Selling Fresh Air

India has become a large seller in the global market for carbon credits. A Team **India Now** report

In 1997, when the United Nations adopted the Kyoto Protocol, an international agreement that addresses rising levels of green house gases (GHGs) - a key cause of global warming and desertification - it brought about one key change. Rich developed countries would henceforth have to pay for inefficiencies in controlling pollution, while developing and poorer nations, affected by it, would benefit.

So in July, outside the Mumbai offices of EcoSecurities, the UK-based environment services company was Kartar Singh, a cattle owner from the interiors of the western Indian state of Maharashtra, on his first visit to Mumbai. Back in his village, Singh had heard that companies would now pay him hard money - not for milk, hide or meat, but for valuable dung.

This dung does nothing directly for the environment, but the gas it generates is used as fuel; thus saving tonnes of firewood and kerosene from burning - which indirectly assists in the control of GHG emissions. "We keep receiving such requests," says Bruno Maier, EcoSecurities' business development manager. Maier, a Brazilian who is now based in India feels, "the market is picking up".

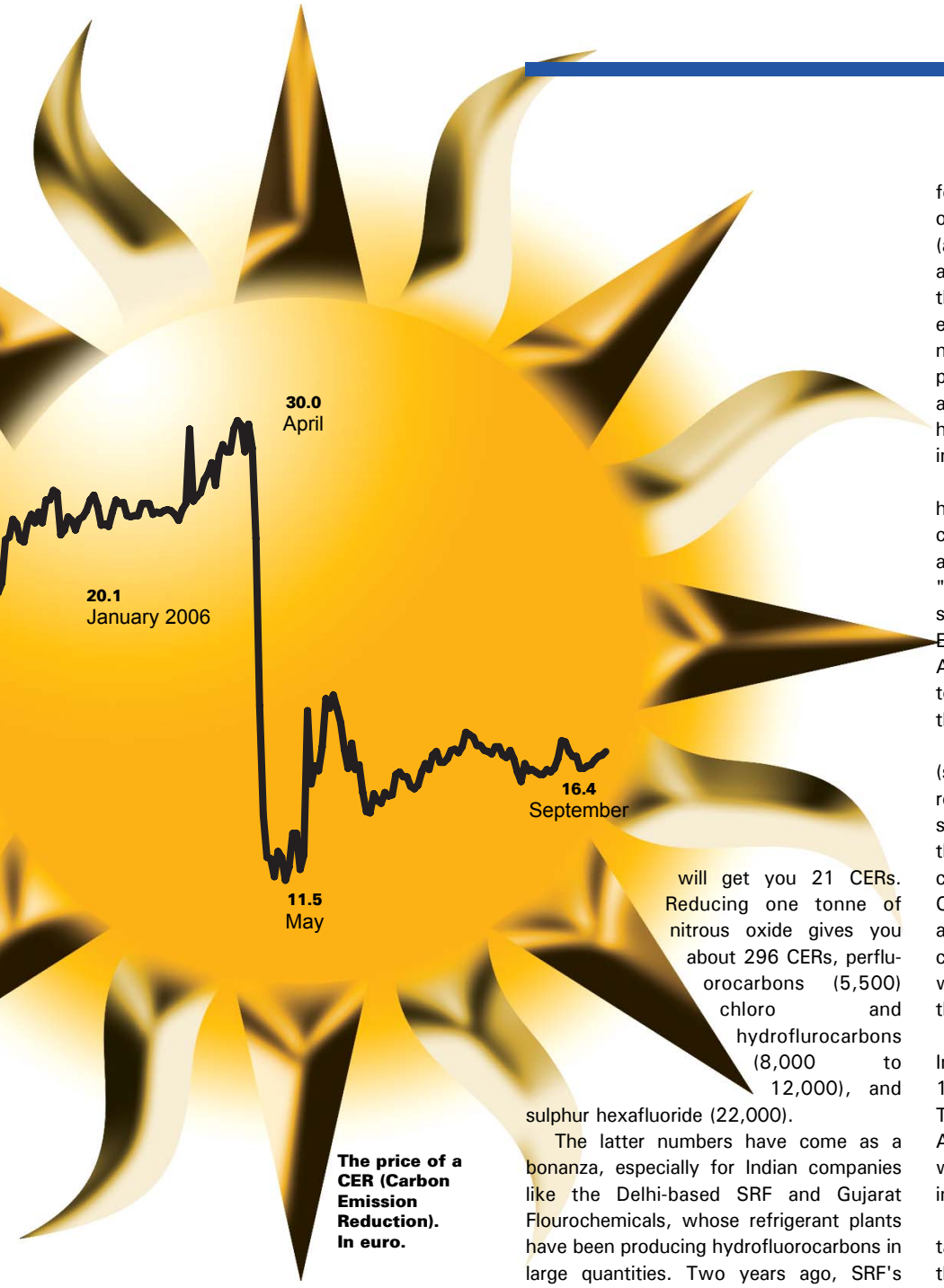
In fact, it already has. Recently the Indian Ministry of Environment and Forests, the Designated National Authority, released its report - having approved 297 projects so far, all eligible to generate CERs (Carbon Emission Reductions), says its director R.K. Sethi. This number has increased from seven in December 2003. Receiving approvals from the ministry is the first hurdle to be crossed before a final UN approval is passed. And between these companies alone, 237 million CERs will be generated by 2012. Keeping this in mind, even the India office of the Netherlands-based Rabo Bank marked its entry into this area recently. Says Rajesh Srivastava, the bank's managing director, "The carbon credits space has yet to develop to its full potential in India."

GLOBAL WARMING: Feel the heat?

The concept of a CER goes back to signing of the Kyoto Protocol, which brought with it terms and conditions that countries - only those that ratified it - have to adhere to. All such countries committed to reduce the pollution levels of 1990 by at least 5 per cent by 2008-2012. Thus the EU (European Union) region has promised to cut pollution levels by 8 per cent, Canada by 6 per cent, Japan by 6 per cent and so on. The US, the biggest polluter, which had an initial target of 7 per cent, later backed out from the Kyoto Protocol. So did Australia.

These targets were then divided among companies, specifying the maximum level of emissions permitted. Being developing countries, India and China have no commitments yet. But for industrialised countries, if targets are not achieved by 2008-2012, companies that default will have to pay severe penalties - from Euro 40 to Euro 100 per tonne of carbon dioxide emitted.

To help such countries to meet their targets, the Kyoto Protocol invented three flexible mechanisms: Emissions Trading, Joint Implementation and CDMs (Clean Development Mechanisms). While Emissions Trading and Joint Implementation takes place only between developed countries, it is under Clean Development Mechanisms that India comes in. Companies that successfully meet targets generate 'credits' or CERs for themselves. Each credit is equivalent to



The price of a CER (Carbon Emission Reduction). In euro.

one tonne of carbon dioxide saved from emission. Those who fail to meet targets, buy credits from such companies to avoid penalties.

How do you calculate the price of a CER? The Kyoto Protocol specifies reduction of six greenhouse gases (GHGs), which are man-made. At more than 50 per cent, carbon dioxide is most abundant. The other five are methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.

Each of these gases is graded by its global warming potential (GWP). Methane has a GWP that is 21 times carbon dioxide, and thus reducing one tonne of methane will get you 21 CERs. Reducing one tonne of nitrous oxide gives you about 296 CERs, perfluorocarbons (5,500) chloro and hydroflurocarbons (8,000 to 12,000), and sulphur hexafluoride (22,000).

The latter numbers have come as a bonanza, especially for Indian companies like the Delhi-based SRF and Gujarat Flourochemicals, whose refrigerant plants have been producing hydrofluorocarbons in large quantities. Two years ago, SRF's (Sriram Fibres) set up a project on which it spent $222,000. This now generates "carbon credits", by significantly reducing air pollution. "Environmental concerns were addressed," says Roop Salotra, chief executive officer (fluoro chemical business), of the Noida-based company.

SRF's project will produce 35 million carbon credits over the next 10 years. Monetarily, the sales of some credits brought in $21 million in 2005-06. By end this year another $55.5 million will be in the kitty and on its books; and the company has sold only 3.8 million credits so far.

Fluorochemical plants produce a liquid coolant used in stationary air conditioners, for which they require HFC22 (a hydrofluorocarbon). In 'business as usual', HFC23 (a byproduct of the chemical reaction, about 2 per cent of HFC22) is released into the atmosphere. Such plants can be made eligible for CERs only by introducing a technology called thermal oxidation. A separate plant is set up, to which HFC23 is diverted and oxidised under high temperature. The harmless gas then produced is released into the atmosphere.

There are several such projects that have started to pay. Yet some are sceptical about the price at which they will be able to sell. The price of a CER has been "more volatile than the price of shares on a stockmarket". On the European Climate Exchange, from a high of Euro 30.5 on 19 April, the price took a 70 per cent plunge to Euro 9 within a month. Until September the price hovered around Euro 15.

Says Biprajit Chakravarthy, director (safety, environment and corporate social responsibility), ACC Cement, "We aren't selling our credits. Prices will soon rise further." By increasing the blend of fly ash in cement from 19 per cent to 30, Chakravarthy has got six ACC plants across India eligible for producing carbon credits. The project cost $212,000, and will generate about four million credits over the next 10 years.

But the price gets even lower if an Indian company tries to sell, at an almost 10-20 per cent discount on the original. This is because European Union Allowances (EUAs), credits that are traded within the EU, are 'readymade compliance instruments', while CERs are not.

Companies that buy and sell EUAs can take them directly into accounts. CERs on the other hand are bought today, but have to be banked until an International Transaction Law comes into place, "which is at least a year away," points out Ram Babu, associate director (sustainability business solutions), at PriceWaterhouseCoopers (PwC). "This brings in the price risk of one year."

Despite such setbacks, the market has picked up - largely due to the EU, which went a step further and set up the EU-Emission Trading Scheme (EU-ETS) with its own preparatory period of 2005-2007, to meet Kyoto's deadline of 2008-2012. Today, in the EU alone there are 9,400 separate factories and power sta-

> Should the carbon credits market fail to take off in a big way globally, pollution will have to be addressed through taxes, like one possibly on air travel.

IT'S IN THE AIR: Most projects generate credits through energy efficiency

tions that report progress on emissions.

The market will pick up further pace when Kyoto's 2008-2012 period comes into action. The largest single buyer of Indian credits is the UK, followed by the EU and Japan. If you further analyse the numbers, at 41 projects, the state of Karnataka has the highest concentration of such projects followed by Andhra Pradesh (36), Rajasthan (32), Tamil Nadu (29) and Maharashtra (25). Most projects generate CERs through energy efficiency, requiring little technology input, in sectors like iron, steel and cement. Yet the highest number of CERs is generated from industrial projects — in refrigerant plants, gas flaring, methane recovery, chemicals and food.

There will however, be several newcomers in the area of energy efficiency and renewable energy. Keeping this in mind, the Multi-Commodity Exchange (MCX) plans to include CERs too in about a year, and has applied to the regulator. Joseph Massey, deputy managing director at Financial Technologies, which runs MCX, feels the price of CERs will firm up in 2007, and more in the 2008-2012 period.

In future, it will be supply and demand that will determine the price of a CER. Take the price of oil, for instance. Points out Herman Mulder, the Netherlands-based group vice-president, of ABN Amro Bank N.V., who was recently in India: "If the price of oil touches $100, there is bound to be a move away from it. Once that happens, pollution levels will start to fall, and thus the price of a CER."

There is a lack of clarity on what will happen post-2012, when the Kyoto Protocol's first commitment period comes to an end. Negotiations have already begun for a second. When the protocol was first envisaged, the impact that developing India and China could have on the environment were not considered. Today China is the second biggest polluter in the world, after the US, and India and China put together account for nearly 15 per cent of global emissions. Yet, China and India will also be the largest producers of CERs in the world.

R.K. Pachauri, chairman of the Intergovernmental Panel on Climate Change, points out that global warming is due to emissions from developed countries that have occurred over the past 100 years. Thus both India and China should not yet have to adhere to commitments. Many agree, however, that post-2012 things will get more stringent, a great deal depending on public opinion and political will. Should the carbon credits market fail to take off in a big way, pollution will have to be addressed through taxes.

There could be a tax of 0.4-0.6 cents per unit of electricity from coal-based power plants, says Ram Babu of PwC. Even further, there are hints of a possible tax on air travel. "It could also be made mandatory for countries to meet at least 20 per cent of energy requirements through renewable sources," says Pachauri. In fact, he feels pollution levels are increasing so fast, that implementation of such taxes may happen even with a successful carbon credits market.

The momentum for negotiations will pick up in year 2007. Critics of CDM say that the basic purpose of the mechanism - to promote renewable energy - has not been met, since the biggest beneficiaries of CDMs have little to do with renewable energy. It will be addressing such issues that will build more support for CDMs.