

## Proposal for a Global Trading Currency Backed by Carbon Dioxide

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The big idea is the creation of the EBCU (environment-backed currency unit) to replace the dollar as the world's trading and reserve currency. It will be established as a neutral international currency along the lines of the 'bancor' proposed by Keynes at Bretton Woods (see Rowbotham, 2000), but with the added advantage of being based on the right to produce carbon dioxide. It will simultaneously make a major contribution to the problems of global poverty and climate change.

The poverty of the South can be explained in terms of their inadequate consumption of the global economy's energy; the over-consumption of the rich, developed countries can be explained in the same way. Table 1 shows how the shares of carbon dioxide of poor countries do not match their shares of world population. The comparison of India and the USA is the most striking: a direct swap of carbon dioxide would resolve around a fifth of the inequality at a stroke.

**Table 1.** *Shares of population and shares of carbon dioxide for various countries*

Country	% population	%age CO <sub>2</sub>
USA	4.77	24.4
Sweden	0.15	0.21
UK	0.99	2.39
Malawi	0.19	0.003
Malaysia	0.38	0.55
India	17.08	4.78

*Source:* CO<sub>2</sub> emissions data are from Oakridge National Laboratory for 1999; population figures from the UN for 2000.

The IPCC (Intergovernment Panel on Climate Change) is a UN panel of experts who have exhaustively analysed available data about the consequences of carbon dioxide emissions to estimate the 'carrying capacity' of the planet, that is how much CO<sub>2</sub> it is reasonably safe for us to emit. The Global Commons Institute (GCI) in London has developed a model for sharing this total amount fairly between the world's people on a per capita basis, and then for reducing this amount fairly rapidly over time. If we work with the year 2000 the sums work out rather neatly, since the model suggests around 6 billion tonnes of carbon can be produced, and the planet had around 6 billion people, which allows us 1 tonne each. Table 2 compares the amount of carbon dioxide we produce now with the amount we would be able to produce in a C&C framework.

Again it is clear from the table how the poorer the country is the less of its share of carbon dioxide it is producing and the more it needs an input of energy from the richer nations. At present we measure economic energy in terms of money, usually dollars. In an economy that respected planetary limits we would measure activity in terms of energy, since this is the scarcest planetary resource. As green economists we need to move towards an economic which used energy as both a way of measuring the economy, and ultimately the basis for its means of exchange, or money.

**Table 2.** CO<sub>2</sub> entitlements under a per capita regime and actual emissions for a range of countries

Country	CO <sub>2</sub> entitlement (MTC)	Actual CO <sub>2</sub> emissions in 1999 (MTC)	CO <sub>2</sub> per capita (MTC/person)
Algeria	31.59	24.76	0.80
Cameroon	15.57	1.28	0.08
Denmark	5.46	13.55	2.54
India	1050.13	293.94	0.29
Jamaica	17.31	2.79	0.16
Kuwait	2.63	13.09	5.10
Senegal	9.90	1.02	0.11
UK	60.99	147.20	2.47
USA	292.90	1499.85	5.26

*Note:* There are two possible ways to measure carbon, either as a gas or in terms of the solid carbon. We have used the latter unit here because of the neatness of the 6 billion tonnes and 6 billion people. The ratio between the two units is simply the ratio of their molecular weights, i.e. 44/12, so that 1 tonne of carbon is equivalent to 3.67 tonnes of carbon dioxide.

*Source:* Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

Tony: these figures are millions of tonnes of carbon, so I think the unit MTC is correct isn't it?

So what we need is a mechanism for facilitating these carbon dioxide exchanges between rich and poor countries. It is obvious that if we just created the market today, the USA would be able to purchase all the licences it wanted and nothing would change. This is because the US dollar is the main global trade and reserve currency. To enable fair trade in carbon dioxide we would need to create a new global currency: the EBCU. The idea was proposed by Richard Douthwaite in his 1999 book *The Ecology of Money*. In the book he writes:

*But what currency are the over-consuming nations going to use to buy extra CO<sub>2</sub> emission permits? If they used their reserve currencies, they would effectively get the right to use a lot of their extra energy for free. This is because the money they paid would be used as an exchange currency around the world, rather than being used to purchase goods from the country that issues it. To avoid this, the GCI [I'm just quoting Richard here: do you want to add something in square brackets? What does Aubrey think?] has devised a plan under which an international organization such as the International Monetary Fund (IMF) would assign Special Emission Rights (SERs)—the right to emit a specified amount of greenhouse gases and hence to burn fossil fuel—to national governments every month according to the C&C formula. Besides the SERs, the IMF would issue governments with energy-backed currency units (EBCUs) on the same per capita basis, and hold itself ready to supply additional SERs to whoever presented it with a specific amount of EBCUs. This would fix the value of the EBCU in relation to a certain amount of greenhouse emissions, and subsequently to the use of fossil energy.*

The EBCUs would only be issued once; after that they would operate as a fixed amount of new currency, only being replaced when they physically wore out. Countries within the EBCU bloc (the aim would be eventually to work towards all countries joining, but initially it might be a limited bloc, say the EU and former colonies), would agree to buy SERs for all carbon dioxide emissions and would only use EBCUs for foreign trade. In this way the system would both limit the amount of international trade and shift an enormous amount of new money in the direction of the poorer countries.

*At the Bretton Woods Conference in 1944 the British delegation headed by Keynes proposed a neutral currency for global trade. When trade is based on a currency that is also the national currency of a state's economy the system inevitably gives that state considerable financial power, but also distorts its domestic economy. Keynes proposed that an international currency should be created to facilitate global trade, which he called the 'bancor'. Douthwaite's proposal is similar, but in this case the currency is based on the planet's scarcest resource: the right to produce carbon dioxide.*

*The bancor was to be created and controlled by an International Clearing Union. This would ensure that a balance of international trade was established by fining countries which carried either trading deficits or trading surpluses. Thus countries with a surplus would have an incentive to trade with countries in deficit to create a balance. The EBCU system requires a similar body which would ensure a balance of global trade and would allocate the new currency on a global per capita basis between all the people of the world.*

**Table 3.** Carbon dependence of trade for four countries

Country	Exports	Export partners	Electricity generation
Austria	Machinery and equipment, paper and board, metal goods, chemicals, iron and steel, textiles, food	Germany (35.7%), Italy (8.7%), France (4.5%), Switzerland (5.9%), USA (4.5%), Hungary (3.9%)	59.28TWh (68% renewable)
Bahrain	Petrol and petrol products (61%), aluminium (7%)	India (14%), Saudi Arabia (5%), USA (5%), Japan (4%), S. Korea (4%)	6.185 TWh (0%renewable)
Bangladesh	Jute good, leather, frozen fish	USA (31.2%), Germany (10%), UK (8%), France (6%), Italy (4.5%)	12.0TWh (6.3% renewable)
Bhutan	Cardamom, gypsum, timber, handicrafts, cement, fruit, electricity, precious stones, spices	India (94%), Bangladesh	1.86TWh (99.95% renewable)

*Note:* A TWh (terawatt-hour) is a million, million watt-hours, or a billion Kilowatt-hours.

*Source:* Country profiles from CIA datafiles.

The exact details about how the currency and the licences would interact has still to be worked out, and would necessarily be adjusted over time. There are also a whole range of interesting political decisions about how the SERs would be shared out or sold within each national economy. These are political decisions that would be made at the lowest appropriate level. For the time being the research is focusing on what the economic impact would be of a world with a strict carbon limit. In such a world the energy intensity of one's products and the way one produces electricity become the most important decisions, as they should be if we are to counteract climate change. The distance that goods travel before they are sold is also important, since the carbon dioxide produced by the transport process would also need to be covered by SERs. Because of the complexity of measuring them and pressure from the global corporations, international air- and sea-transport emissions were excluded from the Kyoto limits, although domestic air and all road freight is counted. With the inexorable increase in goods transportation that globalisation brings with it, trade represents the fastest growing source of CO<sub>2</sub> emissions as a consequence. Table 3 gives some details of how a range of national economies would fare in a carbon-limited world, by giving details of different aspects of their dependence on fossil fuels: for producing their export goods, for transporting them and for generating their electricity.

Austria is typical of a developed western economy with heavy use of fossil fuels and relatively energy-intensive products. It is well placed in having around 68 per cent of its energy generated from non-fossil-fuel (NFF) sources, in this case hydro. Bahrain, like all the oil-producing states, would lose out badly in the new scenario. It is heavily dependent on the export of petrol and petroleum products and has trade partners right across the world. Bangladesh is in a middle position, with relatively low-energy products but distant export markets and predominantly fossil fuel electricity generation. Finally, Bhutan represents the ideal carbon economy. Its products are mainly carbon neutral (with the exception of cement), its electricity is virtually 100 per cent NFF, and it trades almost exclusively with its neighbours India and Bangladesh. When you explore world trade figures you are struck by the huge distances that goods travel to market. It seems unbelievable that nearly a third of Bangladesh's exports go to the United States, half the world away. This is the insane logic of the dollar trade system. By contrast, an EBCU trade system would prioritise local and regional markets.

This handles the convergence part of the Contraction and Convergence model. The second part is the contraction, i.e. reducing carbon dioxide emissions from the level of 2000 to a level which matches the planet's carrying capacity. Table 2 showed the per capita CO<sub>2</sub> for each country if the 2000 level had been shared fairly, which is equivalent to the level of excess for each country, given that the approximate rate per person at that date was around 1 tonne. The contraction level necessary is still being debated, since it relates to complex mechanisms of reabsorption and feedback which are scientifically unclear. However, a reasonable assumption is that, on a global scale we will need 60 per cent reductions in carbon dioxide emissions by the end of this century, on a global basis. Because the UK is presently producing relatively more than other nations we need to achieve a reduction of around 80 to 85 per cent by 2045.

The encouraging news is that the changes needed for us to fit within the C&C framework are perfectly manageable, within this 40-year framework. Table 4 shows the percentage reductions in CO<sub>2</sub> output that

would be required to fit in with both the contraction and the convergence. In the case of the UK the figures suggest that we need an 83 per cent reduction in emissions. With a move towards renewable energy and a large reduction in car usage this target could be reached. We should not panic about climate change; we should lobby for a strict limit on carbon dioxide and a fair mechanism for sharing it. The only workable mechanism would be a new trading currency, within a balanced trading framework.

**Table 4.** Excess of actual CO<sub>2</sub> emissions compared with C&C permitted levels and percentage reduction required, for a range of countries

Country	Excess (x-fold)	% reduction
USA	13.012.8	92.2
Kuwait	13.0512.4	92.03
Denmark	6.876.20	83.9
UK	6.216.03	83.4
Algeria	2.361.96	49.9
India	0.70	-42.9
Jamaica	0.404	-148.4
Senegal	0.263	287.7
Cameroon	0.21	-386.3

Source: Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

#### References

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- Rowbotham, M. (2000), Goodbye America! Globalisation, Debt and the Dollar Empire (Charlbury: Jon Carpenter).*