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ENERGY PROFILES

BARBADOS

APRIL 2021

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Energy Profiles: Barbados

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*The opinions contained in this publication are those
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Background

Barbados is the easternmost of the Caribbean islands. The population in 2018 was estimated at 287,025 and the island is about 430 square kilometres in size, (World Bank, 2019). In 2019, the country's Gross Domestic Product (GDP) was recorded at US\$5.2 billion.

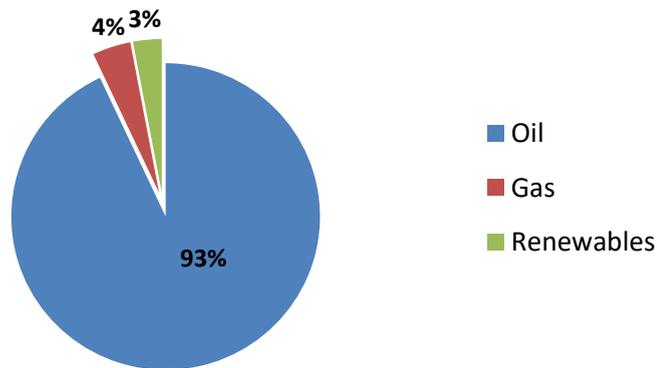
The main sectors are agriculture, industry and services. The services sector, comprised of communications, transportation and finance industries, contributed about 88.7 percent of 2019's GDP. The industrial sector contributes 9.8 percent of GDP and includes mining, manufacturing, energy production, and construction industries. The agriculture sector contributes only 1.5 percent of GDP which can be attributed to the farming, fishing and forestry industries.

The COVID-19 pandemic presented a severe shock to the tourism dependent economy; 2020's GDP contracted by approximately 17.3 percent at US\$4.4 billion, (World Bank, 2021). In early 2021, most of the COVID-19 restrictions in Barbados were lifted, and manufacturing, construction and business activities resumed. Hence, the economy is expected to recover soon.

Energy Sector

The total primary energy supply in 2017 is as follows: oil (93 percent), gas (4 percent) and renewables (3 percent), (IRENA Energy Profiles). Of the renewable energy supplied, 72 percent was represented by biofuels whilst solar accounted for the remaining 28 percent. Primary energy trade statistics also show imports of 21,187 TJ and exports of 1,355 TJ which resulted in a net trade of 19,832 TJ. The net trade translates into -206 USD million and -4.1 percent of the country's GDP in 2017.

Diagram 1: Total Primary Energy Supply | Source: IRENA (2017)

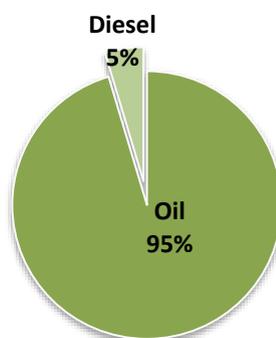


Renewable energy contributed 3.6 percent to total final energy consumption in 2017. Sources of renewable energy consumption include: electricity (28 percent) and bio-energy (72 percent). The main consumption sectors were industry (67 percent), other (21 percent) and households (12 percent), (IRENA Energy Profiles).

The entire population of Barbados has access to electricity. Total electricity capacity in 2019 stands at 291 MW; with non-renewables and renewables represented by 91 percent and 9 percent of total capacity respectively. Latest statistics have also shown a total generation of 1142 GWh, (IRENA Energy Profiles).

The electricity mix in 2019 was composed of 95.4 percent oil and diesel and 4.6 percent solar. Average electricity rates (USD/kWh) as follows: residential (\$0.25), commercial (\$0.28) and industrial (\$0.25). The electricity sector in Barbados has a total customer base of 130,858. Of this customer base, 114,550 are domestic customers and 16,308 are residential customers. Total installed capacity stands at 261.1 MW and the highest peak demand was estimated at 150.5 MW in 2019. The total annual system generation for 2019 was approximately [1013.7 GWh](#) with a load factor of about [79.4](#) percent. Total transmission and distribution losses in 2019 amounted to 6.7 percent of net generation, (Barbados Light and Power Company, 2019).

Diagram 2: Electricity Generation Mix | Source: Barbados Light and Power Company (2019)



Energy and Electricity Regulatory Framework

The Energy Division within the Ministry of Finance, Economic Affairs and Energy is the main regulatory body of the energy sector in Barbados. It is responsible for developing and administering energy policies. The division's specific responsibilities include issuing licenses and leases for all oil exploration and production; advising on petroleum product prices; promoting the use of renewable energy technologies and promoting the effective use of energy.

The Barbados Light and Power Co. Ltd. (BL&P) is the island's sole electricity provider. It started operations in the early 1920's under the complete ownership of a London based holding company. It is now owned by Emera Inc., a Canadian based company. The Electricity Supply Act 1907 gives BL&P the sole rights to transmit and generate electricity and does not have any provisions for Independent Power Producers (IPPs), prohibiting any sale or injection into the grid.

The vertically integrated monopoly has been regulated by the Fair Trading Commission (FTC) of Barbados since 2001. Their existing license, which was gained in 1986, allows BL&P to be the sole franchise in selling electricity up to 2028. The electricity market in Barbados is not liberalized and open for new entities. The FTC is an independent regulator of the supply and distribution of electricity; it regulates electricity rates and also sets the standards of service. The BL&P continues to enjoy positive returns from its operations. For the year 2019, the company made an after tax net income of BD\$53,441,803, (Barbados Light and Power Company, 2019).

Managing the Transition to A Low Emissions Economy

The Barbados National Energy Policy (BNEP 2017-2037) seeks to make Barbados more economically viable and environmentally sounder. It strives for more social balance in its energy sector and to ensure good governance in this area. Its vision statement is to have energy security and affordability through diversity and collaboration: establishing and maintaining a sustainable energy sector. The policy recognizes that by 2037, there should be a significant reduction in the importation of fossil fuels and an increase in renewable energy sources. Further, the Government of Barbados sets a 100 percent renewable energy target by 2037 and expects to become an advanced green economy.

The National Strategic Plan of Barbados (2006-2025) supports the focus on reducing the dependence on fossil fuels. Further, it aims to increase the number of household solar heaters by 50 percent at the end of 2025. Today, water heaters are being used extensively across the island and in 2010, a Renewable Energy Rider Initiative was introduced- which allows customers to connect to the national grid and sell any excess electricity generated from renewable energy sources to BL&P Co. Ltd. In 2012, Barbados hosted The Achieving Sustainable Energy for All in Small Island Developing States where the country announced

a renewable energy target of 29 percent by 2029, (Renewable Energy and Energy Efficiency Partnership).

In 2015, the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREE) was established in Barbados. The centre aims to increase the use of sustainable energy use for CARICOM member states and achieving climate-resilient economies. There are plans to develop a wind farm by 2025; wind energy has not taken off significantly but there is potential to develop this technology to complement existing solar installations. Other targets include: 50 percent increase in the use of solar energy for water heating and other purposes by 2025; production of oil and gas from our ocean resources by 2025.

References

1. Barbados Light and Power Company, See [Home \(blpc.com.bb\)](http://blpc.com.bb)
2. Barbados National Energy Policy (2017-2037). Retrieved from: <http://extwprlegs1.fao.org/docs/pdf/bar199547.pdf>
3. CARICOM Releases, See [Caribbean targets 47% renewables by 2027 - CARICOM](#)
4. Electricity Supply Act 1907, Retrieved from [Barbados \(2014\) | REEEP](#)
5. Fair Trading Commission, See [Fair Trading Commission, Barbados - Home \(ftc.gov.bb\)](#)
6. Howard, Stacia (2019). National Energy Efficiency Monitoring Report of Barbados. Retrieved from: https://repositorio.cepal.org/bitstream/handle/11362/45053/1/S1900970_en.pdf
7. International Renewable Energy Agency (IRENA) Energy Profile Barbados. Retrieved from: [Barbados Central America and the Caribbean RE SP.pdf \(irena.org\)](#).
8. Non- Consolidated Financial Statements 2019, Barbados Light and Power Company Limited. Retrieved from: [Microsoft Word - BLPC Financials Nonconsol 2019 5-Mar-20.docx \(ftc.gov.bb\)](#)
9. The World Bank Indicators. Retrieved from : [Indicators | Data \(worldbank.org\)](#)
10. The World Bank Public Documents. See [mpo-brb.pdf \(worldbank.org\)](#)

11. The National Strategic Plan of Barbados 2006–2025: Global Excellence, Barbadian Traditions. Retrieved from: [The National Strategic Plan of Barbados 2006-2025: Global excellence, Barbadian traditions | Green Growth Knowledge Platform](#).
12. Trading Economics Statistics. See [Barbados \(tradingeconomics.com\)](#)
13. Renewable Energy and Energy Efficiency Partnership, See [www.creee.org](#)

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