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Local Electricity Access Program - LEAP

Connecting People to Overcome Energy Poverty

Electric Power in Africa

The United Nations estimate that despite recent progress and many international support initiatives in global electrification, still about 790 million people around the world are without access to electricity, are living in the dark. About 72% of those people live in sub-Saharan Africa mostly relying on traditional fuels that are wasteful, unreliable, expensive, unhealthy, slowdown social economic development and contribute to environmental problems and climate change. Kofi Annan singled out in the *Africa Progress Panel* flagship report that indoor air pollution alone causes the premature death of four million people worldwide per year; with about 600,000 dying prematurely for this reason in Africa alone¹; its successor organization *Africa Progress Group* is carrying LEAP forward through its strategic Partner *HUMBOLDT-VIADRINA Governance Platform*, Berlin.

Africa's increasing demand for electricity, coupled with its prolific resources of renewable energy, present an opportunity to develop a strong African-run power industry. Clean, reliable and affordable electricity is a key driver for socio-economic development. Electricity is essential not only for households but also for building up or improving education, health care as well as local businesses and thus creating local jobs and value generation.

It is estimated² that 315 million people will gain access to electricity in Africa's rural areas by 2040; only 30 percent will be connected to national grids, even though these grids do not necessarily mean reliable supply. Most of the people so far not connected, will gain access to off-grid household or mini-grid systems.

Preconditions for Successful Decentralized Electrification Projects

It is important to have an enabling environment that ensures that electrification will deliver the maximum value for the local population – regardless of individual technology and business models. Focus for the selection of appropriate solutions should be on meeting the requirements of the local population and their effectiveness to achieve sustainable development. Transparent and fair processes are required to ensure best techno-economic suitability and best fit into the relevant stakeholder framework for each specific region. Therefore, it is key that all relevant stakeholders are involved, at local, regional and national level.

Of additional importance are suitable financing instruments for electrification projects particularly for smaller projects where financing often is the major roadblock. International investors often have

¹ The Africa Progress Panel flagship report "Lights Power Action: Electrifying Africa"(2017) p.15

² E.g. combination of micro-grid with public grid and/or C&I anker models

concerns regarding long term reliability, transparency and the project benefits. Impact investors expect a reliable evidence of sustainability and fair and transparent access to the energy provided. Well documented contribution to the United Nations' Sustainability Development Goals (SDGs) and conformity to highest international environmental and social standards is equally important for impact and commercial investors.

A further precondition to achieve a fast and sustainable electrification is a clearly defined, consistent and long-term stable regulatory and governance framework. This framework has to be open for different power generation and supply solutions, focused on coordination of synergies instead of isolated initiatives of the many private and public players active in the field. The underlying business cases, financing and operation models have to be focused on long term sustainability – technically and economically. Going hand in hand – the described framework and the sustainable business models will lead to a continued and fast growth of installed decentralized power generation solutions, including their compatibility with new technologies an eventual extension of the national power grid.

A stable and suitable national regulatory framework and good governance is key to enable good investments in the required magnitude for the sector. This is pursued in numerous electrification projects at national level, but often neglects the development of appropriate governance conditions at the local levels. The objective of LEAP is to support establishing favourable conditions to attract different investor groups to the local level in order to scale rural electrification and development.³ This includes a key focus towards the needs of the local population and business to create a transparent, fair and future-proof access to affordable, clean energy.

Multi Stakeholder Approach to Develop Good Local Governance

LEAP will be designed to help overcome the suffering of people without access to electricity by improving the local enabling environment for off-grid access. It seeks to develop governance parameters in parallel to accompanying implementation of concrete projects, so that first hand experiences and requirements from the local level can be considered. In the long term, LEAP plans to scale up for the whole of rural Africa and to evaluate the most promising strategies from among those pilots.

LEAP will set up local, national and international multi-stakeholder groups (MSG) to promote open and accountable governance systems through regular deliberating and reporting about relevant governance issues and their development. Participants from civil society, private sector and government are included with the same voting power of all three groups independently of their size.

The multi-stakeholder approach will define relevant criteria enabling a clear, transparent, and stable framework for different electrification purposes (such as rural electrification for single households or for a whole villages or industrial electrification). It is targeted to develop a framework blueprint for decentralized electrification projects that is flexible enough for local or national characteristics. All relevant local stakeholders will be represented and will be enabled to contribute their own perspectives concerning the relevant issues. The local approach must of course be compatible with national legislation and policies – which should give space to the local needs.

- The **local MSG** would be composed of representatives of government, civil society and business who would define together the needs for electrification solutions in a rural region or villages. They would establish relevant standards for a transparent, clear and stable framework enabling appropriate electrification solutions. They would deliberate and report

³ Such as public, institutional-, as well as private I investors – be it impact funds, individual investors or an investor crowd.

regularly about the strengths and weaknesses of their local governance to the national and global MSGs. (In the beginning, when only one or two local systems/ villages participate, the local MSG may be merged with the national MSG)

- The **national MSG** provides advice on technical level (including digitalization), on legal or regulatory level, and reviews the reports from the local MSG. It would also ensure the alignment and support of the local decisions with national policies, by translating the defined parameters of local governance to national standards and governance guidelines. It also conveys and explains the electrification solution to the Global Board as basis for the blueprint set-up and to foster the knowledge exchange between countries.
- At the international level a multi-stakeholder **Global Board** would provide guidance, reach out to other participating countries, and leverage and scale international experience. It would also develop, assess and catalog the electrification solution reported as well as initiate and promote digital tools to improve the project's processes and funding.

The Global Board would evolve from a preliminary **Global Advisory Group** which, once set up, it would flesh out in concrete terms the LEAP Initiative.

LEAP will use applicable digitalization tools. It is important to document and track the investment's impact. Technologies, like Blockchain as one example can be helpful to show contributions to the achievement of the United Nations' Sustainable Development Goals. Furthermore, digitalization can easily serve to analyze the **CO²** impact.

A lean **LEAP Secretariat** will help maintain and expand the multi-stakeholder process for operating the local electricity access. In particular, the Board would have to review the regular reports of the MSGs about the compliance with defined standards by participating communities. It is expected to establish a legal entity (non-profit) with a work-plan, budget and financing plan, commensurate with the evolution of LEAP in various countries. Clear by-laws ensure fair, transparent approach and decision-making processes, and equal opportunities for all stakeholder and working groups (gender, social, political equality).

Proposed Project and Work Plan

The LEAP project includes a **dual approach**: The preparation of multi-stakeholder governance program (as described above) and a concrete bottom-up action accompanied by an initial pilot project in Senegal.

This pilot project in Senegal project has been developed by **connect2evolve**, a grassroots initiative by Siemens Energy employees that combines impact and technology in close cooperation with the village mayor of Ndiob⁴ and private industry like Africa Greentec.

Next steps

The **Advisory Group**⁵ would be established by February 2021 to adopt a common strategy and lay out the work-plan. By spring 2021, the Advisory Group will call a stocktaking session in Berlin, bringing together representatives from government (hopefully Senegal), business (e.g. power generation industry such as Siemens Energy, GRIPS-energy) and civil society organizations. The outcome will help in better defining the way forward for the LEAP initiative in Senegal.

⁴ The choice of the village of Ndiob in Senegal stems from the Mayor's great commitment and interest to adopting green technologies for his municipality (see Annex 1).

⁵ The Advisory Group is presently composed of civil society activists including Prof. Dr. Peter Eigen, Timon Herzog, Sylvia Niewiem and Tanja Romahn (see Annex 2). The Group is actively involved in promoting change through advocacy and awareness raising. Together, they provide considerable convening power and expertise.

Two roundtables will be organized potentially in Berlin and Dakar (or virtual). The **first roundtable**, will bring together representatives from government (including the pilot country Senegal), industry and civil society representatives and experts, for the purpose of a more **concrete** development of governance standards for (a) decentralized electrification, (b) of the focused technical electrification solutions, and (c) the block-chain approach for Senegal. It would also brainstorm to identify potential countries for the second pilot project.

The **second roundtable, proposed to be held in Dakar**, will focus in detail on setting up the Local and National multi-stakeholder groups (MSGs), capacity building for the National and Local MSGs including governance standards. It will also be discussed the status and a roll out of the pilot project. It will be an opportunity to garner, among others, additional support for the initiative and explore potential additional funding.

Results and Deliverables

Within a 12-month period the set-up for LEAP should be established and should be made ready for ongoing operation. At least a first pilot project should be implemented to include practical experiences into the LEAP framework.

This means threat least two MSGs should be established. A first list of standard local governance parameters shall be available as well as a list of electrification technology solutions. Both lists are open list, which are to be constantly supplemented. Further countries for the LEAP approach should be explored and in best case selected for a roll-out of this concept within the following 3-5 years.

All results will be compiled and published in a report. The 12-month period ends with a global meeting launching LEAP as a not for profit Legal Entity with a Global Board – as successor of the Advisory Group, with a secretariat at HUMBOLDT-VIADRINA Governance Platform.

Proposed Budget

A rough cost estimate for the 12-month period the set-up for LEAP totals about 238.00€ as follows. In addition, we expect to contribute about 80.000€ in the form of pro bono consultancies.

Estimated Budget for a start-up 12-month period for setting up activities in Senegal and Germany: <i>Category of costs</i>	Senegal	Germany
Staff costs	34.400€	47.600€
Travel and Meeting Costs:	65.000€	50.000€
General operations	22.500€	18.500€
<u>Total costs:</u>	<u>121.900€</u>	<u>116.100€</u>

Annex 1: The Pilot Project

In this pilot project, the **innovative Blockchain technology will be put to the test for a seed financing model**. A protocol for a decentralized network to be used for the purpose of securing financing from an international crowd of various investors as well as NGO's or non-profit funds.

A Blockchain based crowdfunding should enable access to affordable, reliable and sustainable electricity. The chosen asset, a 45kwp solar container will provide electricity for around 300 households. Every kwh that is provided to the power consumers will be tokenized. By linking this impact token to every single donation., Blockchain increases the **transparency** of financial transactions: it allows each donor to witness the impact of the donation at the project level in the village. Furthermore. It enables the tracking of the project success (e.g. on delivery of produced power to consumers).

It is expected that in the Summer 2021 funding would be **finalized** and the Solar container@ installed in the pilot Senegalese village. For the Blockchain technology to be used to its fullest potential, there's need to be in place an appropriate regulatory framework and an awareness raising program. A solid and adapted governance approach is required and will be developed in a next step.

In parallel to the planning of the pilot project, a **local multi-stakeholder group** will be set up. The group will analyze the development of the pilot project and work out proposals for needed regulatory or modification of rules of electrification programs.

Annex 2: Advisory Group

- **Daphne Büllsbach** (HUMBOLDT-VIADRINA Governance Platform gGmbH) is Managing Director of the Governance Platform and LEAP Secretariat.
- **Peter Conze** (HUMBOLDT-VIADRINA Governance Platform gGmbH) is Chair of the Supervisory Board.
- **Prof. Dr. Peter Eigen Eigen** (HUMBOLDT-VIADRINA Governance Platform) is the founder and former Chair of Transparency International (TI), and of a number of other multi-stakeholder initiatives and was the founding Chair of the Extractive Industries Transparency Initiative (EITI). He has practical experience about the vital role organized Civil Society can play in improving governance.
- **Timon Herzog** is CEO of GRIPS-Energy. Grips Energy is a renewable energy Investor, contractor and IPP focused on developing and emerging countries with special emphasis on sub-Sahara Africa. He is a business economist with extensive international experience in the renewable energy industry and the development cooperation sector (GIZ).
- **Sylvia Niewiem** (Siemens Energy) is a Senior Manager and Blockchain initiator @ Siemens Energy. For the last 3 years she is focusing on Blockchain related topics @Siemens. She is a business economist with extensive experience in the financial and the energy sector with focus on renewable energy.
- **Tanja Romahn**. (Siemens Energy) *Tanja is a business economist and project manager at Siemens Energy. She is part of the Siemens Blockchain team for 4 years and develops use cases and business models. Her passion is the combination of technology and impact.*
- **Gabriele Schwarz** (Bonergie) is Conseil Patronal des Énergies Renouvelables du Sénégal » (COPERES) and convenor of LEAP MSG Senegal