

Proposal for a Global Carbon Incentive Fund

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The basic rationale is to create a UN administered Global Carbon Incentive Fund (GCIF) to which countries would contribute if their carbon emissions per capita are above the global average; and from which they would receive payments if their carbon emissions per capita are below the global average. The beauty of this proposal is that it punishes developed nations with profligate energy use and incentivises developing nations to avoid fossil fuels.

There are different ways of calculating a country's emissions. The national emissions Inventory (NEI) covers all greenhouse gases, but only considers "territorial" emissions produced inside the frontiers of the country. There is no attempt to calculate the carbon footprint of imported goods, and international aviation and shipping are also excluded.

The IEA publish annual emissions data for fossil fuels and waste and produced a global figure of 32.9 Gt CO₂ for 2017; global average 4.3 Tonnes. Again these figures do not consider the consumption of imported goods; nor does it include other industrial sources of carbon dioxide.

The Global Carbon Project (GCP) publish CO₂ data for fossil fuels and cement production which produces a global figure for 2017 of 36.2 Gt CO₂ which equates to 4.8 tonnes per capita. The great advantage of the GCP data is that they provide both production and consumption-based emissions by country from 1990. It seems appropriate to use the consumption-based emissions as this reflects more accurately the carbon footprint of the country concerned. 2017 is the latest year for which both production and consumption-based data are available.

The GCP data does not consider other greenhouse gases. This is not really a problem as other GHGs are usually emitted in proportion to carbon dioxide, so using GCP figures would not produce any distortion into the calculations. More significant is that the GCP data does not include CO₂ emissions from AFOLU, (Agriculture Forestry and Other Land Use), so separate account would need to be taken of countries that promote deforestation or agricultural changes that result in large GHG emissions.

For this proposal to be both acceptable and effective, the carbon price would start at a relatively low level, say \$30 per tonne of CO₂, equivalent to the current carbon price on the EU Emissions Trading Scheme. If this strategy is adopted at COP 26 in 2021, then the price could double every 2 years after that, so that by 2028 the price per tonne of carbon dioxide would be \$240. Before fossil-fuel dependent industries object too vigorously, it needs to be remembered that Sweden already operates with a carbon tax of \$123 per tonne of CO₂. Furthermore IMF figures show that air pollution is already costing the global community \$140 per tonne of CO₂,

If CO₂ is priced initially at \$30 per tonne, then it is possible to calculate the contribution of different countries and the payments received. Using production-based figures, China's per capita emissions are 9.84Gt divided by the population of the country (1.386bn in 2017) which equals 7.1 tonnes per capita per annum. China's contribution to the fund would be \$95.6bn (subtract 4.8 from 7.1, multiply by the population of China, times \$30 per tonne). Using consumption-based data China's per capita emissions reduce to 6.2 tonnes per annum, so the payment reduces to \$58.2bn per annum, a saving of \$37.4bn, or 39 per cent. Clearly China, as the world's largest polluter, will be much happier with a consumption-based system, as would Russia which is fourth on the global list of carbon emitters at 5% of the global total.

The country that will benefit most is India. Consumption and Production were very similar in 1990 (616Mt), but by 2017 production is higher than consumption (2.46Gt versus 2.26 Gt) The 2017 population is 1.339bn, so per capita emissions are 1.84 tonnes using production figures, or 1.69 tonnes using consumption-based emissions. India is below the global average of 4.8 tonnes. So would receive \$85bn versus \$69bn, an increase of \$16bn (23%) using consumption-based emissions. Clearly this would encourage India to develop its huge potential for solar power, rather than coal-fired power stations.

The country that will lose out most is the UK. Production-based emissions have fallen from 600 Mt in 1990 to 387.4 in 2017 (UK average 5.8 tonnes per capita) But consumption-based emissions rose from 657.8 Mt in 1990 to 728.8 in 2007, before falling back to 556.5 in 2017 (UK average 8.4 tonnes per capita). Hence UK would have to pay 8.4 minus 4.8 x 66 million x \$30.00 = \$7.13bn as opposed to \$1.98bn, an increase of \$5.15bn using a consumption-based system. However it needs to be remembered that historical UK emissions are very high & represented virtually 100 per cent of anthropogenic carbon emissions in 1750. As the country that initiated the fossil-fuel era, we should also be the country that sets an example to the global community.

For the US production and consumption were very similar in 1990 (5.1bn Gt) but by 2017 Consumption is 8% higher (5.69Gt versus 5.27Gt). This equates to 17.5 versus 16.2 tonnes per capita; or £124bn versus \$111bn, an increase of 11.7 % using consumption-based emissions.

Conclusion

The Global Carbon Incentive Fund is a neat solution to climate change as it incorporates two key elements: punishment of the profligate and financial incentives for developing nations to maintain their low-emitting status. In order to limit global warming to 1.5C, annual emissions globally need to reduce by 50% by 2030. If a strategy is not agreed at COP 26 next year, then the world will be on a course to irreversible climate change. Using consumption-based data should provide the key to unlocking the logjam that has characterised previous climate change negotiations, and a carbon price that doubles every two years will convey the urgency of the measures that are necessary to gain control of the climate crisis.