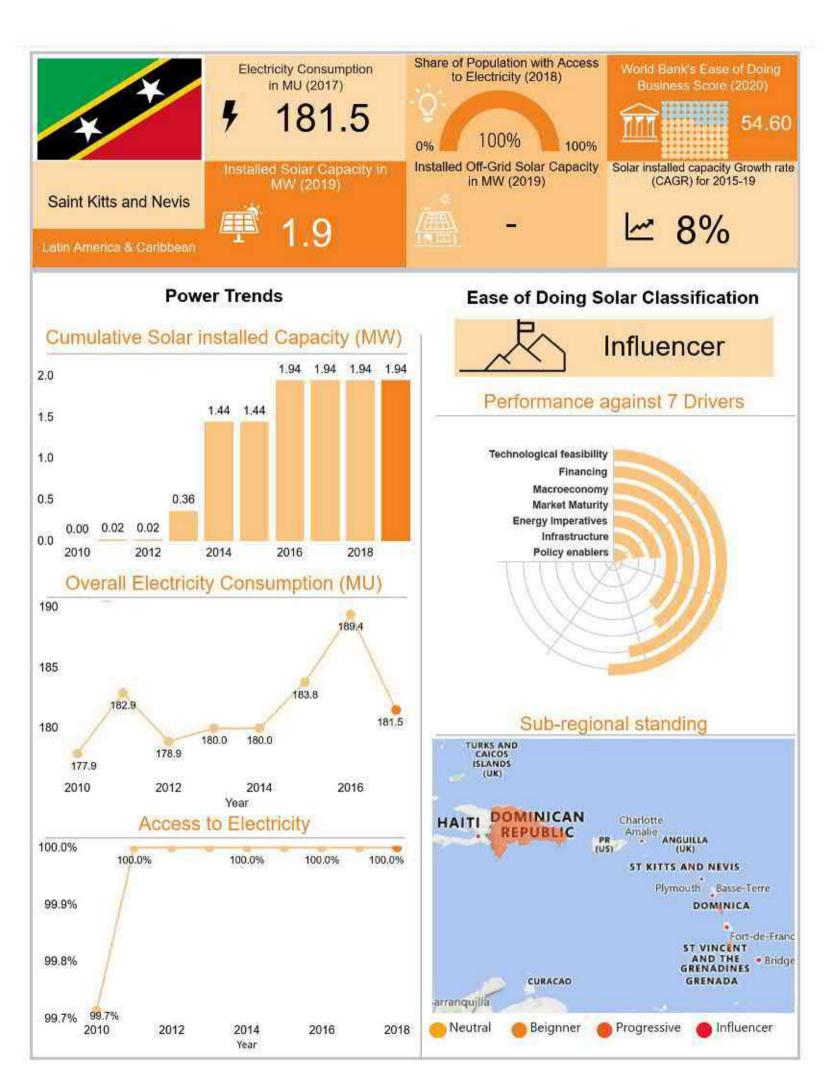
- Currently, more than 500 kms of transmission lines are under construction / procurement to strengthen the regional electricity trade.¹
- USD 7 billion investments are estimated to be required in generation, transmission and distribution infrastructure between 2013 and 2025 to increase the capacity and meet the growing future demand.¹
- Off-grid & mini-grid segments have received funding of EUR 177 Mn. from the European Union in 2016.
- The Government of Rwanda, Mara Corporation Ltd, and SB Energy Corp have signed an MoU in 2018 to develop a 30 MW solar power plant with a storage facility.

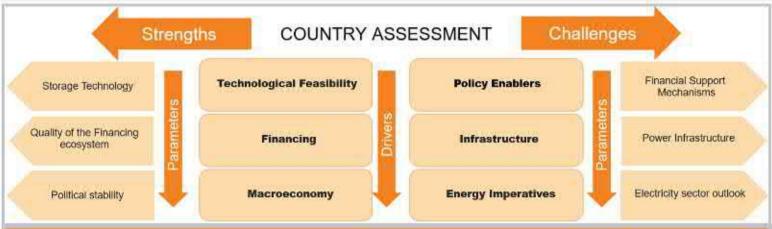


- The country has a stable outlook with a credit rating of B2 in 2018.7
- According to UNCTAD's World Investment Report 2020, FDI inflows has increased from USD 382 million in 2018 to USD 420 million in 2019.¹³
- In 2018, the Government of Rwanda had announced funding to support local lending and co-finance renewable energy projects in the country.¹²
- The Government of Rwanda has signed a USD 48.9 million funding agreement with the World Bank, in 2017, to provide affordable loans to purchase solar energy-based systems.⁹



- Per capita electricity consumption of 30 kWh is the lowest within the East African sub-region.
- Owing to numerous rivers, Hydropower is the primary source for electricity generation with a 46.8% share
 of total electricity generation in 2017.1
- Rwanda has an electricity tariff of USD 0.22 per kWh, which is highest in the Eastern African region.1
- Rwanda Energy Group's strategic plan for 2019-24 aims to reduce electricity losses to 15% by 2024 (currently at 19.4%).²¹







- GDP (Real) has grown at an annual rate of 2.9 % in 2019.3
- Saint Kitts and Nevis is a high-income country with GDP per capita of 19,896 USD in 2019.^{2,7}
- Tourism and Agriculture are the major contributors to the country's economy.
- The GDP (current) is recorded USD 1.05 billion in 2019.



- Under the "Paris Intended National Determined Contributions (INDC) agreement 2015", the government has set a target to generate 50% of the country's electricity from renewables by 2030.¹²
- Measures such as Import duty exemptions on solar energy equipment and fifteen-year tax holiday for RE investors has created a favourable environment for the RE sector.¹¹
- The absence of grid interconnection standards, net metering for grid connected RE generation are limiting the participation of global technology players in the solar market.¹¹



 Owing to relatively high levels of average solar irradiation (GHI) of 5.58 kWh/m²/day and specific yield of 4.64 kWh/ kWp, strong technical feasibility is envisaged for solar projects in Saint Kitts and Nevis.⁴



- There is no independent energy regulator in the country. St. Kitts Electricity Company Ltd. (SKELEC) in St. Kitts and Nevis Electricity Company Ltd. (NEVLEC) in Nevis are two entities that generate, transmit, and distribute electricity in the country.⁶
- Saint Kitts and Nevis has achieved 100% access to electricity in 2010.7
- Solar PV capacity is expected to increase from 2 MW in 2019 to 40.2 MW in 2030 at a CAGR of 34.9%.9
- In 2019, the government partnered with Swiss energy storage company LeclanchE SA to build a 35.6 MW solar plant with 44.2 MWh battery storage which is expected to be completed by end of 2020.9



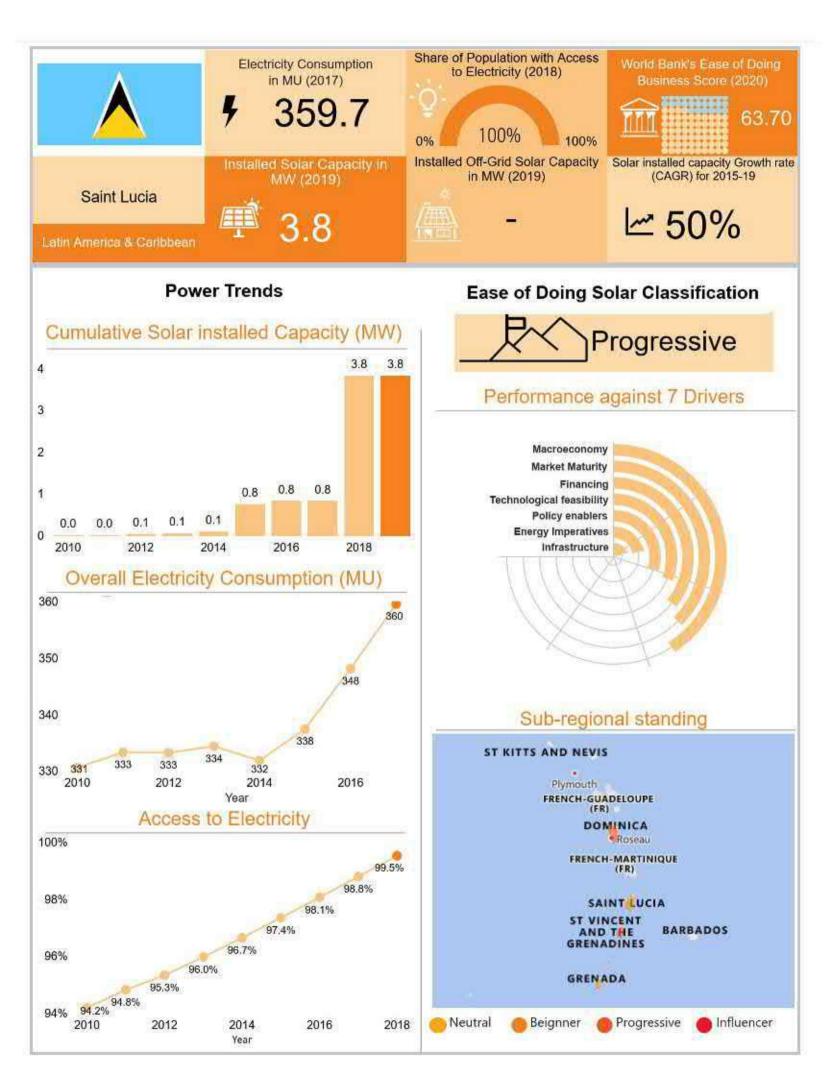
- The interconnection of islands by national gird is a major challenge.
- Electricity system losses stand at 17% and 20.3% of output for St. Kitts and Nevis respectively which are slightly on the higher side.⁵
- To meet the rising future demand, the government is planning to increase the total installed capacity from 64.9 MW in 2019 to 138.6 MW by 2030 at a CAGR of 34.9%.9
- The European Union has signed a Budget Support Program with Saint Kitts and Nevis in 2019 and will
 provide USD 5.6 million in funding for the development of the renewable energy sector in the country.⁹

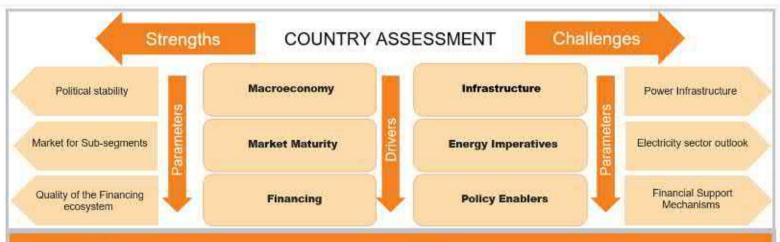


- According to UNCTAD's World Investment Report 2020, FDI inflows has increased from USD 85 million in 2018 to USD 92 million in 2019.¹³
- Saint Kitts and Nevis has recorded a current account balance of -1.7 % of GDP and -0.2% inflation in 2019.¹⁴
- Saint Kitts and Nevis has an Ease of Doing score of 54.6 (out of 100) and ranks 139th among 190 countries in 2020. Businesses face challenges in getting credit, construction permits, enforcing contracts, access to electricity, paying taxes, and trading across borders.¹⁶
- All the banks are fully compliant with the IFRS standards.¹⁵



- Per capita consumption of ~3700 kWh is comparable to the global average as of 2019.8
- With economic and population growth, the annual electricity consumption is expected to grow from 184.7 GWh to 224.9 GWh in 2019-2030 period with a CAGR of 1.8%.9
- The electricity tariff in 2015 is USD 0.26 per kWh, which is relatively low as compared to the Caribbean national average of USD 0.33 per kWh.⁶
- Imported oil is the primary source of electricity generation with a 94.3% share in the total installed capacity of 64.9 MW in 2018.⁹





Insights



- GDP (at current prices) has grown at an annual growth rate of 1.7% (in 2019).^{9,10}
- Country's economy relies heavily on tourism and agriculture (mainly bananas) which are the primary drivers
 of the economy.⁵



- The government has set target to generate 35% of the country's energy from renewables by 2020 and 50% by 2030.6
- As per National Energy Policy, Saint Lucia aims to reduce electricity costs and ensure energy independence through increased adoption of renewable energy.³
- Introduced in 2009, Net metering is catalysing the growth of solar PV in the country.³
- Import duty exemptions and Income tax deductions for RE projects will encourage use and generation of renewable energy.³



- Owing to relatively high average solar irradiation level (GHI) of 5.4 kWh/m²/day and specific yield of 4.52 kWh/kWp, strong technical feasibility is envisaged for solar projects in Saint Lucia.¹³
- Saint Lucia has nearly 100% dependence on costly fuel imports which makes a strong business case for increasing solar contribution in the energy mix.



- The Power Sector in Saint Lucia is regulated by National Utilities Regulatory Commission (NURC). The electricity system of Saint Lucia is wholly operated by the privately-owned firm, St Lucia Electricity Services Ltd (LUCELEC).³
- 100% population in Saint Lucia has access to electricity as of 2018.



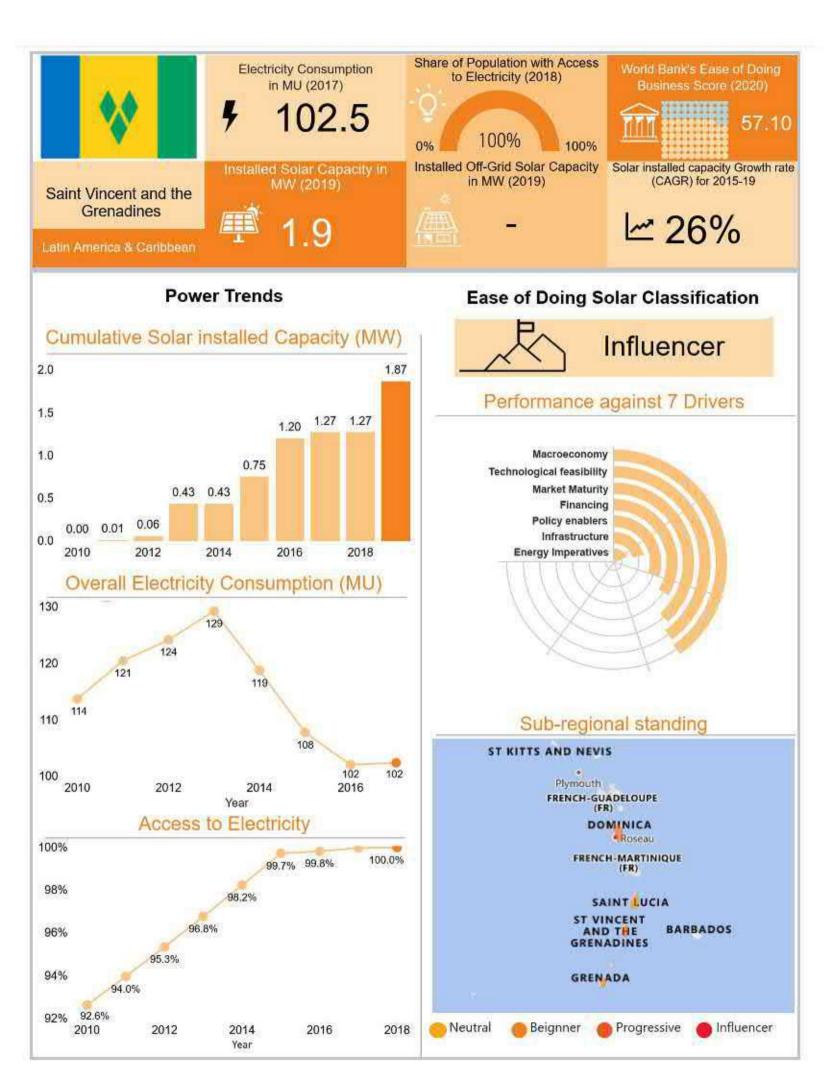
- Investments, in the existing grid, would be required to support safe and reliable integration of renewable energy.¹
- Land acquisition, the permitting process and the policy adjustments are among the major challenges delaying major renewable energy projects in Saint Lucia.
- 47 MW of Renewable energy power plants are under planning and construction phases.³

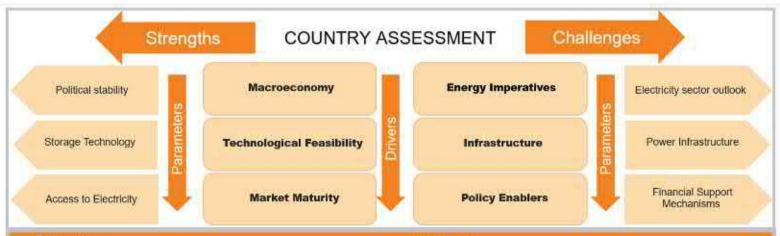


- There is a lack of policy and financial instruments to drive the uptake of Renewable Energy technologies.³
- Saint Lucia is opening its market to enable private sector investments.



- Imported oil is the primary source of energy thereby making the country's economy vulnerable to global oil
 price fluctuations that directly impact the cost of electricity.³
- The volcano that sits in the middle of Saint Lucia is among the largest natural source of energy (geothermal) with a potential of 170 MW.¹
- Solar has only 4% share in installed capacity (total installed capacity of 92.5 MW), despite having 36 MW potential.³







- GDP (Real) has grown at an annual growth rate of 0.4% in 2019.3
- Saint Vincent and Grenadines is an upper middle-income country with GDP (Real) per capita of 7,463 USD in 2019.^{11,12}
- Agriculture, tourism and construction activity are the major contributors to the economy.⁵



- The National Energy Action Plan 2010 targets to generate 60% of the country's electricity from renewables by 2020.4
- Introduced in 2009, Net metering is catalysing the growth of solar PV in the country.⁴
- Tax rebates to solar collectors, solar electricity-generating equipment and other equipment will encourage
 use and generation of renewable energy.²
- Absence of interconnection standards for grid connected RE generation are limiting the participation of global technology players in the solar market.⁴



Owing to relatively high levels of average solar irradiation (GHI) of 5.19 kWh/m²/day and specific yield 4.26 kWh/ kWp, strong technical feasibility is envisaged for solar projects in the country.¹⁷



- There is no independent energy regulator in the country. St Vincent Electricity Services Ltd. (VINLEC) is a sole entity which generates, transmits, and distributes electricity in the country.⁴
- Saint Vincent and Grenadines had achieved 100% electrification in 2016.¹¹
- Solar PV capacity is expected to increase from 1.9 MW in 2019 to 4.8 MW in 2030, growing at a CAGR of 9.0%.²
- VINLEC has signed a contract with solar energy firms, in 2018, to start the engineering, procurement and construction for the utility's first solar battery storage micro grid.²
- Per capita consumption of 900 kWh is relatively low in comparison to the global average.



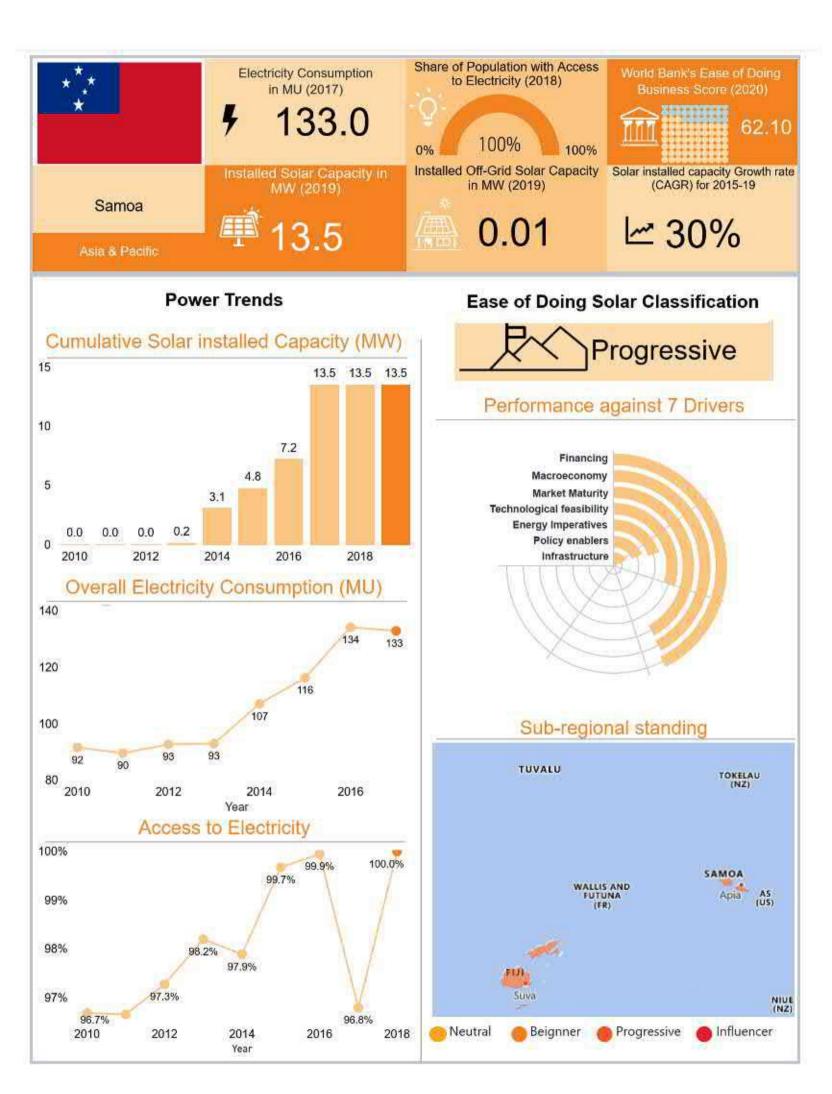
- The interconnection of islands by national gird is a major challenge.²
- Electricity system losses stand at 7% of output, indicating a considerably better quality of network.
- The Caribbean Development bank has provided a funding of USD 27 million, in 2019, for the geothermal energy drilling project to increase the share of renewable energy in generation mix.²
- The Government plans to increase total installed capacity from 58.1 MW in 2019 to 71.1 MW by 2030 to meet the rising future demand.²

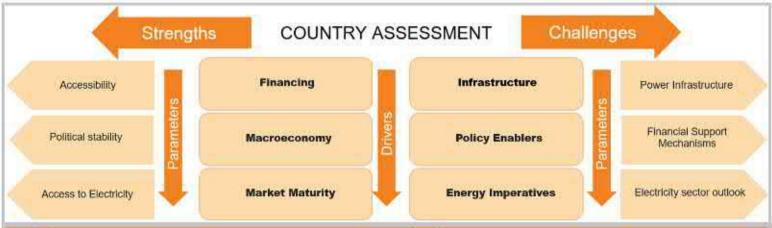


- Country has a credit rating of B3 with stable outlook in 2020, indicating a robust business environment.¹³
- FDI inflows have increased from USD 100 million in 2018 to USD 113 million in 2019.¹⁴
- Public debt is 47.4% of the GDP at the end of 2017. 15,16
- IMF has projected that the current account deficit is expected to decrease from 16% of GDP in 2018 to 12% of GDP in 2022 on account of rise in exports of goods and services and lower dependence on imported fossil fuels by 2022.¹⁶



- Imported oil is the primary source for electricity generation with 83% share in the total installed capacity of 57.5 MW in 2018.²
- The annual electricity consumption is expected to grow from 150.9 MUs to 199.6 MUs in 2019-2030, growing at a CAGR of 2.6%.²
- The electricity tariff, for residential consumers, is relatively low (USD 0.26 per kWh) as compared to the Caribbean national average of USD 0.33 per kWh.⁴
- Only 10-15 MW of geothermal power will be harnessed in near future despite having high potential of 890 MW.²





Insights



- GDP (at current prices) grew, at a rate of 3.5%, to USD 850.655 million in 2019.^{4,5}
- The economy primarily relies on agriculture, manufacturing, tourism and remittances from Samoans living overseas.⁸
- Samoa's GDP per capita was USD 4,315 in 2019.^{10,6}



- In March 2013, the Government of Samoa (GoS) and the New Zealand Ministry of Foreign Affairs (NZ MFAT) agreed to work in partnership to increase the generation from RE sources in Samoa.⁷
- Electric Power Corporation (EPC) has developed interconnection agreements that allow private consumers to install their own small-scale renewable power systems.⁸



- Owing to relatively moderate levels of average solar irradiation (GHI) of 4.78 kWh/m²/day and specific yield of 3.93 kWh/kWp, a moderate technical feasibility is envisaged for solar projects in Samoa.²
- The Renewable Energy Division of the Ministry of Natural Resources and Environment (MNRE) undertakes feasibility studies and research into renewable energy sources for Samoa.⁸



- 100% of population had access to electricity as of 2018.3
- EPC, an autonomous government owned Corporation, is responsible for the generation, transmission, distribution and sale of electricity in Samoa.



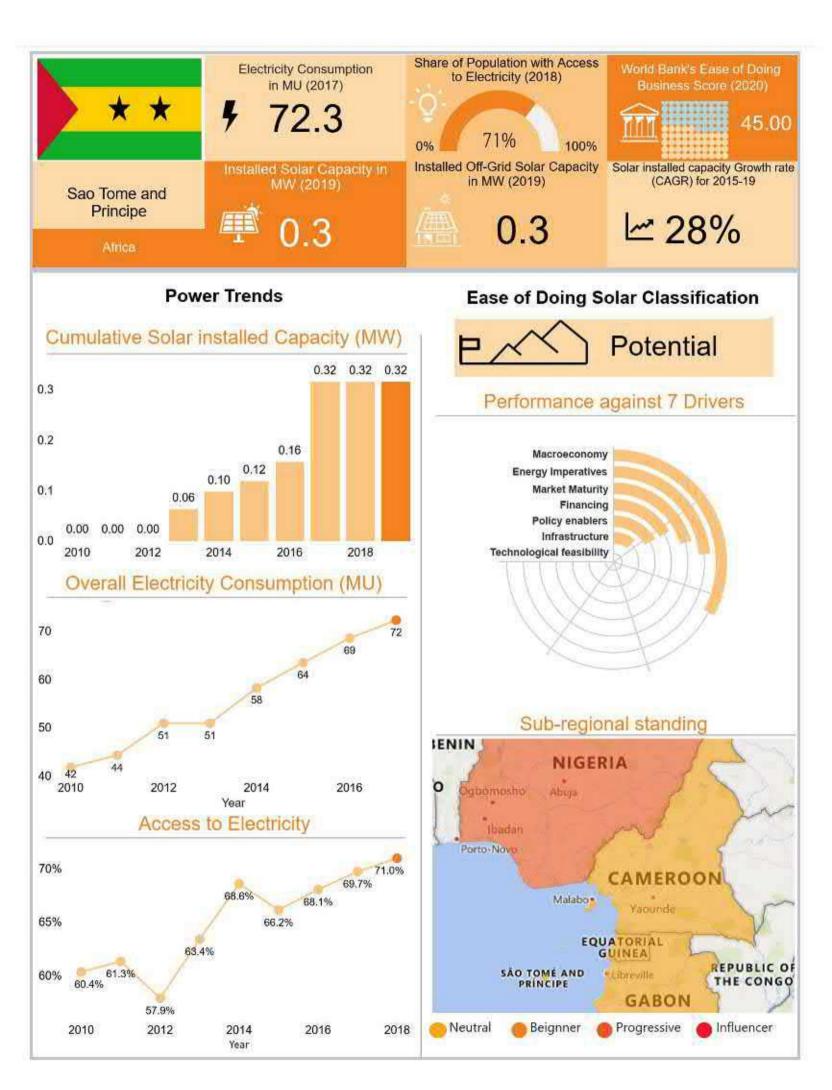
 Investments in solar PV capacity of 200 kW in Opulu and 150 kW in Savaii are being undertaken with assistance from Japan and the Asian Development Bank.⁸

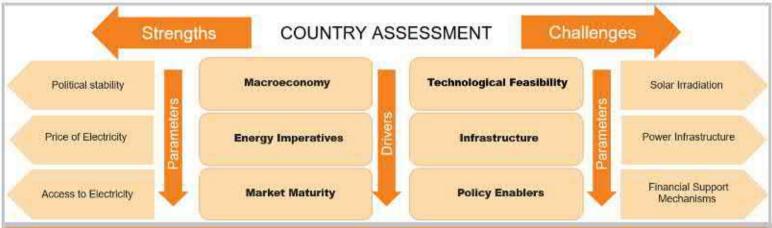


- International financial flow in 2017 was USD 2 million (in PPP terms) to support clean and renewable energy.³
- Domestic Credit Provided by banking sector is 78.7% of GDP as of 2017.6
- The country's four commercial banks provide almost 60% of credit to the economy, while the Samoa National Provident Fund and the Development Bank of Samoa account for approximately 30% of credit.⁶
- The Central Bank of Samoa (CBS) is the country's monetary authority and primary regulator of financial institutions.⁶
- From 2011 to 2017, credit supply to service industries grew at an average of 11% per year.⁶
- The National Financial Inclusion Strategy, 2017–2020 (NFIT n.d.), by the Central Bank of Samoa has been implemented to increase access and usage of financial services.⁶
- The IMF (in 2019) emphasized the importance of completing reforms, particularly the strengthening of the regulatory and supervisory framework, the development of a framework for governance and performance of public financial institutions and the establishment of a credit bureau in the country.⁶



- Samoa's Per capita electricity consumption of 688 kWh as of 2019 is relatively low in comparison to the global average.¹
- Samoa has more than doubled renewable energy capacity since 2013 from 7.5 MW to 15.4 MW in 2016.9
- Project "IMPRESS (Improving the Performance and Reliability of Renewable Energy Power System in Samoa)" funded through the Global Environment Facility (GEF) with USD 6.07 million and USD 46 million co-financing by the Government of Samoa aims to enhance sustainable and cost-effective energy production in Samoa. The project is set to support national efforts towards achieving 100% RE electricity generation by 2025.
- A goal of Samoa's Energy Sector Plan is to "promote the use of indigenous energy resources and renewable energy technologies".







- GDP (at current prices) is estimated at US\$ 429 million and has grown at an annual growth rate of 1.3% in 2019.^{3,8}
- The Republic of Sao Tome and Principe performs better than the Sub-Saharan Africa average on the UNDP Human Development index and has made significant progress improving other social indicators.⁴
- Country's growth is driven by agriculture, tourism and oil-fuelled foreign direct investment of which tourism contributes to approximately 32.9% of GDP.^{4,9}



- The World Bank had approved a USD 16 million project financing from International Development Association (IDA) in 2016. This funding aims at increasing renewable energy generation and improve the reliability of the electricity supply in the country.⁴
- Government has targeted to achieve 50% of energy from renewable sources, in the generation mix, by 2030. ALER (Associação Lusófona de Energias Renováveis) has been working together with its memberthe Ministry of Infrastructure, Natural Resources and Environment (MIRNA) to achieve this goal.¹²
- The World Bank's Energy Sector Management Assistance Program (ESMAP) has provided technical
 assistance through its "Small Islands Developing State Multi Donor Trust Fund (SIDS DOCK MDTF)" with
 funding from Denmark and Japan to help improve (Empresa de Agua e Electricidade) EMAE's capacity and
 quality of services to distribute power and increase energy access to the population in the country.⁷



- Owing to moderate levels of average solar irradiation (GHI) of 4.3 kWh/m2/day and specific yield of 3.46 kWh/kWp, a moderate technical feasibility is envisaged for solar projects in Sao Tome and Principe.²
- Several major studies in Sao Tome and Principe considered innovative solutions to increase capacity and availability of electricity services; A Least Cost Power Development Plan (LCPDP) has been prepared.⁴



- 71% of population had access to electricity as of 2018 and the country targets to achieve universal access by 2030.^{5,6}
- As of 2017, renewable energy share in total final energy consumption is 38%.⁵
- As of 2019, Solar contributed 12% in total renewable capacity in the country.



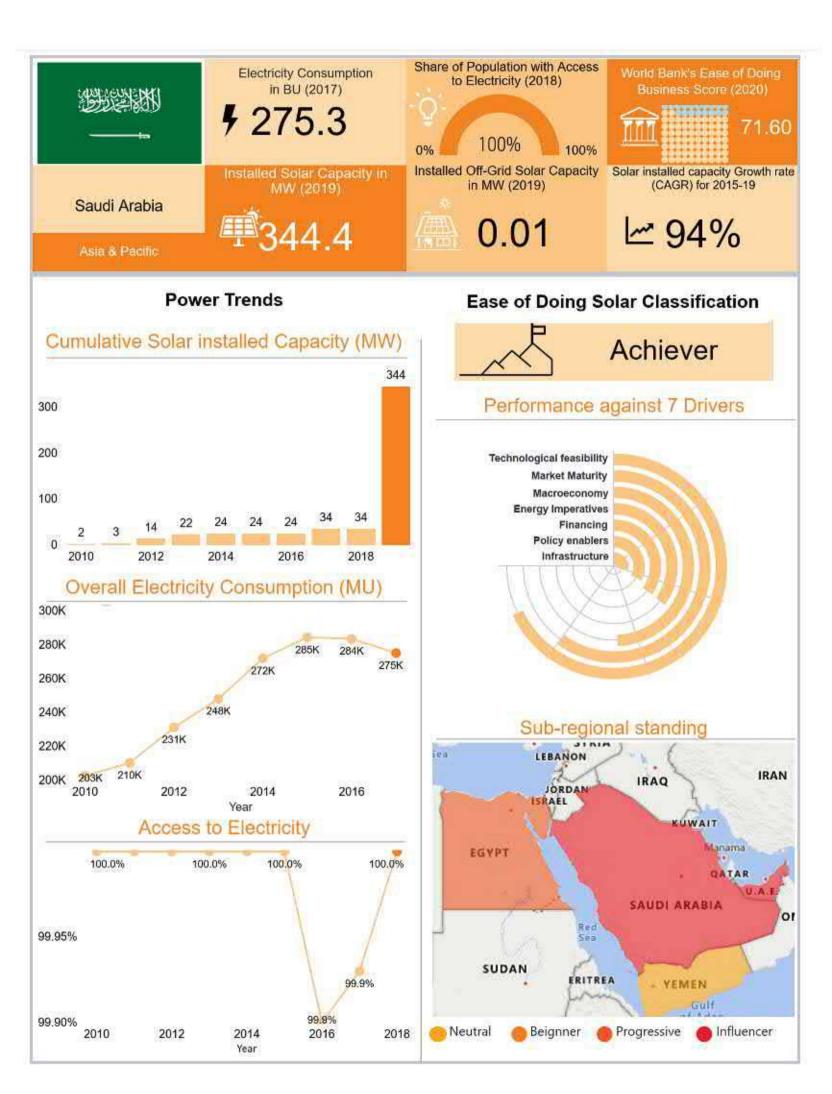
- Transmission and distribution networks are old and poorly maintained leading to high technical losses.
- The interconnected power generation infrastructure in the Island nation is limited and diesel consumption, by oil fired power plants, constitutes a large portion of the operating expenses.¹³
- The Global Environment Facility (GEF) funded project "Strategic program to promote renewable energy and energy efficiency investments in the electricity sector of São Tomé and Principe" is implemented by UNIDO in partnership with the Ministry of Public Works, Infrastructure, Natural Resources and Environment (MOPIRNA). The project contributes to the Vision 2030 "São Tomé e Príncipe 2030: the country we need to build" that aims to transform the country into a climate-resilient and vibrant island hub.⁶

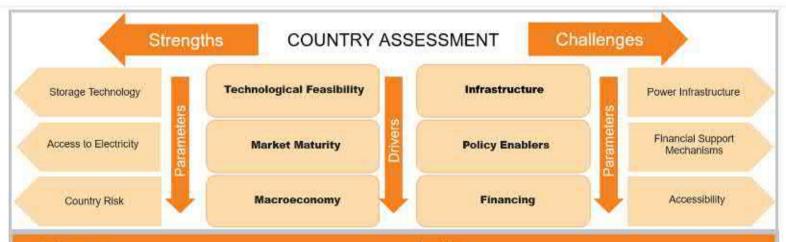


- Country's Power Sector Recovery Project was approved in 2016 with a commitment amount of USD 16
 million. The project aims to increase renewable energy generation and improve the reliability of the electricity
 supply.¹⁰
- The current portfolio, funded by International Development Association (IDA), of power sector related projects had commitments of USD 80 million of which nearly 28% is disbursed.⁴
- Growth was boosted by higher public investment which averaged EUR 43.7 million (about 12% of GDP) in 2017-18 as new externally financed projects began.⁹



- · Per capita electricity consumption of 419 kWh is significantly lower in comparison to the global average.1
- As of 2018, 56% of rural population had access to electricity.
- Total installed capacity in the country was 48 MW in 2019 which includes 2 MW of hydro capacity.¹¹
- Currently the country has one of the highest power generation costs in Sub Sahara Africa.⁶





Insights



- Saudi Arabia is a high-income economy. It is the leading producer of Oil in the world.¹
- GDP (Real) has grown at an annual rate of 0.3% in 2019.²
- The economy of Saudi Arabia largely depends on oil production: limited diversification is a key challenge.³



- The National Renewable Energy Program (NREP) is a strategic initiative under Vision 2030 and the King Salman Renewable Energy Initiative; the program aims to maximize the potential of renewable energy in Saudi Arabia.⁴
- The country's solar target for 2023 has been revised upwards from 5.9 GW to 20 GW and that for 2030 is set at 40 GW.
- By 2030 the country aims to generate 30% of its electricity from RE sources.
- Saudi offers a wide range of investor-centric incentives such as custom duty exemptions, land incentives and repatriation of Capital.⁵



- Owing to average of 8.9 hr/day of sunshine, high average solar irradiation levels of 6.21 kWh/m²/day and specific yield of 5.17 kWh/kWp, Solar has strong technical feasibility.6,5
- Solar-Parks are being developed in advance to boost project's bankability and expedite execution.⁵



- 100% population has access to electricity as of 2018.
- Saudi Electricity Company is the sole authority that manages generation (directly) and transmission (through its subsidiary, the National Grid) in the country.
- The power transmission system is operated according to the Saudi Arabian Grid Code which was established in 2012.
- Annual electricity consumption in amounted to 114.2 BUs in 2000 which increased to 302.9 BUs in 2016 at a CAGR of 6.3%. It is expected to increase to 602.3 BUs in 2030 at a CAGR of 5%.8



- Saudi Arabia's Finance Ministry expects to generate investments worth SR 14 billion (USD 3.7 billion) in the second and third rounds of NREP.
- Saudi Arabia has become part of an interconnected grid established among Gulf countries leading to increased power reliability in the region.⁸



- Country has a negative financial outlook with a credit rating of A1 Negative as of May 2020.9
- An investor-centric ecosystem is established by the government for private sector investors.¹³
- Up to 75% of solar project financing is available as soft loans from Saudi Industrial Development Fund.⁶



- Per capita electricity consumption, in 2019, was 10,429 kWh which is relatively high in comparison to the global average.
- The Solar PV capacity grew from 2 MW in 2010 to 344 MW in 2019.
- 2,170 MW of renewable energy capacity is under development in the country of which 700 MW was awarded in 2019.¹²