

ENERGY
CATALYST

Country Guide: Mozambique

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The Republic of Mozambique stretches along the south-eastern coast of Africa and has a 2,470 km coastline on the Indian Ocean. Its terrain ranges from coastal lowlands in the east to a high plateau in the north-west and mountainous regions along the western flanks of the country. Climatically, Mozambique is characterised by sub-tropical conditions in the south-east and tropical conditions towards the north. The country borders South Africa and Swaziland to the south, Tanzania and Malawi to the north and Zambia and Zimbabwe to the west.

The country has a growing population, with a growth rate of 2.9% in 2018, bringing the total population to just over 31 million people in 2020. That said, the large size of the country means that the population density is less than 30 people/km². Mozambique has an interesting and tragic history. The Portuguese colonisers that settled in Mozambique enjoyed great economic success off the back of the country's resources and population; however, the infrastructure and central services that were developed, such as health care and education, were not made available to non-Portuguese Mozambicans.

Although Mozambique was a Portuguese colony for more than 450 years, only just over 50% of the population speaks the country's official language, Portuguese, which is a low percentage compared to former Anglophone and Francophone colonies. After the ten-year Mozambican War of Independence, Mozambique gained independence from Portugal in 1975. Despite this, the Mozambican Civil War, fought between the incumbent Marxist Front for the Liberation of Mozambique (FRELIMO) and the anti-



Figure 1: Map of Mozambique. Source: d-maps

communist insurgent forces of the Mozambican National Resistance (RENAMO), erupted in 1977. It only ended in 1992 with the end of the Cold War, when Soviet and South African (and US) support of rival factions ended. This war took a massive toll on the population, the country's infrastructure, and the country's development trajectory, the legacy of which is strongly felt to this day. Following the signing of the 1992 peace agreement, a multi-party democracy was established.

The country's first democratic elections were held in 1994 and were won by the FRELIMO party, which remains in power today, having most recently won the 2019 general elections. The period between 1994 and 2013 was largely politically stable; however, hostilities were reignited when the opposition party, RENAMO, claimed that the 2013 general elections were rigged and unconstitutional. This led to several armed confrontations between RENAMO supporters and the Mozambique national army, resulting in renewed social and economic disruption.

In 2016, however, a truce was agreed between FRELIMO and RENAMO which sought to decentralise power and pave the way for private sector driven economic recovery.

Since 2017, Mozambique has struggled with extremist insurgency in the northern parts of the country, primarily around Cabo Delgado. The area is considered a fertile ground for radicalisation, particularly for youth, due to the high unemployment and low literacy rates. The residents of the areas that are suffering from the violence claim that members from Al-Shabaab in Tanzania are crossing the border and radicalising the youth in Mozambique. Between 2017 and January 2019, 150 people have been killed and 500 houses destroyed in these attacks.

Economy

Mozambique is listed as a low-income country with a GDP per capita of US \$539 and is ranked 44th out of 54 African countries in terms of GDP. Since the establishment of democracy in 1994, the country's economic structure has not changed significantly, with some de-industrialisation being seen in a few sectors, barring the extractive industries.

In 2016, the agriculture and fishing sector accounted for more than a quarter of the GDP while employing almost three quarters of the workforce. Despite this and the country's favourable climate, the country is a net importer of food, especially from neighbouring countries such as South Africa.

As a share of GDP, manufacturing is currently less than 10%, declining from 20% in 2000. The extractive industries, which are one of the few sectors that have seen notable growth since the early 2000s, account for 6.9% of GDP and are dominated by coal for export, though increasing focus is being directed at the country's oil and gas sector. Tourism is also an important economic sector in the country, accounting for 8.8% of GDP in 2017 and is expected to continue growing in importance.

Like many emerging economies, the Mozambican economy has been quite volatile, driven by external commodities pricing. Economic growth in 2015 was an impressive 6.7%, driven by coal, coke, natural gas and aluminium exports, however this slowed to an average of 3.7% in the years to 2018 and 1.9% in 2019, mainly due to the damages inflicted by cyclones Idai and Kenneth. Reaching a high of 23.25% in 2017, interest rates have since been reduced by the Bank of Mozambique to 11.25% as of April 2020, while inflation has dropped to below 4% since 2018.

Table 1: Mozambique at a glance

Capital	Maputo
Total area	786,400 km ²
Population	30.4 million (2019)
Official languages	Portuguese
Rural population	64% (2018)
GDP	US\$ 15,200 M (2019)
GDP per capita	US\$ 539 (2019)
Currency	Mozambican Metical (MZN)
Exchange rate 01/03/2020 01/03/2018	1 GBP = 83.18 MZN 1 GBP = 85.00 MZN
Access to electricity	29% (2020)
Urban electricity access	57% (2020)
Rural electricity access	15% (2020)

Unfortunately, in 2016, following the peace agreement between the political factions, it emerged that the government had previously taken on debt without disclosing it publicly (and hence not following legal protocols), and that Mozambique's debt was understated by c.US \$1.4 billion. This increase pushed the government debt-GDP ratio to approximately 100%. As a result, 'Debt Dynamics', a measure of the sustainability of public finances, is one of the major issues that need to be addressed according to the Global Competitiveness Report, with Mozambique being rated as 140th out of 141 countries. The country is working to reduce its debt-GDP ratio through improved tax collection and debt restructuring agreements with international lenders.

The Mozambican economy is operating under a socialist regime, which has been in place since the 1975 independence from the capitalist Portuguese regime. The Portuguese were viewed to have used their capitalist means to benefit the wealthy and to suppress the poor and vulnerable through abusive labour, selective education and access to basic services which deprived most people of access to basic services such as education, electricity and clean water. The socialist reform was therefore an integral component to the country's independence, and sought to create an inclusive and equal economy that benefitted all members of society instead of a wealthy elite. The socialist regime has seen Mozambique nationalising many industries and has a general aversion to the private sector due to its history of exploitative practices in the country. This is especially apparent in sectors providing public benefit services such as the energy sector, where the government assumes a controlling role and has struggled to cede power to the private sector.

As a result of the socialist structure, the government plays a central role in planning and there is a highly bureaucratic structure to the economy. Coupled with corruption issues and cumbersome labour regulations, this has restricted growth in many industries and has frustrated private sector actors. There is a large informal sector in Mozambique which opts to not formalise because of the bureaucracy and complexities in dealing with the government.

In terms of the ease of doing business in 2020, as measured by the World Bank in their annual survey via a comparison of business regulation in 190 economies, Mozambique ranked 138th globally. Figure 2 below illustrates Mozambique's performance on a host of metrics, showing the need to improve the procedures needed to start a business, getting finance and credit and the strength of the legal system to enforce legal contracts. That said, Mozambique is performing well on matters pertaining to construction permits and licensing.



Figure 2: World Bank doing business 2020 global rankings and scores for various 'Doing Business' topics in Mozambique. Source: World Bank Group, 2020

The energy sector in Mozambique

Looking at the energy sector through a primary supply lens, biomass, primarily in the form of forest resources, provides the majority (over 60%) of the total primary energy supply. Biomass is used for cooking and heating almost exclusively in rural areas, where electrification rates are low. It must be noted that while this can be considered a renewable energy source, current forest resources in Mozambique are not being sustainably managed. Crude oil is ranked second (18%) in terms of primary energy supply in Mozambique, and it is mainly used for transportation and to a lesser degree for agriculture. Hydro-energy, as a major electricity generating source, is ranked third (11%) for primary energy supply.

Mozambique has made considerable progress in terms of increasing electricity access: in 2001 just 5% of the population could access electricity while today this figure is 29%. However, much work still must be done to ensure that those in rural areas have access to modern energy services, and a number of donor funded electrification programmes are in progress.

At 187 GW (excluding the theoretical solar potential), predominantly from gas and coal power, Mozambique has the largest electricity power generation potential in Southern Africa. Thus, theoretically, security of supply should not be an issue. However, installed capacity sits at only 2,626MW, of which hydropower currently accounts for 81%. Despite this low installed capacity, a considerable amount of the electricity generated in Mozambique is exported. Indeed, total electricity supply from Mozambican power plants in 2015 was 19,913 GWh, 85% of which came from hydropower, versus a domestic peak demand recorded at only 655 MW and 3,908 GWh, according to the Integrated Electricity Master Plan.

Mozambique only consumes 10% of the electricity from the Cahora Bassa Dam (HCB), whilst a further 30% is exported to South Africa, and the remainder is fed into the Mozal smelter (60%). The Mozal smelter is an aluminium refinery owned by BHP Billiton that produces 540,000 tonnes of raw aluminium per year and is currently undergoing expansion upgrades to boost production to 740,000 tonnes per annum. The Mozal smelter buys electricity generated by HCB from the South African transmission network but is located in Mozambique (10,400 GWh 2013).

Electricity demand is expected to grow substantially in Mozambique in the coming decades. By 2043, consumption is expected to be ten times greater than current levels, with an annual growth rate of 8.5%. The growth in electricity demand is expected to arise from increasing economic growth and increasing electricity access, the latter of which is targeted to reach 100% by 2030.

The Mozambique government has plans to expand the country's generation capacity from the current 2,626 MW to 3,138 MW by 2022 and 4,163 MW by 2030. Under the government's plans, independent power producers (IPPs) will provide the majority of the country's electricity.

Oil and gas

Major oil and gas discoveries were made in 2010 in Mozambique. The Temane and Pande gas fields lie in the Mozambique Basin, which are located in the central part of the country and straddle the coastline (both onshore and offshore) with a proven reserve of 3.5 trillion cubic feet (Tcf). Further north, another gas resource, Rovuma Basin, has been discovered with considerably greater gas reserves, estimated at 124 Tcf.

The Mozambican Constitution states that natural resources in the soil and subsoil belong to the state, so the government formulated a regulatory framework that would allow concessions of up to 30 years to allow these gas discoveries to be pursued. In 2014, Mozambique published its Natural Gas Master Plan, which is an instrument to promote intersectoral coordination on natural gas project design and implementation and plays an integral part in the strategy for natural gas exploitation.

The natural gas reserves discovered in Mozambique could provide much needed economic and social prosperity, if these resources are managed and exploited in a way that is beneficial to all stakeholders.

As such, according to the new Petroleum Law (2014), 25% of all the gas produced in Mozambique would need to be consumed locally. This was envisaged to spur on development of major anchor projects in the oil and gas sector, including gas to liquids plants (50,000 barrels/day), methanol production, fertiliser production (500,000 tonnes per year) and electricity generation capacity (300 MW in South Africa and 600-800 MW in Mozambique).

To date, the Shell gas to liquids refinery (38,000 barrels/day), the Yara fertiliser plant (1.3 million tonnes per annum), and the GLA gas power plant (250 MW) have reached feasibility stage; however, a considerable amount of the Rovuma basins production capacity remains unallocated for domestic use as per the legislation. Additional domestic downstream projects need to reach final investment decisions before further development on the Rovuma Basin can be realised.

In 2000, Sasol in partnership with the National Oil Company (ENH) entered into a 25-year agreement to produce 120 PJ of natural gas that would be used domestically in Mozambique and exported to South Africa. The result of this partnership was the establishment of the Pande and Temane gas fields and the construction of an 865 km pipeline between the Temane gas field and the town of Secunda in South Africa. This gas supply is expected to begin tapering off from 2023, which will leave South Africa with a 98 million GJ gas shortfall from 2023; however, a joint development agreement between Total and Gigajoule (a Southern African gas infrastructure developer) could see the establishment of a liquified natural gas (LNG) terminal in Matola, Maputo which would then secure supply through the currently existing gas network.

The extremist insurgency in the north, the impacts of the COVID-19 pandemic and the sharp reduction in the oil price in 2020 have caused Exxon Mobil to delay the Rovuma LNG project final investment decision, amid the oil industry's significant cuts to capital expenditure. It is expected that the suppressed oil price and on-going violence from insurgency in the north will continue to hinder development and expansion of the oil and gas infrastructure.

There are two major IPPs in Mozambique utilising natural gas: the 120 MW Gigawatt Project and the 175 MW Central Termoeletrica de Ressano Garcia (CTRG) power plant (175 MW), the latter of which is jointly owned by Sasol and Electricidade de Moçambique (EDM). There is also 65 MW of peaker capacity available from two gas-fuelled and one diesel-fuelled Aggreko power plants.

Hydropower

As of 2019, Mozambique was the 7th largest producer of hydroelectricity in Africa with 2,191 MW of installed hydropower. The vast majority (2,075 MW) of this supply comes from the Cohora Bassa Hydropower (HCB) plant. The HCB is augmented by the Mazuzi (54 MW), the Chicamba (43 MW), and the Corumana (16 MW) hydropower plants.

However, there is still a considerable untapped hydroelectric resource in Mozambique. According to the Renewable Energy Atlas, Mozambique has close to 19 GW of hydropower potential, mainly concentrated in the central and northern regions of the country, through the Zambezi and Rovuma Rivers.

The Mphanda Nkuwa hydropower project has been proposed as a run-of-river facility on the Zambezi River in Tete province, which would have 1,500 MW capacity. This project is expected to cost \$2.4 billion and is being developed by EDM, HCB and a strategic partner that has yet to be selected. On completion, this plant will produce 8,600 GWh of electricity. Construction on this project officially commenced in October 2019.

In addition to this large-scale project, there are eight mini-hydro projects that have been identified for development. Three of the projects, the Mavonde (450 KW), Berua (1.9 MW) and Luaíce (479 KW), have completed feasibility studies and are ready for construction.

Solar energy

Compared to all other forms of renewable energy, the Mozambican solar potential is the greatest. The western and northern parts of the country have excellent solar resources and on average the country receives between 1,700 and 2,200 kWh/m² per annum, and the solar potential is estimated at 23 TW. Figure 3 depicts the areas with the highest solar radiation and shows the high potential for solar energy in Mozambique.

According to the Mozambique Renewable Energy Atlas, there is 2.7 GW of solar potential that could be easily developed for use as on-grid and off-grid electrification. 189 projects providing a combined 599 MW of electricity capacity have been identified as priority projects to provide grid-connected power without the need for significant transmission network expansion.

Currently, there is an estimated 42.2 MW of solar PV capacity installed in Mozambique, 40 MW of which is from the Mocuba solar plant which was commissioned in August 2019. The Mocuba solar plant was developed by Scatec Solar and funded by multiple development finance institutions, while the equity of the project is held by EDM (25%), KLP Norfund Investments (22.5%), and Scatec Solar (52.5%).

The remainder are solar PV mini grids funded by the government of South Korea and the Portuguese Carbon Fund, and off-grid projects on a very small scale. Solar PV mini grids represent the majority (1.5 MW) of the installed off-grid solar PV capacity in Mozambique. The largest is the 1.3 MW solar PV mini grid in Niassa.

In addition to the Mocuba plant, the Metoro solar project is another large-scale solar PV project that has begun construction as of January 2020. The Metoro plant is being constructed by Efacec and is developed by Neoen, and will have a capacity of 41 MW, making it the largest solar PV project in the country when it is completed.

Biomass energy

A tropical and sup-tropical country with ample sunshine and precipitation, Mozambique has considerable bioenergy potential. It is estimated that the country has 2 GW of biomass potential, with 128 MW of this being identified as viable and of priority in the short-term (five years).

More than half of the country's biomass potential (1286 MW) lies in forest resources as residues from logging, black liquor from the pulp industry, and dedicated energy plantations. This is followed by the bagasse resource potential of sugar mills (831 MW) which could be used for cogeneration. Though difficult to measure, the industrial, municipal, and agricultural waste streams in Mozambique also offer notable biomass potential while also combating the deleterious environmental impacts of this waste's diversion to landfills.

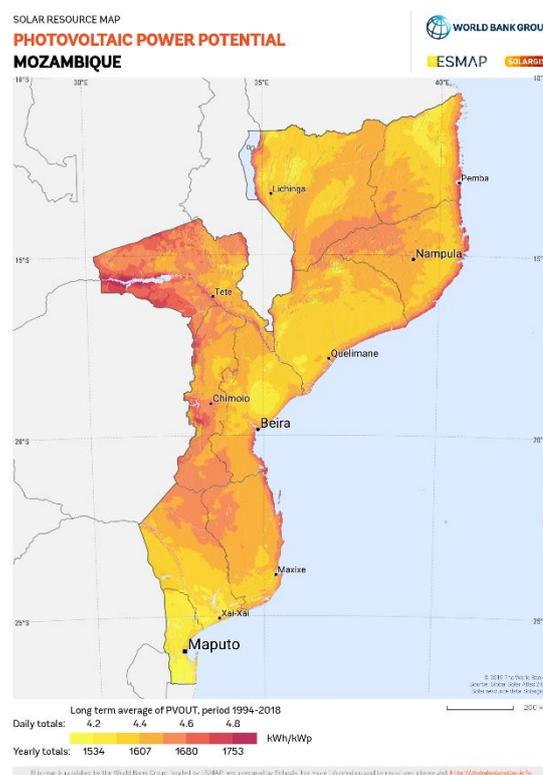


Figure 3: Solar resource Mozambique. (2019 The World Bank, Source: Global Solar Atlas 2.0, Solar resource data: Solargis)

Bioenergy is used widely in Mozambique for cooking and heating, and is the country's major source of energy. Indigenous forests and woodlands are the major source of this biomass, though the harvesting of these resources is unregulated and is not managed sustainably, which could lead to deforestation if left unchecked. Outside of these traditional bioenergy uses, there are no biopower plants or biofuels production facilities in the country.

Efforts from government and international funders are being directed at deploying clean cooking stoves in the country to improve the efficiency and reduce the amount of biomass required by households for cooking. Additionally, bioenergy for electricity and biofuels has been noted as having high potential for job creation.

Wind energy

As of 2019, the only known wind generating facility in the country was a 300kW turbine installed in the Inhambane province. There is, however, 4.5 GW of wind energy potential in the country, and 1.1 GW of this currently has potential for grid-connection.

The Mozambique Renewable Energy Atlas considers only 230 MW of wind energy as high potential, with most of the country's wind resource located in the south (Maputo and Gaza) and in the west (Tete) provinces.

That said, the China Energy Investment Corporation has committed to building a 100 MW wind facility in the Manhiça district of Maputo province with the provision of \$120 million in funding. The wind farm is expected to be completed in 2022.

Table 1 Overview of the main stakeholders in the energy sector in Mozambique

Institution	Role
Ministry of Mineral Resources and Energy (MIREME)	Responsible for national energy planning and policy promulgation. There are three divisions within the MIREME, the power sector, renewables and liquid fuels, and these oversee the operations and developments within their respective spheres. The National Directorate for Electrical Energy (DNEE) is a technical body within the MIREME that is tasked with the preparation, analysis and implementation of energy policies in the power sector.
Ministry for the Coordination of Environmental Affairs (MICOA)	The department has centralised power over all environmental legislation and policy making and is involved with many other ministries to coordinate on environmental issues. MICOA must give approval for environmental impact assessments and for ensuring compliance with international environmental protocols such as the Kyoto Protocol and Clean Development Mechanism CDM applications.
Ministry of Agriculture and Rural Development (MINAG)	MINAG manages and regulates traditional fuels, predominantly forest resources, and works closely with MICOA and MIREME for biomass energy developments.
The Energy Fund (FUNAE)	Funding and implementing energy projects specifically aimed at increasing energy access in rural areas and urban, poor areas. FUNAE seeks to consolidate leadership in the dissemination of renewable energies and contribute to meaningful social and economic development.
Energy Regulatory Authority (ARENE)	Superseding the Conselho Nacional de Electricidade (CNELEC) in 2017, ARENE has decision-making, asset and budget autonomy but is supervised by the MIREME. ARENE, in turn, supervises, regulates, and represents electricity generation, transmission and distribution and effectively controls the electricity market (as well as regulating the liquid fuels and natural gas sector).
Electricidade de Moçambique (EDM)	The state-owned, vertically integrated electric utility in Mozambique tasked with electricity generation, transmission and distribution. The majority of the power supplied via EDM is sourced from Hidroeléctrica de Cahora Bassa, which is 82% owned by the Mozambican government.
Mozambique Transmission Company (MOTRACO)	Owned by EDM, Eskom and the Eswatini Electricity Company (EEC), MOTRACO supplies the MOZAL aluminium smelter with electricity and provides electricity wheeling services to EDM and EEC.
Centro de Promoção de Investimentos (Investment Promotion Centre, CPI)	This institution assists domestic and international investors in identifying and accessing government incentives when establishing their ventures. The mandate is to boost investment in the country to generate economic growth and create wealth.
Empresa Nacional de Hidrocarbonetos de Mocambique (ENH)	ENH is a parastatal oil and gas company in Mozambique which has exclusive rights to explore and develop oil resources in the country. To date, ENH has exercised these rights in partnership with international oil and gas firms such as Enron, Sasol, BP and local firms.

Energy policy

The National Energy Strategy 2014-2023 outlines the vision for Mozambique's electricity sector to overcome the existing challenges and capture the opportunities to harness the country's energy resources in an inclusive, sustainable manner. The key challenges to overcome in the power sector are providing reliable and efficient electricity supply, increasing generation and expanding transmission capacity to meet the current and future demands, and increasing electricity access, which is low compared to its peers. The overarching goal is to solidify Mozambique's position as a key regional energy producer and exporter and to alleviate poverty and generate economic prosperity through the development of the energy sector. The National Energy Strategy has five key focus areas with a strategy for each:

- **Regulation:** An energy regulator shall be established to regulate the entire sector, including electricity, liquid fuels and natural gas. This has been done with the establishment of the Energy Regulatory Authority (ARENE) in 2017.
- **Energy Efficiency:** A legal framework that will govern energy efficiency, from energy supply to energy consumption, shall be created to promote the sustainable and responsible use of energy.
- **Feed-in Tariffs:** A programme to procure energy shall be approved and aimed at renewable energy technologies, which will provide electricity at costs in line with natural gas power with an environmental tax applied. In 2014, feed-in tariff (FiT) regulations were approved for solar, biomass, wind and small hydro technologies; however, connection of these potential projects to the grid still requires further regulation and as of 2017 the FiT programme was under revision.
- **Electrification:** Grid access needs to be extended and the quality of energy improved. To do this \$200 million would need to be mobilised annually to achieve 50% grid access by 2023.
- **Tariff Calculation Methodology:** With private sector investment in the industry, there is a need to settle the tariff methodologies that are used to calculate the electricity price from these new projects. The strategy seeks to determine tariffs that are cost-reflective.

The Mozambican electrification plan, as laid out in the Integrated Electricity Master Plan, will utilise a combination of on-grid electrification and off-grid electrification; the on-grid electrification will prioritise connecting customers on a lowest-cost basis initially, by extending the infrastructure in grid-connected villages to those in the village without connections. It is recognised by the government that extending the national grid to isolated communities will be costlier than those located close to the existing grid infrastructure, which is where off-grid electrification, utilising funding from the Energy Fund (FUNAE), will be used alongside private finance.

The on-grid electrification will expand the current grid to all 128 districts' headquarters. Electrification of these headquarters was completed in 2015. Although on-grid electrification has improved considerably from under 5% in 2002 to nearly 30% as of 2020, electrification in the north and central regions is low. Mozambique is lagging significantly behind the target of universal electricity access by 2030.

Off-grid electrification has been spearheaded by FUNAE under guidance from the Ministry of Mineral Resources and Energy (MIREME). FUNAE was initially tasked with providing funding for off-grid electrification projects but has since seen its mandate shift to responsibility for implementing off-grid electrification projects. As of 2017, FUNAE has electrified 180 villages, 790 schools and 690 clinics in Mozambique, providing modern energy to approximately 3.7 million people. This has been enabled through international donor support.

Up until 2009, off-grid electrification was primarily powered using diesel generation; however, this has since been halted as the electricity supplied from diesel generators is costly and access to diesel limited the electricity supply. FUNAE has since adopted off-grid electrification through three methods: micro-grids, mini grids and stand-alone systems. Micro-grids are 5 kW solar PV systems that supply 25 households with basic electricity at a fixed monthly tariff. Mini grids have larger capacity (500 kW) and are powered by solar PV or small hydro systems whereby electricity is billed according to customer usage. Stand-alone systems are solar home systems that are attached to individual households and a fixed monthly electricity tariff. As of 2019, FUNAE identified 111 mini grid or micro-grid villages, and 81 stand-alone villages to be electrified via the off-grid plan. Additionally, 968 primary schools and 280 clinics have been earmarked for off-grid electrification across multiple provinces. To date though, there is no largescale solar home system and pico-solar programme in the country and the few mini grids that have been installed have been fuelled by diesel generators and have suffered from operation and maintenance issues.

Private sector participation in the off-grid electricity sector has been limited to date, partly due to the country's unfamiliarity with opening up to the private sector. Although it is stated that the private sector is to play a key role in the country's electrification, there are multiple barriers to private sector participation, namely restrictive regulations (including fossil fuel subsidies and high VAT and import duties on solar components), financing and human capacity.

In addition to the National Energy Strategy, the New and Renewable Energy Development Strategy 2011-2025 laid out renewable energy targets for Mozambique. For wind energy, the strategy seeks to install 10,000 turbines for off-grid electrification and install 100 MW for on-grid generation. For solar PV, the country aims to develop PV production lines to supply the components that will be used in the mini-grids and off-grid generation projects. Small hydro would see 125 MW of capacity being developed for both on-grid and off-grid electrification according to this strategy.

Lastly, in 2009, Mozambique approved a Biofuels Policy and Strategy to promote the uptake and usage of biofuels. It was envisaged that stimulating biofuels demand would increase the use of agricultural and industrial biomass wastes, simultaneously reducing greenhouse gas emissions from these waste streams, increasing revenue generation and providing further energy security through reduced reliance on imported liquid fuels. Following this, in 2011 the MIREME imposed blending ratios and standards for biofuels which requires bioethanol to be blended into petroleum at a ratio of 15% from 2016-2020, and 20% from 2021. Additionally, biodiesel is to be blended at 7.5% from 2016-2020, and 10% from 2021.

Table 2: Active support programmes in Mozambique

Programme	Main activities
Supporting the Policy Environment for Economic Development (SPEED+)	A USAID programme launched in 2016 working with private, public and civil society stakeholders to strengthen the operating environment for businesses to attract investment and expand the Mozambican energy market. SPEED+ has provided on-grid and off-grid legal, regulatory, and capacity building support to IPPs and ARENE.

Table 2: Active support programmes in Mozambique

Power Africa: Southern Africa Energy Programme	The SAEP, financed by Power Africa, is supporting EDM to develop 560 km of high-voltage transmission lines between Temane and Maputo and ultimately to South Africa. This is known as the Temane Transmission Project (TTP).
Electricity for All National Programme	This programme was launched by the Mozambican government to achieve universal electricity access by 2030. The national utility, EDM, will lead the development of grid-connected electricity access, while FUNAE will focus on the implementation of off-grid solutions to achieve energy access in the more isolated areas. The MIREME decides the priority areas based on the cost of electrification and technical constraints and will fund this programme through government budget allocations, electricity export revenues (taxes), concessional funding and an electrification levy on grid electricity sales.
Energizing Development (EnDev)	A \$4.5 million programme coordinated by German GIZ and the Netherlands Enterprise Agency (RVO) to bolster solar and improve cook stove distribution in Mozambique. The focus of this programme is on both supply (through solar home systems, mini-grids, and clean cook stoves) and demand (through credit support and finance models). The first phase of the programme ended in 2019 but the second, scale-up phase is under negotiation to expand the reach of these energy services. This programme has been funded using results-based financing (RBF).
Enabel (RERD Phase 2)	Support from Belgium to the tune of \$13.7 million between 2018 and 2022 to support FUNAE on their mandate to supply reliable and adequate energy services. This programme will provide this support through technical and capacity building support and to fund the construction of the hydropower mini grids.
DfID Energy Africa (BRILHO)	Part of the 'Energy Africa' programme, it seeks to improve access to energy for rural households and businesses through private sector innovation, improved cooking stove technology and the deployment of mini/micro grids. The budget allocated to Mozambique is \$30 million and commenced in 2019 for a period of five years. DfID has been providing support through market development, research, technical assistance and regulatory and capacity building support.

Table 2: Active support programmes in Mozambique

Sweden and African Enterprise Challenge Fund (AECF) AECF initiatives	The Swedish Embassy through AECF has committed \$6.5 million to Mozambique private sector companies to access capital and technical assistance with the aim of accelerating access to low cost, affordable, high quality products and services by rural poor households and communities. This funding will be dispersed as matching grant funding to technology providers and developers operating in the mini grid, solar home system and clean cooking stove space.
Sustainable Economic Development Project (KfW)	The Mozambican Commercial and Investments Bank (BCI) has been supported by KfW through the Sustainable Development project to create renewable energy and energy efficiency credit lines to provide enterprises with a subsidised interest rate (15%) for renewable energy technology and energy efficiency solutions.
Beyond the Grid Fund for Africa (BGFA)	Building on from the success of the programme in Zambia, the Swedish International Development Agency (SIDA) requested the Nordic Environment Finance Corporation (NEFCO) to establish and expand the programme to Burkina Faso, Liberia and Mozambique. This expanded programme is the BGFA. Sweden has contributed 46 million Euros to the BGFA programme, which will be used to elicit proposals from off-grid energy companies to compete for this funding opportunity. The aim is to stimulate new sustainable business models which incentivise and accelerate the private sector to offer affordable and clean off-grid energy access at scale.

Industry associations

Mozambique Association of Renewable Energies (AMER) coordinates the representation and defence of its members. It serves as an essential instrument for the participation and awareness of the potential of natural renewable energy resources for the sustainable development of Mozambique.

Confederation of Business Associations (CTA) of Mozambique builds the capacity of the private sector to become an effective player in policy decision making and improves coordination between policy makers and the private sector to meet the needs of the private sector and represent their interests.

Lusophone Renewable Energy Association (ALER) is a Non-Governmental Development Organisation established to promote renewable energies in Portuguese-speaking countries such as Mozambique. The association facilitates business opportunities by supporting the private sector and attracting financing and investment, by liaising with national and international authorities to create a conducive regulatory

framework, and by coordinating all stakeholders, acting as a cooperation platform and the common voice of renewable energies in Portuguese-speaking countries.

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AfDB Country Strategy Paper 2018-2022: Mozambique

https://www.afdb.org/fileadmin/uploads/afdb/Documents/Boards-Documents/MOZAMBIQUE_-_CSP_2018-2022_Final_.pdf

Official UK Government travel advice for Mozambique

<https://www.gov.uk/foreign-travel-advice/mozambique>

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Please contact your Client Relationship Manager if you want help with introductions to specific individuals with these institutions.