



The demand for products, including paints and coatings, which are deemed eco-friendly has been growing. As more companies expound the virtues of reducing their environmental footprint and buying carbon credits, going green has become an important trend. Hence, there is immense opportunity for coating manufacturers who have embraced the concept of green chemistry and engineering.

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The challenge is immense. Traditional fossil-fuel energy is abundant and inexpensive that climate-friendly substitutes have not been accepted without robust policy support. The world's first global treaty to combat climate change, the Kyoto Protocol, was agreed in December 1997. Twelve years later, the world is once again grappling with the need to find a way to reduce the emission of greenhouse gases that will drive climate change, and could raise the Earth's temperature to catastrophic levels within our lifetimes. The stakes are higher than ever. Reports and studies over the intervening years have spelt out the likely cost of failure: floods, droughts, famines and refugees. The first phase of Kyoto expires in 2012, and two years

ago the world set itself a deadline to agree on something to be followed.

Without any practical way to force developing nations to control their emissions, the Kyoto signatories instead reached a compromise known as the clean development mechanism (CDM). Under this scheme, investors could earn credits for projects that cut emissions in developing nations even though the host country faced no binding restriction on its output of these gases. Those credits are being purchased and traded at the CO₂ exchange by various chemical companies, making it possible to earn money out of thin air, while addressing the issue of global warming.

The Kyoto Protocol

Under the Kyoto Treaty, rich countries must cut greenhouse gas emissions by an average of 5 per cent,

compared to 1990 levels, by 2012. They can make up part of their targets by funding greenhouse gas reduction schemes, such as wind turbines or solar power plants, in poor countries. These projects are awarded credits, each representing a tonne of carbon dioxide avoided, for governments or companies to buy. The convention covers all greenhouse gases, although the focus was on the reduction of the following six gases, in order of global warming potential: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The first phase of Kyoto expires in 2012.

Science tells us that a Copenhagen treaty could offer the world its last chance to limit global warming to 2°C above pre-industrial levels, which the EU defines as dangerous. For this to happen, the world's scientists think global carbon emissions must start to fall rapidly during the next decade. This demands severe and legally-binding targets for all developed countries and significant voluntary cuts by the rest.

For sustainable development

CDM provides for investment in projects in developing countries for their sustainable development. It involves an investment by a legal entity from a country that has adopted binding emissions targets according to the Kyoto Protocol, in an emission reduction project of a country, which does not have binding limits on emissions.

As per CDM, under the UN Framework Convention on Climate Change (UNFCCC), a developed country can take up a greenhouse gas (GHG) reduction project activity in a developing country where the cost of GHG reduction is usually less and the developed country could be given carbon credits for meeting its emission reduction targets. The unit associated with CDM is certified emission reduction (CER), which are

generally termed carbon credits, where one CER is equal to one metric tonne carbon dioxide. The investment decision would include an agreement between the two parties and their respective countries on the dispensation and transfer of the emission reductions resulting from the project.

A tradable asset

How does emission trading benefit companies and the environment? Companies A and B emit 1,00,000 tonne of CO₂ per year. In their natural allocation plans, their governments give each of them emission allowances for 95,000 tonne, having them to find ways to cover the shortfall of 5,000 allowances. This gives them a choice between reducing their emission by 5,000 tonne, or purchasing 5,000 allowances in the market or taking a position somewhere in between. Before deciding which option to pursue, they compare the cost of each.

In the market, let the price of an allowance at that moment is Euro 10 per tonne of CO₂. Company A calculates that cutting its emission will cost it Euro 5 per tonne, so it decides to do this because it is cheaper than buying the necessary allowance. Company A even decides to take the opportunity to reduce its emissions not by 5,000 tonne but by 10,000 tonne, to ensure that it will have no difficulty holding within its emissions limit for the next few years.

Company B is in a different situation. Its reduction costs are Euro 15 per tonne, more than the market price, so it decides to buy allowance instead of reducing emissions. Company A spends Euro 50,000 on cutting its emissions by 10,000 tonne at a cost of Euro 5 per tonne, but then receives Euro 50,000 from selling the 5,000

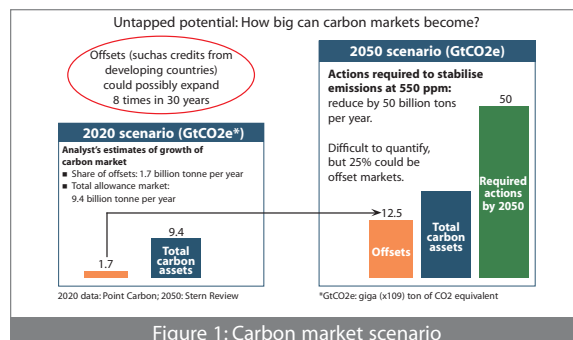


Figure 1: Carbon market scenario

allowances it no longer needs at the market price of Euro 10 each. This way, it offsets its emissions reduction costs by selling allowances, whereas without the emissions trading scheme, it would have had a net cost of Euro 25,000 to bear.

Company B spends Euro 50,000 on buying 5,000 allowances at a price of Euro 10 each. In the absence of this flexibility, it would have had to cut its emissions by 50,000 tonne at a cost of Euro 75,000. Emissions trading, thus, bring a total cost saving of Euro 50,000 for the companies in this example. Since company A chooses to cut its emissions (because this is the cheaper option in its case), the allowances that company B buys represents a real emissions reduction even if company B did not reduce its own emissions.





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Potential buyers

Buyers are typically from industrialised countries that are striving to meet the requirements of Kyoto protocol or concerned with regulating greenhouse gas emissions. Japan holds the largest share of carbon credit, followed by The Netherlands. Asia is the biggest supplier (sellers) of carbon credits and five countries - India, China, Brazil, Indonesia and Romania - account for two thirds of the credits by volumes.

The World Bank had reported that the worldwide trading of carbon credits was valued at \$ 21.5 billion during the first nine months of 2006 - a figure more than double the value for 2005. Last year, over-the-counter transactions hit a record \$ 367 million, according to the data from New Energy Finance (NEF), a research firm.

Opportunities for paints and coatings manufacturers

Over the past decade, consumer demand for products, including paint and coatings, deemed environmental-friendly has gained popularity. No longer merely a buzzword, consumers are becoming more aware of the advantages of using 'greener' products. As more companies expound the virtues of reducing their environmental footprint and buying carbon credits, going green has become an important trend.

The rising demand from customers, including architects and other

specifiers for coatings companies to improve their green profile, have resulted in more environment-friendly formulations and sustainable manufacturing practices. This is an opportunity for manufacturers of coatings who have embraced the concept of green chemistry and green engineering. They can boost their bottom line, by also taking advantage of carbon trading to either improve their manufacturing facilities, or better yet to invest in brand new plants, where some of which can be offset through carbon credits.

Investments in low carbon projects, which range from installing cleaner processes to building greener plants, are what generate credits. The greater the demand for credits, the more attractive such projects become.

This must be of interest to finance ministers. It implies significant new investments and financial flows for sustainable development. It also means application of new technologies and financial instruments to reduce emissions at low costs. Finally, it means re-engineering of globalised economic activity into a low-carbon trajectory, better tuned to cope with future resource and environmental constraints. It has been reported that so far only 4 per cent of the paints and coatings manufacturers globally have purchased carbon credits to offset their consumption.


Growing markets worldwide

The European emissions trading system has emerged as the core of a nascent global market because it features the strongest institutions, and exchanges the greatest volume of credits. During the next few years, if the US establishes a federal trading system, the scale of its emissions trading could supplant the dominance of the EU in the budding global carbon market.

Emerging nations such as China and India matter because their carbon dioxide effluent is rising at

roughly three times the rate of the industrialised world. Total output from emerging nations will exceed that of the industrialised West within the next decade. China is already the world's largest single emitter. Emerging nations also count because their economies often rely on obsolete technologies that offer the opportunity, at least in theory, to save money if new emission controls were applied. The rub lies, of course, in the refusal of these nations to accept limits on their carbon emissions.

For the domestic demand to take off in developing countries, local companies will probably have to be pushed. Setting a limit on companies' emissions beyond which they must buy offsets is not thought to be on the cards. But, hopes are growing with both China and India committing themselves to some kind of non-binding target.

India's Prime Minister recently unveiled an energy efficiency trading system designed to save 5 per cent of the country's energy consumption, and 100 million tonne of carbon dioxide (CO₂) annually, by 2015. The initiative, which is expected to cover around 700 installations, is to be underpinned by a market in tradable energy efficiency certificates. 



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Courtesy: US Department of Commerce