

*Economic Community
Of West African States*



*Communauté Economique
Des Etats de l'Afrique de l'Ouest*

WEST AFRICAN POWER POOL
SYSTEME D'ECHANGES D'ENERGIE ELECTRIQUE OUEST AFRICAIN
General Secretariat / Secrétariat Général

Client: West African Power Pool (WAPP)

Country: Liberia

WAPP/CLSG TA
ENERGY SUPPLY ALTERNATIVES STUDIES
& PROJECT PREPARATION IN LIBERIA
PRIORITY INVESTMENT PROJECTS (PIP)

Terms of Reference for the selection of a Strategic Transaction Advisor (STA)

(March 2020)

List of Acronyms and Abbreviations

CLSG	Côte d'Ivoire-Liberia-Sierra Leone-Guinea Link	LSMS	Living Standards Measurement Survey
DS	Downstream	LTDP	Long Term Development Plan
DTM	Digital Terrain Model	MFS	Minimum Functional Specifications
EPA	Environment Protection Agency - Liberia	MME	Ministry of Mines and Energy (Liberia)
E&S	Environmental and Social	MFDP	Ministry of Finance and Development Planning (Liberia)
ESCP	Environmental and Social Commitment Plan	MoSWP	Ministry of State Without Portfolio (Liberia)
ESF	Environmental and Social Framework (of World Bank)	MW	Megawatt (measure of instantaneous capacity or demand equal to 1 million Watt)
ESIA	Environmental and Social Impact Assessment	NEP	National Electricity Plan
ESMP	Environmental and Social Management Plan	NGO	Non-Government Organization
FAPA	Fund for African Private Sector Assistance (Hosted at AfDB)	OS	Optimization Study
FDA	Forestry Development Authority	PAP	People/Population Affected by the Project
FPIC	Free Prior and Informed Consent	PIDG	Private Infrastructure Development Group
FS	Feasibility Study	PDU	President's Delivery Unit
GBR	Geological Baseline Report	PIM	Project Information Memorandum
GBV	Gender Based Violence	PIP	Priority Investment Project
GDR	Geotechnical Data Report	PIPES	Planning, Investment Programming and Environmental Safeguard Department (WAPP)
GIF	Global Infrastructure Facility	PIU	Project Implementation Unit
GoL	Government of Liberia	PPA	Power Purchase Agreement
GRM	Grievance Redress Mechanism	PPIAF	Public-Private Infrastructure Advisory Facility (World Bank Group)
GWh	Giga watt-hour (measure of energy)	PPP	Public Private Partnership
HPP	Hydroelectric Power Plant	RP	Resettlement Plan
IDA	International Development Agency	SC	Steering Committee
IEE	Initial Environmental Examination	SEP	Stakeholder Engagement (and Information Disclosure) Plan
IFC	International Finance Corporation (World Bank Group)	SEFA	Sustainable Energy Fund for Africa (Administered by the AfDB)
IFI	International Financing Institutions	STA	Strategic Transaction Advisor
IPP	Independent Power Producer	TA	Technical Assistance
IR	Inception Report	TFP	Technical and Financial Partners
ITAP	Integration and Technical Assistance Project	ToR	Terms of Reference
IWRM	Integrated Water Resource Management	TSA	Transmission Service Agreement
kW	kilowatt (measure of instantaneous capacity or demand equal to 1000 Watt)	US	Upstream
LEC	Liberia Electricity Corporation	WAPP	West African Power Pool
LFT	Liberia Focal Team	WB	World Bank
LHS	Liberia Hydrological Services		
LISGIS	Liberia Institute of Statistics and Geo-Information Services		

Table of Contents

1.	Introduction & Background	5
1.1	The West African Power Pool ("WAPP").....	5
1.2	ECOWAS Master Plan	5
1.3	ITAP Project & support to WAPP least cost generation	5
1.4	Brief Presentation of the PIP	7
1.5	Electricity Sector in Liberia.....	9
1.6	Liberian Hydropower Sector.....	10
1.7	Solar Energy in Liberia.....	11
2.	Context & Objectives of the Study	12
2.1	Institutional Framework.....	12
2.2	Feasibility studies of the PIP & Interaction with the STA.....	13
2.3	Indicative calendar of the Feasibility Study	14
2.4	Objectives of STA services.....	15
3.	Scope of Missions and Services of the STA.....	16
3.1	Phase A: Acquaintance with the PIP, its key components and timeline projection.....	17
3.2	Phase B: Legal, Regulatory and Sector Due Diligence	18
3.3	Phase C: Exploration and benchmarking of funding modes	19
3.3.1	Projects financing from public resources.....	19
3.3.2	Projects financing with Private Sector participation	20
3.4	Phase D: Structuring of project funding and implementation	20
3.4.1	Package 1: SP2 Hydropower Scheme and Package 2: Mount Coffee Extension	20
3.4.2	Package 3: PV Solar Pilot Project.....	21
3.4.2.1	Pilot Project preparation.....	21
3.4.2.2	PPP Approach.....	22
3.4.2.3	Preparation of transaction documents and procurement process.....	23
4.	Duration of the assignment.....	26
5.	Timetable and Deliverables	26
5.1	Reporting requirements and other deliverables	27
5.1	Key Deliverables and Indicative Calendar	28
6.	Required transaction advisor skills and experience	29
7.	OTHER INFORMATION	33
7.1	Information/Data to be provided by the Customer.....	33
7.2	Reporting Requirements	33
7.3	Type of contract and remuneration	33

7.4	Participation of WAPP, LEC and the MME	33
-----	--	----

1. Introduction & Background

1.1 The West African Power Pool ("WAPP")

The West African Power Pool ("WAPP") was created in 1999 at the Conference of Heads of State and Government of the Economic Community of West African States ("ECOWAS"). There was a realization that the immense energy resources available to the region, even if not equitably distributed geographically, could be exploited for the mutual benefit of all Members to increase access to reliable and affordable electricity for the socio-economic development of countries. In 2006, the ECOWAS Conference of Heads of States and Government invested the WAPP with the mission of promoting and developing electricity generation and transmission infrastructure as well as coordinating exchanges of electrical energy between ECOWAS Member States.

The Strategy of WAPP is based on the implementation of infrastructure programs with various regional projects of generation and transmission of electric power, which are mutually complementary and reinforcing the regional network. Ultimately, the completion of these infrastructure projects will allow the integration of all power grids in West Africa. The WAPP Infrastructure Program is based on the results of the ECOWAS Master Plan for the Production and Transmission of Electrical Energy Resources approved by the Heads of State and Government in December 2018 through Supplementary Act A/SA.4/12/18.

1.2 ECOWAS Master Plan

Since its establishment, the WAPP Secretariat has taken a leading role in the development of the regional infrastructure and in the implementation of the priority projects defined in the ECOWAS Master Plan. This Master Plan identified 75 regional projects deemed priority for the period 2019 - 2033 of which 47 are generation projects with a total capacity of approximately 15.49 GW and 28 transmission projects totaling approximately 22 932 km of high-voltage transmission lines. The generation projects comprise of 31.1% thermal projects operating mainly with natural gas and 68.9% renewable energy projects (10.67 GW) including 24% hydroelectric power projects.

The Master Plan has shown the interest of the massive development of hydropower in West Africa and the construction of a reliable transmission network allowing the sharing of resources throughout the region. Nevertheless, it was pointed out that in a regional context where macroeconomic parameters could strongly influence the discounted cost, it is important to maintain a balanced energy mix between the different resources in order to guarantee stability of the electric system and at a reasonable development cost under all circumstances/seasons and ensure the technical and financial viability of the development plan. In order to achieve these targets, WAPP supports national companies in the implementation of the priority utility-scale projects and the completion of bankable feasibility studies including the environmental and social components required for their financing. In this context, WAPP has received financing from the World Bank for an Integration and Technical Assistance Project (ITAP) and intends to apply part of the proceeds for consulting services.

1.3 ITAP Project & support to WAPP least cost generation

In support to the WAPP Secretariat's program to establish an interconnected and coordinated network for fourteen countries in West Africa, the World Bank provided a grant for Phase 1 of the Cote d'Ivoire – Liberia – Sierra Leone – Guinea (CLSG) Interconnection Project in order to mobilize Technical Assistance (ITAP project) aiming at (i) enhancing WAPP integration, (ii) synchronizing WAPP transmission networks; and (iii) building the capacity of WAPP.

Component 2A of ITAP project (Supply Alternatives Studies & Project Preparation Support) aims at ensuring that generation capacity will be developed along the CLSG line in a timely and least cost manner. Key supply alternatives identified through the masterplan adopted in 2012 by the Economic Community of West African States (ECOWAS) included the rehabilitation of the Mount Coffee Hydropower Plant (MCHPP) on the Saint Paul River. As the rehabilitation of Mt Coffee HPP is now completed with all four 22MW units commissioned, the WAPP is exploring ways to further secure production of sustainable electricity generation over time while integrating variable renewable energy resources into the mix. As described in the revised ECOWAS Master Plan issued in January 2019, the optimal integration of these variable energy resources must duly take into account all economic, environmental, social and technical constraints.

Activities to be carried out under Subcomponent 2A.3 of ITAP (Supply Alternatives Studies & Project Preparation for Hydropower Development on St. Paul River) aims at addressing these issues through the assessment of the potential contribution of the St. Paul River's hydropower resources and potential storage (and generation) and the confluence of the St Paul and Via Rivers and other sources of energy (solar, thermal, imports/exports) to electricity supply at Liberian and regional levels in the medium to long term.

Planned activities under Subcomponent 2A.3 include:

- an Optimization Study (OS) (completed by Multiconsult in October 2019) to prepare a Long-Term Development Plan (LTDP) for new generation & storage projects in Liberia, from which a Priority Investment Project (PIP comprising 3 packages i) SP2 Hydropower Scheme, ii) Mount Coffee Hydropower Plant Extension and iii) a PV Solar park) was recommended together with associated transmission lines;
- A Technical Assistance (Referred to as "TA2") in progress since September 2019 for providing institutional strengthening and support to regional and local authorities so that the Technical Assistance Program (of the ITAP project) is timely implemented with highest level of sustainability. This TA2 will accompany the development of the PIP until completion of the Feasibility Studies and the STA services;
- Feasibility Studies of the PIP selected by the Liberian authorities (procurement under completion), including (i) Technical & Economic Feasibility Studies (T&EFS) and needed complementary field investigations and (ii) detailed Environmental & Social Feasibility Studies (E&SFS) of the PIP as per ESF requirements, including an E&S Impact Assessment (ESIA), an Environmental & Social Management Plan (ESMP), a Resettlement Plan (RP), an Environmental and Social Commitment Plan (ESCP), and a Stakeholder Engagement Plan (SEP). The recruitment of the Consultant is currently in progress;
- The support from a Strategic Transaction Adviser (STA) to identify adequate options for structuring and financing the PIP and to support Liberian government in updating and preparing new PPAs linked to the development of the PIP and the CLSG interconnection. Within the scope of the Package 3 the services of the STA includes the preparation of the tender dossier for a first Pilot PV Solar Plant project of 10-30 MWp capacity (size to be confirmed by the technical Consultancy for FS) and assistance to the Client/GoL during the comprehensive procurement process until the financial close. This is under the scope of these ToRs.

In order to comply with the World Bank safeguards policies, the WAPP also relies on two Panels of International Experts (PoE) to review all aspects of dams and hydropower projects. These two Panels provide high-level technical and socio-environmental expertise and guidance throughout the pre-investment studies with a view to strengthen technical robustness and sustainability of the PIP.

1.4 Brief Presentation of the PIP

The PIP identified by the Optimization Study and validated in Monrovia on 26 September 2019 at ministerial level Steering Committee (SC) consists of the following individual investments and accompanying policy priorities split in the 3 following packages:

- **Package 1:** An approximate 150MW hydropower plant on the St. Paul River (SP2) providing valuable energy, including storage to be implemented by 2026. Incorporate extra turbine bays into design thereby allowing rapid and cheap increase in generation once regional demand for export warrants the extra investment and/or the commercial model warrants development of the larger SP4 or via reservoir. This SP2 Hydropower scheme is the proposed next new development on the St. Paul River.
- **Package 2:** A 44MW extension of Mt. Coffee HPP. Two extra intakes were incorporated into MCHPP construction and the project was designed to allow for a future extension of the powerhouse to accommodate these additional turbines. This is a low-cost source of power, but almost entirely deliverable during the wet season. This should thus be of next priority with a tentative in-service date set at 2029. Consideration should be given to a commercial model with and earlier delivery date for Package 2 and the Regional export excess wet season generation across the CLSG lines.
- **Package 3:** Up to 90MWp of total solar PV capacity of utility scale is proposed on several sites. The capacity installation should start as soon as possible and be phased in over the period. An analysis of the capacity of the grid to absorb the intermittency of the solar PV power should also be prioritized so as to determine the maximum responsible pace for this scale-up. As recommended by OS, a first plant (pilot project) of 10-20 MW should be initiated as soon as possible.

Packages 2 and 3 of the PIP are relatively straightforward in terms of E&S impacts.

The final configuration of the SP2 HPP (package 1) is not decided at this stage. In order to maximize generation and storage, the proposed option in the Optimisation Study is a project with a FSL at 163m. Nevertheless, FSL will have to be optimized by the Consultant in order to further integrate E&S aspects. The main characteristics of the FSL163 project are summarized in the following table.

Table 1 – Key data for SP2 at FSL 163 m (Source: Optimisation Study, final report, 2019).

Catchment area	17,682 km ²
Mean annual flow	461 m ³ /s
Design outflow flood, 1000 year	5,650 m ³ /s
Reservoir volume	310 Mm ³
FSL	163 masl
MOL	152 masl
Type of dam	Earthfill
Total dam fill volume	2.2 Mm ³
Turbine discharge	420 m ³ /s
Turbine type & no	3 Kaplan
Installed capacity	154 MW
Yearly energy potential	840 GWh

Total cost	710 MUSD
------------	----------

In terms of land use, satellite imagery (Google Earth) and ortho-photos acquired during the LiDAR survey in February 2018, show that the area to be impounded is used for shifting cultivation by up to 53 villages at an elevation of 165 m. The surrounding land is similarly used for shifting agriculture and plantations by numerous other villages and settlements.

No field surveys have been conducted so far for SP2 project. On the basis of the identification of residential buildings in the villages and settlements located on aerial photos in the area to be impacted by the project (reservoir at FSL + 2 m), and average size of households, more than 16,000 people (with a range from 11,300 to 21,700) were estimated at that stage to be impacted by the project at an FSL of 163m. This number varies depending on the FSL considered, as shown on the following figure and the Consultant is expected (i) to consolidate impact of different FSLs and (i) to propose a balanced FSL.

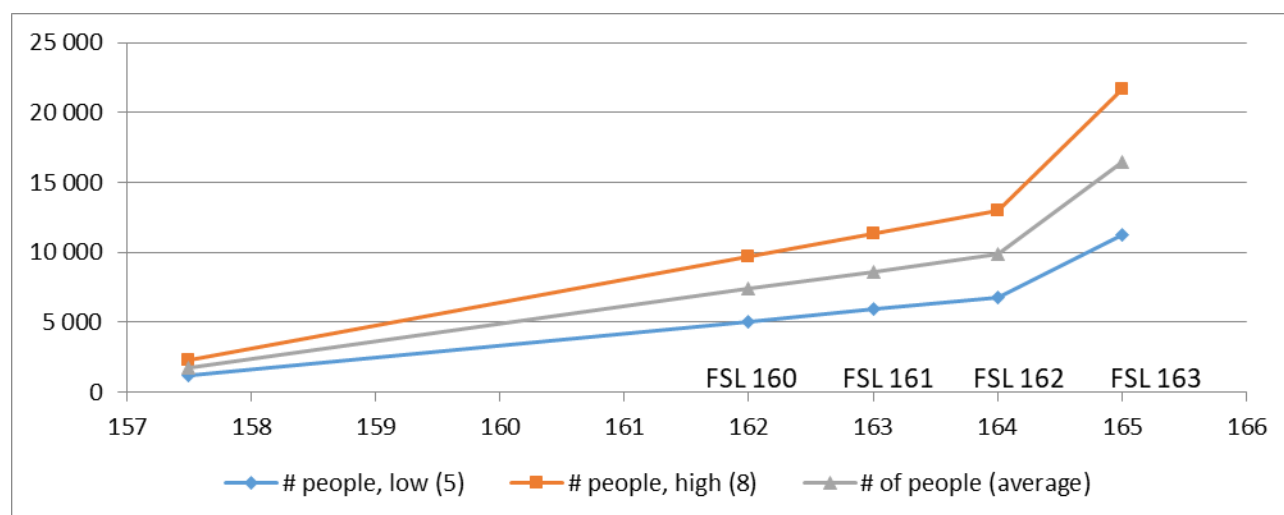


FIGURE 1 NUMBER OF PEOPLE IMPACTED AGAINST ELEVATIONS (FSL = ELEVATION -2)

Detailed information and findings are in the reports that will be made available to the Consultant (Access to the Sharefile will be granted in due time). The conservative schedule towards which the WAPP is working for the preparation of the PIP in Liberia through ITAP is shown in figure below:

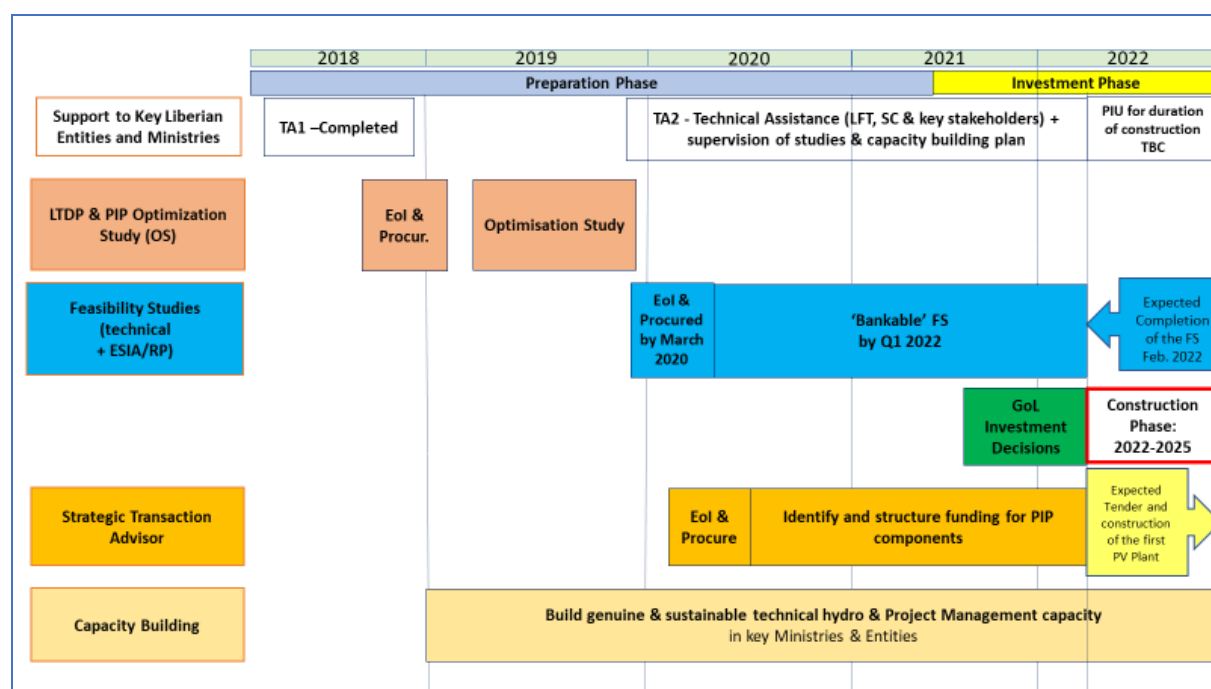


FIGURE 2: PIP PROGRAM IMPLEMENTATION SCHEDULE

The chart shows that the STA must be recruited and operational at the latest in June 2020.

1.5 Electricity Sector in Liberia

Liberia aims at achieving its modest goal of 35% electrification rate by 2030 from the currently low urban rate of 16% (average in the great Monrovia area) and 4% for rural areas. The aspiration of Liberia to become a middle-income country by 2030 would nevertheless be difficult to achieve with only about one-third of its population having access to modern energy services. Liberia is focusing on an accelerated access towards the goal of universal access to electricity using a combination of grid and off-grid solutions. Luckily, Liberia has sufficient renewable energy potential that could support both supply through the national grid and decentralized solutions through the private sector offering basic electrification services to many living in the remote rural areas before 2030. The country's preliminary estimates indicate sufficient renewable energy resources (solar and hydro etc.) that would be cost-effective with the expected advancement of these technologies.

Liberia's current generation capacity is adequate to meet power demand with excess capacity only during the wet season (May-Dec). Total installed generation capacity is 126MW against a peak demand of about 42MW (Dec 2018). Hydropower accounts for sixty-two (62) percent of installed capacity (88 MW – Mount Coffee), heavy fuel oil accounts for twenty-seven (27) percent (10 MW- World Bank HFO Plant, 18 MW- Government of Liberia HFO Plant, 10 MW – Japanese Int'l Cooperation Agency [JICA] HFO Plant) and diesel fuel accounts for 11 percent (9 MW – Bushrod HSD, assumed to be decommissioned in 2035).

The first out of four hydropower units at Mt. Coffee was in operation from December 2016, and the last was commissioned in July 2017. During the dry season (November to April), there is insufficient river inflow to produce sufficient capacity. During the driest months, output reduces significantly requiring HFO or CLSG power augmentation and on the driest of days there is no generation from MCHPP.

1.6 Liberian Hydropower Sector

The St. Paul (SP) River has a technical hydropower potential of over 600 MW. As shown on in Figure 3 below, this potential could be exploited by means of one or two upstream regulating reservoirs (Via/SP4 Reservoir) and a downstream cascade of three to four main HPPs as follows: one plant at the foot of Via Reservoir (130 MW), one at SP 2 Dam (150 MW), one at SP 1B Dam (120 MW) and the existing Mount Coffee HPP.

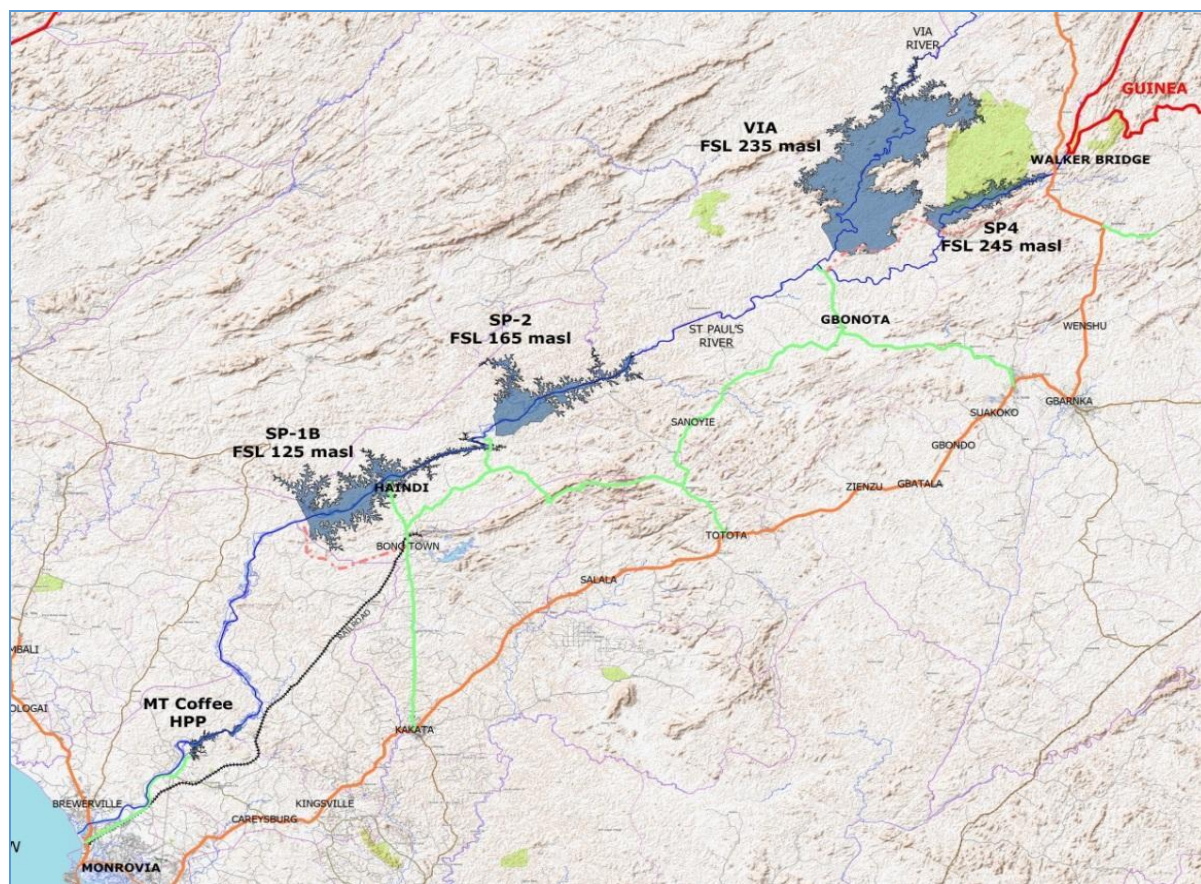


FIGURE 3: ST. PAUL RIVER HYDROPOWER CASCADE AS STUDIED BY CHAS. T. MAIN INT'L IN 1982

Today only the Mount Coffee rehabilitated HPP exists, with an installed capacity of 88 MW (4 x 22 MW units). Two (2) additional units are recommended to be added to Mount Coffee HPP as two additional intake bays (from which two new penstocks could be installed downstream), were originally built into the intake structure to accommodate such an expansion. Previous studies have demonstrated that the scheme would benefit significantly from upstream storage development (& potentially additional installed hydropower capacity) that would reduce its exposure to low river flows in the dry seasons and therefore increase its firm annual energy output.

Studies were undertaken from Dec 2018 to Oct 2019 by Hydrotec and then by Multiconsult, under Technical Assistance contracts with WAPP, to review how the hydropower potential of the St Paul River catchment could be developed in order to sustain Liberia's increasing need for additional generation to meet on-grid and off-grid demand.

The Optimization Study (OS) prepared by MultiConsult, identified the Priority Investment Project (PIP), which was validated by the Steering Committee (SC) on Sept 26, 2019. The PIP is made of three components: (1) the St Paul 2 hydropower project (150 MW), (2) the development of solar

generation across several utility scale sites (90MW), and the Mt Coffee Extension (44 MW). The ToRs described in this document relate to Strategic Transaction Advisory (STA) services for the three components of the PIP.

As part of this previous work, the following key outcomes are of particular importance for the next phases for developing the PIP:

- A database of approx. 200 documents was compiled and will be made available via Sharefile. It includes the Hydrotec and the MultiConsult reports, which have looked at technical, social, environmental, economic, and financial aspects of all schemes identified in the St Paul River catchment.
- A LiDAR survey was carried out in Feb. 2018 for the whole stretch of the St Paul River, where new hydro developments are considered. It includes a Digital Terrain Model (DTM) and geo-referenced ortho-photography.

It is expected that the Consultant will draw on the results of the Optimization Study and other reports available to gain an in-depth understanding of key issues related to the PIP and address them in greater depth during the course of the preparation of the Feasibility Studies (FS).

1.7 Solar Energy in Liberia

The solar resource in the region is abundant, but the transmission and distribution infrastructure will probably limit the expansion of solar power projects. The development of utility-scale solar plants will be optimized by approaching the neighboring countries for possible trade in both directions (import-export).

According to the solar atlas for Liberia, the intensity of solar resources measured by global radiation (GHI) varies gradually from the coast to the interior of the country with better performance inside as shown in Figure 4 below.

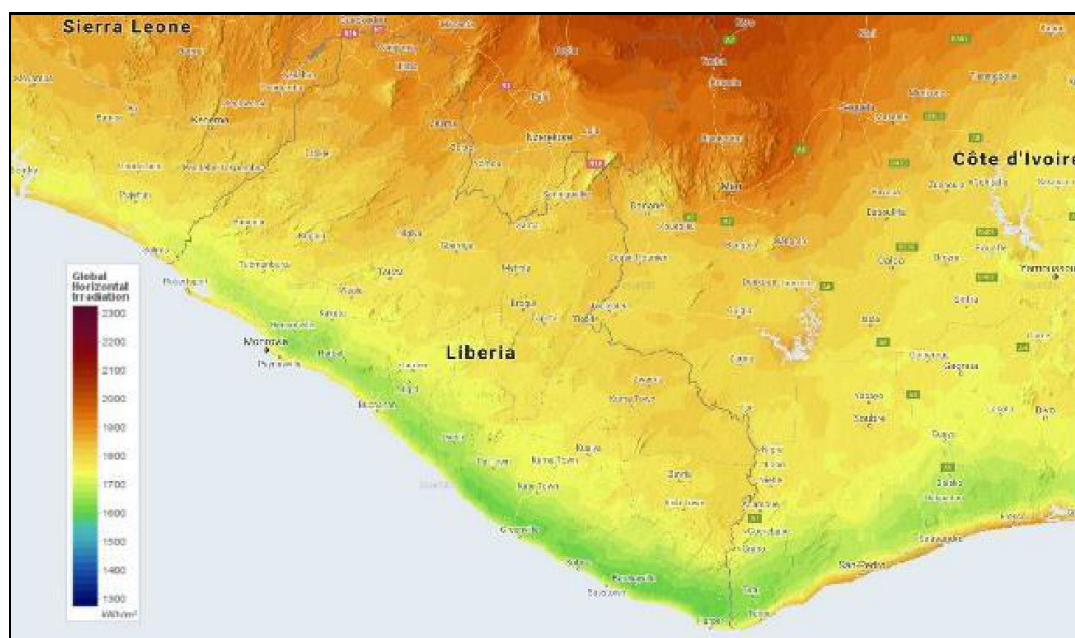


FIGURE 4: SOLAR IRRADIATION MAP FOR LIBERIA (SOURCE: SOLARGIS7)

The fact that the price of Solar PV has been falling rapidly over the past decades made it possible for developing countries to solar energy. This fall in price is driven by the declining cost of the majority of equipment required for the plant. In addition, the short turnaround times for solar power plants to be

operational and the availability of abundant solar radiation, have encouraged the Government of Liberia (GoL) to begin the development of solar energy in the country as a quick response to the country's energy needs.

It is worthwhile to note that if local costs such as logistics and taxes barriers etc. can be overcome and reduced in Liberia, there will be significant savings to the project as can be seen in the recent announcement in Zambia where 120MW of PV has been procured with the lowest price of 3.999 USDc/kWh. No large-scale solar PV plants have yet been constructed in Liberia. If successfully managed this 90MW Solar PV could modify the perceived project risks for developers and achieve prices in the range of the global average.

Based on the cost drivers of solar PV as described above, this first round of projects could successfully mitigate perceived project risks for developers to achieve prices in the range of the global average.

According to the Optimization Study (OS), the 90MW utility scale Solar PV plants “plug & play” could be developed in three tranches.

2. Context & Objectives of the Study

2.1 Institutional Framework

The stakeholders involved in the PIP development include staff from the Ministry of Mines and Energy (MME), the Liberia Electricity Corporation (LEC), the Ministry of Finance and Development Planning (MfDP), the Environmental Protection Agency (EPA), the Forestry Development Authority (FDA), and the President Delivery Unit (PDU). To this end, a Liberian Focal Team (LFT) has been established within this project with representatives from these institutions as shown in Figure below. These stakeholders require Institutional strengthening and capacity building for assuring an effective ownership and appropriation of the project and the reinforcement of their skills and knowledges in the domains of project preparation, design and optimization, procurement and financing structuring.

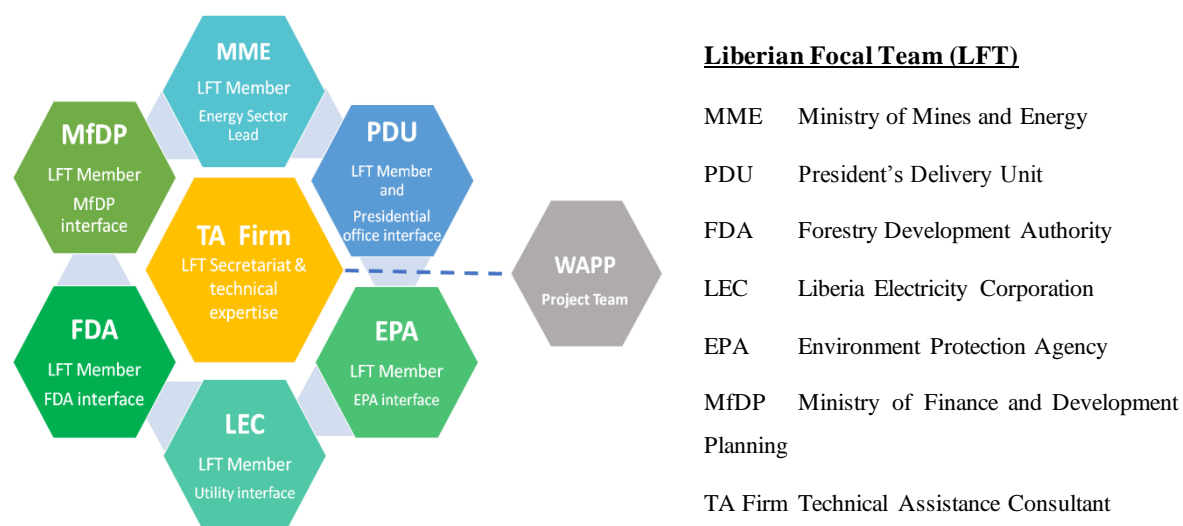


FIGURE 5: LIBERIAN FOCAL TEAM (LFT)

Acting in collaboration with the WAPP, the LFT's main goal is to follow up on project preparation and to provide technical support to the Steering Committee (SC) with members reporting on progress and results of the on-going studies to their respective institution. The MME is the Sector Lead for the PIP and its Senior Representative leads the LFT and chairs the meetings.

The purpose of the SC is to ensure that the whole project is well aligned with Liberians interests. In specific terms, the objectives of the SC are to provide strategic direction to the studies, ensure their relevance and supervise the work of the Focal Team.

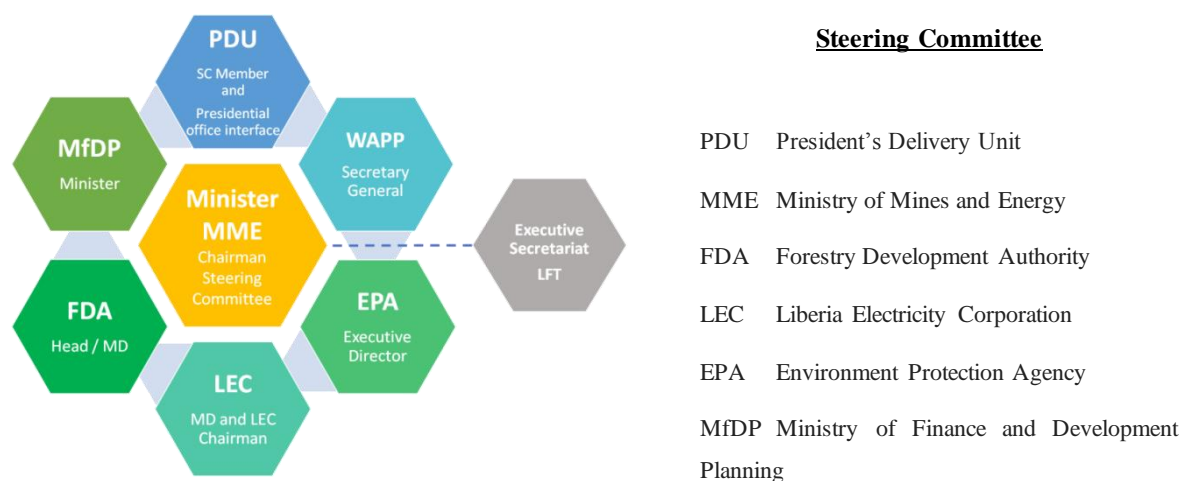


FIGURE 6: STEERING COMMITTEE (SC)

2.2 Feasibility studies of the PIP & Interaction with the STA

A Consultant is conducting a Feasibility Study (Technical and Environmental Social Impact Assessment (ESIA) Studies) of the Priority Investment Project (PIP).

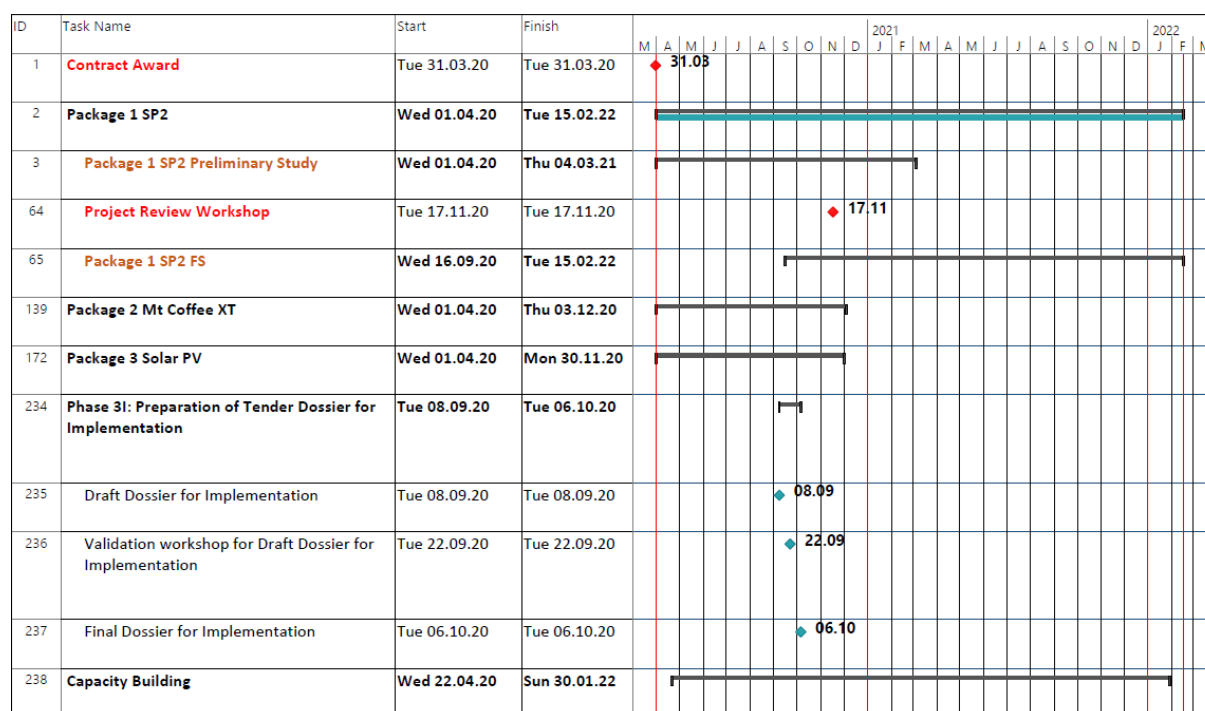
The overall objective of the Feasibility Study is:

- to provide a full bankable Feasibility Study (FS) of the Priority Generation Investment Project (PIP) including hydropower & solar assets (one PV Solar Plant studied up to the level of final design and tender dossier for execution under the most feasible format that a Strategic Transaction Advisor will recommend) and associated transmission infrastructure;
- to carry out Environmental and Social Impact Assessments (ESIA) for each package to identify all eventual impacts on the biological, physical and human environments where the project is to be implemented, on the basis of which respective Environmental & Social Management Plans (ESMP) and Resettlement Plans (RP) and other plans complying to the requirements of the World Bank Environmental and Social Framework (ESF 2016) as well as the WB's Group Environmental, Health, and Safety Guidelines (EHSG) and the requirements of the Liberian laws (for which the Environmental Protection Agency EPA is the focal/leading entity) and the regional/international agreements and treaties to which Liberia is a signatory. Such studies and resulting plans will have to be developed to suggest appropriate solutions to mitigate negative impacts while enhancing positive spin off in order to offer best integration of the project into its host watershed and designated sites for the Solar plant(s).

The interventions of the STA shall be conducted in parallel with the activities of the Consultant in charge of the Feasibility Study. For the STA to better understand the areas of overlap within the two scopes of works, the Terms of Reference for the Feasibility Studies are provided as an Annex C to these ToRs. The STA can identify subjects and activities where it will have to closely liaise, align and coordinate actions and interventions with the FS Consultant. It also shows the schedule of delivery of outcomes from the FS Consultant to be utilized by the STA as inputs in its own studies.

2.3 Indicative calendar of the Feasibility Study

The Feasibility Study for the PIP is expected to start on the 1st of April 2020 with the assignment of the Consultant. The FS will last approximately 22.5 months to be completed in mid-February 2022.



The Technical and Economic Feasibility Studies including the Environmental and Social Impacts Assessment (ESIA) Studies for the 3 Packages of the PIP are conducted by one single Consultancy.

This arrangement implies that the STA activities will be closely linked to the progress and results/outcomes of the FS. Various outputs for the said studies will serve as inputs for the STA to perform its services and specifically the structuring of the adequate financing format corresponding to a given package.

For the Packages 1 and 2, the STA will rely on the results of the FS for the aspects of:

- Confirmed technical solutions and final layout of the projects duly approved by the Client, the stakeholders and the GoL;
- Confirmed sizes, dimensions and capacities of the generating plants and associated infrastructures duly approved by the Client;
- Fully detailed and documented costs (investments and O&M) of the infrastructure components of the projects;
- Fully detailed and documented estimated schedule of construction, commissioning and possible date for entering in “commercial” operations approved by the Client;
- Validation of all permits and Environmental Compliance Certificates (or equivalent according to Liberian Laws and Regulations);

For Package 3 the STA will rely on the results of the FS for the aspects of:

- Adequacy of sites selected for the implementation of PV solar plants approved by the GoL and relevant Stakeholders;
- Official confirmation that selected sites (and in particular the one for the “pilot” PV solar plant) are free of encumbrances, liens and other constraints which may impede the construction of the PS Solar Plants projects;

- Validation of all permits and Environmental Compliance Certificates (or equivalent according to Liberian Laws and Regulations);
- Fully detailed and documented costs of the infrastructure components of the projects with variants depending on the proposed technology.

2.4 Objectives of STA services

The objective of these Terms of Reference (ToR) is to recruit a transaction advisor to help identify strategic options for the financial structuring of the Priority Investment Project (PIP) approved by the Government of Liberia (GoL) on the 26th of September 2019, including possible participation of private investors or commercial financing.

The Strategic Transaction Advisor STA will be recruited for defining the structure of financing the PIP implementation and for guiding the GOL and the Stakeholders in selecting the most appropriate format for operating the electricity generating plants of the program. Broadly this will be either through funding by the GOL (with its own resources and with the support of Technical and Financial Partners) the infrastructure to remain as public assets or requiring the participation of private sector developers/investors and operators for other schemes through Public Private Partnerships (PPP) to be defined on risks assessment and private sector appetite for such participation.

In both cases the first activity of the STA will be to perform a detailed diagnostic and survey of the institutional, legal and regulatory frameworks in place in Liberia ruling the electricity sector as well as PPPs. From this survey, the STA will identify the gaps which need to be addressed through adjustments and promulgations of laws and regulations making these frameworks conducive for raising the appetite from (public &/or private) funders. Overall recommendations will in particular target maximizing private sector participation.

Another task of the STA will be to closely liaise with the Consultant in charge of the Technical, environmental and social Feasibility Studies (FS) to acquaint with the technical and operational specifics of the PIP. This will comprise the understanding of the details of the estimated investment costs and the financial and economic analysis performed by the FS Consultant.

For the aspects of revenues which is one of the main pillar of financing structuring, the STA will investigate the features of the Liberian electricity sector encompassing the aspects of tariffs, their regulation and structure, the intrinsic aspects of the customers's willingness and affordability to pay, the identification of key account customers (PME and industrial/mining compounds), and the financial and operational status, in terms of capacities to transport and distribute the electricity, of the off taker(s) (Liberia Electricity Company LEC, TRANSCO the operator of the CLSG system or any other major/industrial offtakers) to whom the energy will be delivered.

The STA will thoughtfully analyze existing financial forecasts, historical financial performance and technical operating history for LEC and existing power generation and transport arrangements in Liberia including those in place with TRANSCO.

Within the frame of the PIP, the STA will assess, in terms of security of revenues the opportunity for exporting energy through the CLSG interconnexion system. For this purpose, the STA will evaluate the structure of the Transmission and Supply Agreements through an appropriate round of due diligence activities.

Based on hereabove activities, the STA will explore various projects' structuring and financing options, analyze and compare their pros and cons, and support the government and WAPP in selecting the most adequate option for each project or even infrastructure (generation, transmission...). When contemplating the possibility for developing the PIP components under the form of PPPs (the PV solar

plant being the natural candidate for this approach), and after validation by GoL of the options selected, the STA will deliver the complete set of activities for SP2 and solar project and documents from which the most critical are the following:

- a) The tender documentation for private developers/investors/companies to bid for the proposed project (Applicable only for the pilot PV solar plant). Various forms will be explored and will be selected in agreement with stakeholders (Classical bid, auction system, O&M contracts etc...). The selection of the developer will have to follow independent, fair, open and transparent bidding, evaluation and negotiation process;
- b) The Power Purchase Agreement (PPA) which is the key element for PPP or IPP formats;
- c) The requirements to proponents to provide a detailed financial model;
- d) The structuring of the “Security Package” which comprises numerous contractual arrangements and documents like guarantees, escrow accounts, step-in rights clauses, financiers’ direct agreements, specific financing agreements/instruments (carbon credits, green funds);
- e) The contingent liability appraisal to determine the impact of the program on the contingent liability space of Liberia.

One important task of the STA will be to actively participate in the promotion of the PIP projects during the roundtables and meetings with donors, developers and investors that the FS Consultant is in charge of organizing.

3. Scope of Missions and Services of the STA

The STA is expected to provide comprehensive strategic legal, financial, procurement, technical, and E&S advisory on how to successfully structure, phase and develop and finance the PIP and its three (3) packages. In this regard, its overall assignment may be split into two sets of missions/activities that will offer a strategic framework to the delivery of the services (see below).

General purpose missions (Strategic Transaction Advisor [STA])

- a) Provide GoL with state to the art and ad-hoc advice and working models as to the best possible ways and tools to manage and implement (e.g. planning and development phasing) the PIP and its key components
- b) Act as a fair advisor to GoL and various stakeholders as to what are the best structuring arrangements (ex: Legal, financing, ownership, O&P structuring, risks allocation and management mechanisms ...) for PIP packages development
- c) Make sure that proposed structuring is flexible and resilient enough to smoothly adjust whenever needed, according to challenges arising along with projects development process
- d) Assess and recommend (using benchmark approach/methods) the best existing options to consider for the PIP packages development – e.g. hybridization options (this should be carried out in close co-operation with the consultant in charge of the FS) ;
- e) With respect to the above, the STA will suggest and organize (with national authorities clearance/approval for such experience) one study trip that can better inform the LFT and Liberia’s decision makers on the PIP package development options and further develop their understanding and experience of similar projects. (For this study-trip, bidders will include provision for 40 kUSD in their proposal). This may have to be conducted in the West Africa region where solar and hydro projects exist in similarly challenging environments to Liberia. The focus of this study tour should be on the financial modeling, PPA and TSA and other aspects covered under the STA remit;
- f) Ensure overall coherence of the PIP management trajectory with national strategic goals (cross-sectoral, sector wide – NEP – as per contribution to reducing the existing and projected energy demand/supply gap, employment promotion, environment protection, etc.);

- g) Set the ground for the various National Regulatory bodies (CSLG/LERC/MME/LEC/MfDP) involved in the PIP projects to experiment effective regional co-operation on regulatory issues (best practices sharing - regulation, competition, power pricing management/convergence, etc.):
- h) Ensure the PIP projects contribute to meet short/medium (ex: economic growth) and long-term energy sector challenges (ex: sufficient energy supply to enable Liberia to successfully fulfill its economic development in the long run – LTDP);
- i) Make recommendations on any relevant policy gap to be filled (ex: LERC / MME / Competition Body to ensure players comply with fair competition rules on energy markets and that therefore fair power pricing is granted to users/consumers);
- j) Report to the relevant body/level about any issue/risk/threat (suspected or proven) that may have critical impact on St Paul River (and Solar) project development and (ii) recommend best possible way to deal with such issues.

Specific purpose missions (operational advisory)

- a) Come up with an overarching «Road Map» that will integrate all aspects (strategic, operational, planning/schedule, fundraising, governance, resources, etc.) of PIP packages development;
- b) Such Road Map should necessarily include (e.g. Appendix) package-related risk mapping (policy and legal, social and political, financial, operational, economic and market/demand, etc.). On this basis, the Consultant will develop the relevant response strategy and management tools;
- c) Make sure that this Road Map is updated on a regular basis based on field data (and all other relevant data sources) in order to best possible mitigate project's related risks;
- d) Based on an inclusive approach aiming at fostering ownership (particularly from national stakeholders), identify within project governance the functions able to ensure full responsibility on specific risks management (under the overall coordination of the STA);
- e) Act as a fair advisor as per risk management issues and identify appropriate channels to report to the right decision makers in order to enable a smooth and timely response;
- f) Make this tool as simple and friendly as possible with the view of making it a widely shared/agreed working tool among various stakeholders (GoL, Regulatory Body, funding/financing, project governance members, beneficiaries/users, etc.);
- g) With respect to the above, craft and set the ground for developing tools (ex: dashboard) enabling to meet such overarching goals (see general tasks);
- h) Set the ground for the PIP phasing/implementing process to become a «case study» project for Liberia by documenting its overall process (with the view of providing strategic and operational guidance for future energy investment projects nationwide); this could help fill national skills gap over time.

3.1 Phase A: Acquaintance with the PIP, its key components and timeline projection

Once mobilized, the STA will perform a mission to Liberia (recipient country of the PIP) for the kick-off meeting where representatives of the WAPP and the consultant in charge of the SF involved in the implementation of the project will be present.

The STA will hold meetings with Liberian stakeholders for discussing the strategies that the country authorities envisage for the development and implementation of the 3 packages/components of the PIP and the order of priority and tentative schedule.

During this phase, the STA will consult all available material, reports and documents as well as background information pertaining to the PIP (Via the Sharefile). Through meetings with the FS Consultant, the STA will acquaint with the particulars of all aspects of the PIP.

Information collected during this phase and initial discussions regarding the potentially feasible modes of funding and developing the PIP (packages) will allow the STA to submit an inception report outlining the way forward for the unrolling of the next phases.

Additionally, and as a key aspect of its inception report, the STA should come up with the best realistic possible timeline that will enable smooth alignment of PIP feasibility study process/planning with STA services delivery process/planning. This is a key outcome that will probably play a key role for the overall PIP (3 packages) successful implementation. It is recommended that this outcome (aligned timelines) should be widely shared with all possible stakeholders for prior validation and approval as a milestone for overall PIP management process.

Lastly, as a side outcome of the above, the STA will propose a capacity building plan related to Transaction/Development skills that could be delivered to Liberian authorities and that would best support the PIP 3 packages implementation process as set by both timelines (STA and PIP feasibility study). Cost for implementing the capacity building plan will be born separately by the ITAP project.

Note: Allowing the STA to assess, from the ground perspective, the best possible ways to align its own timeline with that of the PIP feasibility study seems a more effective and realistic approach. Changes that shall occur and affect the overall PIP implementation are likely to be better dealt with using such approach as opposed to that consisting of primarily setting hereby both timelines (STA and PIP feasibility study). In addition to practical reasons, this will also give to the potential bidders (STA) room to better assess the overall scope of the project and come up with realistic time frame proposals as to how to best respond and proceed.

3.2 Phase B: Legal, Regulatory and Sector Due Diligence

During the phase of Legal and Regulatory Due Diligence, the STA will examine the complete applicable legal, regulatory and institutional framework within which the PIP will be implemented in order to identify any impediments to project implementation and advise how any such impediments should be addressed. Given the international character of the PIP, aiming at trading electricity with neighboring countries through the CLSG line, the Due Diligence will be extended at the regional level (UEMOA/ECOWAS) to take into account the various existing treaties, agreements and cross-border arrangements and the potentially resulting constraints and/or limitations.

Regarding the possible/envisaged participation of the private sector (which is generically referred to as Private Public Partnership - PPP in the present Terms of Reference and may include and not limited to: Build, Operate and Transfer (BOT), Build, Own, Operate and Transfer (BOOT), Build, Transfer and Operate (BTO), in the implementation of the PIP (especially for Solar Package 3), the legal due diligence will examine also the implications of alternative forms of procurement and alternative PPP structures and will identify a legally sound approach for the establishment of the preferred PPP approach.

A general outline of parameters governing suitable PPP models shall be presented, based on international best practice and specific local circumstances.

The STA will, inter alia, carry out the following tasks:

- a) Assess current laws, policies and institutional framework to ascertain the validity and viability of the proposed PPP structure for each of the 3 packages, including capacity to manage and monitor implementation of the Project once operational and recommend required changes to improve the governance of the same, also the licenses, permits and approvals required for the ownership, financing, construction and operation of the Solar Park, including, but not limited to, for (i) execution of the Project Contracts, (ii) land rights, (iii) taxation, (iv) customs duties, (v) development and transfer of the Special Purpose Vehicle (SPV) ;

- b) Identify any legal obstacles that would prevent the relevant Project participants from obtaining all necessary licences, permits and approvals as identified above;
- c) Develop measures for the proposed PPP project structure, such as guarantees and other risk mitigation instruments, preconditions for a private operator to deliver while meeting service obligations, default and risk clauses, and step-in rights of the Government;
- d) Formulate the appropriate institutional arrangement for the project, taking into consideration the roles and responsibilities of all stakeholders such as the MME, MoF, LEC, LERC, EPA, Transcom, and all potentially involved Liberian Government Agencies/bodies;
- e) Assess Government's role in the proposed PPP project, whether that role comply with the Government's legal obligations, and ensures sufficient Government's interests protection;
- f) Develop and provide details to the legal structure and design of the transaction, identifying the type of PPP contract to be used. Investment commitments, requirements, their nature and management should also be developed;
- g) Review and assess legal issues associated with the management of the social, economic and environmental impacts of the project in a manner consistent with international good practices, including among, issues on resettlement, and environmental consequences/impacts of the projects of the PIP;
- h) Review energy sector financial and governance status and assess roadmap and upcoming initiatives and projects targeting to strengthen and reinforce the sustainability and bankability of the sectors;
- i) Bankability and creditworthiness assessment of existing and anticipated offtakers for PIP packages;
- j) Assess existing and forecasted governance capacity and indebtedness status of Liberia;
- k) Market sounding: Evaluate national and international private sector appetite for PIP projects.; Review past and on-going PPP and private sector initiatives in Liberia.

3.3 Phase C: Exploration and benchmarking of funding modes

The PIP is comprised of 3 different electricity generation projects. According to the findings and conclusions of the Optimization Study, they will be implemented in a sequence spending up to years 2030. Provisionally, the PV Solar package will be implemented at first with a first pilot plant of a 10 to 30 MWp of capacity expected to come online by 2022/2023. The SP2 hydropower scheme will be implemented later and the Mount Coffee extension will be the last generation capacity to be implemented within the frame of the Long-Term Development Plan. The STA will assess financing needs and revenues over time, model the business plan of each project and explore various structuring and transaction options for developing each package, compare feasibility, pros and cons of different options within local context and support GoL in selecting the most adequate and resilient options for each project. Within each project, a mix of public and private sub-options might be considered and recommended for different assets. In its analysis and recommendations, wherever feasible and sound, private sector participation will be sought and maximized. The STA will also prepare a procurement strategy for each of the package.

3.3.1 Projects financing from public resources

The Consultant will confirm which Packages or infrastructure will be request by public resources from the Liberian state budget with the participation of usual Technical and Financial Partners (TFP) or Donors.

The STA will assess the capacities of the Liberian budget for absorbing the possible new commitments to be concluded with the TFP as well as their long-term engagements for Liberia based on their respective Country Strategy Papers/Programs usually defined for a 3-year period of time.

The STA will differentiate what programs/initiatives are funded through loans/credits and those funded by grants or non-reimbursable contributions and their flexibility to be allocated to specific projects/operations upon needs.

For this Phase, the STA will deliver a comprehensive report comprising:

- a) The list of all TFP (including bilateral) active in Liberia;
- b) The details of their current initiatives and programs in concerned sectors (including detailed data on committed and pledged resources) and a summary of preliminary discussions with potential financiers;
- c) A compendium of all available funding instruments (including Credit Enhancement instruments, blended finance project instruments etc.) and facilities with the indicative term sheets, conditionalities, grace period, interest rates, etc;
- d) An assessment of the Liberia eligibility for Export Credits that foreign suppliers can utilize with indicative terms and conditionalities;
- e) The list and description of specific Guarantee Instruments potentially available for Liberia (Credit Risk Guarantee, Partial Risk Guarantee, Credit Risk Insurance, risk mitigation vehicles and guarantees, etc.) and/or potentially required to attract private sector;
- f) Funding facilities available for borrowers and Government Agencies for the preparation of investment projects and access to legal advisory services, like amongst others, the African Legal Support Facility - ALSF hosted at the African Development Bank, the Project Preparation and Advisory Facilities from the World Bank Group (IFC, PPIAF, GIF, PIDG, and from AfDB: NEPAD IPPF, FAPA, and SEFA).

3.3.2 Projects financing with Private Sector participation

For projects or infrastructure of PPP type, which will be likely the format in particular for the implementation of the first (pilot) PV Solar Plant, the STA will explore the various possibilities for co-funding the project with a selected developer with existing instruments available at the private sector windows of TFP.

The STA will complement the above-mentioned compendium with the detailed description of the available instruments and facilities to be extended to Renewable Energy Infrastructure projects implemented with the participation of private developers/investors.

The STA will collect updated information from the organizations providing these instruments detailing eligibility criteria, contact points within the organizations, conditionalities, indicative ceiling amounts, indicative term sheets (interest rates, grace periods, etc.).

The STA will also investigate and identify with corresponding detailed information, the potential for applying for the utilization of Green Funds which are specifically devoted to the Renewable Energy sector.

The STA will perform a brief survey of the local banking market for identifying the leading commercial banks operating in Liberia and the facilities/instruments that they can offer to private developers/investors (Local account, Guarantees, lines of credit, working capital etc.) .

3.4 Phase D: Structuring of project funding and implementation

3.4.1 Package 1: SP2 Hydropower Scheme and Package 2: Mount Coffee Extension

These two packages of the PIP have been identified in the OS as generation capacities to be implemented within the frame of the electricity sector Long Term Development Plan of the country. The planned horizon for their implementation is the years 2030 at the earliest. As both packages are exploiting natural resources (water resources are considered as “Common Goods” belonging to a nation/people) of the country/territory, the funds for their implementation will likely be from

government resources eventually supported by the usual Technical and Financial Partners TFP (international, multinational and possibility bilateral donors)

Under that perspective, the current duty of the STA is to outline the corresponding likely scenario comprising:

- a) The scoping of funding potential by the Financial and Technical Partners of the country, derived from the surveys and investigations performed in Phase C above;
- b) The description of the peculiarities of each TFP practices, their agenda, priority sector detailing:
 - Their cycle time of programming;
 - The dates and durations of their respective Country Strategy Paper (CSP) or Country Partnership Frameworks (CPF) or equivalent;
 - The sectoral pillars presented in the CSP or CPF and relevant details when energy/electricity sector is specifically earmarked;
 - The Donor currently in charge of leading the energy/electricity sector and for different future dates (Donors use to alternate the sector leadership every 3 or 5 years);
- c) The recommendations to the Government of Liberia (Ministry of Finance and Development Planning) for maintaining close contacts with the international donors' community, identifying the dates for attendance to their respective Annual Meetings where funding programs and initiatives are discussed;
- d) A summary of the technico-economic and E&S studies outcomes (jointly established and compiled with the FS Consultant) illustrating the main parameters for the evaluation of projects by donors (EIRR, Socio and Environmental Impacts rating, expected Long Term Goals (Sustainable Development Goals (SDGs), Gender aspects, Climate Change aspect etc.

These above aspects will be integrated in a report (of Road Map type) with recommendations that the GoL and the PIP stakeholders can follow for the next years in view to maintain contact with the TFP for preparing the adequate conditions for the mobilization of funding of the PIP component at the planned deadlines.

3.4.2 Package 3: PV Solar Pilot Project

The implementation of a first PV Solar Plant of pilot type (10 to 30 MWp) is strategic for the GOL (i) to rapidly increase the national generation capacity and (ii) to demonstrate its feasibility with the participation of the private sector.

PV Solar projects are prone for rapid implementation thanks to a relatively shortened investment cycle (e.g. reduced time for construction, relatively low unit capital cost and reasonable risk for private investors/developers.)

3.4.2.1 Pilot Project preparation

For the pilot project, the STA will collect and analyze all information and data established by the FS Consultant. The STA will take over the outputs and outcomes of these studies as the starting point of its own studies. The main FS outputs are amongst others:

- a) Technical definition of the project (including evacuation and connection lines to the grid) including site identification and characteristics, proposed technology and specifications, capacities and dimensions (general layout and arrangement drawings, single line diagrams, etc.), list and quantities of components and equipment, itemized cost estimate, indicative schedule of construction, etc;
- b) Draft output specifications for preferred technical option;

- c) Proposed mode of operation and placement of generated energy in the LEC and CLSG transportation systems with realistic simulation scenarios (including the studies regarding transient stability, the available collected data from the Solar Irradiation measurement campaign);
- d) Assumption, data and parameters utilized for the economic analysis of the pilot project and results of computations, simulations and sensitivity analysis.

The STA will establish a compilation of the above information to prepare a Project Information Memorandum (PIM) in close collaboration with the FS Consultant (including national stakeholders/parties for ownership purpose) to be utilized further for the promotion of the project, the information dissemination to the international market and during round tables with donors and potential investors/developers.

3.4.2.2 PPP Approach

Based on the findings of the Legal and Regulatory Due Diligence, the STA will develop the model for the implementation of the Pilot project under PPP arrangement.

Broadly, the services of the STA will comprise of i) technical review of the project designed by the FS Consultant (including social and environmental aspects) and ii) financial, legal and procurement services including management of the bidding process and assistance up to the financial close. The services will cover the different stages of transaction preparation and implementation including:

- a) the project due diligence, carrying out detailed project financial modelling to support the commercial and financial structuring (development of project term sheet);
- b) managing the PPP bidding process, including bid document preparation, assisting in contract award and providing advisory services until the financial close of the project.

During the development of the PPP approach, after the Pilot Project is technically approved (by the Client and the GOL) the STA will review for confirmation the following aspects which the FS Consultant has studied:

- a) The Socio-Environmental impact assessment including the Environmental and Social Management and Monitoring Plan;
- b) The Land Acquisition and Resettlement Plan (LARP);
- c) The other social impact assessment reports or management plans;
- d) The Economic assessment comprising the Social-Cost-Benefit Analysis;
- e) The Financial analysis including the development of project finance model of the project;

The STA will also prepare:

- a) The legal analysis comprising the legal due diligence;
- b) The action plan to secure the legal and regulatory permits and approvals;
- c) The detailed financial analysis including the Value-for-money assessment, the definition and exploratory analysis of alternative technical PPP options and the determination of the key commercial terms of PPP agreement;
- d) The sensitivity analysis to tariff changes, inflation rates, exchange rates of hard currencies and other factors guiding developers/investors perception and decisions;
- e) The fiscal impact assessment;
- f) The Risk analysis comprising identification and analysis of project risks through establishment of a risk matrix,
- g) Market sounding and benchmarking analysis of PV Solar Projects in Africa;
- h) The Procurement and Implementation Plan comprising an overall action plan with indicative time schedule for procurement and implementation of the project;
- i) The outline of the procurement strategy;

- j) A communication plan for the promotion of the project;

3.4.2.3 Preparation of transaction documents and procurement process

The STA will prepare all documents required for the development of the Pilot project under the PPP format. These activities will comprise without being limited:

Task 1: Tender Documents Preparation and round table meetings

➤ **Development of the process**

The Transaction Advisor will propose an approach to procurement that balances the need to attract maximum interest from creditworthy, qualified and experienced investors in the global market to obtain competitive rates during the bidding process with the desire to minimize the level of government support required.

The Transaction Advisor shall among others

- a) Prepare an analysis and recommendation on possible bidding model and procedures (e.g., rate bidding, milestone bidding;
- b) Propose the form and amount of bid security;
- c) Design a bidding process, based on international best practices;
- d) Designing mechanisms to maximize competition while avoiding unrealistic bids and the vulnerability of projects to overly aggressive bidding;
- e) Work with the World Bank and MIGA teams for the liquidity guarantee proposal documents and with the IFC to attach a term sheet to the bidding documents ("Bidding Documents");
- f) Develop a bid evaluation procedure and detailed, fair, simple and objective evaluation criteria (in accordance with the laws and regulations applicable in Liberia, in line with World Bank procurement regulations), including minimum technical and design requirements; and
- g) Design effective systems for transparent communication with bidders.

➤ **Round table meetings with donors and potential developers**

The Transaction Advisor will participate in the round tables with donors and potential investors/developers organized by the FS Consultant.

The Transaction Advisor (in collaboration with the FS consultant) shall organize consultations with the private sector in coordination with the Government to discuss the bidding process and Contracts. The Contracts must be acceptable to the sponsors and international lenders as the PPA and the Direct Agreement will be attached to the bidding documents and cannot be amended.

The Transaction Advisor and the FS consultant will collaborate for finalizing the documents for the promotion of the project and its presentation during round table meetings with donors and potential developers.

The Transaction Advisor with the Client will finalize the development of the process based on round table meetings with donors and potential developers.

➤ **Development of Prequalification Documents and Tender Documents**

The tender documents should be developed in such a way that the tender is transparent and market-friendly, ensuring comparable offers, open bidding, competitive tender and inspiring market confidence. According to the initial assessment, the procurement process will be a two-stage process with (i) a pre-qualification based on the qualifications of the IPP and (ii) the tender documents sent to the pre-qualified IPPs.

The Transaction Advisor shall:

- a) Prepare the pre-qualification document based on the standard World Bank pre-qualification documents, resulting in pre-qualification of candidates that substantially meet the minimum qualification requirements;
- b) Preparing an appropriate and comprehensive the tender documents in all respects, in accordance with industry best practices and World Bank borrower regulations, the tender documents will have all draft Contracts attached and the financial and guarantee term sheets (if applicable);
- c) Establish and maintain an online data repository containing all relevant Project information (including the Project Information Memorandum) to be shared with the pre-qualified Independent Power Producers (IPPs).

Task 2: Assistance in pre-qualification process

The Transaction Advisor shall provide the Client with all administrative support necessary for the efficient and professional management of the IPP pre-qualification process. This should include, but not limited to, the following:

- a) Organizing the pre-qualification of IPPs with (i) the launch of the publication of the pre-selection documents that will have been developed previously, and (ii) a consultation for the private sector organized in Liberia;
- b) Facilitate effective engagement between the Client and bidders, including, among others, responding to questions raised on pre-qualification;
- c) Manage with the Client the receipt of prequalification offers;
- d) Support the Client in the pre-qualification according to the criteria selected on their financial and commercial capacity to develop and operate the Solar Plant; and
- e) Preparation of pre-qualification evaluation report and discuss the results with the Client and other representatives or consultants of the Client as required;
- f) Manage communication with non-selected IPPs and pre-qualified IPPs notifying them if they have not or have passed pre-qualification respectively.

Task 3: Assistance in bidding process

The Transaction Advisor shall provide the Client with all administrative support necessary for the efficient and professional management of the selection process for the winning IPP(s). This should include, but not be limited to, the following:

- a) Manage communication with the IPP(s) pre-qualified and the sending of the tender documents;
- b) Sharing with the pre-qualified IPPs an online data package containing all relevant information about the Project after updating the submitted data as necessary;
- c) Facilitate effective engagement between the Client and bidders, including, among others, responding to questions raised on the tender documents;
- d) Organizing, conducting and documenting (minutes) pre-bid meetings among others;
- e) Provide support in the management of complaints.

Bids will be evaluated according to the criteria identified previously.

➤ Technical, Legal and Commercial Evaluation

The Transaction Advisor shall:

- a) Assist and advise the Client in the evaluation of the technical and commercial offers in relation to the legal and commercial conditions contained in the procurement document, taking into account any significant deviation from the offer documentation;

- b) Evaluate the technical configuration and specifications included in the bids (including, but not limited to, availability, major and annual maintenance schedules, etc.);
- c) Verify the project implementation schedule provided by the bidders ;
- d) Advise the client on all other technical, social and environmental issues related to the bids ;
- e) Finalize the technical evaluation report and discuss the results with the Client and other representatives or consultants of the Client as required ;
- f) Report on the financial soundness and credibility of the equity investors and identified lenders or underwriters with respect to each party's commitments and proposals ;
- g) Assist the Client in obtaining clarifications from bidders, as required, to evaluate the bids received ; and
- h) Assist and advise the Client on the legal and commercial implications of the bids received.

➤ **Financial Evaluation and Selection of Winner**

The Transaction Advisor shall:

- a) Advise the Client in establishing the underlying financial and business assumptions used by the various bidders and compliance with the tender documents;
- b) Using a computerized financial model, independently evaluate the proposed rate levels for each bidder against the specified evaluation criteria (including levelized rates and actual annual rates) ;
- c) Request the IPP(s) to submit a financial bid (USD/kWh) (if require);
- d) Finalize the evaluation report of the financial bid based on the tariff; and
- e) Assist and advise the Client in the final selection of the winner(s).

Task 4: Contract Negotiation Phase and Support to Financial Close

The Transaction Advisor shall assist the Client in negotiations with the bidder(s) who submitted the most advantageous offer. Activities include, but are not limited to, the following:

- a) Assisting the Client in assembling an appropriate negotiating team and developing a schedule for concluding negotiations and the transfer of the SPV and licenses;
- b) Assisting in the preparation of negotiation strategies. All negotiations must be in accordance with the requirements of the RFP document. If negotiations are undertaken, they shall be held in the presence of the Transaction Advisor. Negotiations shall be minimal as neither the contracts nor the tariff shall be subject to renegotiation;
- c) Assisting and advising the Client in the preparation of the final set of Contracts and making recommendations for its execution ;
- d) Ensure that the Preferred Tenderer meets the preconditions of the Contracts, and the financial documents, including, where applicable, the validity of licenses and permits obtained by the Preferred Tenderer;
- e) Preparing reports on agreements, negotiations and position papers on any controversial issues;
- f) Provide recommendations and final version of Contracts for execution;
- g) Reviewing and/or provide legal opinions;
- h) Preparation of terms of reference for Independent Owner's Engineer and/or Lender's Engineer; and
- i) Recommendations on contract management and preparation of a Contract Management Plan.

Task 5: Capacity Building of Actors

The Transaction Advisor's services will include knowledge transfer and training on the areas covered by its advice as part of a capacity building programme for energy sector actors (MME, LEC, LERC,

WAPP and ERERA) on good practices in auction development and monitoring as well as contract and title management related to the solar farm.

To this end, the MME, LEC, LERC and WAPP General Secretariat will each designate two executives, and one executive per structure will be designated by the Minister of Finance and Planning Development (MFPD), and ARREC to participate in the training. (it is estimated that the cohort of trainees will be minimum 12 persons).

This training will be in English. The Consultant's proposal shall include details cost of the training program in his proposed cost and shall relieve the Client of any costs associated with the organization of the training. The training shall last approximately one week. The Consultant's proposal shall also contain the approach and methodology that the Consultant intends to use to achieve effective transfer of knowledge to the participants.

At the end of the Capacity Building (training) session, the STA will issue a report comprising of:

- a) The presentation of the topics selected for the training;
- b) The didactical and tutorial material used during the training session;
- c) The list of attendants;
- d) The evaluation questionnaires filled by the attendants and an illustration of the analysis results and derived conclusions.

4. Duration of the assignment

The duration of the assignment of the STA will be set to take into account the scope of its expected missions and services and in line with the overall project (PIP) scope and the unrolling of the Feasibility Study activities. It is tentatively planned to last until mid-February 2022 which is the tentative date for the Feasibility Study to be completed.

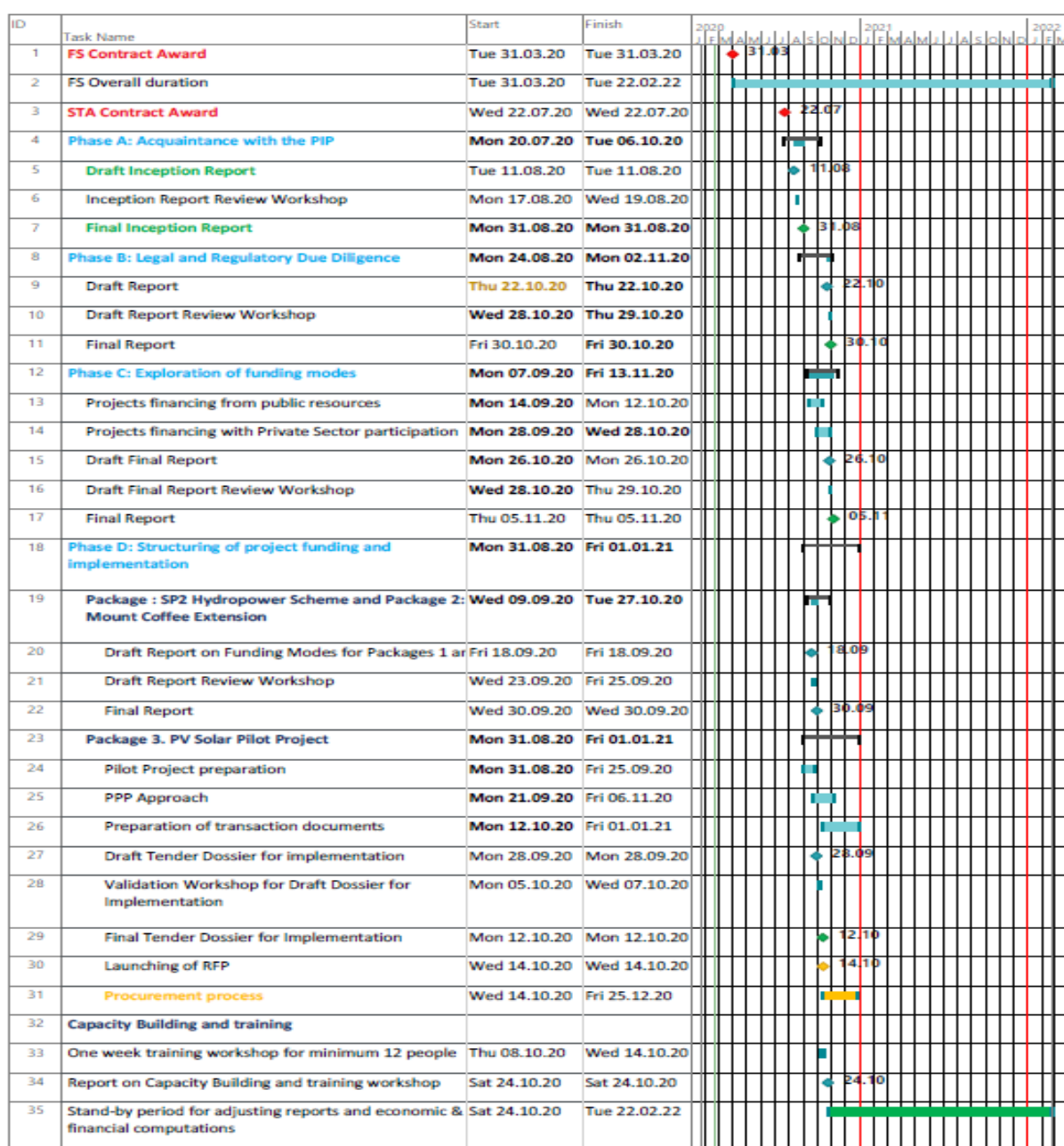
Globally, the STA must stay mobilized during the whole period from its contract award date until the date indicated for the end of the FS. This implies that the STA will have periods of more intense activities (at the beginning of the assignment and then during the process of procurement for the selection of an IPP for the Pilot Solar Plant) and less intense activities during the period when the FS Consultant is deploying its own activities. Nevertheless, the STA shall remain in permanent contact with the Client and with the FS Consultant in order to intervene when required.

For the Solar Pilot Project, the STA will provide the required assistance until the financial close of the Project for a maximum period of 120 (one hundred and twenty) days from signing of the PPP agreement (or Concession Contract).

This assistance will comprise permanent liaison and meetings with the Client and the GoL for ensuring that all contractual documents and legal documents of the “security package” are duly signed and in force allowing the project to officially and validly enter into commercial operations.

5. Timetable and Deliverables

The following Gantt chart indicates the expected unrolling sequences of the STA services.



5.1 Reporting requirements and other deliverables

The Transaction Advisor will be required to produce the reports listed in the table below with among others:

- An Inception Report containing, among others, the Consultant's work program with details on the timing and milestones for financial closing, major deliverables, prerequisites for the Consultant's work to be obtained from the Client, and a detailed list of Contracts to be prepared by the consultant, and a strategy for consultations with the private sector and the Client.
- A Legal and regulatory Due Diligence Report;
- A report on the funding modes recommended for the PIP Packages;
- A report on the Capacity Building/training activities;
- The comprehensive documentation regarding the entire process for the selection/recruitment of a developer/investor for the pilot PV Solar Plant.

All reports, documents, deliverables must be written in English and must be in a form and format acceptable to the WAPP Secretariat and the World Bank. All electronic versions of the reports must be submitted on a USB key in PDF and editable version.

Paper versions will be submitted in three (3) copies in their draft version and six (6) copies in their final version.

The Transaction Advisor should include in his offer his participation in the kick-off meeting and in the various meetings as indicated in the indicative calendar that will be organized by the WAPP Secretariat for the review and validation of the reports. During these meetings, the Transaction Advisor will make a presentation of the reports and collect observations and/or comments from stakeholders for the finalization of the reports. These meetings will take place in Benin or in Liberia and if convenient via téléconferences.

5.1 Key Deliverables and Indicative Calendar

The duration of the Phases A, B, C and D must not exceed 6 months (21 weeks) for collection of information and data and documents preparation and the selection of potential developer/investor for the pilot PV Solar Plant. At this point in time, the Feasibility Studies by the Consultant in charge are still in progress for the incorporation of results of field investigations which can only be developed once access to sites (SP2 component) are built. Consequently, the STA will remain potentially mobilized for interventions until the end of the FS Consultant assignment. This “stand-by” status will aim at:

- Reviewing as required the conclusions and recommendations issued for the financing structuring of the Packages 1 and 2 for reflecting the eventual changes resulting from the FS Consultant studies and investigations;
- Adjusting and amending accordingly the financial and economic parameters/indicators and the results of financial simulation models;
- Updating as required, via addenda the previously delivered reports if they are impacted by the changes.

The Consultant shall propose in his offer a detailed timetable for the execution of the consultancy.

For this purpose, the following schedule is proposed as an indication:

	Outputs and deliverables	Weeks from Contract Award
	Date of Entry in force of the Consultant's Contract	
Phase A	Kick-off meeting	2
	Draft Inception Report (including timeline update and alignment with provisional PIP/FS timeline)	3
	Draft Inception Report Review Workshop	4
	Final Inception Report	6
Phase B	Draft Report on Legal and regulatory Due Diligence	13
	Draft Report Review Workshop	14
	Final Report	14
Phase C	Draft Report on Exploration of Funding Modes	14
	Draft Report Review Workshop	14
	Final Report	15
Phase D	Draft Report on Funding Modes for Package 1 and 2	13
	Draft Report Review Workshop	14

	Final Report	15
	Draft Report on Funding Mode for Package 3	12
	Draft Report Review Workshop	14
	Final Report	15
	Draft Tender Dossier for Implementation	10
	Workshop to validate draft Tender Dossier and Draft Contracts	12
	Tender Dossier and Contracts (final version)	13
	Round Table with Donors	13
Capacity Building	One-week training workshop for minimum 12 people	12
	Report on Capacity Building and training workshop	14

6. Required transaction advisor skills and experience

The transaction advisor will comprise a team, managed by a single lead advisor/team leader. The members of the team will have the skill and experience necessary to undertake the range of tasks set out in these terms of reference. Each individual on the team must be personally available to do the work as and when required. The lead advisor will be held accountable, in terms of the transaction advisor contract, for ensuring project deliverables and for the professional conduct and integrity of the team. Team members may not be changed or removed without the prior written approval of the Client/WAPP, and replacement with someone at least as qualified and capable.

The domains of skills and experience required in the transaction advisory team are as follows:

- Knowledge of national electricity utilities in Africa through previous provision of advisory services;
- Financial analysis, with relevant project finance experience through to financial close for power generation projects either funded by public resources (Government budget and support from TFP) or private investments (various formats of PPP with private sector participation);
- Financial modelling of power generation projects;
- Legal, with relevant law and experience in the drafting and negotiating of PPP agreements;
- Technical due diligence and advice on PPP structuring and contracts;
- Project planning management;
- Project facilities operations and management;
- Negotiations of Concession Contracts, Power Purchase Agreements and generally all contractual arrangements required within the frame of PPP's (EPC Contract, O&M, etc.);
- Contract implementation management;
- Project implementation management.

The STA team shall include qualified personnel with extensive experience in the field of power generation projects, project preparation and appraisal, project management, financial modelling and structuring, investment promotion, economic and financial analysis, risk analysis, procurement, policy and legal, among others.

The STA shall have required qualified personnel and resources, including technical expertise and advisors, to provide all necessary professional, technical, and expert services, as required to accomplish all the services described herein above within the prescribed time.

The STA shall have enough qualified experience and expertise in the field of power generation project with specific background in PV Solar Plant and hydropower projects, which shall include and not limited to professionals listed in table below.

The STA should also have knowledge of the project's taxation frameworks, including exemptions and tax exemption regimes, countries' accounting systems, domestic and global insurance and guarantee sector and their products, special privileges and incentives available to the PPP projects, concessional financing options available for PPP projects from the public sector and other country-specific knowledge.

The list of Key Experts provided in table below is indicative and the STA may select additional experts who are considered required to successfully complete the assignment. Only the 5 Key Experts Curriculum Vitae will be evaluated but others might be discussed/ reviewed during negotiations.

The STA shall also ensure that it has the required backup from experts and specialists for the treatment of the various cross cutting aspects like environmental and social impacts, information dissemination for the promotion of the project, procurement procedures of international donors and development banks and computerized financial modeling.

Table of required experts

Sr.	Minimum qualifications and years of experience	Position
1	MBA (or Law Degree in Business) with minimum total experience of 15 years, out of which minimum 5 years of experience in providing PPP Transaction Advisory Services for developing renewable energies projects. Intervention as lead advisor in at least 3 PV Solar Plant projects and 1 hydropower project in Africa or similar environment.	Team Leader
2	MBA (finance) or equivalent with minimum 8 years of experience in financial modelling and analysis of minimum 3 power sector projects developed/being developed through PPP in Africa or similar environment.	Finance Expert
3	MBA (or Law Degree in Business) with minimum 5 years of experience in Policy Advisory/Tariff Fixation and Regulation and others similar advisory services in Power Sector. Interventions in at least 3 transactions with the preparation and negotiations of PPP Agreements and Power Purchase Agreements with Government Agencies and National Utilities (Off Takers) in Africa.	Power Sector/Policy & Regulatory Expert
4	Master's Degree in Economics, Business and/or other related fields with specialized experience of minimum 8 years in Business Administration, Finance, Economics, Public-Private. Experience of at least 3 electricity generation projects executed in PPP mode in Africa or similar environment.	PPP Specialist
5	Liberia lawyer: Law degree with minimum 10 years of experience in electricity projects development in Liberia. Demonstrated knowledge of laws, by-laws, decrees and regulations enacted and enforced in Liberia in the sector of energy/electricity and private sector participation in the development, financing and operation of public infrastructures.	Lawyer

Team Leader scope of duties and responsibilities

The Team Leader will generally be responsible for coordinating all inputs of the team; submission of all reports; facilitation of meetings and stakeholder consultations, as required; and liaison with the Client/Contracting Authority and the FS Consultant as required. Specific tasks would include, among others, the following:

- a) liaise with Client/Contracting Authority and keep all stakeholders apprised of any issues or concerns that could impact project performance and or completion of the consulting assignment;

- b) be responsible for drafting inception report, progress reports, and updating the agreed work program, and provision of timely information to Client/Contracting Authority on contract administration issues;
- c) manage the team of experts to ensure integrated monitoring of the agreed work program;
- d) coordinate the inputs of team members as per the agreed work plan, advise team members of changes to the work plan, and monitor team members' other project commitments to ensure appropriate priority attention is given to the assigned task;
- e) ensure outputs of team members are in accordance with the contractual Terms of Reference and the Client's quality expectations;
- f) ensure smooth implementation of the internal quality assurance mechanism and be ultimately responsible for output quality by reviewing, commenting upon and approving all such outputs;
- g) ensure all contracted deliverables are prepared in a timely manner and manage project scheduling; and
- h) brief and supervise team members on quality management and integrity and professional conduct; and keep the team updated on changes in the operating environment or procedures.

Finance Expert scope of duties and responsibilities

The Expert will be responsible for performing financial computations and modeling and incorporation of the results in the documents and in the process of the transaction. Specific task will include without being limited:

- a) Develop an appropriate project finance model with suitable assumptions, resulting in a set of projected financial statements (balance sheet, cash flow, income statement, key ratio analysis) and scenarios;
- b) develop the financial/commercial and risk allocation terms of the envisaged PPP modality after assessment of alternative choices including the commercial, legal, and institutional impacts;
- c) ascertain the potential acceptability of the recommended PPP structure by the investors and potential lenders;
- d) recommend a suitable bankable financing plan, including appropriate debt equity ratios, loan tenures, rates and cash flow requirements for project viability and bankability, and required government support;
- e) identify appropriate funding sources, including private sector funding, government funding and government support. Identify their likely terms and conditions, incorporating them in the project financial model;
- f) develop all required due diligence documents for potential lenders;
- g) test all key assumptions against financial model outputs, including the financial internal rate of return and debt service coverage ratio, identifying any required policy revisions for project sustainability, including on the revenue model;
- h) provide project risk analysis with suitable mitigation strategies;
 - i) assess contingent liabilities arising from the project;
 - j) assess project financial management capacity;
 - k) assess the receivability and validity of security instruments provided by the winning bidder/developer;
- l) produce and manage all project and bidding documentation and post-bid monitoring frameworks in coordination with the legal specialist;
- m) manage the bidding process, including marketing, pre-bid meetings, identification of potential bidders, bidder query responses, bidder qualification and evaluation criteria development; and
- n) provide all required support until the financial close of the project;

- o) provide inputs related to taxes, tax exemptions and tax incentives, financial accounting systems.

Power Sector/Policy &Regulatory Expert scope of duties and responsibilities

The Expert will develop a legal/regulatory and institutional analysis to determine the requirements of the selected PPP modality, and assist in the bidding process, project documentation, and evaluation procedures. Specifically, his tasks will include, but not limited to:

- a) conducting a policy and institutional assessment to ascertain the validity and viability of the proposed PPP structure for the project;
- b) assessment of the GoL/Contracting Authority's capacity to manage the project once operational, and recommend required changes and capacity improvement measures as appropriate;
- c) recommend institutional measures to improve the governance of the GoL/Contracting Authority's with the purpose of ensuring efficient management of project assets after PPP project completion;
- d) develop “bankability” measures for the proposed PPP project structure, such as payment and guarantee mechanisms, preconditions for a private operator to fulfil in meeting service obligations, default and risk clauses, and step-in rights;
- e) in accordance with relevant sector and PPP legislation and associated regulation, assist in the bidding process management through documentation preparation, including Request for Prequalification, Request For Proposal, contractual agreements between project sponsor and winning bidder, as well as in developing bidder instructions, bid qualification parameters and bid evaluation criteria, bidding process schedules, and undertake stakeholders consultations;
- f) providing advice on Liberia legal experience of PPP projects in the sector, judiciary -related, legal and regulatory issues pertaining to the project, legal perspective on special privileges and incentives available for PPP projects and other country-specific legal knowledge;
- g) provide all required support until the financial close of the project.

PPP Expert scope of duties and responsibilities

The Expert will focus on the structuring of the project as a PPP. He will specifically ensure that stakeholders and the GoL as the Contracting Authority are fully aware of the peculiarities and constraints of a PPP arrangement. His tasks will comprise without being limited to:

- a) Assess that the Liberian regulations and laws are compatible with the implementation of a PPP in the electricity generation sector;
- b) Assess the possible loopholes in the laws and gaps in the country institutional framework which may impede the implementation of a PPP and recommend measures for addressing the issues;
- c) Dispense knowledge and awareness of PPP peculiarities for the GOL representatives to become informed and conversant with the PPP type of project structuring quite different from public market transactions.
- d) Assure the compliance of transaction documents with the principle and rules of PPP model;
- e) Assist as required in the bidding process and negotiations of the concession contract with the winning bidder.

Liberia Lawyer scope of duties and responsibilities

- a) Support to the STA team for collecting the data and information regarding the legal and regulatory environment in Liberia;

- b) Contribute to the performance of the Legal and Regulatory Due Diligence by compiling relevant texts of laws, including agreements enforced between the GoL and regional institutions and neighboring countries;
- c) Collect available information on already existing projects/transactions in place in Liberia in the infrastructure sector

7. OTHER INFORMATION

7.1 Information/Data to be provided by the Customer

Upon its request, LEC and the MME will provide the Transaction Advisor with the available data on the Project and any other relevant available documents that may facilitate the development of the auction.

7.2 Reporting Requirements

The Transaction Advisor will report to the WAPP Secretariat. However, the MME of Liberia and LEC will appoint counterparts within the Local Focal Team (LFT) or from other Governmental Agencies, including designation of Focal Person who will overlook the activities of the Consultant in Liberia.

All correspondence from the Transaction Advisor to either party shall be copied to the other party for information purposes.

All reports will be submitted by the client (WAPP) for the overall review by the TA2.

7.3 Type of contract and remuneration

The contract will be of Lump Sum type.

The remuneration of the STA services will be as follows.

- a) Advance payment: An advance payment of 15% of the Lump Sum amount will be paid to the Consultant against an advanced payment guarantee at the beginning of the assignment. The advanced will be written off on prorata of the subsequent payment installments. (Details are included in the Request For Proposal and the Instructions to Consultants);
- b) Payment Installments as percent of the Lump Sum amount:
 - 20% at the issuance of the Legal and Regulatory Due Diligence Final Report;
 - 25% at the issuance of Exploration and Funding Modes Final Report;
 - 25% at the issuance of the Final Tender Dossier for Implementation of the Pilot PV Solar Plant;
 - 30% at the financial close of the Pilot PV Solar Plant project;

7.4 Participation of WAPP, LEC and the MME

If requested, the WAPP Secretariat, the MME of Liberia and LEC may facilitate contacts with state structures, the local population and any other local partners involved in this project.

The Transaction Advisor will make his own arrangements, in coordination with the WAPP Secretariat, for any other service/provision that the WAPP Secretariat cannot provide.