

Carbon Added Tax

1. Introduction

This document primarily focusses on the implementation of a globally applied Carbon Added Tax (CAT) being one component of the online [Carbon Taxation Mechanism \(CTM\)](#) proposal document released earlier last year. Centred on a methodology of Carbon Pricing, the Carbon Added Tax is one of four cornerstones of the CTM with revenue flowing between each to address perceived systemic failures of the [Paris Agreement](#).

An important argument supporting the implementation of CAT is that it should not be regarded a product tax. With application similar to Value Added Tax (VAT) but based on product - supply chain related GHG emissions, violation of [WTO / GATT Articles II:2\(a\) and III](#) would be avoided to usefully transcend the difficult arguments regarding nationally imposed carbon border taxes.

This document offers no refinement to the CTM proposals restricting its purpose as a overview of what is a complicated system: the CTM document is available for download via [this webpage](#).

[This paper necessarily cross-references supporting information within the CTM document by means of hyperlink - it is recommended that the Preview Link menu option is used to open the referenced material within the Sense document. Also, this paper should reside within the same Windows folder as the CTM document.]

2. Overview of the CTM

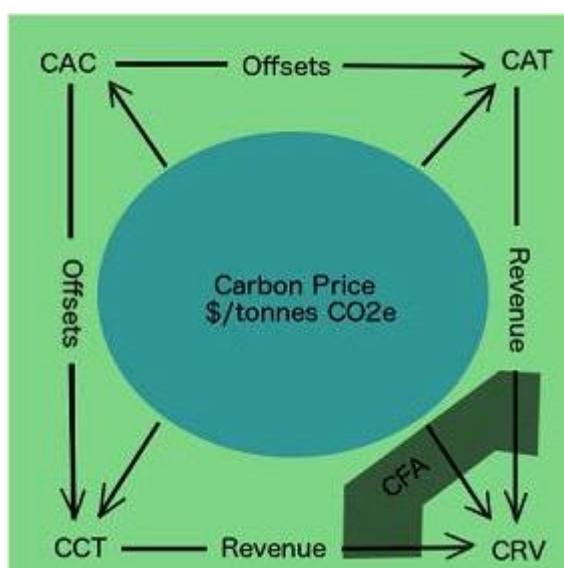


Figure 1- CTM

A simplified depiction of the [Carbon Taxation Mechanism](#) is shown in Figure 1.

The fundamental key to the CTM is the determination of a [Carbon Price](#), expressed in USD per tonne of CO₂-eq (CO₂ equivalent) emissions - in this respect, measures in terms of Greenhouse Gas (GHG) emissions and CO₂-eq emissions are synonymous. The Carbon Price is used to establish a common emissions value to facilitate what is in effect emissions transfer between the four cornerstones of the CTM. The price would be sensitive to changes in the concentration of atmospheric greenhouse gases transcending conventional supply-demand financial market mechanisms.

In order to manage revenue flow, a [Climate Finance Authority \(CFA\)](#) is depicted as intercepting [Carbon Added Tax \(CAT\)](#) and Carbon Combustion Tax (CCT) revenue flow that is recycled as Carbon Relief Vouchers (CRV) aimed as a taxation cushion and incentive for investment into sustainable developments.

The concept of [Carbon Offsets](#) is retained but in a far more regulated manner as Carbon Additionality Certificates (CAC) to overcome past criticism of claims of greenwash resulting from low offset valuation. Furthermore, a separate class of renewable certification regarding electricity generation and separately marketed as [Renewable Energy Certificates](#) have been incorporated into Carbon Additionality Certification

to again overcome low valuation and greenwash.

Crucially, emissions valuation feeding through to the Carbon Price would be based on a [20 year Global Warming Potential \(GWP\) time-horizon](#). This is in contrast to the 100 year GWP time-horizon currently employed in order to reflect the exceptional damaging effects of atmospheric methane resulting from coal, oil and gas industry operations, [fugitive emissions](#) and that arising from changes in land use..

The four cornerstones of the CTM shown in Figure 1 comprise:

1. [CAT: Carbon Added Tax](#).
2. [CCT: Carbon Combustion Tax](#)
3. [CRV: Carbon Relief Vouchers](#)
4. [CAC: Carbon Additionality Certificates](#)

with interconnections comprising revenue flow and offset transfer valued at the established global Carbon Price.

3. Carbon Added Tax

Much as Value Added Tax (VAT) is effectively a consumption tax that is broadly based on the accumulated monetary value of goods and services, CAT would be based on the GHG emissions resulting from goods and services. For goods and services that generate no emissions throughout their supply chain, then the CAT would be zero. Currently, very few goods and services would have zero CAT as CAT would naturally take into account [upstream emissions](#) overcoming the inadequacies of current GHG accounting practise.

In the initial phase of the CTM, CAT would reflect emissions resulting from fossil fuel combustion. Less quantifiable emissions characterised by estimation procedures involving considerable uncertainty such as that arising from loss of carbon sink resulting from, as example, land-use change would necessarily be included into [CAT as a matter of urgency](#).

GHG valuations, irrespective of source or sink, would be based in all circumstances on a [20 year GWP time horizon](#) with resulting CAT charged at the prevailing Carbon Price.

4. Carbon Combustion Tax

Whereas CAT may be regarded an upstream carbon tax, the [Carbon Combustion Tax](#) may be regarded the downstream carbon tax for organisations and individuals that by nature of emissions generated via their internal activities are unable to pass on additional carbon tax as CAT. In this case, CCT would be charged by their energy supplier on top of the accumulated supply chain CAT.

CCT would be charged at the same rate as CAT and based on anticipated GHG emissions resulting from the fuel combustion.

As an over simplification, combined CCT and CAT revenue resulting from fossil fuel combustion would be expected to match expected GHG emissions resulting from oil, gas and coal production output over any specific period.

5. Carbon Relief Vouchers

With the global reach of the CTM, all adults across the planet would potentially encounter some level of carbon taxation on their purchases. For the world's poor, irrespective of location, the additional financial burden would be grossly unjust without some form of capped, GHG emissions equivalent, safety-net taxation relief. However, straightforward taxation relief would fail to adequately engage, indeed reward,

those living lower carbon intensive lifestyles. For this reason, the concept of Carbon Relief Vouchers (CRVs) is proposed to provide both a taxation safety-net and unused relief that may be monetised in some manner as reward.

With a supporting infrastructure, unused relief would be available for expenditure towards [sustainable development activities](#). At the individual level, expenditure may involve the purchase of low cost, locally manufactured, solar water heating systems: at the collective level, the finance might be invested into (carbon additionality) schemes such as re-afforestation projects to generate Carbon Additionality Certificates (CACs) to provide a source of longer term income. The supporting infrastructure for CRV utilisation would differ from region to region, country to county, according to local population needs.

CRVs would be issued in tonnes CO₂-eq and exchanged at the prevailing Carbon Price at time of issue. In this context, an [unapologetic approach](#) is proposed for the CTM whereby a taxation cap of 6 tonnes CO₂-eq per adult would be based on annually assessed energy sector emissions alone. Based on 2019 emissions, and an initial Carbon Price of [75 USD](#), the combined CAT / CCT revenue would raise 2700 billion. With an emissions cut of [7.6% per year to meet the Paris Agreement 1.5 degree C limit](#), 205 billion USD would remain uncommitted following CRV distribution to achieve at least a doubling of the Paris Agreement 100 billion USD climate finance target.

6. Carbon Additionality Certificates

At its simplest, Carbon Additionality Certificates would be rewarded to [Carbon Additionality Schemes](#) that would be required to satisfy very strict criteria in order to avoid the historic issues of carbon offset undervaluation. Crucially, CACs, issued in measures of tonnes CO₂-eq, denote either a source reduction in GHG emissions or carbon sink increase with [verification of additionality](#) based on the same estimation / measurement criteria as that used to allocate product and service GHG valuation. Particularly for those schemes where estimation involves [considerable uncertainty](#) such as re-afforestation projects, the methodology used would be to minimise over-estimation of carbon sink offset potential.

CACs would be valued at the prevailing Carbon Price at the time of issue and would be used as a source of income by Carbon Additionality Schemes up to a point of scheme maturity. Where CACs are made available to the "open-market" a restricted group of organisations would have the option to reduce their CAT/CCT liability.

7. The Ever Increasing Urgent Need to Extend the Paris Agreement

The Carbon Taxation Mechanism had particular relevance to the [UN COP26 Climate Change Conference](#). Indeed, the pre-conference mood-music highlighted the urgent need for a radical extension to the Paris Agreement. As a proposed extension, the CTM remains relevant beyond COP26.

Whether COP26 will be finally judged a success or failure will depend on events prior to [COP27](#) with dependence on the reviewer's criteria. As far as achieving a radical extension to the Paris Agreement, it was a complete failure not that it was on the agenda for COP26.

Beyond fine words, non-binding pledges and the greatly heralded explicit mention of coal as if it wasn't, until now, a combustible contributor to greenhouse gas (GHG) emissions, the ultimate litmus test is whether the rise of atmospheric GHG concentration begins to slow any time soon and then at what rate. The Carbon Taxation Mechanism addresses this aspect (amongst many others) within the context of Carbon Pricing and its implementation as a Carbon Added Tax embracing an end of supply chain Combustion Tax. It is vital that, in the intervening year before COP27, meaningful progress will be made towards recognising the incredibly urgent need for a Paris Agreement extension and that the CTM (or something similar) be included into its agenda.

7.1. Climate Finance

It is clear that the establishment and continued running of the CTM would involve considerable funding.

In order to maintain the objectives of the CTM in terms maintaining equivalence between emissions and carbon pricing underpinning the [four cornerstones](#) flow of offsets and revenue, it is considered that the 100 billion USD climate financing objective of the Paris Agreement be re-assigned to this purpose. Beyond the obligation of developed countries to provide at least this 100 billion, those developed and developing countries that are still planning and have continued to [build new fossil fuel fired power generation capacity](#) since the [Kyoto Protocol](#) should be legally obliged to bridge any funding shortfall on the basis that this be agreed as part of the proposed extension to the Paris Agreement. Importantly, depending of the circumstances of any country providing funding, CRV distribution might be regarded part of the swings and roundabout of climate financing.

Aside of regional conflicts and political-economic intransigence, the CTM offers a realisable and technically possible framework to extend the Paris Agreement. With engagement by the World's population, adoption of the CTM becomes an absolute necessity to reconcile economic and population growth versus the increasing effects of climate change and overcome the identified [systemic failures of the Paris Agreement](#).

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