August 22, 2017

[APPROVE BY MAIL]: BANGLADESH: SCALING-UP RENEWABLE ENERGY PROJECT (SREP) (WORLD BANK)-XSREBD076A-

WORLD BANK RESPONSE TO COMMENTS FROM UNITED KINGDOM

Preliminary Economic and Financial Analysis of the Renewable Energy Financing Facility (REFF)

Assumptions

The Renewable Energy Financing Facility (REFF) is proposed to provide long term loans for utility-scale renewable energy and rooftop solar PV sub-projects supported by the proposed Bangladesh Scaling-up Renewable Energy Project (the proposed Project). The economic and financial analysis presented below uses the same assumptions as those in Annex 3 of the Project Appraisal Document for the solar PV rooftop subproject. This includes the assumption that the REFF would support a maximum of 25% and 75% of the capital cost required for utility-scale renewable energy, and rooftop solar PV sub-projects respectively. The table below presents the assumed schedule of REFF loan disbursements and REFF supported installed generation capacity commissioned during the life of the proposed Project.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Utility-scale RE						
Installed capacity (MW)	0	120	50	0	0	170
Loans from REFF (US$ m)	0	42	18	0	0	60
Rooftop solar PV						
Installed capacity (MW)	4	5	6	7	8	30
Loans from REFF (US$ m)	3	4	4	5	6	22

In addition to generating significant economic and financial benefits as shown below, the REFF is designed to leverage SREP funds to crowd-in commercial capital. The REFF will offer about US$ 82 million of debt financing, which will mobilize an additional US$ 186 million of capital for utility scale renewable energy and rooftop solar PV, as clarified in Table 2 of the Project Appraisal Document. The IDA guarantee offered in parallel with the REFF debt financing under the proposed Project is expected to help mobilize the additional long term capital from commercial sources by mitigating payment and/or credit risk. Depending on the progress of pipeline development, the REFF may take additional financing from other financing sources, including trust funds and development banks, to support investments beyond what is projected in the table above.

Economic Analysis – Results

The REFF is expected to support about 200 MW of renewable energy generation capacity in total. The total investment mobilized through the REFF is economically viable. The economic internal rate of return (EIRR) is estimated around 18.3%, with the net economic benefit of US$ 69.9 million, excluding global environmental benefits. The portfolio supported by the REFF will reduce over 4.5 MtCO2eq of greenhouse gas (GHG) emissions over the lifetime of the sub-projects. Taking into account positive environmental externalities through GHG emission reduction, the EIRR increases to 24.9% which will strengthen the economic case of the proposed Project.

Financial Analysis – Results

The investment portfolio supported by the REFF is financially viable. The financial net present value (FNPV) of the sub-project portfolio is estimated around US$ 24 million, and the financial internal rate of return (FIRR) is 10.9%, exceeding the projected weighted average cost of capital (WACC at 8.5%). The average FIRR to equity holders is expected at 18.6%, covering expected cost of equity of 15% and providing reasonable return on equity from similar RE projects in the region and from infrastructure PPPs, in the context of Bangladesh.