CARBON PARTNERS ASIATICA

22 April 2010

Subject: Input for the proposed tool for WACC calculation

Dear Methodologies Panel Members

We applaud your effort to prepare the tool for WACC calculation.   It contributes greatly to the correct assessment of additionality.

We hope that that our comments in the ensuing sections will help further enhance the proposed tool.

If you have questions about any of the suggestions we have made, we will be more than happy to elaborate or discuss them with you by telephone.

Sincerely

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Methodological Tool

"<mark>Draft</mark> tool to determine the weighted average cost of capital (WACC)"

(Version 01)

I.   DEFINITIONS, SCOPE, APPLICABILITY AND PARAMETERS

Definitions

For the purpose of this tool, the following definitions apply:

Discount rate: The discount rate is the interest rate used in discounting future cash flows in a project financing assessment; it is also called capitalization rate or hurdle rate.

Legal entity: It is the organization that is officially registered[1] in the host country of the CDM project and that has all the assets and working capital of the proposed CDM project activity in its accounting books. The legal entity may be privately or state owned company.

Credit Rating: A rating assigned by an independent credit rating agency. An opinion of the future ability, legal obligation, and willingness of a bond issuer or other obligor to make full and timely payments on principal and interest due to investors. The opinion is based on a qualitative and quantitative analysis by the rating agency.

Debt/Equity Ratio or Debt-to-Equity Ratio: The ratio of a firm's debt to its equity. In a project scenario this represents the project's ratio of debt to equity. The ratio is usually expressed as a relative proportion, as in 50/50, 60/40 or 70/30. The higher this ratio, the greater the financial leverage and financial risk (that is, risk of illiquidity and insolvency) of the firm.

Equity: Net worth; assets minus liabilities. The stockholders' residual ownership position. The capital invested in a business venture without a contractual obligation from the business venture for repayment or servicing. In project financing, this is the cash or assets contributed by a sponsorer.

Scope and applicability

This methodological tool provides procedures to determine the weighted average cost of capital. It can also be used to determine only the cost of equity or the cost of debt. The WACC or its components are required in an investment comparison analysis or a benchmark analysis <Asiatica comment: We believe that it is important to stipulate that when only the cost of equity is calculated as per Step 4, the value can be used only in relation to the equity IRR, not the project IRR. This is because generally speaking, the cost of equity is higher than the cost of debt, and the project IRR, not being able to benefit from leverage, is normally lower than the equity IRR. Weighing the high cost of equity against the low project IRR should not be allowed to avoid mistakenly concluding that a project is economically unfeasible when its profitability is in fact high enough when the comparison is correctly made between the cost of equity and the <mark>equity</mark> IRR. An explicit statement on this point will be crucial in view of two project activities that were recently registered after arguing for their additionality by calculating the cost of equity in essentially the same manner as Step 4 and using it to evaluate the project IRR.>for the purposes of determining additionality or selecting the baseline scenario. The WACC can be used as financial benchmark and be compared with financial parameters

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[1] The minimum condition is registration at the local Internal Revenues Service or equivalent agency.

of an investment alternative, such as the internal rate of return (IRR) among others, or it can be used as discount rate in calculating financial parameters of an investment alternative, such as the net present value (NPV) or the levelized costs of production.

Any investment analysis must be done in the same currency selected for the WACC calculation. All cash flows for income, expenses, costs, etc must be standardized using a single currency or reasonable equivalent in the timeframe of the assessment.

Parameters

This tool provides procedures to determine the following parameters:

Parameter	SI Unit	Description
r	-	WACC
k_d	-	Average cost of debt financing
k_e	-	Average cost of equity financing

Note: No methodology-specific parameters are required.

II. METHODOLOGY PROCEDURE

The weighted average cost of capital (WACC, r) is calculated as follows:

$$r = w_d K_d (1-T) + w_e K_e \tag{1}$$

Where:
r	= WACC
w_d	= Percentage of debt financing
w_e	= Percentage of equity financing
k_d	= Average cost of debt financing
k_e	= Average cost of equity financing
T	= Applicable corporate tax rate

The parameter r calculated as above is to be considered as an after-tax benchmark/discount rate i.e. the economic/financial analysis using this parameter shall include the corporate tax expense.

The WACC or its components should be calculated in the same terms (real or nominal) as in the investment comparison analysis or benchmark analysis.

Apply the following steps to determine the k_d, k_e, w_d, , w_e and T.

Step 1: Determine whether r is estimated based on the situation of the entity undertaking the project activity or based on standard market expectations for the project type

Document and justify in the CDM-PDD which of the following two situations applies to the project activity:

(I) The project activity can only be implemented by the project participants and not by an entity other than project participant, or

(II) The project activity could also be implemented by entities other than the project participants.

Where case (I) applies, the financial discount rate or financial benchmark shall be determined based on the specific financial/economic situation of the entity undertaking the project activity.

Where case (II) applies, the financial discount rate or financial benchmark shall be determined based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer.

Step 2: Determine the status of the legal entity that will host the project activity assets

Where case (II) in Step 1 applies, document and justify in the CDM-PDD which of the following two situations applies to the project activity:

(a) The accounting books of the legal entity reflect at least the total value of all the assets needed for the project activity; or

(b) The accounting books of the legal entity do not reflect the total value of all the assets needed for the project activity.

If case (a) applies, w_e and w_d will be determined based on the accounting books of the legal entity. If case (b) applies, the default debt-equity ratio should be applied.

Step 3: Determine the average cost of debt financing (k_d)

Use one of the following options to determine k_d:

Option 3A: Use the weighted average cost of debt financing of the legal entity

This option can be used if:

- Case (I) in Step 1 applies;

- Case (a) in Step 2 applies; and

- The legal entity owning the project assets uses some form of debt financing with a maturity of more than one year. [2]

Under this option the project participants should document the following:

- For **bonds:** the key parameters of the bond including time to maturity, yield, registration issuance in the financial system and set-up in the market.

- For **loans from a financial institution:** the contract of lending between the financial institution and the legal entity owning the assets of the project activity. In absence of the contract, provide a letter from the bank stating its intention to award the loan and the key terms for the loan.

- If the legal entity uses **debt financing from a parent company** (corporate treasury or headquarter), the transfer of capital to the legal entity must be documented with:

  o The parameters of the corporate bonds as mentioned above. This option is only valid for corporate bonds issued in the host country of the CDM project;

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[2] Debt with a maturity below one year is typically current debt with different interest rates than the interest rates of long term debt and should not be considered in the analysis.

o   The contract of lending between the parent company and the legal entity owning the assets of the project activity.

The parameter k_d should be calculated as the weighted average cost of debt funding of the legal entity owning the project activity. For bonds, use the weighted average yield of the bonds during the last three months prior to the submission of the CDM-PDD for validation or prior to the investment decision, whichever is earlier. For loans, use the weighted average cost of outstanding long-term debt.

Option 3B: Use the cost of debt of the financial system

This option can be used if:

- Case (II) in Step 1 applies; or

- Case (I) in Step 1 and case (b) in Step 2 apply and the debt finance structure for the project is not yet available (e.g. a letter of intent for debt funding is not yet available).

The parameter k_d should be calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects. In the case this data is not available, use the commercial lending rate in the host country for the calculation of k_d. <Asiatica's comment: The use of commercial lending rates as an input in the calculation of the WACC entails addressing the fact that the vast majority of commercial lending is transacted in a floating rate arrangement whereby the rate goes up and down according to market fluctuations. Hence, the commercial lending rate prevailing at the time of project start date may be higher or lower than the cost of debt applicable for the project's life. In contrast, the WACC needs to offer a fixed rate over the life of a project in order for it to serve well for either the investment comparison analysis or benchmark analysis.

To fill the gap between commercial lending, extended in floating rates, and the need for a fix rate for the WACC, three options will be conceivable: 1) averaging commercial lending rates over a period (e.g. 5 years); 2) apply the long-short maturity spread in the bond market; and 3) rely on the swap market information to convert the floating rate to a fixed rate. There is no need to go into details about the options here. We have no doubt that the Methodologies Panel will be able to devise a good approach, with the assistance of financial experts if appropriate. We merely wish to emphasize that it is conceptually incorrect to adopt the latest commercial lending rates at the time of project start date (often published by the host country's central bank) as the cost of debt without considering the above points.

Option 3C: Use the cost of government bond rates as cost of debt

This option can be used if:

- Case (II) in Step 1 applies; or

- Case (I) in Step 1 and case (b) in Step 2 apply and the debt finance structure for the project is not yet available (e.g. a letter of intent for debt funding is not yet available); and

- The government of the host country has issued at least one bond.

The parameter k_d can be assumed as the yield of a 10 years bond issued by the government of the host country or, if this is not available, the bond with the maturity which is closest to 10 years.

Step 4: *Determine the average cost of equity financing (k_e)*

Option 4A: Use the average global expected equity return

This option can be used if:

- Case (I) or (II) in Step 1 applies.

This approach represents an estimated equity return based on a average historical global equity risk premium.

The parameter k_e is calculated equivalent to a risk free rate (calculated as the yield of a government bond issued by the host country minus the country default spread) plus a global equity risk premium, as follows:

$$K_e = [GB_i - CDS] + PE_g \qquad\qquad\qquad \textbf{(2)}$$

Where:

k_e	= Average cost of equity financing
GB_i	= Yield of a government bond issued by the host country
CDS	= Country Default Spread
PE_g	= Global equity risk premium

The parameter K_e should be determined as follows:

- GB_i should be determined as the yield of a ten year government bond issued by the host country, as observed on average in the past 3 years prior to the preparation of the CDM-PDD . If such a bond is not available, the bond with maturity which is closest to 10 years should be used. This bond will have the following options:

    o GB_1, a bond issued in USD terms;

    o GB_2, a bond issued in local currency of the CDM project host country;

- CDS is calculated from a reliable source of Country Default Spread Database, using the rating of the country hosting the CDM project. An international source with at least 5 years in the market and a clear methodology for emerging/developing economies credit rating will be used (e.g. A.M. Best, Standard & Poor's, Moody's or Fitch Ratings, among others);

- Assume a default value of 4.7% for the parameter PE_g.[3]

Note: The project risk is not included in this equation because project participants can reflect the project specific risks in the cash flow analysis in the investment comparison or benchmark analysis as laid out in the sub-step 2C, paragraph 8 of "Tool for the demonstration and assessment of additionality".

This tool may include some guidance on project risk measurement in future versions.

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[3]   *"The worldwide equity premium: A smaller puzzle"* by Elroy Dimson, Paul Marsh and Mike Stauntun from London Business School.

Option 4B: Use the country specific equity return

This option can be used if:

- Case (I) or (II) in Step 1 applies.

This approach provides an equity return which differentiates according to the country risk. This means that for a country with a high country risk (as reflected in its government bond) a higher equity return (k_e) will be calculated compared to a country with a low country risk.

The parameter k_e is calculated equivalent to a risk free rate plus a country risk premium plus a general equity risk premium, as follows:

$$K_e = GB + PE_g \qquad\qquad (3)$$

OR

$$K_e = RF + CDS + PE_g \qquad\qquad (4)$$

Where:
k_e	=	Average cost of equity financing
RF	=	Risk free rate
GB_i	=	Yield of a government bond issued by the host country
CDS	=	Country Default Spread
PE_g	=	General equity risk premium

Equation 3 should be used if the government of the host country has issued a bond with a maturity of at least one year. Otherwise, equation 4 should be used.

The parameter K_e should be determined as follows:

- GB_i should be determined as the yield of a ten year government bond issued by the host country in its local currency, as observed on average in the past 3 years prior to the preparation of the CDM-PDD. <Asiatica's comment: Bonds are the opposite of commercial lending in that they provide a fixed rate that reflects the collection of all the market participants' views about the future. In this sense, the use of the rate at the time of project start date is appropriate. Averaging over the last 3 years is not only unnecessary, but also misleading. When rates are in a falling trend as they are now, the averaging will include high rates in the past and result in a misguidedly high rate , thereby run the risk of determining as additional when a project is economically feasible under the financial circumstances in which the decision is made about it.>If such a bond is not available, the bond with maturity which is closest to 10 years should be used;

- CDS is calculated from a reliable source of Country Default Spread Database, using the rating of the country hosting the CDM project. An international source with at least 5 years in the market and a clear methodology for emerging/developing economies credit rating will be used (e.g. A.M. Best, Standard & Poor's, Moody's or Fitch Ratings, among others); <Asiatica's comment: It is noted that the RF is denominated in USD, while the WACC must be given in the currency of the country where the project is located. For this reason, it will be important to clarify that the value of the CDS in equation (4) should include not only the narrowly defined country default spread, which is applicable to USD-denominated bonds by a country, but also the risk of foreign exchange fluctuations of the country's currency against the dollar, with a view to making it a local currency-denominated rate.

- RF is determined as the yield of a ten year USD bond, as observed on average in the past 3 years prior to the preparation of the CDM-PDD;<u><Asiatica's comment: As mentioned in the section for host country bonds, averaging is conceptually incorrect for bonds.></u>

- For PE_g a default value of 4.1% is used.[4] <u><Asiatica's comment: While the global equity premium is acceptable as a default value, there is a need for an explicit statement about allowing the use of the equity premium over GB, as manifested by the host country's equity. This is because in some countries, the difference between K_e and GB is substantially wider than the global average. Following the example of the qualifications set forth for the source of the CDS, sources for this country-specific equity premium will be required to have at least 5 years in the market and a clear and reasonable methodology for the market based calculation of the equity premium for the country. ></u>

<u>Note</u>:   The project risk is not included in this equation because project participants can reflect the project specific risks in the cash flow analysis in the investment comparison or benchmark analysis as laid out in the Sub-step 2C, paragraph 8 of "Tool for the demonstration and assessment of additionality".

This tool may include some guidance on project risk measurement in future versions.

Option 4C: Use the specific equity expectations of the legal entity

This option can be used if:

- Case (I) in step 1 applies;

- The legal entity can document that one specific expected equity return has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same value for k_e.

The parameter k_e should correspond to the value consistently observed in the past for k_e. Provide transparent documentation in the CDM-PDD on the consistent use of this value in the past[5].

Step 5:   Determine the percentage of debt financing (w_d), and equity financing (w_e)

Option 5A: Use the latest balance sheet under local fiscal/accounting standards and rules

This option can be used if:

- Case (I) in Step 1 applies;

- Case (a) in Step 2 applies; and

- The legal entity owning the assets of the project activity has balance sheets audited by a third party within two years prior to the submission of the CDM-PDD for validation.

The values of the long term debt and equity should be taken as documented in the accounting books of the legal entity.

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[4] *"The worldwide equity premium: A smaller puzzle"* by Elroy Dimson, Paul Marsh and Mike Stauntun from London Business School.

[5] The equity may include common stocks and preferred stock.

The parameters w_d and w_e should be determined as follows:

- w_d should be calculated by dividing the total value of the debt with a maturity above one year by the sum of (a) the total value of the equity and (b) the total value of the debt with a maturity above one year;

- w_e should be calculated by dividing the total value of the equity by the sum of (a) the total value of the equity and (b) the total value of the debt with a maturity above one year.

Option 5B: Default value

This option can be used if:

- Case (II) in Step 1 applies; or

- Case (I) in Step 1 and case (b) in Step 2 apply and the debt finance structure for the project is not yet available (e.g. a letter of intent for debt funding is not yet available).

Use a default value of 0.5 for w_d and 0.5 for w_e.

Step 6:   Determine the applicable tax rate (T)

The applicable tax rate will be the official value of the corporate tax rate as issued by the *internal revenues service agency* or similar institution in the host country of the CDM project. If the Government has differentiated values according to the revenues levels of legal entity; document and justify this scale.

III.   MONITORING METHODOLOGY

No monitoring provisions apply.

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History of the document

Version	Date	Nature of revision(s)
01	EB 53, Annex # 26 March 2010	To be considered at EB 53.
Decision Class: Regulatory **Document Type**: Tool **Business Function**: Methodology		