World Bank experiences in contracting for emission reductions

Christopher Carr, Flavia Rosembuj

Senior Legal Counsel, World Bank[1]

Since the creation of the first World Bank carbon fund over seven years ago, the World Bank carbon business has undergone a number of innovations. In July of 1999, the Executive Directors of the World Bank[2] approved the establishment of a Prototype Carbon Fund (PCF)[3] to promote buying carbon emission reductions in developing countries and countries with economies in transition. This came after years of analytical work[4] framed by the United Nations Framework Convention on Climate Change (UNFCCC)[5]. The PCF has, in many respects, been the pioneer of the global carbon market, piloting transactions several years before the Kyoto Protocol to the UNFCCC entered into effect[6] and acting as a 'role model' for other similar funds that have been launched by the World Bank itself (Carbon Funds), other international financial institutions and the private sector.

The basic concept of the PCF was simple. It collected contributions from both public and private sector entities and used those funds to facilitate projects that reduce greenhouse gas (GHG) emissions. The emission reductions so generated are then distributed to the entities that contributed to the fund pro rata based on the amount of their respective contributions.[7] The basic concept was fully endorsed by the 17 private entities and six governments that contributed US$180 million to the PCF. Soon after the PCF became operational in 2000, it entered into its first emissions reductions purchase agreement (ERPA). To date the PCF has identified, on behalf of the fund participants, emission reducing projects ranging from biomass and small hydro to energy efficiency and conservation in over 15 countries.

In the World Bank, over the past seven years, carbon finance has grown from the PCF to include 10 Carbon Funds,[8] with a total capitalization of approximately US$2 billion.[9]

The Carbon Funds largely focus on compliance interests in the first commitment period (2008–2012) established by the Kyoto Protocol. However, in addition to focusing on compliance obligations, the World Bank has created the Community Development Carbon Fund to allow countries in the poorest regions of the world to benefit from opportunities created by carbon markets, by delivering demonstrable additional sustainable development benefits in addition to emission reductions. Similarly, the World Bank established the BioCarbon Fund to demonstrate opportunities in biological carbon sequestration, and the BioCarbon Fund is still the pre-eminent buyer of assets from land-use and forestry projects worldwide. Additionally, the World Bank has expanded the market beyond generating emission reductions under the current limits of the Kyoto Protocol, including through purchases of emission reductions that are generated post 2012.

1 The views expressed in this article are the views of the authors and do not necessarily represent the views of the World Bank.

2 The World Bank Group is comprised of five associated institutions: the International Bank for Reconstruction and Development (IBRD or World Bank), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA) and the International Centre for the Settlement of Investment Disputes (ICSID). The IBRD is the relevant entity for the purposes of this article.

3 Based on Resolution No 99–1 of the board of directors of the IBRD.

4 D Freestone 'The World Bank's Prototype Carbon Fund: Mobilizing New Resources for Sustainable Development' in Schlemmer-Schulte et al (eds) *Liber Amicorum Ibrahim F. I. Shihata* 265 (Kluwer Law International The Hague 2001).

5 UN Doc Distr General A/AC. 237/18 Part II/Add.1 15 (May 1992) available at http://unfccc.int/resource/docs/convkp/conveng.pdf.

6 The text of the Kyoto Protocol was adopted at the third session of the Conference of the Parties to the UNFCCC in Kyoto, Japan on 11 December 1997. The Kyoto Protocol entered into force on 16 February 2005, available at http://unfccc.int/resource/docs/convkp/kpeng.pdf.

7 D Freestone 'The UN Framework Convention on Climate Change, the Kyoto Protocol and the Kyoto Mechanisms' in D Freestone and C Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms* (Oxford University Press New York 2005).

8 Since the establishment of the PCF, the Bank has also agreed to administer country carbon funds for the Dutch Government, as well as the Danish, Italian and Spanish Governments and companies incorporated therein.

9 In addition to the country carbon funds, the Bank established the Community Development Carbon Fund on 25 March 2003, the BioCarbon Fund on 11 September 2003, the Umbrella Carbon Facility on 1 December 2006 and in cooperation with the European Investment Bank, the Carbon Fund for Europe in November 2006.

The World Bank's carbon finance activity has, since 1999, created business models and examples that have been followed by governments and the private sector. In December 2005 the Executive Directors endorsed the World Bank's approach for further engagement in carbon finance,[10] which includes three clear objectives for the carbon finance activity as it matures: (i) to ensure that carbon finance contributes to sustainable development; (ii) to assist in building, sustaining and expanding the international market for carbon emission reductions; and (iii) to strengthen further the capacity of developing countries to benefit from the emerging market for emission reduction credits.

Furthermore, from a prototype operation, the World Bank's activity and its involvement in the carbon market is now also emerging into the mainstream of the World Bank's lending program. Operationally, the carbon finance program supports the objectives of the second pillar of the World Bank Clean Energy Investment Framework,[11] by providing incentives for transitioning to a low-carbon economy in the World Bank's client countries. The Clean Energy Investment Framework has estimated the scope of the energy and climate problem, putting into context the contributions of carbon finance for clean energy and climate change mitigation.

This article is divided in two parts. The first highlights innovations in the role played by the World Bank as 'buyer' of emission reductions and the second discusses new trends in World Bank ERPAs. This article is not intended comprehensively to treat the legal issues that the World Bank confronted in setting up the Carbon Funds nor all matters arising regarding ERPAs; rather, this article shares some of the recent lessons learned by the World Bank as trustee of the Carbon Funds in entering into carbon transactions.

Innovation in governance of the Carbon Funds and structuring of projects

World Bank-administered trust funds foster partnerships by mobilizing and directing resources to support poverty reduction across a wide range of sectors and regions, thereby supporting the achievement of development results at the global, regional and country levels. Trust funds support development activities or programs with administration by the World Bank and contributions from one or more donors. Donors may include many World Bank member countries, the private sector, foundations and non-governmental organizations and some of the World Bank's own resources. Trust funds have experienced robust growth in various regions and sectors. Much of this growth responds to the international community's desire for the World Bank to help manage broad global initiatives through multilateral partnerships, such as the Global Environment Facility; the Heavily Indebted Poor Countries (HIPC) Initiative; the Global Fund to Combat AIDS, tuberculosis and malaria; the Global Environment Facility and the Carbon Funds.[12]

The PCF represented a new type of business for the World Bank where public and private participants had a strong desire to be actively involved in a fund's management, and where a fund had a goal of generating measurable returns (in the form of emission reductions) for the trust fund's contributors.[13] This meant creating a governance structure for the PCF, within which the interests of the fund participants were expressed, reconciled and given effect. The intricate governance structure created for the PCF was new territory for the World Bank. Although the World Bank was used to acting as a trustee (and, indeed, it is now serving as trustee to almost 1000 trust funds, holding over US$12 billion in trust), it often had broad discretion to administer the funds placed with it under standard trust agreements, which usually contained broadly worded objectives.

Supervisory and management tools and controls similar to the PCF have been included in other Carbon Funds, with the exception of the Umbrella Carbon Facility (UCF). Even the Dutch Government, which has entrusted the World Bank with two different carbon facilities, still maintains an active participation in governance.

As opposed to the rest of the Carbon Funds, participants in the UCF do not have control over the fund's management. The World Bank, as trustee of the UCF is solely responsible for the governance of the UCF and the instrument creating the UCF does not establish any form of participation by the donors other than by contributing to the relevant tranche where they wish to participate. The World Bank, as

10 The Role of the World Bank in Carbon Finance: An Approach for Further Engagement, December 2005, available at http://carbonfinance.org.

11 An Investment Framework for Clean Energy and Development: A Progress Report, September 2006, http://siteresources.worldbank.org/EXTENERGY/Resources/336805-1156971270190/AnInvestmentFrameworkforCleanEnergyandDevelopment.pdf.

12 See 2006 Trust Funds Annual Report from the World Bank available at http://www-wds.worldbank.org.

13 See S Smyth 'The Prototype Carbon Fund: a New Departure in International Trusts and Securities Law' (2005) V(2) Sustainable Development Law & Policy at 28.

trustee of the UCF, pre-identifies the recipients of the trust fund monies, by pre-identifying the project or projects specific to a given tranche, and reports annually to the contributors on how the funds have been used.

The World Bank started carbon finance by pursuing a portfolio of GHG emission reduction projects to which it offered carbon financing. To create a carbon market, the World Bank paired demand for emissions reductions by Carbon Fund participants with supply from project sponsors. As more buyers emerged and the market became more liquid, the role of the World Bank on the side of buyers has become less relevant in some sectors.

However, the World Bank has continued to innovate in order to assist market participants in realizing the benefits of carbon finance. The UCF has aggregated multiple sources of funding, including from the World Bank's existing Carbon Funds and other buyers who were not fund participants, to purchase carbon emissions from large, pre-identified projects on behalf of governments and private firms. The first tranche of the UCF includes two large HFC-23 destruction transactions in China, which together were the largest carbon purchase and showed the possibility of scaling up a purchase of emission reductions. The World Bank's China HFC-23 emissions reduction projects will finance the purchase of approximately 19 million tons of carbon dioxide equivalent per year of emission reduction credits through ERPAs with two chemical companies in China.

Notably, under the terms of the HFC-23 ERPAs, the two companies will not receive the full value of the revenues earned from the sale of the emission reductions. As a condition for participating in the purchase, the World Bank assisted the Government of China on a major policy initiative to create a unique revenue-sharing feature whereby 65 per cent of the proceeds from the transaction will be channeled to a special facility, the Sustainable Development Facility, that contributes to sustainable development activities in China. This revenue sharing is also applicable to all other Kyoto Protocol transactions in China, regardless of the buyer, with different degrees of revenue sharing applying to different sectors (for instance, the revenue sharing is lower for renewable energy projects than HFC projects, in light of the different levels of contribution to the local sustainable development). In this way, the projects will meet the objectives of the Kyoto Protocol by contributing to sustainable development benefits by channeling carbon revenues back into climate change activities.

The UCF represents a shift from the previous approach undertaken by the World Bank, from pursuing portfolios of individual projects on behalf of emission reduction purchasers, to actively helping sellers to gain access to the market by structuring strategic transactions. This trend may be confirmed in the future with the World Bank engaging in other tranches of the Umbrella Carbon Facility or other innovations fully to realize the potential of the carbon market.

Recent World Bank ERPA trends

As the World Bank pioneered the development of carbon funds, it has also helped spur the development of ERPAs. An ERPA is a specialized form of purchase and sale agreement for the acquisition of what can be considered as a relatively new type commodity – an emission reduction.[14] World Bank ERPAs have assisted in showing the possibilities of environmental markets. ERPAs assign value to environmental benefits and can encourage new capital commitments to bring about those benefits.

The World Bank ERPAs have undergone various developments since the inception of the carbon market. Early PCF ERPAs took cues from project finance agreements and World Bank loans and credits, providing varying amounts of up-front financing in return for rights to the future delivery of emission reductions.

However, the Bank soon refined a 'payment on delivery' ERPA approach, whereby payment is principally made on the future delivery of emission reductions.[15] Even in this 'payment on delivery' paradigm, the Bank has retained the ability to offer some up-front financing that can be offset against future payments for delivered emission reductions, in order to facilitate developing the project that reduces GHG emissions. This approach is designed in part to assist rather than 'crowd out' the private sector, by making available private sector opportunities to provide financing.

VER contracts – contracting for a regulatory asset amidst regulatory uncertainty

Notably, the PCF began purchasing emission reductions roughly five years before the February 2005 entry into force of the Kyoto Protocol. However, even these initial PCF ERPAs were designed to catalyze the generation of emission reductions that, depending on the success of these pioneering transactions, could ultimately be converted into

14 See Freestone (n 4) 281.

15 See eg World Bank 'General Conditions Applicable to Verified Emission Reductions Purchase Agreement' dated 1 February 2006, available at http://www.carbonfinance.org (VER General Conditions).

Certified Emission Reductions (CERs) under Article 12 of the Clean Development Mechanism.[16]

To purchase an emission reduction 'asset' the value of which largely stems from a still-developing regulatory program, the PCF structured its purchases around 'Verified Emission Reductions' (VERs). These VER contracts generally define 'emission reductions' as all existing and future legal and beneficial rights arising from one GHG reduction, including the right to any CERs arising from that GHG reduction.[17] In doing so, the contracts seek to capture the future regulatory rights that arise from the physical act of reducing emissions. Under these contracts, the World Bank agrees to make payment for emission reductions as 'verified' against a contractually agreed upon monitoring protocol. Once a project becomes registered by the CDM Executive Board, any necessary adjustments to the monitoring protocol are made, to maximize the delivery of CERs from the project.[18]

VERs contracts can significantly catalyze environmental markets in uncertain regulatory environments. Although the Kyoto Protocol is the typical driver of value in a carbon transaction, a VER contract allows the parties to create, transfer and pay for emission reductions amidst regulatory uncertainty.

With the entry into force of the Kyoto Protocol, many market players focused on purchasing CERs – ie signed contracts that only paid for a 'compliance grade' asset. In other words, payment would only be made for the delivery of CERs that have been issued by the CDM Executive Board. Under these 'CER contracts', the seller bears the risk of the project not producing CERs, including the risk of a project never being approved by the CDM Executive Board.[19]

Even after the entry into force of the Kyoto Protocol, the Bank continued to use VER contracts, as well as CER contracts, to allow maximum flexibility to sellers interested in contracting with the Bank and to help sellers develop difficult projects and new methodologies. VERs have also become significant as the Bank enters into purchases for emission reductions delivered after the Kyoto Protocol first commitment concludes in 2012. World Bank funds buying emission reductions for post-2012 delivery can contribute to market stability, providing continuity between the Kyoto and any post-Kyoto regimes in the evolution of the global carbon market.[20] This can be particularly true where projects need a revenue stream for more than the approximately five years remaining in the first commitment period. To accomplish the goal of post-2012 purchases, the approach the Bank has usually followed is hybrid purchases, including the purchase of CERs for emission reductions delivered until 2012, and purchases of VERs thereafter.

In this regard, VER contracting has come full circle. Whereas VER contracts allowed for the purchase of emission reductions *before* the Kyoto rules were fully developed, they also provide for the ability to purchase emission reductions *after* the first commitment period ends in 2012. In the post-2012 world, payment can still be made against emissions that are verified according to a predetermined monitoring plan as agreed between the contracting parties – with the possibility, as before, that the buyer could obtain whatever compliance value might arise from those GHG reductions.

Standardized conditions – VERs and CERs; risk and pricing

In 2005, the Bank developed standardized 'General Conditions' that apply to its agreements. A short negotiated ERPA, which incorporates by reference the General Conditions, contains transaction-specific terms such as price, volume, conditions precedent, delivery schedule, and representations, warranties and covenants. The World Bank has separate General Conditions for both VER and CER contracts. The use of General Conditions increases the transparency of transactions, increases fairness by offering comparable terms to all sellers, and reduces transaction costs and negotiation time by having standardized terms. In its effort to build market capacity and increase transparency, the World Bank's General Conditions are publicly available on its carbon finance website.[21]

16 Joint implementation projects under art 6 of the Kyoto Protocol generate emission reductions known as 'Emission Reduction Units' (ERUs). Because the CDM market has been more active than the JI market in terms of the number of transactions and overall volume of emission reductions generated, this article refers to the CDM market. However, many of the contracting principles are comparable for JI ERPAs.

17 See eg the definition of Emission Reductions at Section 2.01 of the VER General Conditions.

18 The CDM Executive Board supervises the CDM, under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (COP/MOP). For additional information, see http://cdm.unfccc.int/EB/background.html.

19 The UNFCCC website contains a wealth of information regarding the development status of various projects, as well as reference material. See eg http://cdm.unfccc.int/index.html.

20 The Role of the World Bank in Carbon Finance: An Approach for Further Engagement.

21 See http://www.carbonfinance.org. Standardized conditions have also been developed by the International Emission Trading Association, and the Bank has assisted in at least one other third-party effort to build market capacity through the development of standardized terms. Although ERPAs contain many standard provisions, variations in project risk and buyer and seller preferences continue to lead to different contracting approaches

Both CER and VER contracts have provisions common to purchase and sale agreements, such as delivery and payment terms, definitions, events of default, remedies for those defaults, representations and warranties, and termination events. However, ERPAs also contain terms that are unique to the carbon asset. Two broad categories of risk exist in ERPAs: the 'project risk' that relates to the physical activity occurring that reduces or sequesters emissions, and the 'Kyoto risk' that goes to the regulatory status of those emission reductions.

One constant in both World Bank CER and VER contracts is that the seller bears the 'project risk': the risk that the agreed-upon physical activity will take place, be it capping a landfill, improving energy efficiency or some other activity that reduces or sequesters GHG emissions.[22] This allocation of project risk is based on the seller being best-positioned to assess and bear project risk.

However, significant differences in 'Kyoto risk' allocation can be seen between the World Bank VER and CER contracts. Under the VER General Conditions, the buyer (the World Bank acting as trustee of a carbon fund) bears the risk that the project may not be registered, and will make payment based on the agreed upon monitoring protocol if the registration does not occur within a specific time period. Furthermore, under the VER General Conditions, the Bank bears the risk if the agreed-upon methodology is not approved by the CDM Executive Board, and a less favorable methodology is applied to the project. By comparison, in a CER contract, the seller would bear these risks.[23]

Another crucial issue in ERPA contracting regards the remedies that are available if a seller breaches its obligations under an ERPA. Both the World Bank VER and CER General Conditions provide for three remedies in the event of a seller's unintentional failure to deliver the contracted-for emission reductions: (i) allow delivery in subsequent years, (ii) convert the amount of emission reductions subject to a delivery failure to a call option, or (iii) if, and only, if, the delivery failure persists for three consecutive years or in any of the last three years of the contract, terminate the ERPA and recover the World Bank's costs.[24] Notably, the World Bank forgoes the right to terminate for just one or two years' delivery failure, as long as the breach is not an intentional breach.[25] Rather, there must be a continuing delivery failure in order for the World Bank to have the right to terminate. The intent behind this approach is to enhance the income flow stability to the seller, to allow it to obtain financing for the project.

By comparison, some CER contracts by other buyers require the seller to guarantee delivery. Under such guarantees, if the seller fails to deliver emission reductions from a project, it must deliver CERs from a different source to the buyer. Guarantee provisions have the potential of converting an ERPA from an asset to a liability for the seller. This would occur if a project fails to deliver emission reductions and the seller incurs higher costs for obtaining those emission reductions from a different source. However, sellers that offer guaranteed delivery can obtain significantly higher prices.

Other provisions unique to ERPAs as compared with other purchase and sale agreements also exist, and differing approaches to these unique provisions can be seen in the World Bank General Conditions. For instance, ERPAs should allocate the responsibility between buyer and seller for paying for the 'share of proceeds' required to fund certain CDM administrative expenses and adaptation measures.[26] Under the VER General Conditions the buyer pays the share of proceeds, while under the CER General Conditions the seller pays the share of proceeds.[27] This allocation mirrors which party is expected to bear the regulatory risks involved in developing a Kyoto-compliant project.

Another issue unique to carbon contracts is determining who is the 'focal point' responsible for communicating with the CDM Executive Board regarding how CERs issued by a project are allocated among project participants.[28] In projects involving multiple buyers, the choice of focal point

across the spectrum of buyers and sellers. The future is likely to continue to see some convergence in contracting terms, although varying project activities and approaches to risk making cookie-cutter contracts unlikely to be imminent in the wider market.

22 See the VER General Conditions and the 'General Conditions Applicable to Certified Emission Reductions Purchase Agreement' dated 1 February 2006 (CER General Conditions) available at http://www.carbonfinance.org.

23 ibid.

24 See Section 13.03(a)(i) of the CER General Conditions and Section 13.03(a)(i) of the VER General Conditions.

25 Both the CER and VER General Conditions provide for more stringent remedies in the event of an intentional breach.

26 See UN Doc FCCC/KP/CMP/2005/8/Add.1, Annex to Decision 3/CMP.1, para 66. The adaptation fee includes a 2 per cent deduction from CERs issued for projects (except those located in Least Developed Countries). The fee for the share of proceeds for administrative costs is calculated as US$0.10 per CER issued for the first 15,000 tonnes of CO_2 equivalent for which issuance is requested in a given calendar year and US$0.20 per CER issued for any amount in excess of 15,000 tonnes of CO_2 equivalent for which issuance is requested in a given calendar year. See eg Report to the twenty-third meeting of the Executive Board, Annex 35.

27 See Section 5.05 of the CER General Conditions and Section 5.05 of the VER General Conditions.

28 See the definition of 'Request for distribution of CERs' and related definitions in the Glossary of CDM terms available at http://unfccc.int.

Table 1: Sample World Bank VER and CER Contract Terms

Allocation of Kyoto risk/obligation	VER General Conditions	CER General Conditions
Methodology risk – methodology change from ERPA signing reduces ERs generated	Buyer	Seller
Registration risk – project not registered	Buyer	Seller
Share of proceeds – who pays	Buyer	Seller
Focal point – who communicates with Executive Board	Buyer	Buyer/subject to negotiation

and their communication rights can be significant regarding who controls the disposition of the carbon asset. Table 1 identifies several terms that highlight differences in allocating risks and responsibilities between World Bank VER and CER contracts.[29]

In sum, the allocation of risk, rights and responsibilities in ERPAs can have a significant impact on carbon pricing. For instance, in 2006, CER prices averaged above US$10.00, but according to one study a significant range in CER prices existed from around US$6.00 to up to US$24.00.[30] Thus, CER prices exist along a wide band, indicative of the significant variety in risk between projects, be it project risk, the choice of remedies, the existence of a delivery guarantee, or some other allocation of risk. Further reflective of the importance of risk in emission reductions pricing, average CER prices in 2006 were demonstrably higher than VER prices.[31]

Conclusion

Since the entry into force of the Kyoto Protocol in 2005, the carbon market has experienced tremendous growth from a prototype market to one measured in the tens of billions of dollars. Spearheaded by the pioneering Carbon Funds of the World Bank including the PCF, the market has expanded to include a wide variety of project types and market participants.

Acting as trustee for 10 carbon funds, the World Bank continues to innovate regarding approaches to carbon finance. Notably, one of the latest Carbon Funds created by the World Bank, the UCF, represents a shift from the previous approach undertaken by the World Bank, from pursuing portfolios of individual projects on behalf of emission reduction purchasers, to actively helping sellers to gain access to the market by structuring strategic transactions.

Regarding ERPA developments, various approaches to allocating rights and responsibilities in contracts have led to a range of prices, allowing parties to tailor risks and benefits to their particular needs. Despite the variety in purchase arrangements, there has been some convergence and standardization in contracting approaches, including in the World Bank's own General Conditions for ERPAs, allowing reduced transaction costs and increased transparency. However, varying project activities and approaches to risk make cookie-cutter contracts unlikely to be imminent in the market.

The overarching objective of the PCF was to explore how market-mechanisms could help to reduce global GHG concentrations and contribute to sustainable development.[32] Carbon finance has shown that a market-based mechanism can bring significant amounts of capital, both public and private, to address climate change, as well as to spur economic activity in, and transfer climate-friendly technology to, developing countries.

29 This article is not intended to be a comprehensive treatment of ERPA provisions, and other issues regarding ERPAs arise in these transactions. However, the terms discussed in this article demonstrate an important overarching principle: the allocation of risks, including 'Kyoto Risks', is an important facet of ERPAs that impacts the pricing of the carbon asset.

30 World Bank and IETA 'State and Trends of the Carbon Market' (October 2006) 9–10, available at http://www.carbonfinance.org.

31 ibid at 9.

32 D Freestone (n 4) 282.