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Att: CDM Executive Board

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**Response to questions for scope of review
6MW Somanamaradi grid connected SHP in Karnataka, India (0227)**

Dear Members of the CDM Executive Board,

We refer to the requests for review raised by three Board members concerning DNV's request for issuance of CERs from project activity 0227 "6MW Somanamaradi grid connected SHP in Karnataka, India" and would like to provide the below initial response to the issues raised by the requests for review.

Question No.1:

The emission reduction claimed in this monitoring period is 70% more than the estimation in the PDD.

DNV Response:

As addressed in the PDD and the validation report, the project activity is implemented on the right side of the irrigation canal NRBC (Narayanpur Right Bank Canal), thus utilising the hydro potential available in an irrigation canal.

Being an irrigation canal, availability of water is primarily dependent on the vagaries of the monsoon. The PDD addresses this uncertainty in availability of water and the fact that the project proponents decided to implement the project in two stages. Stage – I comprising the installation of one unit of 6 MW capacity (the project activity) and when sufficient and sustainable water flow is observed in the canal, a second unit of 6 MW capacity would be installed under Stage – II.

DNV acknowledges that the emission reduction estimation in the registered PDD was based on the DPR of the project which had been developed mainly on the water availability, discharge from the dam to the canal for irrigation purpose and on Government schemes to expand canals. The response from project proponent (Annex-1), attached to DNV response to the requests for review, provides the evidences to demonstrate that there was no or hardly any discharge in the canal between 2002 and 2006.

DNV would like to clarify that the additionality of the project activity was argued on the basis of hydrological risks associated with the project activity at the time of project conceptualization. At the time of investment decision taken for the project activity, the irrigation release data was available only for the year 2003. Since one year data is not sufficient for hydrology and power study, an official hydrology study projected by state irrigation department was taken into consideration.

Though sufficient head for power generation was available at the site, risks due to uncertainty in the hydrology as explained above was accepted as a barrier by DNV during validation of the project activity.

DNV would also like to clarify that, at the time of project development NRBC is envisaged with two schemes viz. Scheme–A and Scheme–B. Under scheme-A the irrigation canal was constructed up to 93 km from the Narayanpur dam. Scheme-B of developing canal of 153 km is not approved by the state government due to lack of poor ayacut development and rainfall scarcity in the region. Thus water flow was restricted to a very small portion of its design capacity. Hence it was very difficult for project participants to anticipate the future rain forecast and canal development at the time of project development.

Based on the above, given an anticipated annual generation rate of 20.6 GWh, the project was expected to reduce 16 977 tonnes of CO₂e per year, corresponding to an average plant load factor of 40%.

Contrary to the scenario described above, it has been observed that there has been good monsoon and consequent good discharge from the dam in 2006 and 2007. Moreover, the water discharges are regulated by the Government of Karnataka on a yearly basis and therefore also beyond the control of the project participants and also very difficult to anticipate. The factors which influence the discharge level typically being:

- Availability of water resources (rainfall)
- Area under irrigation and crop types
- Progress in expanding the canal for irrigation purposes (kindly refer to the PP's response on this)

Thus, due to a favourable development of the above-mentioned factors which could not be relied upon at the time of PDD development, actual discharges during the monitoring period have been higher and better exceeding expectations, as elaborated in the response by the PP.

DNV also confirms that there is no restriction on the monthly plant load factor from the state electricity board authorities (KPTCL), the project activity has utilized the available water and therefore the generated excess electricity generation is deemed acceptable, given that the generation is based on the actual discharge of available water and are within the limits of inbuilt capacity.

Question 2:

The DOE closed the Corrective Action Request (CAR) 1 raised regarding the over capacity Electricity generation based on the confirmation from the supplier of the turbine stating that the Turbine .was designed and manufactured with a 10% overload capacity above rated capacity. And the excess generation is within the 10% overload. However, the electricity generated in December 2007 was found to be 12% above the rated capacity.

DNV response:

DNV is of the opinion that the excess generation in the month of December 2007 is also well within the 10% over load capacity on rated capacity. We confirm and concur with the PP's response in this regard, which is reproduced below:

Turbine rated capacity	kW	6000	
Unit outage in the month of December 2007.	Hours	Nil	
Electricity generation in the month of December 2007 at 100%.	kW	$6000 \times 24 \times 31 = 4464000$	
Actual electricity generation (Gross)	kW	4894000	Recorded at Project site
Electricity exported to KPTCL grid	kW	4821600	Recorded & certified by KPTCL representative.
Percentage of overload on rated capacity	<p>A) For Gross electricity generation $(4894000 - 4464000) \times 100 / 4464000 = 9.6\%$</p> <p>B) For electricity export to grid $(4821600 - 4464000) \times 100 / 4464000 = 8.0\%$</p>		

We sincerely hope that the Board accepts our aforementioned explanations and we look forward to the issuance of CERs for the project activity.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS



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