

Impact of COVID-19 on Renewable Energy Sector in Mozambique



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The information included in this report is not simply based on AMER's market intelligence and know-how but also the contribution of key stakeholders namely: The Government of Mozambique, the European Union, and the private sector (due to confidentiality issues they will remain anonymous). AMER would therefore like to express its gratitude to every person involved and their invaluable contribution.



AMER – Mozambican Association of Renewable Energies is a private, non-profit, legal, and administrative entity with financial and patrimonial autonomy, constituted for an indefinite period. Founded in 2017, AMER's mission is to promote renewable energy in Mozambique and to play a crucial role in coordinating the representation of the common interests of its members as well as serve as an essential instrument for the participation and awareness of the enhancement of natural resources renewable energy for the sustainable development of Mozambique. For more information about AMER see our website at www.amer.org.mz

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Acronyms

AfCFTA	<i>African Continental Free Trade Agreement</i>
AUC	<i>African Union Commission</i>
AMER	<i>Associação Moçambicana de Energias Renováveis (Mozambican Renewable Energy Association)</i>
ARENE	<i>Autoridade Reguladora de Energia (Energy Regulatory Authority)</i>
COVID-19	<i>Coronavirus disease 2019 (COVID-19)</i>
DFI	<i>Development Finance Institution</i>
EDM	<i>Electricidade de Moçambique</i>
EnDev	<i>Energizing Development</i>
EPC	<i>Engineering, procurement, and construction</i>
EGRE	<i>European Guarantee for Renewable Energy</i>
FEDESMO	<i>Forum de Energia e Desenvolvimento Sustentável de Moçambique (Energy and Sustainable Development Forum of Mozambique)</i>
FUNAE	<i>Fundo de Energia (Energy Fund)</i>
GET FIT	<i>Global Energy Transfer Feed in Tariff</i>
GW	<i>Gigawatt</i>
GOGLA	<i>Global Lighting Association</i>
HCB	<i>Hidroeléctrica de Cahora Bassa S.A.</i>
IFC	<i>International Finance Cooperation</i>
IPP	<i>Independent Power Producer</i>
MIREME	<i>Ministério dos Recursos Minerais e Energia (Ministry of Mineral Resources and Energy)</i>
MW	<i>Megawatt</i>
MT	<i>Metical</i>
PROLER	<i>Programa de Leilões de Energias Renováveis (Renewable Energy Auction Program)</i>
SDG	<i>Sustainable Development Goal</i>
VAT	<i>Value-added tax</i>
UK DIT	<i>United Kingdom Department for International Trade</i>
US\$	<i>United States Dollar</i>

1. Executive Summary



1. Executive Summary

This report focuses on the impact of the COVID-19 pandemic on the renewable energy sector in general and specifically within Mozambique, by expanding on both the challenges and opportunities that have emerged.

Throughout the report, we examine the impact of the pandemic from different perspectives (global, regional, and local) whilst also considering different perspectives from the private and public sectors, multilateral partners, and international finance institutions.

AMER carried out an extensive literature review of peer-reviewed articles, economic reports, newspaper clippings and engaged with several key stakeholders from the Mozambican renewables sector through detailed interviews to establish the key challenges and opportunities in the present context.

Key challenges include an overwhelmed health system unable to cope with infections caused by the COVID-19 pandemic, made only worse by unreliable access to electricity; an overall decrease in energy demand impact energy providers and the supply chain; an unprecedented amount of financial support from multilateral partners creating significant risks such as the over subsidization of businesses in the medium to long term thus negatively impacting the overall ecosystem.

With regards to opportunities, they indeed outweigh the challenges and have mostly come about since the Government of Mozambique signed up to the Sustainable Development Goal number 7 (SDG7), thus committing itself to “ensure access to affordable, reliable, sustainable and modern energy for all” by 2030. This has translated into a dramatical increase of financial support from international finance institutions to ensure the sustainability of the sector (over US\$200 million) as well as technical assistance and financial support (grants, subsidies, loans, etc) to companies operating in the on-grid and off-grid sector from development finance institutions and multilateral partners (over US\$180 million).

AMER concludes that the COVID-19 pandemic in the renewable energy sector in Mozambique has fast-tracked some of the adjustments that the required intervention of the Mozambican Government such as the prioritization of key barriers to the sector, focusing on specific projects, and milestones increased effectiveness in the responses from the public sector and more importantly the recognition of the invaluable requirement of localization of services and capacity building.



2. Introduction

The COVID-19 pandemic has caused devastating impacts and unparalleled disruptions to health systems across worlds, global markets, and society in general. The African continent has surprisingly experienced an overall lower number of infections and deaths when comparing to other parts of the world, with over 2,800,000 confirmed infections and only about 72,000 fatalities as of March 2021 (WHO, 2021).

When put into perspective Africa accounts for 17% of the global population but only 2.8% of the reported global COVID-19 deaths.

Although various theories attempt to provide plausible explanations for such low mortality rates, one fact remains that the African economy is amongst the most severely affected in the world, and specifically, the Sub-Saharan African region where a decline from 2.4% in 2019 to - 3.7% in 2020 marks the first recession in the region in the last 25 years (IMF, 2021). The World Bank estimates that the per capita income reduced by 6.1% in 2020, meaning that average living standards in a quarter of Sub-Saharan economies have been set back by at least a decade.

Whilst the pandemic is having unpredictable consequences leading to several challenges, it is simultaneously bringing opportunities. One sector that is benefiting from the present sector is the renewable energy sector. The various strengths of renewables from being independent of fuel, distributed, competitive, countercyclical investment that allows financial stakeholders to de-risk their portfolio, have all been playing in favour of the sector during this time, and in southern Africa being a crucial vehicle for the facilitation of energy access.

This report explores key challenges and opportunities brought out by COVID-19 with a focus on Mozambique and how to overcome these challenges by recognizing that the renewable energy sector can play a fundamental role in creating the resilience required by countries to fight against and ultimately overcome this pandemic.



3. Renewable Energy Context in Mozambique



3. Renewable Energy Context in Mozambique



Mozambique possesses enormous potential for renewable energy and the good news is that all this potential has only just begun to be explored. The Renewable Energy Atlas indicates a total potential of 23,026 GW from renewable resources with solar being the more abundant source (estimated 23,000 GW), followed by hydro (19 GW), wind (5 GW), biomass (2 GW), and finally geothermal (0.1 GW).

To be able to explore all the above-described potential, Mozambique has key public institutions and stakeholders that govern and oversee the national energy sector. The stakeholders described below are engaged in the energy sector as a whole which includes fossil-fuels, renewables, and electrical energy.

3.1 GOVERNMENT

3.1.1 MIREME

The Ministério dos Recursos Minerais e Energia¹ (MIREME) is the principal authority in the country and responsible for the drafting of mineral resources and energy sector's legislation. It plans the national energy strategy and oversees the operations and development of the energy sector.

3. Renewable Energy Context in Mozambique

3.1.2 ARENE

The Autoridade Reguladora de Energia² (ARENE) was created through Decree Law 11/2017 of 8 September as a fully independent body with the role of regulating, sanctioning, and supervising the energy sector.

3.1.3 EDM

The Electricidade de Moçambique (EDM) is the government-owned utility company in charge of generation, transmission, and commercialisation of the electricity in the country.

3.1.4 FUNAE, EP

The Fundo de Energia, EP³ (FUNAE) has been established to develop and promote sustainable management of power sources and has historically focused on developing off-grid projects (up to 1 MW) to increase electricity access for people living in rural areas.

3.2 DONORS/MULTILATERAL PARTNERS

Mozambique's energy sector has historically been dependent on support from donors/ multilateral partners and financial institutions. The three areas of the energy sector receiving the most financial support are transmission and distribution of electricity, energy policies, management and administration, and energy production and generation.

3.3 PRIVATE SECTOR

The private sector operating in the energy sector in Mozambique is highly diverse and includes both international and national companies. In the renewable energy market, the opportunities for private sector engagement are divided into investments in energy systems connected to the grid (on-grid) and/or off-grid systems. Both are further explored below.

1 Ministry of Energy and Mineral Resources

2 Energy Regulatory Authority

3 Energy Fund

4. Renewable Energy Sector in Mozambique



4. Renewable Energy Sector in Mozambique

4.1 ON-GRID

Since 1997, the on-grid renewable energy sector has been largely dominated by hydropower, given that this was the year that Hidroelétrica de Cahora Bassa S.A. (HCB) resumed its operation. HCB which is owned by the State of Mozambique (92.5%) and 7.5% by Portuguese REN (Redes Energéticas Nacionais, SGPS, S.A.), and has an installed capacity of 2075 MW and most of its production is exported to neighbouring countries such as South Africa and Zimbabwe.

Apart from HCB, Mozambique presently has the Central Solar de Mocuba (CESOM) a 40 MW solar power plant in Mocuba, Zambezia province directly connected to the grid and fully operational. This plant has as equity partners - KLP Norfund Investments (22.5%), EDM - Electricidade de Mozambique (25%), and Scatec Solar (52.5%) and was built by Scatec Solar Mozambique in partnership with Scatec ASA. A second 40 MW solar power plant in Metoro, Cabo Delgado province, promoted by Neoen (French IPP company) is currently under construction. The plant is estimated to be completed and commissioned by 2022. Further details are provided in the table below.

The National Electricity Master Plan foresees that in the next 10 years there will be an additional injection of over 400 MW (solar and wind projects) which is a clear indication of increasing opportunities that this sector will present in the coming decade. A table describing these pipeline projects is provided in Table 1 below.

Project	Investment Size (USD million)	Installed Capacity (MW)	Status
CESOM - Central Solar de Mocuba	76	41	Operational since 2019
Metoro – Solar	56	40	In construction – to be operational in 2022
2 x Cuamba - PV	30 / 45	15 / 30	PPA signed
Pemba/Mecufi – Solar	20	20	PPA signed
Dondo – PV	TBD	40	All to be launched under PROLER
Manje – PV	TBD	40	
Lichinga – PV	TBD	40	
Inhambane – Wind	TBD	40	
Namaacha - Wind	TBD	60	Feasibility Phase
Lagoa PAti - Wind	TBD	60	
Nacala - Solar PV	TBD	30	

4. Renewable Energy Sector in Mozambique

All projects that are currently operational, in construction, or that have an already existing and signed PPA have arisen under the current regulatory framework that allows the supply of electricity by independent power producers (IPPs) through direct negotiations between the private entity, MIREME, and EDM (as off-taker), however, the **Government of Mozambique has demonstrated its intention in shifting the approach when negotiating renewable energy projects preferring to adopt competitive tenders processes rather than direct negotiations.**

This intention from the government was further made clear by the launch of the Programa de Leilões de Energias Renováveis (PROLER) in September of 2020 as a program that “...model for Public Tenders for the acquisition of licenses for the production of energy from new and renewable sources...to allow the transparent and competitive selection of potential strategic partners for the development and construction of renewable energy projects...” (Programa Nacional Energias para Todos, 2020)⁴.

The program PROLER provides a 37 million euros mechanism whereby IPPs can compete for the right of building and operating large projects namely 3 solar plants of 40 MW each and 1 wind plant of 40 MW. PROLER has already launched the first expression of interest for the first solar plant in Dondo, Beira and according to recent reports, there was significant interest from the private sector (both national and international). The shortlist for the tender of this project is expected to be published in January 2021.

Aside from PROLER, the Government of Mozambique in cooperation with the Federal Republic of Germany through KfW is planning to implement the Global Energy Transfer Feed-in Tariff (“GET FiT”) Programme for Mozambique. GET FiT Mozambique is a US\$30 million program that aims to fast-track the development of smaller renewable energy generation projects (photovoltaic systems including battery storage of up to a total of 32 MW), through a comprehensive set of tools, including tariff viability gap funding, targeted technical assistance, risk mitigation against off-taker risk, and renewable grid integration support.

⁴ www.proler.gov.mz

4. Renewable Energy Sector in Mozambique

4.2 OFF-GRID

The off-grid market in Mozambique has historically been dominated by the partnerships between donors/ multilateral partners and FUNAE with several installations of standalone systems on government facilities such as clinics and schools and mini-grids providing mainly public illumination by using various technologies (solar, wind, biomass, and hydro).

This approach has significant been transformed in the last 3 years when the Government of Mozambique launched the National Energy Programme – Programa Energia Para Todos in 2018, whereby it reiterated its commitment to Sustainable Development Goal (SDG) 7: “Ensure access to affordable, reliable, sustainable and modern energy for all”. This commitment set the stage for a several donor/multilateral partner programs to improve and increase energy access for people and businesses and leverage the private sector’s innovation and investment capacity to come to life.

There are currently a total of 7 donor/ multilateral partner programs that are directly supporting private sector companies in the off-grid sector (SHS, ICS, and mini-grids) in Mozambique. These include Brilho, Beyond the Grid Fund for Africa (BGFA), EnDev, GET.Invest, ILUMINA, ProEnergia and REACT SSA.

BRILHO program⁵, funded by UKAid is leveraging various tools such as non-reimbursable funding and specialised support, to de-risk business initiatives that aim to achieve competitive commercial returns and encourage market growth of clean cooking solutions such as solar home systems, and mini-grids.

The past years have also been important for solar home systems (SHS), whereby private sector companies have established their operations and secured funding, from various sources including international finance institutions and multilateral, to expand their operation. There are now over 20 companies selling SHS as a retail product and at least four companies that have SHS as its sole core business namely, Solarworks! Fenix International, Ignite and Epsilon Energia Solar. Between these 4 companies over 50,000 solar home systems have been sold and installed under a pay-as-you-go (PAYGO) scheme in four provinces, Maputo, Gaza, Inhambane, and Sofala (AMER, 2021).



4. Renewable Energy Sector in Mozambique

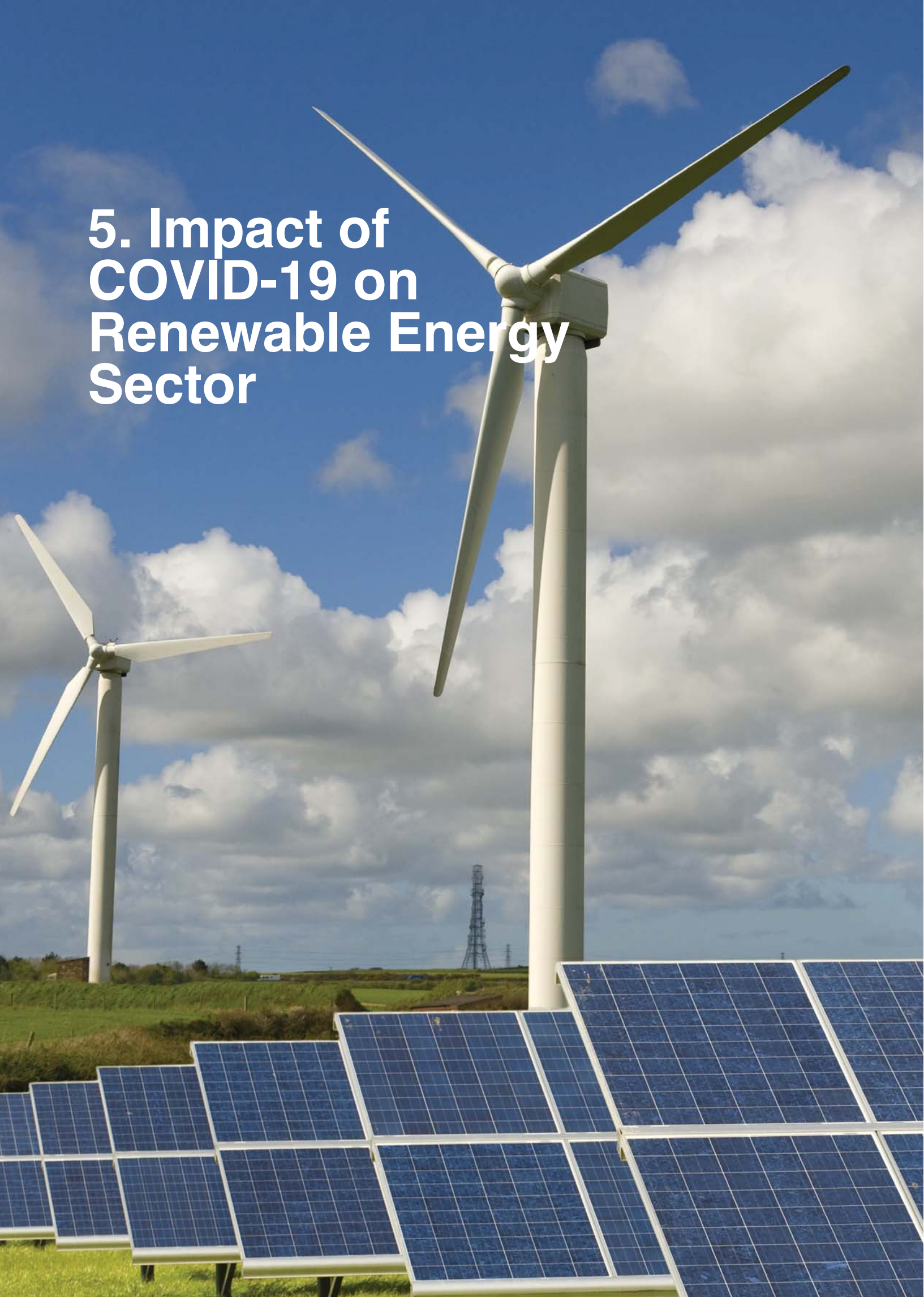
4.2 OFF-GRID

For biomass energy, FUNAE and the Energy and Sustainable Development Forum of Mozambique (FEDESMO) – through its members that are NGOs, public and private institutions, and community-based organisations (CBOs), have been actively involved in developing and promoting improved cooking system (ICS). The ICS initiatives include local community capacity building on how to produce improved cookstoves, new methods of charcoal production, providing environmental education in schools all of which is monitored through the Stove Map tool (<http://stovemap.elva.org/>), which gives an updated overview on the use, production and distribution of improved cookstoves at a national level.

In this market segment, the key players are ADEL Sofala, ADEL Cabo Delgado, ADEL Nampula, Radeze, KULIMA, LIVANINGO, FUNAE, and Kawedzi who in partnership with FUNAE and the Energizing and Development program (EnDev – managed by GIZ) have developed and implemented several projects, including the production and distribution of 4,000 improved stoves for home and institutional use, specifically in Manica (1,500), Inhambane (1,500) and Gaza (1,000).

For mini-grids the involvement of the private sector is still quite limited due to an unclear regulatory framework, however, the anticipated approval of a revised electricity law and mini-grid specific regulations in which the participation of private entities is considered is expected to transform this part of the sector. Understanding the importance of private sector participation FUNAE recently launched the 2nd edition of the Renewable Energy Projects Portfolio - Hydro and Solar Power (FUNAE, 2019), where it adds to the already identified 10 mini-grids (from the 1st edition) another 178 projects for the development.

5. Impact of COVID-19 on Renewable Energy Sector



5. Impact of COVID-19 on Renewable Energy Sector

5.1 IMPACT AT A GLOBAL LEVEL

A recent study by the International Energy Agency showed that due to COVID-19 preventive measures, such as full and partial lockdown, countries are experiencing an average of 25% and 18% decline in energy demand respectively, and that the demand reduced by 3.8% globally including the demand for oil dropping by 5%. This is quite significant for the energy sector and subsequently for the renewable sector.

As per a report launched by The Boston Consulting Group (BCG) the global energy supply chain is experiencing two global shocks: the COVID-19 outbreak and a sharp drop in oil prices. The risks resulting from two global shocks are:

delivery delays due to manufacturing and logistics disruptions.

price escalations especially in sectors with high labour component (such as energy)

supplier bankruptcy (esp. EPCs).

One of the greatest negative impacts of COVID-19 is the disruption of the supply chain of renewable energy technologies mainly because of worldwide transportation being halted and the countries that are the source of these technologies such as China, the USA and Germany shifting their attention to deal with the pandemic. This pandemic is putting jobs at risk as businesses are being forced to lay off their employees due to reducing liquidity adding up to an already high unemployment rate.

A survey was conducted by the Global Lighting Association (GOGLA) focusing on its members who are involved in off-grid energy demonstrated that nearly 46% of the respondents are very concerned for their businesses. The key concerns/challenges include the possibility of ceasing operations, reduced demand for new sales, a decrease of the ability of customers to pay for products and services, disruption in supply leading to stock-outs, and shortage of working capital. Most of the respondents indicated that their main priority is receiving support in terms of relief funds and bridging loans to overcome the impact of the pandemic on their businesses.



5. Impact of COVID-19 on Renewable Energy Sector

5.2 IMPACT ON REGIONAL LEVEL

Most African governments have implemented preliminary short-term responses to deal with the pandemic which include the provision of free electricity, waiver/suspension of bill payments, and VAT exemptions on electricity bills. These measures were more pronounced in sub-Saharan Africa while oil-rich countries of the North mostly have broad economic measures that target their oil and gas sectors.

Overall, interventions were mostly fiscal/financial and short term with medium to long term measures often broad without being specific to the energy sector. Only three countries (Nigeria, Kenya, and Burkina Faso) had specific interventions for renewables. The present inability of most African countries to develop and manufacture renewable energy technologies makes them extremely dependent on importing these technologies to fulfil the local demands. The arrival of COVID-19 brings unprecedented negative impact on the growth of renewable energy-based businesses such as PV suppliers and distributors in the continent.

The impact is even more visible for off-grid energy companies that have the greatest impact in reaching communities living beyond the grid systems. Before the pandemic, solar-based off-grid businesses have been flourishing in the African continent driving and accelerating energy access particularly in the rural communities where there is a lack of grid systems. These same off-grid energy companies are now the most susceptible to the COVID-19 because of liquidity with customer liquidity coming to standstill, decreasing sales, and reduced access to capital making it difficult to maintain their businesses.

As African governments take measures to bolster their economies, they must pay particular attention to the challenges posed by the pandemic in the energy sector and capitalize on the opportunities that it presents to drive the clean energy transition.





5. Impact of COVID-19 on Renewable Energy Sector

5.3 IMPACT ON NATIONAL (MOZAMBIQUE LEVEL)

The falling gas prices pose a significant concern for a country that has placed its trajectory on becoming a gas-driven economy. COVID-19 has severely impacted budgetary allocation for the various sectors, with health care services being the biggest beneficiary and receiving an increase from MT 2 billion to MT 3.3 billion. The government is reaching out to development partners for an additional US\$700 million to help deal with the economic impact of COVID-19 (Jornal Noticias, 2020)

The National Institute of Statistics (INE) in Mozambique conducted a survey half-way through 2020, which was then updated by CTA in the third quarter of 2020, where a total of 89,385 companies were surveyed to begin to understand the impact of COVID-19 on the national economy. The main results of the study demonstrated that 90.4% of the interviewed companies had been affected by Covid-19 and that the four provinces (Maputo, Gaza, Inhambane, and Sofala) were the most affected, with an average percentage of this region standing at 95.0%, with the Inhambane Province being the most affected in the whole country with 98.8%. % of its companies affected by Covid-19.

The impact on revenue was US\$1.1 billion, the impact on employment meant that 90,013 jobs were suspended (CTA, 2020). The survey also demonstrated that the most affected sectors, were companies in the educational, artistic, shows, sports and recreational sectors, and these were affected in their entirety (100%). In contrast companies in the Electricity, Gas, Hot and Cold Steam sectors demonstrated to have suffered little to no impact from COVID-19 on aspects such as lay-offs and foreclosures.

This in part can be explained by the fact that Mozambique has never entered a full lockdown, only in February 2021 did the capital city – Maputo, go into a curfew system, but instead raised its emergency status to the highest possible level (level 4) which meant that only essential services could operate by observing strict restrictions and health recommendations (social distancing, disinfection, etc).

5. Impact of COVID-19 on Renewable Energy Sector

5.3 IMPACT ON NATIONAL (MOZAMBIQUE LEVEL)

For the energy sector as a whole there were no immediate measures aimed at bolstering the sector against the COVID-19 pandemic and although since 2018, the electricity demand in Mozambique has shown substantial growth due to improving electricity access over the years, the COVID-19 pandemic has caused a slight decrease (-4% from February 2020 to April 2020) in demand replicating a similar decrease in the same period in 2019, as illustrated in the graph below, when Cyclone Idai, and subsequent flooding, struck the country.

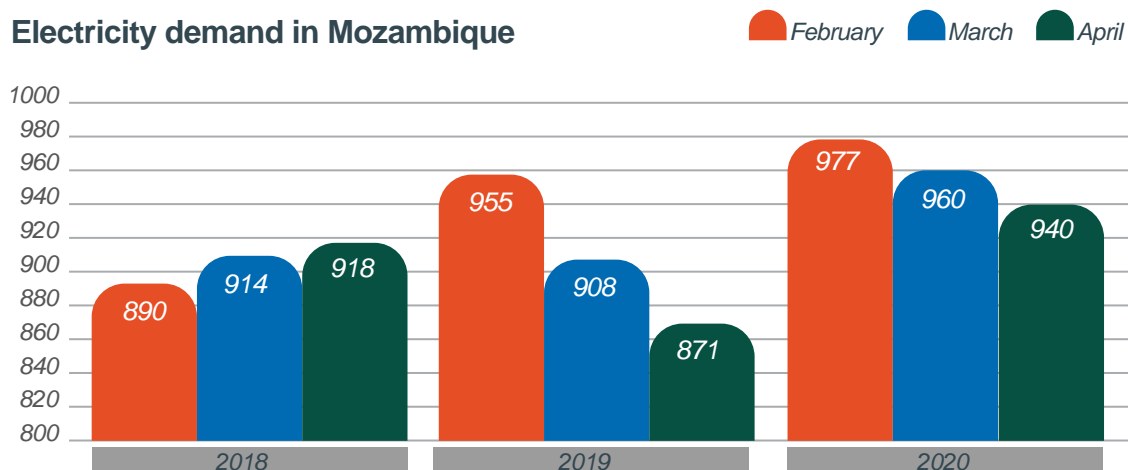


Figure 1 - Electricity demand in Mozambique

As described above there was no significant impact from COVID-19 on companies operating in the renewable energy sector, but there was certainly a lack of clarity on whether energy service providers could continue to operate in a business-as-usual format.

5. Impact of COVID-19 on Renewable Energy Sector

5.3.1.1 MAIN TAKEAWAY FROM INTERVIEWS WITH KEY STAKEHOLDERST

AMER interviewed a total of 20 stakeholders ranging from government, donors/multilateral partners and private sector to better understand how the last 12 months have impacted the activities of the stakeholders and the projects in the sector. By analysing the responses of the various stakeholders interviewed, and specifically those in the renewable energy field, common trends were quickly identifiable with at least five major trends emerging. Each trend is discussed in detail below:

Disruption to the Supply Network:

As discussed above, although Mozambique has never entered an official lockdown, the restrictions imposed on movement (people, goods, services) coupled with the lockdown of South Africa has meant that the supply chain for RE projects which include people, equipment, services, etc was brought to a complete stop in certain cases, or results in delays of 6 months and over.

The measures implemented by Government were also not communicated clearly manner and/or slowly implemented which has meant that businesses have also not been able to rely on these to try and mitigate the disruption to their supply chains.

Adaptation

The vast majority of those interviewed had already embraced the need for adaptation of their business and practices to the current environment. Businesses specifically, were quick to realise that the decrease in energy demand meant fewer customers, the restrictions in movement meant fewer sales, and the need to incorporate health and safety measures into their operations meant more costs. All of this would eventually affect their budgets, targets and milestones for the year, and hence adapting was not a choice but a must to stay afloat. The Government also realized that they would need to adapt in terms of their modus operandi, as physically working from offices and meetings people were no longer viable options.

Efficiency

Above we described how adaption was a visible trend amongst respondents, however, respondents also indicated the importance of being efficient during this adaption period. The Government of Mozambique was able to efficiently leverage on its recently acquired experience quickly mobilizing support (i.e., international community provided a lot of support during the IDAI cyclone), began carrying meetings online avoiding previously notorious delays and activating know-how transfer through distance learning and training.



5. Impact of COVID-19 on Renewable Energy Sector

5.3.1.1 MAIN TAKEAWAY FROM INTERVIEWS WITH KEY STAKEHOLDERST

Resilience

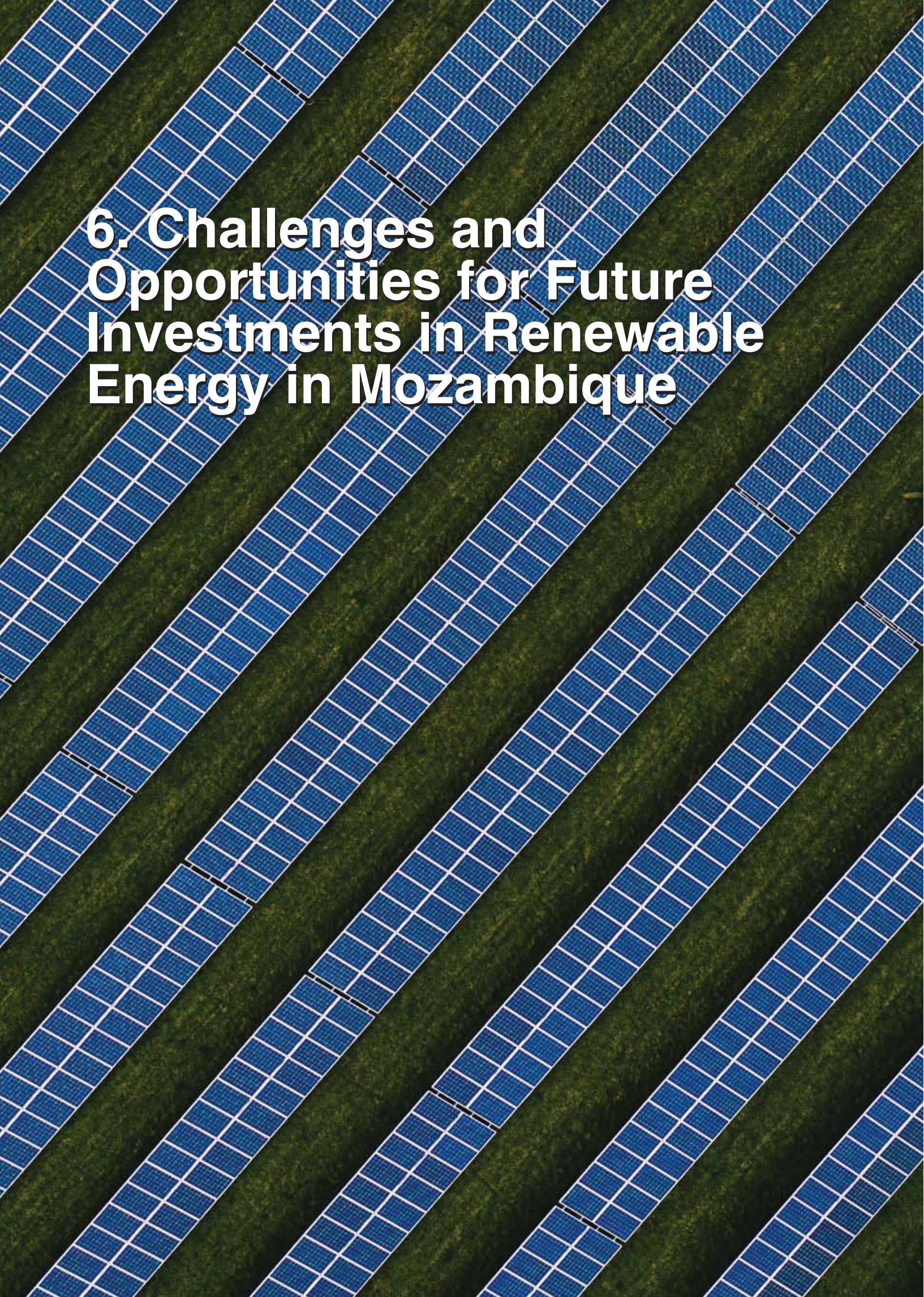
It also emerged quite quickly that the need for individuals and companies to be resilient would be crucial to surviving this pandemic. Businesses that was highly risk-averse have decided to withdraw from Mozambique or simply not enter the market, whilst those that are thriving in the market have become more resilient through relying on local partners, realizing the urgent need for local capacity building and accepting that even if vaccinations are rolled out quickly elsewhere, for Mozambique this will not be the case and the present reality will be the norm for at least the next 2 years.

Support

The silver lining to the pandemic would be the amount of support that has emerged during this pandemic. All respondents clearly stated that they have found support either through partnerships between private sector agents to continue to deliver products and services or through partnerships with DFI community to fund IT equipment and infrastructure thus permitting remote working.

Donors/ multilateral partners have also provided support to businesses by allowing changes on existing financing mechanisms or creating completely new ones (COVID+) so that these are more adequate to the current context as well as Government being more understanding of the current situation and implementing measures such as the prorogation of payments on taxes.



An aerial photograph of a vast solar farm. The image shows multiple parallel rows of blue solar panels, each with a white grid pattern. The panels are arranged in long, straight lines that recede into the distance, creating a strong sense of perspective. The background is a dark green, grassy field. The overall scene is brightly lit, suggesting a clear day.

6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

Investing in renewable energy in Mozambique has several challenges, which were exacerbated by COVID-19, and that can usually only be overcome by companies that are persistent, resilient and have long-term goals. On the other hand, once, companies can overcome these challenges, the opportunities that present themselves are truly unique, giving the fact that this is a nascent market with very little competition and with enormous growth potential.

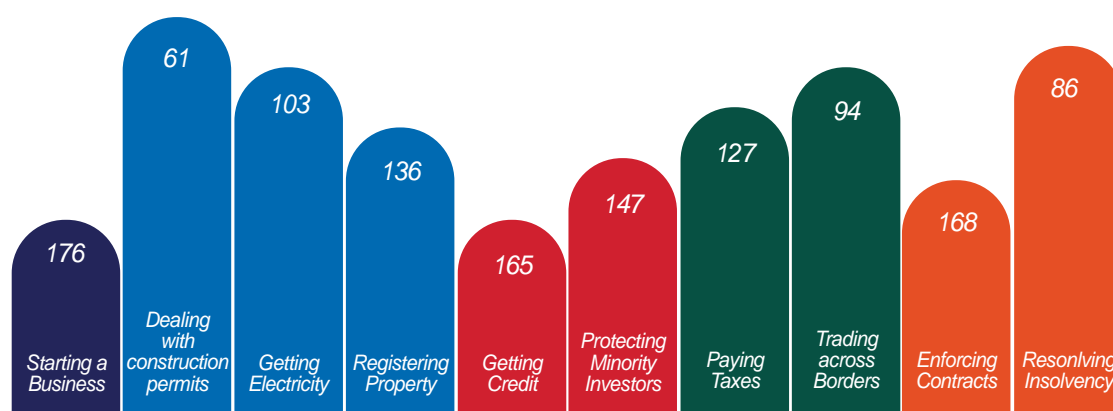
6.1 CHALLENGES

The declining status of Mozambique's economy is probably the biggest challenge that any investor will have to face. GDP growth was forecasted at 4.8% in 2020, however, the reality is that since 2016 the country has averaged a growth of 3.3% and managed to achieve only a 2.3% GDP growth in 2020.

The disparity between the forecast and reality were partly due to challenges posed by COVID-19 but several other factors contributed such as the three major cyclones that have hit the country causing millions in damage and thousands of people to be relocated, the undisclosed public debt of US\$2 billion, insecurity and terrorism attacks in Cabo Delgado province, a drop in international commodity prices and a significant decrease in foreign direct investment.

Mozambique was ranked 138th out of 190 countries in the World Bank – Ease of Doing Business 2020 report with the highest rankings being on dealing with construction permits and trading across borders as illustrated in the figure below.

Figure 2 - Mozambique DB 2020



6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

Although it is presently more expensive to start a business, in comparison to 2019, as the cost to publish the company's deed has increased, Mozambique has also made the entire process less costly by replacing the business license with a notification of activity for some sectors and paying taxes has been made easier by reducing the mandatory carry-forward period before taxpayers can request a value-added tax cash refund to four months (from 12 months previously).

There has been significant improvement in the electrification sector by imposing new deadlines for connection procedures and streamlining processes as well as improving monitoring and regulation of power outages by beginning to record data for the annual system average interruption duration index (SAIDI) and system average interruption frequency index (SAIFI).

For the energy sector, there are still key challenges that further contribute to low energy access percentages, only 34% of the population has on-grid access, which are mainly due to lack of finance, lack of clear regulatory framework, lack of quality infrastructure, lack of skilled workforce, lack of conducive business environment, etc, and the arrival of COVID-19 pandemic has only exposed the above vulnerabilities even further.

With this current scenario, existing and future projects operating in Mozambique will have to learn to overcome the following challenges:

- Disrupting of the global transport sector, creating severe delays to projects in-country and the need to import equipment and materials;
- A lack of skilled workforce, exacerbated by not being able to bring foreign experts quickly;
- Fluctuating national economy affected by a drop in oil prices;
- Delays by the Central Bank delays with approving and processing international transfers;
- An overall decrease in domestic and regional electricity demand;
- Lack of ICT equipment affecting especially government employees to carry out remote working; and
- A strained health system by the COVID-19 pandemic with the added challenge of unreliable access to electricity;
- Reduction in the Southern Africa Power Pool negatively impacting the price for power exports.



6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

Specifically, for the renewable energy market:

Increased consumption of non-renewable energy sources

No fiscal incentives in the foreseeable future as this serves as revenue for the government

A regulatory framework that is currently difficult to navigate, although with great prospects of being simplified with the introduction of a new electricity bill in early 2021;

Apart from these concrete and tangible challenges that are a direct outcome of the COVID-19 pandemic, there are other more complex challenges that the sector will face which are indirect results.

For example, donors/ multilateral partners have put together several specific measures targeted at the renewable energy sector (e.g relief funds) to help alleviate some of the constraints. Although these relief funds will certainly contribute and be a lifesaver for some companies, they could also inadvertently:

Create monopolies and a complete destruction of the diversification of ecosystems

Fortify more stable stakeholders and neglect companies in dire need of support

Over subsidize businesses in the medium to long term thus negatively impacting the creation of a sustainable business model;

Create an environment where companies rely on subsidies to operate.



6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

6.2 OPPORTUNITIES

In mid-2019, Mozambique was placed on the worldwide map as an energy market with the signing of the US\$24 billion financial investment decision for the Mozambique LNG project, currently led by Total, and since then with LNG projects moving forward these are sending positive signals to the rest of the energy market and investors in general.

The North of Mozambique, the region where the LNG projects are located is bound to be reshaped bringing demographic growth and additional energy needs. This will lead to an increase in electricity demand, thus calling for additional investments in the grid and power generation.

This demand for power generation will reinforce the need for a sustainable energy transition, and more importantly the coordination of efforts in developing a conducive business environment and exploit the opportunities presented to facilitate energy access focusing on clean and renewable energy technologies.

Specifically, to the renewable energy market, the pandemic has brought about opportunities such as several development partners and funding organizations being able to mobilize resources to protect the progress made so far towards achieving the sustainable development goals in Mozambique and to effectively exploit the opportunities created by the crisis.



6. Challenges and Opportunities for Future Investments in Renewable Energy in Mozambique

6.2 OPPORTUNITIES

AMER has identified the following opportunities for the sector:

- Multinational energy companies pushing forward on financial investment decisions on a project in Northern Mozambique and thus serving as the anchor projects for other companies and related businesses to invest;
- Short-term opportunity to supply the housing and health sectors as the need for reliability of electricity has dramatically increased during the pandemic;
- Development finance institutions providing tools to ensure the sustainability of the sector
- Focus on achieving SDG 7 leading to publication by FUNAE of Portfolio of Renewable Energy Projects with over 100 projects in off-grid sector worth US\$500 million.
- Donors/ Multilateral partners establishing energy access programs and providing over US\$80 million to support the on-grid sector and US\$100 million to support the off-grid sector;
- International Finance Institutions providing equity for large scale renewable energy projects
- Development Finance Institutions providing relief funds for COVID-19 impact on companies
- Provision of technical assistance programs to government institutions to increase technical ability and create energy access regulations;
- Disruption of the technology supply chain, becoming a driving force for the renewable energy-based industries to expand their businesses.
- The Mozambican Renewable Energy Association (AMER) establishing itself as a platform to represent the interests of renewable investments and facilitate the dialogue between various parties (private sector, donors and government authorities).



7. The Way Forward



7. The Way Forward

As per the "Africa Energy Outlook 2019 report", nearly US\$120 billion is required to provide universal access to 530 million people of the continent. The worldwide disruption of supply chain of renewable energy technologies has created a shortage of the supply and is one of the key lessons for the African continent to focus on the localization of manufacturing of renewable energy technologies. Complete dependence on imported technology has significant risks and the continent shall look for different mechanisms to improve the capacity of the manufacturing industries.

The continent has been slow in localization of the manufacturing of renewable energy technologies because of factors such as lack of innovative alternatives of finance, underdeveloped renewable energy supply chain, lack of skilled workforce, inaccurate perception of renewable energy capacity and lack of R&D.

Localization of manufacturing of renewable energy technologies can be done by developing and implementing internationally proven effective policy tools such as financial incentives for research and development, renewable energy-based power generation, manufacturing industries, etc.

Besides, policies are an effective way to facilitate the localization of renewable energy technology development and manufacturing. It is clear that incentives are wide in nature but those that have a huge impact in localization of renewable energy technologies can include grants for R&D from diversified financial resources, Tax deductions for investments in research and development, performance-based financial award that doesn't require repayment, financial subsidies to power generated with locally-made renewable energy technologies, reduction of income tax for utilities who sell power generated by locally manufactured renewable energy technologies etc.

Specific incentives for the manufacturing industries can be made available ready-to-start workforce, providing free worker recruitment services, tax deductions for labour cost involved in the local manufacturing industries, reduction of income tax for joint ventures involved in local manufacturing of energy technologies to encourage knowledge and technology transfer from foreign direct investment to the local firms, etc.



7. The Way Forward

There are far too many uncertainties to establish which is the best way forward, the lessons that COVID-19 has brought could not be clearer:

Access to new technologies such as remote working is fundamental

Measurements of success should not be bound by physical presence but in results

The modernization and digitalization of administrations is inevitable

Communication and accessibility of information are critical, as lack of information, misinformation, and disinformation about the pandemic can be widespread

The pandemic has been a wake-up call for the African continent to find ways of developing effective support and stimulate the local economies and facilitate energy access to achieve the Sustainable Development Goals.

It is ever clearer that combating COVID-19 requires a strategy that also addresses the social, cultural, and emotional consequences of the lockdown, widespread illness, and death. People's lives are shaped by particular values and systems of meaning that make the world intelligible to them. Information about contamination and calls for behavioural changes are more effective when embedded within local understandings of sociability and interpersonal relationships.

In moments of great strife, solutions and problem-solving are undertaken by the collective. This is evident in responses to past epidemics, such as Ebola and HIV/AIDS, when strong kinship bonds and solidarity were key to facilitating not just community ownership of the problem but also collective action to address the spread of disease.

Although this pandemic will have devastating health and socioeconomic effects on the continent, it also offers the potential opportunity to rebuild trust and begin rewriting the narrative of Africa.

8. References

**9. Annex A
Stakeholder List**





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9. Annex A - Stakeholder List

The following stakeholders were interviewed for this report. Only the name of the institution has been included as individuals were interviewed in confidentiality status.

Stakeholder Matrix (alphabetically)

1. ARENE
2. EDM
3. European Union
4. Fenix
5. FUNAE
6. Globeleq
7. Ignite
8. MIREME
9. Neon
10. Scatec
11. SNV/BRILHO
12. Solarworks
13. Source Capital



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