Corporate Industrial Ecology

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Dear CDM Executive Board,

In reference to the project activity N°1598 "Emission reductions through partial substitution of fossil fuel with alternative fuels in the two cement plants of PT Holcim Indonesia Tbk" please find below additional information and comments with regard to the request of review received from the UNFCCC secretariat on 04.06.2008.

Comment N° 1
The DOE should further explain than give a positive validation opinion on the key assumption in the sensitivity analysis, in particular the coal and biomass price forecasts.

The excel sheet of the complete investment analysis and the sensitivity analysis is shown in Annex 1a and 1b. The project participant releases the excel sheets for consultation of the CDM EB and wishes to make .pdf files publicly available, which are included in the Annex 2a and 2b.

The coal price is based on the contracts between PT Holcim Indonesia Tbk and the coal suppliers. This contract was presented during the validation on site. The forecast regarding the increase of coal price between 2006 and 2010 uses different indices, which have also been shown during the validation. The Kideco coal uses the Barlow Jonker index and the Adaro coal uses the ACR Asian index, which is determined by the supplier's policy. An overview is presented in Annex 1 worksheet "price list" and "coal price fin plan" or Annex 2 page 6- 7. The average coal prices show an increase of 0.6% per year between 2006 and 2010.

In order to fix a coal price post 2010, the coal price trend, as published in the "Annual Energy Outlook 2006 (AEO Report) with Projection to 2030 – released in December 2005"[1] has been used. This document, which is presented in Annex 3, is prepared by the Energy Information Administration (EIA), the official energy statistic office of the U.S Government. This source is reliable, internationally recognized and largely used by procurement bodies to make global business forecast. Taking the value (see line average mine-mouth price in Annex 3) between 2007 and 2017, the trend shows an average decline of 0.5% in the annual price of coal and an average decline of 0.1% in the period from 2007 to 2026. For conservativeness, no declining but a constant price for the period 2011-2017 has been used.

[1] http://www.eia.doe.gov/oiaf/archive/aeo05/excel/aeotab_15.xls

As additional information, the AEO report[2] of March 2008 (Annex 4) reemphasizes the earlier assumption that coal prices will decline by an average of 0.4% between 2007 and 2027. Note that the highest prices are forecasted between 2008 and 2010.

The biomass price forecast is based on the average price that is stated in the contract agreed between PT Holcim Indonesia Tbk and the biomass suppliers in 2006. These contracts have been presented during the validation on site. As PT Holcim Indonesia Tbk is mainly acquiring biomass through is own systems and logistics of new biomass suppliers and not through established systems there is no trend on biomass prices like there is for an internationally traded commodity like coal. Therefore, it has been assumed that the biomass prices will follow the inflation rate (consumer's price) of Indonesia. The inflation rate of the latest version of the investment analysis (PDD one) is based on the Consensus Forecast published in 2007 (Annex 5, p 46). The consensus forecast is based on inflation forecasts made by 19 leading banks and analysts. They forecast an inflation of 6.6% in 2006 decreasing to 5.2% in 2011. For the period post 2011, a fair estimate of expected inflation has been considered to be 4.6% in 2012 decreasing to 3.0% in 2017. The details are presented in Annex 1 worksheet "input", line 91-92 or Annex 2 page 4 in the box "general assumption". In the sensitivity analysis we have added an additional 0.5% to the forecasted inflation, which is based on one standard deviation of the consensus forecast.

Below an overview of the assumption made in the investment analysis and in the sensitivity analysis.
Investment analysis (Annex 1a or 2a)

- Depreciation 12 yrs (Terminal Value realized at 10% of the Investment Cost)
- Coal price: 2007-2010: Company Fin-Plan based on the contract, average increase of 0.6 % per year. 2011 - 2017: No change of the coal price from 2011 based on AEO 2006 Report.
- Biomass Price: Increase inline with inflation based on Consensus Forecast, 6.6% in 2006 decreasing to 5.2% in 2011 than an estimate of 4.6% in 2012 decreasing to 3.0% in 2017
- IRR: -6.3% without credits and 18.8% with credits.

Sensitivity analysis I (Annex 1b or 2b)

- Depreciation 12 yrs (Terminal Value realized at 10% of the Investment Cost)
- Coal price: 2007-2010: Company Fin-Plan based on contracts, average increase of 0.6 % per year. 2011-2017: price increase of 2 % over and above increase considered in the investment analysis.
- Biomass Price: Increase 0.5% over and above the price considered in the investment analysis.
- IRR: 2.3% without credits and 24.7% with credits.

The investment and sensitivity analysis have been done with relevant and accurate information and confirm that the investment without CDM credits is far below the normal IRR used at PT Holcim Indonesia Tbk and that CDM credits are foreseen.

In addition, following the release of guidance on investment analysis during the EB 39, PT Holcim Indonesia Tbk has completed an additional sensitivity analysis based on the most probable life duration of the equipments which for this kind of machinery is estimated to be 20 years. The annex 6 shows the same calculation than the investment analysis with the depreciation based on 20 years instead of 12 years. The IRR is -6.5% without credit and 15.5% with credits. Note that the 12 years depreciation used

[2] http://www.eia.doe.gov/oiaf/aeo/excel/aeotab_15.xls

in the investment and first sensitivity analysis include a terminal value at 10% of the investment cost, which is in line with the new guideline.

Sensitivity analysis II (Annex 6)

- Depreciation 20 yrs
- Coal price: 2007-2010: Company Fin-Plan based on contract, average increase of 0.6 % per year. 2011 - 2017: No change from coal price in 2010, based on AEO 2006 Report. 2018-2026: Average increase of 2% per year. Overall coal price increase from 2007 -2026 is on average 1% per year
- Biomass Price: Increases inline with inflation based on Consensus Forecast, 6.6% in 2006 decreasing to 5.2% in 2011, then an estimate of 4.6% in 2012 decreasing to 3.0% in 2017 and to 1% in 2026
- Biomass Price : Increases inline with inflation
- IRR: -6.5%without credits and 15.5% with credits

The additional analysis presented in Annex 6 confirms as well that the investment without CDM credits is far below the normal IRR used at PT Holcim Indonesia Tbk and that credits were and are foreseen.

As explained, all forecasts are based on official and respected procedures and statistics. Nevertheless future reality may be different from even the best forecast, notably due to the particular geopolitical and geo-financial situations as they are recently emerging since the start of the US mortgage and banking crises as well as the recent oil- and food price surges. As a result energy prices in general, not only coal but also biomass, and inflation may increase faster than even the most pessimistic scenario.

Comment 2

The DOE should confirm the prevailing practice barrier, i.e whether the project activity is the first-of-its kind, and that the technological barriers associated with the partial substitution of coal with biomass would have prevented the implementation of the project activity without CDM.

and

Taking into consideration that Holcim is an international operating company with broad experience on process optimization, the DOE should confirm the prevailing practice barriers, i.e whether the project is the first of its kind for Holcim and that the technological barriers associated with the partial substitution of coal with biomass would have prevented the implementation of the project activity without CDM.

These questions refer to Step 3, Barrier Analysis of the UNFCCC Methodological Tool for the Demonstration and Assessment of Additionality. This tool allows the Project Developer to demonstrate and assess additionality either by an investment analysis or a barrier analysis. We have chosen to demonstrate and assess additionality with the investment analysis. According to the tool the barrier analysis is only required in the absence of an investment barrier, which is not the case for this project.

As an *additional* demonstration, the PDD also mentions the prevailing practice barrier.
The project activity is indeed the first of its kind for Holcim group, since no other company in the Group has achieved this level of thermal substitution by biomass from different types, origins and sources.

Some Holcim companies in Europe, i.e. in Germany, Switzerland, France and Belgium, are able to reach similar thermal substitution rates with wastes, such as fluffs[3] thanks to the well developed waste legislation, law enforcement and financial compensation for these services. This regulatory and market situation is however fundamentally different from a non-Annex 1 country such as Indonesia, resulting in fundamentally different organizational and financial conditions.

A few other biomass utilisation projects are under development in Asia, *all* thanks to the incentives offered by the Clean Development Mechanism.

The only similar project in Indonesia is the project of Indocement (Heidelberg), which started at the same time as the project of Holcim Indonesia, and which is now registered and has received CERs and aims to replace about 15% of its fuel with biomass.

Each market and installation has its specific constraints. For this project a team based in Switzerland supports the company with transfer of knowledge and technologies from Annex 1 to a non-Annex 1 region, which is precisely the objective of the Clean Development Mechanism.

The group has experience and know-how in process optimization and deals with various alternatives fuels in different countries. Without a doubt, Holcim Indonesia received technological and know-how transfer from the group experience. But co-processing of alternative fuels and keeping the clinker characteristics, which depend on the type, homogeneity, calorific value, humidity, handling, kilns parameters and daily operation, stable is challenging. No company within the group aims to use biomass as the proposed project of Holcim Indonesia. Holcim Indonesia like its main competitor Indocement has been approached by the Worldbank to develop a CDM project in 2004. The incentives of a CDM at that time has convinced the CEO of Holcim Indonesia, who has significant aspiration to switch to a more sustainable way to produce clinker, to construct an investment plan and to go ahead with a challenging and ambitious project to use more then 30% of biomass. The CDM process at that time was still starting, no methodology was available, and the timeline and the risk were not well defined. Confident of the availability of credits for this uncommon practice project, the CEO has launched the current CDM project activity with tests, trials and substantial investments. Holcim Indonesia has used the experience of the group and in addition has developed it own tests, trials and know-how.

Holcim Indonesia has been asked to present its project in several international Holcim events such the Vesta forum in Brazil, to show the exceptionality of the project. The Vesta (Annex 7) forum is an internal event to share experiences within the group companies. In addition the corporate sustainable development report 2007 p.12 outlines the uniqueness of the project. The annex 7 shows an extract of the Vesta program in Brazil and the annex 8 shows an extract of the corporate sustainable development report 2007.

[3] Mix of mainly industrial wastes (plastics and papers) prepared by a third party.

Comment 3

The DOE should confirm that the CER revenues were necessary to proceed with the project activity given the delay in its submission for validation and provide a detailed timeline of actions taken towards CDM registration and if possible, a third party evidence of prior consideration of the CDM.

and

Given the international experience of Holcim in optimization of cement production, the DOE should confirm that the CER revenues were necessary to proceed with the project activity given the delay in its submission for validation and provide a detailed timeline of actions taken towards CDM registration and if possible, a third party evidence of prior consideration of the CDM.

The investment analysis clearly shows the importance of the CDM revenues to make the project viable and to support this challenging project. The local CEO is sincerely convinced of the additionality of the project and confident to earn credits and has made investments taking these into account, not knowing that the project timeline, the registration and receiving credits would take so long. Below are the main milestones:

- The WorldBank directly approached Holcim Indonesia in 2004 and proposed a letter of intention (annex already on the UNFCCC website)
- Holcim Indonesia asked the corporate office for a recommendation and was advised not to sign the WorldBank proposal due to the low CER price offered and the unsatisfactory contractual conditions and to wait until the process would be defined more precisely, e.g. until a methodology has been established. Indeed, at that time it was known that Indocement (Heidelberg), the main competitor of Holcim Indonesia, had started writing a methodology.
- While Indocement was developing a methodology, Lafarge Asia was also working on one. It ended with a consolidated methodology (ACM003) at the beginning of 2005, but no project was registered at that time.
- An additional recommendation has been received by Holcim Indonesia from the corporate office in March 2005 recommending waiting the registration of the Indocement project as many administrative hurdles still had to be overcome (Annex 9).
- Holcim Indonesia has started to look for assistance in writing the documents (PDD) and has discussed with a third party, DP Solusi in December 2005. (Annex 10)
- At the beginning of 2006, Holcim Indonesia has informed DP Solusi that the management is putting the PDD documentation on hold until administrative hurdles are overcome (Annex 10)
- The first project registered with the methodology ACM003 was the one from Lafarge Asia in Malaysia. It was registered in April 2006.
- In May 2006, Holcim Indonesia attended the CDM discussion held by the Ministry of the Environment of Indonesia. (Annex 11)
- The project of Indocement (Heidelberg) in Indonesia was registered in September 2006 with the methodology ACM003 version 2.
- The kick-off meeting to start the official documentation (PDD) has been held by the corporate head office project coordinator in Jakarta in October 2006 (Annex 12)
- A proposal from DP Solusi, a local consultant, was received in November 2006. (Annex 13)
- The PDD was mainly written in late 2006.
- The validation proposal has been received in February 2007.
- The validation on site has been performed in May 2007.
- The payment and the request of registration have been requested in February 2008.

Conclusion

The investment analysis and the sensitivity analysis have been done with adequate sources and demonstrate that the project is not financially attractive. The project is the first of its kind and the CERs are necessary to Holcim Indonesia.

For
Holcim Indonesia Tbk

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For
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