

CLIMATE INVESTMENT FUNDS

June 9, 2017

**[APPROVAL BY MAIL]: LIBERIA: RENEWABLE ENERGY PROJECT (AFDB)(SREP)-
XSREL032A**

AFRICAN DEVELOPMENT BANK RESPONSE TO COMMENTS FROM SWITZERLAND

(Q) (re. answer Nr.13): Besides the costs associated with the Environmental and Social Management Plan covered by the Government of Liberia, does the project budget include DRR (disaster risk reduction) measures to protect the investment (e.g. from flooding)?

[AfDB]: Being a project with an environmental and social category of 1 (high risk), the studies take into account the negative impacts of climate change events, including flooding risk. The design of the project takes into account this particular risk and others.

(Q) (re. answer Nr.16): Could you please give us a more specific indication (link) on the WB webpage where the information can be found and, if not self explanatory, give us your interpretation as to how and to what extent the Sector Strategies and Policies Risk is effectively mitigated by the WB Liberia Renewable Energy Access Project.

[AfDB]: It does not seem appropriate for AfDB to critically comment on the implementation status of a WB project. In addition, the power to be generated as part of the proposed project will be injected in the national grid and not be used to power off-grid areas in the country. That been said, you can find the link for the World Bank project: (<http://documents.worldbank.org/curated/en/462421467992516107/pdf/PAD1618-PAD-P149683-R2015-0249-1-Box394822B-OUO-9.pdf>) where you will find under section III, A, a description of the technical assistance sub-components that will directly benefit RREA, which is the agency that will be implementing this proposed project. AfDB is of the view that once completed, these will highly improve the technical capacity of RREA as a whole and shall indirectly benefit the successful implementation of the proposed project.

(Q) (re. answer Nr.21): We acknowledge the possibility to import electricity from Côte d'Ivoire [8 MW capacity] when needed by Liberia but to what extent is this capacity already used by present demand and is this supply really resilient to the dry season, given that Côte d'Ivoire also relies heavily on hydroelectricity?

[AfDB]: The 8MW capacity is already being utilized by Liberia with the entry point in the Nimba County accounting for only 2.4MW which is already fully utilized. We do not foresee an excess of supply as many businesses and households in the region are dependent on the privately-owned generators that use very expensive fuel to meet their electricity needs. In addition, On the other hand Cote d'Ivoire generation mix is predominantly Fossil Fuel Based (Thermal and Gas) and not hydro, however, one of the objectives of Gbendin Falls is to reduce the dependence on the cross border line. It is the objective of the Government of Liberia to reduce its dependency on the imports of power from its neighboring countries, including Cote d'Ivoire which mainly relies in fossil fuel capacity to meet its power needs.

(Q) (re. answer Nr.21): From the project document, your answers to our questions and the earlier appraisal of the WB Liberia Renewable Energy Access Project, we gained the impression that the capacity of 9.34 MW for this plant is geared more to river potential, available budget and expected demand in the future than present demand. This impression is also supported by the lack of clarity regarding the financing of grid extensions and mini-grids to be used to feed yet unconnected communities. Is our impression correct? What options regarding the sale of electricity have been explored to assure an economically sound operation of a plant of this size, also during the wet (i.e. peak producing) season? Is there the possibility to supply industrial or agricultural enterprises and thereby substitute diesel generation, in the time until the grid extensions and mini-grids are implemented?

[AfDB]: From AfDB's point of view, the impressions is not correct. The capacity of the proposed power plant established based on a detailed assessment of the hydrological flow and on an average plant load factor of 70% which seems optimal for a run of the river technology where there's no storage of energy. AfDB and the Government of Liberia firmly believes that once in operations the energy generated will be quickly purchased by businesses across different sectors (including industries and agriculture) and households that currently rely on privately-owned and expensive fossil-fuel based generation.

(Q) (re. answer Nr.22): We understand from your answer that a possible PPP would be limited to an O&M contract or a concession to operate the plant for a determined number of years and that an investment from a private operator is not considered feasibly or desirable. Is our conclusion correct? Unfortunately the answer was truncated. Please provide the rest of your answer.

[AfDB]: As stated in paragraph 4.6 of the PAD, "RREA is currently concluding the development of a Business Plan that will incorporate a methodology aimed at guiding engagements with private sector companies to operate power plants in the country." This project could be the object of a Public-Private Partnership with a private operator being brought on board to operate and maintain the power plant during its life. Given the envisaged installed capacity of the power plant (<10MW) that is insufficient to provide gains in terms of economies of scale and the high transaction costs to structure this project as an IPP, the Government of Liberia objective is to minimize development risk and implement the project under a public scheme and engage a private company to operate and manage the asset.

(Q) (re. answer Nr.9): We do not quite understand how the financial viability data (NPV, IRR and payback) can be equal to the economic viability data. Could you please provide the computations in Excel format.

[AfDB]: The Bank's response (re. answer Nr.9) indicates that the financial parameters are within the range provided for the economic parameters. This cannot be equal as pointed out in your question. Please note the response is three phased as presented i.e. what is the level of shadow prices for CO2 emissions (1.7 US\$/kWh), what is the economic viability if these shadow prices were disregarded or set at 0? still within (ENPV \$67-124 million; EIRR 22.9%-32.4%; EBCR 2.8- 4.4); and the respective financial viability parameters of the investment? (expected to be within the project's economic viability parameters) The financial viability parameters are attached in the feasibility study under financial and economic analysis with different sensitivity of the same.