

**GET FiT
ZAMBIA**

Annual Update

Year in review

2022

Multiconsult



KFW

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Message from the Ministry of Energy

The Zambian Energy sector continues to be vulnerable to adverse effects of climate change due to its overdependence of hydro power. This vulnerability has often resulted in load shedding which impacts negatively on the economy.

In order to mitigate against this, the Government through the Eighth National Development Plan (8NDP) has committed to increasing the share of alternative and renewable energy in the country's power generation mix. The Government through the Energy policy of 2019 has also committed to creating an enabling environment for private sector participation as a way of accelerating the diversification agenda.

The GET FiT programme has contributed significantly towards unlocking private sector participation and fast-tracking the delivery of renewable energy projects such as Solar PV and Small – Hydro. The GET FiT programme has also demonstrated the positive potential for a competitive procurement process to significantly drive down renewable energy electricity tariffs thus contributing towards achieving the sustainable Development Goal of "Ensuring access to affordable, reliable, sustainable and modern energy for all." It therefore continues to be Government's desire to see the successful implementation of the GET FiT programme.

In 2022, The GET FiT projects faced some hurdles that delayed financial close of the Solar PV Projects and progress on the Hydro Projects. Some of these hurdles emanated from an unfavorable macro-economic environment and delayed publication and implementation of key energy policy documents that were meant to impact significantly on viability of the energy sector.

Nevertheless, the Government worked round the clock to overcome some of these hurdles and the Government further remains committed to unlocking the few remaining hurdles. Notable among the significant progress made by Government in 2022 include: the publication of the Electricity cost of service study, the publication of the Government White Paper on the Cost of service study, the revision of ZESCO Limited's connection fees, the finalization of the rules on the Multi-year Tariff framework and completion of Phase 1 of the electricity open access regulatory framework.

I wish to express gratitude to the German Government for their unwavering support towards Zambia's energy sector even in times of delayed progress. I further wish to thank all cooperating partners, financiers, developers and key stakeholders in the energy sector for their support.

Lastly, I wish to make a call to these energy sector players to continue collaborating with Government and among themselves to ensure successful implementation of the GETFIT Zambia project. ■



A handwritten signature in black ink, appearing to read 'Peter Chibwe Kapala', enclosed within a thin black oval border.

Eng. Honorable Peter Chibwe Kapala, MP
Minister of Energy

Acknowledgements from PS

The Ministry of Energy (MoE) wishes to express deep appreciation to our partners who support the development of the Global Energy Transfer Feed in Tariff (GET FIT) Zambia Programme. This programme is designed to ensure that Zambia promotes private sector participation and diversifies its energy mix through the implementation of low-cost renewable energy projects.

Sincere gratitude goes to the German Government and the German Development Bank (KfW) who are our implementing partners. KfW have provided financial support in form of Technical Assistance, Viability Gap Funding (VGF) and the Grid Facility.

We also thank the British Government, through the Department for Business, Energy, and Industrial Strategy (BEIS) who have partnered with KfW to provide Technical Assistance towards the feasibility study for a potential 5MW Solar Microgeneration Programme.

Further and on behalf of the Ministry of Energy, I wish to express my particular special words of thanks to the following line Ministries, Government agencies, departments, and institutions for their support:

- Ministry of Finance and National Planning, Ministry of Justice, Ministry of Green Economy and Environment and Ministry of Water Development and Sanitation;
- ZESCO Limited, Rural Electrification Authority (REA), Zambia Environmental Management Agency (ZEMA), Water Resource Management Agency (WARMA), Energy Regulation Board (ERB), Citizens Economic Empowerment Commission (CEEC), and National Heritage Conservation Commission (NHCC); and

- Department of Energy, Department of Planning and Information, Procurement and Supplies Unit and Office for Promoting Private Power Investment (OPPPI)- Ministry of Energy.

The programme's ultimate success will depend on all stakeholders' commitment and invaluable contributions.

We look forward to your continued support as we work towards successfully implementing all initiatives under the GET FIT Zambia programme. ■



Eng. Himba Cheelo
Permanent Secretary –
Technical Services
Ministry of Energy



Contributing to
a climate-friendly
development path
and sustainable
growth in **Zambia**

Impact Statement

About GET FiT Zambia

GET FiT Zambia is the implementation programme for the Government of Zambia's REFIT Strategy, which aims to facilitate private sector investment in small and medium-scale Renewable Energy Independent Power Projects (IPPs) in Zambia.

GET FiT Zambia is financed by KfW, the German Development Bank, on behalf of the German Government. The Zambian Ministry of Energy (MoE) is the Project Executing Agency (PEA) responsible for the programme. The GET FiT Secretariat (led by the Programme Implementation Consultant, Multiconsult Norge AS) was appointed in 2018 to work with the Department of Energy (DoE) to implement the programme.

GET FiT Zambia is the second roll-out of the GET FiT concept after a successful pilot in Uganda, where it achieved approximately 160MW of installed renewable energy capacity via 17 projects. GET FiT Uganda established a track record for private sector participation.. GET FiT Zambia has been designed based on various lessons learned and on-the-ground experience in Uganda – while considering the country-specific circumstances and barriers to private sector involvement. ■

GET FiT Zambia is implemented by the Ministry of Energy (Department of Energy), in collaboration with KfW, the German Development Bank

The objectives of GET FiT Zambia are:

- Procurement of up to 205MW of renewable energy capacity, as GET FiT Zambia has become the official implementation programme for the Zambian Renewable Energy Feed-in-Tariff (REFIT) strategy.
- Contribution to diversify Zambia's power mix (both in terms of technology and geography) while ensuring cost-effective, environmentally, and socially sustainable projects to maximise value for Zambian end users.
- Introduction of standardised legal documentation for Independent Power Producers (IPPs) and framework that will enable successful integration of the procured renewable energy into the national grid.
- Promotion of competition and private sector participation in the Zambian power sector.

Programme Structure

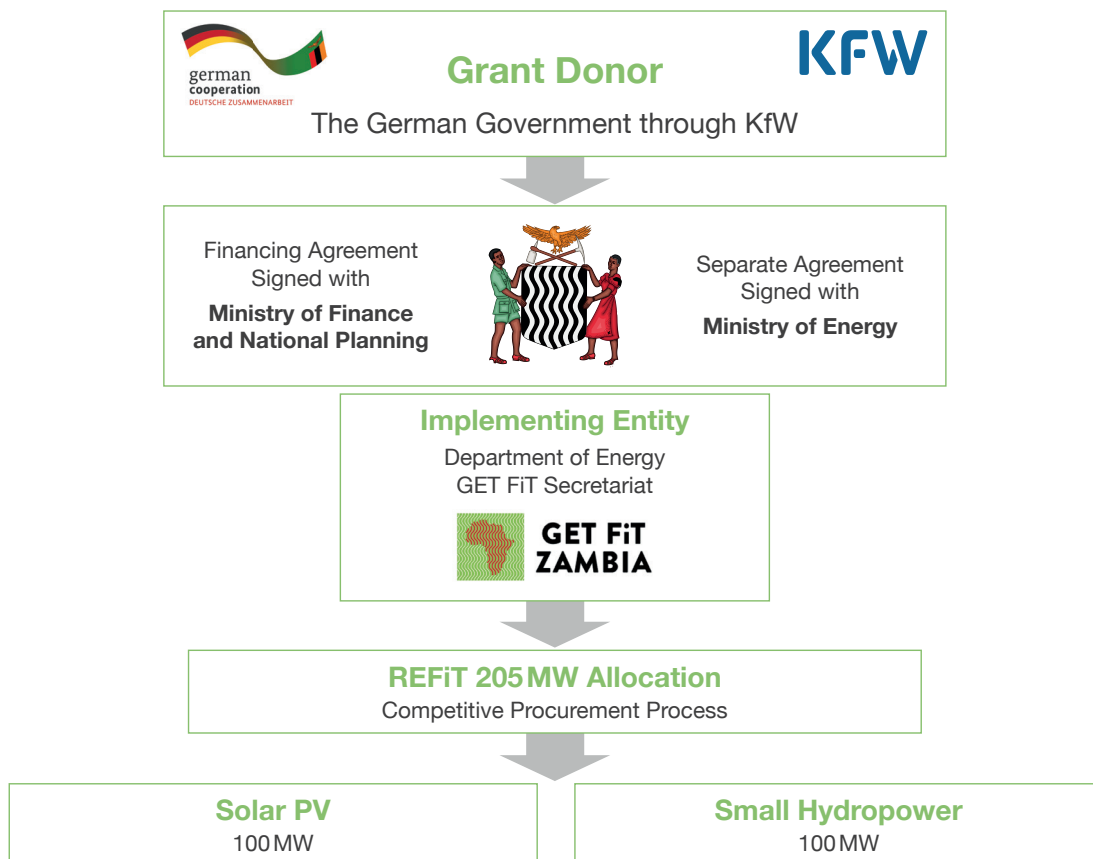
The programme is motivated by acknowledging the wide range of positive, sustainable effects that the development of renewable energy projects can have for economic and social development and the strong potential for such projects in Zambia. At the heart of the programme is the realisation of 205 MW low-cost renewable energy capacity, procured from private sector entities through a competitive procurement process:

- 100 MW Solar PV
- 100 MW Small Hydropower
- Potential 5 MW Microgen

Additionally, GET FiT Zambia aims to boost institutional capacity and improve the investment framework for private sector participation in the Zambian power sector. A key feature is to introduce a transparent renewable energy tender process, advocate for a more streamlined licensing and permitting processes, and strengthen power grid operations to procure and integrate even more renewable energy in the future.

The realisation of up to 205 MW is through the procurement of power from private sector IPPs in alignment with Zambia’s Public Procurement Act and based on international competitive bidding. Under the procurement framework, the IPPs are responsible for their own site selection, feasibility studies, and financing (including debt and equity).

The current 31 million Euro grant funding under the GET FiT Zambia programme is thus not aimed towards providing debt financing to individual projects. Instead, it is aimed at assisting the Ministry of Energy with developing a sustainable procurement framework, boosting institutional capacity and, importantly, improving the investment framework for private sector participation in the Zambian power sector. The GET FiT Zambia programme was tailored to address the challenges stakeholders regarded as barriers to achieving these objectives. It is envisaged that by addressing these challenges, a good foundation and framework can be laid that will facilitate future low-cost procurement of energy from private sector entities in Zambia:



GET FIT TOOLS	BARRIER DESCRIPTION	MECHANISM FOR ADDRESSING THE BARRIERS
 <p>PROCUREMENT & TRANSACTIONS</p>	<p>Reliable Procurement Framework & Improved Investor Conditions</p>	<ul style="list-style-type: none"> ✓ Design & implement a reliable, competitive tender process and work with Ministry of Energy (MoE) to ensure it can be replicated for future rounds. ✓ Design standardised project agreements, incl. Power Purchase Agreement (PPA), Grid Connection Agreement (GCA) and Implementation Agreement (IA). ✓ Identify bottlenecks & advise on streamlined licensing & permitting process.
 <p>DEBT & RISK MITIGATION FACILITY</p>	<p>Risk Mitigation Tools to ensure access to funding & achieve bankability</p>	<ul style="list-style-type: none"> ✓ Identify appropriate risk mitigation tools that will enable small to medium size investors to access finance and achieve bankability. ✓ Collaborate with Africa Trade Insurance (ATI).
 <p>VIABILITY GAP FUNDING</p>	<p>High Cost of Capital availability</p>	<ul style="list-style-type: none"> ✓ GET FIT offers tariff-based support in the form of Viability Gap Funding (VGF) for a limited portfolio of Renewable Energy projects. ✓ VGF facilitates project viability by providing a capital grant to private sector entities willing to take the risks of investing into an evolving renewable energy market in Zambia. ✓ Requirement for VGF expected to reduce, with increasing investment, economies of scale & improved investment framework conditions.
 <p>GRID FACILITY</p>	<p>Grid availability</p>	<ul style="list-style-type: none"> ✓ Includes advisory support. ✓ Provide capital grants, to the awarded SHP developers, for the construction for the grid construction & selected network reinforcements to enable the integration of SHP and other future renewable energy technologies. The grid assets will remain the ownership of ZESCO.
 <p>TECHNICAL ASSISTANCE</p>	<p>Capacity Constraints & Skills Gap</p>	<ul style="list-style-type: none"> ✓ Capacity building programme for key sector stakeholders as part of the Technical Assistance (TA) facility ✓ TA support earmarked for supporting the Small Hydro-power portfolio.

GET FiT Programme Stakeholder and Partners:

The following entities have been identified as the key stakeholders and partners in fulfilling the GET FiT objectives.

- The Department of Energy, within the Ministry of Energy, is responsible for developing and implementing policies, programmes and projects on renewable energy, energy efficiency, electricity and power development to facilitate socio-economic development. The functions of the department include:
 - Facilitating the development and review of policies and legislation on energy to provide an appropriate framework for the effective management and implementation of programmes.
 - Facilitating the construction, rehabilitation, and maintenance of energy infrastructure to ensure the security of supply.
 - Promoting the development and utilisation of climate-resilient and renewable energy technologies.
 - Promoting the development and utilisation of climate-resilient and renewable energy technologies.
 - Maintaining a database on energy resources, production, distribution, consumption, and pricing.
 - Formulating and reviewing energy strategy and action plans to facilitate resources mobilisation and attaining set objectives.
 - Providing technical guidance and support to stakeholder institutions on matters relating to efficient management and conservation of energy

Under the DoE are several units that assist the Ministry in achieving its objectives, including the Office for the Promotion of Private Power Investment (OPPPI).

- OPPPI – The Government established the Office for Promoting Private Power Investment (OPPPI) to promote private sector participation in developing and implementing power projects.
 - The OPPPI coordinated the implementation of significant private sector power projects such as the 300MW Maamba Coal Fired Power Plant, 120MW Itezhi-Tezhi Hydroelectric Power

plant, 750MW Kafue Gorge Lower Hydroelectric Power Project and the Zambia-Tanzania-Kenya Power Interconnector Project. The OPPPI is currently coordinating feasibility studies for a combined capacity of over 2000MW, with some projects currently at the Power Purchase Agreement (PPA) negotiations stage.

- Energy Regulation Board – The Energy Regulation Board (ERB) is mandated to ensure effective energy sector regulation. The ERB does this through issuing licenses to undertakings, monitoring the efficiency and performance of undertakings; receiving and investigating complaints; approving of location and construction of energy infrastructure; price adjustments of energy services and products; and developing standard codes, guidelines, and other regulatory interventions.
- ZESCO – ZESCO Limited is a power utility owned by the Government of the Republic of Zambia that supplies electricity and energy solutions within Zambia and the Sub-Saharan region. The company is the dominant participant in the electricity market in Zambia. ZESCO Limited is a vertically integrated power utility with operations cut across the electricity value chain, generation, transmission, distribution, and supply. The Corporation owns and operates several hydropower stations with a combined power-generating capacity of more than 3,000 MW.
- ZEMA – Zambia Environmental Management Agency (ZEMA) is an independent environmental regulator and coordinating agency. ZEMA is mandated to do all such things as are necessary to ensure the sustainable management of natural resources and protection of the environment, prevention and control of pollution. ZEMA was established through an Act of Parliament, the Environmental Management Act (EMA) No. 12 of 2011. The EMA provides for the continued focus on Environmental Management, including new and emerging issues such as climate change, pollution from Persistent Organic Pollutants, and electronic waste.

Programme Benefits

GET FiT Zambia programme objectives align with the Government of Zambia's development priorities and implementation strategies, as set out in the Eighth

National Development Plan (8NDP). Amongst the stated objectives is the promotion of green growth to safeguard the environment and natural resources. This is especially important as power from renewable energy sources in Zambia, other than large hydropower, is still low, with electricity generation from solar PV only accounting for 3 percent of the total installed generation capacity, and hydropower accounting for over eighty percent. This has made the Zambian energy sector vulnerable to the impacts of climate change as droughts experienced over recent year have led to lower power production from hydropower, resulting in significant power shortages. Therefore, the diversification of the energy mix becomes critical to ensure a sustainable power supply to meet other stated country priorities, such as annual real gross domestic product (GDP) growth of 4.5 percent by 2026 and increased economic growth from agricultural, manufacturing, tourism, and mining sectors.

The GET FiT Zambia programme, by its design, plays a unique role as a catalyst and enabler to ensure progress towards achieving the country's priorities. Below are some of the specific benefits the programme portfolio brings:

- **120MW of Solar PV projects** will enable diversification of generation sources by adding 120MWac of climate-friendly Solar PV to the grid, increasing the generation capacity from renewables. This fulfils the medium to the long-term aim of the REFIT Strategy, ensuring that renewables contribute to a diversified energy mix to create increased energy security. The 120MWac of Solar PV projects are relatively advanced, and only needs to secure finance and commence due diligence before implementation starts thereby allowing the projects to be implemented in a relatively short timeline.
 - **50MW to 100MW of Small Hydropower Plants (SHPs)**, are being targeted in the north and north-western part of the country where rainfall is the highest. The Grid Facility under the programme further aims to strengthen critical network infrastructure to enable both the integration of the SHPs and to accommodate the integration of future renewable energy in the northern part of the country. The deployment of the viability gap funding (VGF) is further aimed at ensuring the project viability while ensuring SHP tariffs remain affordable to the ZESCO and its electricity consumers.
- The GET FiT Zambia projects also allow for the increase of generation output which the country needs to prevent further electricity deficits. In addition, the investment of diverse technologies in the sector increases investment generation from private sector entities. By diversifying the energy mix with Solar PV and decentralised SHPs, the programme will play an essential role in satisfying current power needs and improving the reliability of power supply in the future.
- Project implementation is carried out through a transparent, competitive procurement process with the involvement of the programme stakeholders, particularly the DoE and OPPPI, who are a central part of the programme implementation team. This further aligns with the 8 NDP objective of ensuring a good governance environment.
- The comparatively lower price achieved through a competitive process will allow ZESCO, as the off-taker, to sell low-cost power purchased to its consumers in Zambia.
- The high cost of capital and inadequate regulatory frameworks for renewable energy have been said to contribute to a low rate of private sector investment in renewable energy due to uncertainties around funding. The GET FiT programme aims to improve the institutional framework conditions, build capacity and hand over the standardised project agreements for future implementation by the MoE as part of the ownership strategy.
- The continuation of the procurement of Solar PV and SHPs will support and enable future power development, particularly the implementation of the Integrated Resource Plan, currently under development and set to be completed in 2023.
 - This supports the country's need for consistent long-term planning and project implementation as the country also embarks on activities to increase manufacturing, mining, etc., to move towards economic transformation. With the implementation of the projects being carried out over several years, capacity building and job creation will be an added benefit from implementing the GET FiT projects, thereby positively contributing to human and social development. ■

GET FiT Zambia – Reflections of the Year in Review

2022 represented continued challenges for the GET FiT programme to ensure concrete progress towards implementation of the six (6) awarded Solar PV projects. Nonetheless, the continued commitment of the successful bidders, and positive developments in the macro-economic environment brought optimism as the year came to an end.

Although financing of the GET FiT projects is not concluded, 2022 brought significant progress regarding macroeconomic developments, which is a crucial factor in reopening Zambia as an investment destination for international lenders in renewable energy. Specifically, the International Monetary Fund (IMF) debt relief package was signed on 31 August 2022, and progress was made toward a debt restructuring deal for Zambia, which is now envisioned to be concluded during the second half of 2023.

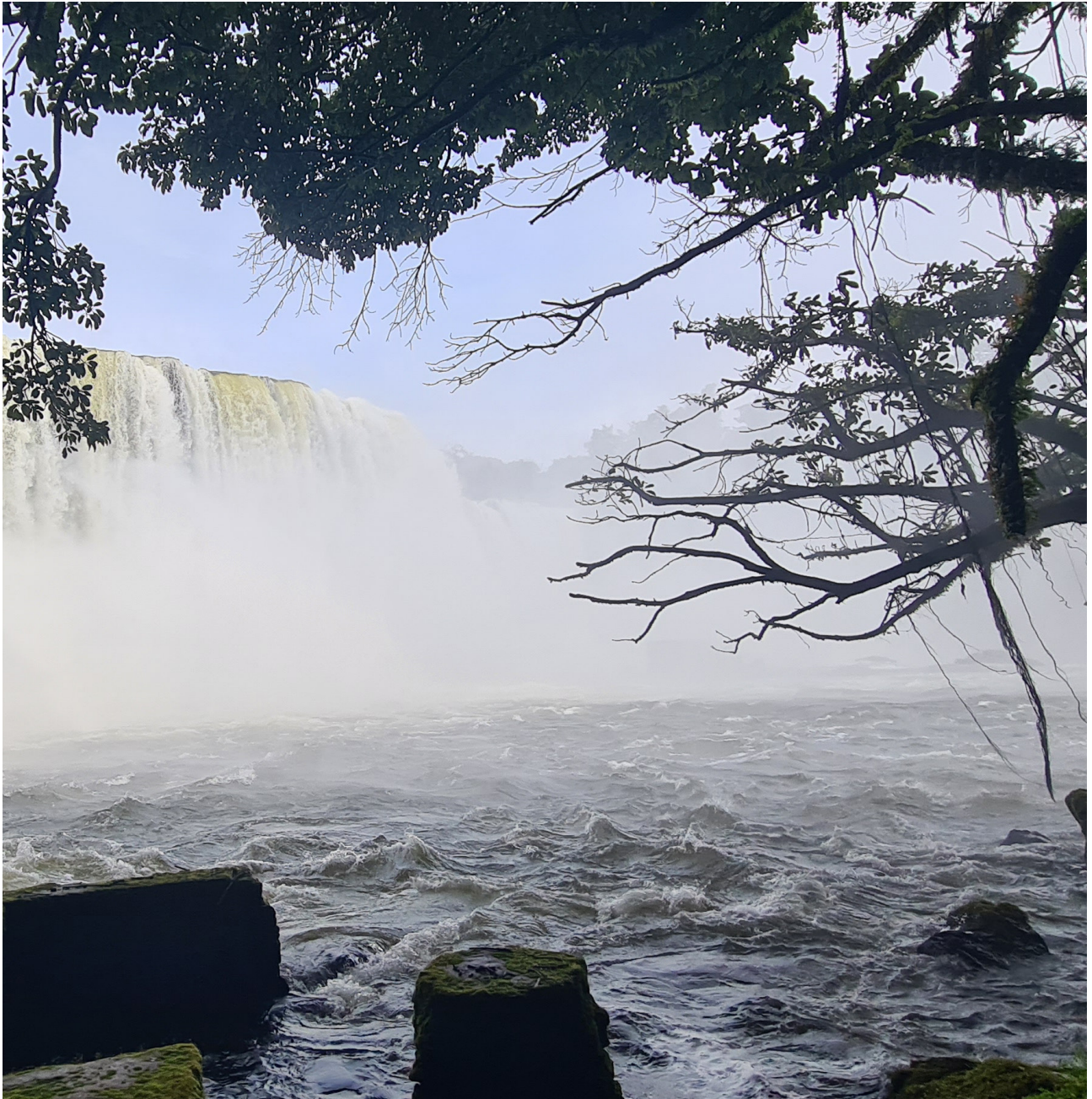
The successful bidders of the Solar PV tender have demonstrated continued commitment to the programme and continued development of their projects through renewing their bid bonds. In addition, the pre-qualified SHP developers have reconfirmed their interest through dialogue with the Secretariat.

Meanwhile, the Secretariat maintains a strong focus on Technical Assistance (TA) activities to ensure that the programme contributes toward the objective of strengthening the institutional framework for renewable energy investments. TA activities include supporting the government in the development of an Open Access Market (see picture from workshop below), and a planned project to assist OPPPI in establishment of a GIS based platform to use in the Feasibility Study Right (FSR) process and ease the communication of FSR sites with the public.

Toward the end of 2022, the country sadly entered into an energy crisis. The REFIT strategy (implemented by the GET FiT Zambia programme), aiming at facilitating private sector investment in small- and medium-scaled renewable energy IPPs in Zambia, was developed as a response to the previous energy crisis in the country (2015/2016 rainy season). The climate crisis impacting the water availability in the country and lead the country to suffer significant power shortages proves that diversifying the energy generation mix has never been more urgent than

now. This makes programs like GET FiT ever more relevant in Zambia's struggle to handle this crisis.

The GET FiT Secretariat, therefore, emphasises the need for joint action to unlock funding and enable investments into renewable energy generation projects and contribute towards the diversification of the production portfolio, to make the country better prepared for changing climatic conditions in the future. ■



Solar PV and Small Hydropower Tender Status

The Solar PV and SHP tenders are two of the main components of the GET FiT Zambia programme, making it a high priority to progress the implementation of these activities.

A public Solar PV tender was announced in 2018, and six (6) Solar PV projects were awarded to three (3) successful bidders in April 2019. MoE granted project development rights in 2019. However, macroeconomic and ZESCO's financial sustainability challenges led to the project financiers suspending their funding activities in the Zambia energy sector. Meanwhile, developers remain committed to implementing projects and have agreed to extend bid validity, while GET FiT Secretariat and KfW remain engaged in onboarding potential lenders.

The Secretariat also explored alternative offtake solutions with investors and financiers. However, merchant risk, the energy tariff structure, and at the time, there were no credit-worthy off-takers with a proven track record in Zambia to off-take power from the projects. Furthermore, it was considered not financially beneficial for ZESCO and its consumers to purchase power at a margin instead of benefiting from the low cost achieved through the tender. This was especially important as the programme objectives were to ensure that broader public benefits from low-cost power procured through the programme. Therefore, stakeholders have agreed that ZESCO will remain the off-taker for the GET FiT projects, especially as the programme design and deployment of grants aim to ensure a low costs tariff outcome that will benefit the broader ZESCO customer base.

Successful Solar PV tender ending in record-breaking award in 2019

At the time, the GET FiT Zambia Solar PV Tender was the largest single Solar PV tender implemented in Sub-Saharan Africa outside of South Africa. It was the first public tender in Sub-Saharan Africa to achieve a tariff below 4 USDc/kWh.

The prices of the power to be provided from these projects were considered so favourable that it was agreed to go beyond the targeted 100MWac. The awards were thus given to three developers of projects which together would provide 120MWac of generation capacity to the Zambian grid.

Though the Solar PV costs have increased over the recent years due to the global impact of global economic conditions, it is trending downward again. It is therefore foreseeable that these impacts can be contained and affordable low-cost tariffs to ZESCO, can still be achieved.

The **Small Hydropower (SHP) tender** was earmarked for launching at the end of the first quarter in 2020. Thirty-three (33) entities were prequalified under the tender in 2019, and twenty (20) were successful in obtaining feasibility rights from the MoE for the development of their projects. The targeted project size for the tender ranges from 1 to 20 MW. The tender launch was put on hold, initially as a result of COVID-19, which resulted in restricted movement of people and hence the ability of developers to make progress on their feasibility studies. However, when the lenders informed the Government that they will be suspending funding activities for private sector projects in Zambia's energy sector, the SHP tender and the Solar PV programme were also put on hold.

The pre-qualified developers are showing continued interest in GET FiT Zambia, despite the tender being put on hold until financing is unlocked. Lenders indicated the importance of resolving the following key concerns before they would be able to fund any private-sector projects in Zambia:

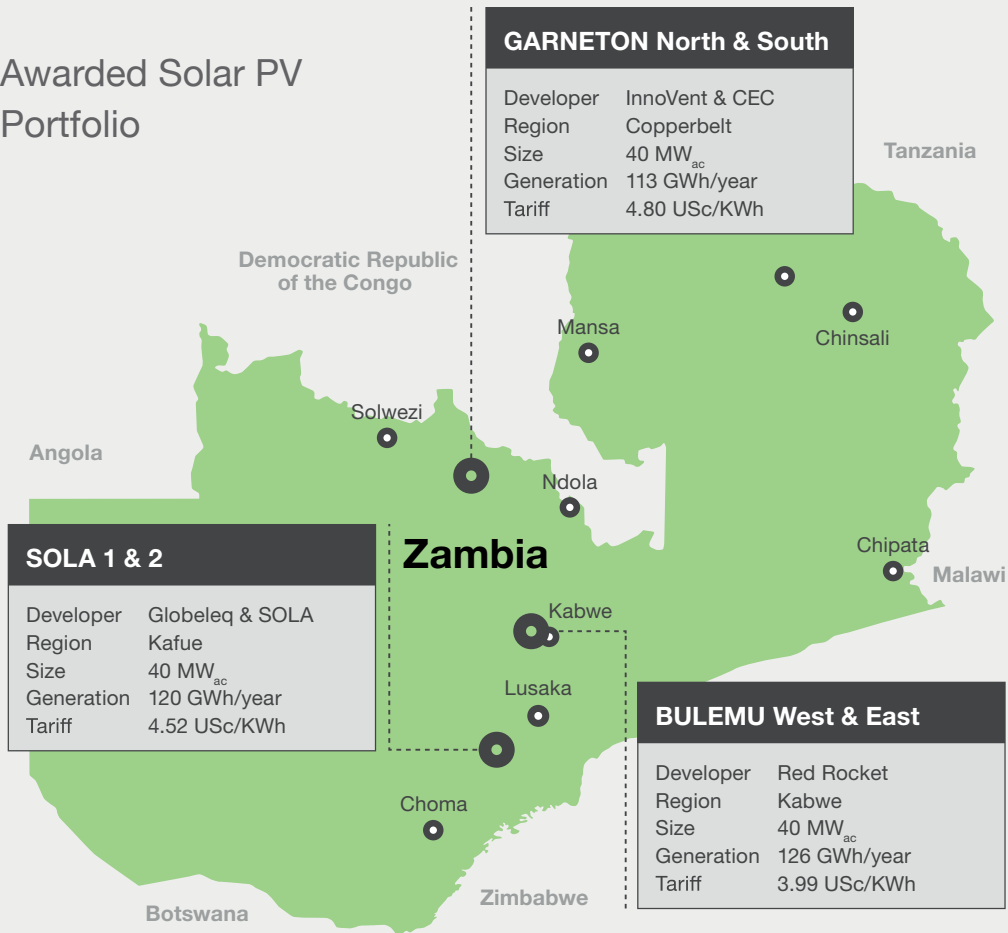
- Finalization of the Cost-of-Service Study (CoSS) and implementation of cost-reflective tariff.
- Provide a roadmap for restoring the sector's financial sustainability, including addressing arrear payments.
- Securing an IMF debt relief package
- Concluding the debt restructuring negotiations with the national creditors

Significant progress was made towards addressing the above requirements. The CoSS was finalised, and the Government of Zambia issued a CoSS White Paper setting out its policy position and framework for the migration towards cost-reflective tariffs. The IMF debt relief package was secured in August 2022, and ZESCO also initiated initiatives to address its financial sustainability. This included finalising its turnaround strategy and 10-year-strategic rolling plan.

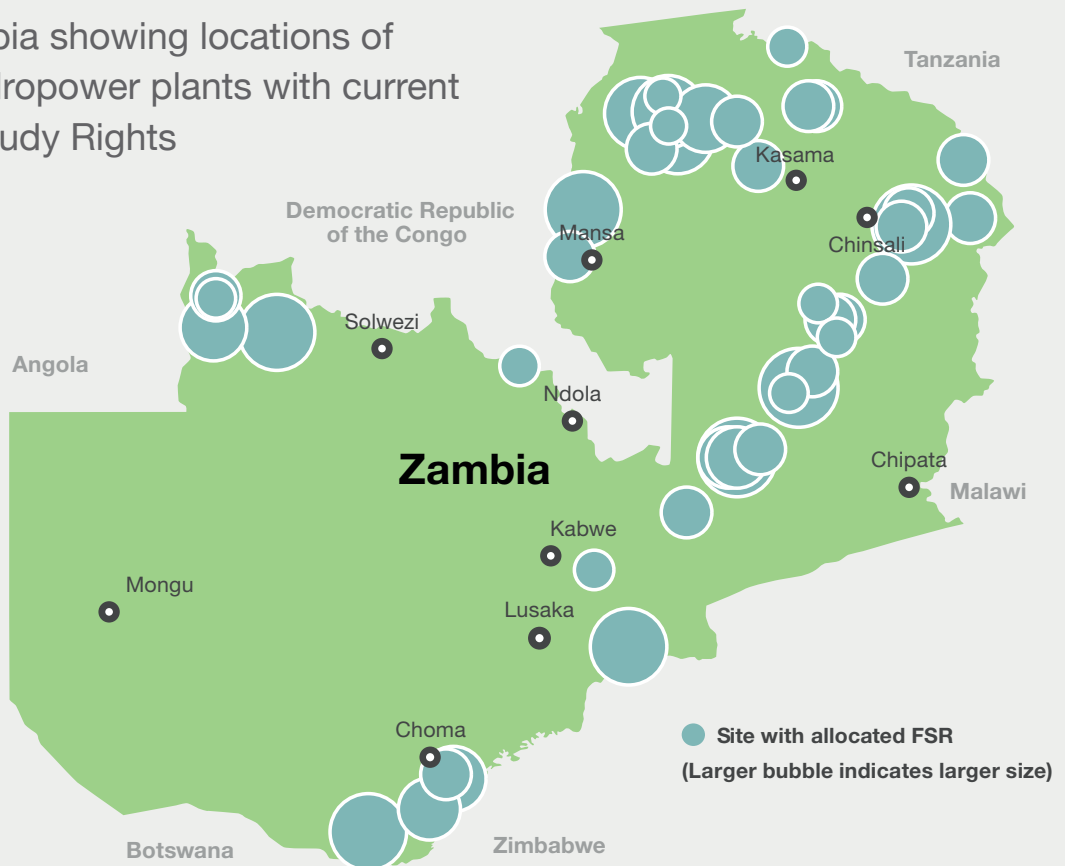
The Secretariat and KfW have continued engaging various lenders and donors to identify an anchor financier and increase available grants under the grid facility. The objective of increasing the grid facility grants is to enable the inclusion of selected grid-strengthening initiatives to ensure the integration of the SHP projects and future renewable energy projects that will be implemented beyond GET FiT programme. It is hoped that all these efforts will allow for faster progress to be made towards the small hydropower tender launch once lender requirements are met, and the Solar PV projects are on track to achieving financial close. ■



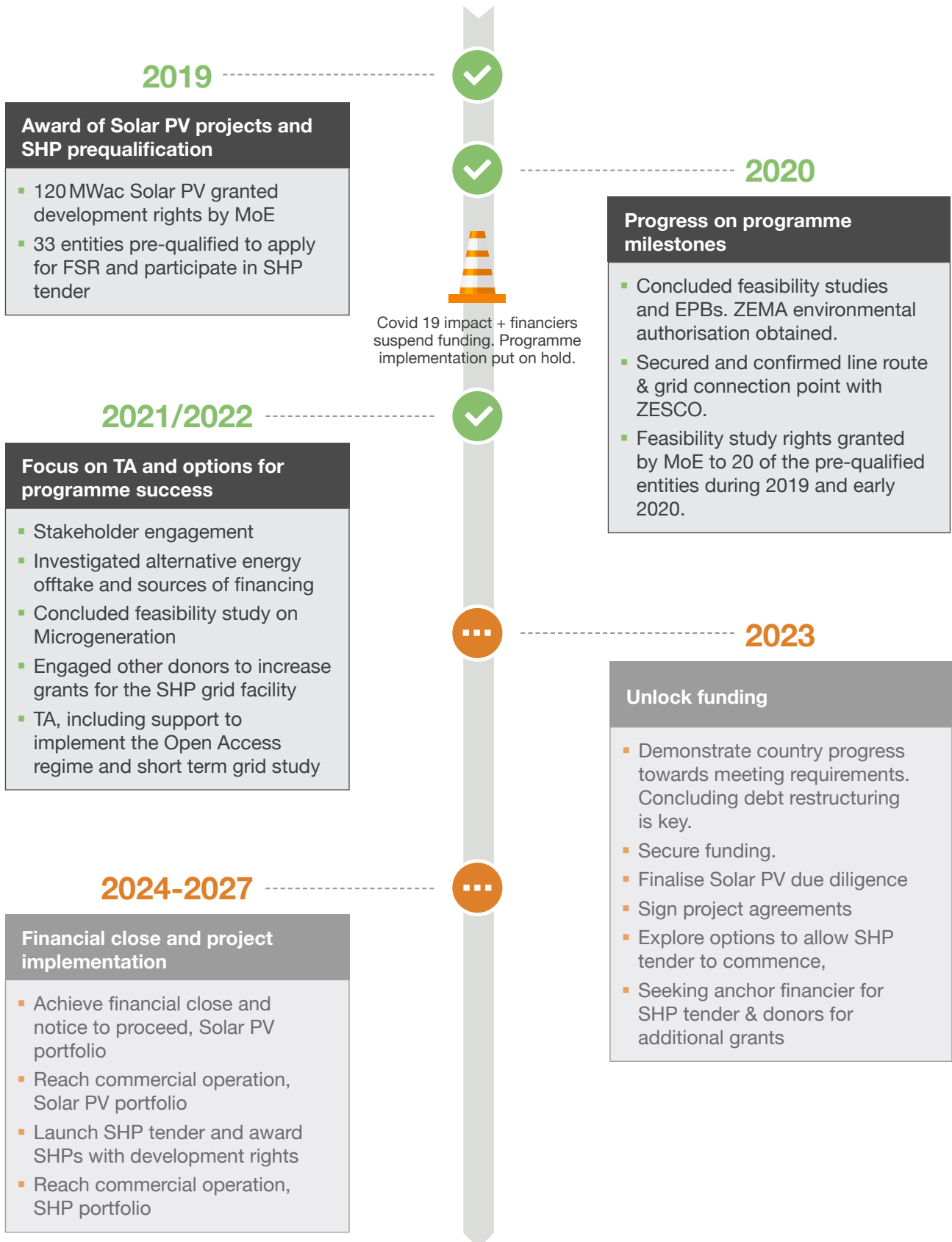
Awarded Solar PV Portfolio



Map of Zambia showing locations of potential hydropower plants with current Feasibility Study Rights



Timeline showing the most important milestones which have been completed for the two tenders to date, and the envisioned timeline for 2023 through 2027.



Unlocking the initial funding for the Solar PV projects is expected to contribute to the sector in following manner:

Sector Sustainability Contribution	Restore Investor Confidence
<ul style="list-style-type: none"> • Allowing ZESCO to make a profit due to energy prices lower than average consumer tariff • Enabling diversification by adding 120 MWp climate-friendly solar to the grid • Adding benefits to the grid as plants are close to the grid and load centers, thereby reducing system losses. Low tariffs include grid connection costs • Short execution timeline: projects relatively advanced allowing for shorter implementation timelines 	<ul style="list-style-type: none"> • Improving investor confidence which enable SHP and other private sector projects in the Zambian on-grid market • Enabling ZESCO to build a payment track record (as the tariffs for the Solar PV projects are below the ZESCO average selling price) • Unlock financing, including funds from the Green Climate Fund (GCF) allocated to Zambia • Build a track record with GCF and demonstrate commitment to the climate targets • Enable potential GCF funding for other initiatives



A Potential “Microgeneration” Window

In 2022, the GET FIT Secretariat continued working on the Microgeneration concept. The REFiT Strategy has an allocation of a 5MW Microgeneration component, and this has been reserved for private Zambian developers to build their experience and track record.

The selection criteria for the GET FIT Zambia Solar PV, and Small Hydropower tender were stringent. Developers were required to include a track record of project development, which excluded many local developers from participating in the tender process. This separate microgeneration procurement window is foreseen to tender 5MW Solar PV to private Zambian developers to build their experience in developing renewable energy projects as well as to build a track record for participation in future procurement tenders. This supports the overall objective of GET FIT Zambia which is to "improve the framework conditions for private investments in small-scale renewable energy".

The 5MW Microgeneration component has the following objectives:

- **Unlocking Zambian investments by** facilitating significant (and favouring full) investments by Zambian entities.
- **Creating financial linkages.** Enabling financing from Zambian institutions in partnership with Development Finance Institutions (DFIs).
- **Building track records.** Supporting Zambian companies in building a track record in developing Solar PV projects.
- **Enable Zambian private sector participation** in renewable energy projects.

Site Overview

Following a technical and environmental screening, a suitable site within the Citizen Economic Empowerment Commission's (CEEC) industrial yard at Mongu was selected for the project. Mongu is the capital of the Western Province of Zambia, with a population of about 191,845 (2010 census). The district is predominately rural. 80 percent of the economic activity is related to agriculture, fishing, forestry, and hunting. The area has an electricity access rate of six percent. The CEEC industrial yards are meant to enhance Small and Medium Enterprises (SMEs) competitiveness in the large manufacturing sub-sectors and create jobs. Locating the Microgeneration projects at this site will support local value creation, reduce technical losses, and provide much-needed electricity to Western Zambia.

Building a Zambian Solar PV Community

At the heart of the Microgeneration component is the idea of fostering a Zambian energy industry by enabling local firms to emerge as successful and competitive project developers in the Solar PV space.

Microgeneration contributes to GRZ's efforts to diversify the electricity generation mix as outlined in the Sustainable Development Goal 7 (SDG7) by increasing the share of renewable energy in the global energy mix by 2030.

Microgen contributes to:

- Building a solar PV tender track record for Zambian developers
- A more diversified generation mix and lower technical distribution losses.
- Socio-economic development in Mongu district

Other Benefits

- More generation capacity in Western Zambia will improve grid reliability and benefit local industry.
- Power plants will create local employment in the construction and operational phases. This job creation aligns with Economic Transformation and Job Creation, one of the main focus strategic development areas stipulated in the 8NDP.

Making Microgeneration a Reality

While small-scale investments/plant sizes are required to achieve the development effects of microgeneration, they also increase the financial cost of electricity from power plants. Making the Microgeneration bankable and financially viable for the developers while keeping tariffs affordable requires grant-funded VGF. Considering the state of the sector and utility, the VGF will be required for this project, and it will need to be structured to ensure it provides a liquidity buffer for lenders.

The following supporting activities will also require grant funding:

- Grid connection
- Technical Assistance – Integration of knowledge transfer activities

The realisation of the Microgeneration project requires grant funding which the secretariat and Ministry have worked on obtaining but have not had much success.

Conclusion

The Microgen concept is an innovative and kettle-ready development project with great potential. However, making it a reality will require grant funding for VGF and other necessary investments. The GET FIT Secretariat and the Ministry are focusing on identifying a willing donor who can provide the required grant funding. ■

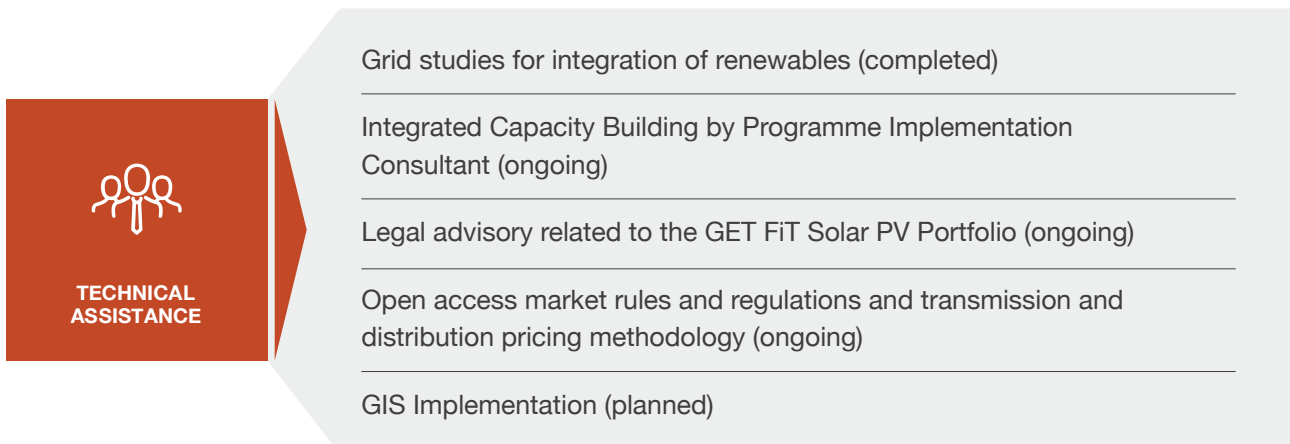
Technical Assistance

GET FiT Zambia is not only a vehicle to procure and develop energy projects in Zambia, but also aims for lasting impact in the sector through experience and capacity building. The close involvement of relevant government institutions in implementing the programme and providing TA to strengthen the investment framework, GET FiT shall contribute to the continued development of renewable energies after the programme implementation period.

The TA components of the GET FiT toolbox aim to boost institutional capacity and enable a transparent regulatory framework for private sector participation in developing the country's renewable energy resources. The TA Facility consists of integrated capacity building through the program's implementation and dedicated TA projects. So far, GET FiT has contributed in establishing a renewable IPP framework, developing a Short-Term Grid Development plan (STGD), and market design and regulations to enable the open access regime in the sector.

In close collaboration with the MoE and other main stakeholders, GET FiT actively identifies opportunities and synergies with other activities in Zambia to contribute to improved framework and investment conditions.

A description of the work conducted and planned under the Open Access Market, the Short-term Grid Development Plan and GIS implementation can be found on the next page.



TA activities provided through GET FiT Zambia

Open Access Market

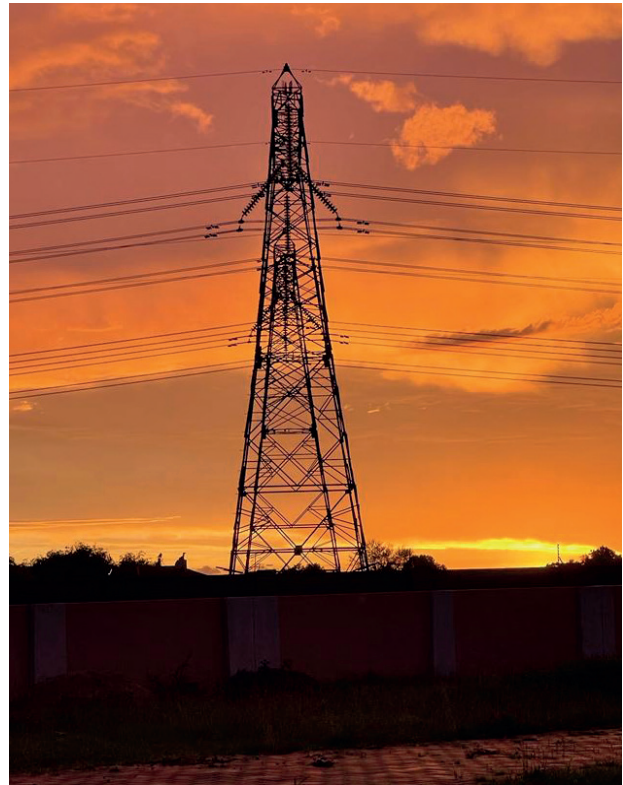
In 2019, the Government of Zambia launched the new National Energy Policy (2019). The new Energy policy facilitated the enactment of the Electricity Act No.11 of 2019 and the Energy Regulation Acts No.12 of 2019. The new Acts have made provision for Open Access to transmission and distribution networks to facilitate power trading between generating companies and end-users.

However, there are currently no regulations to govern the open access regime. Before finalising the regulations, a process has been undertaken to ensure that the open access regime operates fairly and transparently. An appropriate market structure and design, together with rules that would govern the market, is required.

The ERB is, therefore, tasked with developing the market structure and associated open access rules and regulations and creating a transmission and distribution pricing methodology. Through the GET FiT TA Facility, technical assistance is provided to the ERB to support the development of the open access market.

GIS Implementation

As part of the TA Facility, GET FiT and OPPPI aim to improve the application, approval, and monitoring process of renewable energy project developments. OPPPI has a central role in this process. The aim is to establish a GIS-based platform containing the most up-to-date information about renewable energy projects in the pipeline. This will also facilitate the management of FSRs. In addition to the value the GIS platform represents for internal portfolio management, it can also be an efficient tool for improved access to information for market actors. The project is planned to be implemented in 2023. ■



Addressing Programme Challenges

At the time of the 100MW Solar PV launch in April 2018 (and closed in November 2018), the power sector reform to address ZESCO's financial sustainability had been underway. The CoSS was launched with an expected completion date of 2019. On the back of this, the MoE announced the award of six (6) projects representing a total of 120MW in April 2019 to the Successful bidders. The target date for financial close and construction start was Q4_2019/Q1_2020, respectively. The successful bidders undertook several activities to ensure they met these timelines.

Unfortunately, the macroeconomic outlook continued to deteriorate during 2019 and 2020. This, together with continued challenges of financial sustainability in the sector, including lack of progress in the reform efforts, ZESCO's non-payment to IPPs and increased arrears, led to lenders suspending their funding activities in Zambia. By the end of 2020, the situation worsened when the GRZ defaulted on its international debt obligations.

Prospective lenders informed that they could reconsider their position on condition that the GRZ addresses the key concerns (listed in the table below).

The GRZ committed to addressing these concerns and, considering the positive impact the successful implementation of the 120MW Solar PV projects would have on the country; an agreement was reached between KfW and the MoE to extend the programme timelines. The successful bidders have also continued to show interest. They have continuously been willing to extend their bid bonds and validity in the hope that lenders, especially DFIs, would eventually be willing to fund projects in Zambia.

Despite the initial slow progress in addressing the energy sector sustainability concerns and the country's macroeconomic challenges, significant progress has been made since 2021. The feedback does not intend to convey that all lender's requirements have been resolved. Instead, it demonstrates that efforts are being made to address the concerns raised and that significant progress has been made. However, for IPP projects to secure funding, finalisation of the debt restructuring still remains a key hurdle.

The table below provides a brief overview of the key lender concerns and accomplishments.

REQUIREMENT		
1.	IMF Debt Relief	
2.	Debt Restructuring	
3.	CoSS White Paper	
4.	Implement Cost Reflective Tariff	
5.	Sector Reform / Financial Sustainability	
6.	Transparency, including the releasing of Financial Statements	

■ Completed
 ■ On track but not yet completed
 ■ Delayed

In December of 2022, the Minister of Energy and
December 2022, the MoE announced that load management measures would be implemented to rationalise the water in the Kariba Dam to avoid a complete shutdown of electricity generation activities at the Kariba Complex. Though intended for six (6) hours per day, the load management was up to twelve (12) hours. The load management measures have been a feature of Zambia's electricity sector since 2015, as it continues to remain vulnerable to climate change due to cyclical drought. Programmes such as GET FiT Zambia were introduced to help diversify the energy mix by implementing not only Solar PV projects but also SHPs in the northern part of the country, which still has good rainfall.

The role of the 120 MW Solar PV projects in addressing the Zambian power deficit has also been recognised in the MoE's Energy Sufficiency and Surplus Plan. In addition to contributing to government's emergency initiatives, the GET FiT programme would also offer the following benefits:

Sector Sustainability Contribution

- Enabling diversification by adding 120 MW climate-friendly Solar PV to the grid.
- Adding benefits to the grid as plants are close to the grid and load centres, thereby reducing system losses. Low tariffs include grid connection costs.
- Short execution timeline: projects are relatively advanced, allowing for short implementation timelines once financing is secured and financial close achieved
- Allowing ZESCO to bank energy from its hydro-power and sell this into the Southern African Power Pool (SAPP) market during peak periods. This is likely to have a positive impact on its financial sustainability.

Restore Investor Confidence

- Improving investor confidence in the Zambian on-grid market.
- Enabling ZESCO to build a payment track record (as these tariffs are below their selling price).
- Unlock financing, including funds from the Green Climate Fund (GCF) allocated to Zambia.
- Build a track record with GCF and demonstrate commitment to the climate targets.
- Enable potential GCF funding for other initiatives.

Conclusion

Despite all the challenges, the program's resilience is embedded in the fact that the grant funding has been extended by the German government, through KfW, to the GRZ to ensure that low-cost electricity can be provided to the people of Zambia. Therefore, the deployment of funds, whether for developing a competitive procurement process, improving investor framework conditions to promote private sector investment or part of the VGF, is done with this objective in mind.

The GET FiT Programme Partners (which includes the GRZ through the MoE, German Government, KfW, ZESCO and the GET FiT Secretariat) have therefore been willing to consider options to address the short to medium-term risks and bankability concerns to ensure the implementation of much needed renewable energy power in Zambia. ■

Other GET FiT Initiatives

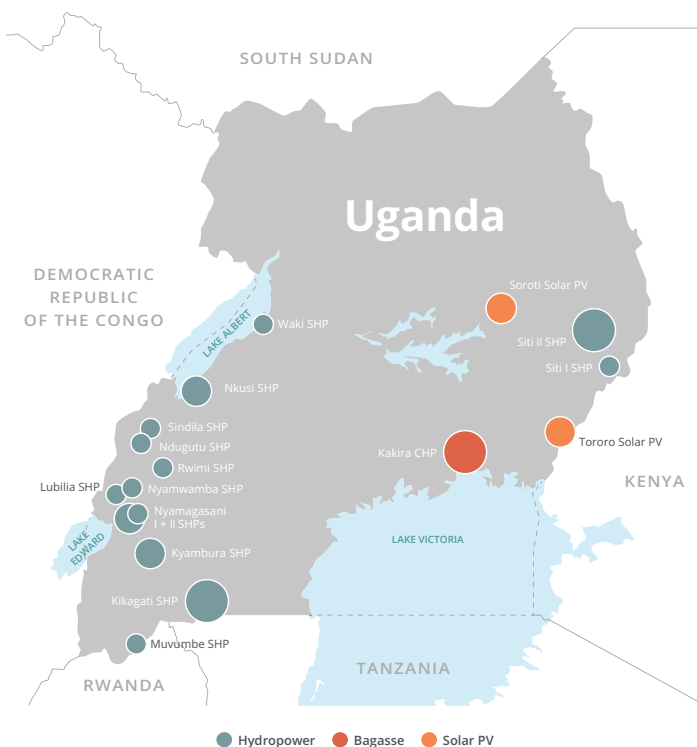
GET FiT Uganda

GET FiT Uganda was the first roll-out of the GET FiT programme. It is designed to leverage private investments into renewable energy generation projects in Uganda. The programme has facilitated a portfolio of 17 small-scale renewable energy projects promoted by private developers with a total installed capacity of 158MW and a planned yield of 765 GWh of clean energy production per year. GET FiT Uganda has been developed by the Government of Uganda and the Electricity Regulatory Authority (ERA) in close cooperation with the KfW Development Bank. GET FiT is being supported by the Governments of Norway, the United Kingdom, Germany, and the European Union (EU).

its unique ability to attract private sector investments. The programme has leveraged over USD 455 million in private investments. Furthermore, with a high level of construction activities, job creation from the portfolio is substantial – amounting to over 13,500 jobs (full-time equivalent). The main focus during the last years of implementation of the GET FiT Uganda programme is grid upgrades which will reduce the amount of deemed energy from the GET FiT projects. The sector improvement throughout the programme implementation period is being recognised internationally, and ERA has been ranked "number 1" in the Africa Electricity Regulatory Index for five consecutive years¹.

With the last three power plants reaching commercial operation in 2021, GET FiT Uganda has proven

For more information on GET FiT Uganda, please visit the website www.getfit-uganda.org.



GET FiT Uganda project portfolio

¹ <https://africa-energy-portal.org/reports/electricity-regulatory-index-eri-africa-2021-edition>

GET FiT Mozambique

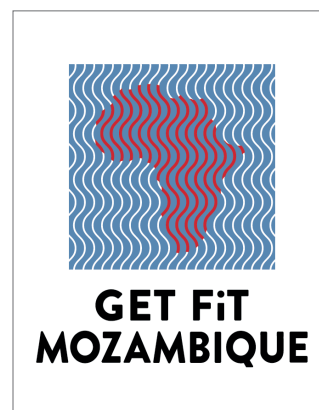
Mozambique is generously endowed with renewable energy resources – with the largest hydropower potential in Southern Africa and favourable conditions for electricity production from Solar PV, wind and biomass. Meanwhile, the country's population still suffers from low electricity access rates. As of 2020, Mozambique's installed capacity consists of approximately 79 percent hydropower, 20 percent natural gas and diesel and 1 percent Solar PV, totalling 2,850MW. The state-owned utility, EDM, operates about 1 GW of this. Several large energy development projects are in the pipeline. The government and EDM recognise the need to engage the private sector and alleviate the challenges in the sector, and IPPs are already an important contributor to Mozambican power supply. The Mozambican power system is characterised by long distances between the large generation centres and the most important load centres, with long and overloaded power lines result in poor power supply. The under-capacity of energy infrastructure and weak security of supply is an impediment to the investments required for Mozambique to become a regional powerhouse and achieve its ambitions of universal access to affordable and sustainable energy for its population. Building on experience from Uganda and Zambia, the third roll-out of the GET FiT concept in Mozambique will support unlocking private investments in renewable energy projects by reducing risks, improving attractiveness of the investment environment, increasing institutional capacity, and building a track record of successfully implemented projects.





GET FiT Mozambique is financed by the German Financial Cooperation and the EU through KfW Development Bank and implemented by the Ministry of Mineral Resources and Energy (MIREME) as Project Executing Agency with the support of Multiconsult

Norge AS as Programme Implementation Consultant. The Government of Mozambique and KfW signed the Special Agreement for the programme under the German-Mozambican economic cooperation in 2019, and its implementation kicked off in May 2022.

At the core of the programme is the procurement of generation capacity by IPPs. The first round will be a competitive international reverse auction for privately promoted Solar PV projects with battery energy storage systems (BESS) at pre-selected sites, ranging from 4 to 15 MW. The total capacity awarded will be around 25-30 MW, depending on the selected sites and the price outcomes of the competitive procurement process. The tender will be conducted under the aegis of the energy regulator ARENE, with EDM as off-taker. The introduction of BESS as part of the tender is a new innovation for the GET FiT programme.

In December 2022, the EU announced their participation in the programme with 20 million Euros. This additional programme funding will support the second procurement round, which will target SHPs.



 <p>Risk Mitigation Facility</p>	 <p>Viability Gap Facility</p>	 <p>Grid Facility</p>	 <p>Technical Assistance Facility</p>
<p>Mitigating political & commercial risks, e.g. offtaker risk.</p>	<p>Top-up for cost-reflective tariffs to make IPP projects with new renewable energy technologies viable.</p>	<p>Grid Studies and Technical Assistance to ensure effective and timely connection of new IPPs to the grid.</p>	<p>Support and capacity building for planning and implementation of competitive procurement of renewable energy to enable an efficient and transparent investment framework based on standardized procedures and documentation.</p>

GET FIT Mozambique Toolbox

As in Zambia and Uganda, the programme's toolbox includes several instruments to support the development of the energy sector in Mozambique.

The German government is also supporting 'Green People's Energy for Africa'. This programme includes a window for private sector-led mini-grid development in Mozambique, which is foreseen to be implemented under the same implementation framework as GET FIT, and with FUNAE as a key

stakeholder. The Green People's Energy for Africa is expected to kick off in the first half of 2023. With around EUR 23.5 million funding, the programme targets supplying at least 7,000 businesses and households in remote rural regions, many of which will receive electricity for the first time.

For further information about GET FIT Mozambique, please visit <https://www.getfit-moz.org>. ■

Outlook

The positive prospects from the end of 2021 have further materialised during 2022, leaving the Secretariat positive that the financial close for the Solar PV portfolio potentially can be reached towards the end of 2023 or start of 2024.

With the GRZ's energy sector, macro-economic reforms and the IMF debt relief package well underway, investor and lender confidence in the Zambia power sector is hoped to be restored. Potential lenders to GET FiT projects have communicated the intention to return to the Zambian energy sector as soon as definitive progress has been made on the debt restructuring negotiations. Against this backdrop, there are prospects for fruitful lender discussions between the successful Solar PV bidders and selected DFIs in the second half of 2023. The Secretariat will continue its engagement with all relevant stakeholders to ensure the continued relevance of the GET FiT Portfolio and implementation of the Government's REFIT programme. Key activities for GET FiT in 2023 will include:

- Continued dialogue with the key governmental stakeholders to the programme
- Continued engagement with financiers to potentially enable progress toward financial close for the Solar PV projects.
- Conclude the due diligence process of the GET FiT Solar PV projects by 2023/early 2024 and explore opportunities to fast-track the projects once funding can be secured.
- Continue to engage donors for additional grants and identify an anchor financier for the GET FiT SHP tender
- Procurement of a consultant to assist OPPPI in the development of a GIS-based platform to make the FSR process more efficient and transparent

- Continued engagement to ensure progress in the Open Access TA project

A successful outcome of GET FiT Zambia has the potential of making Zambia more resilient to tackling the impact of climate change. With a geographically spread portfolio across the country and representing different generation technologies (Solar PV and Small Hydropower), the projects can contribute to reducing the negative impact of external shocks, such as the droughts experienced at the end of 2022.

Thus, the clear ambition for GET FiT in 2023 is to come one step closer to the programme outcome target of Improved framework conditions for private investments in on-grid renewable energies up to 20MW. ■



The People at Work for GET FiT Zambia



The programme is mainly carried forward by the GET FiT Zambia Secretariat in Lusaka and the Zambian governmental institutions Department of Energy (DoE) and Office for Promoting Private Power Investment (OPPPI). The picture to the left shows representatives from the GET FiT Secretariat and the DoE. From left to right, back to front Agnelli Kafuwe (DoE), Dailesi Njobvu (GET FiT Secretariat), Judith Raphael (GET FiT Secretariat), Brian Siakweenda (DoE), Isaac Soko (DoE) and Allan Chivunda (DoE). Other representatives who are not in the picture include David Wamulume (DoE), Shuko Zyambo (OPPPI), Misheck Mubuyaeta (OPPPI) and David Phiri (OPPPI).

KfW, in close cooperation with the Zambian Ministry of Energy, is responsible for the implementation of GET FiT Zambia, supported by Multiconsult as Programme Implementation Consultant:



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GET FiT Zambia Annual Update 2022

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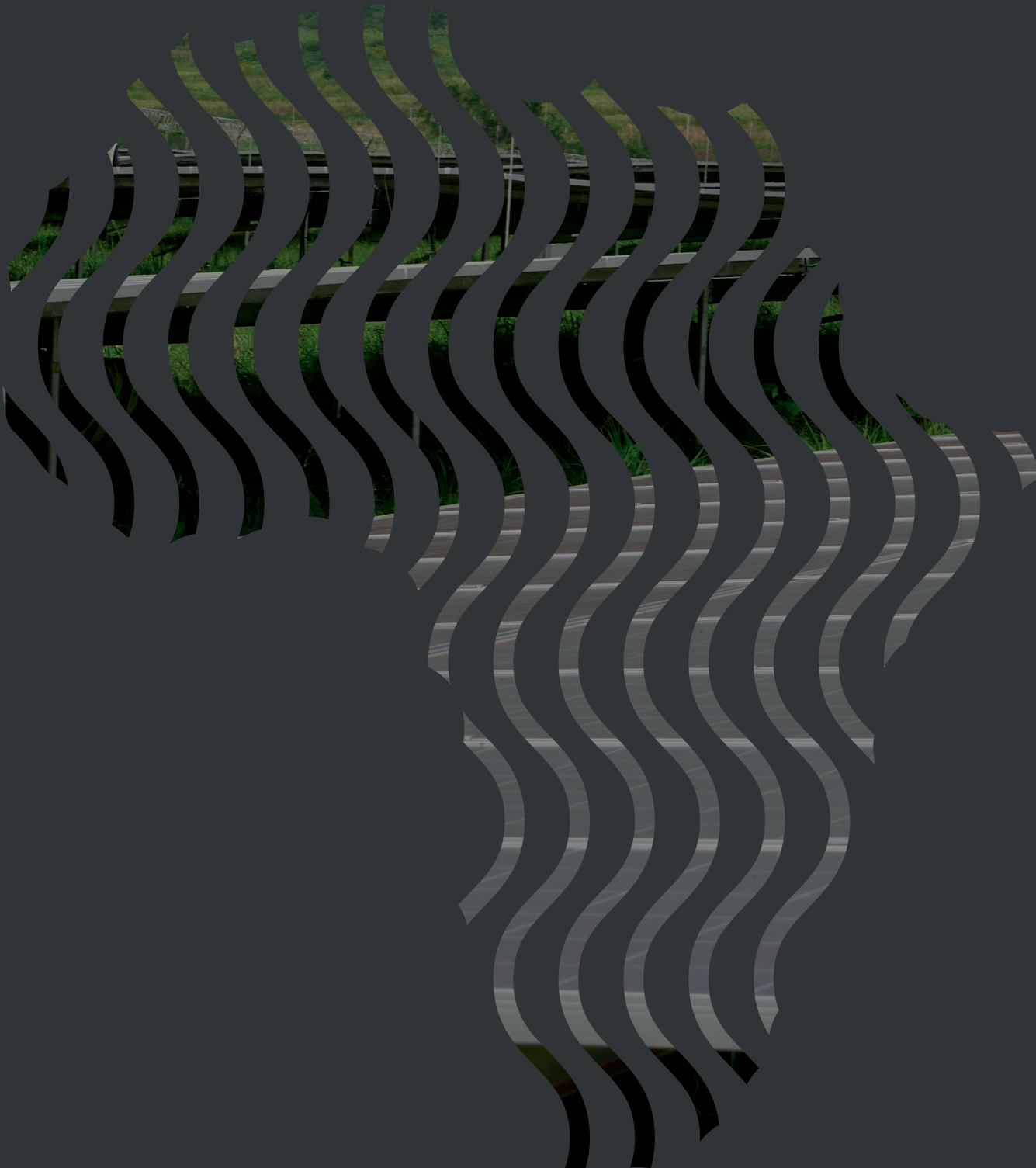
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