



CARBON IS MONEY

Information document

Carbon is Money
Protect the Common
Fix the System

Climate change is the result of a market failure.

Climate change results from a failure of our economic model. This arises from what economists call a negative externality - when the cost of emissions is not included in our economy. This classic collective-action problem, sometimes called a Tragedy of the Commons, is a well-researched subject in economics where a shared resource tends to be rapidly depleted because no single actor – whether a country, organisation or person – considers how their actions affect other users of the resource. In other words, because a participant reaps all of the benefits but suffers only part or none of the costs, they are tempted to over-exploit the resource.

Government attempts to correct this have failed.

Typically when this occurs, governments have either used taxes, incentives or legislation to correct the market failure.

Finding a price for carbon.

In the case of greenhouse gas emissions, governments have focussed on creating carbon markets, where carbon mitigation assets in the form of carbon credits or carbon offsets are traded. Pricing carbon this way should be the most effective and lowest-cost way of incentivising atmospheric carbon reduction. This allows the costs of climate impacts and the opportunities for low-carbon options to be better reflected in our production and consumption choices.

Failure of the carbon markets.

This has, however, not been the case. Carbon markets have failed spectacularly in delivering a reduction in CO₂e concentrations. Carbon mitigation demand is minuscule, and prices remain far too soft to shift behaviour and stimulate significant investment to meet the internationally agreed targets. Their failure stems from poor design rules, lack of oversight and institutional support - the direct result of different nations' inability to find agreement on how they should operate. Due to this, carbon markets remain small and fragmented, with limited liquidity and high transactional friction. They lack transparency and fungibility, giving rise to risks that erode trust.

Institutional inadequacy.

If left to governments, these limitations will not be fixed. Our institutions cannot find the agreements and cooperation required to tackle these issues. There are too many inherent disparities and skewed vulnerabilities between the various nation-states. It is unrealistic to expect nations to find agreement on how to deal with issues such as (i) the inequality of economic welfare and the varied climate ambitions among different nation-states, (ii) the difference in their respective historical contributions made to emissions and how this factors into who pays for what and how much (iii) or the variation in the impact felt by

different geographies independent of the source of the emissions and how to fairly assign liability (iv) or the unfair inter-generational distribution of current economic benefit and future environmental costs.

Adopting The Carbon Standard.

Harness the power of community to overcome institutional impotence.

We need a people-driven solution, independent of governments, that gives every person, organisation, business, and institution a simple and cost-effective ability to take climate action and transmit their climate needs to the market. We need a solution where everyone can participate in the growth of the carbon economy by creating an efficient marketplace for all participants. People and organisations have a significant pent-up demand to take climate action and reduce or offset their carbon emissions. Still, there is no efficient and easy way to do it.

Create market demand for the carbon markets.

Expanding and improving on the current carbon markets requires a significant use case for carbon reductions that has everyday utility to the community. Up to now, the demand for carbon has mainly been driven by the limited compliance needs of a handful of regulated industries in some countries or the ethical needs of some organisations and individuals who want to reduce their carbon footprint or attain neutrality voluntarily. To generate a significant expansion of the carbon markets, we will need to create a substantial source of demand with actual utility value for the market and its participants.

Carbon as the new gold.

This use case exists today. The properties of the carbon mitigation assets, such as carbon credits or offsets, are similar to those of gold, which, like gold, make them suited to be the basis for regulating our present-day money supply. Like gold, it is expensive and challenging to produce, making supply reasonably inelastic and predictable, curtailing the possibility of sudden supply shocks. Like gold, it has limited industrial usefulness, so sudden demand shocks are rare.

Crucially, like with gold, the supply is limited, which provides the necessary scarcity, combined with the high effort to produce and the predictability in supply and demand, creating the requirements for it to be a good store of value. Lastly, like gold, it has attained intrinsic cultural value - gold was used to project wealth and status - carbon mitigation can be used to measure and demonstrate one's personal contribution to ensuring the sustainable future of our environment and society.

Internalising the Externality.

In this manner, carbon mitigation is directly tied to economic output. As the economy grows, so does the need for the money supply. In order to support the greater need for money to represent the increase in the value of the economy, it becomes necessary to increase the levels of carbon mitigation. Economic growth, therefore, directly transmits demand for carbon mitigation.

Updating our Economic Model.

It is entirely feasible for central banks worldwide to simply update their mandates to include carbon mitigation assets. Currently, most of the world's free market economies have a dual mandate of keeping prices stable (targeting inflation) while maximising employment. A simple proposal would be for the mandate to now include a third leg of carbon mitigation achieved. In this case, a central bank will aim to fulfil a triple mandate of stable prices, maximum employment, and a minimum level of carbon mitigation achieved (ideally in line with the recommended IPCC pathway to keep temperatures below 2 degrees centigrade).

Several policy instruments are available to central banks to achieve this, e.g. (i) holding carbon mitigation assets as part of the central bank's balance sheet or (ii) requiring minimum reserve levels of carbon mitigation assets held by commercial banks. A third possibility is for carbon mitigation to fulfil the role of a reserve currency for the world's central banks. All these are tantalising options, but their implementation is fraught with the same collective action challenges that the carbon markets face. Such an implementation would require widespread voluntary adoption by central banks or agreement on the rules of the game. For the same reasons stated above, the inherent competing ambitions of nation-states make this unlikely. The fourth possibility is simply to bypass these institutions and create an independent private currency based exclusively on carbon mitigation that competes for market share with fiat currencies.

In this manner, global citizens who adopt and use the new currency can establish a defacto-independent reference currency. The more people adopt and use it for their money needs, the more relevance this reference currency obtains, and if sufficiently successful in both capturing market share and demonstrating efficacy in generating demand for carbon mitigation, it could then spur countries to adopt such a currency as part of their reserve holdings to transmit environmental policy. This is the most feasible route to start with, in our opinion, and forms the basis of the formation of the *Carbon is Money movement*.

New Proposed International Monetary System.

The currency.

We propose a new international monetary system (a carbon standard) based on a carbon currency to tackle the two pressing externalities in today's global economic and political context: the dangerous and irreversible effects caused by unconstrained greenhouse gas emissions and the correction of the current limitations of the carbon market and its expansion.

We propose a new unit of international trade, the toco – short of tonnes OCO, the molecular formula for carbon dioxide, or tonnes carbon dioxide, where each toco in circulation represents one ton of carbon dioxide equivalent that has been credibly removed from the atmosphere.

We propose that the toco is represented by a portfolio of carbon mitigation assets held centrally in the form of tradable certificates representing credible carbon credits, -carbon -offsets, -carbon reductions or -carbon avoidances verified by independent accredited third parties.

The Carbon Reserve & Monetary Policy.

We propose a central carbon reserve that acts as an independent, non-profit and non-government institution and is responsible for toco issuance, purchases and the custody of the portfolio of carbon assets. It aims to maintain the convertibility of tocos to carbon assets and responsibly grow the toco supply, thus expanding the voluntary carbon market.

We propose a similar monetary framework to the gold standard where the money in circulation was linked to the gold held in a nation's central reserve. The central reserve's function was to ensure that this relationship was maintained and that the convertibility of the currency into gold was maintained at a fixed rate per ounce of gold. In the carbon standard adopted by toco the relationship is maintained as 1 toco per tonne of carbon reduction achievable.

We propose The Carbon Reserve performs a role analogous to that which reserve banks have in applying monetary policy within the monetary framework. It will manage a portfolio reserve of carbon assets to support the issue and support of currency and address any market risks and failures that may arise. In this manner, it will provide a key source of liquidity to the market through the issue of its currency.

We propose The Carbon Reserve strives to fulfil a dual mandate: (i) targeting exchange rates that achieve the Representative Concentration Pathway (RCP) adopted by the IPPC (or other expert body) in an economically sustainable and responsible manner and (ii) to maintain mitigation value stability for its currency.

We propose The Carbon Reserve follows a risk-based approach to assessing the mitigation value of the carbon assets it purchases. The need to assess mitigation value arises from the fact that many different actions have mitigation outcomes but that they don't necessarily have the same mitigation outcomes. Risk-adjusted mitigation values are intended to provide a way to differentiate between assets that are generated from mitigation actions that vary in their design, implementation and impact.

The Payment System.

We propose to introduce a new global settlements platform to support both (i) the payments and receipts of its issued currency among account holders and (ii) the recording of carbon mitigation asset contracts and their exchange among market participants. Tocos are issued to unique digital wallets created by toco account holders.

We propose to use DLT technology to create the platform because it is fast, cost-effective, scales easily, results in immutable records, can deploy in a decentralised manner and can be independently scrutinised by observers. We oppose the creation of traditional cryptocurrency on philosophical grounds. Current permission-less, fully decentralised and anonymous protocols suffer from volatility, performance constraints, moral hazards and lack of consumer protection.

We propose toco transactions take place on a low footprint, permissioned blockchain that is regulatory complaint (KYC and AMLA) in the jurisdictions in which it operates. We believe in the ongoing stability of national currencies; in safe, secure, and stable banking systems and strong consumer protections. We propose The Carbon Reserve work with policymakers as the financial network expands and as regulations change.

We propose the blockchain protocol and design be focused on being capable of handling the daily transactional needs of billions of people. The network shall be secure while capable of high volumes with quick finality. Payment shall be mobile-capable and designed for low latency. The network shall be query-able, auditable, administrable and modular.

Better Money for a better world.

The introduction of such a system will yield significant benefits in the fight against climate change. It provides our economy with a means to internalise negative externalities via monetary policy. It gives us the tools to balance economic growth within our planetary limits as one coherent economic system.

It will dramatically increase demand for carbon mitigation by providing ordinary people with a simple, affordable means to participate in climate action. Leveraging societies' current money needs (i.e. for transactions, savings and investments) creates the liquidity, the market signal and ultimately, the monetary liquidity to support the carbon mitigation volumes and prices we need to achieve the international targets set.

It will significantly reduce friction in the carbon markets, improving carbon price discovery. It provides a key source of liquidity to the market and becomes a tool for mitigating carbon risks via central intermediation services. It mitigates risks in the carbon markets by linking them and pooling risks on a global level.

State of play.

We have established the full set of infrastructure required for the widespread adoption of the new proposed monetary system.

- A capitalised and operative non-profit foundation in Geneva with treasury and portfolio management capabilities to implement monetary policy.
- Swiss regulatory approvals and permission to operate the payment system.
- Capabilities to comply with the regulatory international requirements (KYC, AMLA, etc.).
- A fully operational peer-to-peer payment system that is instantly deployable anywhere with an internet connection.
- A mobile payment application that tracks impact, connects communities and provides social tools to drive the expansion of the monetary system.

We have beta-tested the solution in a mid-sized town between Feb 2023 and Nov 2023. We achieved significant success across all of the important dimensions. We are now rolling out the solution to interested communities, towns and cities in Europe.



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