

World Bank Carbon Finance Business Implementation Note No. 4

Risk and Pricing in CDM /JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions

This note explains the World Bank pricing guidelines for Emission Reductions by explaining some key elements of risk in projects eligible under the Clean Development Mechanism (CDM) and Joint Implementation (JI) and who bears them. It is based on market conditions at the time of writing, and is subject to change.

This note replaces the Prototype Carbon Fund Implementation Note # 5, *Price Formation in PCF Emission Reductions Purchases*, 2000.

As a background, it should be noted that carbon finance is an inherently risky business – first, because of the emergent nature of the Greenhouse Gas (GHG) market, and second, because projects that generate the Emission Reductions (ERs) are located in emerging markets with fiscal and political regimes that are often unpredictable. The price of ERs is directly related to the degree of risk in CDM/JI projects and who bears them.

The Various GHG Commodities

An understanding of the various commodities in the GHG market is key to fully appreciate their inherent risks of delivery and effect on prices. Described below are the GHG commodities of the Kyoto Protocol and the EU Emissions Trading Scheme (EU ETS) – two different markets resulting from different agreements that are independent on each other in most respects¹.

Kyoto Protocol GHG commodities

An “**Assigned Amount**” is the total amount of greenhouse gas that each ratifying country is allowed to emit during the ‘first commitment period’ (2008 – 2012) of the Kyoto Protocol. AAUs are issued by governments that have emission reduction commitments, and can be traded between countries pursuant to international emissions trading, provided that these countries are fully compliant with eligibility requirements.

Certified Emission Reductions are units of greenhouse gas reductions generated from CDM projects (in countries that do not have emission reduction commitments under the Kyoto Protocol), verified by external, UN-accredited third party verifiers², and issued by the regulatory body of CDM, the “CDM Executive Board”. CERs can be used for compliance

¹ The EU Linking Directive outlines the mechanisms by which elements of the EU ETS may be linked to CDM/JI of the Kyoto Protocol.

² CDM projects are required to be validated and verified by external, third-party agencies (termed Designated Operational Entities) that are accredited by the CDM Executive Board upon sufficient fulfillment of stipulated competency criteria, to perform the necessary tasks.

with Kyoto Protocol obligations or to meet emissions caps under the European Union Emissions Trading Scheme. CERs are often traded in forward contracts.

Emission Reduction Units are units of greenhouse gas reductions generated from Joint Implementation projects (in countries, i.e. typically, economies in transition, that have emission reduction commitments under the Kyoto Protocol), verified by external UN-accredited third party verifiers (under what is known as track 2, JI), and issued by the host country. ERUs are also often traded in forward contracts.

Kyoto commodities are measured in tonnes of CO₂ equivalent. All Kyoto commodities have a compliance value only until 2012.

European Union Emissions Trading Scheme

The European Union Emissions Trading Scheme is an EU wide cap and trade emissions trading system that trades in “EU Allowances” (EUAs). **EU Allowances** are allocated units (tons) of CO₂ that grant the holder – typically a private emitter of GHGs– to emit the equivalent quantity of CO₂ towards meeting emissions obligations in the EU ETS. “Allowances” are essentially “rights to emit”, unique to cap and trade schemes, issued by national governments and allocated to emitters either by auctions, regulation or specific decree.

For the purposes of this Note, Emission Reductions (ERs) relate to any project (CDM or JI) that generates emission reductions, where “Emission” is synonymous with “removals” from sequestration projects.

Risk in CDM/JI projects: implications for VER/CER and ERU contracts

Described below are the two main types of risk inherent in CDM projects: carbon specific risks and project risks, and their respective impacts on (forward) contracts that trade in VERs, CERs or ERUs.

Carbon asset risks as described below and most project risks do not are applicable to EU allowances, as they are issued by national governments.

1. Carbon Asset Risks

- i) **Regulatory risk:** This relates to uncertainties regarding (a) what specific regulations will be required for projects pursuant to the Clean Development Mechanism and Joint Implementation³ and b) whether the project, and ultimately the ERs, will be registered with the CDM Executive Board or the JI Supervisory Committee. The most significant component of regulatory risk is additionality risk, which relates to whether the project will be deemed additional by the CDM Executive Board or eligible by the JI Supervisory Committee (which is yet to be established). Although tools are in place to assess and demonstrate additionality, approval depends on the weight of evidence required to be submitted to the Executive Board.

³Note that for JI projects under track 1, regulatory risk is virtually zero, as long as countries are eligible and agree on the transfer of ERUs.

- Another significant regulatory risk is baseline risk, which relates to the reliability of the baseline (the estimate of emissions that would have occurred without the project), the methodology for measuring ERs vis-à-vis the baseline, and whether the ERs verified as delivered by the registered project will ultimately be certified as eligible under the Kyoto Protocol or other regimes⁴.
- ii) Market risk: relates to the expected market price of ERs on delivery. ERs are purchased in a forward contract (in most cases) at a fixed price, which may be different from the market price of ERs at the time of delivery. When contracting for ERs at a fixed price, the buyer assumes the risk that prices may drop in the future (and the seller, the risk that market prices will increase). The price of ERs is highly speculative and their liquidity is not assured (for reasons of uncertainty of whether large quantities of asset classes will enter the market in the first commitment period, in particular Assigned Amount Units)
 - iii) Country risk: relates to the risk that: (a) the host country will ratify and subsequently comply with its obligations under the Kyoto Protocol (b) for JI projects, whether the host country will transfer the Emission Reduction Units as agreed by the project sponsor.

In addition to the above risk categories, Land-Use, Land-Use Change and Forestry (LULUCF) projects are exposed to **non-permanence risk and replacement risk**. Non-permanence relates to whether sequestered carbon will remain sequestered indefinitely (or at least long enough to be equivalent to reducing greenhouse gases by emission reductions), as it could be released to the atmosphere through fires, pests or management actions. Replacement risk relates to the degree, volume, timing and likelihood that temporary credits will have to be replaced⁵.

The above-mentioned risk categories are compounded with uncertainty and time delays during the CDM/JI approval process. Under the CDM, these typically relate to whether new methodologies will be accepted by the CDM Executive Board and, if so, when such approval can be expected and whether the methodology that is ultimately approved will reduce the quantity of emission reductions initially anticipated. At the time of writing, the time required between submission of a new methodology and registration of a project has been substantially more than expected.

However, with time and experience, delays and uncertainty with project registration are expected to decrease, regulatory certainty to increase and overall carbon risks to decrease.

⁴ Issues to be addressed include: Is the project's baseline sufficiently robust to remain valid, enabling it to generate the expected level of certifiable ERs on schedule? If the project is using a new methodology, will the Executive Board approve it? Is the timeline for the approval procedure predictable?

⁵ The UNFCCC has agreed that afforestation and reforestation projects in the CDM will generate two forms of "temporary credits", tCERs and ICERs. All sequestered carbon used to create such credits will be subject to verification of its continued storage at least every five years. If a project does not retain enough carbon, steps have to be taken to replace the existing credits with emission reductions or carbon sequestration from elsewhere. In any case, both t/1 CERs have to be replaced after a maximum of 60 years.

2. Project Risks

In addition to carbon-specific risks, carbon buyers are subject to a range of risks similar to those faced by other project investors, including whether the project will perform as expected, and for ER buyers, whether it will deliver the contracted quantity of ERs. Typical risks include:

- i) Construction risk – will the project begin operating on schedule?
- ii) Performance risk – generally, will the project operate as expected? For example, for renewable energy projects, critical elements are:
 - 1. resource risk: this is to do with security of supply. What is the likelihood that the resource used as fuel source (e.g. wind, water or biomass) will not be available in the required quantities; and,
 - 2. technology risk: will the equipment perform according to expectations?
- iii) Financial, business and regulatory risk – has the project achieved financial closure? What will the competitive environment for the project be? Given the capital structure of the project, will its cash flows be sufficient to fund planned investment, operations and maintenance, debt service requirements and a generate reasonable return? Are the project and its sponsor(s) financially viable and likely to remain so?
- iv) Contract risk – are the contracts in place adequate, enforceable and durable?
- v) Counterparty risk – are the signatories to key contracts (such as power purchase agreements) creditworthy and likely to abide by their terms – notably, will they pay on time?
- vi) Generic country risk – including political risk such as expropriation and foreign exchange convertibility.

World Bank's Experience in Allocating Risks: VER/CER Contracts; ERU Contracts

Regardless of whether contracts are V/CER or ERU-based, projects risks in forward contracts are borne primarily by sellers, though buyers are also affected by the risk of under – or non-delivery.

As a consequence of declining regulatory risk (for certain asset classes only) and its impact on the carbon market, the World Bank's pricing guidelines have shifted: to accommodate the wishes of an increasing number of project sponsors, the World Bank Carbon Funds now offer sellers the choice - based on informed decisions - on whether to enter into VER or CER contracts. This decision on whether the Bank purchases VERs or CERs (or both) depends on the specific circumstances of the project and the sellers' appetite for risk. In particular, this pertains to the kind of risk inherent in the project, the degree of exposure to carbon risks, who bears them and ultimately what the risks associated with the delivery of the asset are.

A tentative decision on whether to purchase VERs or CERs (or ERUs if it is a JI project) is made as Project Idea Notes are submitted to the Bank and reviewed. Thereafter, the Bank in consultation with the sellers, confirms the choice and projects are developed accordingly.

VER contracts

In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In such contracts, Participants in the Carbon Finance Business – and buyers in general - are exposed to the risk that projects may never ultimately be registered by the CDM EB, or that a significant quantity of VERs that are purchased may eventually not be converted to Kyoto-compliant CERs, although all efforts are made to alleviate these issues. For sellers, VER contracts provide certainty that they will receive carbon revenues, although the ultimate price received is discounted to take into account the buyer's additional risk.

Increasingly, a number of banks are lending against VER contracts.

CER/ERU contracts

In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the carbon risks. In such contracts, payment is typically being made upon delivery into national registries, and the buyer is immune to (upstream) carbon-risks.

For project developers, the advantage is that CERs/ERUs obtain a better price than VERs, which could be the contract of choice for those developers that can assume the additional risk.

In CER/ERUs contracts, delivery risk is mostly borne by sellers who in some cases have to purchase replacement CERs, should they default on contracts.

Pricing of EU Allowances vs. CERs /VERs

Project sponsors and other stakeholders often compare CER or VER prices to that of EU Allowances, questioning why the latter are priced significantly higher. The fundamental reason for the price difference is due to the fact that the two markets, i.e. CER/VER and EUA markets are different. More detail is described below:

- i) EU Allowances traded in the EU Emissions Trading Scheme (EU ETS) do not carry **delivery risks**⁶ unlike VERs or CERs – by virtue of them being issued by national governments under a cap and trade system. EUAs are homogeneous assets, and as a result, the spread of prices for EUAs at any point in time is small (generally less than 10 cents between bid and offer prices)⁷.

Throughout 2004, EUAs traded between 7 and 9 Euros⁸. However, by July 2005, EUA prices had risen to more than 28 Euros, with a decline to 20 Euros a month later⁹. This anomalous spike is commonly attributed to short-term demand and supply considerations (including the cold winter in Europe leading to higher emissions from coal and gas consumption, the lack of supply of EUAs for the trial phase of the EU ETS, i.e. 2005-2007). It is expected that EUA prices will stabilize over time, with more experience and additional supply.

⁶ Delivery risk: the risk that Emission Reductions from the project are not generated as indicated in the contract, i.e. the project under-delivers.

⁷ State and Trends of the Carbon Market, 2005; World Bank Carbon Finance Business and International Emissions Trading Association, Washington DC

⁸ Ibid.

⁹ www.pointcarbon.com

- ii) CERs and ERUs are generated by projects that produce measurable reductions in greenhouse gases. To qualify, these projects must be registered by the CDM Executive Board or the JI Supervisory Committee, and ERs issued by the respective regulatory bodies. Unlike EU Allowances, there is significant **lead time, cost and uncertainty** involved with the generation of CERs/ERUs as projects need to be implemented, made operational and continuously monitored¹⁰.

Although CERs/ERUs are yet to be issued (as indeed the JI Supervisory Committee has not yet been established), buyers are still interested in purchasing CERs/ERUs in forward contracts as these assets are Kyoto-compliant. While the buyers of CERs/ERUs do not assume the risk that a project's ERs will not be Kyoto-compliant, they still assume other substantial risks: **carbon specific risks and project risks, including credit and counterparty risks** (as described earlier). These risks relate to the fact that they involve the seller's commitment to deliver an asset that does not yet exist, so there is substantial risk that the project will fail to actually deliver the expected CERs/ERUs. As in other markets, buyers discount such risks by paying lower prices at the time of contracting (as they cannot be sure that they will receive the asset in the future); the price also reflects the likelihood that the seller will actually deliver.

Between January 2004 and April 2005, CERs traded between US\$3 and US\$7.15/tCO₂, with a weighted average of US\$5.63¹¹. ERUs traded between \$4.57 and \$7.20, with a weighted average of \$6/04. Several factors account for this wide range of prices for nominally similar assets, notably: delivery risk, guarantees from the seller or a third party (e.g. parent company, insurer, bank), and creditworthiness of the seller or guarantor. Prices therefore vary according to carbon-specific risks, project risks, and contractual terms. As projects begin to deliver CERs, spreads for *issued* CERs is likely to narrow, with the key differences among *issued* CERs being whether they are also eligible under the EU-ETS.

- iii) Fungibility with the EU ETS: Delivered CERs/ERUs eligible for crediting under the EU-ETS are likely to trade at prices competitive with EUAs. There remains significant uncertainty, however, with regard to the **eligibility of CERs/ERUs in the EU Emissions Trading Scheme**, and their **conditions for transferability** into the EU ETS, as many national governments have yet to clarify these rules. In addition, it is also unclear when the International Transaction Log, the electronic platform that will allow CERs/ERUs to be transferred into the EU ETS will be fully operational. Thus, the lack of complete fungibility between the two commodities is another significant factor that contributes to the difference in prices between CERs/ERUs versus EUAs.

It is clear that the supply of CERs/ERUs during the first phase of the EU ETS (2005-07) will be fairly limited, given lead times and the few projects that have

¹⁰ VERs are also generated from projects, but unlike CERs, the project does not need to be registered with the CDM EB although both VERs and CERs require (positive) verification by Designated Operational Entities. There is however, still significant lead time in the generation of VERs or CERs.

¹¹ State and Trends of the Carbon Market, 2005; World Bank Carbon Finance Business and International Emissions Trading Association, Washington DC

succeeded in obtaining registration from the CDM EB to date. In addition, some classes of CERs/ERUs are excluded¹², for example CERs from LULUCF projects¹³. A revision of the Linking Directive for the second phase of the EU ETS is being undertaken by the European Commission (the second phase of the EU ETS is concurrent with the Kyoto Protocol's first commitment period, 2008-12), and it is possible that more classes of CERs will be opened to the EU ETS.

- iv) Like CERs and ERUs, VERs are also project-based, but unlike CERs or ERUs, they have not undergone registration (e.g. by the CDM Executive Board). Buyers of VERs assume the same risks as those of CERs/ERUs, but in addition, they also assume "regulatory" risks associated with the possibility that they may not be able to use the VERs against their regulatory or international targets if they are deemed not to be in compliance with national or international standards (i.e. if the VERs are not ultimately registered as CERs or ERUs). This **additional regulatory risk of VERs** is also discounted by buyers.

Between January 2004 and July 2005, VERs traded between \$3.6 and \$5, with a weighted average of \$4.23.¹⁴

As for CERs/ERUs, prices for VERs vary according to carbon-specific risks, project risks and contractual terms. The spread between CER/ERU and VER prices is more narrow for projects that use approved methodologies and appear likely to be registered (although the latter is difficult to determine at this point due to the limited number of projects registered so far).

¹² With respect to large-scale hydro projects, the EU has not excluded CERs from such projects, but has provided that these projects should be assessed in accordance with certain international criteria. Specifically, the linking directive states that: "*In the case of hydroelectric power production project activities with a generating capacity exceeding 20 MW, Member States shall, when approving such project activities, ensure that the relevant international criteria and guidelines, including those contained in the World Commission on Dams November 200 Report "Dams and Development - A New Framework for Decision-Making", will be respected during the development of such project activities.*" (New article 11(b)). In addition, the linking directive also states that the Commission report on the application of the directive (expected in 2006) should also consider "the impact of project mechanisms on host countries, particularly on their development objectives, whether JI and CDM hydroelectric power production project activities with a generating capacity exceeding 500MW and having negative environmental or social impacts have been approved, and the future use of CERs or ERUs resulting from any such hydroelectric power production project activities in the Project scheme." (Article 30(2) (l)).

¹³ The most recent EU Linking Directive (Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004) which amended a 2003 directive states that the EU will not recognize CERs from LULUCF projects or nuclear projects (new article 11(a) - see para 3).

¹⁴ State and Trends of the Carbon Market, 2005; World Bank Carbon Finance Business and International Emissions Trading Association, Washington DC. Also, based on relative risks, one would expect VERs to trade at a discount to CERs for similar assets, and that the overall spread of VER prices to be lower than for CERs. However, the World Bank Carbon Finance Business was one of the only buyers of VERs (until 2005), and hence VER prices primarily reflect the Bank's risk evaluation. Also, the contractual provisions of the Bank's ERPA are not very varied, in comparison to the larger size of the CER market and the variation among contractual provisions and the risk of the underlying projects and sponsors.

World Bank Pricing Guidelines

What differentiates the World Bank from other buyers in the market is essentially related to the Bank's role in promoting market development.

World Bank Carbon Funds (CF) do not compete only on prices. For a project to be included in a World Bank carbon fund pipeline, it must be consistent with the strategic priorities of Carbon Finance of the World Bank. In other words, the inclusion of a project into the Carbon Fund pipeline is based on its alignment with the Bank's strategic goals and not on whether there are competing price offers for the project. Strategic objectives include:

- (i) developing carbon assets in technologies or countries that have yet to benefit from carbon finance;
- (ii) developing carbon assets in sectors, using a programmatic approach or in activities of large scale where Bank intermediation is key to opening the market or bringing the project to the market; and
- (iii) promoting synergies between carbon finance, sustainable development and poverty alleviation.

If a project does not meet one of the above strategic objectives, but meets all other criteria for an eligible CDM activity, the Bank is willing to make an offer as a "buyer of last resort", essentially encouraging a project developer to market projects to other buyers for a limited time, and thus promoting market development.

If a project does meet the strategic objectives of the Bank, CFB will:

- Offer "market prices" for the emission reductions from the project as determined at the time of signing the Emissions Reductions Purchase Agreement. The market price is adjusted by CF as required on a monthly basis to reflect market signals; and
- CF will encourage the seller to make an informed decision based on sufficient understanding of the relative risks and price trade-offs of selling VERs vs. CERs.

When a project does not contribute significantly to meeting the strategic objectives and the Bank makes an offer to the seller as "buyer of last resort", the seller is encouraged to seek a better offer from the market; the Bank's offer to purchase expires if the seller receives an equal or better offer.

Why World Bank prices for Carbon are sometimes lower than prices offered by other buyers in the market.

A key aspect of the Bank's assistance through the Carbon Funds is that Participants are prepared with Bank intermediation to take risks that, even today, developing country project sponsors, public and private sector buyers, and project financiers are unwilling to take.

For example,

- i) Participants in most Carbon Funds are willing to take carbon-specific/regulatory risks. When the World Bank Carbon Funds purchase **Verified Emission Reductions**, payment is made regardless of the outcome of subsequent regulatory review of whether such assets fully meet compliance standards and are converted to Certified Emission Reductions. In this case, the Bank seeks to maximize the share of VERs that become CERs/ERUs through its due diligence and its thorough work on methodology¹⁵ development, and by reserving all rights to communicate with the Executive Board (and ultimately the Supervisory Committee) to effect the maximum feasible conversion of VERs to CERs/ERUs for distribution to Fund Participants. As a result, Fund Participants assume the risk that the VERs are not converted to Kyoto-compliant assets, and incur possible unanticipated time delays associated with converting VERs to CERs/ERUs. Further, by paying on delivery of VERs regardless of the outcome of the Executive Board's rulings, the Bank's Emission Reductions Purchase Agreements (carbon finance, essentially) can be taken as collateral by lenders and may increase the availability of project finance and the likelihood of financial closure of the underlying climate-friendly projects.

The vast majority of other buyers purchase on delivery of CERs/ERUs into national registries.

- ii) The World Bank encourages informed decision-making and offers sellers the choice on whether to enter into VER contracts or CER contracts after taking into account the sellers' need for the higher price that CERs obtain, certainty in payments and appetite for risk.
- iii) Bank-managed carbon funds¹⁶ typically buy **beyond 2012**¹⁷ with the expectation that only 60-70% of the VERs can be delivered by 2012 (less as time passes); the vast majority of other buyers only buy up to 2012 vintages. Prices are discounted accordingly.
- iv) A strategic goal of the World Bank is to contribute to **the knowledge of carbon asset creation**. In line with this, the Bank invests heavily in exploring new markets, new technologies and processes where carbon finance can drive sustainable development and poverty alleviation. It **funds upstream project and methodology development**, and accompanies project sponsors in this effort in order to build capacity. In order to increase the number of different kinds of projects that the CDM can support, the Bank is prepared to advance funds for project preparation, including for preparation and defense of new methodologies at its own risk.

¹⁵ Each CDM project is described in a "Project Design Document", and the method used to determine the baseline against which reductions are calculated, is described in a "**methodology**". Each methodology represents – and is specific to – a certain type of project; with the exception of a few methodologies that have been consolidated to be applicable to several types of projects in a given sector.

¹⁶ With the exception of the Danish Carbon Fund and the Netherlands Clean Development Facility.

¹⁷ The Kyoto Protocol requires Parties to reduce their emissions by 5% of 1990 levels during the period 2008-2012, or the "first commitment period". What happens after the first commitment period is uncertain; this depends on international negotiations to create a regulatory agreement beyond 2012. Therefore, the lack of a regulatory framework beyond 2012 adds to market uncertainty and makes carbon finance additionally risky.

If project sponsors decide to unilaterally withdraw from the transaction, the Bank only claims compensation under the terms outlined in the Letter of Intent¹⁸.

It should be noted that preparation costs under the World Bank could be higher than other buyers because of the additional rigor associated with environmental, social and financial due diligence requirements. However, the due diligence significantly lowers the risk that the project's environmental and social impacts are not mitigated.

- v) As part of its commitment to market development, the Bank develops and manages programs and large projects in return for only a **small proportion** of the total emission reductions generated by the project (say 30-40%). This allows the sharing of high-quality, risk free assets that sellers may then benefit from assuming market upsides, i.e. obtaining potentially higher prices from other buyers on the best available terms.
- vi) Depending on the circumstances of the project, the Bank is willing to consider **up front finance** against appropriate guarantee structures to help mobilize investment for underlying projects.
- vii) The Bank is open to purchasing only a portion of emission reductions in specific deals (especially for projects with large ER volumes), to allow sellers to find other buyers in the market, in particular for pre-2012 vintages. If warranted, another buyer may be sought during the negotiation of an emission reduction purchase agreement.

For LULUCF projects, the World Bank uses a combination of careful project selection and risk mitigation techniques to ensure that projects deliver long-lived sequestration, minimize disturbances and unplanned management actions and generate 1/tCERs that are equivalent to VERs/CERs from emission reduction projects. World Bank prices for 1/tCERs assume 'quasi-permanence', and the full price is paid when the sequestration is achieved. The Bank does not differentiate between prices for tCERs and ICERs.

Price formation for 1/tCERs is a positive function of co-benefits or negative function of risks. In other words, a tentative price is indicated at the time of project selection and subsequently raised against co-benefits generated, or discounted against risks, depending on the performance of the project and the likelihood of replacement.

In addition, **replacement credits**, in the form of CERs, would be contracted during 2005-2007 at appropriately discounted prices and sourced from emission reduction projects within the Bank's portfolio for delivery after 2012.

¹⁸ The "Letter of Intent" is a World Bank document that – amongst other things – indicates to the seller that the World Bank intends to purchase the C/VERs. The letter includes an indicative price, delivery time period, and other terms of engagement with the Bank.

Changing Market Conditions that Affect Prices

Declining regulatory risk: Regulatory risk has declined over the past two years, and will continue to decline with experience and more projects. This has had, and will continue to have, an effect on prices.

As the CDM Executive Board approves methodologies (for specific project activities) and consolidates methodologies (for different project activities but pertaining to the same type of project/sector), regulatory risk of projects seeking to achieve CDM registration reduces as project developers may begin to start using pre-approved methodologies rather than submitting new ones and wait for approval. As more methodologies for different types of projects get approved, the risk associated with CDM registration will continue to decline. Some risk will remain, however, until projects (and later its CERs) are registered.

Note that even though there is a consolidated approved methodology for renewables, the risk with these types of projects has not really declined because of (a) difficulty with data and estimating the build and operating margins in developing country electricity grids, and (b) complexities associated with the application of the additionality tool.

17 September, 2005

GLOSSARY

Participants: are investors in the World Bank Carbon Funds, comprising of governments and private sector. World Bank Carbon Funds purchase V/CERs and ERUs.

Annex I countries: Annex I of the UNFCCC lists the countries that were members of the OECD in 1992, 11 countries undergoing the process of transition to a market economy, and the European Economic Community (at the time). Annex I parties are committed to adopt national policies and take measures to mitigate climate change.

Non-Annex I countries: are countries not included in Annex I of the UNFCCC. Non-Annex I countries do not currently have binding emission reduction targets.

Buyer of last resort: in a continual endeavor towards market development, and depending on CFB's strategic priorities, the World Bank encourages project developers to seek other buyers in the market for better offers, failing which the Bank offers to purchase the Emission Reductions as a last resort.

NOTES

1. Prices and information contained in this note reflect the status at the time of writing (September 17, 2005) and may not reflect the latest trends in the market. However, the World Bank will endeavor to update this document as frequently as required.

2. This Implementation Note reflects the viewpoints of the World Bank Carbon Finance Business as a trustee of the Carbon Funds; it does not reflect each Participant's viewpoint or Participants' purchasing policies outside the World Bank. Further, it is written in so far as the Bank's own experiences in purchasing CERs, VERs and ERUs. AAUs and RMUs have not been elaborated in detail. EUAs have been explained only to make meaningful risk and price comparisons with the other commodities.

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