

# THE GREENER SIDE

With emissions trading gathering steam and investment in cleaner technology becoming viable, companies are implementing eco-friendly systems of production

By Nandini Vaish

In 1995, when the sugar division of the GMR Group launched its distillery at Sankili, a village in the Srikakulam district of Andhra Pradesh, it had two options: to power its plant from the grid or generate it from biogas, one of its effluents. It chose the latter. Two years later, thanks to M. Prabhakar Rao, incharge of the Clean Development Mechanism (CDM) and Carbon Trading, GMR, the plant not only meets its power requirements, but has also sold carbon credits of Rs 3 crore to a global investment bank. This is excluding the Rs 2.5 crore the company has saved in the annual power bill. GMR's distillery uses molasses from its sugar plant to produce rectified spirit, extra-neutral alcohol and ethanol. Since the process generates methane, a potent green house gas, the company has set up a methane recovery project, which uses the gas to generate electricity. It also supplements biogas with rice-husk to conserve the fossil fuel.

**282 CDM projects from India were registered this year, the largest number from any country, followed by China.**

Thanks to the Kyoto Protocol—the international pact that regulates green house gas emissions—carbon trading, which essentially means exchanging points earned by reducing emissions of certain harmful gases for money, has emerged as a huge opportunity for developing countries like India and China. The CDM programme permits companies from the industrialised world to offset their carbon emissions by investing in clean-energy projects elsewhere. One tonne of carbon dioxide (CO<sub>2</sub>) is equivalent to one carbon emission reduction (CER) unit and its price ranges from €8 (Rs 458) for early-stage projects to €17 (Rs 973) for issued

units. This means that by registering their CDM projects with the United Nations Framework Convention on Climate Change (UNFCCC), not only can Indian companies make money from projects that are otherwise financially unviable, they can also hedge the risk from rising costs by developing alternative sources of power.

More and more companies are keen on developing a carbon strategy. The Delhi Metro Rail Corporation (DMRC) has kicked off a new trend by applying for carbon credits based on the shift from buses and cars to trains. Thanks to the Delhi Metro, 1,650 buses have gone off the road, reducing pollution levels by 30 per cent. DMRC, which is now developing a new methodology for calculating CERS, hopes to generate five lakh CERS in a period of seven years. It also uses a regenerative braking system that reduces electricity consumption by using the braking energy of trains to generate electricity, which is then re-used.

The Indian Railways is eyeing carbon credits through

the use of light-weight coaches and wagons and solar-based lighting at crossings. "From focusing on how to monetise carbon from CDM projects, companies are now evolving their carbon reduction strategy," says Prashant Vikram Singh, executive director, Pricewaterhouse-Coopers

(PwC),

"Those who have had significant experience in CDM projects have already embedded carbon reduction strategy in their businesses."

Cement major Grasim Industries founded its CDM division in 2002 and identified potential areas where it could reduce CO<sub>2</sub> emissions. "We are targeting a reduction of one per cent in our CO<sub>2</sub> emission every year," says S.K. Maheshwari, the group's executive president and chief manufacturing officer. Thanks to its eco-friendly initiatives, the firm has made Rs 17 crore from two projects, while

Graphic by RAM



# OF CARBON

## PLAYING THE CREDIT CARD

**GFL** has made about Rs 667 crore\* over the past 18 months by selling over 9 million CERs. It has set up a system to decompose HFC23, a potent green house gas.

**GMR** uses bagass and biomass to power its sugar project instead of depending on the grid or fossil fuel. It earned Rs 3 crore from sale of CERs last year.

**DMRC** uses regenerative braking. Capitalising on the modal shift from roads to rail, it expects to generate Rs 74 crore\* from sale of CERs.

**RAILWAYS** expects to earn 1.1 million CERs from using light-weight coaches, solar lighting at crossings and use of bio-diesel.

**GRASIM** blends fly ash with cement, uses alternative fuel and conserves energy.

**ITC** has saved half a million tonne of coal and reduced emission of green house gases by conserving energy, afforestation and use of alternative fuels.

**BRTS** removed nearly 600 tempos and 100 minibuses from Indore. It will replace autos with CNG radio taxis and earn Rs 3.7 crore\* by 2010.

*GFL: Gujarat Fluorochemicals Limited; BRTS: Bus Rapid Transport System, Indore*  
*\*Revenues from sale of CERs are estimates at an average price of €13 per CER*

another 50,000 CERs are pending with the UNFCCC. At an average of €13 (Rs 745) per CER, this could mean revenues of Rs 4 crore. The company blends fly ash with cement, conserves power, uses alternative fuel and has a waste recovery system. "If all the four processes are implemented," says Maheshwari, "the Indian cement industry can reduce its CO2 emissions by 30 million tonne a year." This amounts to an annual saving of Rs 800-1,000 crore. The cement industry generates 5 per cent of India's total CO2 emission—130-150 million tonne every year.

ITC has saved about half a million tonne of coal so far, thanks to its fuel conservation and afforestation projects. It expects to save a lakh tonne every year, says Pradeep Dhobale, CEO, paper business, ITC.

The benefits of carbon trading may go well beyond reducing CO2 emissions. A report by researchers at the Indonesia-based Centre for International Forestry Research and the US-based Forest Trends reveals that carbon trading, involving reforestation, could help reduce poverty in rural areas. For instance, in the Handia forest range of Madhya Pradesh, 95 villages could earn at least \$300,000 (Rs 1.2 crore) a year from carbon payments by restoring 24,700 acre of degraded community forests. In 2004, Powerguda, a village in Andhra Pradesh, sold carbon credits worth \$645 (Rs 26,000) to the World Bank—a first for an Indian village—by extracting bio-diesel from Pongamia trees.

But not everyone is convinced. Anti-trading groups argue that rich countries are likely to use trading as an excuse to avoid reducing industrial emissions. The fact remains, however, that the cost of reducing emissions is much lower in India than in the developed world. India has 282 CDM projects registered with UNFCCC—the highest, which is more than double that of China. However, India's projects are on a small scale. According to the World Bank's 2007 report on 'The State and Trends of the Carbon Market', CERs worth an estimated \$30 billion (Rs 1,20,000 crore) were traded in 2006, three times more than those traded in the previous year. China dominated the supply market with a 61 per cent share of volumes transacted,

while India, despite a larger number of projects, stood a distant second at 12 per cent, up from 3 per cent in 2005. At this rate, while China will capture 66 per cent of Asia's carbon volumes by 2012, India will manage just 20 per cent.

**A** number of firms have now started taking advantage of such opportunities, says Jotdeep Singh, director and head of renewable energy and carbon credits at Rabo India Finance, an advisory on carbon trading. Buying and selling carbon credits is a detailed process, partly because the market is fragmented. For most companies, the best way is to find an intermediary which can identify a potential buyer and facilitate the deal. Apart from Rabo India, specialists in carbon trading and advisory include Emergent Ventures, Agrinergy, PwC and Ernst & Young. "It's truly an international collaboration," says Ashutosh Pandey, practice leader at Emergent Ventures, a climate change specialist advisory. "I talk to an NGO in the morning, which then talks to a village representative. In the afternoon, I call an accredited designated agency in Germany or France to get my project validated, and in the evening I call the US or Europe to sell carbon credits to be generated by this project, funded possibly by a Japanese bank," he explains.

So far, business has been pouring in from the compliance market. Voluntary markets are also evolving rapidly. According to the World Bank report, 2006 was significant, with many new retailers, brokers, and others entering the market. Between 2005 and 2006, the voluntary offset market grew 200 per cent with companies like Dell, Google, Yahoo and Nike announcing that they will buy offsets. A report by New Carbon Finance adds that voluntary carbon markets have served as sources of innovation and reached the smaller communities in developing countries. The emergence of a carbon exchange, as the Multi Commodities Exchange of India

**"The impending expiry of the Kyoto Protocol in 2012 is already impacting new investments in CDM."**

RAJESH SHRIVASTAVA, MD, CORPORATE AND COMMERCIAL BANKING, RABO INDIA FINANCE

## 5 STEPS TO A CLEAN HEAVEN

**1 Under the Kyoto Protocol, the international pact that regulates green house gas emissions, industrialised economies receive specific carbon emission targets.**

**2 Companies that do not have enough credits to offset their emissions must either reduce emissions or buy spare credits.**

**3 Since cutting emissions is tough, companies buy carbon credits from countries where the costs of emission reduction are lowest.**

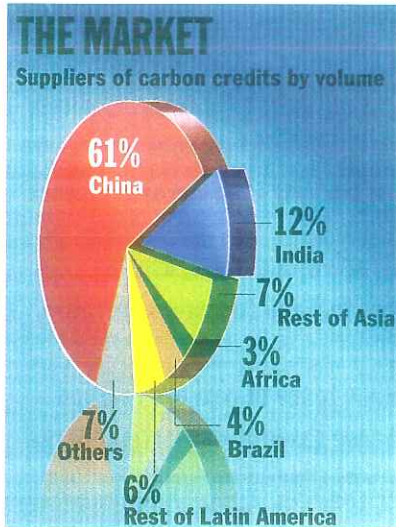
**4 Developing economies like India are not expected to meet emission targets. Companies in such countries can earn carbon credits by investing in clean technology.**

**5 Carbon credits are traded in the international market at a price of around €8-17 per carbon credit, that is, 1 tonne of CO<sub>2</sub>.**

is planning, could further help Indian firms get a better price.

Carbon footprinting, or the calculation of the value of green house gases emitted during the life cycle of a product or service, is in vogue. For instance, rock band Coldplay gave €33,000 (Rs 19 lakh) towards offsetting damages from the production of its album. British Airways allows passengers to offset CO<sub>2</sub> emissions from their flights by paying for their carbon liability, while British retailer Tesco is measuring the carbon footprint of products from light bulbs to detergents and orange juice to see how it impacts climate change. The Indus Entrepreneurs, a non-profit global network, wants to make its annual entrepreneurial summit, to be held in Delhi, a carbon-neutral event, along the lines of the 2006 FIFA World Cup. It has appointed a consultant to calculate the total energy consumed by taking into account the number of participants and the distance travelled by them. The money from such events is then invested in renewable energy projects that could help mitigate the effects of emissions.

Despite such progress, many questions remain. For instance, how ambitious can emission reduction targets get? Will the projects be sustainable once the CERS are over? What happens once the Kyoto Protocol expires in December 2012? "Negotiations are going on, and at the UNFCCC conference in Bali at the end of the year, it is expected that a decision will be taken in the favour of a possible extension or having a similar system in place post-2012," says Santosh Kumar Singh of Agrinergy Consultancy. Prashant believes the market will lend itself to a different format, along the lines of the European Union Emission Trading Scheme, whereby major emitters of CO<sub>2</sub> within the EU must return an amount as emission allowances to the government. While this may not be enough to save the planet, the wave of eco-friendly consciousness might spur innovation in manufacturing. ■



Source: State and Trends of the Carbon Market 2007

**"Carbon credits are a supplemental source of income for companies in developing countries."**

M. PRABHAKAR RAO, INCHARGE, CDM AND CARBON TRADING, GMR GROUP