CARBON CREDIT

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INTRODUCTION

CLIMATE CHANGE:

All the changes in the atmosphere be it hotter or cooler temperatures, increase in sea levels, melting of glaciers or the more-than-frequent hurricanes, are all, primarily, result of the increased carbon-dioxide levels in the atmosphere. And all are responsible for this.

Human activities including burning of fossil fuels (i.e. coal, electricity derived from coal, natural gas and oil) and changes in land use such as deforestation etc. are main sources of industrial green house gas (GHG's) emissions. The Power Generation and Energy Intensive Industries such as Cement, Steel, and Textile & Fertilizers etc. rely on fossil fuels. The Six major green house gases emitted by these industries are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC's), perfulourcarbons (PFCs) and sulphur hexafluoride (SF_6), which can be controlled by human intervention with relative ease. There are at least 25 other gases, including chloroform, CO, and water vapour that influence climate-change.

Global warming potential (GWP) for the major 6 GHGs are summarised below:

GHG	**Global Warming Potential (GWP)**
Carbon dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous oxide (N_2O)	310
Hydrofluorcarbons (HFCs)	140-11,700
Perfluorcarbons (PFCs)	6,500-9,200
Sulphur hexafluoride (SF_6)	23,900

GWP is the global warming impact that a GHG would have over a 100-year timeframe (By definition, CO_2 is used as the reference benchmark, with GWP of 1).

CARBON CREDIT:

Carbon Credit is all about global warming and came into existence as a result of increasing awareness of the need for controlling emissions. Now, we cannot change our lifestyles all of a sudden to minimize the damage we are causing to nature. But what we can do is, we can make sure that the carbon dioxide we emit in the atmosphere is offset somewhere else, so that we can at least get rid of the guilt-factor and help effect a change, however small it can be. Hence carbon credits, also known as Certified Emission Reduction (CERs), are offsets of inter-nation emission trading schemes, implemented to mitigate global warming. A CER is a type of emission reduction unit issued by a competent authority known as CDM Executive Board to projects which reduce GHG emissions. One CER equals to per tonne of Carbon Dixide (CO_2) mitigated by the project.

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC or FCCC) is an international environmental treaty, informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992. The objective of the treaty has to stabilize greenhouse gas concentrations in the atmosphere at an accepted level.

The treaty itself sets no mandatory limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides for updates (called "protocols") that would set mandatory emission limits. The principal update is the Kyoto Protocol, which has become much better known than the UNFCCC itself

The UNFCCC divides countries mainly into two groups: Annexure I and Non-Annexure I countries.

Annexure-I (Developed Countries): Consists of 41 developed countries such as USA, UK, Japan, New Zealand, Canada, Australia, Austria, Spain, France, Germany etc.

Non-Annexure-I (Developing Countries): Are nearly 145 developing countries such as India, Srilanka, Afghanistan, China, Brazil, Iran, Kenya, Kuwait, Malaysia, Pakistan, Phillippines, Saudi Arabia, Singapore, South Africa, UAE etc.

Convention is based on three principles:

- Common but differentiated responsibility
- Precautionary approach
- Sustainable Economic Growth and Development

Annexure I countries have agreed to reduce their emission level 5.2% below 1990 emission level by 2012 i.e. their 1st commitment perid. However non-annexure I countries have no immediate restriction for the reasons like:

a) Pollution is strongly linked to industrial growth, and developing economies can potentially grow very fast.

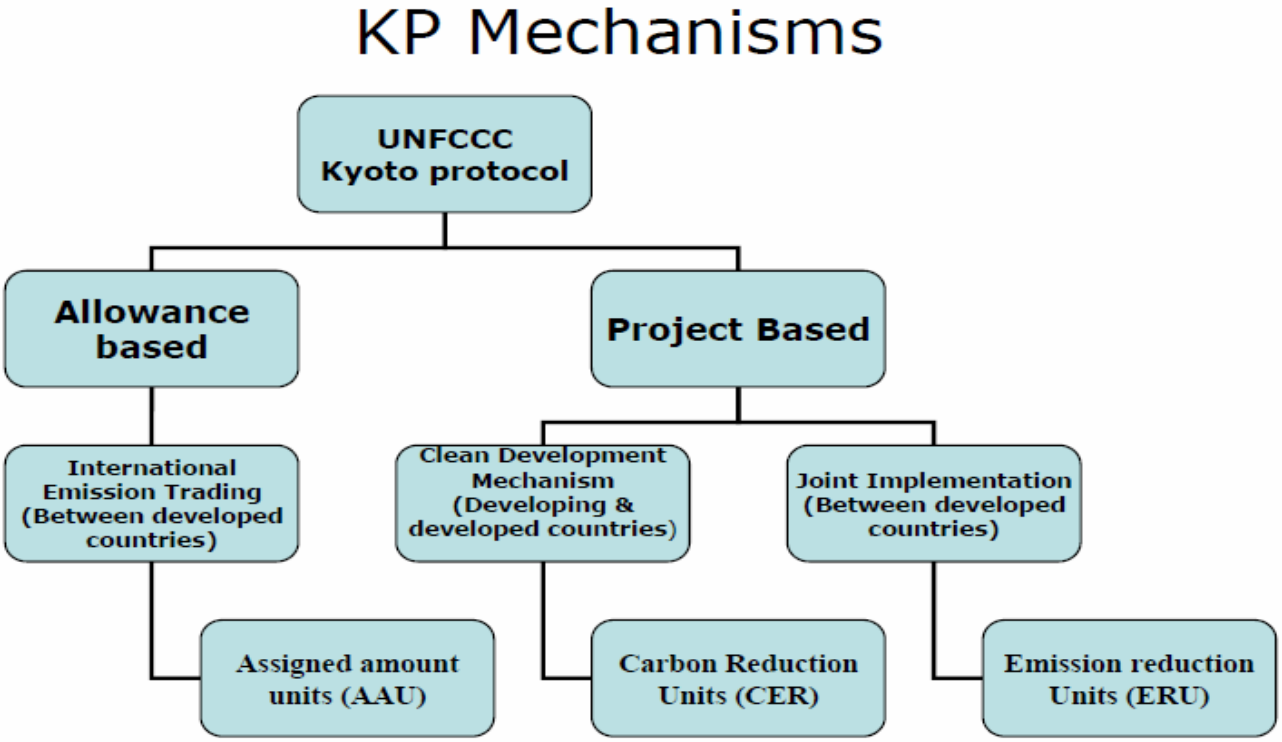
b) They cannot sell emissions credits to industrialized nations to permit those nations to over-pollute.

c) They get money and technologies from the developed countries.

KYOTO PROTOCOL

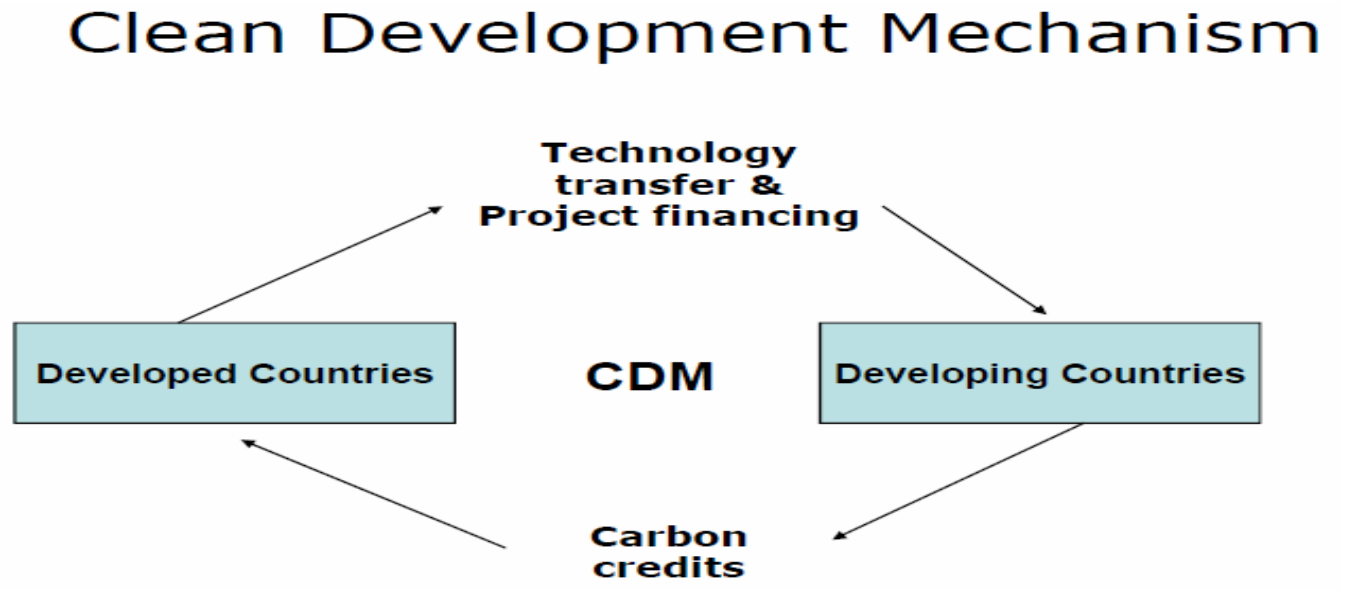
As explained earlier the Kyoto Protocol is a protocol to the United Nations Framework Convention on Climate Change (UNFCCC), aimed at combating global warming. The mechanism adopted was similar to the successful US Acid Rain Program to reduce some industrial pollutants. Following intense negotiations, a protocol is agreed upon and adopted by over 100 countries on 11th December, 1997 in Kyoto, Japan. The treaty was opened for signature on March 16, 1998, and closed on March 15, 1999. In February 2005, 141 countries, including EU, Japan, Canada, and Russia sign the Kyoto Protocol and it gets ratified w.e.f. 16th February 2005 but the US remains a key non-signatory.

Kyoto provides for a 'cap and trade' system which imposes national caps on the emissions of annexure-I countries (Compliance Market). These countries, instead of reducing emissions of their own companies, can 'buy' emission reductions in non-Annex 1 countries (Voluntary Market). On an average, this cap requires developed countries to reduce their emissions by 5.2% below their 1990 baseline over the 2008 to 2012 period (i.e. the first phase of the protocol). EU members committed to reduce their average emissions by8 %. On the other side, India, China, and Brazil are classified as emerging countries and hence exempted from this protocol. India signed and ratified the Protocol in August, 2002. As of November 2009, 187 states have signed and ratified the protocol.



CLEAN DEVELOPMENT MECHANISM

The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol. Under which, a developed country can take up a greenhouse gas emission reduction project activity in a developing country where the cost of GHG reduction project activities is usually much lower than their countries. The developed country would be given credits (Carbon Credits) for meeting its emission reduction targets, while the developing country would receive the capital and clean technology to implement the project.



For example, British Petroleum is running a plant in U.K. and it is emitting more GHG's than the accepting norms of UNFCCC. It can tie up with its subsidiary, if any or with any other company in India (being a developing country) under CDM and generate carbon credit by making Indian Plant more eco friendly with the help of technology transfers.

There are two distinct types of Carbon Credits:

A. **Carbon Offset Credits (COC's):**
   It consists of clean forms of energy production, wind, solar, hydro and biofuels.

B. **Carbon Reduction Credits (CRC's):**
   It consists of the collection and storage of Carbon from our atmosphere through biosequestration (reforestation, forestation), ocean and soil collection and storage efforts.

Both the above approaches are recognized as effective ways to reduce the Global Carbon Emissions crises.

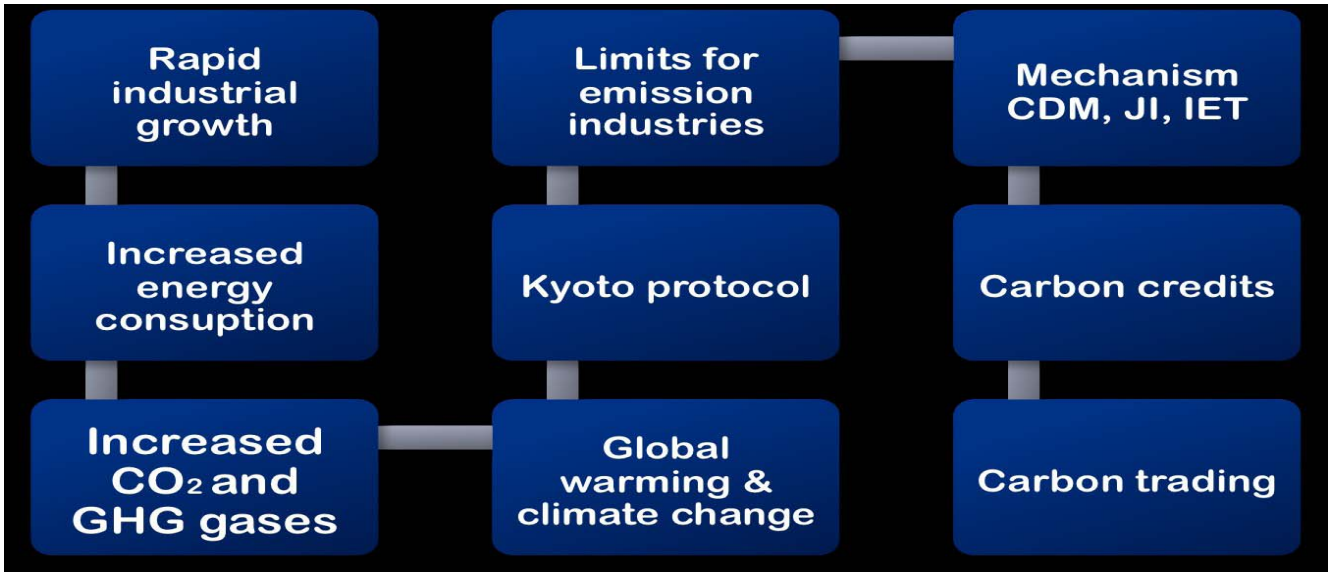
STEPS IN CDM PROCESS

TRADING OPPORTUNITIES

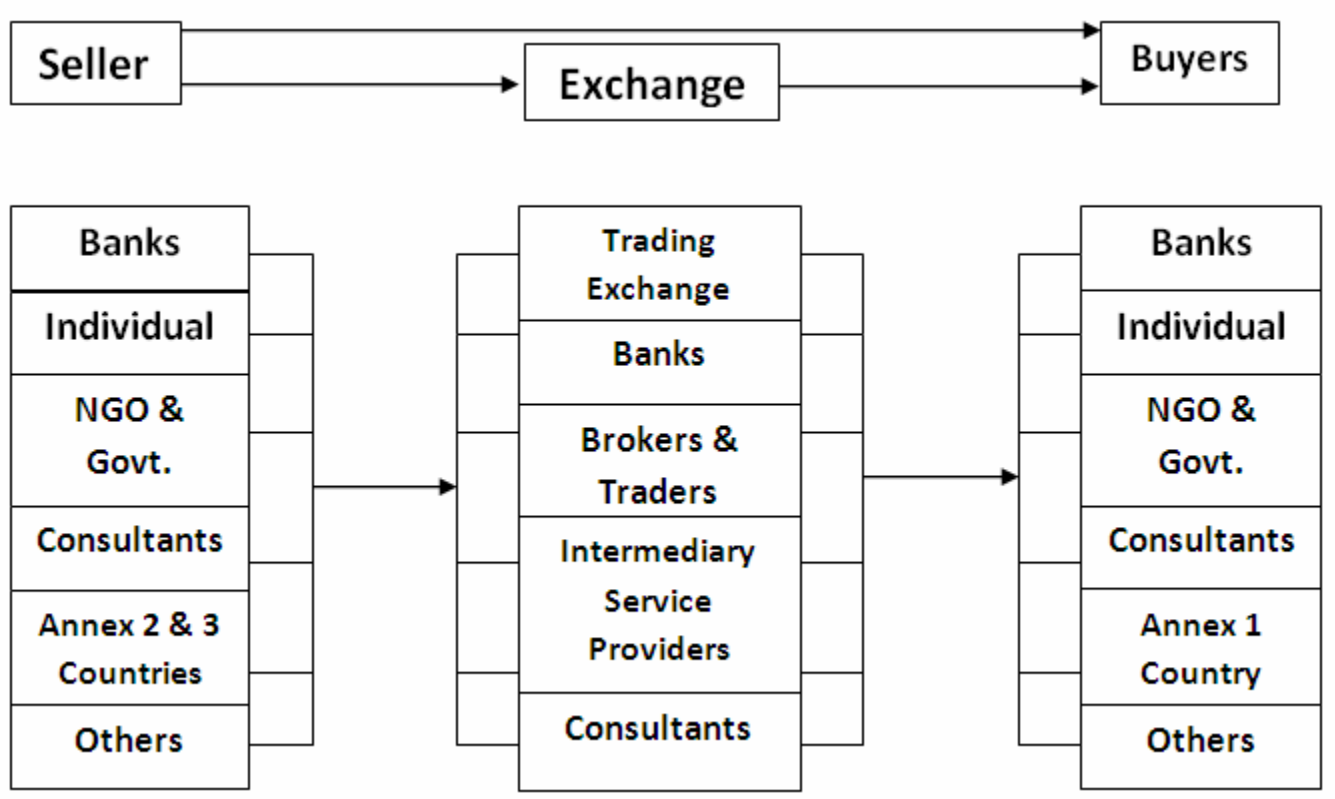
Emissions trading (also known as cap and trade) is an administrative approach used to control emission of GHG by providing economic incentives for achieving reductions in pollution (GHG's).

> "A central authority (usually a governmental body) sets a limit or *cap* on the amount of a pollutant that can be emitted. Companies or other groups are issued emission permits, which represent the right to emit a specific amount. The total amount of permitted emission cannot exceed the cap, limiting total emissions to that level. Companies that need to increase their emission allowance must buy credits from those who pollute less. This transfer of allowances is referred to as a trade. In effect, the buyer is paying a charge for polluting, while the seller is being rewarded for having reduced emissions by more than was needed. Hence those who can reduce emissions most cheaply will do so, achieving the pollution reduction at the lowest cost to society."

The following diagram provides a quick look on the emerging carbon trading:



CARBON NETWORK



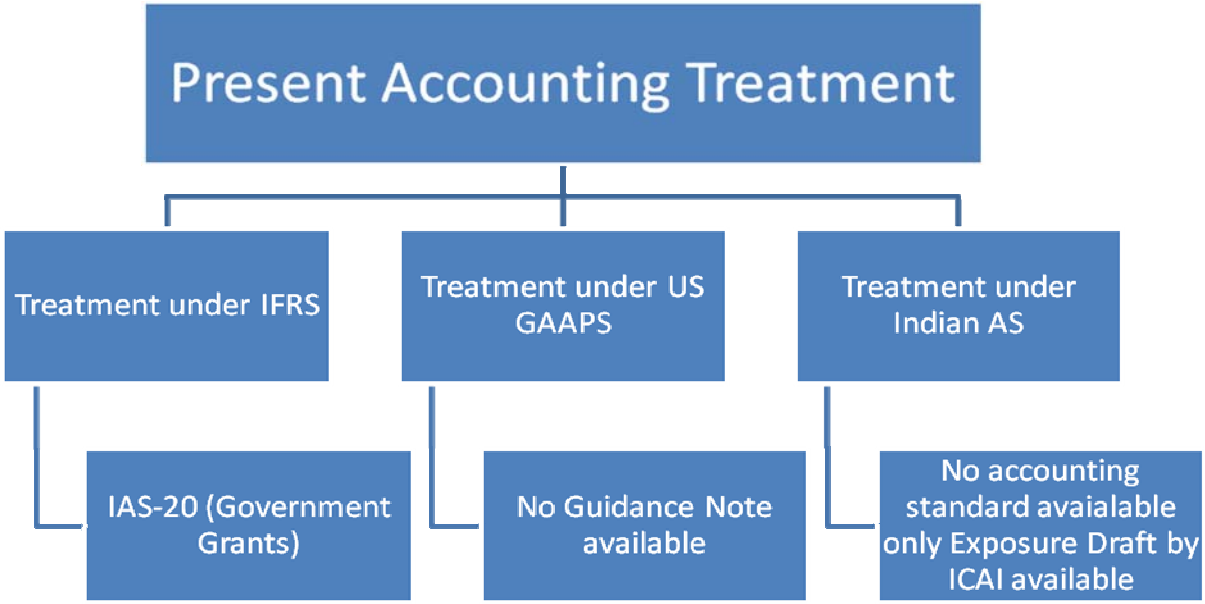
EXAMPLE OF DELHI METRO RAIL CORPORATION (DMRC) TO UNDERSTAND CARBON CREDITS

A must mention project is The Delhi Metro Rail Corporation (DMRC). It has become the first rail project in the world to earn carbon credits because of using regenerative braking system in its rolling stock. DMRC has earned the carbon credits by using regenerative braking system in its trains that reduces 30% electricity consumption.

Let's see how it works:
Whenever a train applies regenerative braking system, the released kinetic energy starts a machine known as converter-inverter that acts as an electricity generator, which supplies electrical energy back to the Over Head Electricity (OHE) lines. This regenerated electrical energy that is supplied back to the OHE that is used by other accelerating trains in the same service line. DMRC can now claim 400,000 CERs for a 10-year crediting period beginning December 2007 when the project was registered by the UNFCCC. This translates to Rs 1.2 crore per year for 10 years. India has the highest number of CDM projects registered and supplies the second highest number of Certified Emission Reduction units. Hence, India is already a strong supplier of Carbon Credits and can improve on it.

ACCOUNTING AND TAX TREATMENT

Generation and trading in carbon credits has gained a lot of momentum but there remains lot of ambiguity for the accounting treatment to be rendered. Questions as regards expenditure on the CDM projects, accounting for self generated CERs, accounting for sale consideration and so on needs to be answered. As of today there is no separate accounting standard for accounting, measurement and disclosures of carbon credits, so we need to look into existing accounting standards and pronouncements.



In June 2009, Accounting Standards Board of The Institute of Chartered Accountants of India issued an Exposure Draft on Guidance Note on Accounting for Self-generated Certified Emission Reductions (CERs). The main features of the said draft as regards accounting treatment are as under:

Clean Development Mechanism (CDM):

The draft does not address the accounting issues involved in carbon credits under Joint Implementation (JI) and International Emission Trading (IET). Since India currently not being under the obligation to reduce its GHG emissions as per the Kyoto Protocol, so it only provides guidance for Clean Development Mechanism (CDM) being relevant for India. It provides guidance on accounting for carbon credits, i.e., CERs generated under the CDM.

Whether CER is an 'Asset':

Based on the definition of asset provided under the Framework for the Preparation and Presentation of Financial Statements, issued by the ICAI, which says "An *asset* is a resource controlled by the enterprise as a result of past events from which future economic benefits are expected to flow to the enterprise." It recognizes CER as an asset.

Recognition of CERs:

According to Para 88 of the 'Framework for the Preparation and Presentation of Financial Statements'

> "An asset is recognised in the balance sheet when it is probable that the future economic benefits associated with it will flow to the enterprise and the asset has a cost or value that can be measured reliably."

As the market for CERs is relatively new, the future economic benefits may not always be assured. Thus, an entity needs to make an assessment for the probability of future economic benefits. Accordingly, if there is a probable market for the self-generated CERs ensuring flow of economic benefits in the future, CERs should be recognised.

Type of Asset:

Once the CER are approved by the Board, these should be recorded as intangible assets under AS 26 as they meet the criteria of 'Intangible Assets' as defined in the Standard, which includes 1) identifiability, 2) control over resources and 3) expectation of future economic benefits flowing to the enterprise.

As per AS-2 "Inventories are assets: (a) held for sale in the ordinary course of business; (b) in the process of production for such sale; (c) in the form of materials or supplies to be consumed in the production process or in the rendering of services."

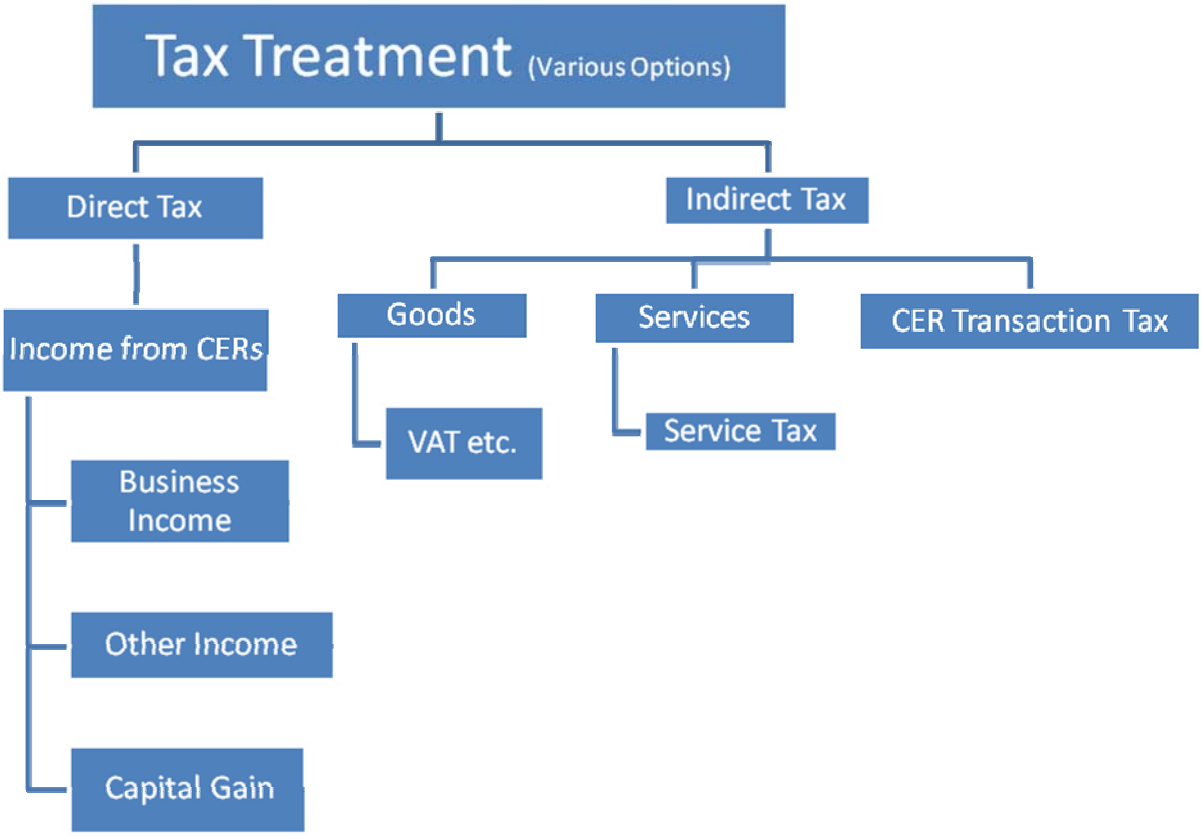
It further provides that CERs are inventories of the generating entity as they are generated and held for the purpose of sale in the ordinary course of business. Therefore, even though CERs are intangible assets these should be accounted for as per the requirements of AS 2.

Cost & Measurement:

Various costs are incurred to set up a CDM project by the entity i.e. research & development, developing selected alternative, project design documents, validation & verification, registration with UNFCCC, monitoring etc. All such costs are the pre-implementation costs, which does not result in CERs. Accordingly these should be treated as per Accounting Standard 10 & 26.

CER's do not come into existence till the UNFCCC certifies and credits the same to 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. It is only the costs incurred for the certification of CERs by UNFCCC and fee paid to consultant, if any, 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.

Further, CER should be measured at cost of or net realizable value whichever is lower as per AS-2.



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