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Re Request for review of the request for issuance for the CDM project activity 'TSIL - Waste Heat Recovery Based Power Project' (Ref. no. 0274) for the monitoring period 1 April 2006 – 31 March 2007

Dear Mr. Sethi,

SGS has been informed that the request for issuance for the CDM project activity 'TSIL - Waste Heat Recovery Based Power Project' (Ref. no. 0274) is under consideration for review as four requests for review have been received from members of the Board.

The review is based on the same reasons outlined below. SGS would like to provide a response to the issue raised by the requests for review:

Questions:

1. *Following the monitoring plan, the auxiliary electricity consumption of the operational system was not measured, but calculated based on the power requirement of operating equipments and the running hours. Although the DOE verified that this is conservative, this is not in accordance with the applied methodologyACM0004 version1 which requires this parameter to be continuously measured. Further clarification is required on how the DOE verified this parameter in accordance with the applied methodology.*

SGS Reply: As per Section D.2.1.3 of the registered project design document/version 02, the 'auxiliary electricity' consumption of the project activity power plant has been calculated. The project proponent has determined the auxiliary electricity consumption of the project activity power plant in accordance with the guidance of the registered PDD (page 37 'footer 11') based on

- the rated capacity of the power plant equipment and
- the equipment running hours.

This is in accordance with the registered Monitoring Plan. Furthermore it is to be noted that the computation of auxiliary electricity based on the rated capacity of the power plant equipment and the equipment running hours will lead to a conservative estimate of baseline emissions (and hence emission reductions) resulting from the project activity as it corresponds to the maximum auxiliary consumption under any operational condition.

The computation of daily auxiliary electricity has been reviewed as elaborated below:

Auxiliary Equipment	Number	Rated Capacity of each equipment (kW)	Total Load (kW)
Boiler Feed Pump	1	132	132
Air Compressor	1	37	37
Oil Vapour Extractor	1	0.75	0.75
Cooling Tower Fan	2	37	74
Main Condensate Extraction Pump	1	18.5	18.5
Acid Transfer Pump	1	0.75	0.75
ID Fan ash handling system	1	0.75	0.75
Motorized Valve (MSSP)	4	1.25	5
Motorized Valve (BFP)	2	1.1	2.2
Motorized Valve (RCW)	2	0.52	1.04
DM water transfer pump	1	7.5	7.5
Clarified water pump	2	3.7	7.4
Mixed bed blower	1	1.6	1.6
De-gasser blower	1	0.37	0.37
Effluent disposal pump	1	2.2	2.2
RCW	2	315	630
HP/LP Dosing Pump	2	0.37	0.74
HP/LP Dosing Agitator	2	0.55	1.1
Total	28	560.91	922.9
Total Connected Load under normal operation (considering 97.5% loading)			899.8 ≈ 900 kW
Normal Operating Hours (per day)			24 hrs
Daily Auxiliary Electricity Consumption			**21600 kWh**

However, project proponent has installed the energy meters in phase wise manner in order to measure the auxiliary electricity consumption of the power plant and the installation requisite energy meters have been completed on 03/12/2007 as confirmed by project proponent and verified by the DOE (please refer Annex 1). Subsequent to the installation of these meters, the project proponent has initiated measurement of the auxiliary electricity consumption of the power plant in accordance with the guidelines of the Approved Consolidated Methodology-ACM0004/Version 01. After 03/12/2007, auxiliary electricity consumption data will be reported as measured data for the respective monitoring periods and monitoring plan will be revised accordingly.

2. *The outage hours were not reported, but it is required by the monitoring plan to be monitored. Further information is required.*

SGS Reply: The 'turbine outage hours' is monitored and recorded manually in the 'Power Plant Log Sheet' following the guidance of the Registered PDD/ Version 02. Detail on the same has been verified during on-site verification and found satisfactory. The monitoring report has been revised accordingly to incorporate the 'turbine outage hours'. Please refer to monitoring report/ version 03 for details. (Please refer Annex 2).

In accordance with the guidance of the registered PDD/version 02, the auxiliary electricity consumption under circumstances of turbine outage is calculated ex-post based on the 'power requirement of the

equipments operating' under such situations. The project proponent has recorded the equipments operational during the period of turbine outages and their individual running hours in order to compute the auxiliary electricity consumption under situations of turbine outages. The 'turbine outage hours' during the verification period under consideration and the corresponding auxiliary electricity consumption have been verified and the details are as provided below:

Turbine Outage Hours and corresponding Auxiliary Electricity Consumption			
Month	Date	Turbine Outage Hours	Auxiliary Consumption
		(HR:MIN)	(kWh)
April - '2006	14-Apr-06	24 Hrs	14700
	15-Apr-06	6 Hrs 37 Mins	21600
	19-Apr-06	9 Hrs 52 Mins	21600
	28-Apr-06	2 Hrs 20 Mins	21600
May - '2006	18-May-06	2 Hrs 13 Mins	21600
	20-May-06	1 Hrs 58 Mins	21600
August - '2006	9-Aug-06	3 Hrs 51 Mins	21600
	10-Aug-06	7 Hrs 27 Mins	21600
	11-Aug-06	1 Hrs 29 Mins	21600
January - '2007	12-Jan-07	2 Hrs 5 Mins	21600
	13-Jan-07	5 Hrs 28 Mins	21600
	14-Jan-07	24 Hrs	21600
	15-Jan-07	24 Hrs	21600
	16-Jan-07	24 Hrs	21600
	17-Jan-07	24 Hrs	21600
	18-Jan-07	24 Hrs	21600
	19-Jan-07	24 Hrs	21600
	20-Jan-07	24 Hrs	21600
	21-Jan-07	24 Hrs	21600
	22-Jan-07	24 Hrs	21600
	23-Jan-07	24 Hrs	21600
	24-Jan-07	24 Hrs	21600
	25-Jan-07	24 Hrs	21600
	26-Jan-07	24 Hrs	21600
	27-Jan-07	24 Hrs	21600
	28-Jan-07	24 Hrs	21600
	29-Jan-07	24 Hrs	21600
	30-Jan-07	24 Hrs	21600
	31-Jan-07	24 Hrs	21600
February - '2007	1-Feb-07	24 Hrs	21600
	2-Feb-07	24 Hrs	21600
	3-Feb-07	24 Hrs	21600
	4-Feb-07	24 Hrs	21600
	5-Feb-07	24 Hrs	21600
	6-Feb-07	24 Hrs	21600
	7-Feb-07	24 Hrs	21600
	8-Feb-07	24 Hrs	21600
	9-Feb-07	24 Hrs	11600
	10-Feb-07	24 Hrs	21600
	11-Feb-07	24 Hrs	1600

Turbine Outage Hours and corresponding Auxiliary Electricity Consumption			
Month	Date	Turbine Outage Hours	Auxiliary Consumption
		(HR:MIN)	(kWh)
	12-Feb-07	24 Hrs	3000
	13-Feb-07	24 Hrs	3000
	14-Feb-07	24 Hrs	3000
	15-Feb-07	24 Hrs	21600
	16-Feb-07	24 Hrs	21600
	17-Feb-07	20 Hrs	21600
	18-Feb-07	24 Hrs	21600
	19-Feb-07	24 Hrs	21600
	20-Feb-07	1 Hrs 20 Mins	21600
March - '2007	10-Mar-07	15 Hrs 15 Mins	21600
	16-Mar-07	8 Hrs	21600
	17-Mar-07	24 Hrs	21600
	18-Mar-07	24 Hrs	21600
	19-Mar-07	24 Hrs	21600
	20-Mar-07	24 Hrs	21600
	21-Mar-07	4 Hrs 4 Mins	21600
	22-Mar-07	14 Hrs	21600
	23-Mar-07	14 Hrs	21600
	24-Mar-07	2 Hrs 40 Mins	21600
	28-Mar-07	16 Hrs	7200
	29-Mar-07	24 Hrs	5000
	30-Mar-07	24 Hrs	7200

It is to be noted that most of the time during the period of turbine outages, the full auxiliary loads of the power plant equipments have been maintained i.e. all the power plant equipments were under operational condition during the turbine outage period. This was to ensure a minimum revamping time of the power plant so that power generation can be resumed immediately on recovery of the turbine from its outage. Therefore the power requirement under this situation is considered to be same as that calculated in “Response to Comment-1 of Review Request” i.e. the maximum auxiliary electricity consumption of the power plant equipments. This is conservative as per the justifications provided in “Response to Comment-1 of Review Request”.

Only nine days during the period of turbine outages within the verification period under consideration (i.e. 14th April 2006, 9th February 2007, 11-14th February 2007 and 28-30th March 2007), the power plant equipments have been run partially i.e.

- Either all the power plant equipments have been run for few hours, or
- Some of the power plant equipments have been run on a trial basis for maintenance purpose/testing for few hours

The auxiliary electricity consumption under such situations depends on the power consumption of the operational equipments and their individual running hours. The project proponent has recorded the rated capacity of the equipments operational under these situations and their individual running hours for computation of auxiliary electricity. This is conservative since the auxiliary electricity consumption based on the rated capacity of the power plant equipments, operational under these situations, will lead to the maximum auxiliary electricity consumption of the power plant under these situations.

The computation of auxiliary electricity consumption for these nine days has been reviewed and the details are as provided below:

Computation of Auxiliary Electricity Consumption for 14th April 2006, 9th February 2007, 11-14th February 2007 and 28-30th March 2007													
Auxiliary Equipment	**Number**	**Rated Capacity of each equipment**	**Total Load**	**Total Connected Load under normal operation (considering 97.5% loading)**	**14/04/2006**	**9/2/2007**	**11/2/2007**	**12/2/2007**	**13/02/2007**	**14/02/2007**	**28/03/2007**	**29/03/2007**	**30/03/2007**
		(kW)	(kW)	(kW)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)
Boiler Feed Pump	1	132	132	128.7	2102.10	1029.60					1029.60	707.85	1029.60
Air Compressor	1	37	37	36.1	589.23		468.98	694.44	541.13	793.65	288.60	198.41	288.60
Oil Vapour Extractor	1	0.75	0.75	0.7	11.94						5.85	4.02	5.85
Cooling Tower Fan	2	37	74	72.2	1178.45	739.54					577.20	396.83	577.20
Main Condensate Extraction Pump	1	18.5	18.5	18.0	294.61						144.30	99.21	144.30
Acid Transfer Pump	1	0.75	0.75	0.7	11.94						5.85	4.02	5.85
ID fan ash handling system	1	0.75	0.75	0.7	11.94						5.85	4.02	5.85
Motorised Valve (MSSP)	4	1.25	5	4.9	79.63						39.00	26.81	39.00
Motorised Valve (BFP)	2	1.1	2.2	2.1	35.04						17.16	11.80	17.16
Motorised Valve (RCW)	2	0.52	1.04	1.0	16.56						8.11	5.58	8.11
DM water transfer pump	1	7.5	7.5	7.3	119.44						58.50	40.22	58.50
Clarified water pump	2	3.7	7.4	7.2	117.85						57.72	39.68	57.72
Mixed bed blower	1	1.6	1.6	1.6	25.48						12.48	8.58	12.48
De-gasser blower	1	0.37	0.37	0.4	5.89						2.89	1.98	2.89
Effulent disposal pump	1	2.2	2.2	2.1	35.04						17.16	11.80	17.16
RCW	2	315	630	614.3	10032.75	9828.00	1126.13	2303.44	2457.00	2201.06	4914.00	3378.38	4914.00
HP/LP Dosing Pump	2	0.37	0.74	0.7	11.78						5.77	3.97	5.77
HP/LP Dosing Agitator	2	0.55	1.10	1.1	17.52						8.58	5.90	8.58
Total		560.91	922.90	899.8									
Auxiliary Electricity					14697.18	11597.14	1595.10	2997.88	2998.13	2994.71	7198.62	4949.05	7198.62
Auxiliary Electricity as reported in 'Monthly Power Generation/ Consumption Report' of TNS System and in Monitoring Report					**14700**	**11600**	**1600**	**3000**	**3000**	**3000**	**7200.00**	**5000**	**7200**
Remarks					Auxiliaries ran for 16h 20min	i) Boiler Feed Pump ran for 8h for trial run ii) Cooling Tower Fans ran for 10h 15min for trial run iii) RCW-1 & RCW-2 ran for 16h for trial run	i) Air Compressor ran for 13h for trail run ii) RCW-1 ran for 3h 40min for trial run	i) Air Compressor ran for 19h 15min for trial run ii) RCW-1 ran for 7h 30min for trial run	i) Air Compressor ran for 15h for trial run ii) RCW-2 ran for 8h for trial run	i) Air Compressor ran for 22h for trial run ii) RCW-2 ran for 7h 10min for trial run	Auxiliaries ran for 8h	Auxiliaries ran for 5h 30min-CPP in Cooling Cycle	Auxiliaries ran for 8h-CPP in Cooling Cycle

We apologize if the initial verification report has been unclear and hope that this letter and the attached information address the concerns of the members of the Board.

Ajoy Gupta, Lead Assessor (+91 9903803700) will be the contact person for the review process and is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely

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Annex 1: Confirmation from PP regarding installation of auxiliary energy meters (Ref. TSI/J/E8.3; dated 04/07/2008)
Annex 2: Monitoring Report /Version 03 dated 30/06/08.
Annex 3: TSIL Auxiliary Electricity consumption during turbine outage period – calculation sheet.
Annex 4: Revised Verification Report, Rev. 1 dated 07/07/2008.