



Article 6

Metrics and Conversion

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Article 6.2 Transfers: Quantification of Metrics

1) Can ITMOs be transferred in non-GHG metrics- amounts of renewable energy or area of land/forest conserved?

- Logical option given many countries have NDC targets expressed in non-GHG metrics.

2) Notwithstanding metrics used to quantify ITMOs, can international accounting be applied in non-GHG metrics including corresponding adjustments?

3) If ITMOs are quantified in GHG metrics, what GWP values to use to convert to non-CO₂ gases into CO₂ equivalent?



Buffer Registry/Netting Account





Multiple metrics

- Most flexible and allows more countries to participate in trading by making it easier to reconcile ITMOs with their NDC targets.
- Countries be allowed to choose which metric(s) to use – could also be same metrics as their NDC, but not necessarily
- ITMOs may be traded in any metrics as long as corresponding adjustments (conversion) are done
- Acquiring country may or may not use the ITMOs and may be no more than a merchant trade
- International guidance on conversions to be developed based on existing practice



Transfers and Acquiring Cases

- 1) Accounting for an ITMO quantified in non-GHG metric in an NDC with an NDC in another metric?
- 2) ITMOs in same metrics?
- 3) ITMOs in multiple NDC targets with multiple metrics?



Guidelines- Accounting

- 1) ITMO quantified using one metric (MWh) would not be accounted for against an NDC target quantified using a different metric (tCO₂e).
- 2) Applying *conversion* between the two metrics to properly account for the ITMO subject to rules.
- 3) Accounting for an ITMO quantified using a non-GHG metric against an NDC target expressed in a different non-GHG metric, using an appropriate conversion by a buyer also without a GHG target.
- 4) Accounting by buyer against a non-GHG target only if the ITMO is quantified using the same metric as the target.
- 5) Accounting for conversion effects.



Guidelines- Accounting

- 6) Mitigation outcomes may be converted when traded beyond borders to GHG metrics before transfer- *the CA must be done in GHG and the NDC is not in GHG. You can CA in the NDC metric, and can then convert in GHG for transfer*
- 7) Based on what the acquiring party wants including a non GHG metric ITMO
- 8) Does it improve transparency?- *(different GWP values)*



Global Warming Potential (GWP) Values

Which options for deciding which GWP values to be used when quantifying ITMOs and for accounting related to NDCs?

- 1) Allowing different sets of GWPs to be used
- 2) Use a single set of GWPs for quantifying ITMOs and setting/tracking progress

An issue in conversions if different countries use different GWP



Transboundary CDM Project India- Bhutan Hydroelectricity



Renewable Energy/Electricity

- A good test case of interconnected grid with precedence
- Connected grids but different metrics
- Connected grids and same metrics
- Unconnected grids and different metrics
- Unconnected grids but same metrics
- What is renewable energy?- Clean coal, solar, wind, hydro, energy efficiencies...
- Carbon content of electricity?



Grid emission factor- CO₂ Baseline Database for Indian Power Plants 2018

Weighted average emission factor, simple operating margin (OM), build margin (BM) and combined margin (CM) of the Indian Grid for FY 2016-17 (adjusted for cross-border electricity transfers), in t CO₂/MWh

<u>Average</u>	<u>OM</u>	<u>BM</u>	<u>CM</u>
0.82	0.96	0.87	0.92

- Average is the average emission of all stations in the grid, weighted by net generation
- OM is the average emission from all stations excluding the low cost/must run sources
- BM is the average emission of the 20% (by net generation) most recent capacity addition in the grid
- CM is a weighted average of the OM and BM (here weighted 50: 50)



Determination of transmission constraints

- Incentive for grid integration and ensuring claimed ERs are real and verifiable
- Constraint criterion 1: In case of electricity systems with spot markets for electricity: there are differences in electricity prices (without transmission and distribution costs) of more than 5 % between the systems during 60 % or more of the hours of the year.
- Constraint criterion 2: The transmission line is operated at 90% or more of its rated capacity during 90% percent or more of the hours of the year.



Determination of transmission constraints

- Where the application of these criteria does not result in a clear grid boundary, use a regional grid definition in the case of large countries with layered dispatch systems (e.g. provincial / regional / national).
- A provincial grid definition may indeed in many cases be too narrow given significant electricity trade among provinces that might be affected, directly or indirectly, by a CDM project activity. In other countries, the national (or other largest) grid definition should be used by default.



Determination of transmission constraints

- In its 28th meeting in December 2006, the CDM Executive Board clarified that the word “regional”, in the context of “regional electricity system” used in ACM0002 can also be interpreted as extending across several countries.
- The Board further clarified that trans-national electricity systems are eligible under ACM0002 as well as clarified that the grid emission factor in this context shall be estimated for the “regional electricity system”. (EB28, paragraph 14)



Baseline emissions data

- Based on the data for a particular fiscal year
- Calculations are based on generation, fuel consumption and fuel quality data obtained from the power stations
- Typical standard data were used only for a few stations where information was not available from the station.
- Cross-border electricity transfers were also taken into account for calculating the CO₂ emission baseline



Thank you
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