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Thank you for this.

I have used the “gas calculation method” information for the purposes of the submission to the European Commission. As you say, that approach will need to be checked at a later stage.

The only information is still need – **by close tomorrow, 11 December, please** – is a brief note on the measures foreseen to bring each of the plants into compliance when the TNP ceases at the end of June 2020.

Richard

From: --

Sent: 05 December 2012 17:17

To: Obe, Nicholas (ERG-ALE); Demain, David (ERG-ALE); Control Pollution (AQIP)

Cc: Vincent, Richard (ERG-ALE); ---; ----,----

Subject: Tata Steel LCP Installations Calculations for TNP

Dear Sir

UK Transitional National Plan (TNP) - Submission in Respect of Tata Steel LCPs (NERP Refs 54, 55, 56, 58, 59, 60, 61)

Further to your letter of 28th December 2011 inviting LCP operators to signal their intent to join the TNP from January 2016 to June 2020, and Tata Steel's response to that on 8th May this year, please find attached the data submission showing the emission ceilings calculated by Tata Steel for its participating plants at Scunthorpe and Port Talbot.

We have taken note of the guidance provided by Defra in May and information provided through subsequent correspondence. The attached files are in a format we developed ourselves but contain all of the information required (corresponding to Table A1 in Appendix A1, and Tables B1, B2 and B3 of Appendix B of the letter of 28th December 2011).

Please note that we have made two separate sets of calculations for our LCPs, as follows:

- The 'NERP method'. Here we have based our calculations upon the relationship between fuel gas NCV and specific flue gas volume, as agreed during the development of the NERP and used as the basis of ceiling setting for the NERP. In this method, Specific Flue Gas Volume = $272.6 \times (1 + 1/(\text{Nett CV} - 0.8))$ Sm³/GJ. We have used this relationship to derive annual average flue gas volume for natural gas (NG), coke oven gas (COG), blast furnace gas (BFG) and, where applicable, basic oxygen steelmaking gas (BOSG). We have taken the default specific waste gas volume for HFO (a minor fuel at both installations) from the official Defra template.
- The 'gas calculation method.' Here we have based our calculations upon what are more typical specific flue gas volumes for COG, BFG and, where applicable, BOSG. In each case, these have been calculated theoretically, based on typical compositions. In this method, we have taken the default specific waste gas volume for HFO (a minor fuel at both installations) from the official Defra template and taken the NERP formula specific flue gas volume for NG.

The reason for the 'double submission' is that we have not formally agreed with Defra any approach other than the NERP approach. On this basis, we felt it was important to set out our calculations according to the previously agreed approach. However, we believe that the relationship between flue gas volume and fuel NCV used to underpin the NERP method is no longer sufficiently accurate and, therefore, that it should not be used as the basis for setting ceilings in the TNP. The primary reason for this is changes in blast furnace operation, in particular, the substantially increased use of injection coal and oil in blast furnaces, which increases the amount of hydrogen in the reduction process, with a consequential impact on BFG NCV and, therefore, determined flue gas volumes.

In order to be transparent in this process, we have set out calculations using both approaches. It can be seen that the gas calculation method determines a higher overall flue gas volume for BFG combustion than the NERP method, whereas it determines a lower flue gas volume for COG and BOSG combustion than the NERP method.

The ceilings derived from the submissions from all declared TNP participants will be used by Defra to estimate the size of the total UK emission ceiling for TNP. For this reason, we urge that the gas calculation approach presented here be used as the basis for any Defra calculations so as to avoid possible upward revisions at a later date. We believe this to be justified as the new method is more representative of current and foreseeable steelmaking practice (note that the NERP formula was derived from analyses of process gases dating back in some cases to 1966). Some further work may be needed to refine the proposed new approach in order to demonstrate its veracity to auditors. Whilst we will progress this, we don't expect any substantial changes to the conclusions and determinations presented here.

I trust that this submission meets Defra's requirements and that the proposal we have made is clear. Nevertheless, please don't hesitate to contact me if you require any clarification.

Finally, whilst this email is made on behalf of Tata Steel and covers LCPs at our installations in Port Talbot and Scunthorpe, we feel it is important that all future formal correspondence (for example, the letter of 28th December 2011) continues to be directed at the local contacts for each of those sites, whose names and numbers have been provided in the spreadsheets (and who are copied here).

Yours sincerely,

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Tata Steel Europe

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