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This action is funded by the European Union

ANNEX

of the Commission Decision on the financing of the individual measures in favour of the Republic of Liberia

**Action Document for Rural Electrification Programme prioritising the South-East of Liberia**

<b>1. Title/basic act/ CRIS number</b>	Rural Electrification Programme prioritising the South-East of Liberia CRIS number: LR/FED/040-034 financed under the 11 <sup>th</sup> European Development Fund			
<b>2. Zone benefiting from the action/location</b>	Liberia The action shall be carried out at the following location: as a priority in the South-East of Liberia			
<b>3. Programming document</b>	National Indicative Programme (NIP) for the period 2014-2020 for Liberia			
<b>4. Sustainable Development Goals (SDGs)</b>	It contributes primarily to the progressive achievement of Goal 7 - Affordable and Clean Energy; it also promotes progress towards Goals 1 - No Poverty and 5 – Gender Equality.			
<b>5. Sector of intervention/ thematic area</b>	Energy	DEV. Assistance: YES		
<b>6. Amounts concerned</b>	Total estimated cost: <b>EUR 42 000 000</b> Total amount of EDF contribution EUR 42 000 000			
<b>7. Aid modality and implementation modalities</b>	Project Modality <b>Indirect management</b> with the Republic of Liberia The contribution to the Regional Blending Platform portion of this Action shall be implemented in indirect management by the entities indicated in the appendix to this action document, in accordance with the Regional Blending Platform’s award procedure <b>Direct management</b> for small studies			
<b>8 a) DAC codes</b>	23 210 Energy generation, renewable sources (50%) 23 630 Electric power transmission and distribution (50%)			
<b>b) Main Delivery Channel</b>	12000 Recipient Government 13000 Third Country Government (Delegated Cooperation)			
<b>9. Markers (from CRIS DAC form)</b>	<b>General policy objective</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Principal objective</b>
	Participation development/good governance	<input type="checkbox"/>	<input type="checkbox"/>	✓
	Aid to environment	<input type="checkbox"/>	✓	<input type="checkbox"/>
	Gender equality and Women’s and	<input type="checkbox"/>	✓	<input type="checkbox"/>

	Girl's Empowerment			
	Trade Development	<input type="checkbox"/>	✓	<input type="checkbox"/>
	Reproductive, Maternal, New born and child health	✓	<input type="checkbox"/>	<input type="checkbox"/>
	<b>RIO Convention markers</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Principal objective</b>
	Biological diversity	✓	<input type="checkbox"/>	<input type="checkbox"/>
	Combat desertification	✓	<input type="checkbox"/>	<input type="checkbox"/>
	Climate change mitigation	<input type="checkbox"/>	✓	<input type="checkbox"/>
	Climate change adaptation	✓	<input type="checkbox"/>	<input type="checkbox"/>
<b>10. Global Public Goods and Challenges (GPGC) thematic flagships</b>	N/A			

## SUMMARY

The South-East (SE) of Liberia has been mostly at the margin of development in Liberia for a long period of time; accessibility is very difficult and electricity, perceived as one of the main drivers of development, is unavailable to almost everybody.

A few hundred households in 5 main settlements receive electricity from Côte d'Ivoire as a result of an EU co-funded cross-border project but revenue collection from the electricity consumed has not been effective and through the proper channel. Only one mini-grid in Nimba County, which is currently being managed by a private company, appears to be doing well. This operation has not been licensed yet by the Liberian Electricity Regulatory Commission (LERC). The consumption of electrical power without payment by consumers in the other four mini-grids is not financially sustainable.

The objective of the Programme is to stimulate socio-economic development and thereby improve the living conditions of the rural population, prioritising the South-East of Liberia. It aims to achieve this objective by increasing access to reliable and affordable renewable-energy-based electricity. The programme attempts to catalyse private sector investment in the development of electricity mini-grids.

The main outcomes of the action will be that electricity is widely available and used by people in the selected main settlements of the South-East of Liberia for productive, commercial and residential purposes as well as for the delivery of basic services (as health and education) and that the licensees or commercial operators active in the targeted areas are operating in a gender sensitive way according to their contracts, following best practice and are set on a growth trajectory.

The programme provides technical assistance and applies two support modalities for private sector investments in and operation of mini-grids.

- Tailored Financial Support of the investment and expansion plans of private mini-grid investors and productive use investments of their electricity consumers through a number of risk-sharing finance instruments such as sub-ordinate loans, conditional loans/grants, quasi-equity, equity and first-loss guarantees tailored to the specific needs of individual investors in each of the targeted locations.
- Construction of Assets for electricity generation, transmission and distribution, in the few locations where this is still required to make private sector investment possible.

Accompanying measures will make sure that the arrival of electricity translates into the reduction of poverty and improvement of the living conditions of the people, especially women and girls living in the area.

## 1 CONTEXT ANALYSIS

### 1.1 Context Description

Liberia lies on the west coast of Africa, bordering Sierra Leone, Guinea and Côte d'Ivoire. The country occupies a territory of 111,370 km<sup>2</sup>, with a population estimated at 4.9 million as of 2018, growing at an annual rate of 2.6 %.

The presidential and legislative elections of October 2017 have been a milestone in Liberia's post-war transition. They represent the first transition since the end of the civil war and took place with a significantly reduced presence of the United Nations Mission in Liberia (UNMIL), whose mandate ended on 30 March 2018.

Liberia, the poorest country in the Economic Community of West African States (ECOWAS) region with a gross national income (GNI) per capita of USD 370<sup>1</sup>, has one of the lowest levels of human development in the world (ranking 177 out of 188 countries)<sup>2</sup>, weak state capacity, and a high level of dependence on international donors.

Liberia is one of the lowest ranked countries in the United Nations Development Programme (UNDP) Gender Inequality index in 2016. Women remain disadvantaged relative to men across a range of measures related to employment, health, education, and political participation. Gender based violence remains a persistent problem in the country.

Less than 3% of the population in rural Liberia has access to electricity while in Monrovia the figure is now 31%.<sup>3</sup> Roughly half of that electricity is generated by highly polluting and costly small generators.

Most of Liberia's electricity infrastructure was destroyed or deteriorated during the years of conflict (1989 to 2003). Before the civil war, Liberia had a total installed capacity of 182 MW. Some rural parts of Liberia (defined as all areas outside Monrovia) were provided electricity by the Liberia Electricity Corporation (LEC) through 13 isolated grids powered by diesel engines and located in the capitals of the counties.

The reactivation of the Mount Coffee Hydro since 2017 is expanding energy access in urban Monrovia. The EU-funded 33 kV cross-border project has provided electricity to some of the settlements near the border with Côte d'Ivoire like Harper, Pleebo, Zwedru, Tappita and Ganta, reaching 36 000 persons by the end of July 2017<sup>4</sup>. The 225 kV Côte d'Ivoire – Liberia – Sierra Leone – Guinea (CLSG) transmission line of the West African Power Pool (WAPP) is supporting expansion of electricity access in other major towns of Liberia, such as Buchanan, and to the rural communities along the line.

In 2018, 10 mini-grids using renewable energy (hydro, wood, solar PV, palm oil, solar-diesel) are operational with capacities ranging from 22.5 kW to 60 kW.<sup>5</sup> The projects were funded by the EU, USAID and World Bank. Nine are operated by a local cooperative, one by a private operator.

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<sup>1</sup> <https://data.worldbank.org/country/liberia>.

<sup>2</sup> <http://hdr.undp.org/en/countries/profiles/LBR>

<sup>3</sup> Liberia Household Income and Expenditure Survey 2017 [http://microdata.worldbank.org/index.php/catalog/2986/related\\_materials](http://microdata.worldbank.org/index.php/catalog/2986/related_materials)

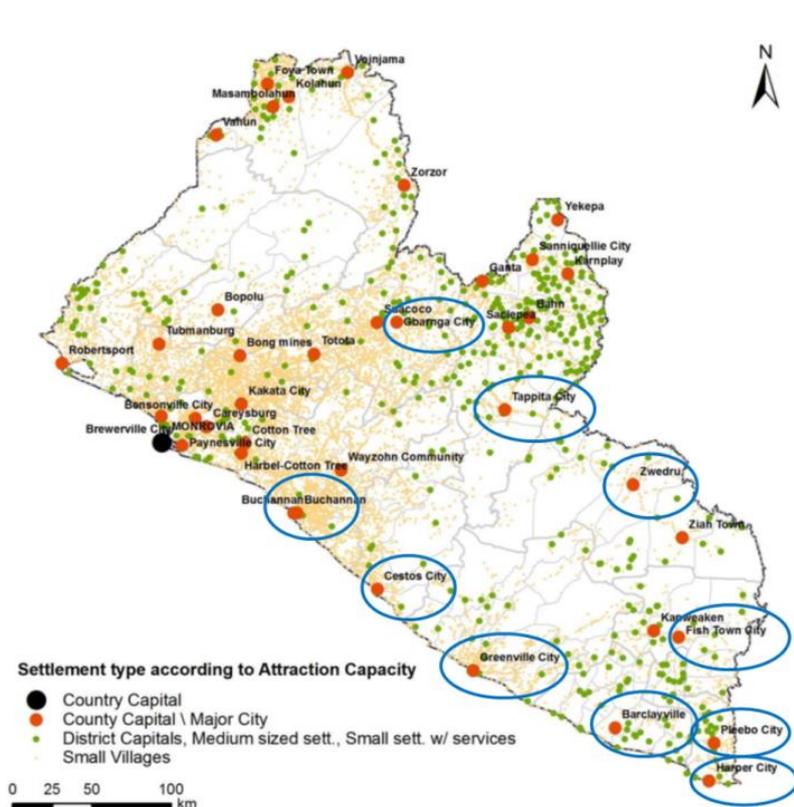
<sup>4</sup> [https://energypedia.info/wiki/Liberia\\_Energy\\_Situation](https://energypedia.info/wiki/Liberia_Energy_Situation)

<sup>5</sup> [www.renewables-liberia.info](http://www.renewables-liberia.info)

The average national electricity price is among the highest in the world; the 2018 LEC household consumer rate is USD 0.35kWh with industrial rates and rates for the cross-border projects at USD 0.25/kWh.

The EU-funded Rural Energy Strategy and Master Plan 2016 has been approved and launched by the Government and is available online under: <http://www.liberiaruralenergy.org>. The responsible government agency is the Rural and Renewable Energy Agency (RREA). A gap of USD 750 Million remains to implement the Rural Energy Master Plan with USD 100 Million being required in the next years. EU and Sweden have committed to joint programming and identifying actions for possible future funding under their respective funding programmes.

Map: Geographic location of the 10 potential electricity mini-grids in the South-East of Liberia for which pre-feasibility studies were prepared for the preparation of the Action Document.



Seven of these get power from the national grid, Cestos might be connected by an African Development Bank (AfDB) financed transmission line, Greenville is an isolated grid, for Barclayville recommendations by pre-feasibility study is supply by solar home systems, as conventional mini-grid technology is too costly for the scattered population.

## 1.2 Policy Framework (Global, EU)

The EU policy guiding this action is the New European Consensus on Development<sup>6</sup> in particular as far as it relates to sustainable energy and climate change. Energy is a critically important development enabler and is central to solutions for a sustainable planet. Developing countries need energy to promote inclusive growth and further improve standards of living. Investment in sustainable energy can ensure and increase access to clean water, clean cooking, education and healthcare, and can also create jobs and support local businesses in an environmentally friendly manner.

<sup>6</sup> OJ C 210 of 30.6.2017.

This programme is relevant for the United Nations 2030 Agenda for Sustainable Development, in particular section Planet, directly Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all and, more indirectly, Goals 1 - End poverty in all its forms everywhere, 5 - Achieve gender equality and empower all women and girls, and 9 - Build resilient infrastructures.

In July 2018, the UN Human Rights Committee has expressed concern at discrepancies between different sources of law, including minimum age for marriage and polygamy. Non-discrimination is enshrined in the Constitution but the UN HR Committee has asked to adopt comprehensive legislation that prohibits discrimination based on national or ethnic origin, religion, disability or sexual orientation, and provide for effective remedies in case of violations. Same-sex sexual conduct between consenting adults is criminalised. LGTBI individuals are stigmatised and experience violence, arbitrary detention and police abuse. Defenders advocating for the rights of LGTBI individuals experience harassment and reprisals. Women's and girls' rights are not effectively protected, particularly under traditional law; and sexual and gender-based violence, as well as impunity, is high.

### **1.3 Public Policy Analysis of the partner country/region**

#### ***Public Policy Assessment and EU Policy Framework***

The policy and strategy of the previous Government under President Ellen Johnson Sirleaf was called Agenda for Transformation (AfT) and had been assessed by the EU as relevant. President George Weah's Government, established in January 2018, is developing a successor strategy called the "Pro-poor Agenda for Prosperity and Development (PAPD)". The strategy has four pillars: Empowering the people; Economy and jobs; Sustaining the peace; and Governance & transparency. It explicitly targets the under-served South-East of the country; the EU action is fully aligned with this geographic priority. The new public policy, which is under development, is provisionally assessed as being relevant and credible by the EU. It reflects the commitment of the Republic of Liberia in eradicating poverty and reducing inequality aligned to the objectives of the European Union (EU) prescribed in the National Indicative Programme (NIP) 2014-2020. Owing to the EU's strong presence in Budget support, EU staff are continuously reviewing and assessing the credibility and relevance of the Government's public policy.

At sectorial level, the official policy is the Liberia Energy policy 2009, which is considered relevant but requires updating. The 2015 Electricity Law of Liberia and the Act to establish the Rural and Renewable Energy Agency (RREA) represent the legal foundation. The Government of Liberia, through the Ministry of Mines and Energy (MME), has requested the EU Delegation in Liberia to implement a project for the expansion of Rural Electrification supply to the South-East of Liberia. This action fully supports the implementation of the Rural Energy Strategy and Master Plan and Government priorities to continue to expand electricity to all parts of Liberia. The Nationally Determined Contribution (NDC) prepared for the Paris Agreement underlines that the energy sector is the highest contributor of greenhouse gases (GHG) in Liberia emanating mainly from the use of traditional fuels such as firewood, charcoal and palm oil and the use of fossil fuels, especially petroleum products. Liberia's Initial National Communication (2013) reinforces the National Energy Policy with additional long-term targets and related activities, which includes: (i) reducing GHGs by at least 10% by 2030; (ii) improving energy efficiency by at least 20% by 2030; (iii) raising share of renewable energy to at least 30% of electricity production and 10% of overall energy consumption by 2030.

The Liberia Electricity Regulatory Commission (LERC) was established by law in 2015. The three Commissioners appointed by the previous administration in 2017 were in an acting position unable to recruit staff. Finally, with the appointment by the President in September 2018 of three new Commissioners, recruitment of the other office staff is ongoing. With Donor technical assistance (TA), including by the EU, drafts of key implementing regulations, a draft multi-annual budget for

LERC and job descriptions for LERC staff were prepared. Currently the recruitment process for staff is ongoing.

#### 1.4 Stakeholder analysis

##### *Stakeholder analysis*

The Government of Liberia is the main duty bearer, responsible to promote, protect and fulfil human rights obligations. The Government has shown a high level of commitment in implementing the previous national development plans, but remains hampered by the weak institutional capacity and policy framework to coordinate actions and follow-up on implementation. The institutional capacity across government will improve only gradually but some lessons have been learnt from the AfT mid-term review. A Monitoring and Evaluation Unit has since then been established in the Ministry of Finance and Development Planning (MFDP).

The institutional capacity of the National Authorising Office (NAO), who administers the 11<sup>th</sup> EDF NIP and of the Rural and Renewable Energy Agency (RREA) is sufficient for the implementation of this action, which includes significant TA support.

Energy Policy is the responsibility of the Ministry of Mines and Energy (MME). The present capacity of this Ministry is very weak and, since the recent change of Government, has led to a substantial replacement of high level staff positions in the Ministry, a learning process is taking place.

The RREA has an authoritative and strong presence in its mandated area of rural electrification and its capacity, with continuous donor support, is considered reasonably good. RREA's mandate is to facilitate and accelerate Rural Electrification but not to operate as a utility.

The EU, in coordination with the US-funded Millennium Challenge Account Liberia (MCA-L), is providing substantial TA support to LERC in establishing electricity generation, transmission and distribution regulations and licenses. An exhaustive and transparent regulatory framework to be issued by LERC is essential for attracting private capital into the sector.

Both RREA and LERC have been very actively involved in the identification of the components of this action, which falls under their mandate.

KfW (German development bank) has indicated an interest to invest in a floating solar plant on the reservoir of the Mount Coffee Hydropower plant. The telecom company Orange, intends to take up pay-as-you-go (PAYG) distribution of Solar Home Systems in Liberia and is in partnership dialogue with a qualified European supplier on this. Mining and agricultural concessions are providing electrification of the staff households.

In parallel to the present action, Sweden has committed to support a Solar Home Systems (SHS) and solar microgrid programme and to delegate its management to the Nordic Environment Finance Corporation (NEFCO), who is already committed to Liberia under other activities funded by Sweden.

Direct beneficiaries of the project include RREA, the private sector licensees of the mini-grids, private entrepreneurs – men and women – who receive "productive use of electricity" support, the women and girls who will participate to the gender-focused accompanying measures, which are a specific component of this action, and private households and businesses who get an electricity connection. All these individuals are the rights-holders to whom the government is accountable.

Indirect beneficiaries of the project will be the entire population residing in the major settlements targeted under this programme and in the scattered rural areas targeted by the parallel Swedish co-funding. They get access to electricity and to electricity powered equipment for productive uses. The potential indirect beneficiaries of this project are in the order of 20% of the total population of Liberia. All these individuals are the rights-holders to whom the government is accountable.

Particular attention has been given, during the consultations with concerned populations, to civil society organisations (CSOs), women’s organisations and others as part of the stakeholders in the Electricity sector Gender Analysis carried out in the preparatory phase and will be given during the implementation of the action.

## 1.5 Problem analysis/priority areas for support

### *Priority areas for support/problem analysis*

The Government's Pro-poor Agenda for Prosperity and Development explicitly targets the rural and under-served areas of Liberia. The previous government explicitly requested the EU to concentrate on the under-developed and under-served south-east of the country in several of the 11<sup>th</sup> EDF sectors of concentration. Gaps in the energy sector are prevalent in the south-east, both in terms of infrastructure availability to support access for the population as well as trained personnel at different levels.

Under the 11<sup>th</sup> EDF, the EU supports the Government in modernising and enhancing the quality of the Technical and Vocational Education and Training (TVET) offer available to young people in Liberia to ensure the TVET subsector matches existing labour demands and promotes an entrepreneurship culture. The TVET Financing Agreement signed in April 2018 and the related contract signed with UNIDO in August 2018 includes support for skills development for rural electrification as a key priority. There will be synergy and alignment with the S-E rural electrification project to ensure technical skills needed for oversight and monitoring during and after construction are mobilised.

The evaluations of the previous actions funded by the EU have highlighted the following problems:

- a) Investments in electricity assets have not produced sustainable results in the absence of a capable operator once the construction phase is completed.
- b) The national grid company Liberia Electricity Corporation (LEC) has been absent from the rural areas for over 25 years and cannot be counted on as an operator capable and willing to operate in the rural areas, lacking generation and transmission capacity, which is also not cost effective due to the distances and small population which would be served if grid extensions would be sought.
- c) Any electricity undertaking can operate only if licensed to do so by the Liberia Electricity Regulatory Commission (LERC) and no licenses have been issued to date since LERC has not received any licence application yet nor would LERC have the necessary staff to review the application. Support staff was being recruited since January 2019. This problem is being mitigated by substantial support to the standing-up of LERC being provided, in coordination between EU and US-funded Millennium Challenge Account Liberia (MCA-L) in the sense of labour and support division.  
MCA-L provides logistics and initial salaries (till LERC becomes financially independent) and EU provides TA (temporarily short term via TAF and subsequently long term via the 3-year Technical Assistance, which was awarded on 03/10/2018 under Decision 30 831.
- d) The evaluation and preparatory studies carried out by the EU in consultation with the RREA during the identification stage of the present action have found that mini-grids are sustainable only in settlements with significant productive activities. Farmers and other low-income consumers have been found to be unable to pay for the long term replacement cost of the equipment and only businesses have been able to ensure the sustainability of the mini-grids which were constructed. In the absence of private sector businesses (as is the case in Liberia), unfortunately, mini-grids have proven not to be sustainable. However, new digital technologies coming into the market (such as the swarm technology described in 4.3) might allow business models to enable electricity supply to low income households.
- e) Dispersed rural areas can be sustainably provided with electricity only via isolated systems and not by mini-grids;

f) Past interventions have not focussed sufficiently through the "gender lens".

## 2 RISKS AND ASSUMPTIONS

Risks	Risk level (H/M/L)	Mitigating measures
<p><b>Political – Legal – Institutional</b></p> <p>The possible low interest and capability of the Government entities in charge of the electricity sector.</p> <p>Weak civil society and weak legal and institutional frameworks cannot fulfil their oversight and control function.</p>	M	<p>The present Minister of Finance and Development Planning has stressed the highest priority for future funding to the Electricity sector given by Government to generation, transmission and distribution projects in the S-E.</p> <p>Support to and promotion of institutional and legal reforms; development of regulations; continued support to civil society; continued political dialogue.</p>
<p><b>Macroeconomic</b></p> <p>Economy remains vulnerable due to high dependence on export of commodities (reduced revenues from exports) and raw materials (minerals, rubber) reducing potential investment; limited foreign exchange resources.</p>	H	<p>Improving service provision to rural areas will support the long-term growth and stability of Liberia.</p> <p>Ongoing discussion with IMF on the possibility of a Programme.</p> <p>Continue promoting regional integration.</p> <p>Access to electricity would open the potential of the development of high value agricultural goods value chains.</p>
<p><b>Public policy</b></p> <p>Due to high aid dependency a potential reduction of aid could influence the delivery of public policies.</p>	M	<p>New policy support instrument (PSI) programme with IMF focuses on improvement of tax collection and tax administration.</p>
<p><b>Rural Energy Fund (REFund)</b></p> <p>Financial credibility.</p>	M	<p>Should it prove impossible, at the start or during implementation, to certify REFund as compliant with International Auditing Standards then another Financial Institution of the ElectriFI family will be entrusted with the administration of these funds.</p>
<p><b>Natural resources that will be used for producing energy</b></p> <p>Non-renewable (fossil) energies may be used in this project.</p>	L	<p>All sites in the S-E, except Greenville and Barclayville, are or will be on-grid with Côte d'Ivoire and the nearest generation from which the power will come in principle is the Man Hydro Power Plant. The Ivorian grid is nevertheless part of the WAPP interconnected grid for which it is not possible to determine the source of generation beyond an overall average (<a href="http://www.ecowapp.org/">http://www.ecowapp.org/</a>).</p> <p>The Greenville project foresees generation coming from a local Small Hydro Power Plant with hybrid solar-diesel options for the start-up phase. EU will ensure that preference will be given to the environmentally best option in the tendering process – if the necessary funds will be available under the upcoming Financing Decision.</p> <p>Barclayville foresees solar home systems, ideally</p>

		in a swarm grid configuration.
<p><b>Low demand for tailored financial support</b></p> <p>In principle, the terms for the tailored financial support will be market based; except that no "rural" or "start-up company" risk premiums will be charged. The cost of finance may be too high to enable developers to identify sufficient high-tariff paying customers to make investment viable. Liberia is a fragile country, with poor road infrastructure by West African standards and a dispersed poor population.</p>	H	<p>Should the initial approach of the tailored financial support be found not to be fully successful at mid-term review, then the balance of funds would be re-oriented following the mid-term recommendations. Conditions on the ground vary substantially from one location to the other. In the case where the implementation of our programme will prove impossible for certain locations, existing economic feasibility findings at the time will dictate the next steps.</p>
<p><b>Human Resources</b></p> <p>MME, LEC and RREA have limited institutional and human resource capacities.</p>	M	<p>A very qualified NEFCO administration, the Supervisor and Technical Auditors for the works and of the various licenses or other similar legal instruments, with adequate budget, will be contracted under the programme.</p> <p>The action shall strengthen their project management capacities of the sector and shall keep adequate qualified personnel, including for the monitoring of the project.</p> <p>The Delegation commits to a high level of engagement in technical assistance, monitoring, advice, and project steering.</p>
<p><b>Coordination of the Donors' intervention</b></p> <p>Potential future risk of lack of coordination between the donors' interventions in the energy sector and limited communication between LEC and the donors' community.</p>	M	<p>Continuation of the Donors' energy dialogue, which has already seen a significant leap in quality by the formation of the Rural Energy Working Group (REWG) 22/09/2017. EU is part of the REWG Steering Committee.</p> <p>All members of the Steering Committee continue their pro-active participation through monthly meetings.</p>
<p><b>Corruption and Fraud</b></p> <p>Perceived level of corruption.</p>	M	<p>Government continues on determined action against corruption. The EU Delegation supports the Government of Liberia in fighting corruption on several levels: corruption cases of major relevance or in the area of Public Financial Management are discussed within the framework of the policy dialogue of the budget support operation. In addition, the State Building Contract has one specific condition to increase the approval and publication of spending entities' procurement plans to prevent corruption through transparency. In addition, one indicator rewards the Liberia Anti-Corruption Commission for verifying a sample of asset declarations by public officials to monitor against illicit wealth accumulation. Perception of corruption will be monitored through the logframes of the budget support operation and the support project to civil</p>

		society.
<b>Low gender sensitivity</b> in the development of the electrification in the country, and specifically in the south-east.	M	The trainings and other activities in the gender component of the programme are implemented as per the recommendations of the Gender Analysis undertaken in the identification phase.
<b>Assumptions</b>		
1) Côte d'Ivoire Energie (CI) continues supplying electricity, which is more likely if LEC settles its 2013-2017 arrears to CI; 2) LERC has issued licenses and holds licensees to their initial commitments, based on which funding will eventually have been approved for the given locality, or appoints new licensees if the original ones default; 3) Sufficient contractors interest to bid, given the bad access history of the area; 4) All involved actors have a sufficient level of knowledge and expertise on gender equality.		

### 3 LESSONS LEARNT AND COMPLEMENTARITY

#### 3.1 Lessons learnt and Evaluation of Previous actions funded by EU

Results from previous EU financed interventions have informed the development of the action<sup>7</sup>. The main lessons learnt from these contracts, from the Mount Coffee Hydropower project, from one specific EU Evaluation<sup>8</sup> and from evaluations shared by other donors in the framework of the Rural Energy Working Group are:

- a) Domestic and pico-grid solar installations can be best handled by the private sector supply market; there is no scope or justification for direct government-level intervention at such a small scale;
- b) Small solar mini-grids can be reasonably easily installed but, once installed and handed-over to the communities, the communities have in most cases found it impossible to collect sufficient funds to pay for the replacement of the batteries, as required after 5 to 8 years;
- c) If grid electricity arrives but there is no willing and qualified operator in place, electricity will not flow regularly due to lack of maintenance and the electricity bills will not be issued nor paid.

#### 3.2 Complementarity, synergy and donor coordination

Several donors are engaged in the energy sector in Liberia. The presently known activities funded by the different donors in Rural Electrification are as follows:

Under the 11<sup>th</sup> EDF NIP EUR 100 million envelope for Energy, the EU is implementing the EUR 52 million Financing Agreement "Monrovia Consolidation of Electricity Transmission and Distribution", which targets mainly the capital Monrovia; the present programme will target the Rural area, which in Liberia is defined as any area outside Monrovia.

The World Bank is funding the Liberia Renewable Energy Access Project (LIRENAP) in Lofa (USD 25 million grant under Scale-up Rural Energy Programme (SREP) for a 2.5 MW Hydro, 115 km 33kV transmission lines for around 10 000 connections plus a loan in the amount of USD 2

<sup>7</sup> Energy Facility grant contracts: 238 644 Cross-border supply of Electricity to Rural Communities in Liberia from Côte d'Ivoire; 267 810 Bring light to the 205 Health clinics which do not have it; 267 844 Rural Energy Master Plan and Market Development; 353 422 Renewable Energy market development, training and installation of solar pico-grids; 353 458 Construction of 5 rural village solar mini-grids.

<sup>8</sup> Contract 378 863 Mid Term Evaluation of the initial operational phase of contract 238 644 Cross-border supply of Electricity to Rural Communities in Liberia from Côte d'Ivoire.

million by the World Bank for 3 MW back-up diesel generation), which is presently being designed. Furthermore, the World Bank is working with the Government to investigate ways to proceed towards operation and maintenance contract, including a distribution assignment.

AfDB is administering a USD 25 million grant allocation under the twin component of SREP in the South-East of Liberia, under which the Gbedin Hydropower Plant is targeted for funding.

AfDB is also administering the Liberia Energy Efficiency and Access Programme (LEEAP), of EUR 45 million, which includes a EUR 10 million grant co-financing from the EU Africa Infrastructure Trust Fund Transport Investment (AITF).

KfW is identifying the 5<sup>th</sup> phase of their Rehabilitation and Recovery Programme, which focuses on the south-east and covers various integrated sectors including agriculture, health and roads but, based on available information, KfW wishes to limit its intervention to the local level and does not seek any form of interconnection or synergy beyond the local level. EU and KfW have agreed to continue exchanging information.

The US National Rural Electrification Cooperatives Association (NRECA) is providing support to RREA with USAID funding and has prepared, amongst others, the following: 33 kV transmission and distribution standards which will be used for the Kaiha II and Ganta-Gbarnga-Suakoko 33-kV line extension project; Service Provider License Agreement; Consumer Contract; Bill of Rights, etc. A standard US toolbox for Rural Electrification projects (Infrastructure Specifications and concession or cooperative approach contracts) exists and NRECA can make it available. Synergies and possible application of the toolbox under the EU financed action may be explored.

USAID indicated that they will fund the 33 kV transmission line from the EU-funded cross-border project in Ganta to Gbarnga and Suakoko, eventually putting Gbarnga on-grid.

Two private sector-focused energy programmes are currently being funded by Sweden in Liberia. They are AECF/REACT (USD 6 million for Liberia) and Beyond the Grid Fund for Africa (10 million Euros for Liberia). In the spirit of coordination and division of labour, it was agreed with Sweden that their programme will target dispersed solar home systems while the EU funding will target the larger settlements through mini-grids. The preferred option is that the same International Finance Institution manages separate windows for the two sources of financing.

In addition to the technical activities related to energy transmission, a wide range of actors are undertaking activities on the social dimensions of energy, including but not limited to training of women in technical skills and provision of solar lanterns to rural women as documented in the EU-funded Electricity Sector Gender Analysis (contract 388 314).

All stakeholders mentioned above are members of the Rural Energy Working Group (REWG) Steering Committee, which meets monthly and has repeatedly discussed several components of this action and provided input and guidance. There is excellent understanding between the stakeholders on the electricity public policy and the respective agendas are reasonably aligned.

The present action stems from a joint EU-Sweden Identification with the objective of a parallel and fully coordinated implementation.

Finally, the present programme will contribute to other EU efforts in the country. Most notably the EU Liberia Agriculture Programme (EULAP) which aims at reducing poverty, increasing income and resilience against shocks in the rural areas and improving food and nutrition security. Limited rural infrastructures and access to electricity have been identified as major obstacles for the development of agriculture. EULAP encompasses different components, as increased productivity of selected value chains (cocoa as well as sustainable fisheries), improved nutrition and strengthening capacity of Ministry of Agriculture.

## 4 DESCRIPTION OF THE ACTION

### 4.1 Overall objective, specific objective(s), expected outputs and indicative activities

The **overall objective** of the Programme is to increase prosperity and accelerate development in the country in the Rural South-East of Liberia. There is an explicit intent to select the options that are best from a Climate Change Mitigation perspective.

**Outcomes** include:

1. The licensees or operators in charge in the main targeted settlements have invested equity, operate according to best practice and are set on a growth trajectory;
2. Capital is accumulated in the REFund for further future investments in rural electrification and to further support the entry of private finance into rural electrification;
3. There will be more women engagement in the Energy sector businesswise as well as reduction in electrical mishaps among women and children.

**Outputs:**

1. New energy generation; New transmission and distribution lines installed or existing ones upgraded; additional customer connections are in place in existing and new mini-grids;
2. Tailored financial support is in place and licensees/operators have received financial support following a transparent and competitive award process; Licensees or operators receive regular technical audit and advice;
- 3.1 Support provided to LERC to determine for each site the amount per kWh to be contributed to REFund;
- 3.2 Support provided for RREA to determine the procedures for the flow of REFund monies;
4. Electricity awareness is improved in particular for women;
5. Electricity from renewable sources of energy used in the selected main settlements for productive, commercial and residential purposes as well as for the delivery of basic services (as health and education);

**Main activities**

1. Implementation of **Tailored Financial Support** to "bottom-up" private sector investment in mini-grids and in the productive uses of electricity, which will provide:
  - Investments (equity, quasi-equity, subordinate loans, et al) in private companies investing in the preparation, implementation and operation of mini-grids or extensions thereof using renewable energy technology as their main source of generation;
  - Facilitation of loans to small businesses investing in productive use of electricity, favouring energy efficient processes, channelled through local banks and micro-finance institutions, making available medium term refinance loans and partial credit guarantees;
  - Financial support to TA in business development and expansion (market studies, mentoring, etc.) to entrepreneurs engaging in mini-grid investments and to small businesses and investing in electricity using equipment for productive uses.

Tailored Financial Support to productive uses will be provided to beneficiaries under the present programme in the areas of Electricity-Agriculture and Electricity-IT Nexus.

2. **Construction of Assets** for electricity generation, transmission and distribution for a few identified mini-grid projects where this is required to make a license/affermage contract profitable for private sector investment, i.e.:
  - **Buchanan:** About 6 km 33 kV sub-transmission line from the 225/33 kV CLSG substation to the city border and distribution backbone inside the city, with connection to the Port Area;

- **Greenville:** either a solar power plant covering the entire long-term electricity demand, or a 2 MW hydropower plant combined with a small solar power plant for the initial demand until the hydro will be operational. The system will be completed by a distribution backbone;
- **Barclayville:** demonstration project for digital swarm-grid AC technology (as further explained in 4.3). The limited development and competition existing for this technology may require direct award. Should this approach not be successful then the backstop option will be solar home systems.

This includes supervision and related services for the Liberian Authorities during the construction phase of the selected projects, including knowledge transfer, capacity building and on-the-job training to local authorities, operators and the beneficiary population.

3. **Additional support** will be provided under small contracts in direct management for e.g.: further TA to RREA on the individual electricity affermage contracts, the Electricity-Agriculture and Electricity-IT Nexus and the Technical Audit of the works.

4. **Prepare and conduct gender sensitive energy awareness events and trainings**, i.e.

- Events to reach both women and men, taking into consideration women's lower access to information and restricted mobility, in Buchanan, Cestos City, Greenville, Barclayville and Fish town;
- Develop and roll out structures for Village Saving Loans Associations (VSLA) or set up a mechanism for the provision of micro credits for women to ensure women's access to financial capital in the five chosen geographical locations;
- Develop and actualise strategies to boost interest amongst young girls to choose technical courses;
- Provide training to women in technical areas to meet the employment needs of the EU energy programme once rolled out;
- Develop training modules and conduct business management trainings to prepare women for the upscaling of relevant businesses that have clear growth potential once power is available;
- Provide gender training to key actors in the energy sector to ensure that all involved key stakeholders have a sufficient level of knowledge on gender equality and how it matters in the energy sector, in Monrovia and at the five field locations.

N.B. Technical assistance to LERC & MME and Studies have been/are being provided with EU support to Liberian authorities for the preparation of mini-grid projects with funding from the preparatory phase<sup>9</sup> including:

- Designing the appropriate affermage contracts for the electrification of mini-grids in general, including institutional and legal framework, rules and procedures;
- Providing TA services for implementation of the enabling environment of the selected projects, i.e. the drafting of the individual licences and the relevant award procedures as well as promoting the compliance with the UN Guiding Principles on Business and Human Rights;
- Feasibility study, Design and preparation of Tender Documents of the individual works components for electricity generation, transmission and distribution.

The 3-year TA to LERC started in March 2019 under the already signed new contract 401 419 TA to LERC & MME.

The inclusion of the community awareness raising, participation and consultation activities to ensure citizens and of possible support to homes that cannot afford the service; the provision of electricity to basic social service facilities, such as schools, medical centres/hospitals, etc, and

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<sup>9</sup> Ongoing contracts: 384 896 Electricity Licenses in the S-E; 390 463 Design and Tender Docs for Minigrids in the S-E; 398 525 Feasibility Study and Tender Documents for the Sinoe Rapids Hydro Power Plant near Greenville.

including complaints mechanisms for potential rights violations and discrimination is part of the licensing and tariff setting processes being prepared by LERC with EU support.

Part of the licensing and tariff setting processes being prepared by LERC with EU support (stakeholder analysis) include community awareness raising, citizens participation and consultation activities, complaint mechanisms for potential rights violations and discrimination and stakeholders dialogue.

## 4.2 Intervention Logic

The private sector must be the driver of the expansion of electricity access to the south-east. Liberia is, due to poor internal transport and other infrastructure, not the country of first choice for investors. Thus, risk sharing support is justified and will be provided.

The entry of scale oriented, financially sound and technically-savvy companies into the power supply business in Liberia is key to achieve the connection targets by 2035.

EU will finance construction of electrification assets only in towns where LERC has awarded an electricity undertaking licence with exception of Barclayville, which is a special case and might not require a licence because of the type of action and its small size.

In order to prepare efficiently the ground for project implementation, TA services are provided and included in the preparation component of the projects. To ensure maximum transfer of know-how and participation of Liberian private capital in rural electrification, the founding of joint-ventures between foreign digital grid technology firms and private Liberian entrepreneurs will be actively supported through information campaigns.

The demonstration project in Barclayville of digital swarm-grid technology is done for cost discovery and market entry reasons. Swarm grid technology integrates individual micro-grids into a coherent village/town-wide inter-connected 24-hour per day AC grid power system. The technology offers better tailoring of power supply to cover individual household and productive power demand than Solar Home Systems (SHS).

The future integration of the mini-grids and the swarm-grid into the national grid will be considered in the design to ensure long term sustainability.

The productive use activity within the "Tailored Financial Support modality" targets to remove the lack of financial know-how and of access to finance, hindering the creation or expansion of local businesses, which will be commercially enabled by improved electricity supply.

The EU and Sweden are working towards increasing access to electricity in rural areas in Liberia in a parallel and coordinated manner. This Programme will complement the EUR 10 million SIDA programme, which supports investments in SHS and solar microgrids, applying SIDA's Results Based Financing (RBF) modality, which in Zambia reached 25 000 connections within 8 months and expects to reach 300 000 in Zambia within three years.

The present programme applies two support modalities for private sector investments in mini-grids:

- The **Tailored Financial Support** component supports the investment and expansion plans of private investors with a number of risk-sharing finance instruments such as sub-ordinate loans, conditional loans/grants, quasi-equity, equity and first-loss guarantees tailored to the specific needs of individual investors. Criteria for the allocation of funds to competing requests could be, amongst others, the "offered tariff", "private capital leverage ratio", "number of connections per financial support", etc. The commercial and economic viability of investments in the mini-grids is enhanced by loan finance support to investments in productive uses of electricity, using, inter alia, Micro Finance Institutions as intermediaries to channel loan finance to end-users. Support will be only provided for in areas where a proper LERC licencing process has taken place. In the absence of a market for these services, no market study could be carried out yet and it will be

carried out as part of the application to the Blending Board; the financial allocation to this component is notionally calibrated with the SIDA programme..

- The **Construction of Assets** for electricity generation, transmission and distribution using the standard EU Works and Services procurement procedures.

To ensure that this is not perceived as an old-school grant, the already funded and signed contract 401 419 TA to LERC & MME will provide support so that the electricity fees paid by the consumers include a portion to be paid into the Rural Electrification Fund (REFund) to build-up capital reserves in Liberia for future expansion of existing, or new such projects. The REFund has agreed to the principle of involving the EU in its governing structure and its design modification as possibly required to administer these flows of money from the operators/affermataires. The existing REFund Operating Guidelines are annexed and there is agreement that they will need to be updated as a result of a Board meeting held on 05/04/2019 (minutes not available yet).

Sweden has signed the Delegation Agreement for the management of its programme with the Nordic Environment Finance Corporation (NEFCO). Due to the complementarity of our electrification programme with the Swedish one and in order to facilitate a smooth implementation and a close interaction between the two programmes would make sense to delegate/transfer our funding for the tailored financial support to NEFCO. For this purpose, a contribution agreement would be signed with NEFCO. In case of failure to do so for reasons external to the Commission, we propose an ElectriFI country window with one of the ElectriFI family IFIs as a second option.

This programme will prioritise the South-East of Liberia; if successful and funds will still be available, the concepts of the programme may be extended to the rest of rural Liberia.

### 4.3 Mainstreaming

#### **Gender**

A gender analysis, undertaken by external consultants during the period November 2017 – March 2018, has concluded that the social dimensions of energy provision need to be addressed in order to reach the overall objective of contributing to poverty reduction. To achieve this, the approach under this action will be two-fold: i) implementation of a number of gender sensitive measures, including but not limited to ensuring quotas for women in employment opportunities and inclusion of women in project structures, and ii) development of a gender component which will prepare women, primarily through training and economic empowerment activities, to fully capitalise on the energy to be provided. The gender component will be implemented under a Service contract. Any investment in skills training will closely complement EU existing efforts under the 11<sup>th</sup> EDF TVET programme.

Accompanying measures:

- Gender sensitive training and capacity building to ensure that the arrival of electricity translates into poverty reduction and improved wellbeing of women, men, girls and boys living in the targeted areas. The TORs for tendering these services are available.

#### **Rights-Based approach**

The action is consistent with the Human Rights Country Strategy. Women in Liberia continue to miss out on opportunities and lack participation in management and decision-making positions at all levels of the society. Despite overall having almost an equal share of the labour force, they are very under-represented in terms of paid employment as women hold only 24% of paid jobs and earn less than 70% of men. Women are more likely to be vulnerably employed in the informal sector and agriculture and they make up 60% of the workforce in rural areas in Liberia. The prevalence of women in the low skilled labour informal economy is associated in part with low literacy levels: women and girls continue to have limited access to education (33% of women are literate compared

to 62% of men). Child marriage and violence against women, including female genital mutilation, remain of serious concern.

The action will help to reduce these barriers by providing Affordable and Clean Energy to as many final beneficiaries as possible. For example, the availability of light in public places at night reduces the incidence of Sexual and Gender based Violence (SGBV). The availability of light at home has been proven to improve the educational achievements of girls, who are traditionally expected to carry out domestic chores during daylight hours. Moreover, training and employment opportunities under the umbrella of the energy programme will provide women with access to economic empowerment and will strengthen women's voice and agency in the selected communities.

## **Environment**

The Programme, which encourages the deployment of zero-carbon off-grid energy services, will have an overall positive environmental impact. The Programme will lead to the reduction of CO<sub>2</sub> emissions and other pollutants by replacing the existing private fuel-based generation sets. To minimise negative impacts, RREA will facilitate a programmatic Environmental and Social Impact Assessment (ESIA) that covers all potential activities. The ESIA findings and recommendations will apply to all developers under the project, who will have to prepare Environmental and Social Management Plans, including their Monitoring and Evaluation components. In addition, the project will involve extensive consultation with the local communities to ensure local environmental concerns are considered. Waste from photovoltaic systems, notably used batteries, will benefit from a specific waste management system.

The Environmental Strategic Planning stage made the necessary strategic choices and, at this point, the ongoing standard ESIA is the proper tool. The programme focusses on renewable energies and will not fund stand-alone fossil fuel plants. Environmental Strategic perspective will nevertheless guide in the selection between alternatives.

For the works to be funded by the EU, the required ESIA and Resettlement Action Plans (RAP) are available at pre-feasibility level and are due, at feasibility level, by the end of April 2019. Two specific notes on the Environmental aspects are part of the package of annexes.

The Steering Committee described under 5.8 will oversee that all environmental components and aspects will be properly put in place.

### **4.4 Contribution to Sustainable Development Goals (SDGs)**

This intervention is relevant for the United Nations 2030 Agenda for Sustainable Development. It contributes primarily to the progressive achievement of Goal 7 - Affordable and Clean Energy; it also promotes progress towards Goals 1 - No Poverty through new business creation and new jobs and 5 - Gender Equality through the substantial gender component in accompanying measures. The programme is moreover in line with EU Gender Action Plan 2016-2020<sup>10</sup>.

## **5 IMPLEMENTATION**

### **5.1 Financing agreement**

In order to implement this action, it is foreseen to conclude a financing agreement with the partner country.

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<sup>10</sup> Gender Equality and Women's Empowerment: Transforming the Lives of Girls and Women through EU External Relations 2016-2020, SWD(2015)182 final of 21.9.2015.

## 5.2 Indicative implementation period

The indicative operational implementation period of this action, during which the activities described in section 4 will be carried out and the corresponding contracts and agreements implemented, is **96** months from the date of the entry into force of the Financing Agreement.

Extensions of the implementation period may be agreed by the Commission's authorising officer responsible by amending this decision and the relevant contracts and agreements.

## 5.3 Implementation of the Budget support modality

N/A

## 5.4 Implementation modalities

The Commission will ensure that the EU appropriate rules and procedures for providing financing to third parties are respected, including review procedures, where appropriate, and compliance of the action with EU restrictive measures<sup>11</sup>.

### 5.4.1 Procurement (*direct management*)

Subject in generic terms, if possible	Type (works, supplies, services)	Indicative number of contracts	Indicative trimester of launch of the procedure
Small specialist studies or TA; Technical Audit, which are not part of 5.9 Evaluation or 5.10 Audit	Services	3	2

### 5.4.2 Indirect management with the partner country

A part of this action with the objective of constructing electrification assets may be implemented in indirect management with the Government of Liberia according to the following modalities:

The partner country will act as the contracting authority for the procurement procedures. The Commission will control ex- ante all the procurement procedures and grant procedures.

Payments are executed by the Commission.

The financial contribution does not cover the ordinary operating costs incurred under the programme estimates.

The partner country shall apply the Commission's rules on procurement. These rules will be laid down in the financing agreement to be concluded with the partner country.

### 5.4.3 Contribution to the African Investment Platform (AIP)

A part of this action may be implemented under indirect management with the entities, called Lead Finance Institutions, identified in the appendix to this action document.

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<sup>11</sup> [www.sanctionsmap.eu](http://www.sanctionsmap.eu) Please note that the sanctions map is an IT tool for identifying the sanctions regimes. The source of the sanctions stems from legal acts published in the Official Journal (OJ). In case of discrepancy between the published legal acts and the updates on the website it is the OJ version that prevails.

#### 5.4.4 *Changes from indirect to direct management mode due to exceptional circumstances*

Where the preferred implementation modality "indirect management" with the partner country cannot be implemented due to circumstances outside of the Commission's control the implementation modality "Procurement (direct management)" shall be used for items under 5.4.2 above.

Subject	Indicative type (works, supplies, services)	Indicative trimester of launch of the procedure
Electricity generation and distribution backbone in Buchanan, Greenville and Barclayville	Works	Only hypothetical, but not foreseen
Supervision, Technical assistance	Services	Only hypothetical, but not foreseen

#### 5.5 **Scope of geographical eligibility for procurement and grants**

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply subject to the following provisions.

The Commission's authorising officer responsible may extend the geographical eligibility or of unavailability of products and services in the markets of the countries concerned, or in other duly substantiated cases where the eligibility rules would make the implementation of this action impossible or exceedingly difficult.

#### 5.6 **Indicative budget**

	<b>EU contribution (EUR)</b>
<b>5.4.1 Direct Management – Procurement</b>	<b>900 000</b>
<b>5.4.2 Indirect management with Liberia (<i>indicative amounts</i>)</b>	<b>24 000 000</b>
Works	20 000 000
Services	4 000 000
<b>5.4. Contribution to Africa Investment Platform</b>	<b>15 000 000</b>
<b>5.9 Evaluation, 5.10 Audit</b>	<b>200 000</b>
<b>5.11 Communication and visibility</b>	<b>300 000</b>
<b>Contingencies</b>	<b>1 600 000</b>
<b>Total</b>	<b>42 000 000</b>

#### 5.7 **Organisational set-up and responsibilities**

For the Tailored Financial Support modality a Steering committee will be formed comprising the EU Delegation, NAO, RREA and the designated Tailored Financial Support modality administrator, which will meet on a monthly basis during the initial phase. Frequency may be adjusted throughout the lifespan of the project based on emerging needs. Representatives of the beneficiaries of the action (i.e. Liberian population) may be invited to join, i.e. civil society organisations (CSOs) and other stakeholders, including women's organisations, based on the matters to be discussed in the project steering committee.

A continuous technical-level interaction will be ensured by the Delegation.

For the part under indirect management, the Contracting Authority will be the NAO and the Supervisor or Project Manager will be the Rural and Renewable Energy Agency. Supervisory progress meetings will be held between the EU Delegation, NAO and RREA.

Concerning the governance of the Rural Energy Fund (REFund), which has Board-endorsed Operating Guidelines, agreement in principle has been achieved for EU participation. The Board did endorse RREA recommendation for the Commission's membership to the REFund Management Committee. Further details were expected to be formalised during the Board meeting of 5 April 2019 (minutes not available yet).

Concerning the governing structure of the Tailored Financial Support modality proposed to be administered NEFCO, the funds would be administered under the Liberia window of the Beyond the Grid Fund for Africa (BGFA), for which NEFCO and Sweden have signed a Framework Facility Management Agreement on 22<sup>nd</sup> February 2019. Currently the BGFA is structured essentially as a Trust Fund for Sweden which is the sole contributor. However, it has been envisaged from the start that the fund would welcome like-minded donors as contributors including the EU.

The governance of the Facility is coordinated through the BGFA Steering Committee to whom the Facility Manager presents semi-annual reports on work done (for information) and draft semi-annual work plans and budgets on work to be done (for approval).

The EU Delegation would be a member of the Steering Committee of the Liberian window, to ensure EC maintains oversight of the operations. The EU Delegation would have the right of expressing its "non-objection" on the proposed investments as part of the Steering Committee, through an approval process similar to other existing financing instruments. It is expected that the detailed process of decision-making on proposed investments should be further elaborated by NEFCO and validated by Steering Committee members.

The BGFA is currently in a mobilisation phase.

## **5.8 Performance and Results monitoring and reporting**

The high-level performance monitoring will be carried out between RREA, NAO and the Delegation through a Steering Committee of this Financing Agreement, which will meet at least twice a year. The relevant reports will be prepared by RREA and in principle shared also with the Rural Energy Working Group.

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process and part of the implementing partner's responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the logframe matrix.

The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed and of the budget details for the action. The final report, narrative and financial, will cover the entire period of the action implementation.

The Commission may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

## 5.9 Evaluation

Having regard to the importance and nature of the action, mid-term, final and ex-post evaluations will be carried out for this action or its components via independent consultants contracted by the Commission.

A mid-term evaluation will be carried out for problem solving and learning purposes, in particular with respect to adapting the project to a changing context and making corrections to the project based on the lessons of the first phase of implementation. In particular, the recommendations of the mid-term review for a possible re-orientation of the Tailored Financial Support component will be implemented.

Both a final evaluation and an ex-post evaluation will be carried out for accountability and learning purposes at various levels, including for policy revision. The evaluations will consider the human rights and gender dimensions of the action.

The Commission shall inform the implementing partner at least 15 days in advance of the dates foreseen for the evaluation missions. The implementing partner shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.

The evaluation reports shall be shared with the partner country and other key stakeholders. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.

Evaluation services may be contracted under a framework contract.

## 5.10 Audit

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audits or expenditure verification assignments for one or several contracts or agreements.

It is foreseen that audit services may be contracted under a framework contract.

## 5.11 Communication and visibility

Communication and visibility of the EU is a legal obligation for all external actions funded by the EU.

This action will contain communication and visibility measures which shall be based on a specific Communication and Visibility Plan of the Action, to be elaborated and implemented by a communications contractor which will be recruited at the start of implementation and supported with the budget indicated in section 5.6 above.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country, contractors, grant beneficiaries and/or entrusted entities. Appropriate contractual obligations shall be included in, respectively, the financing agreement, procurement and grant contracts, and delegation agreements.

The Communication and Visibility Manual for European Union External Action shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations. Communication efforts under the programme will be gender sensitive.

It is foreseen that a contract for communication and visibility may be contracted.

## APPENDIX 1 - INDICATIVE LOGFRAME MATRIX

The activities, the expected outputs and all the indicators, targets and baselines included in the logframe matrix are indicative and may be updated during the implementation of the action, no amendment being required to the financing decision. When it is not possible to determine the outputs of an action at formulation stage, intermediary outcomes should be presented and the outputs defined during inception of the overall programme and its components. The indicative logframe matrix will evolve during the lifetime of the action: new lines will be added for including the activities as well as new columns for intermediary targets (milestones) for the output and outcome indicators whenever it is relevant for monitoring and reporting purposes. Note also that indicators should be disaggregated by sex whenever relevant.

	Results chain	Indicators	Sources and means of verification	Assumptions
<b>Impact (Overall Objective)</b>	1. To increase prosperity & accelerate development in the country through the availability of sustainable Electricity in the Rural South-East of Liberia. 2. Climate Change Mitigation.	1. PAPD development indicator for the S-E. 2. EURF 2.21 - Greenhouse Gas (GHG) emissions avoided (tonnes CO <sub>2</sub> eq) with EU support.	End of project and 3-year post-project-end Evaluation reports.	
<b>Outcome(s) (Specific Objective(s))</b>	1.1 Electricity from renewable sources of energy is used in the selected main settlements for productive, commercial and residential purposes, as well as for the delivery of basic services (as health and education). 1.2 The licensees or operators of supported projects have invested equity and operate according to best practice and are set on a growth trajectory. 1.3 Capital is accumulated in the REFund for further future investments in rural electrification and to further support the entry of private finance into rural electrification. 1.4 Electricity awareness is improved in particular for women.	1.1 Number of productive, commercial and domestic customers (number of people disaggregated by sex) in the selected settlements, connected and using electricity. 1.2.1 Amount of invested private debt and equity finance in projects. 1.2.2 Number of companies active in mini-grids investment. 1.2.3 Percentage of technical Audit reports concerning the licensees or operators which show compliance and apply the UN Guiding Principles on Business and Human Rights. 1.2.4 Amount of co-financing by local FIs. 1.3.1 Amount of money accumulated by the REFund. 1.3.2 Number of private companies developing and operating mini-grids 1.3.3 Number of local FIs in mini-grid finance	1.1 Mid-term evaluation report. End of programme report. 1.2 LERC annual reports. 1.3.1 RREA info on received affermage fee payments from supported projects. 1.3.2 & 3 NEFCO info on value of assets and on achieved private investment; Operating status of firms having received Tailored Financial Support. 1.4 Final report of the women-focused electricity training TA.	I) LERC fully operational. II) Tailored Financial Support terms and conditions are of interest for investors and sufficient to match cost of supply to ability to pay of population. III) Barclayville demonstration project proves economic viability of concept and is followed up by entry of companies investing in AC micro-grids. IV) Government implements the road access programme to the S-E.

<p style="text-align: center;"><b>Outputs</b></p>	<p>1.1.1 Existing transmission lines have been reinforced/extended as needed.</p> <p>1.1.2 Additional customer connections are in place in existing and new mini-grids.</p> <p>1.1.3 New generation.</p> <p>1.1.4 New transmission/ distribution lines.</p> <p>1.2.1 Tailored Financial Support is in place and licensees/operators have received financial support following a transparent and competitive award process.</p> <p>1.2.2 Licensees or operators receive regular technical audit and advice.</p> <p>1.3.1 LERC has determined for each site the amount per kWh to be contributed to REFund.</p> <p>1.3.2 RREA has determined the procedures for the flow of REFund monies.</p> <p>1.4 Women focussed electricity trainings provided.</p>	<p>1.1.1.1 Km of lines reinforced.</p> <p>1.1.1.2 Km of lines extended.</p> <p>1.1.2 Customer connections with households disaggregated by sex of the head of household.</p> <p>1.1.3 Type and power of new generation assets in place.</p> <p>1.1.4 km of new transmission &amp; distribution lines</p> <p>1.2.1 Number of licensees or operators that are beneficiaries of the Tailored Financial Support.</p> <p>1.2.2 Number of technical audits of electricity operators conducted.</p> <p>1.3.1 Status of REFund component of tariff methodology.</p> <p>1.3.2 Status of REFund procedures.</p> <p>1.4 Sex-disaggregated number of people with awareness about the benefits and dangers of electricity.</p>	<p>Reports by the Supervisor and the Technical Audit.</p>	<p>1) LERC holds licensees to their initial commitments, based on which funding will eventually have been approved for the given locality, or grants licenses to new licensees if the original ones default.</p> <p>2) Sufficient investor interest to bid for electricity licenses/affermage contracts, given the dismal economic conditions and access history of the area.</p> <p>3) Sufficient contractor interest in bidding for the works and supervision contracts.</p>
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**APPENDIX 2: LIST OF ELIGIBLE LEAD FINANCE INSTITUTIONS**

AECID	Agencia Espanola de Cooperacion Internacional al Desarrollo, Spain
AFD	Agence Française de Développement, France
BIO	Belgian Investment Company for Developing Countries, Belgium
CDP	Cassa Depositi e Prestiti S.p.A., Italy
DEG	German Investment Cooperation, Germany
EIB	European Investment Bank
KfW	Kreditanstalt für Wiederaufbau, Germany
COFIDES	Compañía Española de Financiación del Desarrollo, Spain
FMO	Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden, The Netherlands
PROPARCO	Groupe Agence Française de Développement, France
SIMEST	Società italiana per le imprese all'estero, Italy
SOFID	Sociedade para o Financiamento do Desenvolvimento, Portugal
AfDB	African Development Bank
The World Bank Group	
NEFCO	Nordic Environment Finance Corporation