

	CDM: Response form for Request for revision of approved methodologies (version 01.1)
Date of Meth Panel meeting:	October 9-11, 2006
Title and number of Request for revision	“Treatment of electricity exported from a project activity to a grid located in a different country.”; AM-REV-26
Summary of the query:	
Please use the space below to summarize the request for revision on the related approved methodologies.	
<p>The request for revision aims to revise ACM0002 to make it applicable to renewable electricity generation projects that result in a reduction of GHG emissions in another non-Annex I country by exporting electricity, either directly or indirectly (see below). A revised version of ACM0002 is submitted along with a draft CDM-PDD for a specific project activity. The Yguazú Hydropower Project (hereinafter YHP) is a proposed 200 MW hydropower plant to be located in the Yguazú River in Paraguay. As noted there, “this project will provide peaking capacity and address Paraguay’s peak demand, thereby improving the Electric System of Paraguay. Through the operation of the YHP, Paraguay will avoid using energy from Itaipu Bi-national and will thus enable Brazil to dispatch more energy from Itaipu, according to the Treaty of Itaipu”. Therefore the project case “indirectly enables” increased exports to another grid, while the project itself does not export power. The proposed amendment to ACM0002 is designed to consider the project case (indirect) as well as direct provision of exported power. The key applicability conditions added are the following:</p> <p>“Electricity generated from the project activity can be considered to substitute the electricity of the foreign grid connected to the domestic grid by way of a transmission line or a particular power plant, under the following cases.</p> <p>a). When it can be concluded that the project activity directly provides electricity to the foreign grid. Specifically, the following cases fall in this category:</p> <ul style="list-style-type: none"> • When the project activity is directly connected to the foreign grid (including cases when the project activity is jointly developed by the host country and the neighbouring country, e.g. in the case of hydropower plant in an international river). • When the project activity is under contract to export electricity to the foreign grid. <p>In such cases, it is considered that the project activity is not different from the project activity located in the foreign grid. Where the project activity is connected to more than one grid, export to each grid is considered according to the amount of electricity exported.</p> <p>b). When the project activity is indirectly connected to the foreign grid via the grid within the host country (“domestic grid”), and when the following conditions are met. <i>[project case shown in the draft CDM-PDD]</i></p> <p>The electricity generated in the domestic grid substantially exceeds current and foreseeable electricity demand of the area it services for the duration of the crediting period specified in the draft CDM-PDD. “Foreseeable electricity demand” can be established e.g. through historical trend of electricity demand or forecasted demand. It is proposed here that if electricity supply is expected to exceed electricity demand by 25% under any scenario during the proposed crediting period, then the condition is met.</p> <ul style="list-style-type: none"> • The net electricity import of the foreign grid (to which electricity is exported from the domestic grid) exceeds the net electricity export. Where reverse is the case, the net export from the foreign grid can be subtracted from the amount of electricity from the project activity substituting the foreign grid (EG_{ex,y}). 	

- There exists a contractual relationship between the domestic and foreign grids to purchase the surplus electricity it generates. In cases where the domestic and foreign grids are linked by an international power plant, similar contractual relationship between domestic and foreign grids can be established.”

The proposed revision also includes equations to calculate emissions reductions from directly or indirectly exported power, on the assumption that these flows can be tracked and monitored in a straightforward fashion.

Recommendation by the Meth Panel:

(a) Please use the space below to provide amendments /changes (in your expert view, if necessary).

Please note that the Meth Panel is currently undertaking a closer examination of issues related to accounting for electricity imports in ACM0002 baseline emissions equations, and to projects involving electricity export, and in so doing, may identify issues in addition to those noted here.

The suggested revision provides some monitoring procedures to identify the grid to which the power will be exported, and to monitor and certify that power is contracted by or consumed in that grid (e.g. via contracts, receipts of sales, etc.). It also provides some useful equations. However, the overall revision does not adequately address a number of potential issues, especially in the case of indirect increase in exports as is the case for the project submitted with this request for revision underlying. These issues include the following:

- Transmission constraints are not addressed. A procedure is needed to demonstrate that transmission constraints might not impede the cross-border flow of electricity. In particular, it should be shown that transmission capacity is adequate to handle the baseline electricity flows as well as the additional power generated or indirectly enabled for transmission. If this cannot be shown, there is a risk that the project will not displace the amount of power in the export grid as calculated by the methodology revisions.
- Interaction among linked hydro facilities could lead to mis-estimation of net electricity exports. The request for revision does not address whether and how the project might affect downstream generation profiles of other hydro facilities in the linked river basin. This concern is not unique to “exported power” projects, however, it becomes more important in the case of “indirect exports” where it is explicitly claimed that one project operation will enable another power plant to export more power, as is the case here (Itaipu). A procedure to assess such interactions should be considered, even if just to demonstrate the effects are negligible or positive. (Note that the draft CDM-PDD states that “Because the YHP will only operate during peak hours, it is necessary to control the water flow of the Yguazú River that reaches the Acaray reservoir to produce energy. Since YHP will be constructed at the Yguazú River above Acaray, it must be operated not to affect the power generation at Acaray. This will require special staff training and control technology.” However, there is no information or methodology to explain how this condition is assured.)
- The possibility of “paper transaction projects” should be avoided. One could imagine a situation where Proposed CDM activity in country X contracts with entity in country Y. At the same time, a non-CDM activity in country Y contracts with entity in country X for a similar amount of electricity. This might occur for instance, if the CDM revenue were sufficient to justify this contractual exchange, due to the higher CM emission rate in country Y. The methodology would not correctly assess emission reductions in this case (“net electricity exports of the exporting grid could still be negative”).
- Highly peak demand projects could have a different displacement effect. Is ACM0002 appropriate for a project that is designed only for on-peak generation (like the draft CDM-PDD case)? It might be preferable in such a situation to modify, depart from, or at a minimum justify the use of ACM0002. The PP is welcome to propose the use of ACM0002 if it can be demonstrate that it is conservative in such a situation. At first glance it is not clear whether one could make a general statement in either

direction. Indeed, if the project displaces fossil-based peak load generation, the baseline emission rate is likely to be relatively high. However in a grid with significant hydro-based load following capability (in this case the export grid, not the domestic one), adding more peak load generation might in fact improve the relative economics of new base (vs. peak or intermediate) load generation, and improve the likelihood that further additions are for instance coal-based (where coal is the most attractive baseload technology) – this would be a potential leakage issue. These are certainly not the only potential impacts.

- Other issues
 - If retrofits/modifications to existing (exporting) facilities are included in the methodology revision, a methodology to estimate/calculate $EG_{baseline,ex,i}$: (Baseline electricity exported to the foreign grid i , in the case of modified or retrofit facilities) needs to be provided.
 - $NEXFi,y$: (Net electricity export of the foreign grid i .) needs to be defined. Is it total exports minus total imports?.

(b) Please use the space below for providing guidance, as per Para 93 of EB25 Report, on what type of projects need to revise the PDD as a consequence of the suggested revision, if the recommendation is to revise the methodology.

Not applicable.

Answer to authors of the request for revision by the Meth Panel :

Please use the space below to provide an answer to the authors of the above query

See above.



Signature of the Meth Panel Chair

Date: 13/10/2006

(Rajesh Kumar Sethi)



Signature of the Meth Panel Vice-Chair

Date: 13/10/2006

(Jean-Jacques Becker)

Information to be completed by the secretariat	
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