

The Global Carbon Incentive Fund. Is this the Solution to Climate Change?

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The basic rationale is to create a UN administered fund 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 incentivizes developing nations to avoid fossil fuels. It also provides a financial instrument to enforce “Contract and Converge”.

There are different ways of calculating a country’s emissions. The national emissions Inventory (NEI) covers all greenhouse gases (GHGs), 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 Global Carbon Project (GCP) publish CO₂ data for “industrial” fossil fuel emissions from energy and cement production which produced a global figure for 2018 of 36.6 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. High emitters such as China and Russia would benefit from a consumption-based system as they export more than they import. The EU, the US and particularly the UK would pay more using consumption-based emissions: but these are also the countries that have benefited most from historical emissions. 2018 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 roughly in proportion to carbon dioxide, so using GCP figures alone would not produce any major distortion into the calculations. More significant is that the GCP data does not include CO₂ emissions from AFOLU, (Agriculture Forestry and Other Land Use). Separate account would therefore need to be taken of countries that promote deforestation or agricultural changes that result in large emissions of CO₂ or other GHGs such as agricultural nitrous oxide or methane..

For this proposal to be both equitable and effective, the size of the levy for high-emitting countries; and the amounts received by low-emitting countries is determined by the difference from the per capita global average of 4.8 tonnes CO₂ per annum; multiplied by the population of the country concerned; times the tariff placed on a tonne of carbon dioxide. This could start at \$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 tariff could increase every other year depending on the effectiveness of the scheme. If, for example, the scheme started in 2022, and the price doubled every other year, then by 2028 the tariff 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 price of \$123 per tonne of CO₂. Second BP are already factoring in a carbon price of \$150 per tonne of CO₂ by 2030. Finally the IMF, in 2015, calculated that fossil fuel emissions are costing the global community \$150 per tonne of CO₂, mainly in the form of societal costs from air pollution.

Assuming for the moment, that CO₂ is priced initially at \$30 per tonne, then it is possible to calculate the contribution of different countries and the payments received (See Table 1)

The country that will benefit most is India. The 2018 population is 1.353bn, and per capita emissions were 1.7 tonnes per annum using consumption based data. Since India is below the global average of 4.8 tonnes, it would receive \$126 bn per annum with a tariff of \$30 per tonne of CO₂. Clearly this would encourage India to develop its huge potential for solar power, rather than building yet more coal-fired power stations.

The UK situation

The country that will lose out most is the UK. Production-based emissions have fallen from 600 Mt in 1990 to 366 in 2018 (UK average 5.5 tonnes per capita) But consumption-based emissions rose from 657.8 Mt

in 1990 to 728.8 in 2007, before falling back to 530 in 2018 (UK average 8.0 tonnes per capita). Hence UK would have to pay 8.0 minus 4.8 x 66 million x \$30.00 = \$6.5 bn as opposed to \$1,4 bn, an increase of \$5 bn using a consumption-based system. However it needs to be remembered that historical UK emissions are very high, and represented virtually 100 per cent of anthropogenic carbon emissions from 1750-1800. As the country that initiated the industrial revolution, and has benefited massively from the burning of fossil fuels, Great Britain should also be the country that sets an example to the world community by promoting a road map that will go a long way to solve global warming

Table 1. Levies and sums received by different countries at \$30 and \$60 per tonne of carbon dioxide

Country Population	Per capita annual emissions CO2	Price Per Tonne of CO2 \$30	Price per tonne of CO2 \$60
India 1.353 bn	1.7 tonnes pa (Consumption-based)	\$126 bn GAIN	\$252 bn GAIN
China 1.428 bn	6.3 tones pa (Consumption-based)	\$64 bn LEVY	\$128 bn LEVY
United States 327 million	18 tonnes pa (Consumption-based)	\$129 bn LEVY	\$258 bn LEVY
EU-27 448 million	6.7 tonnes pa (Consumption-based)	\$26 bn LEVY	\$51 bn LEVY
United Kingdom	5.5 tonnes pa (Production-based)	\$1.4 bn	\$2.8 bn
66 million	8.0 tonnes pa (Consumption-based)	\$6.4 bn LEVY	\$12.8 bn LEVY
2018 Data			Difference \$10 bn

Political Considerations

The beauty of the GCIF scheme is that it penalises the profligate whilst simultaneously incentivising the low-emitting countries to adopt low carbon technologies, thus avoiding the need for developing nations to rely on fossil fuels with all the geopolitical complications that entails. In addition the scheme should not be seen as a tax on carbon; or even as a money transfer from the developed to the developing world, particularly as such schemes have failed to gain support in the Global South and are regarded as charity in the Global North. It should be seen as a fair equitable and just levy or reward for the current carbon emissions from every country on the planet.

However, there are two further requirements to make the GCIF scheme both equitable and effective. First there has to be a mechanism for dealing with deforestation and other changes in land use which affect

carbon emissions but which are not included in the Global Carbon Project figures. Second there needs to be a mechanism for rogue countries that refuse to participate. The answer to both these difficulties is a border carbon adjustment tax on all exports from countries that are trashing the planet. And the tax needs to be set high enough to compensate for the loss of revenue to the GCIF.

Finally the UN needs to get away from resolutions requiring unanimity. Five countries refused to sign up to the IPCC document on limiting global warming to 1.5C: Russia; Saudi Arabia; Kuwait; Australia and the US under Trump. Mercifully the US no longer has a President in climate denial, so US support is no longer a problem. The other four all have a significant vested interest in promoting the sale and distribution of fossil fuels. If they won't cooperate then they need to become international pariahs and pilloried for forfeiting the future of the planet for profit.

At COP 26, resolutions are supposed to be unanimous, which means that any one country can frustrate the will of the majority. This is a system that is designed to fail, and may well explain why the last 25 COP meetings have had no discernible effect on the upward trajectory in global greenhouse gas emissions. We need COP 26 to be a success, but for that to happen we need to find a mechanism around the unanimity roadblock.

One way is to establish a Global Carbon Coalition (GCC) of the willing; which would have to include the four biggest emitters: China; US; EU; and India. India would be happy to cooperate as it will be receiving considerable funds from the other three. The EU is already committed to a redistribution model, and China will probably cooperate as the levy will be significantly less using a consumption-based system. That leaves the US, whose President Joe Biden is also taking climate change seriously.

A further proposal is the Sunrise Scenario whereby a low emitting country from the Global South teams up with a high-emitting country from the Global North in order to road-test the GCIF proposal, iron out the technical aspects and diplomatic hurdles. For example, India could partner up with the US or the EU, and the UK could partner with one or more African countries such as Nigeria, Kenya or Rwanda. For the purposes of this pilot scheme, the tariff could be set low at \$1 per tonne of CO₂, as the aim is to assess feasibility; not to transfer large sums of money. The GCIF proposal could then be presented and adopted at COP 26 with input from countries that have gained experience from these pilot schemes.

Summary

The Global Carbon Incentive Fund is an elegant and equitable 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. The IPCC have recommended that emissions globally need to reduce by 7.7% per annum between 2020 and 2030 in order to limit global warming to 1.5C. Thanks to Covid the first year of the decade is roughly on target: but going forward this will require a reduction of 70% over 9 years, or 5.0% per annum if compounded. Let us put to one side for the moment the fact that we are on course to reach 1.5C of warming by 2025, and that staying below 1.5C is impossible. In reality we need to ensure that there is a balance between sources and sinks for all GHGs before 2050, and even that will result in a significant overshoot above 1.5C.

What is abundantly clear, is that if a strategy is not agreed at COP 26 this year, then the world will be on a course to irreversible climate change. The Global Carbon Incentive Fund, if it relies on consumption-based data, may well provide the key to unlocking the log-jam that has characterised previous climate change negotiations, and a carbon price that doubles every two years or three years until 2028 will convey the urgency of the measures that are necessary to gain control of the climate crisis.

So there's the solution. All we need now is the political will, and leaders with sufficient standing on the world stage to actually make this happen.

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