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To cdm-info@unfccc.int
From andrew.prag@pd-forum.net
Date 5th March 2010
Subject **Evaluation of Electricity Tariffs in proposed CDM Activities**

CO VICE-CHAIRMAN

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Honourable Members of the CDM Executive Board,
Dear Mr. Mahlung,

We would like to take the opportunity through this letter to share with you observations regarding:

- The CMP5 decision requesting the EB to develop guidance for the treatment of feed-in tariffs in the additionality analysis for renewable energy project activities;
- The EB decisions on the registrations and rejections of proposed CDM activities as published in reports of EB50, EB51 and EB52;
- The CMP5 decision requesting the EB to establish modalities and procedures for direct communication between the EB and project participants in relation to individual projects.

We understand that the recent EB discussion about electricity tariffs is neither technology-specific nor country-specific. Nevertheless, it is apparent that all recently concerned projects belong to the hydroelectric and wind power sectors and are located in China. Thus we deem appropriate to provide some country specific background information on which our observations presented in this letter are based. We also provide more detailed information on hydro and wind tariff setting in two separate annexes. More generally we would like to point out that, in China:

- Average tariffs for renewable energy projects have in most cases increased since November 2001. However, individual tariffs can be affected by a large number of factors, including capacity, supply profile and location of the power plant.
- Partially different principles for setting tariffs are applied depending on the responsibility for power dispatch (centrally or locally).
- Relevant authorities may decide on their own responsibility to support specific projects via increased tariffs, while such an increased tariff is not accessible to comparable activities and does not set precedence.

Summarising this background information we want to express that there are good reasons that in a large country like China (but also in other large countries) feed-in tariffs show differences and variation in time as well as in geographic application, and these differences are due to a wide range of variables.

In light of these facts and in particular after reviewing the meeting report of EB52 we would like to share the following observations with you:

- Current EB policy seems to be that projects under review will only be granted registration if the project proves additionality by applying the highest ever reported tariff in a province even if it exceeds the local consumer tariff. Requesting projects to apply this highest tariff does not take

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ANNEX I - Details on electricity tariffs in the wind power sector in China

The members of the Project Developer Forum are happy to note the recent registration (with corrections) of wind power projects in China at EB52. These proposed projects have an IRR that does not cross the recognised benchmark even with the application of the historical highest reported tariff in the province. Having reviewed the EB52 report, we note that the DOEs associated with the projects are required to confirm three precise issues for each project. We wish to comment on each of the items. DOEs are required to demonstrate:

1. Whether there is a decrease in tariff

PD Forum: We note there is no tariff decrease for most regions and this was confirmed by the NDRC in their official submission to the EB. It is important to note that some of the tariffs observed in registered PDDs are merely conservatively high estimates made at the time of submission for registration when the actually applied tariff was not known yet. This is required by the additionality tool. PDD tariffs are generally higher than the subsequently applied tariffs and we are not aware of any actually applied tariff that is higher than the ones stated in the registered PDDs. The most recent tariff notification by NDRC of July 2009 introduces very clear fixed tariffs for all wind projects. For projects being planned since the publication of this policy the tariff applied in the feasibility study and the financial assessment in the PDD therefore are fixed and unequivocal.

2. Whether the higher previous tariffs are E- policies

PD Forum: We confirm that all wind tariffs to date contain a subsidy, and as such give a comparative advantage to wind over conventional power. It is important to note, however, that not every subsidy is a consistent policy. The previously higher tariffs were individually attributed to very few projects only and did not provide investment security for each and every future project. They can be compared to support programs for geothermal and CO₂ capture and storage projects as we see them today throughout Europe: In early stages of policy development a government experiments with subsidies, supports for R&D, tax reductions and other means. None of these are meant to be applicable automatically for future investments – the early tariffs were one-off project-specific decisions. Hence, the tariffs before 2006 cannot be called E-policies in line with the currently applicable EB22 guidance and even if they were to be called E-policies, they could be disregarded in line with that same guidance, the purpose of which was and should continue to be to avoid perverse incentives. A degree of investment security was only introduced by the Renewable Energy Law of 2006, and further strengthened in the 2009 tariff notification by NDRC which fixed all tariffs. Finally, the request to use the highest tariff is not a requirement in line with current additionality criteria as outlined in the VVM and additionality tool and is not a credible measure as explained above. We are again concerned that projects are denied registration by retroactively applying a methodological approach that does not even yet exist!

3. Whether such a decrease in tariff would effectively mean an increase in incentives for more GHG intensive technologies.

PD Forum: While the concept of a “reference tariff” is not defined, it would appear that the EB views accepting tariff reductions only up to the level of being 100% proportional to demonstrable cost reductions. In other words, using as input for the IRR calculations a tariff calculated by taking the historical high tariff for similar (CDM) projects in the same region as point of departure and then fully (=100%) adjusting this tariff according to the demonstrable and quantifiable cost reductions only as this would result in a “reference tariff” which would at least reflect no changes in incentives for the investors.

However, this concept of a “reference tariff” does not exist within any CDM guidance and would need careful consideration. There are many factors impacting the incentives for the PP besides the tariff and investment costs, including among others O&M costs, expected load factor / generation and tax rates. Also, a single tariff awarded to a specific project for particular reasons

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cannot credibly be taken as the basis for calculating a “reference”, if the “reference tariff” approach were taken this would require a trend analysis which includes a wider range of projects.

Nevertheless, to try to understand this approach we have analysed a project in Western Inner Mongolia. In the table below it is clear that the tariff has decreased by 19% whereas the costs per installed capacity have decreased by 25%. Therefore, in line with your thinking, the incentive to the project investor has not decreased.

Please confirm that the following type of quantitative analysis provides the EB with sufficient quantitative data to reach a fact-based decision, and then our members will spread the message that this type of analysis can be included in each individual PDD.

Project	Installed capacity (MW)	Static total investment RMB	Tariff including VAT (RMB/kWh)	Costs RMB/MW installed capacity
Reg. 2135 (highest tariff)	49.50	584,430,000	0.579	11,806,667
Proposed project	201.00	1,786,610,000	0.470	8,888,607
% Reduction			19	25

Further, we also provide for the EB’s consideration the following information related to the **actual highest ever-applied** tariff for some key Chinese regions. These are the correct highest ever approved tariffs, rather than merely conservatively high ex-ante estimates taken from PDDs or feasibility studies, though these are provided as footnotes for clarity. Please let us know should the EB consider other values:

Region	Project name	Capacity	CDM	Actual tariff incl. VAT (RMB/kWh)	Type
Gansu	Gansu Yumen Sanshilijingzi Wind Power Project	49,3	2193	0,56	Approval
Jilin	Jilin Changliang	9,35	771	0,63 ¹	Approval
Hebei, wind resource region IV	Hebei Haixing 49.5MW Wind Farm	49,5	2007	0,61 ²	Approval
Hebei, wind resource region II	Zhangbei Manjing Wind Farm	45	0233	0,60 ³	Approval
East Inner Mongolia	Inner Mongolia Dali Phase V 49.5MW Wind Power Project	49,5	1629	0,54 ⁴	Approval
West Inner Mongolia	Inner-Mongolia Ximeng Abag 49.5MW Wind Power Project	49,5	2135	0,579 ⁵	Approval

Details of actual tariffs from projects all over China are provided in the excel file, Annex III

¹ You may have **observed** the PDD tariff for project 483 to be 0.702 RMB/kWh including VAT but the **actually applied** tariff for this project is only 0.61. All large scale projects of about 50MW received 0.61. All projects over 100MW received 0.5523.

² Similarly, the PDD tariff for project 2125 was 0.64 RMB/kWh including VAT but the **actually applied** tariff for this project is only 0.61, see the official document "Jijiguan [2009]69" issued by Price Bureau of Hebei province In August 2009.

³ The PDD tariff for project 2125 was 0.64 RMB/kWh including VAT but the **actually applied** tariff for this project is only 0.61, see the official document "Jijiguan [2009]69" issued by Price Bureau of Hebei province In August 2009. However, this project is in wind resource region IV.

⁴ The PDD tariff for project 1629 was 0.61 RMB/kWh including VAT but the **actually applied** tariff for this project is only 0.54, see the official document " NDRC[2008]1876".

⁵ Please note that two other projects received their tariff approval in the same letter, receiving 0.5497 and 0.548 RMB/kWh including VAT respectively. The PDD tariff for project 1621 was 0.5978 RMB/kWh including VAT but the **actually applied** tariff was only 0.51.

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Annex II - Details on electricity tariffs in the hydropower sector in China

As mentioned in the letter, in general tariffs for renewable energy projects in China, including hydropower projects, have seen an increase since November 2001. However, tariffs for hydropower projects are affected by a large number of factors, including dispatch situation, capacity, supply profile and location:

- There are several ways that tariffs for hydropower projects have been set in China⁶. The tariff can be set at different levels (e.g. province, county, municipality) and can be standardised or negotiated on a bi-lateral basis between the grid company and the developer, depending on how the power produced by the plant is dispatched.
- The capacity of hydropower projects range from 100 Watt units installed by individual householders living next to streams, to the Three Gorges Dam with an installed capacity of over 18,000 MW. The latter is over 180 million times the output of the former.
- Projects may be run-of-river, storage, or pump storage, and can be operated primarily to meet peak demand for power, to meet base load demand, or to supply power whenever there is sufficient water (with no storage).
- Dispatch can be on the basis of all power being able to be supplied to the grid at any time, or there can be restrictions placed on generation.
- In general pump storage projects will receive high tariffs per kWh, as they are used to provide power in times of peak demand.
- Depending on the location of the project, the developers may need to design the project to avoid having significant environmental impacts or to upgrade the local infrastructures. This may lead to additional costs, which the relevant authority may have been content to support via increased tariffs.
- There may be specifically high tariffs offered to projects that supply power to regions that are at the end of a grid line where there is high demand for the power.
- Projects with small capacities and long lines to the grid will experience high line losses, whereas large scale projects with high voltage lines will experience low grid losses, which will impact upon the projects' economics.

This highlights that whilst it may be reasonable, for example, to look at trends in tariffs since 2001 for centrally dispatched projects of a certain capacity, with a certain output profile, within a certain region, we believe that it is not reasonable to compare trends in tariffs for all types of hydropower project jointly and at the provincial level.

⁶ The electricity dispatch authorities in China are authorised to set tariffs at different dispatch levels by the *Electric Power Law (1996; see http://www.gov.cn/ztl/2005-12/30/content_142165.htm)*. There are five levels of electricity dispatch authorities in China according to the *Grid Dispatch Management Regulations Implementation Methods (1994; see <http://www.people.com.cn/item/fifqk/qwyfq/1994/220003199401.html>)*. From top down these are:

- 1) National grid dispatch,
- 2) Trans-provincial grid dispatch that dispatches transmission between provinces/autonomous prefectures/municipalities that are directly under the jurisdiction of the Central Government,
- 3) Province/autonomous prefecture/municipality grid dispatch,
- 4) Dispatch of municipalities that are under the jurisdiction of the provincial governments, and
- 5) County-level grid dispatch.

In general, dispatches at the provincial level and above are considered centrally dispatched. This includes 1), 2) and 3). When a grid connection agreement is signed with the provincial grid company, a project is centrally dispatched.