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Introduction [of Critical Currents, issue 7, Nov, 2009 "Carbon Trading - How it works and why it fails"]

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I » Introduction

The headlines tell the story. ‘Billions wasted on UN climate programme’.¹ ‘Truth about Kyoto: huge profits, little carbon saved’.² ‘UN effort to curtail emissions in turmoil’.³ ‘The Carbon Folly: Policymakers’ Favourite Global Warming Fix Isn’t Working’.⁴ ‘European Union’s efforts to tackle climate change a failure’.⁵ ‘The great carbon credit con: Why are we paying the Third World to poison its environment?’⁶

Behind these headlines lies a tale of the growing failure of the main tool that governments, financial institutions and corporations have adopted to address climate change. This is carbon trading – a multi-billion dollar scheme whose basic premise is that polluters can pay someone else to clean up their mess so that they don’t have to.

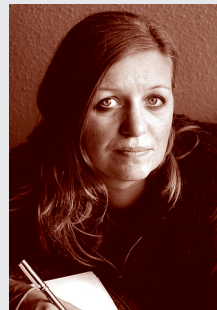


Photo: Pinelopi Sioni

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- 1 John Vidal, ‘Billions wasted on UN climate programme’, *The Guardian*, 26 May 2008, p.1.
- 2 Nick Davies, ‘Truth about Kyoto: Huge Profits, Little Carbon Saved’, *The Guardian*, 2 June 2007, p.1.
- 3 Jeffrey Ball, ‘UN Effort to Curtail Emissions in Turmoil’, *Wall Street Journal*, 12 April 2008, p. A1.
- 4 Emily Flynn Vencat, ‘The Carbon Folly: Policymakers’ Favorite Global Warming Fix Isn’t Working’, *Newsweek*, 12 March 2007
- 5 Channel 4 Evening News, London, lead story, 7 March 2007.
- 6 Nadine Gouri, ‘The great carbon credit con: Why are we paying the Third World to poison its environment?’, *Daily Mail*, 1 June 2009; <http://www.dailymail.co.uk/home/moslive/article-1188937/The-great-carbon-credit-eco-companies-causing-pollution.html>

This issue of *Critical Currents* examines what carbon trading is and why it was adopted in the first place. It tells the story of how, from its global beginnings as part of the Kyoto Protocol in 1997, carbon trading has failed to change the way we acquire and use energy, while short-circuiting demands for the fundamental reforms needed. In the process, it has rewarded polluters for continued pollution while at the same time causing social and environmental injustice.

Climate change: a genuine crisis

Nowadays, few people doubt that the climate is changing and that human activity is the major cause. The evidence is 'unequivocal', according to the 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), an assessment that synthesises the research of 2,500 scientists.⁷ The period from 1997 to 2008 includes the 10 warmest years since global records began in 1850, while average sea level rises are accelerating.⁸ The IPCC warns that if present trends continue unchecked, temperatures could rise by over 6 degrees Celsius and sea levels by up to 60 centimetres globally by 2100.⁹ This is a conservative estimate compared to more recent studies, which have shown that the geological record of ice melt was non-linear and responded more rapidly.¹⁰ The likely consequences of climate change vary from region to region, but include widespread drought, desertification, flooding and glacial melt.

This message now seems to be getting across. But global efforts to tackle climate change

are failing badly, with large and accelerating global increases in greenhouse gas emissions in the decade since Kyoto, as well as a threefold growth in emissions from fossil fuels since the 1990s.¹¹ This booklet will argue that the market-based solutions advocated by many politicians, celebrities, scientists and large NGOs compound the problem.

There has never been a lack of materials or ingenuity for dealing with climate change. Like many other social problems, global warming is a crisis created by the actions of a minority of the world's peoples – what Ramachandra Guha and Madhav Gadgil have called the omnivores, the development-aided class of modern consumers.¹² For the world's majority, global warming remains a problem for which they already have the solution: forgoing excessive use of fossil fuels. The recent Western fashion for distancing responsibility for climate change, both spatially and temporally, by attributing it to future car-hungry Chinese or Indians, is a diversion possible only under the assumption – shared by elites in North and South alike – that a society that mandates over-consumption is the universal human destiny.

Current global efforts to address climate change, however, look absurdly inadequate. In 1997, the Kyoto Protocol saw 38 industrialised countries commit themselves to cut greenhouse gas emissions by 2012 to a level 5.2 per cent lower than those of 1990. At that time, the IPCC suggested that there would need to be a rapid 50 to 70 per cent emissions reduction if the world were to stand a chance of averting devastating climatic change. It has since revised its projection upwards.¹³

- 7 Intergovernmental Panel on Climate Change, *Summary for Policymakers of the Synthesis Report of the IPCC Fourth Assessment Report*, IPCC, Geneva, November 2007, p.1.
- 8 Goddard Institute for Space Studies, 'Global Temperature Trends: 2008 Annual Summation', 16 December 2008; <http://data.giss.nasa.gov/gistemp/2008/>
- 9 Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis - Summary for Policymakers*, February 2007, p.6; <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>
- 10 James Hansen, Makiko Sato, Pushker Kharecha, David Beerling, Robert Berner, Valerie Masson-Delmotte, Mark Pagani, Maureen Raymo, Dana L. Royer, James C. Zachos, 'Target atmospheric CO₂: Where should humanity aim?', *Open Atmos. Sci. J.*, vol. 2, 2008, pp. 217–231. This study shows that when temperatures increased to 2–3 degrees Celsius above today's level, 3.5 million years ago, sea levels rose not by the 59 centimetres predicted by the IPCC but by 25 metres.

- 11 For example, CO₂ emissions rose by an average of 3.2 per cent between 2000 and 2005.
- 12 Ramachandra Guha and Madhav Gadgil, *Ecology and Equity*, Penguin, London, 1995.
- 13 Intergovernmental Panel on Climate Change, *IPCC Second Assessment: Climate Change 1995*, IPCC, Geneva, 1995.

Several more recent studies have argued that even the latest IPCC figures are an underestimate. For example, James Hansen of NASA has pointed out that the IPCC's earlier calculation failed to take account of 'slow feedback' mechanisms that increase temperature rise caused by greater greenhouse gas concentrations.¹⁴ More generally, in their attempts to meet political demands that a single unit be devised through which the climate impact of one greenhouse gas can be compared simply with another, and then bought and sold in the form of pollution permits, scientists have downplayed the unpredictable, complex and non-linear impacts of climate change to render them easier for policymakers and markets to digest.

Making climate problems fit market solutions

It was clear from the outset that the Kyoto Protocol was inadequate. Shortly after the treaty was signed, a scientific journal pointed out that 30 Kyotos would be needed merely to stabilise the concentration of carbon dioxide (CO₂) in the atmosphere at twice the level it stood at the time of the Industrial Revolution.¹⁵

But as a prerequisite for agreeing on even such an inadequate 'solution', the United States delegation then introduced into the Kyoto negotiations a series of carbon trading proposals that served to undermine even the weak targets under discussion.

The idea was to allow the industrialised countries included in the treaty, if they did not want to make reductions domestically, to trade away these commitments for the promise of emissions reductions in other countries. The important point, so the theory went, was to achieve an overall balance

rather than insisting on each country meeting its own target. The 'hidden hand' of the market would guide the process towards the cuts that were the cheapest to make.

This loosened the lid that Kyoto itself had placed on industrialised countries' emissions. For example, the industrial collapse that took place in the former Soviet countries meant that they were already emitting far less than in 1990. This provided a ready supply of 'hot air' emissions units (as they became known), releasing the pressure on the North to make cuts domestically. Other loopholes quickly appeared too.¹⁶

Carbon trading

Carbon trading is a complex system which sets itself a simple goal: to make it cheaper for companies and governments to meet emissions reduction targets – although, as we will show, emissions trading is designed in such a way that the targets can generally be met without actual reductions taking place.

Carbon trading takes two main forms: 'cap and trade' and 'offsetting'.

What is cap and trade?

Under a scheme called 'cap and trade', governments or intergovernmental bodies like the European Commission hand out licenses to pollute (or 'carbon permits') to major

¹⁴ James Hansen et al., *op. cit.*, *supra*, note 10.

¹⁵ David Malakoff, 'Thirty Kyotos Needed to Control Global Warming', *Science*, 278, no. 2, 19 December 1997, p. 2048.

¹⁶ These included the exclusion of international shipping and aviation from emissions reduction targets. Official UN statistics show that fuels sold for use in international aviation and international marine transportation increased by 65.9 and 18.4 per cent, respectively in the period from 1990 to 2006. These figures refer only to transport originating from or arriving in Annex 1 countries (those with emissions reductions targets). See UNFCCC, 'National greenhouse gas inventory data for the period 1990–2006', November 2008, p.12; <http://unfccc.int/resource/docs/2008/sbi/eng/12.pdf>

industries. Instead of cleaning up its act, one polluter can then trade these permits with another who might make 'equivalent' changes more cheaply. This is the approach underlying the European Union's Emissions Trading Scheme (EU ETS), the world's largest carbon market, which was worth US\$ 63 billion in 2008 and continues to expand rapidly.¹⁷

The theory is that the availability of carbon permits will gradually be reduced, ensuring scarcity, so that the market retains its value while at the same time forcing a reduction in the overall level of pollution. The cap part is supposed to do the work, environmentally speaking, setting a legal limit on levels of permissible pollution within a given time period. Each cap reduction is, in effect, a new regulatory measure introduced by governments and/or international bodies to restrict pollution further.

The 'trading' (or 'market-based') component of such a scheme does not actually reduce any emissions. It simply gives companies greater room to manoeuvre in addressing the emissions problem, for which reason carbon trading proposals are sometimes also referred to as 'flexible mechanisms'. Installations exceeding their reduction commitments can sell their surpluses to those who have failed to clean up their act adequately. Companies that want to keep on polluting save money, while in theory companies that are able to reduce beyond legal requirements will seize the chance to make money from selling their spare credits. But this flexibility comes at a cost – what is cheap in the short term is not the same as what is effective in the long term or environmentally and socially just.

17 World Bank, *State and Trends of the Carbon Market 2009*, World Bank, Washington DC, 2009, p.7.

In practice, the scheme has failed to incentivise emissions reductions. For example, a combination of industrial lobbying efforts and measurement difficulties have ensured that the pollution rights granted to private firms within cap and trade schemes are in many cases more generous than the polluters need to cover their existing level of emissions. This surplus of permits can then be sold to other polluters so that they too might avoid reducing their greenhouse gas emissions.

To date, the vast majority of permits have been handed out for free (a practice known as 'grandfathering') in the EU ETS, and the same is true for other cap and trade schemes.¹⁸ The number of permits awarded is calculated according to existing levels of pollution, which means that those who have polluted most in the past are rewarded with the greatest subsidy. This free gift of pollution rights to some of the worst industrial polluters amounts to one of the largest projects for the creation and regressive distribution of property rights in history.¹⁹

18 This is the case for the EU ETS until 2012. Although the EU and US have both claimed that auctioning could provide a major revenue stream to finance other measures to tackle climate change, this has not yet materialised. In the USA, President Obama initially budgeted for US\$ 646 billion as a result of auctioning 100 per cent of carbon permits, but as of September 2009 it is proposed that around 85 per cent be allocated for free. See Jim Efstathiou Jr. and Kim Chipman, 'Carbon Market Backers Split Over Obama Climate Plan', *Bloomberg*, 19 March 2009; <http://www.bloomberg.com/apps/news?pid=20601072&sid=aVzbV8Sc35PY>.

The European Union also significantly watered down its auctioning plans for the third phase of the EU ETS, with EU finance ministers vetoing calls for the money to be ringfenced for climate-friendly policies. The largest single public revenue stream that remains has been designated for the development of controversial 'carbon capture and storage' technologies.

What are carbon offsets?

The second type of carbon trading is offsetting. Instead of cutting emissions at source, companies, and sometimes international financial institutions, governments and individuals, finance ‘emissions-saving projects’ outside the capped area. The UN-administered Clean Development Mechanism (CDM) is the largest such scheme, with almost 1,800 registered projects as of September 2009, and over 2,600 further projects awaiting approval.²⁰ Based on current prices, the credits produced by approved schemes could generate over US\$ 55 billion by 2012.²¹

19 There is also a question of North-South distribution at stake here. Cap and trade schemes currently exist in Northern countries, where governments award the pollution rights to companies that operate within their borders. For each year of its scheme, the EU has awarded free emissions permits equating to almost 2 billion tonnes of emissions – between 17 and 34 per cent of the world’s ‘carbon dump’. Loosely translated, this means the EU and companies operating there are in on the fact that they over-pollute – with a carbon price at €30 per tonne, the equivalent asset value would be approximately €60 billion. A proposed cap and trade scheme in the USA, which would cover around 85 per cent of its emissions, would generate an even larger asset value – to be split, most likely, between free passes for industry and revenue for the US government.

It is worth noting, too, that this fundamental inequality in allocations is only marginally improved by auctioning the revenues rather than ‘grandfathering’ them. When the EU and US plan to auction carbon rights and pay a proportion, the question remains: are these their rights to sell? The defence that is typically used in response to this charge is that a proportion of the auction revenue will be allocated for development funding, which tends to come with ‘conditionalities’. This is like owning a house with another person, selling it without their consent, then promising to return a small part of the money as long as they agree to spend it according to criteria you define.

20 UNEP Risoe CDM/JI Pipeline Analysis and Database, 1 September 2009, <http://cdmpipeline.org/overview.htm>

21 This is based on a UNEP Risoe September 2009 estimate of 279 million Certified Emissions Reductions (CERs) issued by 2012, and assumes a CER price of US\$ 20. CERs are the offset credits issued by the CDM.

Although offsets are often presented as emissions reductions, they do not reduce emissions. Even in theory, they at most merely move ‘reductions’ to where it is cheapest to make them, which normally means a shift from Northern to Southern countries. Pollution continues at one location on the assumption that an equivalent emissions saving will happen elsewhere. The projects that count as ‘emissions savings’ range from building hydro-electric dams to capturing methane from industrial livestock facilities.

The carbon ‘savings’ are calculated according to how much less greenhouse gas is presumed to be entering the atmosphere than would have been the case in the absence of the project. But even the World Bank officials, accounting firms, financial analysts, brokers and carbon consultants involved in devising these projects often admit privately that no ways exist to demonstrate that it is carbon finance that makes the project possible.²² Researcher Dan Welch sums up the difficulty: ‘Offsets are an imaginary commodity created by deducting what you hope happens from what you guess would have happened.’²³ Since carbon offsets replace a requirement to verify emissions reductions in one location with a set of stories about what would have happened in an imagined future elsewhere, the net result tends to be an increase in greenhouse gas emissions.

The use of ‘development’ and ‘poverty’ rhetoric to describe offsets also masks their fundamental injustice: offsets hand a new revenue stream to some of the most highly

22 Larry Lohmann, ‘Marketing and Making Carbon Dumps: Commodification, Calculation and Counterfactuals in Climate Change Mitigation’, *Science as Culture*, vol. 14, no. 3, September 2005, pp. 203–235.

23 Dan Welch, ‘A Buyer’s Guide to Offsets’, *Ethical Consumer*, no. 106, May/June 2007.

polluting industries in the South, while simultaneously offering companies and governments in the North a means to delay changing their own industrial practices and energy usage. As we show in chapter 4, carbon offset projects have resulted in land grabs and the repression of local communities.

Voluntary offsets, which give consumers in the global North a means to make a payment to assuage their guilt about consumption, and companies the chance to present a green face to the public, run into similar problems. Offsets on the voluntary market exist outside UN regulation, but they have similarly negative consequences on the communities forced to endure them. In addition, these personal offsets individualise the response to climate change, distilling the complexities of a systemic problem of how energy is produced and used, and how land is distributed, into a seemingly simple question of authorising a small payment with the click of a computer mouse.²⁴

Putting a price on climate change

These market-based approaches form a key part of the architecture for how international financial institutions and governments propose to address climate change. In the words of the UK Government's influential *Stern Review on the Economics of Climate Change*, climate change is 'the greatest market failure the world has ever seen'.²⁵ Defin-

ing the problem in this way suggests that it is simply a market problem. New markets, Stern insists, can repair what existing markets broke. It is assumed that climate change occurred because no price was put on carbon, with the result that it was not valued when economic decisions were made.

This approach suggests that the earth's capacity to regulate its climate can be treated as a measurable commodity. The problem is that while commodity prices can do many things, one thing that they have never achieved is to solve problems that require structural change in so many fundamental areas of industry and agricultural practice. A market price for carbon, says Sussex University's Energy Group's Jim Watson, 'is a very poor weapon in what is supposed to be a war to save humanity'.²⁶ In the 1970s, high price rises did little to wean industrial societies off oil – and there is little reason to believe that a carbon price can do so either.

The problem is, firstly, that price signals are uncertain – highly so in the case of existing carbon markets. Proponents of carbon trading argue that such markets could affect long-term infrastructure decisions *if only* a stable price signal could be achieved. Yet carbon prices are inherently volatile. The commodity traded as 'carbon' does not actually exist outside of the numbers flashed up on trading screens or the registries held by administrators. But a single tradable unit is needed in order to create a market, and for this purpose a whole set of incommensurable practices, undertaken at different

²⁴ Kevin Smith, *The Carbon Neutral Myth: offset indulgences for your climate sins*, Carbon Trade Watch/Transnational Institute, Amsterdam, 2007.

²⁵ Nicholas Stern et al., *Stern Review on the Economics of Climate Change*, HM Treasury, London, 2006, p.viii.

²⁶ Jeremy Lovell, 'Carbon Price is Poor Weapon against Climate Change', *Reuters*, 25 September 2007.

places and times – from making industrial processes more efficient to capturing coal-mine methane and generating hydro-electric power – are treated as though they were the same.

This makes putting a price on carbon largely an arbitrary exercise and uncertain as predicting a price of even the most mundane commodity is at best guesswork. Currently, traders may attempt to track carbon prices merely by looking at energy prices, calculating the difference between coal and gas prices or by speculating about future political decisions. That is an unlikely recipe for instituting the deep structural changes that the global warming problem demands.

The numbers game

Carbon trading has created a system whereby different greenhouse gases are treated as equivalent and quantifiable ‘things,’ opening them up to the possibility of exchange. An emissions cut in one place becomes ‘equivalent’ to, and thus exchangeable with, a cut or a compensatory measure elsewhere.

At first glance, this may seem uncontroversial. As the World Bank puts it, ‘greenhouse gases mix uniformly in the atmosphere, which makes it possible to reduce carbon emissions at any point on Earth and have the same effect’.²⁷ Climate change is a global problem rather than a local one, so it should not matter whether these reductions are made in Brussels or Beijing. A moment’s reflection will show, however, that, in producing such equivalences, carbon trading already drifts away from tackling climate change.

²⁷ World Bank, *Community Development Carbon Fund Annual Report 2004* World Bank, Washington, 2005, p.5.

That challenge consists mainly of initiating a new historical pathway that leads away from dependence on fossil fuels, which are by far the major contributor to human-caused climate change. Once taken out of the ground and burned, coal, oil and gas add to the amount of carbon cycling between the atmosphere and the oceans, soil, rock and vegetation. This transfer is, for human purposes, irreversible: once mined and burned, fossil carbon cannot be locked away safely underground again in the form of new deposits of coal, oil or gas, or in the form of carbonate rock, for millions of years.²⁸

The transfer is also unsustainable: there is simply not enough ‘space’ in above-ground biological and geological systems to park the huge mass of carbon that is coming out of the ground safely without carbon dioxide building up catastrophically in the air and the seas. As biologist Tim Flannery puts it: ‘There is so much carbon buried in the world’s coal seams [alone] that, should it find its way back to the surface, it would make the planet hostile to life as we know it.’²⁹

Most untapped coal, oil and gas, in other words, is going to have to stay in the ground. Accordingly, countries currently ‘locked in’ to fossil fuels need instead to ‘lock in’ to non-fossil energy, transport, agricultural and consumption regimes within at most a

²⁸ M. Eby, K. Zickfeld, A. Montenegro, D. Archer, K. J. Meissner and A. J. Weaver, ‘Lifetime of Anthropogenic Climate Change: Millennial Time Scales of Potential CO₂ and Surface Temperature Perturbations’, *American Meteorological Society*, vol. 22, no. 10, May 2009.

²⁹ Tim Flannery, ‘Monstrous Carbuncle’, *London Review of Books*, vol. 27, no. 1, 6 January 2005.

few decades.³⁰ Because this shift is structural, the first steps need to be undertaken immediately to minimise future dangers and costs.

While carbon trading encourages ingenuity in inventing measurable ‘equivalences’ between emissions of different types in different places, it does not select for innovations that can initiate or sustain a historical trajectory away from fossil fuels (the effectiveness of which is less easy to measure).

Business as usual

For both governments and many large corporations, the appeal of carbon trading schemes is that they give the appearance of addressing climate change but do not mandate an immediate start to structural change in existing energy practice, production or consumption patterns. As *The Guardian*’s Nick Davies has pointed out, carbon offsetting is ‘an idea which flows not from environmentalists and climate scientists trying to design a way to reverse global warming but from politicians and business executives trying to meet the demands for action while preserving the commercial status quo’.³¹

But climate scientists can succumb to a similar logic. In its Fourth Assessment Report, the IPCC assumes that an international carbon market will be a ‘foundation for future mitigation efforts’.³² This is a remarkably

short-sighted conclusion for an organisation whose work recognises the need for urgent action to reduce greenhouse gas emissions. It is possible to conceive of all manner of climate disasters, it seems, but not to think outside the box of the economic systems that are contributing to their happening in the first place.

The message of all this is clear. Industrialised societies can continue to use up fossil fuels until there are none left worth recovering. At the same time, they can create new markets that make it possible to claim that others can clean up the mess, and that it will be economically ‘efficient’ for them to do so. This is a market, politicians and business leaders assure the public, in which you will be able to ‘pay’ the environmental costs of continuing to drill oil by screwing in efficient light bulbs, or for the costs of opening a new coal mine by burning the methane that seeps out of the same mine.

Yet as long as oil, coal and gas continues being taken out of the ground, run through combustion chambers, and transferred to the active carbon pool in the air, oceans, vegetation and soil, the world will remain on a path toward catastrophic climate change. It took millions of years for plants to extract the carbon from the atmosphere that makes up today’s coal, oil and gas deposits. It’s taking only a few centuries to burn it. Despite all the schemes selling ways to capture carbon there is no environmentally sound or quick method to safely restore the fossil fuels and carbon deposits at the rate they have been unleashed into the atmosphere.

30 Gregory C. Unruh, ‘Understanding Carbon Lock-In’, *Energy Policy*, no. 28, 2000, pp. 817–30.

31 Nick Davies, ‘The inconvenient truth about the carbon offset industry’, *The Guardian*, 16 June 2007, <http://www.guardian.co.uk/environment/2007/jun/16/climatechange.climatechange>

32 Intergovernmental Panel on Climate Change, *op.cit.*, *supra*, note p.7.

Carbon trading is aimed at the wrong target. It is not directed at reorganising industrial societies' energy, transport and housing systems – starting today – so that they don't need coal, oil and gas. It is not contributing to the de-industrialisation of agriculture or the protection of forests through the recognition of local and Indigenous Peoples' tenure rights or food sovereignty. Instead, it is organised around keeping the wheels on the fossil fuel industry for as long as possible.

