UNFCCC Secretariat
Martin-Luther-King-Strasse 8
D-53153 Bonn
Germany

11th December 2007

Sir,

Response for Review of Biomass Energy Plant-Lumut (0249)

1. The steam consumption of the chiller was calculated as the difference between closing and opening readings of the meter. However in June-July 2006 the monthly opening reading does not correspond to the closing reading of the previous month. Clarification is required on how DOE has verified the accuracy of this parameter.

The steam flow meter default setting was to record steam consumption in 6 digits in the unit of kg. Due to high flow rate in kg, the steam flow meter was recalibrated on 13th July 2006 to record in 5 digits in tonnes with one decimal point.

The steam totaliser values were recorded on a daily log sheet together with other refinery plant parameters which has been validated during verification process by the DOE.

The data recording was done in such a manner that, once a full revolution is completed an additional 7th digit will be added in the excel spreadsheet to mark the complete of one revolution. The monthly absorption chiller steam consumption during the period of 1st May 2006-13th July 2006 can be counter checked with the data from 13th July 2006-31st Dec 2006. (e.g. Closing of May 2006 was recorded with 7 digits of 1,646,908 kg, which indicates a complete of one revolution of 999,999 digits during the month. The next month, June 2006 was recorded with 6 digits neglecting the 7th digit from the closing of May 2006. In the month of June the meter completed 2 revolutions and thus the 7th digit has a value of 2. Later in the month of July the 7th digit is removed and the opening value was given as 74,152).

The relevant log sheets and the excel spreadsheets have been verified during the verification site visit by DOE.

The similar reporting format has been in practice since the first CER monitoring and verification report of this project activity.

● DEM Malaysia Office:
36 Floor, Menara Maxis
KLCC, 50088 Kuala Lumpur
Malaysia
Tel.: +6 03 2615 0014
Fax: +6 03 2615 0011

○ DEM Head Office:
Vestre Kongevej 4-6
DK 8260 Viby J, Aarhus
Denmark
Tel.: +45 8734 0600
Fax: +45 8734 0601

From 01/05/2006-13/7/2006 (Reading in kg)

Month	Opening kg	Closing kg	Consumption tonnes
May	241,289	***1***,646,908	1,405.619
Jun	646,908	***2***,074,152	1,427.244
01-13/07/06	74,152	430,051	355.899
		TOTAL	**3,188.8**

From 13/07/2006-31/12/2006 (Reading in tonnes)

Month	Opening tonnes	Closing tonnes	Consumption tonnes
13*-31/07/06	43,005.1	43,514.0	508.9
Aug	43,514.0	45,147.5	1,633.5
Sep	45,147.5	46,684.2	1,536.7
Oct	46,684.2	48,017.5	1,333.3
Nov	48,017.5	49,657.0	1,639.5
Dec	49,657.0	50,526.1	869.1
		TOTAL	**7,521.0**

** totaliser meter was calibrated to display the steam flow in tonnes*

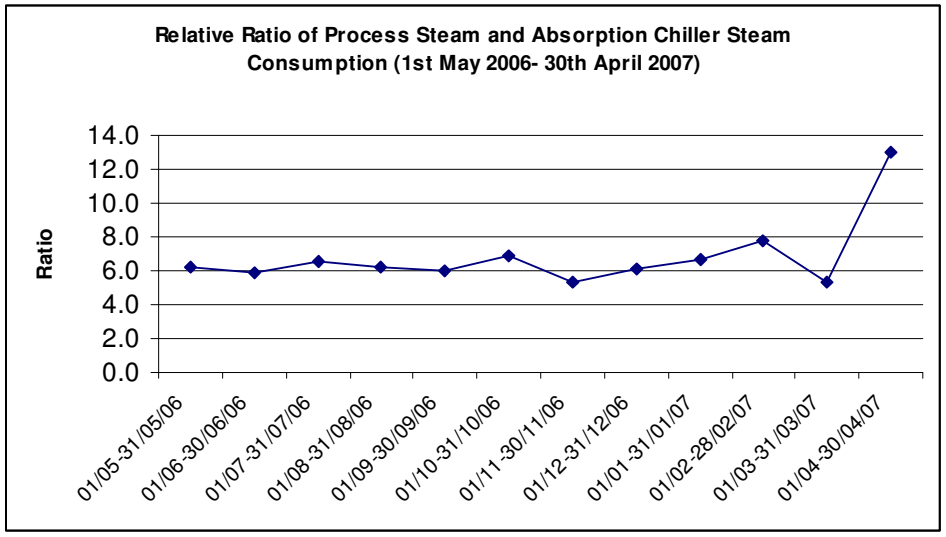
2. The PDD stated that 15 t/h of steam will be generated for palm oil refinery process consumption and 3 t/h will be used to provide cooling through a new absorption chiller system.. However, the relative steam supply to the chiller during this monitoring period is below the relative steam supply to the refinery. Further clarification is needed.

The 3 t/hr stated in the PDD is an approximate round up value of 2.5 t/hr estimated steam demand given in the PDD based on design stage of the project activity and was therefore based on design parameters and a prognosis of steam and cooling demand. Please refer to the table below on the absorption steam demand estimation.

Referring to the PDD p.g 35

Estimated Cooling Capacity	5217391	RTh/yr
Absorption Chiller Effciency, η	3.86	kg/hr/RT
Absorption Chiller Steam Consumption	20139.13	t/yr
Estimated Operation Hours	8000	hr/yr
Absorption Chiller Steam Demand	2.5	t/hr

However the average absorption chiller steam demand in the actual, monitored operation has been lower than 2.5 t/hr. Relatively the average steam demand for the refinery is also lower than the projected demand in the PDD of 15 t/hr. The relative ratio between process steam and absorption chiller steam is approximately 6.0. The graph below indicates the fluctuation of the relative ratio for the period covered by second monitoring and verification report.



The steam demand for both the process and absorption chiller is very much depending on the palm oil crop season, scheduled plant shutdown periods and efficiency of the heat exchangers. The relative ratio between process steam and absorption chiller steam consumption is not constant but approximate to the calculated value of 6.0.

Note: The absorption chiller was not in operation for maintenance for approximately 2 weeks in the month of April 2007 which causes the relative ratio to shoot up to 13.

Yours truly,

Henrik Rytter Jensen
Country Manager

Danish Energy Management - KL Office
36th Floor Menara Maxis, KLCC
50088 Kuala Lumpur
Malaysia
malaysia@danishmanagement.dk