

The gold mine in the greenhouse

Michael Northrop and **David Sassoon** explain how the Kyoto Protocol, and the EU Emissions Trading Scheme, are laying the foundations for an international market directing capital to tackle climate change

The port of Shenzhen in China faces south towards Hong Kong across a 35-kilometre stretch of water. Home to a mere 20,000 people in 1979, today you'll find 12 million people there, a bursting economic development zone, a microcosm of the new China. Look a little closer and you'll find the landfill that receives 600 truckloads of garbage a day. The piles grow ever higher and rot in the coastal sunshine. But even this refuse is now generating serious income.

That's why on some days, you'll find Jamie Russell there amid the piles of garbage. He hails from Harvard, McKinsey, Silicon Valley and, most recently, the financial markets of London. He's not down on his luck. Right there in the midst of all that putrescence, he's up to some alchemical magic. He's managing a project that is transforming the pungent stench of Shenzhen's landfill into €70 million (\$86 million) of potential value.

"There's a lot of low-hanging fruit in China and India," he says, "a lot of it in the detritus of daily life." In Shenzhen, the fruit is more accurately off the bough and decomposing, and therein lies its peculiar value.

Russell can recognise it because he is what you could call a sustainable economy professional. He helps investors and business owners in Europe to turn a buck while transferring technology and capital to far-flung places – all in order to reduce greenhouse gas emissions. He's a catalyst for win-win transactions, and in the case of Shenzhen, the commodity he's dealing in is the methane rising invisibly from the landfill.

Methane is a particularly noxious greenhouse gas. It's more than 20 times as potent as carbon dioxide. If you can capture methane in large quantities and – oddly enough – destroy it, you can earn a small fortune in carbon credits for your trouble and handsomely reward everyone who participates in the effort.

"This project is exactly what Kyoto agreements were designed to

make possible," says James Cameron, vice chairman and co-founder of boutique London-based merchant bank Climate Change Capital, and Jamie Russell's boss. "We're seeing carbon transactions in the millions of tonnes in China. They are attractive emerging market investments because they provide new income streams detached from the local currency."

He says that Climate Change Capital has raised \$130 million into a fund in the past year from investors who want to cash in on carbon – with plenty more to follow. He has committed almost all of it to projects like the one in Shenzhen, and positioned to provide respectable private equity-level returns.

Cameron compares the hunt for loose carbon and its climate-damaging equivalents to the search for rich deposits of oil. His team goes prospecting for carbon, negotiates access with governments, and procures rights in complicated transactions. He betrays no sign of irony when he tells you this, and it takes a minute before what he doesn't say sinks in. His brand of carbon prospecting is actually the antithesis of oil prospecting. One takes greenhouse gases out of the air, the other pumps them in. One is sustainable, the other isn't.

Climate Change Capital and the other outfits in the business are doing something that is still somewhat economically mysterious and financially precarious. They are demonstrating how the same kind of market forces that made fossil fuels so lucrative can be put in the service of curing the global addiction to oil, of protecting the climate and of transitioning to a low-carbon economy.

For those unacquainted with this gold mine inside the greenhouse, here's how it works. In response to the Kyoto agreement, the EU established a greenhouse gas emissions trading scheme. From last year, thou-



Destined for landfill – and to begin generating a new global currency

sands of EU companies were set annual carbon dioxide emissions targets, and given a marketplace in which to buy and sell carbon allowances – the right to emit carbon, measured by the tonne.

It allows those companies that are set to beat their target to sell surplus allowances, giving a financial incentive to environmental outperformance. On the other hand, it provides a safety valve for those that need to emit more carbon dioxide (because they are growing, for example). The market in essence sets the price at which the most carbon can be reduced at the lowest price.

Carbon has been turned into a new form of global currency and, as a result, the creative instincts of all manner of business talent have been unleashed. Through something called the Clean Development Mechanism, the Kyoto Protocol has also made it possible to generate carbon credits in parts of the world – such as China, India, Latin America and Africa – which do not, as yet, have emissions targets under the climate pact. These credits can then be sold into the European marketplace. It has created the opportunity to strike it rich on carbon in faraway places.

This is what has taken Jamie Russell to Shenzhen, and others like him all over the globe. When the EU's emissions trading market opened last year, a tonne of carbon was trading at around €7. As of early April, it had climbed to around €27 a tonne. At that price, the 2.6 million tonnes of carbon dioxide equivalent that will be destroyed over the next five years at the Shenzhen landfill are worth more than €70 million.

"This market has been more innovative than anyone ever thought possible," Russell says. "If I hang about the bar at any of Beijing's business hotels, I'm bound to run into a competitor, or someone who's there because of carbon."

Who else, exactly, is showing up at those posh Oriental saloons? Representatives of government compliance programmes, officers of buyer's pools like Natsource, agents for sellers looking for carbon buyers, and professionals like Jamie, there on behalf of private financial investors – they all show up. What's conspicuously missing from this nascent gold rush, however, are US companies in any significant numbers. It's particularly odd in light of the fact that it was US international influence that made this carbon market possible in the first place.

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representatives of the first President Bush, followed by those of President Clinton, who insisted that flexible market mechanisms be incorporated into the international climate regime. They helped to design them and push them through to adoption.

"This carbon market is the American dream in action all over the world," Russell says. "There is no shortage of American capital in this market, and there are lots of private American citizens involved, but America itself is missing." He believes US business could be set back a generation by missing out on the present opportunity.

"We saw what happened with mobile telephony. By harmonising standards, European companies turned a five- or six-year head start into a lead that will take a generation to close," Russell says. "The US will stay ahead of other growing trading nations by keeping a generation ahead in productivity and technology development. This is what clean and efficient business can offer."

While his work most immediately generates profits for investors, Russell also understands that it brings competitive advantages to the UK economy. By transferring capital and technology from the UK, his projects propel innovation at home and create new sources of advantage inside of new markets.

Shenzhen's landfill operators are happy to cooperate. They gain access to start-up capital and state-of-the-art methane capture technology, and they are now able to derive revenue from something that had previously only been a cost centre for the municipality. The flexible mechanisms are making developing nations a part of the solution to global warming, knitting the world together in new kinds of economic relationships.

Still, the Shenzhen landfill is only a tiny project within a problem of monumental scale. Although there is now estimated to be more than \$4 billion in capital looking for carbon mitigation projects around the world, demand for such projects already outstrips supply. Russell will admit that this market is only a first small step in the right direction. He's testing the principle, and demonstrating that it works, but the road ahead remains uncertain.

Investors have yet to be given sufficient assurance that this market will survive beyond 2012, when the first phase of Kyoto expires. The flexible mechanisms have been plagued by bureaucracy and disappointing administrative competence. Powerful inter-

ests are hard at work trying to derail Kyoto. The carbon market, designed according to the American dream, is nevertheless proving itself as a first catalyst for action.

"We are showing that reducing emissions is not a cost, but a global opportunity. We are competing successfully for funds from investors who expect attractive returns, commensurate with traditional private equity," Russell says. "I believe the crux of the opposition to carbon mitigation is simply the fear of change. It looks threatening to incumbent industries accustomed to a certain way of doing business, but it doesn't have to be."

Russell is echoing an observation that former President Bill Clinton made last year at COP 11 in Montreal, the latest of the annual UN climate change meets. Clinton arrived to help break a logjam in the negotiations and quoted Machiavelli to make a point: "There is nothing so difficult in human affairs than to change the established order of things."

Clinton also pointed to another primary obstacle, this one hardly philosophical. "The old energy economy is well-organised, well-financed and well-connected politically," Clinton said. "The new economy is, by and large, entrepreneurial, creative, still undercapitalised, and the markets are not all that well organised." He called on the international assemblage of listeners to jump start the creation of "an enormous new world".

"My plea is ... that we not give up on market mechanisms," Clinton said. "This carbon market is going to take off, as long as we don't walk away from it. It's going to be an enormously successful thing ... moving big dollars around and getting big projects done."

From his perch, Cameron is upbeat. He sees the carbon markets starting to reach impressive scale, and remains encouraged by the simple arbitrage that's possible with carbon. Carbon is selling for €27 a tonne in Europe. In China, you might be able to buy that same tonne of carbon for €10, he points out. It's a question of doing the upstream prospecting and closing the deals as, well, the oil industry has been doing for more than a century.

"Over the years, the millions of tonnes of carbon that will be available through the Clean Development Mechanism will comprise a significant percentage of the total demand of the European Union," Cameron says. "It's amazing, if you think about it. My friend Richard Sandor," founder of the Chicago Climate Exchange, "likes to say that the carbon market is already bigger than the US grain market." ■