

The New Greenback

India has emerged as the second-largest seller of carbon credits globally. Scores of companies are now getting on the clean development mechanism bandwagon by adopting cleaner technologies, says **N.B. Rao**.

GROWING international awareness of the threat of global climate change because of increasing carbon dioxide emissions is fuelling demand for carbon credits. And the sharp spurt in the price of petroleum products over the past 12 months has triggered off rapid expansion of the international carbon market.

The worldwide carbon credit market is likely to surge by 75 per cent this year, touching the \$100 billion-mark, after doubling last year. According to the World Bank, the carbon market added up to \$64 billion in 2007, more than double the 2006 figure of \$31 billion. And in 2005, it was a mere \$11 billion.

The European Union's Emission Trading Scheme (EU ETS) also saw a doubling of both value and number of allowances transacted to the tune of \$50 billion.

World Bank data shows that the global carbon market doubled or tripled in value for all segments, except for projects in developing countries, which saw a leveling off of market volumes transacted under the Clean Development Mechanism (CDM) – from 537 million tonnes of carbon dioxide equivalent (MtCO₂e) in 2006 to 551 MtCO₂e in 2007.

"Sixty-eight developing countries participate in the CDM, which offered climate-friendly projects for the market for the first time in 2007," explains Karan Capoor, senior World Bank carbon markets expert and the main author of The State and Trends of the Carbon Market Report, 2008. "But, at a time that global coopera-

tion to reduce the risk of climate change is more important than ever before, the prospects for developing countries benefiting from the carbon market are in question."

But China, India and Brazil are the exception, and among the main players in carbon credits. India has emerged as the second largest seller of carbon credits after China, with a six per cent share in 2007. Indian firms earned \$300 million by selling certified emission reductions (CERs – each of which is equivalent to a tonne of carbon dioxide). In just about four years, the figure is expected to jump more than ten-fold to \$3.6 billion.

CERs are issued by the executive board of the CDM, set up under the Kyoto Protocol, after verification of emission reductions achieved by specified projects. Carbon credits are generated by firms in the developing world when they adopt cleaner technologies that result in the reduction of greenhouse gas (GHG) emissions.

For a reduction of every tonne of CO₂ that is released, thanks to the adoption of cleaner technology, the company gets a CER that can be sold in exchanges across the world like any other commodity. Most buyers of these credits are companies located in the developed economies – and which are signatories to the Kyoto Protocol on climate change.

Firms from highly industrialised countries (except the United States, which has not signed the Protocol) buy credits from developing countries like



ILLUSTRATION: FARZANA COOPER





CURBING GHG EMISSIONS : Industrialised countries find it difficult to switch over to cleaner technologies, or the cost of changing over is prohibitive

India as they find it difficult to switch over to cleaner technologies, or the cost of changing over is prohibitive. They can offset this by investing in projects that reduce GHG emissions in developing countries, or by buying tradeable credits from companies in the developing world.

Arvinder Sethi, director, climate change, Union Ministry of Environment and Forests, notes that the government has been urging industry bodies to invest money and time in carbon credits, pointing out that it would be “a win-win proposition.”

The National CDM Authority in India has accorded host country approval to over 350 projects – highest in the world, accounting for 32 per cent of a total of 1,128 projects – which involves investment of nearly \$20 billion and relating to sectors like energy efficiency, renewable energy, fuel switching, industrial processes and municipal solid waste. These have the potential to generate over 420 million CERs by 2012.

The CDM has passed another milestone, time to reflect on our success and redouble our efforts to improve and expand the mechanism.

The Kyoto Protocol’s CDM registered its 1,000th global project recently in Andhra Pradesh, an energy efficiency one that is expected to reduce carbon dioxide emissions by nearly 35,000 tonnes annually.

“The CDM has passed another milestone, time to reflect on our success and redouble our efforts to improve and expand the mechanism,” says Rajesh Kumar Sethi, chair of the CDM executive board, which is part of the Bonn-headquartered United Nations Framework Convention on Climate Change (UNFCCC),

CDM projects have so far generated more than 135 million CERs, and are expected to generate more than 2.7 billion CERs in the first commitment period of the Kyoto Protocol (up to 2012). Though the Kyoto Protocol was negotiated in 1997, the CDM took effect only in 2005.

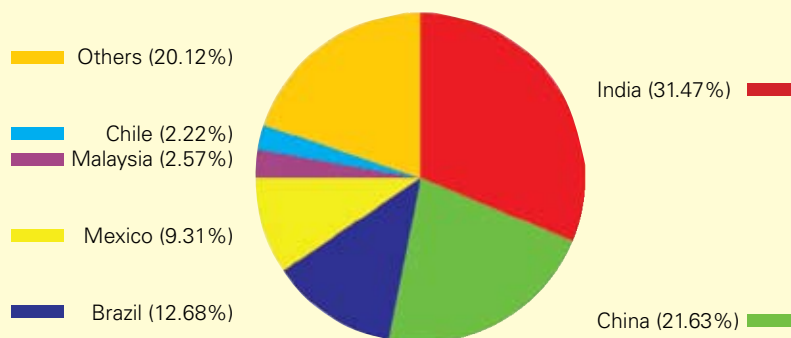
“With 1,000 projects in 49 countries in just two and half years, the ‘infant’ CDM has shown its potential, and is maturing into a ‘junior,’” adds Sethi. “It’s clear that

there is still much greater potential that can be realised, while respecting the imperative of ensuring environmental integrity and making the mechanism as simple as possible."

According to analysts, demand for carbon credits has soared ever since oil and commodity prices began heading northwards. GHG emissions are primarily caused by the burning of fossil fuels including crude oil, natural gas and coal. The high cost of these non-renewable energy sources is triggering off a rush to invest in alternative – and cleaner – energy sources the world over.

Factors driving the value of carbon credits – it was being traded around \$40 a CER towards the end of July – are the introduction of binding emissions targets

Registered project activities by host party. Total: 1,128



Source: CDM, UNFCC

FUTURES TRADING IN ENVIRONMENTAL PRODUCTS

INDIA'S leading commodities exchanges, the Multi Commodity Exchange (MCX) and the National Commodity and Derivatives Exchange (NCDEX) recently launched futures trading in carbon credits. This followed a Government of India notification in January, bringing carbon credits within the ambit of tradeable commodities.

According to B.C. Khatua, chairman, Forward Markets Commission, "India is the first developing country to offer a hedging tool for CERs, a Kyoto protocol compliant emissions instrument under the Clean Development Mechanism of the United Nations Framework Convention on Climate Change. This marks the introduction of environmental products in the Indian commodity futures market."

MCX, which was first off the mark in January, entered into a strategic alliance with the Chicago Climate Exchange in 2005. The MCX contracts track prices on the European Climate Exchange.

According to the exchange, "India being one of the leading generators of CERs through CDM, it has a large scope in emissions trading. Analysts forecast that its trading in carbon credits would touch \$100 billion by 2010."

NCDEX launched its futures contract for CERs in April. "The exchange has

taken care to ensure that the design of the contract is relevant to Indian participants to trade and hedge their stream of CERs," says P. H. Ravikumar, managing director and ceo, NCDEX.

MCX recently signed an agreement with IDEAcarbon to co-develop rated carbon instruments for trading on its platform.

IDEAcarbon, which recently set up the Carbon Ratings Agency to provide independent credit ratings for carbon assets, will act as a global strategic adviser for the exchange on climate change policy and business opportunities in carbon markets.

According to Shandi Modi, ceo, IDEAcarbon, "The alliance represents a key step in developing the carbon market in India and internationally, as, for the first time, trading will be based on rated carbon assets. Ratings will be an integral part of standardising carbon as a commodity and establishing it as a new asset class."

ICRA, a leading ratings agency, also plans to provide end-to-end consultancy services in the carbon trading market. P. K. Choudhury, ceo, ICRA group, says that a subsidiary, ICRA Management Consultancy Services Ltd (IMaCS), has developed the capabilities to provide

an end-to-end solution to project developers to earn Certified Emission Reductions (CERs) and assisting in its sales.

Elaborating on the clientele, IMaCS managing director R R Rao said, "The primary target clients with this new offering will be international financial institutions, carbon funds, renewable project developers, insurance firms and CER buyers from across the world."

Somak Ghosh, group president, development banking and corporate finance, Yes Bank, notes that "The price of carbon is too volatile, leading to uncertainties in project cash flows and hence financing."

The bank is a co-investment manager and general partner in the Cleantech Fund for South Asia. "We would be playing the role (along with Global Environment Fund) in raising the money, identifying the investment pipeline, actually making the investments, monitoring the investments and then exiting the investments. We do not target raising money domestically for this fund," explains Ghosh.

With leading Indian commodity bourses having introduced carbon trading, investor interest in the sector is expected to grow over the coming years.



MITIGATING GREENHOUSE GASES : The National Action Plan for Climate Change aims to enhance ecological sustainability in India; there will be tax incentives for industry to adopt cleantech

later this year under the second phase of the Kyoto Protocol, and the likely adoption of a cap-and-trade system by the US from next year.

Both US Presidential candidates, Barack Obama and John McCain have vowed to introduce climate change legislation and opt for a cap-and-trade system. This is expected to drive demand for CERs.

There is growing interest – and funding – in developing countries like China, India and Brazil in ‘clean projects’ for setting up plants that help reduce GHG gases, churning out more CERs that can be traded in exchanges.

The venture capital community is now showing interest in funding cleantech projects in India, as there is growing global interest in carbon trading and CDM projects. In fact, the last few months have seen a remarkable transformation, with Indian companies successfully raising almost \$1.5 billion abroad through bonds for green projects, mainly in the wind and

solar energy segment. New York-based emissions commodity asset management company, Green Ventures International, has launched a \$300 million India Carbon Fund. It aims to buy CERs from companies operating under the CDM in India and sell them to European buyers. Depending on the success of this maiden fund, it may launch a billion-dollar, India-focussed carbon fund.

IFCI Venture Capital Funds recently launched an \$80 million Green India Venture Fund. It will invest in commercially viable, energy-efficient, CDM projects.

American private equity firm Global Environment Fund (GEF) has joined hands with Yes Bank for a cleantech fund for South Asia - a \$300 million growth capital fund, for investing in clean energy opportunities in the region.

The Indian Government has also drawn up an ambitious plan to encourage industry to opt for green technologies. Prime Minister, Manmohan Singh, recently launched the National Action Plan on

Climate Change (NAPCC), which aims at “national growth objectives through qualitative changes in direction that enhances ecological sustainability, leading to further mitigation of greenhouse gases.”

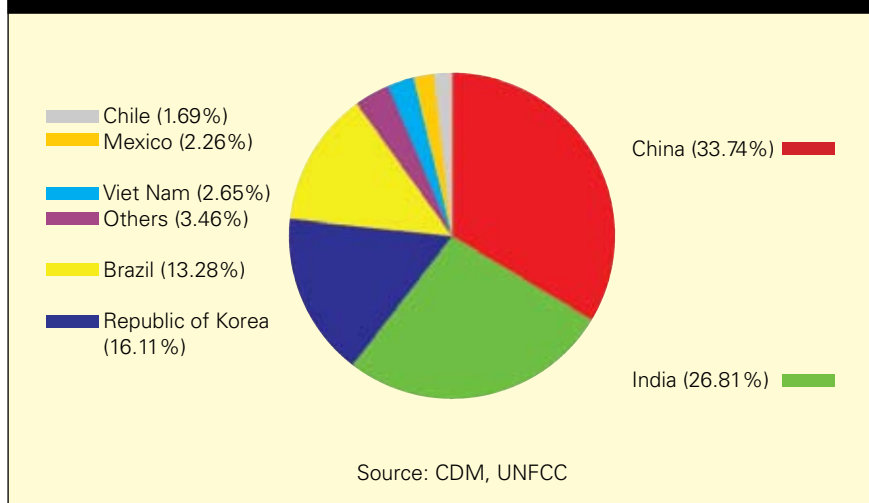
The plan revolves around eight missions dealing with solar energy, energy efficiency, sustainable cities and villages, water, forests, agriculture, the Himalayan systems threatened by glacier melt, and support for climate change related science and R&D. A Council on Climate Change has also been set up.

Kapil Sibal, Union Minister of Science and Technology, says the government would soon come out with detailed and exhaustive norms for reducing carbon emissions. This would involve tax concessions and incentives to motivate industry to reduce emissions.

The government is committed to keep India’s per capita emissions below the average for the developed world at all times. India’s per capita emission was 0.87 tonnes in 1994, and is currently estimated

IFC supports thermal power projects with better GHG and environmental performance than the average, to help India meet its electricity needs.

CERs issued by host party. Total 169,438,384



to be 1.1 tonnes. This is quite low as compared to industrialised countries like the US (20 tonnes of GHG per capita), or even China (four tonnes).

The highly industrialised economies are expected to cut GHG emissions by an average of five per cent below 1990 levels by 2012, and reduce carbon emissions by about 80 per cent relative to current levels by 2050. For Europe, this would mean reduction to around five tonnes by 2030 and to two tonnes by 2050. India, China and other developing countries have time till 2020, before they can start reducing their emissions.

While small and medium-sized companies have so far dominated the CDM projects in India, larger players are now taking on a key role and are expected to drive this sector over the coming years.

Large volume projects are expected to come aboard the CDM bandwagon in the future, especially in the area of energy. Large groups including Reliance, the Tatas and the Aditya Birla group are unveiling plans to invest in these projects.

Tata Power Company, for instance, is expected to earn over \$35 million a year in carbon credits after the execution of its \$4.25 billion ultra-mega coal-based thermal power project in Mundra in Gujarat. The International Finance Corporation (IFC), the World Bank's private sector lending arm, has extended a 20-year tenor loan of \$450 million for the project.

IFC points out that the Mundra project

of Tata Power is the first private sector power project in India using super-critical boiler technology, making it the most energy-efficient, coal-based thermal power plant in India. "IFC is supporting thermal power projects that have better GHG and environmental performance than the average in India, as a way to help the country meet its large need for more electricity," according to the corporation.

State-owned energy major ONGC has a CDM project at a platform at Mumbai High, which recovers exhaust heat for heating oil. It also registered its fourth CDM project for its flare gas recovery project at Hazira in Gujarat, reducing flares to zero levels.

Tata Steel recently launched a new programme, 'Accelerated drive for CO₂ education,' which was launched by B. Muthuraman, managing director. "It is high time we take cognisance of the situation and take larger steps to reduce CO₂ emission and protect the environment," says Muthuraman. "We must take definitive steps to reduce CO₂ and set targets to reduce energy consumption."

Indian corporates are busy unveiling plans to curb their own GHG emissions and to take advantage of the new CDM regime. Cutting down on emissions and adopting greener and cleaner technologies not only helps save the environment, but is also good for bottomlines.

STABILISING GHG CONCENTRATIONS

THE United Nations Framework Convention on Climate Change (UNFCCC) has near universal membership, with 192 countries as partners. It is the parent treaty of the 1997 Kyoto Protocol, which has 178 member parties.

Under the Protocol, 37 highly industrialised countries and countries undergoing the process of transition to a market economy, have legally binding emission limitation and reduction commitments. The ultimate objective of both treaties is to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

Under the clean development mechanism (CDM), GHG emission reduction projects in developing countries can earn saleable emission offset credits, called certified emission reductions (CERs), each equivalent to one tonne of carbon dioxide. Countries with an emission reduction or limitation commitment under the Kyoto Protocol can use CERs to meet a part of their obligations under the protocol.