2. The PP is requested to explain and the DOE should validate the appropriateness of a fixed tariff in the sensitivity analysis

The proposed CDM project activity is a wind power project in the state of Karnataka in India and involves sale of the generated electricity to the electricity grid. In doing the financial analysis of the project, the tariff rate for the project was derived from the Karnataka Electricity Regulatory Commission (KERC) tariff order for Non-Conventional Energy Sources dated 18th January 2005[1]. The order clearly states that for wind power projects, an average tariff rate of Rs. 3.40/unit (page 18-19) will be applied upto the10th year of commencement of the project. This is further substantiated by the Power Purchase Agreement (PPA) signed between MMTC and HESCOM (Utility) for the period of twenty years which puts a clause that MMTC would be selling the electricity generated at a fixed rate of Rs. 3.40/unit for the first ten years. Relevant extract of the PPA has been provided as annex[2] 2-2.

From the 11th year onwards, the tariff rates for the project would be decided by the commission. The HESCOM may or may not purchase the power at the rates determined by the commission as it is free to do so as per the clause 5.2 of the PPA. In case the HESCOM is unwilling to purchase, MMTC may have to compulsorily sell the power to a third party even at a lower tariff rate (in addition to the wheeling and banking charges).

Further, according to the above mentioned tariff order, KERC (Para 8 vii) opines that differential tariff rate should apply to projects that have completed their first ten years of operation, as major liabilities in the project (mainly debt repayment) is expected to be over by this time. Hence, for projects beyond 10 years, PP may not get the same rate of tariff or even get lower tariff rates. Hence, there is a lot of uncertainty in the quantum of revenue which is expected to accrue to the PP after the tenth year. However, for the financial calculations of the project, the PP, being on the positive side, has considered a constant tariff rate of Rs. 3.40/unit for the entire project lifetime.

The sensitivity analysis carried out by the PP, with respect to tariff rate, aims to absorb the possible changes in tariff rate after the tenth year. As per the latest Guidance on the Assessment of Investment Analysis (version 02, EB 41), the sensitivity analysis should be carried out only for those parameters which constitute more than 20% of the project revenues. The tariff rate is one of the most important determinants of revenue to a project. Revenue due to tariff in the last ten years of the project constitutes 45% (approx.) of the total project revenues. Thus, sensitivity analysis with respect to tariff rate after the tenth year is a significant parameter for sensitivity analysis to find out the feasibility of the project.

The tariff rate after the tenth year was varied upto ±20% from the base case. The results of sensitivity analysis have been shown in a tabular format below:

[1] Annex 2-1: KERC Order http://www.kerc.org/english/index.html
[2] Annex 2-2: PPA extract

Tariff Variation (after 10 years)	(-)20%	(-)10%	0.00%	(+)10%	(+)20%
Tariff rate	2.72	3.06	3.4	3.74	4.08
IRR	12.73%	13.27%	13.77%	14.24%	14.68%

It was found that a variation of 10-20% in the tariff rate after the tenth year will lead to a change in the returns to the project by a significant amount. Thus, tariff rate indeed plays a very important role in determining the returns to the project. Since the returns to the project are already below the benchmark, uncertainty in tariff rates after the tenth year makes the project further unviable.