

July 12, 2013

Comments from ADB on the Approval by Mail: India : Rajasthan Renewable Energy Transmission Investment Program (ADB)

Dear Patricia,

We would like to thank UK for reviewing the proposal and providing questions for clarification and are pleased to submit below our responses quickly in the interest to time. I hope this will provide adequate information but we would be happy to provide further clarification if required.

UK Q1: As noted in the proposal, in the case of RE transmission systems, higher costs are incurred relative to conventional transmission systems because base-load utilisation is between 20-30% (in comparison to 80% for conventional base-load power). As the transmission system is to be built with a significant amount of spare base-load capacity, will the operators of the transmission system look for opportunities to use this spare capacity, and if so, where will this come from (e.g. new fossil fuel generation)?

ADB: The state and central government investment plan for Rajasthan is to support 5700 MW of new renewable energy by 2018. ADB considers a conservative target of 4300 MW that could be achieved during this timeframe. The transmission network built in Rajasthan will cater to this giga-watt scale development of variable-output RE power, and therefore the need for CTF support.

While project developers in theory can set up fossil fuel power generation projects in any part of India, a review of the Electricity Plan for Rajasthan (the development plan for the next 5 years for generation and transmission in Rajasthan) indicate low probability for fossil fuel generation capacity addition to significantly increase utilization of the infrastructure built under the Investment Program.

There is good complementarity between the wind resource (mostly night time) and solar (day time) in a few areas (near Akal) and support to increase the loading through improvements in forecasting, reactive power compensation would be taken up under the Investment Program. ADB has financed a 100 MW CSP project in Rajasthan with better load factors. We are also working with the Government of India on pre-feasibility for large scale concentrated solar power plants (including storage) under other planned CTF projects that would help increase the potential utilization.

UK Q2: The project claims to facilitate the deployment of 4300 MW by building the transmission network. This would save emissions of up to 54m t CO₂e over 25 years, attributable to the investment of CTF. This would yield a cost/tonne of \$3.7/t CO₂e over project lifetime. Are the 4300 MW only built as a result of the investment into energy infrastructure or would some of these installations have gone ahead anyway? This will help us to establish the business as usual scenario.

ADB: Clarification: Avoided GHG emissions are estimated at 5.4 Million tons CO₂e per year; over an operating period of 25 years, avoided emissions will be about 135 million tons CO₂e. Given the inadequate levels of transmission network facilities at 400, 220 and 132 kV across the renewable energy zone in Western Rajasthan and the planned nature of the solar park, new RE generation capacity and the proposed transmission system expansion are integral and therefore interdependent; i.e., new RE plants could be built without the transmission lines, in which case there would be no outlet to deliver the produced electricity (and GHG reductions).

The CTF concept of transformation implies that a new business-as-usual (BAU) scenario is being created, which is the objective of the National Solar Mission and the Rajasthan state policies. Alternatively stated, the impact of CTF-supported investments is the creation of a new baseline. The Rajasthan program will directly support at least 4300 MW of new RE capacity, with replication and scale-up potential of at least 2.5 (Rajasthan expects to reach 28,000 MW of installed RE capacity 2030). The Rajasthan program fulfills the transformation criteria noted in paragraph 15 of the guidelines for Clean Technology Fund, Investment Criteria for Public Sector Operations, dated 9 February 2009, in particular those items highlighted below.

Transformation Potential: Project/program proposals for CTF co-financing should demonstrate that they constitute a strategic effort to stimulate lasting changes in the structure or function of a sub-sector, sector or market. Such transformation should speed up or deepen market penetration of a low carbon technology relative to business as usual. Strong market transformation will result in economies of scale, enhanced competition and private sector participation, and eventually savings in the unit abatement costs. In the context of the CTF, the term "transformation potential" is defined as the extent to which the deployment, diffusion and transfer of technologies and the implementation of policy reforms result in significant reduction in emissions growth against a national, regional or sector baseline.

UK Q3: The Annex details a series of development co-benefits, including health and employment. Why are none of these benefits going to be monitored as a part of the project monitoring framework?

ADB: The ADB supported Investment Program is a part of the Rajasthan Renewable Energy Investment Plan that will deliver important co-benefits including enhanced energy access, health and employment benefits linked to the development of the renewable energy industry in Rajasthan and India. One of the non-physical outputs in the project monitoring framework that would be developed is the community development policy for Rajasthan with the Rajasthan Renewable Energy Corporation (RREC) that will be ready by mid 2014 and will include targets on co-benefits. A monitoring mechanism for these co-benefits will be created as part of this.

Based on studies in 2010 by industry bodies, a requirement for about 600,000 jobs in the solar industry (including about 150,000 people in on grid solar PV) and about 46,000-160,000 jobs in the wind industry was estimated by 2020 at a national level.

However, these figures would depend to a large extent on the path adopted on certain key functional areas in particular the extent of R&D and manufacturing.

ADB will work with Rajasthan Government to develop a system to monitor these co-benefits as appropriate and report to CTF as far as possible.

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