

## Information Note

### NM0292 “Waste gas based combined cycle power plant in a Greenfield iron & steel plant”

#### I. Background

1. This methodology applies to project activities that construct and operate a captive or grid-connected combined cycle electricity generation power plant in a Greenfield iron and steel production facility, using waste gas such as blast furnace gas, coke oven gas, and converter gas sourced from the same facility. The power generated in the project activity is used within the industrial facility and/or exported to the grid by the industrial facility.

2. The Meth Panel, at its thirty-eighth meeting, recommended the methodology NM0292 for approval by the Board. While considering this methodology, the Board, at its forty-seventh meeting (para. 20 of the meeting report), requested the Meth Panel to address the following issues:

- Analyze possible issues related to generation of waste gas of multiple types and their inter-linkages in the complex industry like integrated iron & steel plant. The analysis shall take into account the outcome of ongoing consultancy assignment on waste energy recovery in complex iron & steel industry;
- Review the applicability condition requiring that the power generated in the project activity is used within the industrial facility and/or exported to the grid by the industrial facility;
- Review the rationale behind the requirement of determination of baseline efficiency based on the top 15% efficient power plants.

#### II. Analysis

3. The Meth Panel, at its fiftieth meeting, after analyzing the Board’s request and consulting with the project participants, concluded the consideration of the proposed new methodology NM0292. The following analysis was made:

4. The Meth Panel reviewed the possibility of applying some of the approaches of the comprehensive revision of ACM0012 ver. 04.0.0, which was approved by the Board at its sixtieth meeting, in the context of NM0292. Annex 3<sup>1</sup> of this revision was partially based on the inputs from an external expert which requires in complex industries, such as iron & steel plants, an energy balance in the facility to be established to demonstrate that the waste gas from other applications are not diverted to the CDM waste energy recovery project. The annex requires the historical data of one year to perform this energy balance. The Meth Panel agreed that it is not possible to apply annex 3 of ACM0012 ver. 04.0.0 to NM0292, as NM0292 is developed based on the recovery of the same quantity of waste gases in the baseline and in the project for a Greenfield iron & steel plant.

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<sup>1</sup> Annex 3 entitled “Conservative baseline emissions if multiple waste gas stream(s) with potential for interchangeable application exist in the project facility”.

5. The Meth Panel further analyzed whether annex 1<sup>2</sup> of ACM0012 ver.04.0.0, which has similar approaches as those applied in NM0292 for determination of baseline emissions of Greenfield facilities, can be applied to NM0292. The Meth Panel agreed that, annex 1 cannot be applied to NM0292 as the annex is not applicable to energy efficiency improvement project activities using the same quantity of waste gas in the baseline and project scenario.

6. The Meth Panel addressed the concern of the possibility of diversion of waste gases from other applications to a CDM project by adding an applicability condition in the methodology. This applicability condition requires the project participants to demonstrate that the level of use of waste gas for power production in iron & steel plants is the same in the absence of, and after implementation of a CDM project activity.

7. Furthermore, the Meth Panel decided to limit the applicability of the methodology for the baseline scenario of Rankine cycle based power generation technology as opposed to open cycle gas turbine technology. The reason for this is that a barrier which precludes the installation of a combined cycle but allows the installation of a single cycle turbine is not conceivable.

8. A requirement is included in the common practice analysis which stipulates that the host country does not have more than 20% of plants using waste gas based combined cycle or open cycle power generation technology. Following the Board’s request, the Meth Panel also agreed to change the requirement of the estimation of baseline efficiency based on the top 15% performing plants to the top 20% performing plants using Rankine cycle based power generation technology, to maintain internal consistency as well as consistency with the approaches followed in other methodologies.

9. In line with Board’s request, the Meth Panel deleted the applicability condition related to the use of power generated using CDM project activities and improved the description of project activities to which the methodology is applicable.

### III. Conclusion

10. The Meth Panel agreed to recommend the draft methodology NM0292 for the Board’s approval, implementing the above-mentioned changes, in line with the Board’s request.

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#### History of the document

Version	Date	Nature of revision
01	EB 62, Annex # 15 July 2011	To be considered at EB 62.
<b>Decision Class:</b> Operational <b>Document Type:</b> Information note <b>Business Function:</b> Methodology		

<sup>2</sup> Annex 1 entitled “Assessment of extent of use of WECM and determination of baseline practice factor for CDM project activity implemented in Greenfield facilities using a reference waste energy generating facility (or “reference facility” for the purpose of this annex) and manufacturers specifications”.