



CDM Executive Board  
UNFCCC Secretariat  
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29<sup>th</sup> December 2010

**Re: Request for review of the request for issuance for the CDM project activity "N<sub>2</sub>O decomposition project of PetroChina Company Limited Liaoyang Petrochemical Company" (UNFCCC Ref. No. 1238) Monitoring Period 01 Dec 09 – 13 Mar 10**

Dear CDM Executive Board Members,

SGS has been informed that the request for issuance for the CDM project activity 1238 N<sub>2</sub>O decomposition project of PetroChina Company Limited Liaoyang Petrochemical Company for 01 Dec 09 to 13 Mar 10 is under consideration for review because three requests for review have been received from members of the Board or one request for review has been received from a Party involved.

One issue was raised in the requests for review. Through this letter SGS would like to comment on the reason(s) for review and provide additional information for clarification.

**Reason(s) for the request for review:**

***The calculation of Q<sub>N<sub>2</sub>O</sub> by-pass, the N<sub>2</sub>O emissions due to the by-pass of the decomposition facility, was based on the N<sub>2</sub>O emissions calculated from the 0.27 tonne N<sub>2</sub>O per tonne of adipic acid produced specified by the IPCC Good Practice Guidance, whereas the actual emission rate of the facility during this monitoring period is around 0.30 tonne N<sub>2</sub>O per tonne of adipic acid produced. The DOE is requested to clarify how it verified the calculation of the project emissions and emission reductions.***

**SGS response:**

The CDM project activity N<sub>2</sub>O decomposition project of PetroChina Company Limited Liaoyang Petrochemical Company (referred to as "the project" hereinafter) was registered as a CDM project activity on 30/11/2007 against AM0021 version 01.

According to the methodology applied to the project, i.e. AM0021 version 01, Q<sub>N<sub>2</sub>O</sub> by-pass is calculated from Q<sub>N<sub>2</sub>O</sub> and %<sub>on-line</sub>. The methodology specially requires that Q<sub>N<sub>2</sub>O</sub> is item 2b.2. used to monitor the baseline of anthropogenic emissions, which is calculated by multiplying P<sub>AdOH</sub> by N<sub>2</sub>O<sub>/</sub> AdOH, while N<sub>2</sub>O<sub>/</sub> AdOH (measured in t N<sub>2</sub>O /t adipic acid) is the actual emissions rate capped by the lowest emission factor of 0.27 t N<sub>2</sub>O per tonne of adipic acid produced specified by the IPCC Good Practice Guidance. The parameter Q<sub>N<sub>2</sub>O</sub> is used in both baseline emissions calculation and project emissions calculation. The methodology AM0021 version 01 does not provide two separate parameters for the quantity of N<sub>2</sub>O produced, for example, one for baseline emission calculation and one for project emission calculation.

In the registered PDD of this project, "Q<sub>N<sub>2</sub>O</sub> by-pass<sub>y</sub> = (Q<sub>N<sub>2</sub>O</sub> × (1 - %<sub>on-line</sub>))", "Q<sub>N<sub>2</sub>O</sub> by-pass<sub>y</sub> = (P<sub>AdOH</sub> × N<sub>2</sub>O<sub>/</sub>AdOH × (1 - %<sub>on-line</sub>))", "Q<sub>N<sub>2</sub>O</sub><sub>y</sub> = (P<sub>AdOH</sub> × N<sub>2</sub>O<sub>/</sub>AdOH)<sub>y</sub>", and, "N<sub>2</sub>O<sub>/</sub>AdOH (measured in t N<sub>2</sub>O /t AdOH) is the actual emissions rate capped by the lowest emission factor KE<sub>N<sub>2</sub>O</sub> of 0.27 t N<sub>2</sub>O per ton of adipic acid produced specified by the IPCC Good Practice Guidance." The registered PDD of this project complies with the applied methodology AM0021 version 1 in regards with the calculation of the N<sub>2</sub>O emissions by-passing the decomposition facility (Q<sub>N<sub>2</sub>O</sub> by-pass).

In the Monitoring Report Version 2 dated 28/05/2010, which was submitted in the request for issuance, Q<sub>N<sub>2</sub>O</sub> by-pass = Q<sub>N<sub>2</sub>O</sub> × (1 - %<sub>on-line</sub>), in accordance with the registered PDD and the methodology applied. Q<sub>N<sub>2</sub>O</sub> was the quantity of N<sub>2</sub>O produced used in the baseline emission calculations and was calculated by multiplying P<sub>AdOH</sub> by N<sub>2</sub>O<sub>/</sub> AdOH, which was capped by 0.27.

The verification team accepted this because the calculation in the Monitoring Report strictly followed the registered PDD and the applied methodology. Because the methodology AM0021 version 01 only provides one parameter for the quantity of N<sub>2</sub>O produced (Q<sub>N<sub>2</sub>O</sub>) and requires Q<sub>N<sub>2</sub>O</sub> used for calculating



Q\_N2O\_by-pass to be the same as the one used for baseline emissions, the the same value was applied in both the calculation of baseline emissions and the calculation of project emissions.

This calculation approach of Q\_N2O\_by-pass was applied in the previous issuances of the project activity and the previous issuances of other projects applying AM0021 version 01.

In the Monitoring Report Version 2, the baseline N<sub>2</sub>O emissions were calculated as:

$Q_{N_2O_y} = P_{AdOH} \times N_2O_{/AdOH}$ , in accordance with the formula described in the registered PDD and AM0021 version 01.

The project N<sub>2</sub>O emissions by-passing the decomposition facility were calculated as:

$Q_{N_2O\_by-pass_d} = (Q_{N_2O} \times (1 - \%_{on-line}))_d$ , in accordance with the formula described in the registered PDD and AM0021 version 01.

As presented in Section 3.4.5 of the verification report, version 0, dated 08/06/2010, which was previously submitted in the request for issuance for this monitoring period, the verification team verified the reported monthly data and the accumulated values in the monitoring period of P\_AdOH as correct against the data in all daily raw production logs and monthly statistics.

As presented in Section 3.4.16 of the verification report, version 0, the N<sub>2</sub>O\_/AdOH during this monitoring period was calculated as higher than the capped maximum N<sub>2</sub>O emission rate (KE\_N<sub>2</sub>O). Thus KE\_N<sub>2</sub>O as 0.27 kg N<sub>2</sub>O/kg AdOH was adopted as the N<sub>2</sub>O\_/AdOH to determine the quantity of N<sub>2</sub>O to be credited for this monitoring period as per AM0021 version 01. The actual emission factors was higher than 0.27 kg N<sub>2</sub>O/kg AdOH as resulted in by the technical process of adipic acid production, it is consistent with the information specified by the IPCC Good Practice Guidance: emission factor varies within 300kg/t AdOH ± 10% along with different feed stocks.

Therefore, the baseline N<sub>2</sub>O emissions, Q\_N<sub>2</sub>O, in the monitoring period were verified to be correct.

As presented in Section 3.4.4 of the verification report, version 0, SGS verified the daily %\_on-line against the data in all daily DAS reports. The daily (1-%\_on-line) is then multiplied with the daily Q\_N<sub>2</sub>O (baseline N<sub>2</sub>O emission) to get the daily Q\_N<sub>2</sub>O\_by-pass<sub>d</sub>, the latter is aggregated monthly. The reported monthly total of Q\_N<sub>2</sub>O\_by-pass was verified to be correct against the data in all daily DAS reports and the monthly statistics.

The project emissions were calculated as:

$PE_y = Q_{N_2O\_by-pass_y} \times GWP_{N_2O} + ND_{N_2O_y} \times GWP_{N_2O}$ , in accordance with the formula described in the registered PDD and AM0021 version 01.

The emission reductions were calculated as:

$ER_y = BE_y - PE_y - L_y$ , in accordance with the formula described in the registered PDD and AM0021 version 01.

The verification team verified that the calculations of baseline emissions, project emissions, leakage and emission reductions had been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology AM0021 version 01, and confirmed this in Section 3.6 and Section 4 of the verification report, version 0, dated 08/06/2010.

N<sub>2</sub>O\_/ AdOH was capped by 0.27, while the actual emission rate of the facility during this monitoring period was around 0.30 tonne N<sub>2</sub>O per tonne of adipic acid produced, the calculated emission reductions were therefore not overestimated.

In accordance with the requirements of Para. 202 of VVM version 01.1 (equals to Para. 203 of VVM version 01.2), the verification team had verified the compliance of the monitoring plan with the monitoring methodology and has confirmed that the monitoring plan of the project is in accordance with the monitoring methodology applied to the project in Section 3.3 of the verification report submitted in the request for issuance.

In accordance with the requirements of Para. 205 of VVM version 01.1 (equals to Para. 206 of VVM version 01.2), the verification team had verified the compliance of the actual monitoring with the monitoring plan and confirmed that monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD in Section 3.4 of the verification report submitted in the request for issuance. The verification report listed each parameter required by the monitoring plan and clearly stated how the information flow for these parameters including the values in the monitoring reports had been verified.



SGS considers the request for review does not lead to a revision to the monitoring report or the verification and certification report previously submitted for the request for issuance.

SGS hopes that this letter and the attached PP response address the concerns of the Board.

Yours sincerely,

CDM Team

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