

Carbon Credits – An Accounting Perspective



Over the last century, the surface temperature of the earth on an average increased by close to 1°C. This phenomenon has been termed as “Global Warming”. As per Kyoto protocol, 36 countries have committed to reduction of Green House Gases (GHG) produced by them by 2012 from the 1990 levels. Carbon credits are certificates issued to countries that reduce their emission of GHG which causes global warming. There is currently no authoritative guidance either from the International Accounting Standards Board (IASB) or Financial Accounting Standards Board (FASB) in the US for the accounting of carbon emissions and credits, although the boards have issued some guidance in the past. India is one of the countries that have credits for emitting less carbon. India and China have surplus credits to offer countries that are in deficit. China alone accounts for more than one third of the total supply of CERs in the world which makes it the world’s largest source of carbon credits through CDM, with India coming next with approximately 25% of the projects under CDM. Exchanges like the Chicago Climate Exchange, EU Climate Exchange (EUCX), and Multi Commodity Exchange of India (MCX) have developed to trading platforms for carbon credits. An attempt has been made in the article to explain the concept of carbon credits, creation and accounting aspects.



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Scientists have identified the cause as increase in greenhouse gas emissions, depletion of forests, fossil fuel and industrial emissions. Global warming has the dooming effects of melting the polar ice caps, thermal expansion of water leading to an increase in the average sea levels, depletion of the ozone cover and natural calamities like the ones caused by the El Nino system leading to incessant flooding, forest fires, droughts, etc. Sea levels have risen by 20 cm over the last 130 years and are expected to rise by 1ft to 5ft in the next 100 to 300 years, which could send parts of countries like Bangladesh, Maldives, Egypt, Kiribati, Tuvalu or even cities like Shanghai, Tokyo, Mumbai, Amsterdam, London and New York under water.

The United Nations Framework Convention on Climate Change (UNFCCC) has adopted a protocol in 1997 at the summit in Kyoto, Japan. This came into effect on 16th February 2005. As of March 2012, 191 member nations have ratified the protocol with the exception of United States which is the world's largest emitter of green house gasses. As per this protocol, 36 countries have committed to reduction of Green House Gases (GHG) produced by them by 5.2% by 2012 from the 1990 levels. The national targets, however, vary from 8% for the EU, 7% for US, 6% for Japan, 0% Russia, while others like Australia and Iceland are permitted to increase the emissions. The protocol provides for various mechanisms to control climate changes, like Clean Development Mechanism (CDM), Joint Implementation ((JI), International Emission Trading (IET).

Kyoto Protocol: How does it Work

Clean Development Mechanism (CDM): It is a project based mechanism. The credits are generated by developing emission reduction projects, or from afforestation projects in non-Annex 1 nations (developing nations). This mechanism creates new CERs which is not the case in the other two mechanisms. This, when acquired, increases the amount of eligible emissions for the Annexure 1 nations (developed nations). As a result CDM, projects must meet detailed requirements and follow the exact steps for validation, registration and verification for emission reductions. The CDM allows industrialised countries with a greenhouse gas reduction commitment to invest in emission reducing projects in developing countries as such an investment in their own countries is costly, the investment may be made in a developing country where the cost of GHG reduction project is usually much lower.

Joint Implementation (JI): This is also a project based mechanism by which a developed country with a higher GHG reduction cost invests in a project that reduces emissions or enhances the removal of carbon footprint in another developed country which has lower costs and receives credits. No new credits get created in JI; it only gets redistributed from one developed country member party to the next.

International Emissions Trading (IET): Under this mechanism, Annex 1 party may acquire or transfer Emission Reduction Units (ERU) from another party. Countries can trade in the international carbon credit

Due to the lack of any mandatory guidance on for the accounting of carbon emissions and credits, there are currently divergent accounting practices in vogue. Differences exist on the accounting for the development of the projects under CDM mechanism, generation of CERs, timing of recognition, sales and inventory valuation, etc. Currently carbon related transactions can be accounted with reference to IAS 2 (Inventories), IAS 20 (Government Grants), IAS 37 (Provisions) IAS 38 (Intangible Assets) and IAS 39 (Financial Instruments).

market to cover their shortfall in allowances. Entities in developed countries exceeding the emission limits set for them, can buy credits from entities that generate them as a result of lesser emissions.

India's Advantage

Carbon credits are certificates issued to countries that reduce their emission of GHG which cause global warming. Carbon credits are measured in units of Certified Emission Reductions (CERs). Each CER is equivalent to one tonne of carbon dioxide (CO₂) reduction. China, Brazil and India are potential beneficiaries from the newly found source of revenue. For the purpose of the protocol, a total of 36 countries have been listed in Annexure – A, which are industrialised countries who have to meet their emission reduction targets by buying GHG emission reductions in Non Annexure-1 countries of which India is a part. We need to consider only CDM as we are not in Annexure-1 for considering JI or a buyer of CERs under IET.

India is one of the countries that have credits for emitting less carbon. India and China have surplus credits to offer countries that are in deficit. China alone accounts for more than one third of the total supply of CERs in the world, which makes it the world's largest source of carbon credits through CDM, with India coming next with approximately 25% of the projects under CDM. The major projects that aid in the issuance of CERs are hydroelectric power plants, wind energy, bio mass and congregation projects. These credits are called "Carbon Offset Credits"; the other form is "Carbon Reduction Credits". These credits are gained through afforestation which traps the carbon emissions.

In total, 1.67 billion CERs will be generated from projects created in the period 2009-2012. At the current rate of € 9 per CER, this translates to approximately € 15 billion of opportunity for countries like China, India and Brazil. In May 2010, a World Bank report on carbon trading put the market in the world at approximately € 100 billion, which is mostly from Europe and Japan. It is expected that this will increase manifold, if US becomes a part of the Kyoto Protocol and is included in Annexure 1 therein. As of 2010, there were 520 registered CDM projects out of the total 2313 projects registered by the UNFCCC. The projects have potential to generate 43 million CERs annually.

The markets for carbon credits are basically of two types:

1. Compliance
2. Voluntary (mainly US)

Compliance markets have set a “cap and trade” system whereby the total annual emissions for an industry or country are capped by law, and carbon credits can be traded between businesses or sold in trading markets. Those producers who exceed their emission reductions can trade their credits to others in the market place who have not reached their emission goals. Voluntary markets exist for businesses or individuals to lower

Statistics of CDM Projects and CERs Issued as of 2011

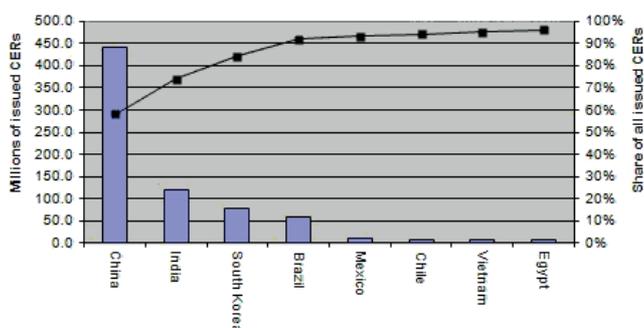
CDM project with CERs issued

CDM projects in the pipeline Type (rejected projects excluded)	CDM project with CERs issued		
	Projects	Issued kCERs	Issuance success
Afforestation			
Agriculture			
Biomass energy	158	20255	83%
Cement	9	1850	55%
CO2 usage	1	10	31%
Coal bed/mine methane	19	9059	49%
Energy distribution	1	316	83%
EE households	2	28	60%
EE industry	29	1690	82%
EE own generation	87	33408	79%
EE service	1	6	63%
EE supply side	9	1094	97%
Fossil fuel switch	37	23395	58%
Fugitive	4	8386	116%
Geothermal	5	2002	62%
HFCs	19	351820	106%
Hydro	359	58679	87%
Landfill gas	76	19642	42%
Methane avoidance	96	8167	49%
N2O	35	171055	134%
PFCs and SF6	4	976	73%
Reforestation			
Solar	5	107	108%
Tidal			
Transport	2	359	47%
Wind	266	46532	86%
Total	1224	758837	96.2%

Source: www.cdmpipeline.org

Trading of CERs

The CERs are given by the CDM executive board to projects in developing countries to certify that they have reduced the GHG by one tonne of CO₂ per year. The project so certified by the board is monitored to check if the reduction as envisaged is actually taking place before award of the credits. Exchanges like the Chicago Climate Exchange, EU Climate Exchange (EUCX), and Multi Commodity Exchange of India (MCX) have developed to trading platforms for carbon credits.



their “carbon footprint” by voluntarily purchasing carbon credits from an investment fund or company that has aggregated credits from individual projects that reduce emissions. Compliance markets are mainly due to the Kyoto Protocol, a cap and trade system that resulted from the international Framework Convention on Climate Change

Accounting Aspects

There is currently no authoritative guidance either from the International Accounting Standards Board

(IASB) or Financial Accounting Standards Board (FASB) in the US for the accounting of carbon emissions and credits, although the boards have issued some guidance in the past. In 2004 IASB has issued IFRIC 3- Emission Rights, to provide guidance on this aspect, but was soon withdrawn in June 2005 due to criticism on account of potential volatility arising from recognising changes in value of the allowances and movement of provisions for emissions in the income statement. Similarly in the US, Emerging Issues Task Force (EITF) sought to provide guidance on this aspect under EITF 03-14, but the same was also dropped from the agenda. In 2007, the two boards have again taken up a joint project to address emissions accounting but is again paused currently and a decision is likely to be taken in the coming months. Due to the lack of any mandatory guidance on this there are currently divergent accounting practices in vogue. Differences exist on the accounting for the development of the projects under CDM mechanism, generation of CERs, timing of recognition, sales and inventory valuation, etc. Currently, carbon related transactions can be accounted with reference to IAS 2 (Inventories), IAS 20 (Government Grants), IAS 37 (Provisions) IAS 38 (Intangible Assets) and IAS 39 (Financial Instruments).

Carbon credits are an entitlement to emit CO₂ in the future, they could also be sold in an active market, and to this extent they provide future economic benefits to the entity that holds them. Carbon credits can be classified as Intangible assets. It is to be noted that unlike other intangible assets like patents, trademarks, etc. the carbon credits are not created by the entities; they are created by the regulators and offered to or acquired by the corporations. Credits can be acquired either

from a regulatory body or purchased in an auction or in an exchange where the credits are traded. There is a further complexity to the accounting of the carbon credits, which is should they be treated as Intangible assets or inventory, they possess both the characteristics of being assets and inventory. For a corporation that has to comply with the emission standards, it is required to buy the credits and extinguish them. The accounting practices are divergent and regulators across the world accept either treatment. The use of intangible assets treatment is supported by the erstwhile IFRIC 3 and is widely used under both IFRS and USGAAP.

A brief look of the IFRIC 3 – Emission Rights (though currently withdrawn) can provide a guidance of what the IASBs position was in this regard. It provides for accounting CERs as intangible assets, the allowances that are free of charge are government grants, which will be initially recorded at fair value with a corresponding entry to deferred credit. The deferred credit is amortised over a period of time to the income statement. Allowances are derecognised on their sale or surrender to the government for emissions in excess of the target set for reduction. Companies which have an emission related liabilities have to create a provision based on IAS 37 (Provisions, Contingent Liabilities and Contingent Assets).

There are two possible methods of valuation of carbon credits: the “cost” and the “fair value” method. Any credit purchased either in market or auction is to be recognised at cost or nominal value in case received as a government grant; however, credits may also be offered by the regulators free of cost as a result of the corporation’s use of clean technology and emission reductions. This may be recognised as a government grant. However, a question arises as to whether it is really a government grant. Also the classification in the balance sheet as a short term or a long term asset creates further complications.

The amounts received from the sale of CERs should not be treated as revenue but should be taken to other income, as the sale of CERs is only ancillary and not the main revenue generating activity of the company. The management has to decide whether carbon credits should be treated as inventories or intangible assets as per their judgement. In case they are classified as intangible assets, they will be of finite life in the sense that their utility will be only till the end of the compliance period. Also these should be subject to impairment testing.

Liability for Emitters: There have been questions as to how to measure the liability in case of emissions

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There have been questions as to how to measure the liability in case of emissions by companies beyond the permissible limit set. Though there is no standard guidance on this, it would be prudent for companies to create a provision as emissions occur as a charge to the income statement. The liability has to be measured based on the best estimate of the expenditure that would be required to settle the obligation. Emitters may in fact start creating a provision, once the emissions exceed the allowances that they already hold.

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Yet another development in the carbon market has been the use of forward contracts and derivatives by the producers of CERs to hedge their price. This has been more so in the recent years as the price of CERs has been on a downward trend for the last four years to reach its lowest point in 2011. There are also questions on the accounting of these types of instruments as any guidance is lacking. These contracts may be derivatives and have to be accounted for accordingly.

Guidance Note – Accounting for Carbon credits issued by ICAI

The ED provides for the timing of recognition of CERs as assets. It mentions that when a company executes a project after successful registration under CDM, CERs will be generated as the entity meets its emission targets, however, they cannot be recognised, at this stage as they at best represent contingent assets until the verification process is complete and cannot be recognised as per *AS 29 – Provisions, Contingent Liabilities and Contingent Assets*. After the verification and approval by UNFCCC, the CERs are resources controlled by the entity and can be expected to give rise to cash and cash equivalents and hence are assets.

CERs should not be recognised as assets before they are credited to the entity by UNFCCC, as they are not unconditionally available to the generating entity.

The GN also touches upon the valuation of the inventories of CERs so held. Costs incurred in producing these inventories may comprise research and development costs for the clean technology implemented, project design costs, fees paid to the agencies like DOE, national authority, UNFCCC for approval. CER certification costs and operating costs to run the CDM project. However, as per AS 26 R&D, costs prior to certification may not be included in the cost of these as these are costs incurred before the asset came into existence, also costs like project design and don't result in the CERs coming into existence and cannot be inventorised, hence as per the guidance only the cost of certification by UNFCCC which brings the CERs into existence can be taken as the cost of producing the inventories.

Once the cost is ascertained following the guidance as per AS2- Valuation of Inventories, the CERs have to be carried as a part of the inventory at the lower of "cost" or "net realizable value".

Revenue Recognition

Sale proceeds of CERs are to be recognised as per AS 9 – Revenue Recognition, on fulfillment of the conditions specified as per para 11 on transfer of the CERs to the buyer and the seller retains no control over them and there is no uncertainty on the amount of consideration receivable. Gujarat Fluoro Chemicals Ltd, which is a leading player in carbon credits, accounts for revenue from the credits on delivery or sale of rights to the credits. Also the carbon credits are classified as inventories and included in the current assets.

The income tax department has found a new avenue of raising the tax collections in carbon credits. As per information with the department, about 200 companies large and small, are engaged in trading carbon credits. Income from sale of CERs needs to be accounted under the head income from Business & Profession or as a capital gain. However, most companies record the income under the head "Income from other sources". However, with the implementation of the Direct Taxes Code from 2012 the position will be clarified as the income from the CERs will have to be treated as business income.

Taxation Aspects

VAT: CERs are considered as goods when read in the context of the landmark judgement of the Supreme Court in *Tata Consultancy Services Vs State of Andhra Pradesh [2004] 271 ITR 401*. Although this is a case involving computer software, it can be extended to CERs; the same position was reiterated by the SC again in the case of *BSNL v. UOI [2006] 152 Taxman 135/282 ITR. 273/145 STC 1*. The court has held out the following points in the TCS case as attributes for being classified goods. “A “goods” may be tangible property or an intangible one. It would become goods provided it has the attributes thereof having regard to (a) its utility; (b) capable of being bought and sold' and (c) capable of being transmitted, transferred, delivered, stored and possessed. If a software, whether customised or non-customised, satisfies these attributes, the same would be goods”.

The Delhi VAT commissionerate, as per a ruling in 2010, has mentioned that CERs (carbon credits) are certificates having a market value and there are people willing to buy and sell the certificates. So the intrinsic value coupled with the free transferability makes it a marketable commodity and, therefore, covered under Section 2(1) of the Delhi VAT Act 2004. Here again, reference was made to the ruling by the apex court in the TCS case and held that all the three attributes specified in the judgement have been fulfilled, thus making CERs goods. The CERs have been added in entry 3 of the IIIrd schedule of the DVAT Act 2004 at 4% rate.

However, as majority of the carbon credits are sold to overseas buyers, VAT will not be applicable on them; they should in essence qualify as export of goods.

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income by mentioning “*the gross earnings referred in 32(3) shall be the aggregate of the following(xi) any consideration accrued or received on transfer of carbon credits*” also the word carbon credit has been defined in Chapter XIX, Clause 314 (46).

The Future of Carbon Markets

It is clear that the market for carbon credits is growing and is expected to fetch revenues to Indian companies that have embarked on CDM mechanism projects. However, there may be turbulence in the future due to the fall in the global CER prices, the Euro zone crisis, increase in the number of projects under CDM by the UNFCCC thereby leading to an increase in the supply of CERs. There is also a lower possibility of the developed countries agreeing to binding commitments after the first commitment period that ends in December 2012. It will become all the more difficult post 2012 to forecast the market for carbon credits. A recent report by Fitch Ratings in November 2011 has also predicted a decline in the revenues from carbon credits to Indian companies' post 2012.

Only time will decide what happens in the future for the carbon market that has seen a spectacular growth in the past few years. The end of the first compliance period in 2012 and further negotiations between the countries will pave the way for the carbon market. Some analysts predict that the price of CER to be € 79 by 2020 as the region struggles to reach its target, but that appears to be a distant proposition with the current prices lingering around €3 to €4. Others point that the EU which is facing an economic crisis may take a very hard stand in the future. The US may also enter into some form of trading scheme or voluntary compliance increasing the demand for the CERs. One thing that is certain is that India has made its mark in the carbon market and any growth in this space will be advantage India. ■

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