

Carbon Credit Accounting for sustainable growth in Indian Context

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I. INTRODUCTION:

United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992, with the objective of limiting the concentration of the Green House Gases (GHGs) in the atmosphere. Kyoto Protocol came into force in February 2005 which sets limits to the maximum amount of emission of GHGs by countries. Kyoto Protocol provides three market-based mechanisms. The only mechanism relevant in Indian context is the Clean Development Mechanism (CDM) under which the Carbon Credits (Certified Emission Reduction Certificate - CERs) are granted. The Carbon credits are the certificates which are issued for certifying emission reduction. These certificates are traded in the international market and purchased by the companies of developed countries which are signatory to Kyoto protocol in order to cut down GHGs emission with the most cost-effective way. The Carbon credit is a financial instrument and it is an intangible asset.

The Collins English Dictionary defines a **carbon credits** “a certificate showing that a government or company has paid to have a certain amount of carbon dioxide removed from the environment”.

The Environment Protection Authority of Victoria defines a carbon credit as a “generic term to assign a value to a reduction or offset of greenhouse gas emissions usually equivalent to one ton of carbon dioxide equivalent”.

A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one ton of carbon dioxide or the mass of another greenhouse gases with a carbon dioxide equivalent to one ton of carbon dioxide. Carbon credits and carbon markets are a component of national and international attempts to mitigate the growth in concentrations of greenhouse gases. One carbon credit is equal to one metric ton of carbon dioxide or in carbon dioxide equivalent gases. Carbon trading is an application of an emissions

trading approach. Greenhouse gas emissions are capped and then markets are used to allocate the emissions among the group of regulated sources.

Carbon accounting or greenhouse gas accounting refers to the processes used to measure how much carbon dioxide equivalents an organization emits. It is used by states, corporations, and individuals to create the carbon credit commodity traded on carbon markets. The main objectives and advantages of carbon credit accounting are selected by the signatories to the Kyoto Protocol as an alternative to carbon taxes. By treating emissions as a market commodity some proponents insist it becomes easier for businesses to understand and manage as:

- The price may be more likely to be perceived as fair by those paying it.
- Investors in credits may have more control over their own costs.
- The flexible mechanisms of the Kyoto Protocol help to ensure that all investment goes into genuine sustainable carbon reduction schemes through an internationally agreed validation process.
- It may provide a framework for rewarding people or companies who plant trees or otherwise meet standards exclusively recognized as "green".

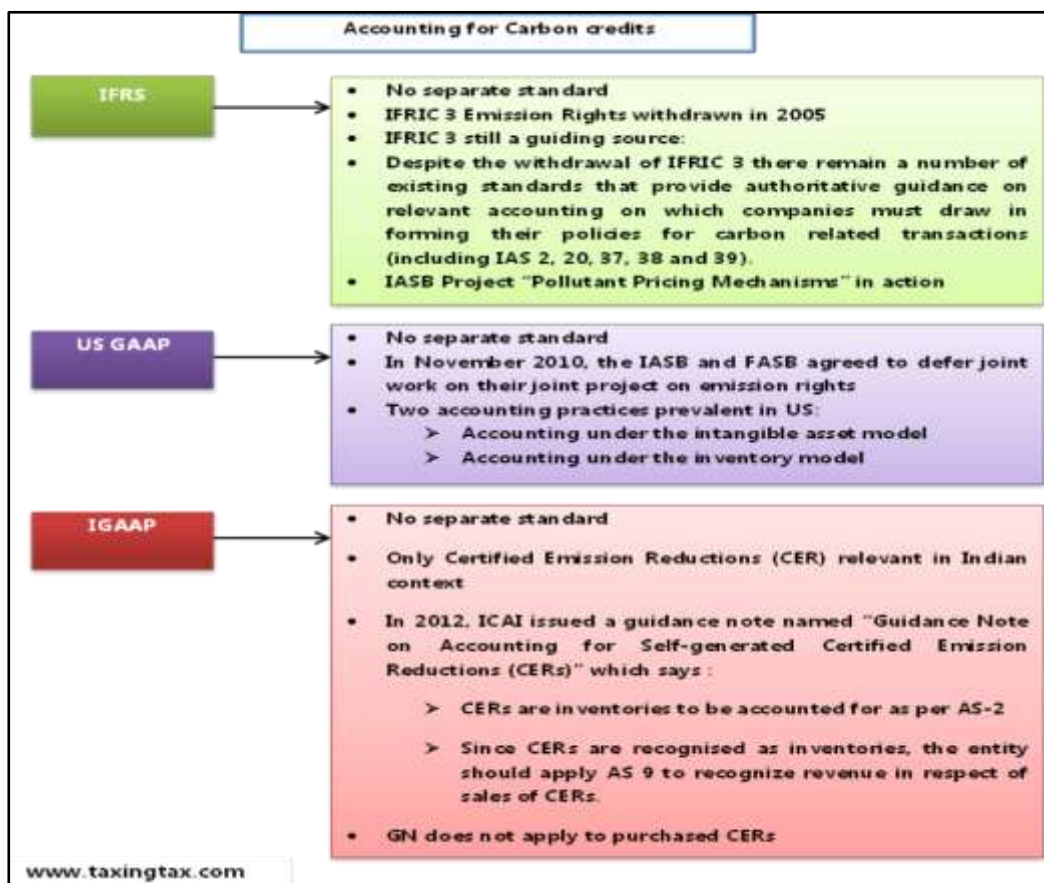
The goal is to allow market mechanisms to drive industrial and commercial processes in the direction of low emissions or less carbon intensive approaches than those used when there is no cost to emitting carbon dioxide and other Green House Gases into the atmosphere. Since Green House Gases mitigation projects generate credits. This approach can be used to finance carbon reduction schemes between trading partners and around the world.

Besides providing many advantages, the concept of carbon credit has some drawbacks which are given below:

- The Kyoto mechanism is the only international agreed mechanism for regulating carbon credit activities and includes checks for additional and overall effectiveness respectively.
- The United Nations Framework Convention on Climate Change is the only organization with a global mandate on the overall effectiveness of emission control systems although

enforcement of decisions relies on national cooperation.

- As several countries responsible for a large proportion of global emissions (notably USA, Australia & China) have avoided mandatory caps, this also means that businesses in capped countries may perceive themselves to be working at a competitive disadvantage against those in uncapped countries as they are now paying for their carbon credit costs directly.



Carbon Credit

The concept came into existence as a result of increasing awareness on the need for pollution control. It became formal after the agreement among 141 nations known as KYOTO PROTOCOL. A Carbon Credit is equal to one ton of carbon dioxide expelled in the atmosphere. The Carbon Credits are the certificates awarded to the countries taking active participation in reducing the emissions that cause global warming.

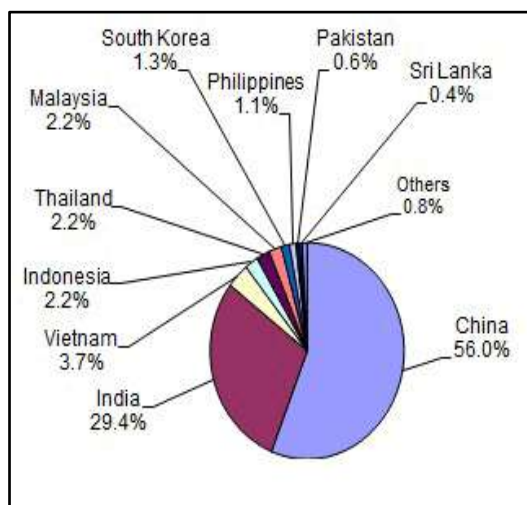
As per the KYOTO PROTOCOL, developing as well as the least developed countries are not bound by the emissions they produce. For the developed nation, to meet the assigned

reduction targets, allowances have been issued equal to the number of emissions allowed.

CLEAN DEVELOPMENT MECHANISM

The Clean Development Mechanism" (CDM), defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to consider an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction credits, each equivalent to one tonne of carbon dioxide, which can be counted towards meeting Kyoto targets.

The amount involved is giant and infrequent transactions are also involved. If the project is for a long term, then the credits shall be bought or sold in multiple phases. At that particular time the identification of these in the books of accounts shall become a cumbersome task and if they are recorded as sales and purchases. The reason behind this is that are repeating and recurring in nature and is for a short period of time. Therefore, they must be classified as extraordinary items not treated as ordinary items of sales.



<http://cdmpipeline.org/cdm-projects-region.htm>

There are several benefits of undertaking CDM projects:

- Reduced energy bills by using energy-efficient equipment.
- Additional depreciation on capital equipment installed for CD projects.
- Reduced regulatory oversight.
- Image of a responsible corporate citizen.
- Advance preparation for such time when India will be given targets to reduce greenhouse gas emissions on its own account.

Certified Emission Reductions (CER):

Certified Emission Reductions (CERs) are a type of emissions unit or carbon credits issued by the Clean Development Mechanism (CDM) Executive Board for emission reductions achieved by CDM projects and verified by a DOE (Designated Operational Entity) under the rules of the Kyoto Protocol.

CERs can be used by Annex 1 countries in order to comply with their emission limitation targets or by operators of installations covered by the European Union Emission Trading Scheme (EU

ETS) in order to comply with their obligations to surrender EU Allowances, CERs or Emission Reduction Units (ERUs) for the CO₂ emissions of their installations. CERs can be held by governmental and private entities on electronic accounts with the UN. CERs can be purchased from the primary market (purchased from an original party that makes the reduction) or secondary market. At present, most of the approved CERs are recorded in CDM Registry accounts only. It is only when the CER is actually sitting in an operator's trading account that its value can be monetized through being traded.

The IASB Accounting Principles

Since there is no regulatory guidance yet, some firms made their own emissions accounting policies. But most companies are accounting for their carbon credit transactions using the IASB's IFRS.

This accounting standard specified that:

- Emission allowances (CER) are intangible assets and measured following IAS 38 Intangible Assets
- If the CER is from a government, an entity can treat the credits as government grants on initial recognition (IAS 20) As an entity produces emissions, a provision for its obligation is recognized to deliver allowances as per IAS 37
- CER is a non-monetary asset that has no physical substance. So, it's treatable as an intangible asset. But it's an asset that's often not held for use in the production of goods or services. Rather, it's held for sale and self-generated by the entity in the ordinary course of business.

ACCOUNTING ASPECTS OF CARBON CREDIT

In India, there is no separate Indian accounting standards to measure income and expenditure from carbon reducing projects. The existing standards can well account for new capital investments, its depreciation, recurring costs and sale proceeds of CERs. Some professionals feel that CDM projects should be accounted for as a separate segment under AS-17 (segment reporting). A CDM project cannot be a profit centre or cost centre in itself and therefore, it is neither possible nor desirable to attempt to work out separate profit or loss of any CDM project, with an accuracy expected from accountants. A combined reading of Section 43A and Schedule VI of the Companies Act clearly establishes that sale proceeds of CERs should be disclosed as a line item in schedule of the other income if amount is material.

Carbon trading is an effective tool to earn extra benefits for developing countries and non-developed countries. Clean Development Mechanism is also an effective source of technological and economic development for developing countries with environmental upgradation. Although India is the largest beneficiary of carbon trading, it still does not have a proper policy for trading of carbons in the market. For appropriate functioning and development of carbon markets and carbon trading practices, separate financial accounting standard must be established.

The Indian Corporate Counsel Association (ICCA) has set eight principles for reducing worldwide greenhouse emission together with India.

1. Develop a structure and design to accelerate greenhouse emission reduction and avoid market hinderances and minimize carbon emissions.
2. Target the most important, best and lowest price abatement opportunities.
3. Push for energy potency is to enhance and to cut back the greenhouse emission. A recent study found that for each unit of greenhouse gases emitted directly or indirectly by the industry, the trade allows over two units emission saving via product and technologies provided to alternative industries and customers.
4. Support the event and implementation of latest technology.
5. Support the event of the foremost economical and property use of accessible feedstocks and energy.
6. Giving incentive for quicker action by satisfying „early movers that proactively cut back their carbon emission.
7. Push for the foremost economical and property disposal, recovery and usage choices.
8. Develop technology cooperation to support abatement in developing countries if trade policy manufacturers and alternative stakeholders take step to facilitate emission reduction and totally utilize chemical product.

Carbon Credits are gaining momentum not only around the world but also in India. The Concept of Carbon Credits evolved as a step to alleviate the rising Global Warming on earth. The emission of greenhouse gases by industries and anthropogenic activities has caused irreparable damage to the atmosphere leading to increasing global temperature, affecting human life and causing Global Warming.

The Concept of Carbon Credits was therefore evolved by way of an agreement by

different countries of the world when they met at the third Conference of Parties to the United Nations Framework Convention on Climate Change.

Carbon Credits serve the dual purpose of protection of nature and as a source of revenue generation for the developing and under developed countries. The developed countries who have ratified the Kyoto Protocol which was an outcome of the Third Conference of Parties of the UNFCCC have agreed to reduce their greenhouse gas emissions as per the individual norms set by the Kyoto Protocol. In case they fail to meet the emission targets they can buy the extra requirement by following the flexibility mechanism provided by Kyoto Protocol i.e., either purchasing Carbon Credits from the commodities market or by investing in Clean Development Mechanism projects.

Due to lack of any mandatory guidance on carbon credit mechanism, there are currently divergent accounting practices in vogue. Differences exist on the accounting for development of projects under CDM mechanism, generation of CER's timing of recognition, sales and inventory valuation etc.

Currently, India account for the transactions related to carbon credits with reference to AS-2 (Accounting for Inventories), AS-26 (Intangible Assets), AS-12(Government grants), AS-9 (Revenue recognition), AS 10 (Revised tangible fixed assets) and AS-29 (Contingent assets).

Carbon credits are measured in terms of Carbon Emission Units (CERs). There are various accounting aspects on measurement and recording of CERs.

ACCOUNTING TREATMENT CER AS AN INTANGIBLE ASSET:

The meaning of "asset" in accounting. To become an asset, it should be:

- Controlled by an enterprise as a result of past events, and
- From which future economic benefits are expected to flow to the enterprise.

In context of CERs, Future economic benefits flowing from the CERs and CERs possessing a cost or value that can be measured with reliability should be met as follows:

As the market for CERs is relatively new an entity needs to assess the probability of arising of future economic benefits. The concept of probability means the degree of certainty with which future economic benefits associated with

CERs will flow to the entity. Therefore, the probability criterion is said to be met when there is a reasonable assurance that future economic benefits will flow from the CERs to the entity.

As regards to the criterion for measurement of cost or value there are certain costs which are incurred to generate CERs and therefore the cost of CERs can be measured reliably.

CER does not have any physical substance. Keeping in view the non-physical form of CERs, the definition of **intangible assets** per Accounting Standard (AS) 26, Intangible Assets is noted as follows:

“An intangible asset is an identifiable non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.”

Therefore, there are three main features of intangible assets: Identifiable, Non-monetary asset, and without physical substance

From the above definition, there is confusion about CER being an intangible asset. The reason is that CERs are not held for use in the production or supply of goods or services, and used for neither administrative purposes nor are they used for the purpose of renting to others. Instead CERs generated by the generating entity are held for the purpose of sale.

As per Accounting Standard, AS-26 an Intangible asset can be defined as:

“An intangible asset arising from development (or from the development phase of an internal project) should be recognised if, and only if, an enterprise can demonstrate all of the following:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale
- Its intention to complete the intangible asset and use or sell it and ability to use or sell the intangible assets:
- The identification of cost incurred.
- Probability of external market.
- The realistic expectation that there will be sufficient future revenues to cover cost.

Further, though CERs are intangible assets as mentioned above AS 26 scopes out those intangible assets from its purview which are specifically dealt with in another Accounting Standard and requires them to be accounted for in accordance with that Standard.

The intangible assets generated from the development expenses are capitalised and as per AS-26, intangible asset shall be recognised at cost.

CER AS AN INVENTORY:

The purpose of sale in the ordinary course of business is excluded from the scope of AS 26, therefore, is to be accounted for as per Accounting Standard (AS) 2, Valuation of Inventories. In this context the definition of the term “inventories” as given in AS 2 is noted below:

“Inventories consist of the following:

- Held for sale in the ordinary course of business (finished goods).
- In the process of production for such sale (raw material and work-in-progress).
- In the form of materials or supplies to be consumed in the production process or in the rendering of services (stores, spares, consumables).

From the above, it follows that CERs are inventories of the generating entity as they are generated and held for the purpose of sale in the ordinary course of business.

CER as Inventory Item (IAS 2)

IAS 2: an entity must account for inventories at a lower cost and net realizable value

Net realizable value: estimated selling price less estimated costs of completion and other costs to make the sale. The cost of inventories consists of all costs of: purchase, conversion, and other costs incurred in bringing the inventory to its present condition.

Major inventory costs may include:

- Research costs from exploring measures to reduce emissions
- Costs incurred in developing the selected alternative measures
- Cost of preparing the Project Design Documents
- Registration fees with the United Nations Framework Convention on Climate Change (UNFCCC)

Therefore, even though CERs are intangible assets these should be accounted for as per the requirements of AS 2.

CERs do not come into existence till the UNFCCC certifies and credits the same to the generating entity and, therefore do not become the assets of the generating entity. Accordingly, not all costs incurred by the generating entity give rise to CERs and therefore not all costs can be considered as the costs of bringing the CERs to existence (i.e., their present location and condition). For example,

the research and development costs as mentioned above are the pre-implementation costs of the CDM projects which do not result in CERs.

It is only the costs incurred for the certification of CERs by UNFCCC which bring the CERs into existence by way of credit of the same by UNFCCC to the generating entity. Thus, the costs incurred by the generating entity for certification of CERs, are the costs of inventories of CERs.

In order to certify and issue CERs, UNFCCC imposes two types of levies on the generating entity:

- In form of specified percentage of CERs earned.
- In form of cash payment.

In form of specified percentage of CERs earned:

A specified percentage of the CERs earned are deducted at the point of issuance by the UNFCCC. In other words, the generating entity is issued CERs net of this levy. For example, if this levy is 2.5% and if 1000 CERs are to be issued, then after deducting 25 CERs, 975 CERs will be credited. This levy is applied to all projects other than those of the Least Developed Countries.

In form of cash payment:

The second type of levy is imposed in the form of a cash payment which is charged by the UNFCCC towards meeting administrative cost. In this levy a fixed payment per unit of CER is charged for the total CERs credited to the generating entity. Taking the above example further, if USD 0.12 per CER is charged towards the second levy, then the generating entity will need to make a payment at this rate for the 975 CERs credited to it, i.e., USD 117.

Apart from the above two levies, the generating entity also needs to pay consultation fees to the consultant for the services rendered to obtain the certification of CERs by UNFCCC.

The costs incurred for certification of CERs at which the inventory of CERs should be valued include the consultant's fee and the cash payment made under the second levy to the UNFCCC for obtaining the credit of CERs. The deduction of CERs by UNFCCC under the first levy is in kind which increases per unit cost of the CERs credited to the generating entity.

INCOME RECOGNITION OF CER UNDER AS-9:

Since CERs are recognised as inventories, the entity should apply AS 9 to recognise revenue in respect of sales of CERs. A number of

researches are done on the concept of carbon credit accounting. All of them give separate views on the recognition of the CERs. Some views are briefed hereunder:

As per the research done by Deloitte China Research and Insight Centre on New Challenges in Carbon Accounting – An Overview following suggestions are given: Carbon credits arguably have characteristics of both an intangible asset and inventory. According to the definition of Intangible assets, they lack physical substance and they do have a finite life. But unlike typical intangible asset, they do not amortize over that finite life. They also have the characteristics of inventory. Both IFRS and US GAAP define Inventory as assets that are either: -

- Ready for sale in the ordinary business
- In the process of Production
- Consumed in the process of production

CARBON CREDIT ACCOUNTING GUIDELINES IN INDIA:

The Institute of Chartered Accountants of India (ICAI) has issued an 'Exposure Draft of the Guidance Note on Accounting for Self-generated CERs' in 2009 enumerating suggested accounting principles for CERs generated by an entity. The exposure draft provides for accounting principles relating to recognition, measurement and disclosures of CERs generated by CDM. While undertaking a CDM project, an entity has to go through plenty of research and development, documentation and approvals process.

Accounting treatment for CERs taking in consideration the exposure draft issued by ICAI is proposed in the following manner: According to the ED, the generating entity should recognise CERs as asset only after receipt of communication for credit from United Nations Framework for Climate Change (UNFCCC) and provided it is probable that future benefits associated with CERs will flow to the entity and costs to generate CERs can be measured reliably. In case of CERs held with the CDM Executive Board, the note on accounting for carbon credits states that when the CERs are in the approval stage, these should be accounted for as per the provisions of AS 29 as Contingent Assets, and once approved, should be recorded in the books as an intangible asset. During the processes when CER are being generated and till the time the communication of about its verification is received from UNFCCC, they are at best to be classified as Contingent Assets as per AS 29. Further, when such when the communication for recognition is received this asset meet the definition of the term 'Inventory' given under AS 2 (Valuation of

Inventories) and, hence, are valued at lower cost and net realisable value. Only the costs incurred generated by the entity for certification of CERs bring the CERs into existence and, therefore, only those costs (cost incurred for certification of CER, consultants' fees and fixed cash payment made per unit of CER as a levy towards administrative charges) should be included in the cost of inventory.

According to the prescribed criteria, all other costs are either not directly relevant in bringing the inventory to its present location and condition or they are incurred before CERs come into existence. Thus, those costs cannot be inventoried. Expenses in the research and development phase are classified as pre-implementation cost of CDM and while undertaking the project for reduction in carbon emission, cost incurred on development should be accounted for as enumerated in AS 26 for Intangible assets. And in cases where an entity may use a tangible asset / install device to reduce emissions and generate CER, the cost in respect of such equipment/devices be treated as per the provisions of the Accounting Standard (AS 10 Revised) for Property, Plant and Equipment. Accordingly, the depreciation of such assets / devices should not be included in the cost of the inventory of the principal product/s of the generating entity as they do not contribute to bringing the inventory of the principal product/s to their present location and condition, as the depreciation is incurred at the stage before CERs come into existence. Accordingly, depreciation of these assets / devices should be expensed in the statement of the profit and loss in the period to which it relates with regards to CERs held for sale; in case an enterprise possess CER to be traded in the ordinary course of business, i.e., the enterprise would hold the asset as 'available for sale', the same should be accounted for as Inventory under provisions of AS 2. Further, intent of the entity would determine whether these credits should be recorded as intangible assets or as inventory.

CARBON CREDIT ACCOUNTING ISSUES IN THE INDIAN SCENARIO

Presently the Carbon Credit accounting posing the challenges of suitable system of valuation, accounting and auditing guidelines at international and national levels. Some major concerns associated with Carbon credits accounting in India are as follows:

- Till the approval of CDM by United Nations Framework for Climate Change, the project has to be treated as intangible asset,

after approval CER has to be treated as inventory. The conversion from asset to inventory in accounting will give rise to more impediments.

- While computing the cost of CER, the cost incurred for certification has to be treated as cost of inventory, the treatment for other expenses incurred for CER are not elucidated.
- Selling price of CER is obtained easily from the stock markets and commodity exchanges, but the calculation of actual cost price involves complication and the guidelines are ambiguous.
- While calculating the profit on sale of CER, if all the cost incurred is not taken into account, there will be mismatch in the amount of profit in the financial statement.
- The guidelines provided by ICAI with respect to accounting of CER in carbon credit found to be inconsistent.
- The tax treatment of carbon credits is an issue that has been a subject matter of substantial debate. Tax issues may arise at the time of entitlement of the credit, since the same could be viewed as a benefit arising out of carrying a business specifically taxable under section 28(iv) of the Income tax Act, or on its sale, the questions may arise whether the receipt is on a capital or revenue account and in the case of the former whether there could be any taxable capital gains.
- Although India is the largest beneficiary of carbon trading, it still does not have a proper policy for trading of carbons in the market. For appropriate functioning and development of carbon markets and carbon trading practices, separate financial accounting standard must be established.

Tax Implications:

As CERs are capital assets tax liability should be admitted under the head Capital Gain. If credit is held for more than 36 months immediately preceding the date of transfer claim for concessional rate of taxation should also be. This will provide a discipline for determining the difference between long term and short-term holdings and will also give clarity about timings of sale of such credits a balance between cash flow needs interest factor etc. The cost of acquisition of self-generated asset is nil, section 55(2) of the Income Tax Act will come in operation, and total sale consideration will be liable for Capital Gains Tax (long term/short term) according to the period of holding.

In Indian circumstances, if sale of CER credits happens to overseas buyers, of the property held overseas, such sale, though sale of “goods”, will not attract any sales tax.

Value Added Tax. Delhi government in recent notification has announced that the Certified Emission Reductions or the Carbon Credits are to be taken into consideration as goods and hence their sales liability is the value added tax in the State. The Commissioner of Trade and Taxes has declared and clearly stated that the nature and aspects of Carbon credits have to be checked and inspected against the definition of goods to arrive at the conclusion that carbon credit are same from ordinary commodities bought and sold in the market and thus a sale transaction of carbon credit would fascinate value added tax on sales.

Taxability of Carbon Credits

Income-tax Department has been treating the income on transfer of carbon credits as Business Income which is subject to tax @ 30%. However, divergent decisions have been given by the courts on the issue as to whether the income received or receivable on transfer of carbon credit is a revenue receipt or capital receipt. In order to bring clarity on the issue of taxation of income from transfer of carbon credits and to encourage measures to protect the environment, it is proposed to insert a new section 115BBG to provide that where the total income of the assessee includes any income from transfer of carbon credit, such income shall be taxable at the concessional rate of 10% (plus applicable surcharge and cess) on the gross amount of such income. No expenditure or allowance in respect of such income shall be allowed under the Act. This amendment will take effect from 1st April 2018 and will, accordingly, apply in relation to the AY 2018-19 and subsequent years.

Section 115BBG: Tax on income from transfer of carbon credits.

(1) Where the total income of an assessee includes any income by way of transfer of carbon credits, the income-tax payable shall be the aggregate of—
(a) the amount of income-tax calculated on the income by way of transfer of carbon credits, at the rate of ten per cent; and (b) the amount of income-tax with which the assessee would have been chargeable had his total income been reduced by the amount of income referred to in clause (a).
(2) Notwithstanding anything contained in this Act, no deduction in respect of any expenditure or allowance shall be allowed to the assessee under

any provision of this Act in computing his income referred to in clause (a) of sub-section (1).

For the purposes of this section “carbon credit” in respect of one unit shall mean reduction of one tonne of carbon dioxide emissions or emissions of its equivalent gases which is validated by the United Nations Framework on Climate Change and which can be traded in market at its prevailing market price.

Auditing Framework: The auditor is required to examine and collect the following, as audit evidence:

- 1) Verifications and vouching of registers and documents maintained by the entity covered under the Air (Prevention and Control of Pollution) Act 1981.
- 2) Copy of consent granted by the State Board along with the compliances of conditions therein, if any.
- 3) Information of excess emission of air pollution furnished with the State Board.
- 4) Re-imbusement of expenses relating to above said clause and their treatment and disclosure in Financial Statement.
- 5) Treatment of cost incurred for the acquisitions of control equipment along with the disclosure in financial reporting.

II. CONCLUSION

Carbon trading is an effective tool to earn extra benefits for developing countries and non-developed countries. Clean Development Mechanism is also an effective source of technological and economic development for developing countries with environmental upgradation. Although India is the largest beneficiary of carbon trading, it still does not have a proper policy for trading of carbons in the market. For appropriate functioning and development of carbon markets and carbon trading practices, separate financial accounting standard must be established.

Carbon credits are treated as government grants, accounting for R& D expenses incurred on undertaking the CDM project etc. Though several CDM projects are being undertaken in India, but there remains a lot of ambiguity with regard to legal, regulatory, accounting and taxation issues. One of the most important factors is consistency and methods must be adopted so that reported emissions may be compared over time. Fundamental to the adoption of these accounting practices is the need to be transparent and coherent and to leave a clear audit trail in all respects.

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