CLIMATE CHANGE AND THE CARBON CREDITS MECHANISM

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Climate change would have lasting consequences. One giant asteroid came along 65 million years ago, and that was it for the dinosaurs.

-United Nations Environment Programme(UNEP)

Introduction

The Threat to the environment, posed by the global climate change is real. Human activities are increasing the atmospheric concentrations of greenhouse gases. All theoretical models predict that these increases in greenhouse gas concentrations will cause changes in climate both regionally and globally -- with adverse consequences likely for human health, as well as to ecological and socio-economic systems.

Carbon dioxide, the most important greenhouse gas produced by combustion of fuels, has become a cause of global panic as its concentration in the Earth's atmosphere has been rising alarmingly. This devil, however, is now turning into a product that helps people, countries, consultants, traders, corporations and

even farmers earn billions of rupees. This was an unimaginable trading opportunity not more than a decade ago. Carbon credits can form a massive source of revenue for the developing world.

Professional Opportunities for Chartered Accountants in the field of Carbon Credit

1. Conceptualizing the Clean Development Mechanism (CDM) project
2. Quantification of greenhouse gases (GHG) Carbon Footprint
3. Selection of Cleaner technologies for New projects
4. Project risk analysis
5. Registration of project - both national and international level
6. Obtaining Host country approval
7. Preparation of Project Concept Note
8. Preparation of Project Design Document
9. Selection of Methodologies and Baseline
10. Legal and regulatory advice during negotiations with host country Designated National Authority (DNA)
11. Advice on the appointment of independent validators
12. Assistance to achieve registration of the project by the CDM Executive Board
13. Assistance in getting verification done by Designated Operational Entity (DOE)
14. Ensure Compliances
15. Assisting various Ministries associated with National Action Plan on Climate Change (NAPCC)
16. Carbon Finance
17. Energy Audit under The Energy Conservation Act 2001
18. Advise on investment in carbon credit
19. Accounting advisory services
20. Taxation advisory services

What are Carbon Credits?

Carbon credits are certificates issued to Countries that reduce their emission of Greenhouse Gases (GHG) which cause Global Warming. It is like a Permit that allows an entity to emit a specified amount of greenhouse gases.

Credits can be exchanged between businesses or bought and sold in international markets at the prevailing market price. Credits can be used to finance carbon

reduction schemes between trading partners and around the world. They provide a way to reduce greenhouse effect emissions on an industrial scale by capping total annual emissions and letting the market assign a monetary value to any shortfall through trading.

Carbon credits are a key component of national and international emissions trading schemes that have been implemented to mitigate global warming. Over a decade ago, most countries joined an international treaty -- the United Nations Framework Convention on Climate Change (UNFCCC) -- an international agreement to address the danger of global climate change, to begin to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. More recently, a number of nations approved an addition to the treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures.

United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC or FCCC) is an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992. The Convention is the foundation of global efforts to combat global warming. The UNFCCC entered into force on 21st March 1994. Currently the Convention has been ratified by 195 parties (194 States and 1 regional economic integration organization).

India signed UNFCCC on 10th June 1992 and ratified it on 1st November 1993. Under the UNFCCC, developing countries such as India do not have binding GHG mitigation commitments in recognition of their small contribution to the greenhouse problem as well as low financial and technical capacities. The Ministry of Environment and Forests is the nodal agency for climate change issues in India. It has constituted Working Groups on the UNFCCC and Kyoto Protocol.

The Convention divides countries into two main groups - Annex I & Non-Annex I Countries. The Convention is based on three principles – 1. Common but differentiated responsibility; 2. Precautionary approach; 3. Sustainable Economic Growth and Development.

Kyoto Protocol

A number of nations approved an addition to the UNFCCC treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures. The treaty was negotiated in Kyoto, Japan on 11th December 1997, at the Third Conference of Parties (COP 3), hence the name 'Kyoto Protocol'. The Protocol entered into force on 16th February 2005.

The Kyoto Protocol, an international and legally binding agreement to reduce greenhouse gas(GHG) emissions worldwide assigns mandatory targets for signatory nations. Countries that ratify this Protocol agree to reduce their emission of the specified 6 greenhouse gases, or engage in emissions trading if they maintain or increase emission of these gases. The first commitment period under this Protocol starts from calendar year 2008 to calendar year end 2012.

Currently, 193 parties (192 States and 1 regional economic integration organization) of the UNFCCC have ratified the Protocol. India acceded to the Kyoto Protocol on 26th August 2002.

The detailed rules for the implementation of the Protocol were adopted at COP 7 in Marrakesh in 2001, and are called the "Marrakesh Accords."

Kyoto Protocol Mechanisms

Under the UNFCCC, Countries are separated into 2 categories:
1.Developed - referred to as Ann 1 Countries, and
2. Developing – referred to as Non-Ann 1 Countries

Annex I (developed countries) agreed to reduce their GHGs by 5.2 % below 1990 levels in the Protocol's 1st commitment period i.e 2008 – 2012.

The Kyoto Protocol is only binding 'industrialized' or 'developed' countries. These are states listed in Annex 1 of the UNFCCC. The protocol commits developed countries to specific targets for reducing their green house gas emissions. Each country has a prescribed number of 'emission units' which make up the target emission. The Kyoto Protocol provides mechanisms for countries to meet their emission targets.

The Kyoto Protocol provides for three market-based mechanisms that enable countries or operators in developed countries to acquire greenhouse gas reduction credits:

1. Emissions Trading, (also known as "the carbon market")
2. Joint Implementation(JI)

3. The Clean Development Mechanism (CDM)

International Emission Trading

Emissions trading (ET) is a mechanism that enables countries with legally binding emission targets to buy and sell emissions allowances among themselves. Each country has a certain number of emission allowances (amount of carbon dioxide it can
emit) in line with its Kyoto reduction targets. Countries can trade in the international carbon credit market to cover their shortfall in allowances. Countries with surplus credits can sell them to countries with capped emission commitments under the Kyoto Protocol.

Emissions trading transfers "assigned amount units" or AAU units. One AAU is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials. The buyer will then use the credits to meet their emissions targets. Thus a new commodity was created in the form of emission reductions or removals. Carbon is now tracked and traded like any other commodity. This is known as the "carbon market." The carbon market is a key tool for reducing emissions worldwide. It was worth 30 billion USD in 2006 and is growing. Currently, futures contracts in carbon credits are actively traded in the European exchanges (ECX).

Participants in the market include Project enablers, Public utilities, manufacturing entities, Hedgers, Intermediaries, Ultimate buyers, banks, and others. The potential buyers of carbon credits are mostly in various Annexure I countries that need to meet the compliance prevailing in their countries as per the Kyoto Protocol or those investors who would like buy the credits and with the expectation of selling them at a higher price during the first commitment period of the Kyoto Protocol (2008-2012). The major sources of supply are Non-Annexure I countries.

Joint Implementation

The Joint Implementation (JI) mechanism allows a country with an emission reduction or limitation commitment i.e an Annex I Country to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex I Country, each equivalent to one tonne of CO2, which can be counted towards meeting its Kyoto target. It is done because of geographical or

cost implications. Emission reduction units (ERUs) created through joint implementation is treated in the same way as those from emissions trading.

JI project must provide a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to what would otherwise have occurred. Projects must have approval of the host Party and participants have to be authorized to participate by a Party involved in the project.

There are 2 procedures under this mechanism. If a host Party meets all of the eligibility requirements to transfer and/or acquire ERUs, it may verify emission reductions or enhancements of removals from a JI project as being additional to any that would otherwise occur. Upon such verification, the host Party may issue the appropriate quantity of ERUs. This procedure is commonly referred to as the "Track 1" procedure." If a host Party does not meet all, but only a limited set of eligibility requirements, verification of emission reductions or enhancements of removals as being additional has to be done through the verification procedure under the Joint Implementation Supervisory Committee (JISC). This is known as the "Track 2" procedure. Under this "Track 2" procedure, an Accredited Independent Entity (AIE), accredited by the JISC has to determine whether the relevant requirements have been met before the host Party can issue and transfer ERUs.

Clean Development Mechanism

The Clean Development Mechanism (CDM) offers industrialized countries the possibility to engage in economically and environmentally competitive emission reduction projects in developing countries (the Non-Annexure I countries). Through the CDM, certified emission reductions (CERs) will be generated.

Certified Emission Reductions (CERs) are climate credits (or carbon credits) issued by the Clean Development Mechanism (CDM) Executive Board for emission reductions achieved by CDM projects and verified by a Designated Operational Entity (DOE) under the rules of the Kyoto Protocol.
These certified emission reduction (CER) credits, each equivalent to one tonne of CO2, can be can be traded and sold, and used by industrialized countries for the purpose of being counted towards meeting Kyoto targets.

Projects that will be implemented through the CDM have to fulfill additional criteria that will be defined by a national framework of the host countries (developing countries, where the project will be implemented). A CDM project

has a pre-defined project-cycle that was defined by the UNFCCC, the official executive institution concerning these questions.

The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction limitation targets. The gains to the developing country host parties are in the form of finance, technology, and sustainable development benefits while investors profit from CDM projects by obtaining reductions at costs lower than in their own countries.

Benefits for India from CDM

India is seen as one of the Non-Annex I countries offering the largest potential for CDM development, besides China and Brazil.

By setting up Clean Development Mechanism Projects, India has a lot to gain from Carbon Credits:

- It will gain in terms of advanced technological improvements and related foreign investments.
- It will contribute to the underlying theme of green house gas reduction by adopting alternative sources of energy
- Indian companies can make profits by selling the CERs to the developed countries to meet their emission targets.

India being a developing country has no emission targets to be followed. However, it can enter into CDM projects. Industries like cement, steel, power, textile, fertilizer etc emit green houses gases as an outcome of burning fossil fuels. Companies investing in Windmill, Bio-gas, Bio-diesel, and Co-generation are the ones that will generate Carbon Credits for selling to developed nations. Polluting industries, which are trying to reduce emissions and in turn earn carbon credits and make money include steel, power generation, cement, fertilizers, waste disposal units, plantation companies, sugar companies, chemical plants and municipal corporations.

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. 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.

Institutional Framework

- The CDM is administered by the CDM Executive Board (CDM Board) which reports and is accountable to the Conference of Parties (COP). A Carbon emission reduction (CER) is given by the CDM Executive Board.
- Developing country is the Project Developer also known as the Host Party/ Country
- Annex 1 countries are the Investors
- The project has to be first approved by Designated National Authority (DNA) of the Host country where the project is being set up. The Designated National Authority (DNA) in India is the National Clean Development Mechanism Authority (NCDMA)
- An institution which verifies the essential prerequisites for CDM projects and certifies the emission reductions is the Designated Operational Entity (DOE)

Eligibility for CDM projects

1. The CDM Project must promote sustainable development as defined by host countries
2. Emission reductions must be:
a. Real
b. Measurable
c. Long term reduction
d. Additional
3. Funding for CDM must not divert funds from existing government development programs
4. There should be voluntary participation by each party involved
5. The activity must ensure access to environmentally sound technology needed by the developing country.

The basic rules for the functioning of the CDM were agreed on at the seventh Conference of Parties (COP-7) to the UNFCCC held in Marrakesh, Morocco in October-November 2001. At COP-7, it was decided that the following types of projects would qualify for fast-track approval procedures:

- Renewable energy projects with output capacity up to 15 MW
- Energy efficiency improvement projects which reduce energy consumption on the supply and/or demand side by up to 15 GWh annually
- Other project activities that both reduce emissions by sources and directly emit less than 15 kt CO2 equivalent annually.

The projects must qualify through a rigorous and public registration and issuance process designed to ensure real, measurable and verifiable emission reductions that are additional to what would have occurred without the project.

Additionality

CDM Projects have to satisfy the "additionality" criteria, which means – " The emission reductions of the proposed project must be additional to any that would occur in absence of the project".

According to the Kyoto Protocol, gas emission reductions generated by project activities must be additional to those that otherwise would occur. Additionality is established when there is a positive difference between the emissions that occur in the baseline scenario, and the emissions that occur in the proposed project.

The project proposal should establish the following in order to qualify for consideration as CDM project activity:

- Emission Additionality: The project should lead to real, measurable and long term GHG mitigation. The additional GHG reductions are to be calculated with reference to a baseline
- Financial Additionality: The procurement of Certified Emission Reduction (CERs) should not be from Official Development Assistance (ODA)
- Environmental additionality: It looks as to what would happen without the project. This includes a dialogue of impact of the project activity on resource sustainability, reduction of the level of pollution by the project etc.
- Technological additionality: The CDM project activities should lead to transfer of environmentally safe and sound technologies and knowledge.

There are other sustainable development indicators which is the prerogative of the host Party to confirm whether a clean development mechanism project activity assists it in achieving sustainable development. The CDM projects should also be oriented towards improving the quality of life of the poor from the environmental standpoint.

CDM Projects

The mechanism is overseen by the CDM Executive Board, answerable ultimately to the countries that have ratified the Kyoto Protocol. 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 (CMP)

In order to be considered for registration, a project must first be approved by the Designated National Authorities (DNA) of the Host country where the project is being set up.

The Designated National Authority (DNA) in India is the NCDMA:-
National Clean Development Mechanism (CDM) Authority,
Ministry of Environment and Forests
Member Secretary ,
115, Paryavaran Bhawan,CGO Complex,Lodhi Road, New Delhi, India
Director (Climate Change) Phone: (91-11) 2436 2252 Fax: (91-11) 2436 2252

The projects which would be eligible to be set up as CDM projects should lead to reductions of greenhouse gases (CO2, CH4, N2O, HFC, PFC and/or SF6), for example:

- Renewable energy projects, such as: wind, solar, geothermal, (clean) biomass and hydro energy.
- Energy efficiency improvement projects.
- Transportation improvement projects.
- Projects concerning recovery and utilisation of methane, for example from waste landfills or coal mines.
- Projects concerning fossil fuel switching to less carbon-intensive sources.

Eligible Host Countries for CDM Projects

CDM projects are possible in countries that (1) have ratified the Kyoto Protocol, (2) have satisfactorily established the amount to which the country must reduce

its emissions over the 2008-2012 commitment period, (3) have in place its national system for estimating emissions and removals, (4) have in place a national registry, (5) have submitted its most recent required inventory (the inventory must also be assessed for quality) and (6) submit any supplementary information required to show that it is in compliance with its emissions commitments.

Eligible CDM host countries must have designated a national authority (DNA) for the CDM. The DNA is additional to the UNFCCC Focal Point, although in reality they may be the same organisation. The DNA is responsible for approval of hosted CDM projects and for setting national guidelines for CDM implementation. The approval of CDM projects are done in the form of Letter of Approvals (LoAs), which include a statement for voluntary participation in CDM and a declaration confirming the project's contribution to sustainable development in the host country.

Steps in Development of CDM project

In India, clearance for a CDM project is granted by the National CDM Authority (NCDMA) and is spearheaded by the Union Ministry of Environment and Forests.

Irrespective of whether CDM projects are initiated by the private sector, non-government organisations or government agencies, their development will involve a number of essential steps viz.:

1. Identify project and develop project concept note
2. Project Development and preparation of Project Design Document.
3. Host country approval
4. Validation of the project
5. Registration with the CDM Executive Board
6. Project implementation and monitoring
7. Verification and certification

About the Author

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Mr.Rajkumar S Adukia is an eminent business consultant, academician, writer, and speaker. A senior partner of Adukia & Associates he has authored more than 34 books on a wide range of subjects. His books on IFRS namely, "Encyclopedia on IFRS (3000 pages) and The Handbook on IFRS (1000 pages) has served number of professionals who are on the lookout for a practical guidance on IFRS. The book on "Professional Opportunities for Chartered Accountants" is a handy tool and ready referencer to all Chartered Accountants.

In addition to being a Chartered Accountant, Company Secretary, Cost Accountant, MBA, Dip IFR (UK), Mr. Adukia also holds a Degree in Law and Diploma in LaborLaws. He has been involved in the activities of the Institute of Chartered Accountants of
India (ICAI) since 1984 as a convenor of Kalbadevi CPE study circle. He was the Chairman of the Western Region of Institute of Chartered Accountants of India in 1997 and has been actively involved in various committees of ICAI. He became a member of the Central Council in 1998 and ever since he has worked tirelessly towards knowledge sharing, professional development and enhancing professional opportunities for members. He is a regular contributor to the various committees of the ICAI. He is currently the Chairman of Committee for Members in Industry and Internal Audit Standard Board of ICAI.

Mr. Adukia is a rank holder from Bombay University. He did his graduation from Sydenham College of Commerce & Economics. He received a Gold Medal for highest marks in Accountancy & Auditing in the Examination. He passed the Chartered Accountancy with 1st Rank in Inter CA & 6th Rank in Final CA, and 3rd Rank in Final Cost Accountancy Course in 1983. He started his practice as a Chartered Accountant on 1st July 1983, in the three decades following which he left no stone unturned, be it academic expertise or professional development. His level of knowledge, source of information, professional expertise spread across a wide range of subjects has made him a strong and sought after professional in every form of professional assignment.

He has been coordinating with various professional institutions, associations' universities, University Grants Commission and other educational institutions. Besides he has actively participated with accountability and standards-setting organizations in India and at the international level. He was a member of J.J. Irani committee which drafted Companies Bill 2008. He is also member of Secretarial Standards Board of ICSI. He represented ASSOCHAM as member of Cost Accounting Standards Board of ICWAI. He was a member of working group of Competition Commission of India, National Housing Bank, NABARD, RBI, CBI etc.

He has served on the Board of Directors in the capacity of independent director at BOI Asset management Co. Ltd, Bharat Sanchar Nigam Limited and SBI Mutual Funds Management Pvt Ltd. He was also a member of the London Fraud Investigation Team.

Mr. Rajkumar Adukia specializes in IFRS, Enterprise Risk Management, Internal Audit, Business Advisory and Planning, Commercial Law Compliance, XBRL, Labor Laws, Real
Estate, Foreign Exchange Management, Insurance, Project Work, Carbon Credit, Taxation and Trusts. His clientele include large corporations, owner-managed companies, small manufacturers, service businesses, property management and construction, exporters and importers, and professionals. He has undertaken specific assignments on fraud investigation and reporting in the corporate sector and has developed background material on the same.

Based on his rich experience, he has written numerous articles on critical aspects of finance-accounting, auditing, taxation, valuation, public finance. His authoritative articles appear regularly in financial papers like Business India, Financial Express, Economic Times and other professional / business magazines. He has authored several accounting and auditing manuals. He has authored books on vast range of topics including IFRS, Internal Audit, Bank Audit, Green Audit, SEZ, CARO, PMLA, Antidumping, Income Tax Search, Survey and Seizure, Real Estate etc. His books are known for their practicality and for their proactive approaches to meeting practice needs.

Mr. Rajkumar is a frequent speaker on trade and finance at seminars and conferences organized by the Institute of Chartered Accountants of India, various Chambers of Commerce, Income Tax Offices and other Professional Associations. He has also lectured at the S.P. Jain Institute of Management, Intensive Coaching Classes for Inter & Final CA students and Direct Taxes Regional Training Institute of CBDT. He also develops and delivers short courses, seminars and workshops on changes and opportunities in trade and finance. He has extensive experience as a speaker, moderator
and panelist at workshops and conferences held for both students and professionals both nationally and internationally.. Mr. Adukia has delivered lectures abroad at forums of International Federation of Accountants and has travelled across countries for professional work.

Professional Association: *Mr. Rajkumar S Adukia with his well chartered approach towards professional assignments has explored every possible opportunity in the fields of business and profession. Interested professionals are welcome to share their thoughts in this regard.*