

Energy Africa – Uganda

Compact development: Final Report



September 2016

This report and compact has been written by François Carme and Julius Magala for Landell Mills Ltd and produced by Evidence on Demand with the assistance of the UK Department for International Development (DFID) contracted through the Climate, Environment, Infrastructure and Livelihoods Professional Evidence and Applied Knowledge Services (CEIL PEAKS) programme, jointly managed by HTSPE Limited and IMC Worldwide Limited.

The views expressed in the report are entirely those of the author and do not necessarily represent DFID's own views or policies, or those of Evidence on Demand. Comments and discussion on items related to content and opinion should be addressed to the author, via enquiries@evidenceondemand.org.

Front cover images: Restitution workshop held on August 5th 2016 in Kampala



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Report Summary

The Energy Africa Campaign is a DFID-led initiative to accelerate the household solar market in Africa, and help achieve universal energy access by 2030. Policy Compacts – voluntary bilateral agreements between the UK and over a dozen partner countries - are an essential part of the Campaign.

In 2012, 15% of Uganda's population of 39 million¹ had access to electricity², with a clear divide in terms of accessibility between rural and urban areas. In the former, around 7% of the population can access electricity, while in the latter this number climbs up to 55%³. The market potential for off-grid solar in Uganda is, therefore, significant. However, the overall affordability for solar off-grid products is likely to be affected by the high proportion of the population living below the extreme poverty line (38%).

Around 200 companies are active in the Ugandan market and it is ranked 3rd out of 19 African countries in the Climatescope assessment which evaluates countries' investment climate and enabling environment for low carbon energy and green economy development⁴.

There are various types of off-grid electricity services based on renewable energy technologies in Uganda. These are primarily solar photovoltaic (PV) systems, and mini-distribution systems (mini-grids) drawing electricity supply from decentralised power generation facilities. In Uganda's 10-year Rural Electrification Strategy and Plan (RESP) 2013-2022, the target is to increase installations of PV or solar home systems (SHSs) and mini-grids by a further 140,000⁵. In addition, the SE4ALL Action Agenda and Investment Prospectus (2015) set ambitious targets of energy access, with solar PV as the main contributor to delivery of off-grid electricity.

The main Actions proposed under the Compact were:

- **Develop a specific strategy for off-grid solar electrification** - To provide visibility and better coordinated support towards implementation of activities for off-grid solar market development.
- **Provide clarity on the fiscal policy and develop a conducive regulatory framework for off-grid solar enterprises**, in particular on tax exemptions and taxation of solar accessories and appliances – to make solar more affordable for the poor.
- **Effectively apply existing regulation and set Quality Standards** – to incentivise quality products and protect consumers.
- **Support supply chain** by improving access to finance and strengthening outreach/distribution capacity of the solar companies.
- **Facilitate access to financing for consumers** – to overcome upfront costs barrier.

This Energy Compact is not intended to be a comprehensive set of solutions to the barriers to off-grid solar electrification. Rather, it outlines immediate actions that will help to address fundamental market barriers and enablers. The signatories of this document hope that these actions will help jump-start the market and attract other partners, as part of a long term plan to accelerate the development of a vibrant, rapidly growing off-grid solar market that can deliver universal access to modern energy by 2030.

¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision.

² IEA (2014) *Africa Energy Outlook 2014*, International Energy Agency. The SE4All Global Tracking Framework (2015) estimates an 18% level of access nationally.

³ SE4All (2015) estimate a 71% access rate in urban areas in 2012.

⁴ <http://global-climatescope.org/en/country/uganda/#/details>

⁵ http://www.rea.or.ug/docs/Strategic_Plan2013-2022.pdf

1. Energy Africa

The Energy Africa Access Campaign is a DFID-led initiative to accelerate the expansion of the household solar market in Africa, and help achieve universal energy access by 2030 rather than by the 2080 forecast that current trends indicate.

It seeks to accomplish this by aligning supportive policy with coordinated donor support, to improve market conditions and increase investment. Launched in October 2015, the Campaign grew out of DFID's longstanding commitment to energy access, and its multi-sector country-level development experience.

The Campaign is both global – in advocacy, programmes and mobilising stakeholder partners – and local, in 14 countries in Africa where DFID has a presence on the ground. This document conveys the results, process and learning gained through a consultation process in Uganda. It describes a voluntary agreement between the Government of Uganda and the UK regarding the policy changes, co-ordinated support and other actions to accelerate the development of the household solar market.

2. The Uganda Energy Sector

Policy framework

The definition and agreement of an Energy Compact for Uganda provides an important step in implementing the country's 10-year Rural Electrification Strategy and Plan, through a clear **strategy for off-grid solar electrification** with targets, milestones, specific actions and related budget for solar market acceleration. This should also be accompanied by a **monitoring system** to ensure implementation of the recommended measures and actions⁶.

Understanding and interpretation of fiscal policy

The policy should individually address each specific barrier, including **actual application of policy and standards as well as the lack of clarity and uncertainties in the tax regime** (in particular relating to solar parts and appliances). In this respect, the East African Community (EAC) has recently issued a directive removing the customs duty exemption on solar accessories in all EAC countries (Uganda, Rwanda, Tanzania, Kenya and Burundi). The EAC decisions **technically affect duties only and not VAT**, but governments are **likely to link VAT exemptions to duty exempted products only**. Uganda has already acted on this interpretation by enforcing import duties (25%), VAT (18%) and withholding tax (6%) at their respective borders on solar powered equipment such as radios and televisions, significantly driving up end-user costs. Solar distributors, such as M-KOPA, who have stated an increase in the cost of an SHS by 20%, are very concerned about the impact of such a decision in price sensitive markets.

Aside from such speculation on the EAC directive, and providing that the VAT and import exemption for the entire system is re-introduced, many stakeholders interviewed during the development of this Energy Compact, recognise that the fiscal environment is consistent. There is no uneven subsidy and traditional energy goods (kerosene, petrol, and diesel) are taxed. These conditions are favourable for the multiplicity of

⁶ For example, a quarterly meeting by the steering committee to review the progress and set priorities for the next implementation period.

players who are currently operating in this dynamic sector in Uganda, of whom many (49) are fully subscribed members of the Uganda Solar Energy Association⁷.

Consumer protection and awareness: *Application and enforcement of existing regulations and standards and promotion of good quality products*

One of the key issues remains the capacity of the GoU to apply standards that would have a positive effect by removing low quality products on the market. In consultation with the private sector and industrial actors, The Uganda National Bureau of Standards (UNBS) is responsible for developing and issuing national standards, provision of import inspection services, quality assurance, testing and certification of imported goods⁸. However, UNBS currently lacks adequate staff (only 5 controller staff in total) and equipment to fulfil its tasks. Awareness amongst consumers is a further issue as customers currently lack a clear understanding of the solar system specifications, quality and financing mechanisms that would improve their ability to make informed purchasing decisions.

Supply chain financing: *Access to finance for market development for solar importers, distributors and system integrators to expand outreach in rural areas*

Most of the stakeholders interviewed agree that a major constraint to market development is access to finance for the **supply chain**. Different business models are already in place, including Rent-To-Own, fee-for-service, cash sales, sales with credit, microfinance institutions partnering with private distributors or becoming solar distributors⁹. Amongst the lessons learnt from the subsidy component of the World Bank's programme of Energy for Rural Transformation (ERT) II was the market distortion created by the end-user subsidy scheme on local markets.

Consumer financing: *Access to finance for end-users in particular small businesses and rural households*

Though there are a number of innovative financing models like PAYGO (aimed mainly at the household level rather than at businesses or larger consumers), there is also a need to further develop models through financial institutions such as SACCOs which are closer to the target market and, as such, can provide higher quality and more flexible services.

⁷ The Uganda Solar Energy Association has a membership of 72 in total throughout Uganda.

⁸ *Some actions are on-going through REA with the support of the WB*

⁹ *Example: Village Power and Tujjenge have launched collaboration to improve access to solar power in Soroti and Busia districts. Tujjenge is a microfinance company active in Uganda and Tanzania.*

3. Institutional framework and key stakeholders

Uganda is planning to strongly develop its economy with structural improvements, as captured in “Vision 2040”. In this vision document, aiming to consolidate and accelerate growth, the Government of Uganda has formulated a plan to implement the country’s long-term development goal of achieving an upper middle income status by 2040. In relation to the energy sector, the key target set out in the Uganda Vision 2040 is to increase electricity per capita consumption to 3,668kWh by 2040. To achieve this target, the national grid access rate should increase to 80% with total installed generation capacity reaching 41,738MW.

The guiding policy governing the overall energy sector in Uganda is the Energy Policy for Uganda 2002 (currently under review), which has the goal of “meeting the energy needs of Uganda’s population for social and economic development in an environmentally sustainable manner”. Furthermore, the **Rural Electrification strategy plan 2013 – 2022 (2012)** sets specific targets for universal electrification by 2040 through electric service providers (ESPs). It sets an overall access goal of 22% of the rural population by 2022.

As part of this commitment, the Government of Uganda also recognises the role of off-grid electricity solutions such as solar home systems, in meeting the country’s energy access targets.

a) Institutions

Below is a brief presentation of the main institutions relevant to the PV sector. With intertwined activities and objectives, it is important that these bodies work together since their actions and strategic decisions are likely to affect other players in the solar market as a whole.

Institutions directly involved in the solar market expansion (excluding solar mini-grids):

- i. **Ministry of Energy and Mineral** - This is the entity responsible for energy and mineral resources in Uganda. It plays the role of policy supervisor and provides oversight in the energy and mineral sector. The mandate of the MEMD is to “Establish, promote the development, strategically manage and safeguard the rational and sustainable exploitation and utilisation of energy and mineral resources for social and economic development”.
- ii. **Rural Electrification Agency (REA)** - The REA operationalises the government's rural electrification function under a public-private partnership framework. It functions as the secretariat of the Rural Electrification Board which carries out the rural electrification responsibilities, as per the Electricity Act of 1999. It is mandated to facilitate the goal of achieving a rural electrification rate of at least 22% by the year 2022.
- iii. **Uganda Energy Credit Capitalisation Company (UECCC)** - The mandate of UECCC is to provide a reliable framework for pooling resources from Government, investors and development partners and to channel these for viable renewable energy projects. UECCC is in place to facilitate investments in Uganda’s high-potential renewable energy sector. The Company’s main objective is to provide financial, technical and other support for renewable energy infrastructure development in Uganda, with a particular focus on enabling private sector participation. In this regard, UECCC provides technical assistance and new financing options to facilitate private sector led energy projects.

Institutions involved in the energy sector that can influence the solar PV market (including solar mini-grids):

- iv. **Electricity Regulatory Authority (ERA)** - This is a statutory body established in the year 2000 in accordance with the Electricity Act 1999 to regulate the generation, transmission, distribution, sale, export and import of electrical energy in Uganda, and to guide the liberalization of the electricity industry, manage licensing, rates, safety and other matters concerning the electricity industry. ERA's mandate is to supervise all licensed companies within the electricity sector to ensure they comply with the Electricity Act 1999 and Regulations thereto, and to safeguard all stakeholders' often competing interests. In performing its functions, ERA ensures that electricity companies comply with the conditions of their licenses and protects the interests of electricity consumers in respect of: (i) the prices, charges and other terms of supply of electricity, (ii) and the quality, efficiency, continuity and reliability of the supply services.
- v. **Uganda Electricity Generation Company Ltd (UEGCL)** - A limited liability company incorporated in 2001 and fully-owned by the GoU. UEGCL's key role is to carry on the business of electric power generation and sale within Uganda or for export to neighbouring countries. In addition it builds, operates and maintains a number of electricity generation power plants, monitors the operation and maintenance of its concessioned assets, and provides technical support as and when required by the GoU through MEMD.
- vi. **Uganda Electricity Transmission Company Ltd (UETCL)** - Under the single buyer model, UETCL owns and operates the High Voltage Transmission Grid, coordinates the power supply system to achieve balance between supply and demand, dispatches generation facilities, negotiates all bulk power purchase agreements, and manages power exports and imports.
- vii. **Uganda Electricity Distribution Company Ltd (UEDCL)** - Owns and manages assets consisting of substations and voltage networks, land and buildings, tools and equipment and other assets, monitors compliance to Lease and Assignment Agreement, operates and maintains off-grid stations in Moyo, Adjumani and Moroto until their divestiture, manages a pole treatment plant and supervises completion of the Rural Electrification Schemes that were under construction before the transfer of business to Umeme.
- viii. **Umeme** - Umeme is the largest electricity distribution company in Uganda. It is mandated to: (i) operate, maintain, upgrade and expand the distribution network; (ii) retail electricity to its customers; and (iii) improve efficiency within the electricity distribution system. It is listed on the Uganda Securities Exchange and on the Nairobi Securities Exchange (NSE). Investec Asset Management is the majority shareholder after a second issue in 2014.

b) Private Sector

The solar PV market in Uganda is mainly private sector led with the number of solar companies increasing from a handful of solar importers mainly based in Kampala with a focus on larger solar systems to more than 200 companies with innovative financing solutions and distributors of a variety of solar systems and accessories. The private sector players range from importers, distributors, and system integrators/installers. The reorganisation of the Uganda Solar Energy association (USEA), whose mandate is coordinating and lobbying for better services to the companies and end users, provides hope for better organisation of the private sector. USEA currently has a membership of 72 solar companies.

c) Key development partners active in the solar market

A number of development partners are involved in policy advocacy, financing and providing technical assistance for the solar off-grid market. Most of them contribute to the energy sector development, while a few of them directly support the solar off-grid market.

A list of the main donors / initiatives relevant to the household solar space in Uganda include the following:

- i. **Advocacy and Technical Assistance**
 - DFID
 - Lighting Africa
 - World Bank in the framework of the ERT III programme
 - GIZ/EnDeV
 - USAID/Power Africa
 - UNCDF
 - SIDA
 - Dutch embassy
- ii. **Financing the supply chain (grant, debt or equity)**
 - World Bank
 - GIZ/EnDeV
 - USAID/Power Africa
 - UNCDF
 - EU
 - SIDA
 - Dutch embassy
 - NORAD/Norway Embassy
- iii. **Consumer financing (grant, debt or equity)**
 - World Bank,
 - FINCA
 - Post Bank
 - Centenary bank
 - Opportunity bank
 - UECCC
 - Energy 4 impact (formerly GVEP International)

d) Main programmes in support of solar market in Uganda:

- i. **World Bank programme:** Energy for Rural Transformation (ERT) - III (2016 – 2020) - Component 2: Off-grid Energy Access (US\$25 million).
 Energy for Rural Transformation (ERT I and II), through the Photovoltaic Targeted Market Approach (PVTMA), is being implemented as part of the rural electrification program by the Rural Electrification Agency. It offers a sales-based performance subsidy scheme that also provides business development support to private PV dealers. Under this programme, other Ministries have procured PV systems to meet their sectors' electricity needs. Based on this experience, a third phase (2016-2020) has been launched (called ERT III) which focuses on the supply chain. ERT III aims at increasing access to electricity in the rural areas of Uganda. The programme has three components among which is an off-grid energy access component. This component includes:
 - Installation of solar PV systems for public institutions in rural areas;
 - Business development support;
 - Provision of credit and guarantee instruments through the UECCC to the PFIs to facilitate consumer financing needs and working capital for solar businesses supporting off-grid access;
 - TA to strengthen the UECCC; and
 - Quality standards enforcement support.
- ii. **UNCDF CleanStart Programme (2012 – 2018)**
 UNCDF is the UN's capital investment agency for the world's 48 least developed countries (LDCs). UNCDF's CleanStart programme supports low-income consumers to transition to cleaner and more efficient energy through microfinance. CleanStart has four components:

- **Finance for clean energy** to develop scalable consumer and enterprise financing models. This is supported through a combination of pre-investment technical assistance; risk capital grants; and concessional finance.
- **Technical assistance for clean energy** to increase the 'scale' potential of financing models by creating a supportive business ecosystem (e.g. consumer confidence, last-mile distribution, customer service).
- **Knowledge and Learning** to promote awareness and customer-centric growth.
- **Advocacy and Partnerships** to co-create a policy and business environment that supports energy microfinance to reach scale.

In August 2015, **CleanStart launched an Energy Access Challenge**. Five institutions were awarded out of 67 companies that submitted 73 ideas (thus underlining the very high demand): D.Light, Finca Uganda Ltd, Village Power, Eco Group (cook stoves and SHS) and BioLite (cook stoves).

UNCDF is investing \$1.8M in grant funding (leveraging an additional \$3 M) to support proven entrepreneurs and management teams to test commercially-driven business ideas that can achieve breakthroughs in consumer financing and/or energy value chain financing (e.g. for distributors, manufacturers).

UNCDF CleanStart is also undertaking two research programmes to understand off-grid customers better:

- **Energy ladder research (on-going)**: a year-long study on the so-called "energy ladder" for solar power in Uganda to see if first-time buyers of small solar-powered products such as solar lanterns eventually buy larger and more expensive home systems, and what the role of financing is. Link to [press release](#).
- **Energy diaries (starting)**: respondents are asked repeat questions every two weeks on money management, financial service and energy use over a six-month period.

iii. **Sida Uganda programme (2016-2020): Renewable Energy Challenge Fund** - Sweden has earmarked SEK 40 million (USD 4.6 million) for a period of four years to support qualifying SMEs (for off-grid solutions including solar) with scalable market led business models through a competitive process to access grants. The key outcomes of this contribution will include:

- Improved capacity and performance of Renewable Energy (RE) SMEs benefitting from technical advisory and management support, challenge funds, sector marketing, new networks, etc;
- Renewable energy SMEs in Uganda have increased access to financing such as debt, equity, and other forms of sustainable funding options that enable scale up of distribution of solutions especially targeting the rural households.
- Increased productivity and employment especially for youths and women along the renewable energy value chains.

iv. **GiZ/ Energising development (Endev) Programme** (April 2009 to December 2016): Endev is supporting 5 solar companies (Green Light Planet, Solar sense, Ultratec, Village Power and IBN COM) that are distributing high quality solar products to the off-grid rural market in Uganda. The programme works with distribution and financing partners to solve the key bottlenecks affecting the solar market like inadequate distribution, after sales service, limited access to finance and lack of awareness. These partners benefit from financial and in-kind support which includes capacity development, awareness and promotion campaigns, implementing or piloting innovative financing and distribution approaches for solar systems. Thus far the programme has achieved the following results:

- Established 14 solar outlets for the 5 solar companies;

- Supported Green Light planet to open up 25 SunKing solar centres in Northern and Eastern Uganda;
 - Provided financial support to Village Power company for piloting a Pay as You Go system which has enabled sales of 3,000 solar systems;
 - Created awareness campaigns in addition to providing shop branding, promotional materials and radio adverts;
 - A total of 36,600 solar systems sold (Pico PV- 30,000, Solar Home Systems- 6,000 and 600 for institutions and SMEs).
- v. **Norwegian Government/NORAD:** Through the Renewable Energy Business Incubator (REBI), support services have been provided to solar businesses to include training, business plan development, market research, proof of concept, feasibility, investment support and capacity exchanges. The solar businesses supported include Quality solar Enterprises and Mugo Power.
- vi. **The Norwegian Government also supports WWF programmes** in Kasese through the champion district initiative and commercialization of solar powered cookstoves at the Department of Physics/Makerere University. Norway further supports most of the multi-donor programs promoting modern energy solutions in Uganda administered by WB, UN organisations, “Clean Start”, “EnDev”, etc.

Other development partners such as **EU, AFD, NORAD, KFW, OFID** are supporting **on-grid** rural electrification programmes. For example, OFID is currently financing an on-grid rural electrification programme (\$ 15MUS for 13,000 connections) in Kayunga and Kamuli districts.

e) Civil Society

International non-profit making organisations are involved in supporting solar enterprises to increase energy access. They provide technical and business training, market awareness, financial access, advocacy and other tailored advisory services. Examples include:

- SNV
- GiZ
- Lutheran World Federation
- WWF
- Energy 4 Impact (formerly GVEP International)
- World Vision

4. Compact goals

The overall objective is to increase the viability of the market thus increasing access to greater numbers and more diverse set of households.

Specific objectives

Better co-ordinated support: With the ongoing revision of the energy policy, there is an opportunity to increase attention and focus to off-grid solar electrification. The setting of an off-grid solar electrification strategy with specific milestones, targets and budget will help draw further attention to solar off-grid electrification. With a targeted strategy, off-grid solar electrification will be more visible and therefore easier to build consensus and rally support from all stakeholders including ministries, agencies, development partners, civil society and private sector towards implementation of the activities.

Reduced cost price burden: By removing the ambiguity in interpretation of taxes which leads to non-uniform tax payments and sometimes paying higher taxes and lobbying for exemptions on accessories, the risk of paying an extra cost (up to 20% according to some stakeholders) of the solar system price by the end user will be overcome. The clarity of taxes and exemptions on accessories, parts and appliances will reduce the cost burden which will be borne by the end user of the solar system. This will also make solar systems more competitive compared to the alternative sources of energy.

Market and consumer protection: Adopting and enforcement of quality standards, once consumers are made aware of the standards, will provide a new basis for differentiating high quality from low quality products. In other markets, such policy changes have appeared to have the effect of raising the minimum performance level among competitors. The implementation of such measures would support a healthy and sustainable market in Uganda.

Wider market base: Provision of technical assistance and finances to strengthen the supply chain by increasing outreach of solar distributors to areas where they would normally not set up a sales outlet, thus also ensuring the availability of qualified solar technicians. This will lead to improved accessibility of products and services to the last mile customers, including after sales services which would increase customer satisfaction. The development of the supply chain further creates jobs and income generation opportunities for the various actors.

Increased affordability: The provision of end user financing through innovative financing models (e.g. mobile payment mechanism and microfinance) will solve one of the main barriers to off-grid solar uptake which is the high upfront costs. End user financing models like PAYGO can help businesses reduce costs, tremendously increase low income households' ability to pay, and improve the widespread adoption of solar products.

5. Support and Accountability

Mobilisation of core support

On 16th June, the UK's Permanent Under Secretary of State for International Development, Nick Hurd, signed an Energy Access Partnership with the Minister of Energy which reinforce the UK's work in the energy sector in Uganda through support to the off-grid energy revolution.

Moreover, DFID has already mobilized support through the following programmes:

- a) **AECF Renewable Energy and Adaptation to Climate Technologies (REACT) Challenge Fund** (2010-2021): DFID has committed £27m to REACT East Africa to catalyse private sector investment and innovation which increases access to low cost, clean energy for rural businesses and households, and/or provides products and services that help rural people and farmers adapt to climate change.
- b) **Technical Assistance Facility** (Jan 16 - Jan 17): DFID has committed £0.54m to develop compact agreements identifying the policy changes required and the available donor and government support. This is funded from REACT.
- c) **Power for All** (Oct 15 - Dec 16): This is a global education and communications/advocacy initiative that joins leading private sector and civil society practitioners and implementers in a new partnership to advance renewable, decentralised solutions as the fastest, most cost-effective and sustainable approach to universal energy access. It seeks to develop the bottom-up political, financial and policy context needed to accelerate access to energy before 2030.
- d) **High Growth Sectors Programme in development** (under formulation), could support market facilitation for off grid household solar.
- e) **FSDU Financial Sector Deepening Uganda** (2012-2017) is supporting development of finance packages to free up working capital through debt structuring, support to end users. DFID has committed £17m for this.

Accountability for progress

This Compact has been developed under the leadership of the Ministry of Energy and Mineral Development, through collaboration with the private sector active in Uganda's solar market, civil society representatives, in particular the Uganda Solar Energy Association (USEA), the Rural Electrification Agency (REA), the SE4ALL Secretariat (Energy Commission, MEMD), development partners such as UNCDF and USAID / Power Africa, and with the support of DFID.

The champions of this Compact (DFID Head of Office and Permanent Secretary, Ministry of Energy and Mineral Development) will agree to meet and review progress and take necessary actions. The signatories to this Compact should agree to meet at least annually.

The Steering Committee of this Compact has agreed to monitor progress across the many stakeholders involved in follow-up implementation and to be a focal point for engagement and communication. They should meet quarterly.

6. Lessons Learned

The four lessons from this experience that might apply in other Compact situations are:

1. Inclusive process to reach consensus in terms of diagnosis and proposed solutions:

This is necessary to ensure the ownership of the Compact goals in particular by the institutional stakeholders and development partners. The proposed solutions have to be realistic, feasible within a short period of time and measurable. They addressed the most critical near-term needs, with the perspective to mobilise deeper and broader support from donor partners.

2. Coordination and further commitment of the key institutions and development partners

This Compact provides an initial analysis of the existing commitment of development partners towards supporting the solar market expansion. Current support is unlikely to be sufficient to overcome the identified barriers given needs are significant in particular areas:

- The lack of clarity and uncertainties in the interpretation of the fiscal policy;
- The limited capacity of the Uganda National Bureau of Standard (UNBS) regarding solar products;
- The lack of awareness of good and bad quality products by end-users;
- The need for access to finance for solar importers, distributors, and systems integrators;
- The limited payment capacity of end-users and financing facilities in rural areas.

Further coordinated support is therefore crucial to meet the expectations of the private sector, civil society and consumers. This support requires the full and proactive engagement of key Government institutions, in particular MEMD as the leader of the process, but also REA, UNBS and UECCC. In this way, the Compact should include a strong in-country implementation management.

3. Agree on deadlines and tight monitoring scheme for implementation

To make sure that the Compact will result in tangible impacts, its implementation has to be tightly monitored. For that purpose, each of the actions will be developed through detailed ToR which includes breakdown of the activities, milestones, indicators of progress and budget requirements. The Steering Committee agreed to meet at least quarterly and the signatories of the Compact should communicate at least annually.

4. Reinforce the role of the civil society group with a focus on the Uganda Solar Energy Association (USEA) to align the actions on the actual needs of the private sector

Civil society is expected to play a key role, in particular USEA, since it will ensure the alignment of the actions on the actual needs of the private sector, NGOs involved in solar PV programmes and the end-users. Furthermore, it can warn and lobby the leading institutions in case of delays, malfunctioning, ambiguity or irregularities.

Beside this lookout function, associations can actively contribute to self-regulation and the implementation since they have a good connection with the private sector and the last-mile market.

ANNEX A: Stakeholders Involved

Consultations were held with the following persons to develop this Compact (members of the Steering Committee are underlined):

1. Wafula Wilson, Ministry of Energy and Mineral Development (MEMD);
2. Howard Standen, DFID, Uganda
3. Simon Kalanzi, SE4ALL Secretariat, Energy Commission, MEMD;
4. Hee Sung Kim, UNCDF
5. Oscar Ankunda, USAID / Power Africa
6. Benon Bena, Uganda Rural Electrification Agency (REA)
7. Abdeel A. Kyezira, Konserve Consult / Uganda Solar Energy Association (USEA)
8. Tamasuza Kambagira Amos, Ministry of Energy and Mineral Development;
9. Roy Baguma, Uganda Energy and Credit Capitalisation company;
10. Vincent Ochwo, Uganda National Bureau of standards
11. David Rogers, USAID / Power Africa
12. Moses Kakooza, GIZ/Endev
13. Job Mutyaba, Swedish Embassy / SIDA
14. Mbuso Gwafila (WB)
15. Joyce Demucci, SNV
16. Paul Orikushaba, The Lutheran World Federation
17. Isaiah Owionji, WWF
18. Marc Simbizi, Swedish Church
19. Bernard Anguyo Oja, Greenlight Planet
20. Radhika Thakkar, Greenlight Planet
21. Daniel Willette, Fenix International
22. Jefferson Bwambale, Solar Aid/Sunny Money
23. Leslie Enright, Finca
24. Richard Ndahiro, Finca,
25. Abu Musuuza, Village Energy
26. Ejuku Francis Daniel, Barefoot Power
27. Anthony Weremaka, M-Kopa Uganda
28. Abhay Shah, UltraTec
29. Christopher Musoke, FSDU
30. Tony Simbwa, Power Trust
31. Stephen Kafeero, Go Solar
32. Mary Susan Abbo, CREEC
33. Hans Peter Christophersen, Counselor Trade & Energy, Royal Norwegian Embassy
34. Robert Towers, DFID, Uganda
35. Baguma K Douglas, Managing Director, Innovex
36. Douglas Karugaba, Innovex
37. Kadi Warner, Regional Advisor on Climate Change, Embassy of the Kingdom of the Netherlands
38. Jorn Leeksa, first Secretary, Embassy of the Kingdom of the Netherlands
39. Representative of Ministry of fisheries

ANNEX B - Documents reference list

The documents used to draft this Compact are the following:

- National Energy Policy (2002)
- National Development Plan II (2015)
- Power Sector Investment Plan (2011)
- Renewable Energy Policy (2007)
- Rural Electrification strategy plan 2013 – 2022
- Renewable Energy Investment Plan (2011)
- Uganda Vision 2040 (2013)
- SE4ALL Action Agenda (2015)
- Investment Prospectus (2015)
- Energy Country Report - Embassy of Netherlands in Uganda (Nov. 2015)
- Off-grid solar country briefing: Uganda - ODI-GOGLA
- The market for solar household - Gogla report (2016)
- Policies to expand the market for solar household solutions - Gogla report (2016)
- Factsheet Solar Market Development - GIZ / EnDev Uganda (2016)
- FINCA BrightLife Business Model presentation (2016)
- Project Appraisal Document – ERT-3 Programme – WB (2015)
- Solar market development study in Uganda – Endev / CREEC (2014)
- Baseline Energy Africa Compacts – internal compilation of figures – DAI/LM (2016)
- Energy report for Uganda by 2050 – WWF (2015)

ANNEX C: Uganda Energy Africa Compact

Energy Africa – Uganda

Compact and plan of action



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The views expressed in the report are entirely those of the author and do not necessarily represent DFID's own views or policies, or those of Evidence on Demand. Comments and discussion on items related to content and opinion should be addressed to the author, via enquiries@evidenceondemand.org.

Front cover images: Restitution workshop held on August 5th 2016 in Kampala



Energy Africa Uganda Compact

This Energy Africa Uganda Compact (“Compact”) seeks to accelerate the expansion of the household solar market in Africa and help achieve universal energy access by 2030. This Compact represents a voluntary plan of action between Energy Africa partners, UK Department for International Development and the Government of Uganda, regarding the policy actions and coordinated support needed to accelerate the development of the household solar market in Uganda.

While we recognise this Compact is not legally binding, our endorsement and those supporting it creates no legal obligations on us or them, and that any participation in this Compact by us or our supporters does not create or indicate any future financial commitment, we hope that by working together, we can move the household solar sector forward for the benefit of all Ugandans.



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1. Introduction

The Energy Africa campaign seeks to accelerate the expansion of the household solar market in Africa, and help achieve universal energy access by 2030 instead of 2080 on current trends. It seeks to achieve this by strengthening the policy environment and market conditions for the private sector to accelerate the development of household solar in Uganda.

This document represents a voluntary agreement between Energy Africa partners regarding the actions and coordinated donor support that is needed to support this process. The purpose of the document is to outline:

1. Implementation requirements to support a rapid expansion of the private sector market;
2. Government policy commitments and their current status;
3. Coordinated support already committed and remaining to be developed.

The solar home systems referred to in this Energy Compact are solar photovoltaic systems for electricity, rather than solar thermal systems used for heating purposes. They include fixed systems with roof-mounted solar panels and fixed lighting; portable 'plug in and play' systems; and small solar systems up to a few kWp¹⁰. Solar mini-grids and portable solar lanterns are not considered in the Compact.

2. The Uganda Context

The market for solar photovoltaic energy (PV)

The solar PV market in Uganda has steadily grown over the last 15 years with new players, including foreign investors, entering the market. While ten years ago there were a handful of solar companies mainly engaged in institutional solar PV installations, there are now over 200 companies involved in the solar business (both PV and solar thermal), 72 of whom are also members of the Uganda Solar Energy Association¹¹.

The market's expansion over this period has been supported by the following conditions:

1. Conducive regulatory policies that encourage investment and trade in the solar sector, in particular through provision of tax exemptions for importers and subsidies for end-users¹²;
2. Institutional framework that supports and implements solar energy activities, such as government projects that specifically promote the use of solar in rural electrification;
3. The demand for reliable electricity and modern energy services by an expanding middle-income society;
4. Inaccessibility to the national grid in rural areas;
5. The price drop of solar products;
6. National awareness programmes that are facilitated through donor support;
7. The growth in the telecommunication sector through facilitating mobile payment and monitoring systems.

However, the longer term sustainability of the market must still be improved if it is to remain financially viable without donor and government support, and achieve the scale and ambition of meeting the 2030 target of universal energy access.

¹⁰ The classification of lanterns and solar home system plug and play kits is taken from Lighting Africa definition.

¹¹ Out of which 49 fully subscribed members

¹² which have since stopped

Access to electricity and penetration of PV solar in Uganda

In 2014, Uganda's national electrification rate was estimated at 26% (20% in rural areas and 55% in urban areas), including through solar home systems and diesel generators. This means that, at that time, 618,000 households in urban areas and 4.85 million households in rural areas still did not have access to electricity¹³.

At the same time, in 2014, over 30,000 solar PV systems were installed and sales are estimated at around 50,000 solar home systems per year¹⁴. The baseline of sales has still to be confirmed and consolidated, and this Compact also proposes to build up market intelligence activities, among others, by collecting data of sales from current solar companies. These systems are not only for residential use, but also include SHS sales for productive (mostly water pumping), commercial (shops, restaurants) and social uses (hospitals and schools)¹⁵. The market potential for off-grid solar is, therefore, great but requires supporting actions if it is to be scaled up.

Solar PV business models

Currently, the main business models in Uganda's solar market are:

- Companies focusing **on distribution and innovative financing mechanisms for the off-grid market**: PAYG for the majority, but also hire purchase, and fee for service;
- Companies focusing **on importing and selling to retailers and end-users**, including installation. They provide financing directly or in partnership with banks/MFIs;
- **Solar manufacturers** with distribution networks;
- **Distributors offering small products** (lanterns, small solar kits) with or without financing facilities;
- **Systems integrators** buying from distributors as retailers and installing for the end-users. Most of them are local Ugandan companies which are distributed throughout the country.

Challenges

This Compact proposes concrete and specific measures based on a large consultation process in order to address the main barriers to further market development identified by the stakeholders: public, private, civil society and development partners (See in Annex 4 for full list of stakeholders consulted).

The overall affordability of solar off-grid products might yet be affected by the high proportion of the population living below the extreme poverty line (30% in 2015¹⁶). In addition, financing challenges are listed as the main barrier by companies, with one company reporting that, in their view, market growth in Uganda is currently completely reliant on the level of finance companies can secure. Perhaps the greatest need is access to working capital for systems integrators to finance their stocks and marketing, but also for importers to pre-finance their stock and their expansion in the context of a fast growing market.

Another challenge refers to the limited outreach capacity of the distributors to the last mile customers due to limited financing and human resources of the companies, poor infrastructure (roads and telecommunication) and lack of market intelligence.

Next to access to finance, the high number of low quality products and counterfeits entering the Ugandan market is a key barrier for sustainable market development. This affects the whole range of solar products including SHS components. To illustrate the extent of this challenge, an interviewee estimated that more than 60% of solar portable lanterns available on the market today are of low quality which, in turn, affects consumers' perceptions towards other solar products.

¹³ Uganda households: 7.4 million in 2014

¹⁴ Global Off Grid Lighting Association (GOGLA) provided a conservative estimate of about 20,000 units sold in 2015

¹⁵ Estimate is for basic lighting and phone charging, based on interviews with vendors. Source: SE4ALL Action Agenda (2015). Probably underestimated: for example, in 2015 Fenix International sold about 46,000 systems.

¹⁶ Reference: Gogla "Off-grid solar country briefing: Uganda" (2016)

Current fiscal policy is something which concerns many market players. The East African Community (EAC) is proposing to restrict the duty exemption on solar goods to those related to solar generation (with the risk of consequently affecting VAT exemption as part of a national interpretation), thus excluding solar accessories. Such a measure could result in increasing the cost of a SHS by 20%. According to the private sector, there is an urgent need for clarity as well as for setting a conducive regulation for the solar segment as a whole, i.e. both solar parts and appliances.

The key challenges are outlined in Section 4 below, and centre around:

- **Policy framework:** Specific off-grid approaches in national policy and planning;
- **Fiscal barriers:** Clarity and uncertainties on fiscal policy, and on its interpretation and application;
- **Consumer protection and awareness:** Enforcement of existing regulations and standards;
- **Consumer protection and awareness:** Promotion of good quality products;
- **Supply chain financing:** Outreach capacity of distributors of solar products and services in rural areas;
- **Supply chain financing:** Access to finance for market development solar importers, distributors and systems integrators;
- **Consumer financing:** Access to finance for end-users, in particular small businesses and rural households.

3. Fit with existing strategies and frameworks

The overall objective of Uganda's 2007 Renewable Energy Policy (see below) is to diversify energy supply sources and technologies in the country. Its key policy goal is to increase the use of modern renewable energy from 4% in 2007 to 61% of the total energy consumption by the year 2017. Solar energy is a key component, but a target has not yet been specified for this sector. Government documents demonstrate that there is a clear acceptance and understanding from the government that off-grid (including solar home systems) are a key element for increasing energy access and renewable energy penetration.

Existing policy, strategy and plans

Government driven strategies and key policies relevant to solar are:

- **National Energy Policy (2002):** This is the guiding policy governing the energy sector in Uganda stating overall objectives;
- **Renewable Energy Policy (2007):** States an increase in the use of modern energy to 61% by end of 2017. The main strategies to be deployed in order to meet the policy objectives include, among others, a legal framework for standardised power purchase agreement (PPA); introduction of Feed in Tariffs (FIT); provision of credit mechanisms for renewable energy consumers and tax incentives on renewable energy technologies;
- **Power Sector Investment Plan (2011):** This document refers to large investment in on-grid power plants, not as such to solar market acceleration;
- **Rural Electrification Strategy Plan 2013 – 2022 (2012):** Targets universal electrification by 2040 through electric service providers (ESPs). It sets an overall access goal of 22% of the rural population in 2022 which includes a total number of 138,500 connections from solar home systems (SHS) and mini-grids.
- **The Energy for Rural Transformation (ERT I and II) project** is being implemented as part of the rural electrification program, supported by the World Bank. Under ERT Phase II, the Rural Electrification Agency (REA) is implementing the solar PV Targeted Market Approach (PVTMA), a sales-based performance subsidy scheme that also provides business development support to private PV dealers. Based on this experience, a third phase (2016-2020) has been launched (called ERT III) which focuses on the supply chain. The subsidy scheme has proved to be unsuitable by distorting the market.

- **Uganda Vision 2040 (2013):** This aims at operationalising the overall GoU strategy toward socio-economic development including the importance of access to energy. There is no reference to specific targets or actions for the solar market expansion;
- **National Development Plan II (2015):** This document only refers to promoting renewable energies including solar but without specifying targets and underlying strategies.

Other relevant documents include:

- **SE4ALL Action Agenda and Investment Prospectus (2015):** These documents set ambitious targets for energy access considering solar PV as the main contributor to electricity in off-grid areas. This includes 140 MWp of SHS by 2030 achieving 30% of the population¹⁷, 36 to 60 MWp of microgrid and 4 to 9 MWp for water pumping and lighting (schools, health centers). The overall target of energy access by 2030 is >98%.

While these policy documents do not contain a clear roadmap with milestones, specific actions and related budget for solar market acceleration, they do **reflect the commitment of the Government to supporting off-grid renewable energy as part of its electrification policy and objectives.**

Key challenges and proposed concrete actions aimed at overcoming the barriers for solar market expansion are outlined below. The pace and level to which these can be achieved will largely depend on the commitment and support from the Government of Uganda and other relevant stakeholders.

4. Compact Actions

This section highlights current barriers to household solar market expansion and proposed actions to create an enabling environment for this sector to thrive taking into account the current context and existing policies and strategies. It is based on analysis of existing market information and on consultations with key stakeholders in the Ugandan government, private sector and civil society. Annex 1 contains further analysis of Actions.

N°	Issue	Current Situation	Specific Action
1	Policy framework	<p>Current policy focuses more on on-grid electrification; however this is currently under review. To date, the off-grid policy is not detailed:</p> <ul style="list-style-type: none"> • In the rural electrification strategy plan, no measurement of Business As Usual situation, clear approach with milestones for distributed solutions; • The role of the government is not clearly 	<p>ACTION 1: Provide policy briefs in order to build the case for off-grid integration into the existing policy. Gather and publish market intelligence on off-grid market potential to increase relevance and importance of focus on solar home systems (SHS) for decision making. USEA can play a role in coordinating the development of such policy briefs. Explicit recognition of the impact of SHS on gender equality, job creation, and environmental sustainability. Develop a policy for digital financial services aimed at regulating mobile technology based financial platforms like PAYG as the transaction costs are quite high.</p>

¹⁷ Equivalent to 195,062 SHS sold annually over the period 2015-2030.

		<p>defined;</p> <ul style="list-style-type: none"> The National Energy Policy does not include specific measures targeting the small-scale solar market. 	<p>ACTION 2: Amend existing strategy plans to include a clear and detailed strategy and action plan with milestones and related budget for off-grid electrification with distributed solutions¹⁸. Integrate this strategy in a proper rural electrification master plan with its operationalisation (e.g. through a concession model according to the RESP 2013-2022). Include conducive regulatory measures geared to the private sectors and end-users with specific approaches to promote gender issues. Involve public and private stakeholders in the definition of energy access approaches.</p>
2	Fiscal barriers	<p>Lack of clarity and uncertainties of the fiscal policy both for the revenue authorities in charge of the application (URA) and the solar importers and distributors. The administration of this policy is not streamlined with resulting gaps in the interpretation, application and enforcement. For example:</p> <ul style="list-style-type: none"> the risk that the application of the fiscal regulation is subject to the personal interpretation of the customs officer in charge of the control for new products without Harmonized System (HS) code; the EAC Management Act is being changed to now remove the solar accessories and spare parts from the exclusion of Duty; this causes uncertainties to the market players. 	<p>ACTION 3: Provide clarity on fiscal policy and set up a conducive regulatory framework for importing and certifying products, in particular:</p> <ul style="list-style-type: none"> Clarify and strengthen existing mechanisms: Tax exemptions (import duty and VAT), on selected off-grid appropriate equipment, accessories and high energy efficient appliances; Adopt simplified procedures for imports and licensing¹⁹; Develop clear and updated documentation and guidelines to solar companies and authorities about the regulation, taxation and related conditions (e.g. list and features of tax exempted equipment, appliances and components); Need to streamline procedures for taxing new products without Harmonized System (HS) code; Build capacity of importers to understand regulation, tax policies, and its implementation and strengthen dialogue with Uganda Revenue Authority (URA) to understand the trade of solar products, parts and accessories; Donors and Government could help to strengthen the industrial Association (USEA) to lobby for tax exemption and clarity at the EAC and Ministry of Finance. Development Partners can further strengthen the role of USEA by supporting membership of USEA as a condition for finance provision.

¹⁸ For example in Ethiopia and Tanzania by using the planning software called Geosim: rural electrification and investment plans, including network expansion options and decentralized mini-grid, with capacity of national institutions in terms of planning;

¹⁹ Example: an importer can lodge a partial customs declaration by using an invoice. Then, by presenting the goods to customs, these are released against duties paid at a later stage. Thus the entire clearance process is accelerated and the trader has the goods at his disposal more quickly.

N°	Issue	Current Situation	Specific Action
3	Consumer protection and awareness	<p>Quality issues of solar products and services:</p> <ul style="list-style-type: none"> • Consumer protection bill has never been passed²⁰; • No standards for small PV products, only for SHS. Lighting Africa standard adoption is underway; • Solar market is saturated with low quality products; • Lack of qualified technicians; • Lack of resources of the Uganda National Bureau of Standard (UNBS) to control and enforce the standards. Currently only 5 controller staff in total; • No proper facilities to test the products. This results in delays e.g. whilst waiting for suitable levels of sunshine. <p>Lack of awareness of good quality products amongst end-users: households, NGO, public institutions, communities, businesses.</p>	<p>ACTION 4: Disseminate and ensure enforcement of standards:</p> <ul style="list-style-type: none"> • Apply standards on (i) importation (IEC and LA), (ii) design, (iii) installation and (iv) usage. Apply IEC and Lighting Africa as minimum standards requirements. Update installation code; • Implement a certification process and self-regulation for solar companies incl. distributors and installers, e.g. through Uganda Solar Energy Association (USEA); • Train and certify solar technicians for design, installation and after-sales service; • Strengthen the capacity of UNBS with staff dedicated to solar products and testing facilities (e.g. test bench that allows testing in simulated environments instead of waiting for the sun to shine). Reinforce spot controls at the distributors' outlets and at the entry points of import. • In addition to UNBS, accredit and build capacity for a third institution²¹ to perform tests on behalf of UNBS which provides certification. Furthermore, provision of financing to UNBS in order to outsource the pre-inspection of the products at customs; <p>ACTION 5: Inform and create awareness on good quality products:</p> <ul style="list-style-type: none"> • Develop clear product specifications and labeling (performance, certification), trainings and user-manual for clients of PV products; • Finance awareness campaigns, information platforms at national and local levels and guidelines (e.g. on certified products and companies). Include specific messages targeting women, children and potential productive activities; • Strengthen the role of private sector representatives such as Ugandan Solar Energy Association (USEA) for example, to finance awareness campaigns on certified products and companies. • Build an information portal through websites and mobile technology to avail information to end-users regarding good quality solar products and services.

²⁰ http://www.newvision.co.ug/new_vision/news/1327798/minister-table-consumer-protection

²¹ such as the Centre for Research in Energy and Energy Conservation (CREEC)

N°	Issue	Current Situation	Specific Action
4	Supply chain financing	<p>Limited capacity of distribution of solar products and services to the last mile impacting affordability for the poorest and most vulnerable</p> <p>Lack of access to finance:</p> <ul style="list-style-type: none"> • Difficulty with hard currency financing, due to exchange risk and high inflation²²; • High costs and risks for companies offering microfinancing facilities including PAYG solutions hence worsening the issue of affordability. 	<p>ACTION 6: Support expanded distribution infrastructure (e.g. sales outlets, sales force, distribution partnerships) of solar companies that are focusing or have plans of distributing to the rural areas and under-served regions such as Northern Uganda. Support includes Technical Assistance to develop scalable business models suitable management systems and incentives to expand sales outlets e.g. results based financing.</p> <p>ACTION 7: Provide affordable financing facilities for solar companies:</p> <ul style="list-style-type: none"> • Conduct research on financial inclusiveness in RE sector²³ (focus on previous and existing financing models, challenges, lessons learnt, limited commitment from banks, successes and proposal of suitable incentive schemes); • Create a dedicated solar fund, in particular targeting local systems integrators²⁴; • Create awareness and train financial institutions on business opportunities, e.g. by profiling and assessing bankable businesses (e.g. understanding of solar products and services); • Loan guarantees to counter high interest rate and collateral requirement; • Provide transaction advisory services, TA on financial management and guidelines on the different financing instruments.
5	Consumer financing	<p>Limited payment capacity of end-users and financing facilities in rural areas:</p> <ul style="list-style-type: none"> • Procedures from regulated banks and MFIs are too heavy and costly for low market consumers; • In practice, private companies and SACCOs are more reactive and adapted to small consumers. 	<p>ACTION 8: Provide financing facilities (loans but no subsidy because of the risk of market distortion) in particular for base of pyramid (BoP) and female consumers:</p> <ul style="list-style-type: none"> • Provide information on financing instruments (mobile payment, MFI, PAYG, solar kiosks) and improved payment platforms (multiple language options, transactions security...); • Inform and sensitise local financial institutions on the good quality solar products and their benefits; • Support MEMD to work with the Bank of Uganda, the Ministry of Finance and local financial institutions to simplify lending requirements and repayment process for solar solutions²⁵; • Support MFIs to set up solar companies (see business model in Asia).

²² This observation is supported by the World Bank with the ERT-3 programme implemented through the UECCC for example through Financial Sector Deepening Uganda (FSD Uganda)

²⁴ Could be managed by UECCC, PSFU or FSDU

²⁵ for example, using solar systems as collateral, supporting mobile money integration for solar companies and MFIs.

5. Coordinated Support

This section highlights potential areas for support, and the existing intervention by development partners (DPs) related to the proposed actions. Potential national partners and implementers are also identified in the last column. Note that current support needs to be coordinated and reinforced in order to scale up the impacts and achieve the targets of solar market development, as per the national policy, in particular the Renewable Energy Policy (2007) and the Rural Electrification strategy plan 2013 – 2022 (2012).

Key donor programmes relevant to the Uganda household solar sector are listed in Annex 2.

The following actions refer to the activities geared to support market growth with the active support of the government institutions which are expected to take the leadership.

N°	Issue	Action	Existing donor support and potential partners for the specific action
1	Policy framework	<p>ACTION 1: Develop policy briefs</p> <p>ACTION 2: Develop a clear and detailed strategy and action plan</p>	<p>ACTION 1: No existing donor support</p> <p>Government partners: MEMD, REA, ERA, MoF and Bank of Uganda as leaders of the process</p> <p>ACTION 2:</p> <p>DPs: GIZ/ENDEV, EU and Power Africa for the provision of Technical assistance and advice on policy integration. This includes the review of the Energy Policy 2002.</p> <p>Government partners: MEMD, REA and ERA</p>
2	Fiscal barriers	<p>ACTION 3: Develop clarity on fiscal policy and set up a conducive regulatory framework for importing and certifying products</p>	<p>ACTION 3:</p> <p>DPs: GIZ/ENDEV, KFW, EU and Power Africa for the provision of Technical Assistance and advice on policy integration and adaptation of regulations</p> <p>Government partners: MEMD, REA, ERA and URA</p>
3	Consumer protection and awareness	<p>ACTION 4: Disseminate and ensure enforcement of standards:</p>	<p>ACTION 4:</p> <p>DPs: TA of the WB in the framework of ERT 3 Programme (2016-2020):</p> <ul style="list-style-type: none"> • Subcomponent 2.2: Business Development Support for Rural Access incl. promotion of organization and self-regulation among the solar business; • Subcomponent 2.4: Quality Assurance and awareness for Solar Market Development. This includes financing of testing facilities with capacity building under UNBS and awareness activities on the quality of products. <p>Other existing commitment: Lighting Africa</p> <p>Potential partners: USEA and UNBS</p>

N°	Issue	Action	Existing donor support and potential partners for the specific action
		<p>ACTION 5: Inform and create awareness</p>	<p>ACTION 5:</p> <p>DPs: WB, Lighting Africa, GIZ/ENDEV, USAID/Power Africa, UNCDF, SIDA</p> <p>Partners: PSFU, Uganda Solar Energy Association, private distributors, MEMD and REA</p> <p>One of the components of the UNCDF “Cleanstart” programme (2012 – 2018) will support MEMD, REA and UECCC for market building activities such as awareness at district level, database of the market.</p> <p>SIDA will support consumer awareness activities.</p>
4	Supply Chain Financing	<p>ACTION 6: Expand distribution infrastructure</p> <p>ACTION 7: Provide affordable financing facilities for solar companies:</p>	<p>ACTION 6:</p> <p>DP: GIZ is supporting 5 solar companies to set up 14 outlets (so far). The companies are selected based on current efforts to expand their last mile distribution, quality and affordability of the products.</p> <p>ACTION 7:</p> <p>DPs: UNCDF, WB, GIZ, EU/SIDA, USAID, NORAD</p> <p>WB under the subcomponent 2.3 of the ERT-3 (2016-2020): Financial Intermediation for Rural Access (US\$11.5 million). Provision of line of credit and guarantee instruments through the UECCC to the PFIs working capital for solar businesses supporting off-grid access.</p> <p>UNCDF is implementing the “Cleanstart” programme (2012 – 2018): the main component provides grants and TA to develop scalable consumer and enterprise financing models.</p> <p>Embassy of Sweden in Uganda will also soon be implementing a <i>RE Challenge Fund (USD 4.6 million)</i> that will provide grant financing. Additionally, SIDA provides Loan guarantees funds for renewable energy enterprises.</p> <p>EU/SIDA through the <i>Energy Facility</i> instrument is implementing solar PV electrification programmes.</p> <p>GIZ is implementing solar PV electrification programmes and TA activities for Market structure development and climate finance.</p> <p>USAID: provides partial loan guarantee of \$2.5 million over 5 years for Centenary Bank to lend to SolarNow; Increases the amount of capital available to the company to scale-up its hire-purchase solar-financing</p>

N°	Issue	Action	Existing donor support and potential partners for the specific action
			<p>business model.</p> <p>Norway/NORAD: Through the Renewable Energy Incubator, NORAD provide training, technical support, business plan development, market research and investment support and seed funding. They also support WWF solar off-grid activities under the champion district initiative in Kasese. They are working with the civil society in form of Community based organisations (CBOs) whose memberships are usually youths and women. The champion district initiative is a partnership between Local Government, WWF, CBOs and private solar companies.</p>
5	Consumer financing	<p>ACTION 8: Provide financing facilities (loans but no subsidy because of the risk of market distortion) in particular for base of pyramid (BoP) and female consumers:</p>	<p>ACTION 8:</p> <p>DPs: WB and UNCDF.</p> <p>WB: The subcomponent 2.3 of the WB funded programme called ERT-3 (2016-2020) includes financing facilities through UECCC for consumers (households and small businesses). Could include the setting up of a monitoring system with specific gender indicators as well as partnership arrangements with SACCOs where majority members are women.</p> <p>UNCDF: the CleanStart programme includes grants to energy enterprises and financial institutions to develop scalable models for financing clean energy.</p> <p>There are several financial institutions in Uganda providing energy loans such as FINCA partnering with the distributor Brightlife, Centenary Rural Development Bank, UECCC partnering with Pride and PostBank.</p> <p>Note that other development partners such as EU, AFD, NORAD, OFID are supporting on-grid rural electrification programmes.</p>

The above briefly outlines current programmes supported by development partners active in Uganda. However, **some of the key barriers to market development have not been addressed to date and are likely to require specific actions, for example:**

- Current lack of clarity and uncertainties on key areas of fiscal policy;
- The limited capacity of the industry association and Uganda National Bureau of Standard (UNBS) regarding solar products;
- The lack of awareness of good and bad quality products by end-users;
- The lack of access to finance for solar importers, distributors, and systems integrators;
- The limited payment capacity of end-users and financing facilities in rural areas;
- Limited market data.

6. Preliminary Implementation Plan and Timeframe

The following table offers a preliminary timeline for implementation of the above policy and support actions. The final timetable will be confirmed based on the engagement of the government implementers and the development partners. The allocation of roles and responsibilities for the implementation will be decided by the Steering Committee in the next step further to the preliminary validation of this Compact proposal.

#	Action	2016	2017				2018			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Provide policy briefs	■	■							
2	Develop a clear and detailed strategy and action plan		■							
3	Provide clarity on the fiscal policy and set up a conducive regulatory framework			■	■					
4	Disseminate and ensure enforcement of standards:				■	■				
5	Inform and create awareness on good quality products						■	■		
6	Provide support to expand distribution infrastructure		■	■	■	■				
7	Provide affordable financing facilities for solar companies	■	■	■	■	■	■	■	■	■
8	Provide financing facilities for end-users	■	■	■	■	■	■	■	■	■

7. Monitoring and Evaluation

The steering committee of this agreement within the respective departments in support of the signing ministers is composed of:

1. Wafula Wilson, Ministry of Energy and Mineral Development;
2. Howard Standen, DFID, Uganda
3. Benon Bena, Uganda Rural Electrification Agency (REA)
4. Simon Kalanzi, SE4ALL Secretariat, Energy Commission, MEMD;
5. Abdeel A. Kyezira, Konserve Advisory / Uganda Solar Energy Association (USEA)
6. Oscar Ankunda, USAID / Power Africa
7. Hee Sung Kim, UNCDF

The steering committee members will meet or have a call not less than quarterly to discuss progress on the actions agreed in this Compact.

It is expected that the signatories or their representatives will hold a call or meeting not more than 12 months after the signing of this document to assess progress, and agree an update to this agreement if appropriate.

Signed:

Date	Date
[Title] Government of Uganda	[Title] DFID

ANNEX 1: Analysis of Actions

As mentioned above, there is need for defining a clear policy for off-grid electrification which includes a roadmap with targets, milestones, specific actions and related budget for solar market acceleration. A **monitoring system** could be set up in order to ensure the actual implementation of the measures and actions²⁶.

The policy should address one by one each specific barrier such as the **actual enforcement of policy and standards as well as the lack of clarity and uncertainties in the tax regime** (in particular on solar parts and appliances).

In this respect, the East African Community (EAC) has recently issued a directive removing the customs duty exemption on solar accessories in all EAC countries (Uganda, Rwanda, Tanzania, Kenya and Burundi). The EAC decisions **technically affects duties only and not VAT**, but governments are **likely to link VAT exemptions to duty exempted products only**. Uganda has already acted on this interpretation by enforcing import duties (25%), VAT (18%) and withholding tax (6%) at their respective borders on solar powered equipment such as radios and televisions, significantly driving up end-user costs.

Solar distributors are very concerned about the impact of such decision in price sensitive markets. M-KOPA mentioned an increase in cost of an SHS by 20%.

Beyond this (providing the VAT & import exemption for the entire system is reintroduced), many interviewees recognise that the fiscal environment is consistent: there is no uneven subsidy and traditional energy goods (kerosene, petrol, diesel) are taxed. This is thus increasing the value proposition of solar lighting solutions and explains the dynamism of the sector supported by a multiplicity of players: for example, the Uganda Solar Association counts 72 members throughout the country, out of which 49 are regular payers.

One of the key issues remains the capacity of the GoU to apply standards to support a reduction in the quantity of low quality products on the market. The Uganda National Bureau of Standards (UNBS) lacks adequate staff (only 5 controller staff in total) and equipment to fulfil its tasks. UNBS is responsible for developing and issuing national standards, provision of import inspection services, quality assurance, testing and certification of imported goods.

Most of the stakeholders agree that a major part of the support **should now focus on financing the supply chain**. Different business models are already in place: Rent-To-Own, fee-for-service, cash sales, sales with credit, microfinance institutions partnering with private distributors or becoming solar distributors²⁷. Lessons learnt from ERT II showed that all end-user subsidy schemes are not appropriate by resulting in market distortion.

²⁶ For example, in Rwanda, organizations and companies involved in energy programmes are required to submit annual plans and proceeding monthly reports.

²⁷ Example: Village Power and Tujijenge have launched collaboration to improve access to solar power in Soroti and Busia districts. Tujijenge is a microfinance company active in Uganda and Tanzania.

ANNEX 2: Further information on coordinated support

A number of development partners are involved in policy advocacy, financing and providing Technical Assistance for the solar off-grid market. Most of them contribute to the energy sector development, while a few of them directly support the solar off-grid market.

A list of the main donors / initiatives relevant to the household solar space in Uganda include the following:

i. Advocacy and Technical Assistance

- DfID
- Lighting Africa
- World Bank in the framework of the ERT III programme
- GIZ/EnDev
- USAID/Power Africa
- UNCDF
- SIDA
- Dutch embassy

1. Financing the supply chain (grant, debt or equity)

- WB
- GIZ/ENDEV
- USAID/Power Africa
- UNCDF
- EU
- SIDA
- NORAD

2. Consumer financing (grant, debt or equity)

- WB,
- FINCA
- Post Bank
- Centenary bank
- Opportunity bank

Below are presented some of the key programmes supporting the solar market in Uganda:

World Bank programme: ERT-III (2016 – 2020) - Component 2: Off-grid Energy Access (US\$25 million)

As part of the rural electrification program, Energy for Rural Transformation (ERT I and II), through the Photovoltaic Targeted Market Approach (PVTMA) offered a sales-based performance subsidy scheme that also provides business development support to private PV dealers, is being implemented. Under this programme, other Ministries procured PV systems to meet their sectors' electricity needs. Based on this experience, a third phase (2016-2020) has been launched (called ERT III) which focuses on the supply chain. ERT III aims at increasing access to electricity in the rural areas of Uganda. The programme has three components among which is an off-grid energy access component. This component includes;

- The installation of solar PV systems for public institutions in rural areas;
- Business development support;
- Provision of credit and guarantee instruments through the UECCC to the PFIs to facilitate consumer financing needs and working capital for solar businesses supporting off-grid access;
- TA to strengthen the UECCC; and
- Quality standards enforcement support.

UNCDF CleanStart Programme (2012 – 2018)

UNCDF is the UN's capital investment agency for the world's 48 least developed countries (LDCs). UNCDF's CleanStart programme supports low-income consumers to transition to cleaner and more efficient energy through microfinance. CleanStart has four components:

- (1) **Finance for clean energy** to develop scalable consumer and enterprise financing models. This is supported through a combination of pre-investment technical assistance; risk capital grants; and concessional finance.
- (2) **Technical assistance for clean energy** to increase the 'scale' potential of financing models by creating a supportive business ecosystem (e.g. consumer confidence, last-mile distribution, customer service).
- (3) **Knowledge and Learning** to promote awareness and customer-centric growth.
- (4) **Advocacy and Partnerships** to co-create a policy and business environment that supports energy microfinance to reach scale.

In August 2015, CleanStart launched an [Energy Access Challenge](#). 5 institutions were awarded out of 67 companies that submitted 73 ideas (This underlines the very high demand!): D.Light, Finca Uganda Ltd, Village Power, Eco Group (cook stoves and SHS) and BioLite (cook stoves).

UNCDF is investing \$1.8M in grant funding (leveraging an additional \$3 M) to support proven entrepreneurs and management teams to test commercially-driven business ideas that can achieve breakthroughs in consumer financing and/or energy value chain financing (e.g. for distributors, manufacturers).

UNCDF CleanStart is also undertaking two researches to understand off-grid customers better:

- **Energy ladder research (on-going):** a year-long study on the so-called "energy ladder" for solar power in Uganda to see if first-time buyers of small solar-powered products such as solar lanterns eventually buy larger and more expensive home systems, and what the role of financing is. [Link to press release](#).
- **Energy diaries (starting):** respondents are asked repeat questions every two weeks on money management, financial service and energy use over a six-month period.

Sida Uganda programme (2016-2020)

Renewable Energy challenge fund - Sweden has earmarked SEK 40 million (USD 4.6 million) for a period of four years to support qualifying SMEs (for off-grid solutions including solar) with scalable market led business models through a competitive process to access grants. The key outcomes of this contribution will include:

- Improved capacity and performance of Renewable Energy (RE) SMEs benefitting from technical advisory and management support, challenge funds, sector marketing, new networks, etc;
- RE SMEs in Uganda have increased access to financing such as debt, equity, and other forms of sustainable funding options that enable scale up of distribution of solutions especially targeting the rural households;
- Increased productivity and employment especially for youths and women along the renewable energy value chains.

GiZ/Energising development (Endev) Programme (April 2009 to December 2016)

Endev is supporting 5 solar companies (Green Light Planet, Solar sense, Ultratec, Village Power and IBN COM) that are distributing high quality solar products to the off-grid rural market in Uganda. The programme works with distribution and financing partners to solve the key bottlenecks affecting the solar market like inadequate distribution, after sales service, limited access to finance and lack of awareness. These partners benefit from financial and in-kind support which includes capacity development, awareness and promotion campaigns, implementing or piloting innovative financing and distribution approaches for solar systems. This far the programme has achieved the following results:

- Established 14 solar outlets for the 5 solar companies
- Supporting Green Light planet to open up 25 SunKing solar centres in Northern and Eastern Uganda
- Provided financial support to Village Power company for piloting a Pay as You Go system which has enabled sales of 3,000 solar systems.

- Created awareness campaigns in addition to providing shop branding, promotional materials and radio adverts
A total of 36,600 solar systems sold (Pico PV- 30,000, Solar Home Systems- 6,000 and 600 for institutions and SMEs).

Norwegian Government/NORAD

Through the Renewable Energy Business Incubator (REBI), support services have been provided to solar businesses to include training, business plan development, market research, proof of concept, feasibility, investment support and capacity exchanges. The solar businesses supported include Quality solar Enterprises and Mugo Power.

The Norwegian Government also support WWF programs in Kasese through the champion district initiative and commercialization of solar powered cookstoves at the Department of Physics/Makerere University.

Norway further supports most of the multi-donor programs promoting modern energy solutions in Uganda administered by WB, UN organisations, “Clean Start”, “EnDev”, etc.

OFID is currently financing an on-grid rural electrification programme (\$15MUS for 13,000 connections) in Kayunga & Kamuli Service.

ANNEX 3: Documents reference list

The documents used for to draft this Compact are the following:

- National Energy Policy (2002)
- National Development Plan II (2015)
- Power Sector Investment Plan (2011)
- Renewable Energy Policy (2007)
- Rural Electrification strategy plan 2013 – 2022
- Renewable Energy Investment Plan (2011)
- Uganda Vision 2040 (2013)
- SE4ALL Action Agenda (2015)
- Investment Prospectus (2015)
- Energy Country Report - Embassy of Netherlands in Uganda (Nov. 2015)
- Off-grid solar country briefing: Uganda - ODI-GOGLA
- The market for solar household - GOGLA report (2016)
- Policies to expand the market for solar household solutions - GOGLA report (2016)
- Factsheet Solar Market Development - GIZ / EnDev Uganda (2016)
- FINCA BrightLife Business Model presentation (2016)
- Project Appraisal Document – ERT-3 Programme – WB (2015)
- Solar market development study in Uganda – Endev / Creec (2014)
- Baseline Energy Africa Compacts – internal compilation of figures – DAI/LM (2016)
- Energy report for Uganda by 2050 – WWF (2015)

ANNEX 4: Consultations held to develop this Compact

Consultations were held with the following persons (underlined are the members of the Steering Committee):

1. Wafula Wilson, Ministry of Energy and Mineral Development;
2. Howard Standen, DFID, Uganda
3. Simon Kalanzi, SE4ALL Secretariat, Energy Commission, MEMD;
4. Hee Sung Kim, UNCDF
5. Oscar Ankunda, USAID / Power Africa
6. Benon Bena, Uganda Rural Electrification Agency (REA)
7. Abdeel A. Kyezira, Konserve Advisory / Uganda Solar Energy Association (USEA)
8. Tamusuza Kambagira Amos, Ministry of Energy and Mineral Development;
9. Roy Baguma, Uganda Energy and Credit Capitalisation company;
10. Vincent Ochwo, Uganda National Bureau of Standards
11. David Rogers, USAID / Power Africa
12. Moses Kakooza, GIZ/Endev
13. Job Mutyaba, Swedish Embassy / SIDA
14. Mbuso Gwafila, World Bank
15. Joyce Demucci, SNV
16. Paul Orikushaba, The Lutheran World Federation
17. Isaiah Owionji, WWF
18. Marc Simbizi, Swedish Church
19. Bernard Anguyo Oja, Greenlight Planet
20. Radhika Thakkar, Greenlight Planet
21. Daniel Willette, Fenix International
22. Jefferson Bwambale, Solar Aid/Sunny Money
23. Leslie Enright, Finca
24. Richard Ndahiro, Finca,
25. Abu Musuuza, Village Energy
26. Ejuku Francis Daniel, Barefoot Power
27. Anthony Weremaka, M-Kopa Uganda
28. Abhay Shah, UltraTec
29. Christopher Musoke, Financial Sector Deepening Uganda (FSDU)
30. Tony Simbwa, Power Trust
31. Stephen Kafeero, Go Solar
32. Mary Susan Abbo, CREEC
33. Hans Peter Christophersen, Counselor Trade & Energy, Royal Norwegian Embassy
34. Robert Towers, DFID, Uganda
35. Baguma K Douglas, Managing Director, Innovex
36. Douglas Karugaba, Innovex
37. Kadi Warner, Regional Advisor on Climate Change, Embassy of the Kingdom of the Netherlands
38. Jorn Leeksma, first Secretary, Embassy of the Kingdom of the Netherlands
39. Representative of Ministry of fisheries



Restitution workshop held on August 5th 2016 in Kampala – about 40 participants