

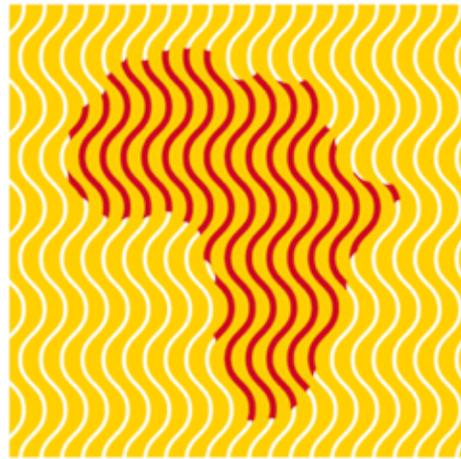
**GET FIT
UGANDA**

ANNUAL REPORT

2016

SUPPORTED BY





GET FIT UGANDA

ANNUAL REPORT 2016

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MESSAGE FROM ERA



The Electricity Regulatory Authority continues to recognize the great role played by the GET FiT program in supporting Uganda towards achieving the policy objective regarding the prioritization of renewable energy in the national generation mix.

Eng. Ziria Tibalwa Waako,
AG. Chief Executive Officer

The year 2016 saw the impact of the GET FiT program on Uganda's Electricity Supply Industry grow from strength to strength. In addition to the six (6) hydropower projects that broke ground in 2015, construction works began for six (6) more power plants in 2016 and early 2017, bringing the total of the planned installed capacity from the GET FiT projects currently under construction to 86 MW.

Furthermore, on December 12, 2016, the Ugandan Electricity Supply Industry through GET FiT support achieved yet another major milestone of commissioning the first grid connected Solar Photovoltaic Plant in the country. The 10 MW grid connected Solar PV plant located in Soroti by Access Uganda Solar Limited is the largest of its kind in the East and Central African region. The development of this solar project, has gone a long way to demonstrate how synergies of Development Partner and hosting government support can be utilized to harness private sector capital for infrastructure project development.

The Electricity Regulatory Authority continues to recognize the great role played by the GET FiT program in supporting Uganda towards achieving the policy objective regarding the prioritization of renewable energy in the national generation mix. Monitoring of projects under construction is on-going so as to enable them to achieve Commercial Operations Dates as per the respective implementation time plans.

The Electricity Regulatory Authority would further like to salute the GET FiT program for the Technical Assistance facility which has enhanced ERA's processes in regulating the Electricity Supply Industry. Particular emphasis of the Technical Assistance facility was placed on Due-diligence for licensing, evaluation and monitoring of projects, financial and tariff

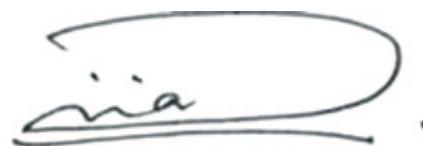
modelling, and standards for interconnection and wheeling arrangement. The facility has enabled the Authority to build capacity to ensure long term sustainability beyond the GET FiT Program.

It is notable that the implementation of the GET FiT program saw Uganda become one of the best Renewable energy investment destinations and gain international recognition. The Bloomberg ratings of 2016 rated the country 2nd best with regard to Renewable Energy investments in Africa. In an effort to maintain the favourable Renewable Energy Investment climate, the Authority with support from the GET FIT program revised the Renewable Energy Feed in Tariffs in July 2016 in order to sustain the level of financial viability of the potential projects to ensure that the country remains one of the best investment destinations on the African continent beyond the GET FiT program.

The Authority appreciated the continued support from development partners towards construction of evacuation infrastructure for the GET FIT projects. As we approach the peak of construction and commissioning of the GET FIT generation plants, the Authority shall continue to prioritize the proper monitoring and coordination of the construction activities for the evacuation infrastructure. This will enable a harmonized commissioning of the power plants.

The Electricity Regulatory Authority is committed to ensuring efficient and effective implementation of the GET FIT program and shall continue to make every effort to achieve sustainable electricity Supply for social economic transformation.

The Authority looks forward to supporting Development Partners in sharing the experiences and lessons learnt during the implementation of the Uganda GET FiT program, as similar programs are rolled out in other countries.



Eng. Ziria Tibalwa Waako,
AG. Chief Executive Officer

MESSAGE FROM EU



KfW and the German Government have rallied development partners Norway, the United Kingdom and the European Union around a programme owned by the Government of Uganda, reducing the transaction costs for the Government. This is effectiveness!

Kristian Schmidt,
EU ambassador to Uganda

Dear readers,
 on the 12th of December 2016, we celebrated the inauguration of the first GET FiT solar plant in Soroti - with a production capacity of 10 MW the biggest in Eastern Africa.

The Soroti Solar Plant project is a very good demonstration on how development partners can deliver better when they efficiently coordinate their efforts. The GET FiT programme is also a real success in this sense. KfW and the German Government have rallied development partners Norway, the United Kingdom and the European Union around a programme owned by the Government of Uganda, reducing the transaction costs for the Government. This is effectiveness!

The GET FiT programme in Uganda is the first one of this kind in the world. Given its success, it is now being copied in Zambia and Vietnam, whereas Namibia, Ghana and Mozambique have also shown interest in the model.

Such a programme would not have been possible without the strong commitment and the key role played by the Electricity Regulatory Authority (ERA). I would like here to pay tribute to the former CEO of ERA, Dr Benon Mutambi, who created the model. He designed, together with Development Partners, this innovative scheme of a GET FiT Premium to finance and fill the viability gap for renewable energy projects to be profitable. He contributed to the improvement of an enabling regulatory framework for private sector investment in renewable energy, which is recognised internationally and that many other countries now want to emulate. I am convinced Eng. Ziria Tibalwa, the new acting CEO, will continue to implement Dr Mutambi's legacy with excellence.

Uganda has recently been ranked at the top of international indexes on investment climate for renewable energy. Bloomberg's "Climatescope 2016" has ranked Uganda 7th out of 55 developing countries worldwide and 2nd in Africa for its clean energy investment climate and policies, showing a steady improvement after already good results in 2014 and 2015. In the October 2016 index from Fieldstone Africa, Uganda was also one of the Big Five together with Morocco and Egypt. These are markets in which investment in renewable energy is compelling. I wish to congratulate the Government of Uganda for this very good result.

Another 10MW Solar Plant will soon be constructed in Tororo supported by the EU and the GET FiT programme. Together with other GET FiT projects (total 160 MW), it is contributing to diversifying Uganda's electricity mix, reducing the current high dependency on hydropower and the need for thermal generation, and thus reducing the emission of greenhouse gases and making Uganda more resilient to climate change.

GET FiT is therefore part of global efforts to switch to full renewable energy sources. At the UN conference on climate change in Paris in December 2015 and in Marrakech in November 2016, the world reached a ground-breaking agreement to limit global warming and accelerate the introduction of renewable energy worldwide. Uganda may hit international headlines for its renewable energy success story.

The next challenge for Uganda is now to bring power to the people. As development partners we welcome the current reflexion about a new policy on electricity access and we stand ready to support the Government of Uganda in that direction.



Kristian Schmidt,
 EU ambassador to Uganda

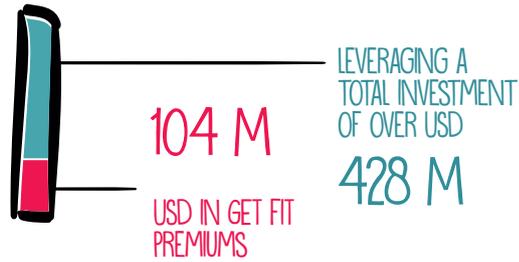
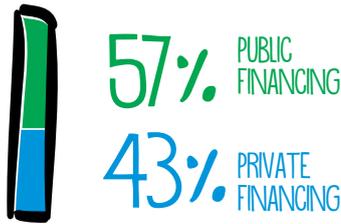
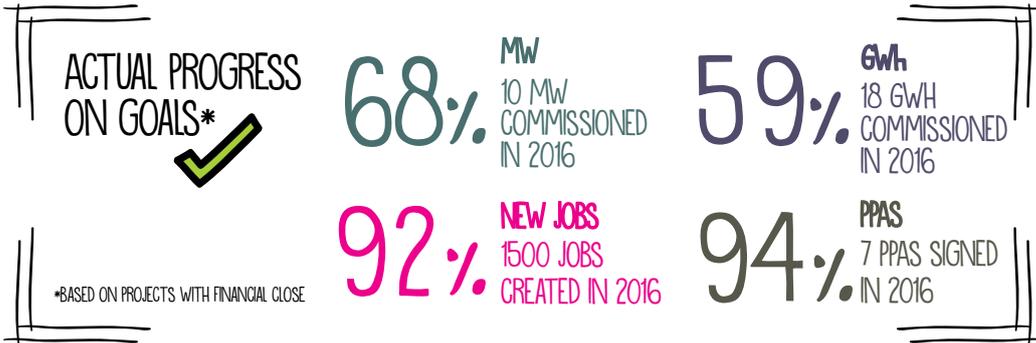
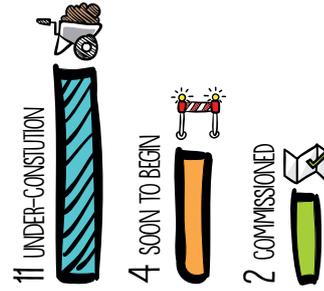


17 PROJECTS

157 MW

769 GWh

4200 JOBS



WE CURRENTLY HAVE **30 MW** OF POWER GENERATION COMMISSIONED, ABOUT **86 MW** UNDER CONSTRUCTION AND ANOTHER **41 MW** SOON TO BEGIN.

THIS IS ALL SPREAD ACROSS

17 PROJECTS
HYDRO, SOLAR AND BAGASSE

WE ARE MOVING TOWARDS OUR 157 MW TARGET

EXECUTIVE SUMMARY

Over the past year, GET FiT Uganda has taken several considerable steps towards full materialization of its project portfolio. As perhaps one of the most important highlights of 2016, eight projects managed to reach financial close with their lenders in 2016, thus bringing the total up to 11 out of 17 projects. This effectively means that in terms of installed generation capacity (MW), 63 percent of the portfolio is now financially secured. This, combined with the equally important fact that 74 percent of the portfolio is now under construction or commissioned (12 out of 17 projects), bodes for great optimism going into the final years of Program implementation.

In November, the Soroti solar PV project (10 MW) was commissioned as Uganda's first on-grid solar power plant. This milestone for the Ugandan power sector marked the beginning of a potentially bright solar powered future for the country. The official opening attracted great publicity and manifested the position of Uganda's power sector as a progressive one, determined to reach its ambitious targets for national electrification through investment in renewables with private sector involvement.

Following the break-through year of 2015, where the first six GET FiT hydropower projects commenced construction, another three were able to break ground in 2016. Thus after a year of widespread construction activities across the hydropower portfolio, 2017 is likely to become the year of commissioning for the first plants. The first two are expected to go operational in March, while several others will follow throughout the year. With the remainder also commencing construction within the first few months of

this year, construction supervision and flexible follow-up of any unforeseen technical issues will continue to be a core activity of the GET FiT team.

Adding to the above, construction of critical grid infrastructure for power evacuation of GET FiT projects will be commenced under the support of GET FiT development partners. This will not only cater for successful implementation of the portfolio, but also strengthen the national grid and pave the way for further renewable energy development and electrification. Moreover, ERA will benefit from improved regulatory frameworks and comprehensive capacity building in key areas of its core business through the extensive technical assistance provided as part of the Program. Hence, 2017 is likely to become a highly productive, fruitful and exciting year for GET FiT stakeholders and the Ugandan power sector.

It is uplifting also to note that the environmental and social performance across the project portfolio has improved noticeably in 2016. GET FiT continues to provide substantial support to developers in complying with international standards on issues such as resettlement, compensation, health and safety. This is vital not only to safeguard the overall success and legacy of the Program, but also to build developer capacity and to ensure sustainable utilization of Uganda's small-scale RE potential for years to come. During GET FiT implementation, some developers have made impressive improvements in their capacity to manage a range of environmental and social issues. As a consequence of GET FiT, there is now a considerably higher degree of compliance with Ugandan and international standards than would otherwise have been observed.

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OUTLOOK FOR 2017

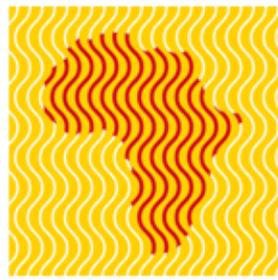
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STATUS OF GET FIT ROLL-OUT TO OTHER COUNTRIES

LIST OF ABBREVIATIONS OR ACRONYMS

COD	Commercial operation date
CP	Condition Precedent
BEIS	Department for Business, Energy & Industrial Strategy
DFA	Developer Finance Agreement
DFID	Department for International Development
ERA	Electricity Regulatory Authority
GFPPM	GET FIT Premium Payment Mechanism
GoU	Government of Uganda
HPP	Hydro Power Plant
IA	Implementation Agreement
IC	Investment Committee
IDA	International Development Association
IFC	International Finance Corporation
MEMD	Ministry of Energy and Mineral Development
MoFPED	Ministry of Finance and Economic Development
M&E	Monitoring & Evaluation
PPA	Power Purchase Agreement
PRG	Partial Risk Guarantee
RFP	Request for proposal
SC	Steering Committee
TA	Technical Assistance Facility
UETCL	Uganda Electricity Transmission Company Limited





**GET FiT
UGANDA**

1 ABOUT GET FIT UGANDA

The GET FiT Uganda Program was officially launched on May 31st 2013. The program, which has been jointly developed by the Government of Uganda, the Electricity Regulatory Agency (ERA) and KfW is designed to leverage private investment into renewable energy generation projects in Uganda. GET FiT is being supported by the Government of Norway, the United Kingdom, the Government of Germany and EU through the EU Africa Infrastructure Fund.

The main objective of the GET FiT Program is to assist East African nations in pursuing a climate resilient low-carbon development path resulting in growth, poverty reduction and climate change mitigation. In Uganda, GET FiT is fast-tracking a portfolio currently of 17 small-scale renewable energy (RE) generation projects, promoted by private developers and with a total installed capacity of 157 MW. This will yield approximately 770 GWh of clean energy production per year, transforming Uganda's energy mix within a period of 3-5 years, and resulting in:

- emission reductions of roughly 11M tons of CO₂ in the 20-year lifespan of Power Purchase Agreements (PPAs);

- an increase in Uganda's energy production by about 20%, and thus a contribution to tackling an anticipated supply shortage in the period up to 2020;

- facilitating (or significantly improving) access to energy for at least 200.000 additional households (approximately 1.2M people), also in rural areas due to strengthening of regional grids;

- leveraging of close to MEUR 400 in public and private investments for RE generation projects with a limited amount of results-based grant funding.

A more comprehensive description of the specific tools and approaches applied by GET FiT to address the challenges faced in the Ugandan power sector, the governance structure of the Program and key activities and achievements so far, is found in the GET FiT Annual Reports produced since 2013 (www.getfit-reports.com).



PROJECT PORTFOLIO PROGRESS



Portfolio Status

Another progressive year

Following the breakthrough year of 2015 when the first six hydropower projects started construction after several delays, 2016 was another highly progressive year for the GET FiT Program. Notably, the Soroti solar PV project was commissioned as Uganda's first on-grid solar power plant. Further to this, four additional hydropower plants and one solar plant commenced full construction activities during the past year. Thus, ten GET FiT hydropower projects are currently under construction. Of these projects, four – six schemes (depending on construction progress) are expected to reach commercial operation within 2017. Finally, the remaining four hydropower projects in the portfolio which are still at the development stage are all expected to break ground within the first half of 2017.

Break-through on project financing

In 2016 an encouraging eight projects (six hydropower and two solar) reached the critical milestone of financial close, bringing the total to ten out of seventeen. While several projects had already started construction prior to closing

financial arrangements (using equity), it is vital to the sustainability of the portfolio and its ability to achieve targets, that most projects are now financially closed. This achievement confirms the progress of Uganda's renewable energy investment climate in recent years.

First hydropower commissioning coming up

Entering 2017, the Program is on the verge of celebrating the commissioning of the first hydropower plants in the GET FiT portfolio. Muvumbe (6.5 MW) and Siti I (6.1 MW) are both expected to become operational in March. This will mark an encouraging start to the operationalization of our hydropower portfolio and emit positive signals to other developers and the sector as a whole. The ongoing construction of Siti 1 SHP is progressing well. Although the project was largely on track to be the first hydropower project to commission in late 2016, the project has experienced delays in shipping of critical materials. Muvumbe SHP was also on target for commissioning in 2016, but has been delayed by a range of external factors, including i) local political challenges, ii) interconnection issues and iii) shipping delays.

The next table provides a brief updated status on



key project milestones across the portfolio. Green cells indicate that a milestone has been achieved. The expected dates for key milestones that have not yet been achieved are otherwise shown. Only three projects have not obtained generation licenses, while five are still negotiating for PPAs.

No.	Project	Generation License	DFA	PPA	Financial Close	Construction start	Commissioning
1	Rwimi						Q3 2017
2	Nyamwamba						Q1 2018
3	Waki						Q4 2017
4	Siti I						Q1 2017
5	Siti II						Q3 2018
6	Lubilia						Q4 2017
7	Kakira Cogen						
8	Sindila						Q3 2018
9	Muvumbe						Q1 2017
10	Soroti Solar						
11	Tororo Solar						Q3 2017
12	Kikagati	Q1 2017		Q1 2017	Q2 2017	Q1 2017	Q4 2018
13	Nyamughasani I				Q2 2017	Q1 2017	Q4 2018
14	Nyamughasani II				Q2 2017	Q1 2017	Q4 2018
15	Ndugutu		Q1 2017		Q3 2017	Q1 2017	Q4 2018
16	Kyambura				Q1 2017		Q4 2018
17	Nkusi				Q1 2017		Q1 2018



Projects



22



Commissioned Projects

SOROTI: The First Grid-connected Solar Power Plant in Uganda Starts Operations



10 MW
PLANT

17,5 GWH
P/YEAR

On November 24, 2016, the developer Access Uganda Solar Ltd (partnership between Access Power from Dubai and the French company EREN Renewable Energy) announced beginning of commercial operation of the Soroti Solar Power Plant, located just outside Soroti Town in Soroti District, Eastern Uganda. The 10 MW plant (32,680 solar modules on 13 hectares) became the first grid-connected solar power plant in Uganda, but also East Africa's largest photovoltaics plant at date of commissioning. The Soroti Solar Power Plant



Soroti Solar Power Plant. (photo: Access Power)

will produce around 17,5 GWh each year, which correspond to clean, low-carbon, sustainable electricity to 40,000 homes, schools and businesses in the area.

The GET FiT Investment Committee had approved the Soroti Solar Project in October 2014, as part of the Solar Facility for the GET FiT Premium Payment

Mechanism. The Developer signed a Developer Financing Agreement with Government of Uganda (represented by KfW) in July 2015, and the 20-year Power Purchase Agreement with Uganda Electricity Transmission Company Ltd (UETCL) in September 2015. Financial close was achieved in January 2016, and the Engineering, Procurement and Construction Contractor (Spanish company

TSK) started mobilization in February 2016.

Being the first of its kind in Uganda, the Soroti project naturally faced a range of regulatory, technical and financial challenges on its implementation path. Nonetheless and despite externally caused delays, the plant was commissioned only two years after selection for

GET FiT support. This was made possible only through the continuous and coordinated efforts of the Developer, ERA, UETCL, KfW/GET FiT and other stakeholders. Importantly, efforts were maintained due to a strong, common ambition of pushing Uganda's first on-grid solar PV project ahead.



Mr. Ambrose Kamukama, Electrical Technician, AUSL.
(photo: Multiconsult)

One of the main advantages of solar power is that project lead times are among the shortest of any power generation technology. While it took approximately nine months to build and commission the 10 MW Soroti plant, it could have been achieved in five months had the developer not experienced external delays due to customs clearance and damaged equipment during shipping (transformers). Nonetheless

the implementation of the project was a major achievement, in particular considering the very steep learning curve for the sector as a whole. At peak construction, the plant had over 120 local workers involved, including engineers recruited and trained by the Developer. Local trained employees will also implement the Operation and Maintenance of the plant.

The USD 19 million plant is financed by a mix of debt and equity with the senior debt facility being provided by FMO, the Netherlands Development Bank, and the Emerging Africa Infrastructure Fund (EAIF). The GET FiT Program supports the project with approximately USD 9.5 million, to be disbursed over a 5 year period.

The inauguration ceremony on December 12, 2016, was attended by Uganda's Minister of State for Energy, H.E. Simon D'Ujanga, together with the EU Head of Delegation to Uganda, H.E. Kristian Schmidt, the ambassadors of Germany and the Netherlands Dr. Peter Blohmeyer and Mr. Henk Jan Bakker, as well as representatives of Access Power, EREN RE, TSK, ERA, FMO, EAIF, and other stakeholders.



EU Ambassador and Ambassadors of the Netherlands and Germany join Uganda's Minister of State for Energy H.E. Simon D'Ujanga for the official tape cutting at the launch of the Soroti Solar Power Plant. (photo: Delegation of the European Union to Uganda)



KfW's GET FiT programme facilitated the speedy tendering, financing, construction and completion of Access' PV facility in Soroti, Uganda. The preparation to a high standard of key project documents prior to the tender significantly reduced both the risk and cost of development, while the concessionary element of the tariff enables us to deliver affordable grid-scale renewable energy to the state utility

Stephane Bontemps
Managing Director, Access Power



KAKIRA Cogeneration



20 MW
BIOMASS

147 GWH
DELIVERED

20 MW biomass (bagasse from sugar production) plant in Jinja District, Eastern Uganda. Total investment is USD 57M with approximately USD 7.1M in GET FIT commitments. Kakira Sugar Ltd. signed the GET FIT financing agreement in April 2015, and reached official COD when the PPA was signed in mid-2015. Consequently, Kakira Sugar Ltd. became the first recipient of a GET FIT

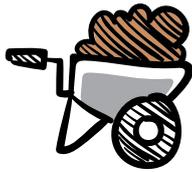
premium payment in September 2015. In 2016, the total energy production from Kakira was much lower than anticipated. While planned annual production for the plant is 147 GWh, delivered

energy accumulated to less than 60 GWh over the past year. This is due to a reduction in availability of sugar cane, caused mainly by increased local competition in the sugar cane market. The latter affects Kakira operations and fuel supply to the generation facility, as a significant share of sugar canes are purchased from outgrower farmers. The future annual production levels for Kakira are expected to depend on the outcome of ongoing discussions regarding regulatory issues for the sugar market.



Kakira Sugar Estate

2.3



Projects Under Construction

SITI I



6.1 MW
INSTALLED

29 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 6.1 MW and estimated 29 GWh annual production located in Bukwo District, Eastern Uganda. Investment of USD 14.8M with USD 3.6M in GET FiT commitments. Construction

was commenced in March 2015 and Siti I is now the most advanced hydropower project in the GET FiT portfolio with expected COD in March 2017. The final steps of construction are progressing well. Had the project has not faced delays in shipping of critical materials, particularly GRP pipes, even a commissioning in late 2016 would have been possible (less than 24 months!).



MUVUMBE



6.5 MW
INSTALLED

31 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 6.5 MW and 31 GWh annual production. The project located is in Kabale district. Investment of USD 14.1M with USD 4.5M in GFPPM commitments.

The project commenced construction works in September 2015 and has progressed well. Unfortunately, Muvumbe has experienced some minor delays during the latter stages of construction due to a range of external factors, including i) local political challenges, ii) interconnection issues and iii) shipping delays. Nonetheless, the project is still on track for COD in March 2017 and will become one of the first GET FiT hydropower projects to be operational.



NKUSI



9.6 MW
INSTALLED

46 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 9.6 MW and 46 GWh in annual production. The project is located in the Kibaale and Hoima districts. Investment of USD 23M with USD 6.5M in GFPPM commitments. The project commenced construction in June 2015, and expected COD is in Q1 2018. Nkusi HPP has several unique

features, with access only by barge and boat via Lake Albert and a spectacular access to the intake via a suspended footpath navigating the vertical cliffs over Nkusi falls. It is the only GET FiT project designed with a tunnel, and the developer struggled to obtain viable quotations from tunneling contractors. They therefore decided to go ahead and construct the tunnel themselves, directly employing staff and procuring tunneling machinery. The project is currently facing interconnection challenges. A planned 132/33 kV substation nearby will be vital to ensure full power evacuation, but implementation is currently behind schedule. ERA, GET FiT and other GoU entities are following up on this issue to mitigate or reduce the risk.



RWIMI



5.5 MW
INSTALLED

27 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 5.5 MW and estimated 27 GWh annual production, located in Kasese district. Investment of USD 20.8M with USD 3.9M in GET FiT commitments.

The project reached financial close and initiated construction works in July 2015, and expected commercial operations date is Q3 2017. The power evacuation line is already completed, which is encouraging. However, the developer has encountered challenging conditions during the construction of the dam. A main contributor in this regard has been unusual flooding into the dry season. Moreover, the excavation of the waterway has proven to be more time-consuming than foreseen.



NYAMWAMBA



9.2 MW
INSTALLED

39 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 9.2 MW and estimated 39 GWh annual production, located in Kasese district. Investment of USD 26.8M with USD 5.8M in GET FiT commitments. The project started construction in Q4 2015, and the expected

commercial operation date is Q1 2018. While construction start was originally planned for June 2014, the project experienced significant delays due to flooding, which damaged critical access infrastructure (road and bridge) and required redesign of the scheme. Nyamwamba will require a 17 km dedicated medium voltage line for interconnection to the national grid, which REA is committed to construct. In 2016 Nyamwamba has progressed well. Construction of weir, intake and headrace pipe is on schedule. Despite a challenging river with rapid floods and rough sediment transport, progress on the weir site is notable.



LUBILIA



5.4 MW
INSTALLED

25 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 5.4 MW and expected 25 GWh annual production, located in Kasese district. Investment of USD 18.7M with USD 3.2M in GET FiT commitments. The developer commenced

construction in March 2016 after clearing the final environmental and social CPs. Expected commercial operation date is Q4 2017. Works at the forebay, intake weir and sedimentation basin are progressing well. Excavation of the headrace canal and penstock have both commenced in a steep and challenging terrain. In terms of interconnection, Lubilia is ideally placed only 3.2 km from the existing grid, and grid interconnection is not likely to represent any challenges.



WAKI



4.8 MW
INSTALLED

25 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 4.8 MW and estimated 25 GWh annual production located in Hoima and Bulisa District, Western Uganda. Investment of USD 18.1M with USD 3.6M in GET FiT commitments.

The developer launched construction activities in May 2015 and saw rapid progress on the access roads and headrace canal. However in 2016, the progress was hampered due to difficulties reaching financial close. Financing is now secured and we expect the project to be largely back on track towards a late 2017 commissioning.



SITI II



16 MW
INSTALLED

72 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 16 MW and estimated 72 GWh annual production located in Bukwo District, Eastern Uganda. Investment of USD 33M with USD 10.2M in GET FiT commitments.

The project started construction in August 2016, with expected commercial operation date in Q3 2018. In the long term, full and adequate power evacuation for Siti II depends on the progress of the Mbale–Bulambuli 132 kV transmission project. Implementation of the latter will not be possible prior to commissioning of the HPP, hence an interim medium voltage solution is being constructed by REA to enable the timely interconnection of the plant (see section 4.2 for details).

SINDILA



5 MW
INSTALLED

27 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 5 MW and 27 GWh expected annual production located in Bundibugyo district. Investment of USD 17M with USD 3.3M in GET FiT commitments.

Sindila was the last project to be selected from the second Request for Proposals (RFP) round, after a re-appraisal of the project was conducted in October 2014. Construction started in early 2017 and expected commercial operation date is in Q3 2018. Reinforcement of the 87 km long 33 kV line from Bundibugyo to Fort Portal is required to ensure viable power evacuation from the power plant and is financed under the GET FiT interconnection support component, which will also benefit the GET FiT approved and neighboring project Ndugutu HPP.



KYAMBURA



7.6 MW
INSTALLED

36.7 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 7.6 MW and 36.7 GWh in annual production. The project is located in the Rubirizi district. Investment of USD 24M with USD 5.4M in GET FiT commitments.

Approved for GET FiT support after RFP 3 in November 2015. Preliminary construction commenced in early 2017, with expected COD in Q4 2018. The project is currently implementing a major design change. The previous headrace tunnel is being replaced by a headrace canal. Importantly, this significantly reduces project costs and construction time for the project. However, continued GET FiT support is currently uncertain due to a number of challenging conditions that need to be met in a short time frame.



TORORO SOLAR



10 MWP
INSTALLED

16.7 GWH
P/YEAR

Ground mounted solar PV power plant, located in Tororo district, with a planned peak capacity of 10 MWP and an average annual energy production of 16.7 GWh.

Investment of USD 20M with USD 8.6M in GET FiT Commitments. After experiencing various delays throughout 2016, the project was able to break ground in late 2016. The developer expects to reach COD in Q3 2017. To achieve the general ambition of a short construction period, it is particularly important to proactively address any unforeseen issues along the way. The GET FIT supervision team will make efforts to maintain flexibility in its supervision and support to help the developer achieve this goal.

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Projects Under Development

KIKIGATI

16 MW
INSTALLED115 GWH
P/YEAR

Run-of-river hydropower plant with a planned installed capacity of 16 MW and 115 GWh annual production located in Isingiro district, Southern Uganda on the border to Tanzania. Investment of USD 51.1M with USD 12.3M in GFPPM commitments.

After two years standstill, the Governments of Tanzania and Uganda signed a bilateral agreement for implementation of the project in 2015. This enabled the new owner, Berkeley Energy, to resume preparatory work. However, due to continued cross-border issues and difficulties in implementing bilateral agreements, the project has struggled extensively to achieve financial close and construction start. While a few outstanding issues remain, progress on cross-border issues has been notable and the project now expects to commence construction within the first half of 2017.

NYAMAGASANI I

15 MW
INSTALLED64 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 15 MW and 64 GWh in annual production.

The project is located in the Kasese district. Investment of USD 36.7M with USD 9.4M in GFPPM commitments. Approved for GET FiT support after RFP 3 in June 2015. DFA signed in 2016. Construction start is expected within Q1 2017.

NYAMAGASANI II

5 MW
INSTALLED25.5 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 5 MW and 25.5 GWh in annual production. The project is located in the Kasese district. Investment of USD 19.8M with USD 3.7M in GFPPM commitments.

Approved for GET FiT support after RFP 3 in June 2015. DFA signed in 2016. Construction start is expected within Q1 2017. The Nyamagasani projects both benefit from the GET FiT interconnection support component, which includes the provision new 33 kV lines and the reinforcement of the existing local networks to fully evacuate power from the plants.

NDUGUTU



4.8 MWP
INSTALLED

22 GWH
P/YEAR

Run-of-river HPP with a planned installed capacity of 4.8 MW and 22 GWh in annual production. The project is located in the Bundibugyo district. Investment of USD 15M with USD 3.2M in GFPPM commitments.

Approved for GET FiT support after RFP 3 in June 2015. DFA signed in 2016. Construction start is expected in mid-2017, with planned commissioning in Q4 2018. The project will benefit from the already initiated works on access roads etc. from its neighboring project Sindila. The developer is currently considering a design change, specifically moving the intake location and headrace to create more head and thus increase the power output of the plant. However, time is running out for major changes like this, and the decision to actually proceed with the change is currently being discussed.

2.4 Expected Portfolio Output

Overall, the GET FiT portfolio stands at a total of 17 projects, yielding a planned generation capacity of 157 MW and 769 GWh of annual energy production. Three technologies are supported, including hydro (14 projects), solar PV (2 projects) and one bagasse-based power plant. The overall move from

development to construction stages has taken the portfolio to a higher level of certainty, and increased the confidence in achieving Program targets to a large extent. The figures below provide an overview of the portfolio, and illustrate the expected build-up of installed capacity and annual generation from the portfolio.

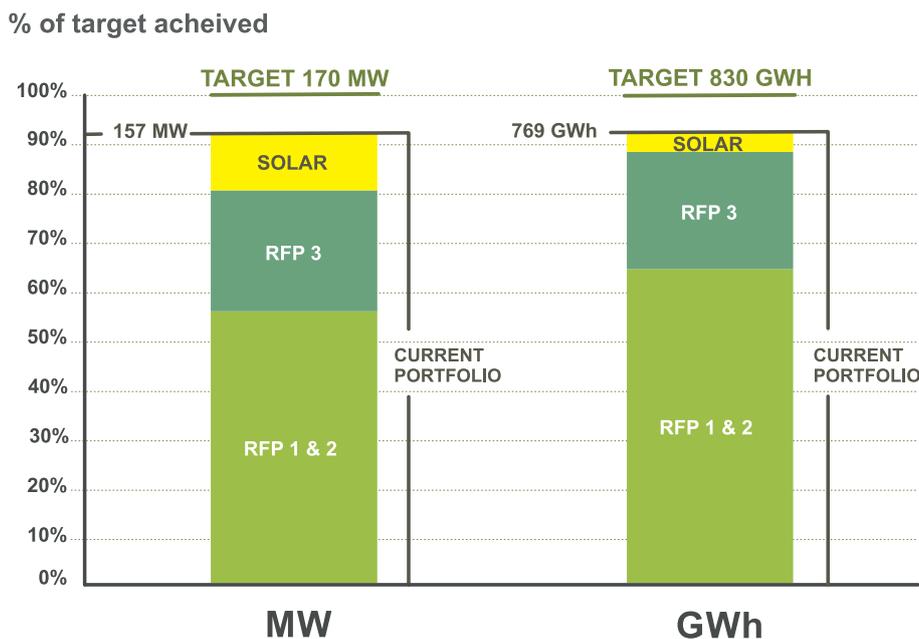


Figure 1: GET FiT portfolio build up and original targets

The figure below illustrates the indicative portfolio build-up with time. The majority of approved projects are expected to reach commercial operation by end of 2018. It should be noted that

the projection is subject to the uncertainty of one or more projects failing to reach financial close and dropping out of the portfolio.

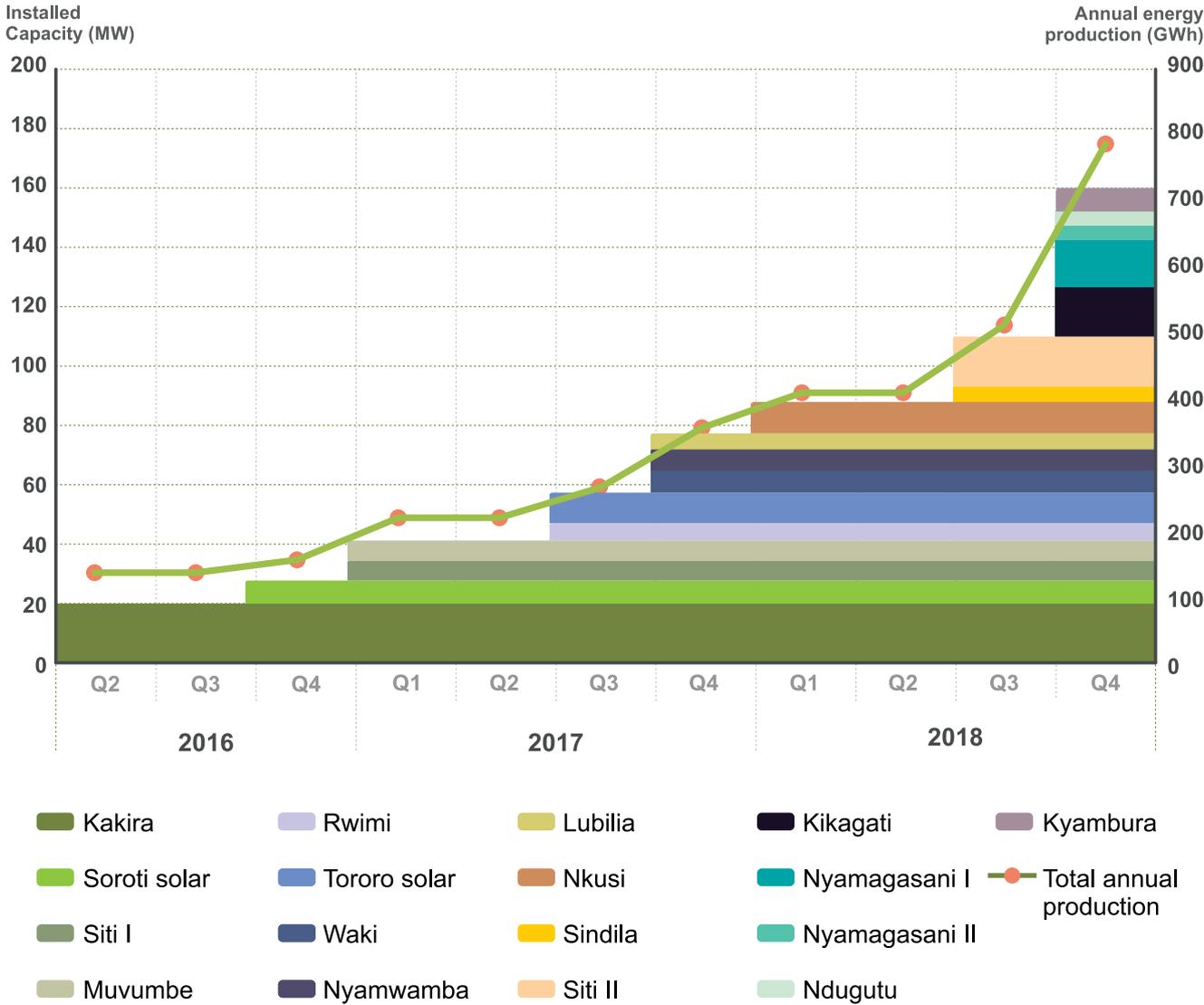


Figure 2 GET FIT implementation timeline

2.5 Re-appraisal of Projects

As the GET FiT Program is now moving towards the end of its window of opportunity, certain projects are facing pressure to meet deadlines, reaching financial close and commencing construction. There is a risk that one or several projects within the existing portfolio may lose the support of the GET FiT Program. In order to enable potential swift replacement of any project(s) dropping out of the portfolio, a process was initiated by ERA and KfW to re-appraise three projects that had

previously applied, but not been granted GET FiT support.

The re-appraisals are ongoing, and will critically review and determine whether these projects have seen sufficient progress against the scoring criteria to be accepted. Upon approval of any of these projects, they would be included as reserve projects, with the potential to obtain partly or full GET FiT support in the event of projects dropping out of the current portfolio.



3

MANAGEMENT OF ENVIRONMENTAL & SOCIAL PERFORMANCE

3.1

Environmental and social benchmark

Sound management of environmental and social risks protects the environment, safeguards project-affected people and workers, secures a social license to operate and guards against a variety of risks during construction and operation.

Projects receiving GET FiT support are therefore expected to comply with Ugandan regulations as well as international standards, particularly the environmental and social performance standards (PS) of the International Finance Corporation (IFC). The IFC PS act as a global benchmark and

are widely applied by international financing institutions and private investors, which also make these a convenient common reference point in multi-donor funded initiatives like GET FiT. It is important to note that the Ugandan regulations and the IFC PS overlap greatly, though there are also some important differences. Examples of differences include the IFC PS requirement of compensation for loss of assets based on full replacement cost (market value + transaction costs) rather than Uganda's requirement of using depreciated value, and the IFC PS requirement for biodiversity offsets when a project impacts a protected area such as a national park (no such requirement in current Ugandan legislation).

Challenges in compensation

Example from LUBILIA small Hydropower Project

The Lubilia Small Hydropower Project in Western Uganda, developed by DI Frontier Market Energy and Carbon Fund, started construction in February 2016. Like in many projects, project-affected people (PAPs) have a strong preference for the immediate and tangible cash compensation rather than in-kind compensation. Despite the risks of cash compensation and efforts by the Developer to encourage at least partly accepting

compensation in-kind, Mr. Simon Nyamusule (35 years old) was one of the PAPs who repeatedly insisted on receiving the full compensation in cash rather than in-kind, even though the project meant his house had to be taken down and this left his family in a vulnerable position.

Instead of acquiring a new house, Simon lent the compensation money to his brother to do business in neighbouring DR Congo. Unfortunately, the money was lost. Being unable to acquire a new house for his family, he came back to the Project to request for assistance. Following discussions over considerable time, the Project agreed to

partly support Simon in acquiring half an acre of land, assisted in securing a job with the Project and to save part of his salary to pay for land, plant maize with support from the Project’s livelihood restoration activities and harvest and sell maize with some profit. The Developer continues to follow up closely and provide non-cash support to Simon, so that he can sustain his family and gradually hopefully complete the construction of his house.

GET FiT encourages developers to provide additional incentives for PAPs to choose in-kind rather than cash compensation, acknowledging that developers cannot force PAPs to accept in-kind compensation. When PAPs make decisions that later prove unfortunate, a responsible developer goes an extra mile to assist people to help themselves, like in this case. and the decision to actually proceed with the change is currently being discussed.



Simon Nyamusule (left) with the Developer’s Community Liaison Officer, Mr. Jeremiah Kimeze, in front of the productive maize field.

From vulnerability to livelihood improvement

Example from RWIMI Small Hydropower Project

The Rwimi Small Hydropower Project acquired land from more than 90 households. Mr. Semu Mumbere, supporting a family of eight persons, lost a large share of his land and was therefore categorised as a vulnerable PAP. Semu received a compensation of 2.8 million Ugandan shillings (about USD 1,000 at the time), a very large amount of cash by local standards, but money that Semu carefully placed in family priority areas: ‘During compensation for my land, I received 2.8 million which helped me to construct a permanent good house and with the balance I attained another land which is about 1 acre with good fertile soils’. As a vulnerable PAP Semu received priority in terms of employment, and he has been working with the Project since the construction start in 2015. Semu has been a hard-working employee,

and his efforts were recognized and resulted in a daily salary increment from UGX 7,000 to UGX 10,000. He has also received seeds for three seasons, saplings for two seasons, goats and poultry as part of the livelihood restoration plan. Through his salary and the Project’s assistance, Semu Mumbere has been able to increase his livestock gradually to 10 goats and even a cow. In addition, he has been able to pay his children’s school fees on time and managed to put small solar panels on his house. His hard work, combined with trainings on intensive agriculture, poultry practice, goat rearing, and domestic cash flow management, has placed him and his family in an improved situation despite the potential vulnerability induced by the Project’s land take. GET FiT continues to encourage project developers to prioritise vulnerable PAPs in livelihood restoration, to identify their particular needs and priorities and to use this information in tailoring livelihood restoration to individual

PAPs. Developers are also required to follow up and monitor vulnerable PAPs as part of efforts to ensure that the livelihoods of vulnerable PAPs are as a minimum restored, preferably improved.



Mr. Semu Mumbere at work for the Rwimi Small Hydropower Project.



Semu's wife picking up the poultry (1 cockerel, 2 hens) provided by the Project as part of livelihood restoration



Example of community development efforts

Siti 1 Small Hydropower Project

The Siti 1 project on the northern side of Mount Elgon in Eastern Uganda is one of several hydropower projects with a land take that impacts more than 100 households. Beyond the livelihood restoration for those directly affected by the Project, the developer also seeks to invest in long-term community development through building skills and empowering project-affected

people as well as other community members. One of the activities is training of mostly women as birth attendants.

The training of 35 people built their capacity, which also came with a considerable sense of pride in their new skills, and provides a source of income for their families. These skills also secure important benefits through safer births for the remote community that has limited access to health facilities.



A group of future birth attendants in gear provided by the Project, ready for a training session.

3.2 GET FiT follow-up and support

As highlighted in previous GET FiT Annual Reports, the capacity of developers to manage environmental and social risks, including health and safety, has been lower than expected. Weak capacity was reflected in the low environmental and social scores during appraisals of applications for the GET FiT premium payment mechanism. An anonymous survey among developers in 2015 also confirmed that few of the developers had experience from implementing projects in line with the IFC performance standards prior to GET FiT.

Consequently, GET FiT has spent considerable time advising developers on E&S issues. Support from GET FiT also included environmental and social workshops for small hydropower, biomass and solar developers and their consultants in June 2014 and October 2015. In 2016, developers continued to express a high demand for GET FiT

engagement on management of environmental and social risks. Additional resources have been provided by KfW, and GET FiT in cooperation with ERA continued to support developers in this respect.

With more projects moving into construction, much of the follow-up in 2016 was in the form of supervision visits to construction sites. The GET FiT Implementation Consultant carries out a semi-annual one-day supervision visit to each project under construction to monitor and advise on environmental and social as well as technical issues. Action points are identified in each supervision visit. One of the projects with particularly weak environmental and social management systems is visited quarterly. The supervision visits continue to prove useful and a necessary part of managing environmental and social risks. A total of 18 project supervision visits to ten projects were made in 2016.

3.3 Performance – improvements and remaining challenges

Overall, the environmental and social performance improved in 2016. However, progress is uneven between projects, and this appears to be largely related to variation in the level of internal environmental and social capacity with the developers as well as the degree to which the environmental and social standards are firmly embedded in developers' strategies and seen as a priority at senior management level. During GET FiT, some developers have made impressive improvements in their capacity to manage

a range of environmental and social issues. As a consequence of GET FiT, there is now a considerably higher degree of compliance with Ugandan and international standards than would otherwise have been observed.

Prior to GET FiT, most developers had not gone through full project cycles from project development to operation following international performance standards. Moving from planning to construction, developers now experience new challenges in practical implementation of environmental and social measures, including

ensuring contractors understand and adhere to the developers' management plans and standards. Continuous improvements are required. GET FiT believes that once developers have gone through the steps from project development to operation, they will have improved planning and implementation capacities considerably.

Unfortunately, 2016 saw the first fatality reported among construction workers for a GET FiT supported project in a traffic related accident. The developer and contractor in question are working to support the family who lost the husband and father. During a supervision visit in 2016, GET FiT noted systematic weaknesses and unacceptable safety measures on this construction site. GET FiT therefore requested that certain high risk construction activities were suspended until appropriate safety measures were put in place, despite the critical nature of these activities for the project construction timeline. GET FiT further requested an independent audit of the Contractor's site practices to verify that improvements had been implemented. Following this audit, an unannounced inspection was carried out by GET FiT to check that improvements continued to be

implemented. We were content to note that this inspection showed great improvements.

The GET FiT Investment Committee defined more than 50 environmental and social conditions precedent (CPs) across the three RfPs. This large number of CPs reflects the overall low environmental and social capability of project developers and their consultants, particularly gaps in environmental and social impact assessments (ESIAs), resettlement action plan (RAPs), environmental and social management or action plans (ESMPs or ESAPs) and livelihood restoration plans (LRPs). Fourteen CPs across seven projects were cleared in 2016. Cumulatively, about 70 % of the environmental and social CPs have now been cleared. Four projects still need to clear CPs prior to construction start.

Based on environmental and social grounds, one approved project had its support revoked by the GET FiT Steering Committee in 2015. No support was revoked in 2016. There are, however, projects that need to improve their environmental and social performance to achieve COD in compliance with standards and hence be approved for the first disbursement of the GET FiT premium payment.

For more information, see Figure 7 on page 37 in the GET FiT Annual Report 2015.

For more information, see text box on page 38 in the GET FiT Annual Report 2015.

A closer look at displacement for hydropower projects

Relatively abundant rainfall in Uganda not only provides the basis for hydropower production but also widespread rainfed subsistence agriculture and a high population density with small land plots in most of the project areas. Consequently, displacement of people is one of the main issues that projects need to carefully manage to minimise impacts on local people and to reduce project risks associated with sensitive issues regarding land, compensation and livelihood restoration. Some experiences with handling of displacement in the small hydropower projects are summarised below but is limited to physical and economic displacement and not associated issues such as potential food insecurity, landlessness and marginalisation. As will be seen below, there is great variation in the degree to which developers have been able to avoid displacement.

Highly variable extent of displacement

There are two forms of displacement. Physical displacement refers to relocation or loss of shelter. Economic displacement refers to loss of assets or access to assets that leads to loss of income sources or other means of livelihood. Project-related land acquisition as well as restrictions on

land use can cause displacement.

Based on data available at the time of GET FiT project approvals, the small hydropower projects were estimated to cause physical displacement of about 150 households and economic displacement of about 1,400 households. It is important to note that most of the economically displaced households only lost a small proportion of their land.

GET FiT has observed great variation in the degree to which projects have managed to avoid and minimise land take and displacement. There is a trend of more displacement when land take grows (see Figure 3 below). There is an exception to these trends as some projects have very limited or no displacement despite a relatively large land take. The latter group of projects are located in drier areas without significant agricultural production, with very low population density and therefore a limited incentive to minimise land take. About 87% of the projects (13 out of 15) have a land take below 1 hectare per GWh of estimated annual power production. Of the two projects with a larger land take than 1 ha/GWh, one has a reservoir with considerable inundation and the other is in a dry area without agriculture and no strong incentive to minimise land take. A group of four projects (27%) cause very limited displacement (physical and economic), less than 0.5 households per GWh of estimated annual power



production. The rest of the projects impact more than 2.3 households per GWh. The main difference between these two groups of projects is level of rainfall in the project areas and consequently extent of agriculture and population density. Within the second group of projects (those in areas

with considerable rainfed agriculture), there is large variation in impact levels. Here, the ability of developers to adjust project design to avoid displacement is an important factor influencing levels of displacement and associated risks.

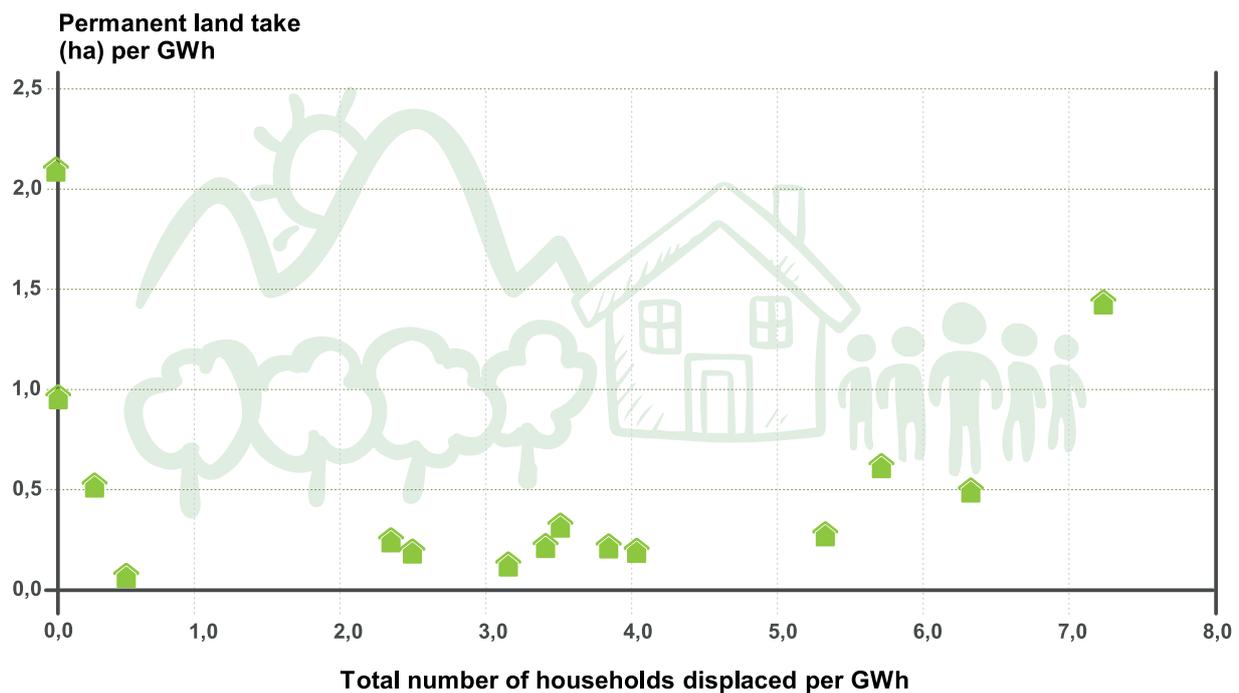


Figure 3: Land take (in hectare) per GWh (estimated annual power production) plotted against total number of displaced households (physical and economic displacement) per GWh for 15 small hydropower projects approved for GET FiT support.³

If we split total number of displaced households into physical and economic displacement, Figure 4 shows a general trend of physical

displacement increasing with the extent of economic displacement. This figure also shows two main groups of projects in terms of physical

³Data are taken from studies done prior to GET FiT approval. For some projects, the extent of land take and displacement have increased during detailed design and construction. These increases will be reported on later.

displacement. Nine projects (60 %) have avoided all or virtually all physical displacement, four of which have also fully or nearly fully avoided economic displacement. These projects are in areas generally not suited for agriculture and with very few people, typically further downstream in catchments where climatic conditions are drier. The other five of the nine projects in this group

have managed fully or largely to avoid physical displacement even if located in areas with rainfed agriculture and higher population density. On the other side, a group of four projects causes the highest levels of physical displacement, all have recorded more than 0.74 households physically displaced per GWh of estimated annual power production.

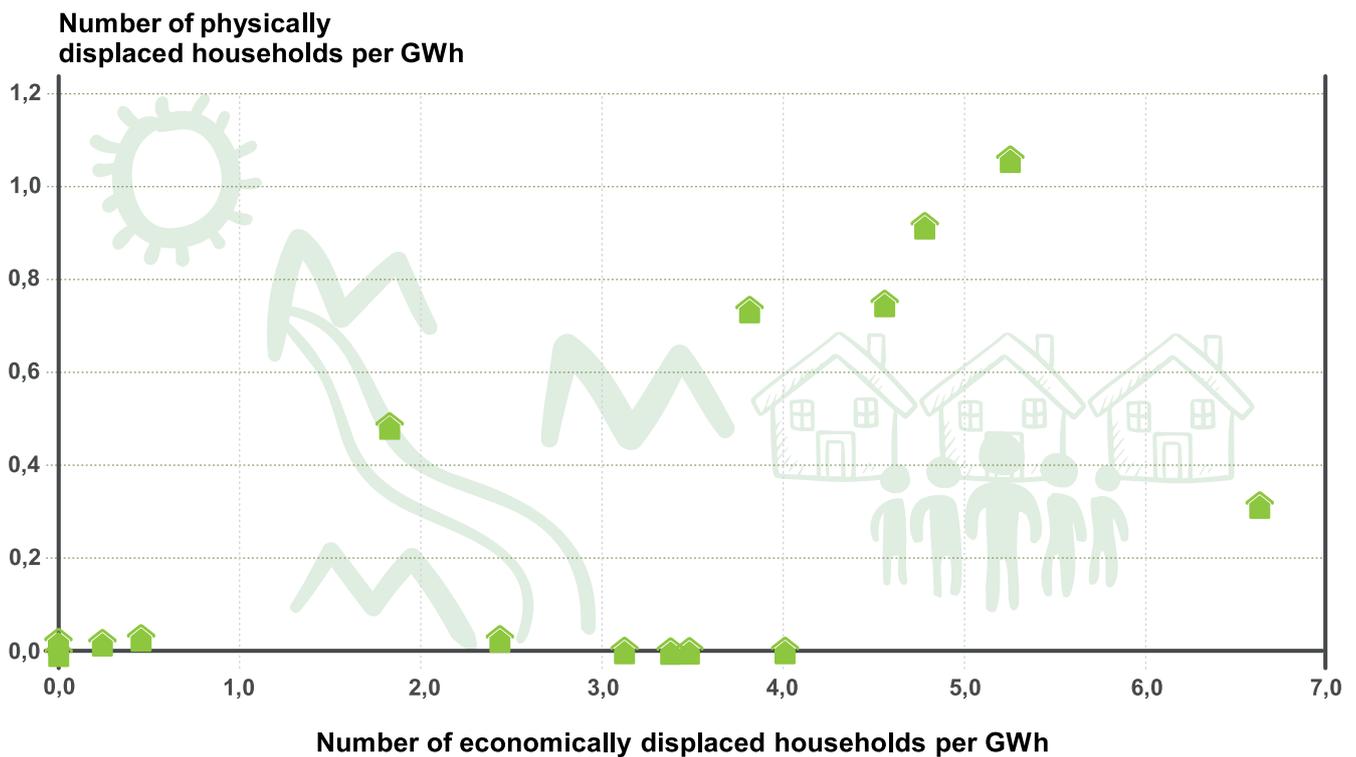


Figure 4: Number of physically displaced households per GWh (estimated annual power production) plotted against number of economically displaced households per GWh for 15 small hydropower projects approved for GET FiT support.

Some GET FiT experiences from engagement with developers

The above shows the need for GET FiT's to focus on management of displacement. Project developers were expected show that they had avoided displacement as far as possible, and when avoidance was not possible, minimise displacement by exploring alternative project designs. The degree of success in avoidance varied considerably, partly

due to the developers' planning capacities and partly due to the topographical and climatic conditions at project sites. For those displaced, the livelihoods and standards of living should as a minimum be restored, preferably improved. Appropriate compensation and livelihood restoration plans were therefore essential and a focal issue for GET FiT. Developers overwhelmingly relied on cash compensation, which was the preference over land-for-land and house-for-house compensation among communi-

ties, despite the risks in terms of long-term livelihood security when cash compensation is used. Cash is also a simple form of compensation for the developers, at least in the short-term. GET FiT requested developers to do more to raise awareness and incentivise compensation in-kind rather than cash, particularly for vulnerable persons, and to monitor whether livelihoods are restored. The lack of developers' experience from long-term engagement with project-affected persons, particularly vulnerable people, contributed to the bias towards cash compensation.

Categorising project-affected people and clearly distinguishing between those affected only marginally on the one side (most PAPs) and those who are substantially affected and left in a vulnerable position on the other (few PAPs), was another challenge. For the first group, cash compensation may not jeopardise living standards as most of the livelihood base remain unaffected. The second group is potentially much more vul-

nerable as they may have lost a large proportion of their land, remain with land of poor quality or their ability to sustain themselves has otherwise been reduced. GET FiT requested most developers to revise resettlement action plans and livelihood restoration plans to better differentiate livelihood restoration approaches according to PAPs' vulnerability.

Some developers make commendable efforts to work with local civil society organisations (CSOs) that have experience in community work as part of livelihood restoration. Experiences are mixed as abilities of the CSOs have proved variable, underlining the importance of good selection processes for partners in livelihood restoration.

Implementation of resettlement and livelihood restoration plans is ongoing and the degree to which projects manage to restore, or improve, livelihoods in a sustainable manner will be reported on later.

4

OTHER ACTIVITIES AND ACHIEVEMENTS

4.1

GET FiT Forum 2016

ERA held a two day GET FiT Forum on 30 – 31 May 2016, funded by the GET FiT Facility. The first day comprised a public multi-stakeholder event aimed at addressing the broader topic of private sector investment and small-scale RE project development in Uganda. The event also served as a publicity opportunity to communicate the achievements of the GET FiT program as well as to review lessons learnt from the program’s implementation phase. The event provided a platform to discuss the future of private sector investment in the Ugandan RE sector, and the future role of public, private and commercial investors and financing institutions. The public event closed with a celebratory dinner for key stakeholders and GET FiT representatives hosted by ERA. The ERA launched its new corporate identity during the dinner.

The second day of the Forum consisted of technical level workshops for ERA staff. The workshops were prepared and administered by Multiconsult in cooperation with the Investment Committee members (Anton Eberhard, Vincent Kasangaki, Sylvia Kreibiehl and Jim Cohen). The objective of the workshops was to share experience from project appraisal and supervision through interaction with the experts of the GET FiT Investment Committee and Implementation Consultant. Through various technical sessions, key experiences, lessons learned and insights of the international experts were shared with the ERA team. Important inter-disciplinary dependencies between environmental and social, technical and economic aspects were discussed during the sessions.



Panel discussion at the GET FiT Forum (Photo: GET FiT)



Environmental & Social

A joint session on management of environmental and social impacts and risks covered three main areas. Firstly, the overall appraisal and scoring frameworks applied in GET FiT were summarised. Secondly, the main appraisal and scoring elements and issues were presented. Finally, some lessons and experiences from the appraisals and construction supervision visits so far were highlighted. A break-out session with ERA environmental and social staff went into further details on management of environmental and social risks.

Technical

The procedures and lessons learnt from technical appraisals of GET FiT applicant projects were presented briefly in a joint session for all participants. More detailed discussion between technical ERA staff and the Implementation Consultant were held in a break-out session. It was discussed how ERA and developers can build on lessons learnt from GET FiT (in particular with regards to hydrology assessment and plant optimisation), to ensure efficient implementation of RE projects going forward.

Economic & financial

The session on economic and financial appraisals was carried out with ERA staff, but a few donors and members of the Investment Committee attended as well. The session covered three main areas. Firstly, the overall appraisal and scoring frameworks applied in GET FiT were summarized, as were the results and implications for the applicant projects under RFP2 and 3. Secondly, the specific relevance and points of emphasis for ERA, as the regulator, were discussed in detail. Thirdly, the specific nature and implications of limited-recourse project finance as applied in most GET FiT projects was presented and discussed. Throughout the session, project fundamentals (e.g. capex/MW, plant factors, key risk factors) were emphasized and the influence on financial viability and bankability were addressed. Investment Committee members participated actively in the discussion, providing practical insights and suggestions. The session was rounded off by a group case-study regarding one of the applicant projects from RFP 3, and a final round-the-table comment period regarding key takeaways for ERA from the GET FiT financial and economic appraisal approach.

power

4.2 Grid interconnection

The adequate and timely interconnection of GET FiT projects to ensure power evacuation remains as a key risk for several projects and currently represents the single most considerable risk to achievement of GET FiT targets. Moreover, it to an increasing degree represents a risk to the Government in form of potential deemed energy⁴ obligations.

In 2014/15, development partners agreed to provide additional financial support to strengthen critical grid infrastructure and regulatory capacity for effective evacuation of power generated by the GET FiT projects.

Investments implemented under GET FiT governance.

As part of their overall commitment to the GET FiT Program, UK DFID has contributed a GBP 14.7 million grant to address urgent grid investments, combined with comprehensive technical assistance to ERA. All the infrastructure investments are under full implementation and currently at procurement stages. Construction for these interventions will commence at full scale in 2017. The projects are summarized in the table below.

Table 2 Critical grid infrastructure investments and TA implemented under GET FiT governance

Item	Required Intervention	Project owner	Source of funding	Estimated investment need (MUSD)
1	Opuyo Substation reinforcement	UETCL	UK DFID	5.8
2	Reinforcement of 33 kV networks in Western Uganda	UETCL	UK DFID	13
3	TA support to ERA	ERA	UK DFID	3.7
Total investment need				22.5

33 kV Upgrades in Western Uganda

GoU through KfW has received funding from UK’s DFID for the upgrade of selected 33 kV lines necessary for the grid integration of four GET FiT projects in Western Uganda, as identified by the power sector joint task force. The REA, through KfW, has procured the services of Consultant Sweco in 2016 to design and supervise

the implementation of the lines. Sweco has kicked off the project and is currently undertaking technical and environmental surveys towards the design and construction of the lines. The upgrades are expected to be ready in 2018.

Opuyo Substation

The Opuyo substation was identified as a key substation for the development of the vast solar power

⁴Deemed energy is energy which could have been produced at a generating facility but is not due to insufficient grid capacity. This represents an income loss to the power plant owner, which must be compensated by GoU.

potential in the East, including the just commissioned Soroti solar project. Additionally, the substation has reliability constraints due to the fact that it has only one transformer. Upgrades are required to improve the grid stability and security by providing transmission infrastructure with adequate flexibility. GoU through KfW has received funding from UK's DFID to upgrade the substation. A tender agent has been procured by UETCL with support from KfW, a supervision consultant has been selected and procurement is currently ongoing for the EPC contractor.

TA Support to ERA

The TA support to ERA was aimed at building the capacity of the regulator to effectively implement interconnection agreements for new small renewable energy projects, and to monitor the compliance of licensees with regulatory requirements. The support has involved two main components, both initiated in 2016. The first was the development of an **Interconnection and Wheeling Agreement**, which was awarded to Intec GOPA in June 2016. This TA is aimed at addressing the technical requirements for the interconnection of small-scale generators, which are insufficiently covered by the existing grid code, and to develop a wheeling agreement for power evacuation through intermediate networks to the transmission grid. The Consultant held a consultative workshop in January 2017 and the final deliverables are expected end of February 2017.

The second TA component targeted the **Optimization of Compliance Monitoring of Distribution and Transmission Licensees and Regulatory Capacity Building**. The overall objectives for this TA were to equip ERA staff with the procedural, technical, economic and envi-

ronmental competence to perform its mandate as regulator of the transmission and distribution sub-sector in line with international best practice and to establish licensing and performance monitoring processes for all present and future transmission and distribution licensees. The consultancy was awarded to the joint venture between Azorom, Fichtner and Kaizen Africa in November 2016. The consultant held a kick-off meeting in December 2016 and the assignment is well underway.

In an effort to maintain the favorable Renewable Energy Investment climate in Uganda, ERA with support from the GET FIT TA Facility revised the Renewable Energy Feed in Tariffs (REFiT) in July 2016. A main target was to maintain the financial viability of future projects being developed without the support of GET FiT, and ERA approved the new tariffs for the period 2016- 18. The tariff review was conducted in cooperation with Frankfurt School, and included hands-on training for ERA staff within establishment of benchmark energy generation costs and tariff modeling. Following the tariff review, cost reflective REFiTs were established for most technologies, including small hydropower and bagasse. For solar PV, no reasonable tariff could be determined taking dynamic panel prices into account. Hence tendering will be adopted as the main approach for solar PV development, to achieve competitive tariffs.

Finally, ERA and GET FiT are currently developing a new technical assistance component to implement a modern regulatory IT system for ERA. This has been identified by the Authority as a key need in adopting and institutionalizing their increasingly comprehensive regulatory framework and competence base, and to make their general operations more effective and efficient.



Stakeholder workshop by Intec GOPA on the Interconnection and Wheeling Agreement TA at Golf Course hotel, Kampala (source: GET FiT)

Other key grid investments supported by development partners

In addition to the above listed interventions, the World Bank and the Government of Germany have committed

to provide financing towards implementation of critical grid infrastructure (subject to positive appraisal), as presented in the table below.

Table 3 Critical grid infrastructure investments and TA implemented under GET FiT governance

Item	Required Intervention	Project owner	Source of funding	Estimated investment need (MUSD)
4	Nkenda Substation reinforcement	UETCL	World Bank	16
5	Mbale – Bulambuli 132 kV line **	UETCL	Germany (loan)	40
Total investment need				56

A brief description and status update on implementation of these interventions is provided below.

Nkenda Substation

The Nkenda substation in Kasese is pivotal to the electrification of Western Uganda and for the power evacuation of existing and pipeline small hydro power projects in the area. Six GET FiT projects with a cumulative generating capacity of 48 MW will be evacuated through Nkenda substation. Three of the projects are already under construction, with one expected to reach COD in mid-2017. With a current capacity of 40 MVA, the substation will need to be upgraded to cater for the new and pipeline projects. The World Bank has secured funding for the required upgrade of the substation from 40 to 120 MVA for this purpose.

Based on the planned commissioning of GET FiT projects, implementation of the Nkenda substation reinforcement must be maintained as a key priority in order to minimize deemed energy obligations. The latest updates are as follows:

The selection of the supervision consultant by UETCL is complete, pending approval of the World Bank. UETCL implementation timeline foresees 9 months procurement and 18 months construction. Realistic best case is

mid-2019, so deemed energy risk remains high.

Mbale – Bulambuli Transmission Project

The new 132 kV Mbale – Bulambuli transmission line will be required for the efficient evacuation of the Siti 1 and 2 HPPs (23 MW) and other pipeline projects in the area. KfW through EU ITF has secured funding for the feasibility study of the line and UETCL has procured a consultant to undertake the study. Given the long lead times for the transmission line construction, the government, through ERA and REA, approved the implementation of an interim 33 kV solution to enable timely evacuation of Siti 2, which is currently under construction. However, the interim solution does not allow for full power evacuation from the Siti projects, and therefore is only valid for a limited period of time. Once the validity of this solution expires, the 132 kV line must be in place to (again) avoid future deemed energy obligations on GoU. As the study for the 132 kV permanent solution is currently behind schedule, this needs to be fast-tracked in order to avoid the latter.



The UETCL Nkenda Substation is a key component for adequate power evacuation of GET FiT hydropower projects in Western Uganda. Photo: GET FiT

It should be noted that this report only mentions (donor funded) investments directly related to evacuation of GET FiT projects, but that several other critical investments in transmission infrastructure are ongoing.

For example, the ongoing construction of the 220 kV transmission line from Nkenda to Hoima will be important for the stable evacuation of projects in Kasese and Hoima areas. Additionally, REA and Umeme will finance and construct a number of 33kV lines to interconnect

GET FiT projects to the national grid.

Although comprehensive efforts are being made by GoU and GET FiT development partners to fast-track critical grid investments, the interventions are generally behind schedule with respect to planned commissioning of the GET FiT portfolio. Continued efforts are thus crucial to avoid further delays. More details on how GET FiT addresses these challenges are provided in Chapter 5 (Program Monitoring & Risk Management).

4.3 Status of the World Bank PRG Facility

In 2014, a Partial Risk Guarantee (PRG) facility in support of small scale renewable projects in Uganda was approved by the World Bank Group Executive Board. The PRG facility was structured specifically to align with the existing GET FiT systems used to implement, manage and monitor the portfolio . The PRG facility comprised three complimentary risk-mitigating components;

i. Facilitate the provision of short term liquidity support to the benefit of UETCL's Power Purchase Agreement obligations.

ii. Termination compensation for events of governmental/utility default under the PPA / IA.

iii. Commercial debt guarantee.

Due to various reasons, GET FiT developers do not utilize the PRG facility. In some aspects, this can be viewed as positive, indicating that the investment climate (hereunder the regulatory, technical and financial frameworks) of the Ugandan power sector was sufficiently reliable and stable for developers to manage without it.

4.4 Evaluation and Performance Review

In October 2015, an independent consultant was contracted to carry out the first performance review of GET FiT Uganda. Data collection started during the last quarter of 2015 and the final performance review report was submitted in May 2016. The full report is available on the GET FiT website .

5

FINANCIAL STATUS

5.1

Funding commitments

The results-based nature of the GET FiT Program is strongly dependent upon predictable and credible commitments from funders in order to prove successful. Furthermore, it requires a certain degree of active follow-up and flexibility in order to maintain a healthy cash balance throughout the Program.

To this end, four development partners have taken up the challenge and provided GET FiT with the necessary funding; Government of Norway, Government of UK (through BEIS and DFID), Germany (BMZ, BMU) and the EU (through EU ITF).

To date, EUR 93.6 million has been committed to the Program.

DONOR	NET AMOUNT COMMITTED (EUR)
Norway (NOK)	15 590 475
UK DECC (GBP)	28 394 469
UK DFID (GBP)	14 128 113
Germany BMZ (EUR)	15 000 000
Germany BMU (EUR)	496 605
EU ITF (EUR)	20 000 000
	93 609 662

Table 4: Overall donor commitments to GET FiT. Net amounts are based on funding disbursed to the Program thus far, projected exchange rates for undisbursed funds and deduction of management fees

5.2 Foreign exchange rate developments

Foreign exchange rate developments within the financial structure of the Program reduced the overall budget by approximately 13 % as of mid-2015. Subsequently, a 1.5 million Euro budget buffer was introduced to cushion future decline in the EUR/GBP rate until remaining disbursements were made to KfW and converted in EUR. Reference is made to previous GET FiT annual reports for more details on these issues.

A limited amount of undisbursed donor funds remains at this stage, currently equivalent to approximately 8% of the total GET FiT budget. As the established buffer still leaves room for a significant level of decline in the EUR/GBP rate, the associated risk is not considered particularly high. Nonetheless, the exchange rate developments are monitored to enable measures if needed.

5.3 Disbursement projections

Committed disbursements from the GET FiT Program go towards four purposes: i) payments to approved projects, with 50 % paid at commercial operation date and 50% paid in the form of results based support over the first five years of operation, subject to actual production, ii) payments to consultants under the Technical Assistance Facility for ERA, iii) advisor and consultants for the overall management and monitoring of the Program, and iv) management fee to KfW. Figure 5 illustrates the actual (up to and including 2016) and expected distribution of committed payments for the first years of the

Program. The projections are based on agreements signed with developers thus far and status of approved projects. It is noted that consultant payments under the Technical Assistance Facility are relatively high in early years, while payments to project support are expected to take up the lion's share of the disbursements going forward. Given the expected timing of the current portfolio, the majority of commercial operation date payments are expected in 2017-2018. Due to the results-based disbursement during the first five years of operation, the final payments from GET FiT cannot be expected before 2023.

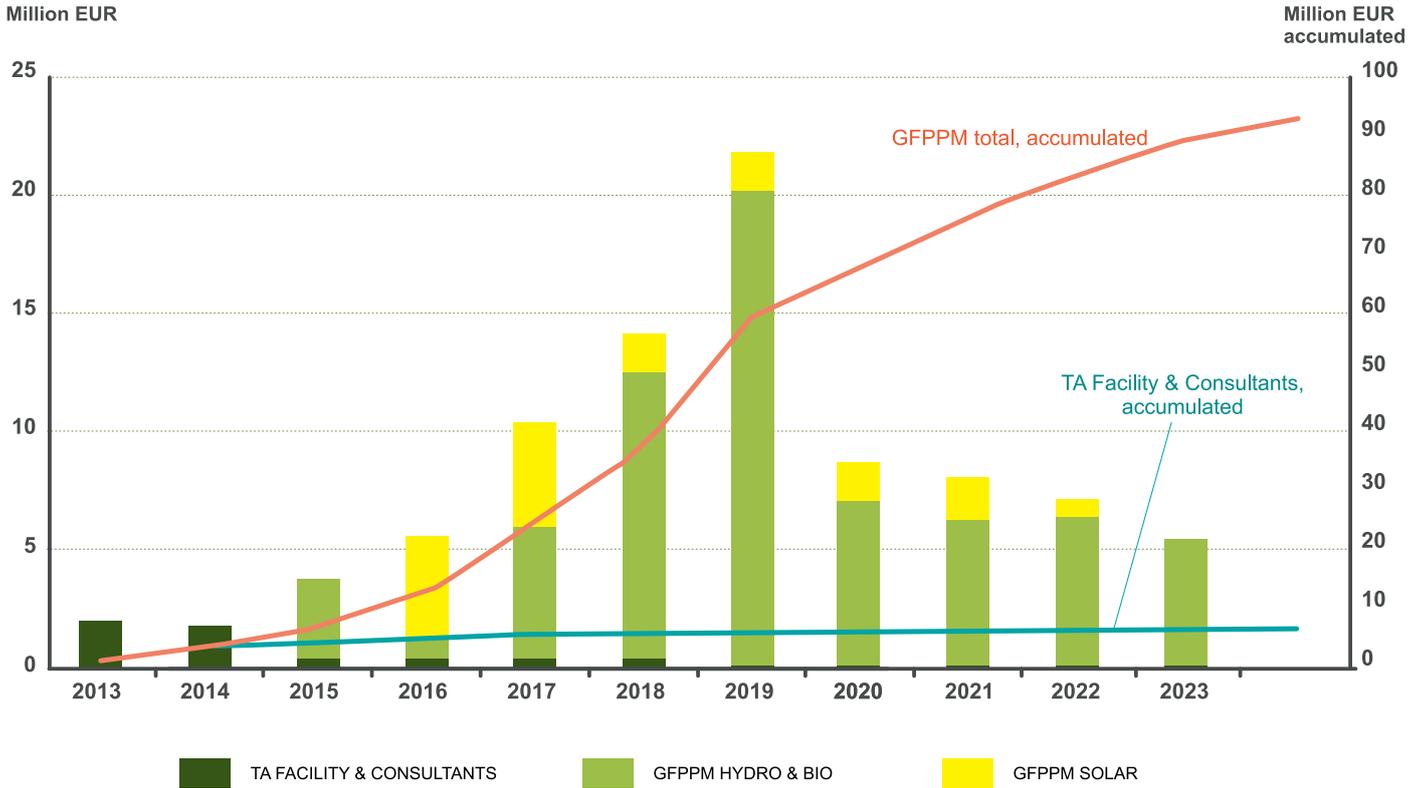


Figure 5. Projected annual payments (premium payments and consultants) under GET FiT. Projections are subject to uncertainty, mainly related to individual project progress.

Figure 6 shows the relative shares of the various cost components under the GET FiT Program, based on current budget reservations. Overall, less than 10 percent of the overall funds are tied to

management, implementation and the Technical Assistance Facility, while 90 percent of the total commitments are expected to be disbursed as premium payments.

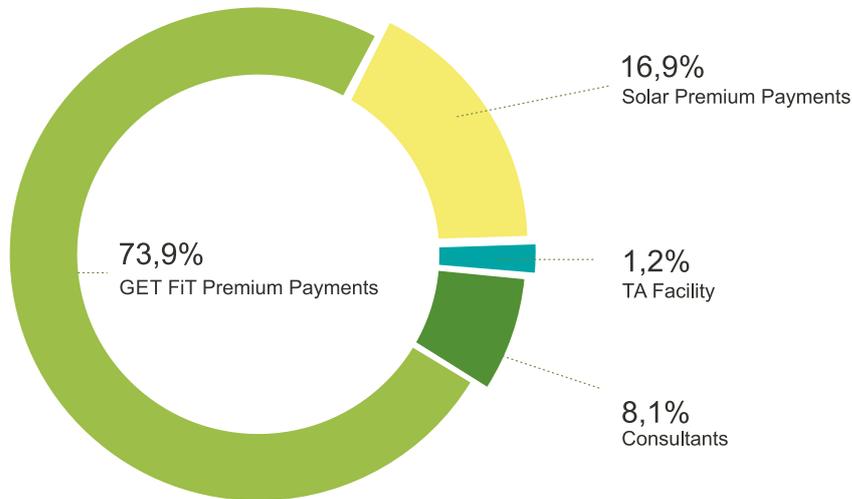


Figure 6. Approximately 90 % of commitments to GET FiT are projected to be disbursed as premium payments

6

PROGRAM MONITORING & RISK MANAGEMENT

6.1 Program monitoring

The GET FiT Monitoring and Evaluation framework monitors the outputs, outcomes and impacts generated by the Program through one or several quantitative indicators, which are collected from project developers and key sector stakeholders semi-annually. On this basis and through additional data collection, bi-annual performance reviews

and evaluations are conducted by an independent consultant. The objective of these reviews is to critically and independently assess whether GET FiT is meeting its output targets and milestones. The first performance review was conducted in 2015/16, and the report is available at the GET FiT website.

Table 5. GET FiT targeted outputs, outcomes and impact



OUTPUTS	OUTCOMES	IMPACT
1. Increased small scale RE capacity & generation.	1. Improved private sector investment environment for renewable energy in Uganda.	Uganda pursues a low carbon, climate resilient development path, resulting in growth, poverty reduction and climate change mitigation.
2. Balanced portfolio of RE technologies.	2. Improved financial stability of energy sector.	
3. Reduced GHG emissions.	3. Improved local grid stability.	
4. Increased number of Ugandan national jobs.		
5. Increased capacity of ERA.		
6. Finance mobilised for GET FiT portfolio.		

In the early years of Program implementation and with respect to portfolio capacity targets, the monitoring reported mainly on expected results based on the current portfolio status, since results could not be attributed at early development stages. With a range of projects now at financial close and under construction, it

is encouraging to present considerable progress on a range of indicators following a progressive 2016. The Logframe table below presents the progress achieved over the past year. For historical progress, refer to the previous GET FIT annual reports.

Table 6. GET FIT targets and results – status after 2016

OUTPUTS			OUTCOMES		
Indicator	Target 2023	Status 2016	Indicator	Target 2023	Status 2016
MW installed ⁶	170	99	Net change in GHG emissions (Cumulative MtCO _{2e}) ⁷	4	0,2
GWh delivered to national grid ⁶	830	455	Number of commercial banks that invest in renewable energy with project finance	3	3
Number of technologies supported by GET FIT	4	3 techs – hydro, bagasse, and solar	No. of development permits and generation licenses issued by ERA per year	8 permits /4 licenses	6 permits / 4 licenses
Number of direct national construction and O&M jobs created in relation to the power plants	4200	3855	Number of sub-regions with GET FIT projects	5	4
Time taken by ERA to review generation license for 1-20 MW RE application	3 months	2,5 months	REFIT adjusted to be cost-reflective (%) ⁸	100 %	100 %
Private investments (MUSD) leveraged by GET FIT ¹¹	500	258	Subsidy paid (excluding capacity charge) by GoU for UETCL to cover thermal power use	0	0
		Leverage ratio expected at approximately 1:4.2, based on associated GET FIT premiums	GWh purchased by UETCL from thermal stations (2018 target)	319	66.2
Private finance mobilised for GET FIT (MUSD) ⁶	200	122	Cost reflective retail tariffs in place ⁹	100 %	92 %
Public finance mobilised for GET FIT (MUSD) ⁶	300	136			

⁶ Counting commissioned projects and projects with financial close

⁷ Based on commissioned projects

⁸ Tariffs adjusted to be cost reflective after a tariff review in mid-2016. The review was carried out by ERA with technical assistance provided through the GET FIT TA Facility

⁹ Since GoU still pays capacity charges to thermal generation facilities, retail tariffs are not fully cost reflective.

6.2 Risk management

Risk management is a continuous process running through the lifetime of the Program where risks are identified and categorized, and measures introduced to reduce or eliminate the risks. For more information and detail on the risk matrix and methodology for risk categorization, please refer to earlier GET FiT reports.

The semi-annual monitoring undertaken by GET FiT measures progress on key indicators for the Program. Effectively, this contributes to identifying and addressing risks as it helps ERA, KfW, development partners and other stakeholders to keep track of progress and see periodical development. However, the day-to-day management of the Program is the primary source for risk identification and follow up. Close communication with project developers and power sector institutions and stakeholders, access to key ERA staff via the GET FiT secretariat (which is hosted by ERA themselves), active participation in joint power sector planning by KfW and the secretariat and engagement of development partners are all key arenas that enable GET FiT to continuously identify and assess risks to Program implementation. This approach has proved vital to achieve progress, as it has allowed the Program to proactively address and mitigate risks across a wide range of issues and areas of the sector. These include both financial, legal and regulatory risks. However, this close interaction and follow-up has also contributed to increased management costs by KfW and need for additional consultant support.

In terms of the ability to follow up on project specific technical, environmental and social risks, the supervision of construction is obviously the key tool, focusing on pro-active and flexible support and follow up of all projects until they reach commercial operations. These are key lessons learnt that could be taken into account for implementation of future GET FiT or similar schemes

Key risks and ongoing GET FiT efforts

Based on the overall developments throughout 2016, GET FiT risk management efforts are currently largely focused within the following main areas of concern:

Grid interconnection. The lack of progress on grid infrastructure investments required for GET FiT projects in 2016 has made the anticipated interconnection risk even more critical. In addition to the various investments supported specifically by GET FiT and development partners (see chapter 4.2), some GET FiT projects are also affected by delayed implementation of smaller scale grid investments. Although less costly, these are equally crucial in terms of securing timely and adequate interconnection. As a response to these challenges, GET FiT has intensified efforts to support GoU entities in fast-tracking and coordinating required interventions. In late 2016, ERA also requested support from the Program to prepare an assessment of the overall deemed energy obligations that would be incurred by GoU in various scenarios of i) required timelines for implementation of grid infrastructure and ii) implementation of the GET FiT portfolio. The assessment was conducted by Multiconsult (GET FiT Implementation Consultant) and is aimed at assisting ERA, MEMD and the transmission and distribution companies in their continued planning and coordination. Currently, some 80 MW face risks regarding delayed grid interconnection. Apart from jeopardizing the achievement of GET FiT targets, this represents a huge challenge for the energy sector and the Ugandan economy since generated power has to be paid for without capitalizing on its benefits in terms of social and economic development.

Importantly, the ongoing TA to ERA (see chapter 4.2 for details) is progressing well and will be instrumental in increasing ERAs capacity

to coordinate and monitor grid planning and operation, which will also benefit the ability to provide timely and adequate power evacuation for GET FiT and future embedded RE generators in Uganda.

Late construction start for remaining projects.

While most GET FiT projects are now financially closed and/or under construction, time is running out for the remaining projects under development to fully commence construction activities. Although it is understood that projects in general are facing a range of challenges, including delays caused by external factors, the pre-determined time frame for Program implementation requires that these projects break ground within early 2017. ERA and GET FiT are making necessary efforts to help developers reach their required deadlines on development milestones set by the Program.

This is achieved primarily by providing flexible support to the developers, e.g. on complying with required technical, environmental and social standards in order to proceed to construction. While it is still anticipated that the remaining projects in the portfolio will be implemented as part of the Program, there is a significant risk that some projects may not fulfil deadlines and hence lose GET FiT support. In order to address this, a re-appraisal of projects previously considered for support is currently being undertaken. If approved, these projects may replace potential drop-outs and thus contribute to achieving the capacity targets of the GET FiT project portfolio.

Environmental and social risk. It is uplifting to note that the environmental and social

performance across the project portfolio has improved noticeably in 2016. GET FiT continues to provide substantial support to developers in complying with international standards on issues such as resettlement, compensation, health and safety. This is vital not only to safeguard the overall success and legacy of the Program, but also to build developer capacity and to ensure sustainable utilization of Uganda's small-scale RE potential for years to come. During GET FiT implementation, some developers have made impressive improvements in their capacity to manage a range of environmental and social issues. As a consequence of GET FiT, there is now a considerably higher degree of compliance with Ugandan and international standards than would otherwise have been observed. Nonetheless, E&S performance remains a key risk of the Program. With now many projects under construction it is vital that E&S standards are implemented according to agreed plans. GET FiT has allocated additional consultancy resources to ensure follow up throughout the construction phase of each project. These efforts are elaborated on in the chapter on E&S performance.

Notably, GET FiT is also in the process of allocating resources towards post-commissioning supervision visits to all projects in the portfolio. For environmental & social issues, several processes and obligations of the developer in achieving required standards require efforts beyond the date of commercial operation. Hence, in order to properly verify that plans are implemented according to requirements and enable follow up of deviations, conduction of post-COD supervision visits are considered instrumental.



OUTLOOK FOR 2017

Whereas 11 out of 17 approved projects are now under full construction or commissioned (Kakira and Soroti), most of the remaining schemes are likely to break ground within the first half of 2017. Five hydropower projects and one solar project are expected to reach commercial operation this year, with most others following in 2018. To ensure timely commissioning and achievement of the time-bound GET FiT capacity and production targets, a key focus of KfW and the GET FiT Secretariat going forward will be to assist the least advanced projects to fast-track construction start. Efforts are also being made to enable potential replacement of any project that fails to meet critical deadlines.

Another key focus of the GET FiT team will be the continued supervision of projects under construction, to ensure compliance with performance standards and other requirements. Continued close communication with developers and flexible support on technical, environmental and social issues will be vital in avoiding delays and ensuring quality of works.

To safeguard GET FiT targets and ensure viable grid interconnection for all projects, KfW and the GET FiT Secretariat will maintain pressure on implementation of components within the interconnection support scheme. This includes

the comprehensive infrastructure reinforcements and TA support which require a high level of coordination between all stakeholders. The GET FiT team will support GoU entities and project developers by facilitating joint planning and continuous dialogue throughout the process. Continued efforts in this regard will be critical to avoid project delays and legal issues related to grid interconnection for the range of projects. The upcoming year will be a decisive one for the Program. If important milestones such as construction starts or financial close are missed, some projects may have to be excluded from the portfolio. These in turn could potentially be replaced by previously rejected projects in order to maintain capacity targets, depending on outcome of re-appraisals.

Most of all, 2017 is the year in which commissioning of the first hydropower projects in the portfolio, as well as the second solar plant, are planned. Adding to this, construction of critical grid infrastructure for power evacuation of GET FiT projects will commence, and ERA will benefit from improved regulatory frameworks and comprehensive capacity building in key areas of its core business. Hence, most of all, this year is likely to become a highly productive, fruitful and exciting year for GET FiT stakeholders and the Ugandan power sector.



STATUS OF GET FIT ROLL-OUT TO OTHER COUNTRIES

Based on the success, experience and lessons learnt thus far from the implementation of GET FiT Uganda, market assessments were carried out in a range of countries to explore the potential for further roll-out. As a result, the GET FiT concept is currently at various stages of further consideration or actual roll-out in several new countries, with the most advanced at the moment being Zambia.

Preparations for the GET FIT **Zambia** Program have advanced well in 2016 and the German Government committed full funding for Phase I of the Program in December 2016. Most likely, it will kick off by launching a Solar PV Auction for a total capacity of 50 MW in May 2017. The launch date is however still dependent on the formal adoption of the REFiT Strategy by the Zambian Cabinet which is expected in Q1 2017. Preparations for small hydro and biomass (Phase II of GET FiT Zambia) will start in 2017. The GET FiT Zambia Programme comprises the following elements: 1) GET FiT Premium (Grant Top-Up), 2) Standardized Legal Documentation, 3) Support for Permitting and Licensing, 4) Risk mitigation (in cooperation with ATI) and 5) Support for Grid Integration. A GET FiT Coordinator is permanently based in Lusaka, who will be reinforced by a full GET FiT Secretariat by Q3 2017 (Procurement to start in Q1 2017).

The Interim Renewable Energy Feed-in Tariff Program (Interim-REFiT) was introduced in **Namibia** in 2015 and shall contribute to mobilizing private investments into small-scale energy projects with a total capacity of 70 MW. However, the Namibian Interim REFiT Program could only attract investments mainly into solar energy, whereas investments into other renewable energy resources did not materialize as expected. Namibia is particularly interested in supporting the utilization of encroacher-bush, as more than one third of Namibia's surface is covered as a result of intensive farming. The bush encroachment suppresses the growth of grass,

reduces biodiversity and reduces the penetration of rainwater required to recharge the all-important underground water resources. In order to explore the utilization of encroacher bush as a renewable resource for electricity generation, the Government of Namibia has requested KfW to undertake a detailed design and implementation readiness study to develop a program concept for a GET FiT Program 'bush-to-electricity' in Namibia. The study shall be financed by the Government of Germany. It will be tendered and carried out in the course of 2017.

A Renewable Energy Feed-in Tariff (REFiT) was introduced in **Mozambique** in 2014. However, private investments in renewable energy projects have not materialized as expected. In order to operationalize the REFiT, the Government of Mozambique has requested KfW to undertake a detailed design and implementation readiness study to develop a programme concept for a GET FiT Programme in Mozambique. The study will be financed by the Government of the United Kingdom and Northern Ireland. It will be tendered and carried out in the course of 2017.

In December 2016 the German Government indicated a commitment of up to 14.5 m EUR (grant funds) for a Renewable Energy Development Facility (REDF) in **Vietnam**. The REDF is jointly prepared by the General Directorate of Energy of the Ministry of Industry and Trade (MOIT) of Vietnam and KfW and will be largely based on the GET FiT model implemented in Uganda. The MOIT intends to adopt a new feed-in-tariff policy for wind and solar energy. Based on the new policy, the Facility can provide additional financing and help kick start private investments in wind and possibly solar energy in Vietnam. KfW assists MOIT in mobilizing additional funding from other donors (including the EU).

The possibility of a GET FiT rollout in **Ghana** under the new Government will be assessed during 2017.







GET FiT UGANDA

ANNUAL REPORT **2016**

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