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A6.4 MEP012-A05: Draft mechanism methodology: N₂O abatement from nitric acid production (version 01.0)

Item	Section no. (as indicated in the document)	Paragraph/Table/Figure no. (as indicated in the document)	Comment (including justification for change)	Proposed change (including proposed text)
1	INTRODUCTION	3.1 Applicability	The methodology notes emerging low-N ₂ O production technologies but gives no examples.	The Stamicarbon Total Recycle Concept (TRC) is precisely such an example: Examples of such emerging technological options include the Total Recycle Concept (TRC) developed by Stamicarbon, which incorporates full recycle of gas within the plant. These advanced designs demonstrate substantially reduced intrinsic N ₂ O emissions compared to conventional nitric acid processes. Given their capability to achieve very low baseline N ₂ O emission levels, nitric acid production lines employing such technologies would require a separate methodological consideration for determining a plausible baseline scenario.
2	BASELINE EMISSIONS	7.2.2 – Determination of BAT baseline N ₂ O emission factor	Proposed text insertion. Total recycle concept (TRC) can be presented as a potential BAT candidate because it reduces N ₂ O emissions (secondary abatement is foreseen at this stage), no tertiary abatement is required. Very small flow of tail gas sent to the atmosphere.	Stakeholders may also consider recent advances in nitric acid process design such as the Stamicarbon Total Recycle Concept (TRC), which integrates nitric acid production in a loop, resulting in significantly reduced N ₂ O emissions to the atmosphere. Preliminary data indicates that these process configurations may achieve emission levels materially lower than the indicative BAT ranges (<4 grams N ₂ O/ton HNO ₃ (100%)).

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3	APPENDIX 1	3.3: Determination of BAT Emission Factor	Proposed insertion. The appendix compares literature sources and industry data to define BAT. Here is the place to explicitly add TRC as a modern low-N ₂ O benchmark.	In addition to the catalyst systems referenced above, process-integrated approaches such as the Stamicarbon Total Recycle Concept (TRC) provide further evidence that substantial reductions in N ₂ O emissions can be achieved through optimized nitric acid flowsheet design. TRC employs full recycle of tail gases to the burner, improved heat-integration schemes, and optimized oxidation conditions that collectively minimize the emissions of N ₂ O. Initial technical reports indicate N ₂ O emission factors substantially below historical primary-abatement values.