

## **Agenda item 4.1 (b)**

Paragraph 21(d) of the annotated agenda,  
Annex 8 to the 74<sup>th</sup> MP meeting report

# Revision "TOOL07: Tool to calculate the emission factor for an electricity system"

**CDM EB 97**

Bonn, Germany, 30 October to 3 November 2017



## Procedural Background

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- **EB89 request to revise grid tool to:**
  - a) Better accommodate small isolated grids in small island developing States and least developed countries; and
  - b) Enhance the clarity of the requirements related to the demonstration of transmission constraints.
- **EB94** considered a revision to the grid tool and requested the MP to re-submit a draft revision for the Board's consideration by:
  - a) Further exploring alternative criteria for determining the transmission constraints;
  - b) Improved consistency of definitions (i.e. isolated system, dispatch area);



### Transmission constraints

#### **Three options:**

- 1) Delineation provided by the DNA. **No need for transmission constraint check**
- 2) Delineation dictated by the dispatch area. **No need for transmission constraint check**
- 3) More than one independent dispatch area (e.g. power pools).  
**Transmission constraint check is mandatory**



### Alternative criteria for determining transmission constraints

- If there are no transmission constraints, two (or more) electricity systems are considered as one integrated electricity system and one GEF is to be calculated for the two systems combined.
- For electricity systems **with spot markets, differences in electricity prices < 5%** between the two electricity systems at least during **60% or more of the hours of the most recent year** (Paragraph; 19(a));
- For other grid systems, the transmission line is operated at **90 % of its rated capacity at least during 90% or more of the hours of the most recent year** (Paragraph 19(b)).
- The **transmission capacity** of the transmission line connecting the electricity systems is **>10%** of the **installed capacity of either of the project electricity system or of the connected electricity system, whichever is smaller** (Paragraph 19(c));



### Alternative criteria for determining transmission constraints

- **Current provision (1/3):** *No transmission constraint “In case of electricity systems with spot markets for electricity: there are differences in electricity prices (without transmission and distribution costs) of less than 5% between the two electricity systems at least during 60% (at least one year data required)”*
- **Proposed revision:** *Replace 60% with 90%*
- **Rationale:** 90% ensures systems operate as integrated systems – 60% implies that 40% of the time, these systems are operating independently



### Alternative criteria for determining transmission constraints

- **Current provision (2/3): No transmission constraint if** “*The transmission line is operated at 90% or less of its rated capacity at least during 90% or more of the hours (at least one year data required)*”
- **Proposed revision:** “*The transmission line is operated at 75 per cent or less of its rated capacity at least during 90 per cent or more of the hours..*”
- **Rationale:** *Literature suggests 75% or less of rated capacity for not less than 90% of the time should indicate no transmission constraint between the two connecting electricity systems*



### Alternative criteria for determining transmission constraints

- **Current provision (3/3): No transmission constraint if** *“The transmission capacity of the transmission line connecting the electricity systems is more than 10% cent of the installed capacity either of the project electricity system or of the connected electricity system, whichever is smaller “*
- **Proposed revision:** *To retain as it is*
- **Rationale:** *This option (established based on expert input and literature review in the past) has been used by the majority of the CDM projects for demonstrating transmission constraints;*
- *A value lower/higher than the 10% could result in a significant discrepancy in what constitutes a connected system*



## Impacts

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- The proposed revision, if approved, will
  - a) simplify the application of the grid tool for isolated grid systems, in particular in SIDS and LDCs.
  - b) provide clarity on procedure to determine transmission constraints in identifying relevant project electricity systems





## Recommendation

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- The MP recommends that the Board adopt this draft revised tool



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