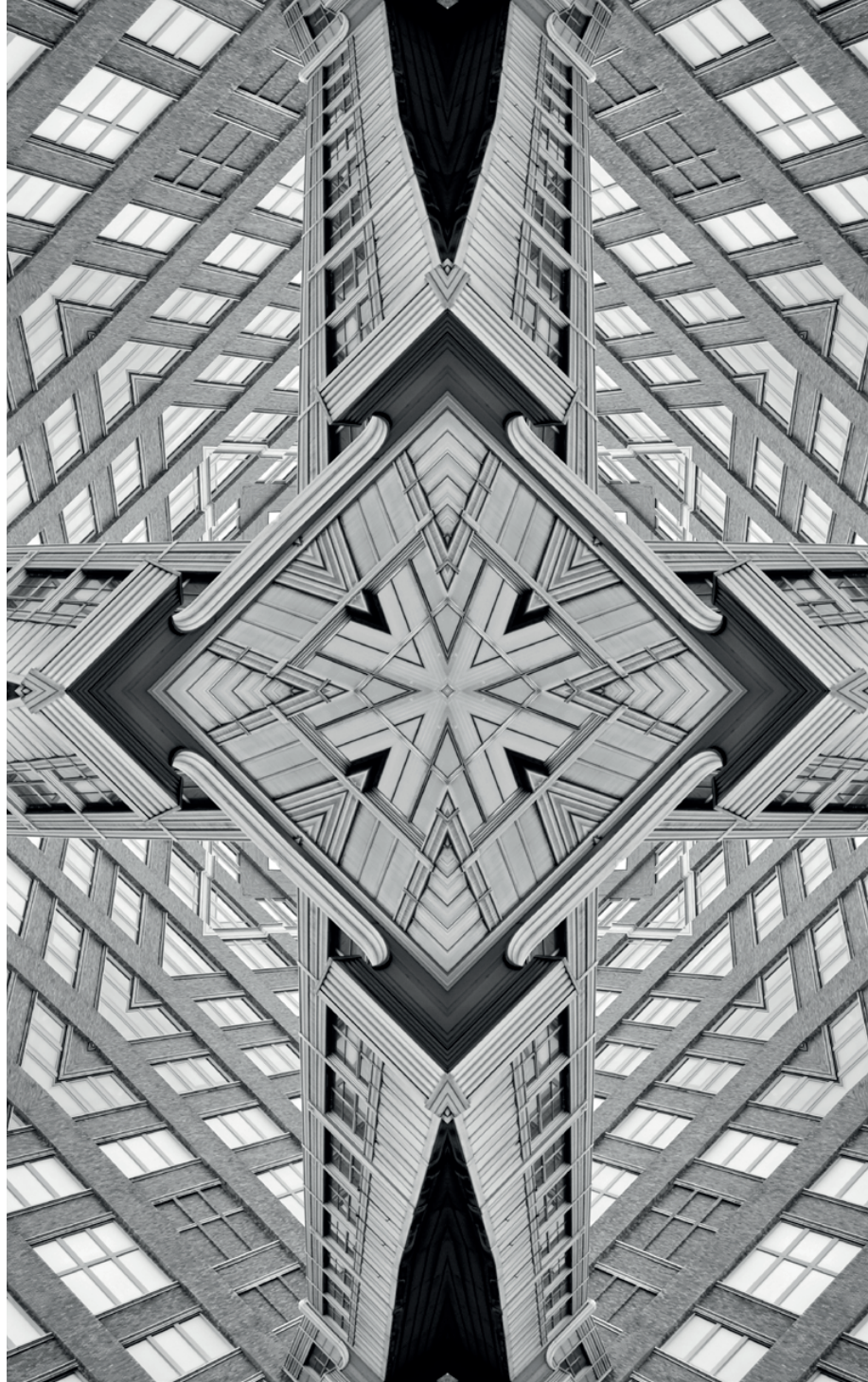


Issue

Brief

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The Global Carbon Incentive Fund as a Response to the Climate Crisis

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Abstract

The 2015 Paris Climate Agreement, often hailed as a diplomatic triumph, aims to limit temperature increases to below 2 degrees Celsius (C), preferably to 1.5 degrees C, compared to pre-industrial levels. However, with the United Nations (UN) having failed to establish a method for putting a price on carbon, greenhouse gas emissions have continued to rise, and global temperatures increased by more than 1.2 degrees C in 2020. Already, experts warn that the world is past the point of limiting global warming to 1.5 degrees C. This brief makes an account of the attempts that have been made by the international community to put a price on carbon and explains why they have largely failed. It makes a case for the creation of a Global Carbon Incentive Fund (GCIF).

Six years since the Paris Climate Agreement was adopted at the Conference of Parties (COP) 21, its goal of keeping the rise in global temperature well below 2 degrees C has become unattainable. According to the World Meteorological Organization (WMO), there is a 90-percent chance of breaching 1.5 degrees C in at least one year between 2021 and 2025.¹ Xu et al. (2018) predict that the underlying temperature trend will likely reach 1.5 degrees C by 2030,² while the Intergovernmental Panel on Climate Change (IPCC) surmises that this could be pushed back to 2040, provided that remedial measures are implemented rapidly.³

A 2015 International Monetary Fund (IMF) report estimated that the cost of fossil fuels subsidies amount to US\$5.3 trillion annually, i.e. 6.5 percent of global GDP, much of which is in the form of health costs from the air pollution generated by many of the most carbon-intensive energy technologies.⁴ These externalities are not taken into account when comparing the cost of energy generated from different sources, creating an imbalance between renewable sources and fossil fuels.

Most analysts agree that the balance can be redressed by **taxing fossil fuels directly**, or else, indirectly by taxing carbon emissions; the fossil fuel industry has resisted such a move for years. For example, fossil fuel interests in the United States (US) spent US\$2 billion from 2000 to 2016 in lobbying activities to prevent the Senate from passing climate legislation.⁵ While many countries do impose direct taxes on fossil fuels such as petrol or diesel, they apply mainly to heating and fuel and not more widely to other sectors.

The United Kingdom (UK) introduced a fuel price escalator in March 1993, which increased the cost of such fuels above the inflation rate; this was replaced by the fuel duty stabiliser in 2011. Since then, the British government has refused to increase the fuel tax further. Finland was the first country to introduce a carbon tax based on CO₂ emissions, closely followed by Sweden in 1991. Sweden now has the highest carbon tax of any country in the world, set at SEK1190 (equivalent to US\$126 per tonne of CO₂).⁶

“The Paris Climate Agreement’s goal of keeping the rise in global temperature well below 2 deg C has become unattainable.”

A second method of putting a price on carbon is the **carbon credit market**, which involves two basic schemes.

1. Certified emission reductions (CERs), which are administered by governments or subnational authorities and are modelled on the cap-and-trade programmes that were introduced to reduce sulphur emissions. In the 1970s and 80s, sulphur emissions from coal-fired power stations contributed heavily to air pollution and acid rain, and companies that were unable to comply with new emission standards were only allowed to continue operating if they purchased sulphur credits. Since the price of the credits increased, the companies were forced to reduce their sulphur emissions. However, this model has not worked well for carbon in the absence of a global carbon market; moreover, the market price has never been high enough to force companies to minimise their emission. In the European Union (EU), for example, the carbon price fluctuated from €5 to €10 per tonne of CO₂ equivalent (CO₂e). At the same time, countries with large forests, such as Russia, were allocated carbon credits simply for not felling forests, allowing them to continue to pollute while also being paid without having to take any corrective actions.

Globally, there are 61 separate CERs in operation, but they only cover 20 percent of global emissions. The largest CERs are in the EU, China, the US, South Korea, Canada and Switzerland. The EU Emissions Trading Scheme (ETS) was established in 2005 as the first international carbon trading scheme and claims to have reduced emissions in those sectors that participate in the scheme by 21 percent. However, this covers merely 40 percent of industrial activity in Europe. The carbon price on the EU ETS is currently around €50. The UK, post-Brexit, is likely to develop a standalone carbon trading scheme and has set a minimum price of £15.00 per tonne of CO₂. Australia has no CERs after they were scrapped by then Prime Minister Tony Abbott in 2014.⁷

At a national level, when governments set a target date for net zero, carbon credits are seen as an alternative to zero carbon emissions since certain sectors are difficult to decarbonise. However, CER schemes are not applied globally, giving companies the option to move production to countries where no ETS operates. To prevent this, the EU has threatened to impose a Carbon Border Adjustment Tax, but this may be difficult to implement if it conflicts with World Trade Organization (WTO) agreements. In this context, a UN-mandated carbon tax would be a much more effective instrument for controlling carbon emissions globally. However, such a tax is unlikely to be accepted by countries that either export fossil fuels or rely heavily on them. Indeed, at the COP24 in 2018, the US, Saudi Arabia, Russia and Kuwait rejected the IPCC report on limiting global warming to 1.5 degrees C.⁸

2. Voluntary emissions reductions (VERs), wherein companies can purchase “over-the-counter” carbon credits that are certified through a voluntary certification scheme. When businesses invest in processes (which they do not own) that reduce or remove carbon and other greenhouse gases, it is known as “carbon offsetting.” For example, a company could support a certified project in the developing world to replace diesel generators with batteries charged by photovoltaic panels. Such an arrangement could provide developing countries with renewable energy and is one way for the financial community to transfer funds to the Global South.

Unfortunately, these schemes are often used by fossil-fuel-dependent industries to claim carbon neutrality while making little or no effort to reduce their own emissions at source. Airlines, for example, may offset their CO₂ emissions from a flight and even pass the costs to their passengers as a carbon levy, claiming carbon neutrality at no cost to themselves. To date, the cumulative offsets from VERs is 1,300 Mtonnes CO₂e, but it is predicted to grow rapidly in size. Former Bank of England governor Mark Carney has called for a US\$100 billion investment in the VER market.⁹

Carbon offsets have been widely criticised, since the schemes are fraught with problems related to poor regulation and lack of proper certification. For instance, a company can purchase a peat bog and receive carbon credits without utilising it, allowing it to claim carbon neutrality while making no impact in terms of emission reduction. Thus, carbon offsets become a diversion from the real task of reducing emissions at source. James Hansen has described carbon credits as being the equivalent of “Medieval Indulgences,” allowing people to assuage their guilt while continuing to contribute to climate deterioration.¹⁰

One way to reduce fossil fuel dependence is by **incentivising the development of renewable energy**. To this end, the UN has proposed the transfer of US\$100 billion from developed to developing nations,¹¹ called the Climate Finance Fund. However, while the scheme was adopted over a decade ago at the COP16, it has not managed to raise the necessary funds. The UK government, for example, has recently reduced its Overseas Development Grant from 0.7 to 0.5 percent of its GDP. Overall, the Global North dislikes the seemingly “charitable” nature of the scheme, whilst the Global South has an aversion for the conditional nature of the funds.

In 2019, Professor Raghuram Rajan, former chief economist at the IMF, described a financial instrument that would transfer funds to the Global South by imposing a carbon levy on high emitting nations¹² and called it the “Global Carbon Reduction Incentive.” This has been developed and renamed as “Global Carbon Incentive Fund” (GCIF) by the author of this brief.^{13, 14}

The Global Carbon Incentive Fund: Opportunities and Challenges

The United Nations Environment Programme (UNEP) is the international body charged with proposals to mitigate climate change. The central goal of the proposed Global Carbon Incentive Fund (GCIF) is to create a UN-administered fund to which countries must contribute if their carbon emissions per capita surpass the global average and from which they would receive payments if their carbon emissions per capita are below the global average. In essence, the GCIF will penalise developed nations for profligate energy use and incentivise developing nations to avoid fossil fuels. Moreover, it provides a financial instrument to enforce “Contract and Converge,” which was cited as the most equitable framework for mitigating climate change at the COP3 in 1997.¹⁵ Recently, however, there has been little or no deliberation on this instrument, with the exception of a letter in the *Financial Times* in 2021.^{a,16}

There are different ways of calculating a country’s emissions. The National Emissions Inventory (NEI) covers all GHGs, but only considers “territorial” emissions produced inside the frontiers of the country. The NEI figures thus exclude the carbon footprint of imported goods, international aviation, and shipping. The Global Carbon Project (GCP) publishes country-specific carbon dioxide (CO₂) data annually for “industrial” fossil fuel emissions, which includes energy and cement production; in 2018, the GCP

“The proposed fund seeks to penalise profligate energy use and incentivise less dependency on fossil fuels.”

produced a global figure of 36.6 gigatonnes of CO₂, i.e. 4.8 tonnes per capita. The advantage of the GCP data is that it provides both production- and consumption-based emissions by country, starting in 1990.^b Of these, the consumption-based emissions data reflects more accurately the carbon footprint of a country. High emitters such as China and Russia will benefit from a consumption-based system, as they export more than they import; while the EU, the US and the UK will pay more using such data. To be sure, the latter are countries that have benefited most from historical emissions.

a The letter was signed by Colin Challen, Former Chair, All-Party Parliamentary Group on Climate Change; Robin Stott, Executive member, UK Climate & Health Alliance; Bill McGuire, Professor Emeritus of Geophysical & Climate Hazards; and Aubrey Meyer, Director, Global Commons Institute.

b 2018 is the latest year for which both production- and consumption-based GCP data are available.

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One disadvantage of the GCP data is that it does not include other GHGs or CO₂ emissions from agriculture, forestry and other land use (AFOLU). The former is not an insuperable problem, since other industrial GHGs are usually emitted roughly in proportion to CO₂. Thus, using GCP figures alone is unlikely to result in any major distortion in the calculations. However, to address the lack of AFOLU data, a separate account is needed, specifically for countries that promote deforestation or activities that result in large emissions of CO₂ and other GHGs such as agricultural nitrous oxide or methane. The data is readily available from the IPCC, which estimates GHG emissions from AFOLU. Using this, the UN must formulate a uniform method of pricing. This is best done by means of the Sunrise Scenario, which can act as a pilot scheme for road-testing the GCIF proposal. Under this scheme, an emitting country from the Global South can team up with a high-emitting country from the Global North to road-test the GCIF proposal and smoothen the technical aspects and diplomatic hurdles. For example, India could partner up with the US or the EU, and the UK, with one or more African countries.

For the GCIF 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 CO₂. This could start at US\$30 per tonne of CO₂, which is considerably below the current carbon price on the EU ETS. If this strategy is adopted at the COP26 in 2021, the tariff could increase every other year depending on the effectiveness of the scheme. For example, if the scheme is rolled out in 2022 and the price doubled every other year, by 2028, the tariff per tonne of CO₂ would be US\$240. Alternatively, it could start at US\$60 per tonne of CO₂, and double in price every three years. To be sure, fossil fuel-dependent industries may be inclined to object to such a model; however, it must be highlighted that similar carbon pricing mechanisms have already been implemented in several countries. Sweden currently operates at a carbon price of US\$126 per tonne of CO₂. Second BP, too, is already factoring in a carbon price of US\$100 per tonne of CO₂ by 2030. Moreover, according to IMF projections, fossil fuel emissions cost the global community roughly US\$145 per tonne of CO₂ in 2015, mainly in the form of societal costs from air pollution.

“High emitters such as China and Russia will benefit from a consumption-based system; the EU, US and UK will pay more.”

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Based on the model proposed above, if CO₂ is priced initially at US\$30 per tonne, the contribution of different countries and the payments received will be as seen in Table 1.

Table 1
Levies and Sums Received by Different Countries at US\$30 and US\$60 Per Tonne of Carbon Dioxide

Country Population	Per capita annual emissions of CO ₂	Price Per Tonne of CO ₂ US\$30	Price per tonne of CO ₂ US\$60
India 1.353 billion	1.7 tonnes pa (Consumption-based)	US\$126 billion GAIN	US\$252 billion GAIN
China 1.428 billion	6.3 tonnes pa (Consumption-based)	US\$64 billion LEVY	US\$128 billion LEVY
United States 327 million	18 tonnes pa (Consumption-based)	US\$129 billion LEVY	US\$258 billion LEVY
EU-27 448 million	6.7 tonnes pa (Consumption-based)	US\$26 billion LEVY	US\$51 billion LEVY
United Kingdom 66 million	5.5 tonnes pa (Production-based)	\$1.4 billion	\$2.8 billion
2018 Data	8.0 tonnes pa (Consumption-based)	\$6.4 billion LEVY	\$12.8 billion LEVY \$10 billion Worse Off

As Table 1 shows, the country that will benefit the most is India. In 2018, its population was 1.353 billion and per capita emissions were 1.7 tonnes per annum, using the consumption-based data. Since India is below the global average of 4.8 tonnes, it will receive US\$126 billion per annum, with a tariff of US\$30 per tonne of CO₂. This will, in turn, incentivise India to develop its huge potential

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for solar power instead of building more coal-fired power stations. Meanwhile, the country that stands to lose the most from using consumption-based (rather than production-based) emissions data is the UK. While production-based emissions have fallen from 600 megatonnes in 1990 to 366 in 2018 (UK average, 5.5 tonnes per capita), consumption-based emissions have increased from 657.8 MT in 1990 to 728.8 MT in 2007, before falling back to 530 MT in 2018 (UK average, 8.0 tonnes per capita). Thus, using a consumption-based system, the UK will have to pay US\$6.5 billion $([8 - 4.8] \times 66 \text{ million} \times \text{US}\$30)$ as opposed to US\$1.4 billion—an increase of US\$5 billion. Thus, the British government is likely to resist a consumption-based system.

However, as the host of the COP26, it must look beyond short-term losses and demonstrate to the world that it can still play a global role post-Brexit. Historically, UK emissions have been amongst the highest and, before 1800, represented virtually 100 percent of anthropogenic carbon emissions. As the country that initiated the Industrial Revolution and has benefited greatly from the burning of fossil fuels, the UK must now lead by example in the international community and promote a roadmap that will help solve global warming in the long run. Already, the UK serves as a great example of the potential of renewable energy; over the past 30 years, it has decarbonised its electricity supply while increasing the size of its economy by 80 percent, proving that renewables do not constitute a hindrance to development.

In implementing the GCIF proposal, one of the most crucial of the foreseeable challenges will be the willingness, or lack thereof, of countries to participate in the scheme. To address this, it will be useful to impose a border carbon adjustment tax on all exports from countries that behave in an environmentally irresponsible way. This tax must be set high enough to compensate for the loss of revenue to the GCIF.

“The UK has proved that renewables are not a hindrance to development: it decarbonised its electricity supply while increasing the size of its economy by 80%.”

The Global Carbon Incentive Fund: Opportunities and Challenges

In 2018, four countries refused to sign the IPCC document on limiting global warming to 1.5° C, namely, Russia, Saudi Arabia, Kuwait, and the US (under Trump). With the change in presidency in 2020, the US is no longer part of this problem. The remaining three, which have significant vested interests in promoting the sale and distribution of fossil fuels, must either be compelled to cooperate or declared international pariahs. It should further be noted that in 2021, Russia, China and Saudi Arabia, along with Australia, India and Turkey, refused to agree to a ban on coal-burning at the G20 meeting in July.

Keeping these developments in mind, the UN must attempt to move away from resolutions requiring unanimity. In the upcoming COP26, too, resolutions are required 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 explains why the last 25 COP meetings have had no discernible impact on the upward trajectory in global GHG emissions. For the COP26 to be a success, it is imperative to find a way around the unanimity roadblock.


One way is to establish a Global Carbon Coalition (GCC) of the willing, which must include the four biggest emitters—China, US, EU, and India—responsible for roughly 60 percent of the global carbon emissions. Of these, India is likely to be most cooperative, since it will receive a considerable amount of funds from the other three. Further, the EU is already committed to a redistribution model, and the US under Joe Biden is also taking climate change seriously. China, the world's biggest emitter, for its part, should consider that the levy under the GCIF model will be significantly lower using a consumption-based system. The GCIF proposal could be presented following a Sunrise Scenario pilot (discussed earlier). For the purposes of such a pilot scheme—aimed at assessing feasibility, and not transferring large sums of money—the tariff could be set low at US\$1 per tonne of CO₂. Once these pilot schemes have been successfully executed, the GCIF model could be adopted by the UN, with inputs from countries that have gained experience from Sunrise Scenario pilots.

“In the upcoming COP26, resolutions are required to be unanimous; this is a system that is designed to fail.”

Conclusion

Dr Robin Russell-Jones is facilitator at the 2021 St George's Climate Consultations at Windsor Castle; founder of Help Rescue the Planet (<http://co.uk>); and organiser of the Mayday C4 events (maydayc4.com) being held monthly in the run-up to the COP26.

The Global Carbon Incentive Fund can be an elegant and equitable solution to climate change, as it incorporates two key elements: penalty for profligate energy consumption, and financial incentives for maintaining low-emitting status. According to the IPCC, global emissions must be reduced by 7.7 percent per annum between 2020 and 2030 to limit global warming to 1.5 degrees C—the target set by the Paris Climate Agreement. As a result of the extended lockdowns imposed by most countries in response to the COVID-19 pandemic, this target has been roughly achieved in the first year of the decade. However, efforts must be ramped up in the coming years to achieve the required reduction of 70 percent over nine years. It will not be sufficient to simply exhort nations that rely heavily on fossil fuels to come up with more ambitious NDCs (Nationally Determined Contributions). It is critical to establish an efficient mechanism for pricing carbon globally, preferably during the COP26 this year. Failing this, the world will likely be on a fast track to irreversible climate change.

A carbon price that doubles every two to three years until 2028 will convey the urgency of the measures that are necessary to gain control of the climate crisis. Using consumption-based data, the GCIF could well provide the key to surmounting the impasse that has characterised previous climate change negotiations. What is now needed to push this through is the political will of leaders with sufficient standing on the world stage. 

“It is critical to establish an efficient mechanism for pricing carbon globally.”

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