Annex 5

Comparison of draft recommended to be approved methodology with the component individual methodologies NM0143: "Catalytic reduction of N_2O inside the ammonia burner of nitric acid plants" and NM0164: "Sasol Nitrous Oxide Abatement Project"

	NM0143	NM0164	Draft Approved Methodology
Technology	1) Installation of a secondary N_2O abatement catalyst inside the Ammonia burner of a nitric acid plant.	1) Same as in 143.	1) Same as in 143.
Definition of capacity of the plant. Limits.	1) The nitric acid production facility (capacity is measured in tonnes of 100% concentrated nitric acid) to which this methodology is applied has been: Operating since; under construction on or before; or ordered and purchased on or before; 31/12/2005.	1) Installed capacity that exists before project implementation, defined as maximum production in the last ten years or design capacity by 31/12/2004. 2) Design capacity is total yearly capacity (considering 365 days of operation per year) as per the plant technology provider documentation. If the plant has been modified to increase production, and such de-bottleneck or expansion projects were terminated before December 2004, then the new capacity is considered nameplate, provided proper documentation of the projects is available.	1) Existing capacity of facilities installed no later than 31/12/05. 2) Design capacity is total yearly capacity (considering 365 days of operation per year) as per the plant technology provider documentation. If the plant has been modified to increase production, and such de-bottleneck or expansion projects were terminated before December 2005, then the new capacity is considered nameplate, provided proper documentation of the projects is available
Project boundary	1) Complete process between the ammonia burner inlet and the stack. 2) Gases: N_20 (baseline and project).	1) Physical, geographical site of the nitric acid plant. 2) Same as in 143.	1) Same as in 143. 2) Same as in 143.
Baseline scenario	As per AM 0028.	Similar to AM 0028.	Same as in 143.

	NM0143	NM0164	Draft Approved Methodology
Additionality	"Tool for the demonstration and assessment of additionality".	Same as in 143.	Same as in 143.
Definition of Campaign	Installation of a new gauze pack.	Installation of a new set of primary catalyst gauzes in the oxidation reactor.	Installation of a new set of primary catalyst gauzes in the oxidation reactor.
Determination of permitted range of parameters required to define operating conditions of the baseline campaign	1) Data from 5 campaigns on 4 ammonia burner parameters: temperature, pressure, ammonia flow, ammonia to air ratio. 2) If historical data not available: plant specifications or literature reference 3) Outliers values (upper and lower 2.5% quartile) eliminated. 4) Permitted range: maximum and minimum from the remaining values for temperature and pressure, and maximum for ammonia flow and ammonia to air ratio. 5) Ammonia catalyst used in previous 3 campaigns.	1) Data on 3 ammonia burner parameters: temperature and pressure 3 campaigns, ammonia flow 10 years. 2) Same as in 143. 3) Same as in 143. 4) Permitted range: maximum and minimum from the remaining values for temperature and pressure, and maximum for ammonia flow. 5) Same as in 143.	1) Same as in 143. 2) Same as in 143. 3) Same as in 143. 4) Same as in 143. 5) Ammonia catalyst used in previous 5 campaigns.

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Baseline emission factor	1) Measurements: N_2O concentration and flow of stack gas. 2) If the plant is out of permitted range, values are eliminated. 3) If the plant operates more than 50% of the duration of the campaign out of permitted range of parameters, baseline campaign should be repeated. 4) Average values from measurements are calculated, outliers (outside 95% confidence interval) are eliminated, average is recalculated. 5) If the baseline campaign length is larger than the average length of historic campaigns, only values measured up to historic length are considered.	1) Same as in 143. 2) If the plant is out of permitted range, values are replaced by the lowest of: (i) conservative IPCC or (ii) the last value recorded when the plant was operating in permitted range. 3) Averages of parameters values are calculated.	1) Same as in 143. 2) Same as in 143. 3) Same as in 143. 4) Same as in 143. 5) If the baseline campaign length is larger than the average length of historic campaigns, only values measured up to historic length are considered. 6) Statistical test to compare that the average value of each prescribed parameter used to define the permitted range during baseline campaign and during historic campaigns. If it concluded with 95% confidence level that the values are different, baseline campaign should be repeated.
Change on the ammonia catalyst	1) Change between historic and baseline campaign: If the new catalyst is common practice in the region and supplied by a reputable manufacturer, or if it corresponds to a composition that is reported as being in use in the relevant literature, or it could be justified that the choice of the new composition was based on considerations other than an attempt to increase the rate of N_2O production, the new catalyst could be used without limitation of N_2O baseline emissions.	1) No change. Justification could be done (but not limited to) demonstrating that total weight and/or composition of new specification of catalyst compares favorably, while the performance (measured as the total production and/or conversion efficiency) is at least the same, if not better, than with the previous gauze specification.	1) Same as in 143. 2) If during the project activity a different catalyst (compared to one used for setting the baseline) is used the baseline campaign should be repeated or the conservative IPCC value should be used as N_2O baseline emissions.
Uncertainty	The baseline emission factor is reduced by a factor correspondent to the overall uncertainty of the applied monitoring equipment		Same as in 143.

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Recalculation of the baseline emission factor due to shorter duration of project campaign	If the duration of the project campaign is shorter than Camp hist min, baseline emission factor must be recalculated by eliminating those N_2O values that where taken during the production of those tonnes of nitric acid by which the duration of the project campaign exceeded (i.e. the last tonnes produced).		If the duration of the project campaign is shorter than the average duration of the historic campaigns, baseline emission factor must be recalculated by eliminating those N_2O values that where taken during the production of those tonnes of nitric acid by which the duration of the project campaign exceeded (i.e. the last tonnes produced).
Project emissions	1) Measurements of N_2O concentration and flow in the stack. 2) Average values from measurements are calculated, by eliminating outliers (outside 95% confidence interval). 3) The project emissions are highest of the two (i) moving average and (ii) yearly value. 4) Project emissions after 10 campaigns are the highest between yearly level or the minimum during the first 10 campaigns	1) Measurements of N_2O concentration and flow in the stack.	1) Same as in 143. 2) Same as in 143. 3) Same as in 143. 4) Same as in 143.
Downtime of automated measuring system	The last measured value will be valid and applied for the next 48 hours. If downtime is longer than 48 hours, the period will not be taken into account in the calculation of the baseline emission factor nor for the campaign specific emission factor.		The lowest between the conservative IPCC (4.5 kgN_2O/ton nitric acid) or the last measured value will be valid and applied for the downtime period for the baseline emission factor, and the highest measured value in the campaign will be applied for the downtime period for the campaign emission factor.