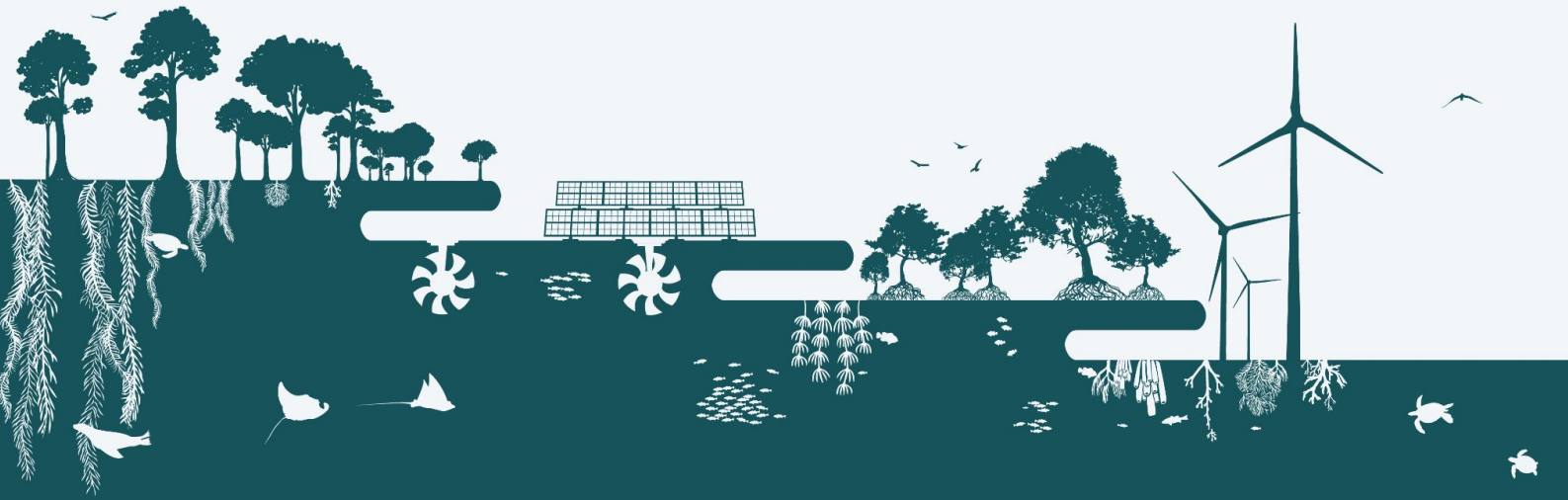
eco core

EcoCounts

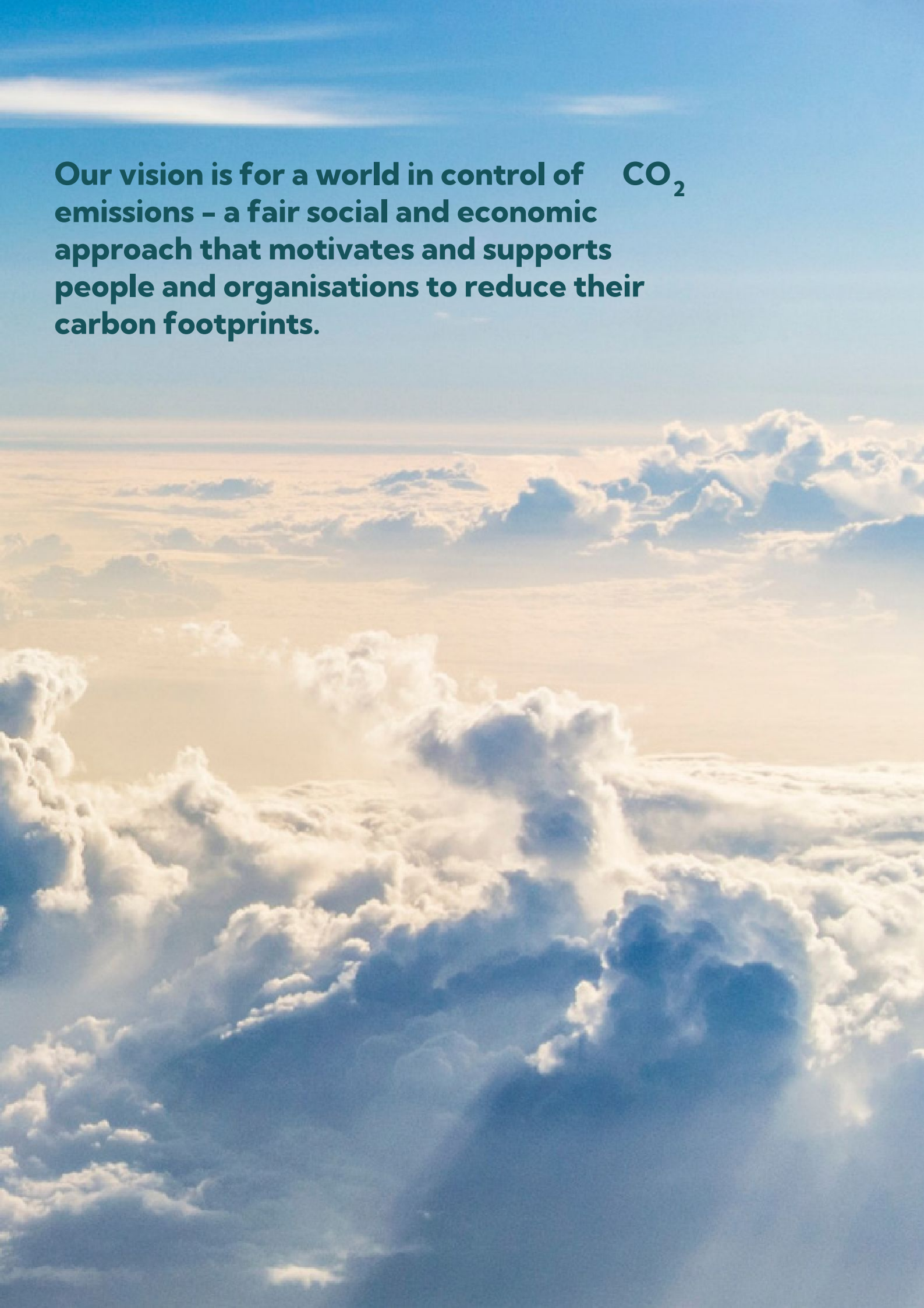
DON'T WAIT FOR THE CAVALRY:

A NEW APPROACH TO A ZERO EMISSIONS FUTURE

A Radical Synthesis of Practical Social and Economic Changes to Reduce CO_2 Emissions



Incisive economic change to reduce CO_2 emissions is not just possible, it could allow everyone to live better lives and do better business in an equitable, practical and efficient way.



Our vision is for a world in control of CO_2 emissions – a fair social and economic approach that motivates and supports people and organisations to reduce their carbon footprints.

Table of

Contents

The Problem

CO_2 emissions are everybody's responsibility 6

The Solution

Create an nationwide carbon pricing & control mechanism 7

Quick Maths

How a flight to the Maldives compares to a cup of tea and what it means in carbon tokens 8

Key Points

Making our CO_2 emissions as real and tangible as money 9

How would the carbon currency work? 10

Historical Precedence

Why we know it's possible to make these changes 13

Supply Chain Examples

How does buying a Loaf of Bread with Carbon Currency reduce CO2 Emissions? 14

Risks

Incomprehensible Risks: the 21st Century Minefield 16

Our Mission 17

Policy

Governments Doubling Down on Fossil Fuels 20
Questioning Existing Climate Policies 21
New Focus 22
Designing climate policy rules that are hard to break 23
Breaking down wicked problems 24

Society

The Mathematics of the Just Transition 28
EcoCounts: Trailblazing Sustainable Change 30
Triangle of Responsibility: Overcoming Inertia 33
Reframing the Narrative 34

EcoCore & EcoCounts Roadmap 35

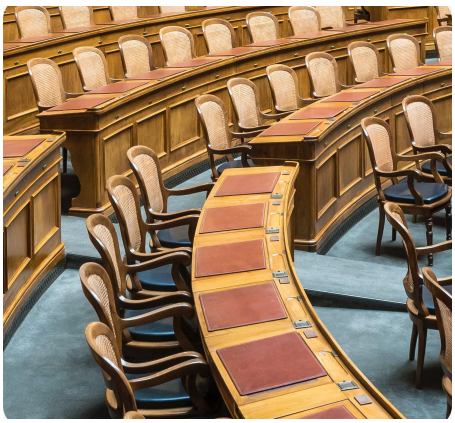
Business

Boosting the Slow Business Cycle 38
Driving fossil-free innovation 39
A Paradigm Shift for the Voluntary Carbon Markets 41
Trade borders and CO_2 emissions charges 43
Transparent, Equitable Payment for Carbon Drawdown 44

Summary

What can you do to help? 45
Appendix: the EcoCore Model Definition 46
Authors & Designer 48

CO_2 emissions are everybody's responsibility.



- Making progress on reducing CO_2 emissions requires everybody to reduce their carbon footprint: creating accountability in people, business and government
- You can't manage what you can't measure - if you don't know what your carbon footprint is, you won't know how to reduce it.[1]
- Businesses voluntarily measure the CO_2 emissions they are responsible for, but using the Scope 3 standard[2] makes them responsible for emissions over which they have no control. Adopting this Scope 3 creates the unrealistic expectation that businesses will solve the issue of how much CO_2 is created by people using their product or services from cradle to grave across their whole supply chain.
- While businesses measure their carbon footprints at an organisational level, they don't drill down, so individuals remain unaccountable for team or department carbon footprints
- Meanwhile individual 'high-burner' citizens are unmotivated to measure their carbon footprint in case it is "too high". Why make drastic lifestyle changes if there is no obvious benefit?
- All these issues also play out on a global scale and, as outlined by the United Nations, those contributing the least to CO_2 emissions around the world are the ones most affected. There is little to no fairness or justice evident in the last decade of global climate action beyond a history of unfulfilled promises.

1. See this run-down of what "carbon footprint" can mean: Carbon Footprints Defined
2. All indirect emissions that occur in a company's value chain, i.e. not emissions resulting from energy production, such as emissions from the extraction and transportation of raw materials, the production of goods and services, and the disposal of products: https://ghgprotocol.org/corporate-value-chain-scope-3-standard

Create a nationwide carbon pricing & control mechanism

It must:

- Start with a citizens' carbon allowance, equitably distributed and steadily decreasing
- Drive innovation for the energy transition
- Reverse the inequitable trend in financial income and CO_2 emissions growth
- Incorporate payment for CO_2 emissions at every step of every business supply chain
- Promote simple, low effort carbon pricing for all transactions
- Control the production of fossil fuels at the point of extraction
- Be scalable on an international level to include willing nations

Most people are familiar with managing a financial budget, whether it's making sure you can pay household bills or running a budget for work. A carbon price on every product or service you pay for taps into the same psychology, and allows people both at home and at work to make either/or choices at every step to reduce their carbon footprint.

Quick Maths

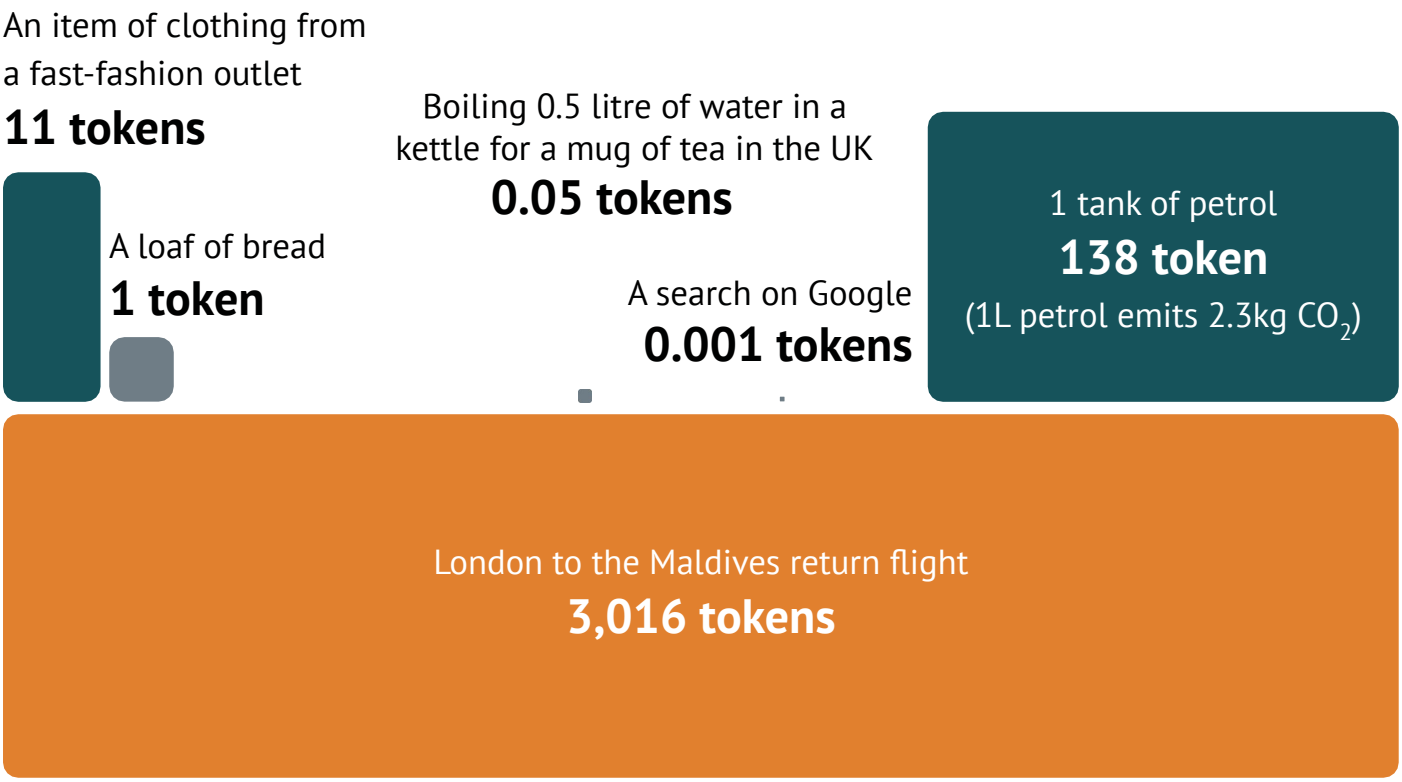
How a flight to the Maldives compares to a cup of tea and what it means in carbon tokens

Some calculations, based on one carbon token = one kilo of CO_2 [1]

In the UK in 2021 our average carbon footprint, including all greenhouse gases, including shipping and aviation and all the built-in emissions in foreign imports, was roughly 10 tonnes of CO_2e - there are various estimates both higher and lower than this.

This gives us, while keeping some back for government use:

- 7.5 tonnes CO_2 per person per year (7,500 tokens)
- Approximately 20 kg per day
- This equates to 20 tokens per day



1. Data from Our World in Data - *CO_2 and Greenhouse Gas Emissions Data Explorer*; Mike Berners-Lee - *How Bad Are Bananas?*; Trove - *Decarbonising Fashion*

Key Points

Making our CO_2 emissions as real and tangible as money

The policies that EcoCore combines into one framework rely on what amounts to a second, dual currency for the economy, based on the citizens carbon allowance. This second currency runs in parallel with money. Here are the key points:

Mechanics

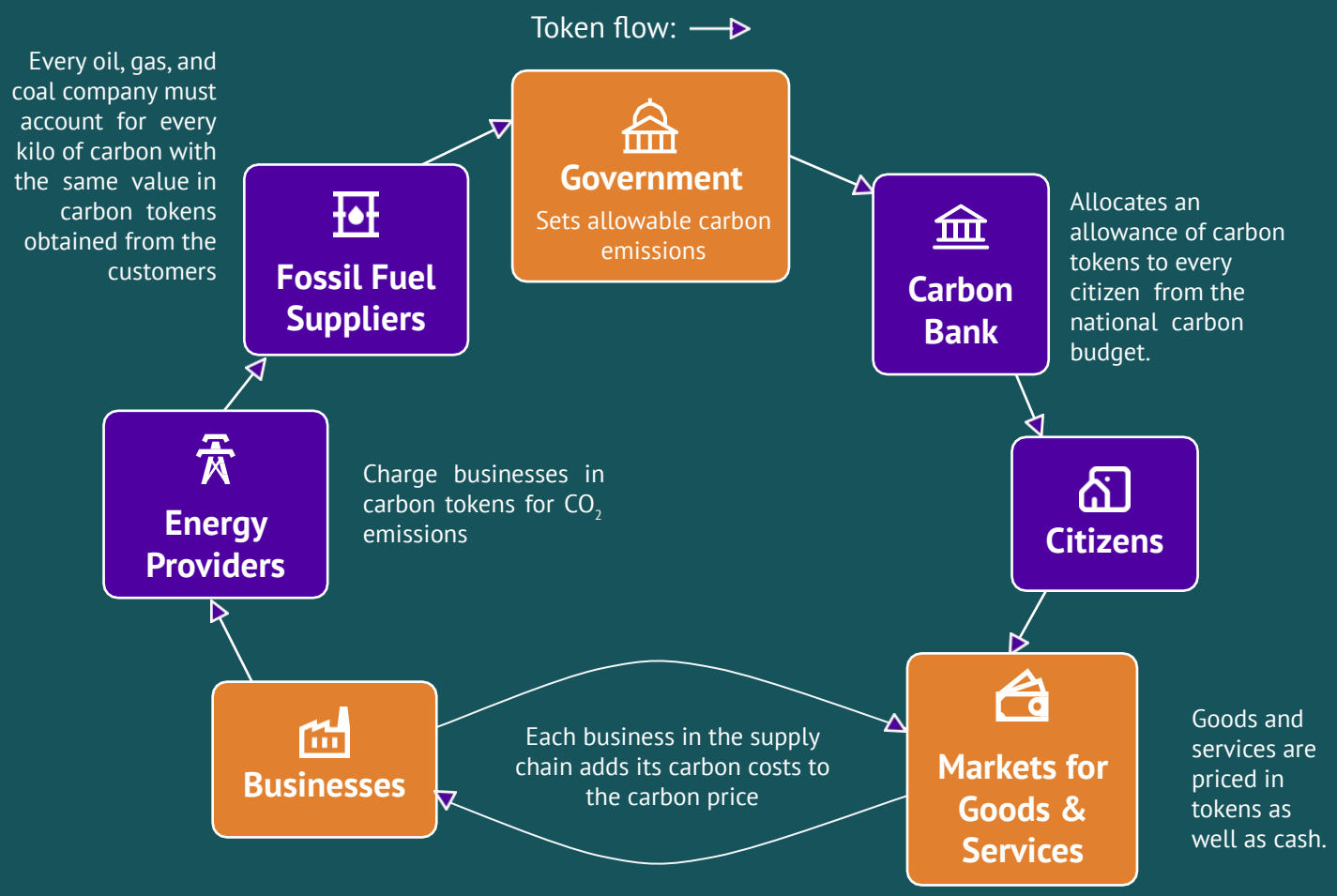
- At the start of every allowance period, the government distributes tokens denominated in kilos of CO_2 to citizens as a per capita carbon allowance for use in all purchases
- Businesses receive no allowance. Instead, they charge carbon tokens on all sales, alongside cash, in order to pay their suppliers in turn in carbon tokens for all their purchases

Every product or service, retail or wholesale, bears a growing carbon token price, paid for by customers at each step of the supply chain. So the token price of a deliverable builds up incrementally, showing the final purchaser what CO_2 emissions their purchase has caused

- Fossil fuel corporations at the beginning of the supply chain must pay the government in tokens for every kilo of fossil fuel they extract from the ground and recoup the tokens on the sale of their products
- All people are responsible for their own carbon budget, increasing carbon literacy rates across the population
- Every business runs its carbon budget in much the same way as they manage income and expenditure in a set of accounts. It must pay carbon tokens for purchases and should obtain all or most of its carbon tokens via sales of goods or services.
- People, businesses, in fact any organisations may buy or sell carbon tokens freely on the open market, which results in a varying, real-time, national carbon price, based on participation of all sectors of the economy
- The amount of tokens handed out as allowances by the government directly controls the amount of all CO_2 emissions in the economy and society, affording the government a strong guarantee of achieving its emissions targets

Key Points

How would the carbon currency work?



The carbon currency based on carbon allowances should replace attempts to set a carbon price. We roughly know the quantity for various global warming scenarios. Setting the quantity per capita & issuing that could be a lot more effective than trying to guess the "right" price for carbon.

Society

- Carbon budgeting rewards people's carbon prudence at every level. Those who can afford levels of consumption with high CO_2 emissions will be able to purchase the tokens they require from those who use less than their allowance. The pressure on the 'high burners' to become more prudent goes hand-in-hand with the flow of income to those less able to afford the measures to cope with increasing climate impacts.[1]

- The trading of tokens brings greater social cohesion in times of increasing crisis as the flow of income from high emitting, high income citizens to lower income, lower emissions citizens creates a form of basic income for those with low emissions

- Equitable distribution of tokens fosters a sense of 'all being in the same boat', becoming a social norm at a time of worsening climate change-induced socio-economic impacts

Policy

- Supply restrictions are the most effective approach to reducing fossil fuel use in the economy, eliminating unplanned CO_2 emissions, decreasing the risks of missing climate targets, and leveraging national energy efficiency improvements. This approach prevents the rebound effect from energy savings, which would otherwise result in unchanged levels of energy consumption. The cap pushes demand towards renewables or cancels it.

1. Parag Y. and Fawcett T.: *Personal carbon trading: a review of research evidence and real-world experience of a radical idea.* Energy and Emission Control Technologies 2:23-32 (2014)

Key Points

- Coverage is close to comprehensive, including the capacity to address the public sector, foreign imports, and other greenhouse gases such as methane.
- A transparent and robust framework requires the fossil fuel supply cap to be set by an independent public authority capable of resisting weakening through political pressure and lobbying efforts
- The fossil fuel supply cap as a quantity corresponds directly to the nation's overall climate goal - a definitive emissions reduction target
- Checks and balances and details of implementation would be worked out through democratic means such as a citizen assembly

Business

- Growing realisation of who bears responsibility for CO_2 emissions in business supply chains should prompt extensive adaptation, innovation and technological advances. Large organisations would be prompted to deal with CO_2 emissions at the lowest level within their organisation's budgetary hierarchy rather than creating large scale estimates of emissions and generalised decarbonisation plans. Employees' greater carbon literacy and carbon prudence would stimulate more innovative and targeted decision- making at these lower levels.
- Rather than private, voluntary carbon markets where emitters purchase carbon credits from carbon drawdown projects, all carbon drawdown projects would be funded through the payment of carbon tokens from the state, centralising the regulatory framework required. The carbon tokens spent in this way on carbon drawdown are taken into account when setting the national carbon budget.

1. du Plessis M.: *The role of knowledge management in innovation* Journal of Knowledge Management 11.4 20-29 (2007)

Why we know it's possible to make these changes

The introduction of a national carbon allowance would not be totally unprecedented. Equivalent economy-wide shifts include:

1971 The UK decimalised its currency and dropped the non-decimal shilling.

1973 The UK introduced Value Added Tax on everything.

1978 The UK started mandating metric measurements.

1990 The sovereign nations of East and West Germany reunified, completely replacing the Ost-Mark with the Deutsche Mark.

1999 Germany did it again with 10 other European nations to introduce the Euro.

2008 The UK government estimated the costs of a introducing a "citizens' carbon card" at £2 billion set-up and £1 billion annual running costs. Since then, progress in digital technology has generally made technology platforms greatly more advanced and less expensive.

Supply Chain Example

How does buying a Loaf of Bread with Carbon Currency reduce CO_2 Emissions?

1. It starts when the government decides to restrict fossil fuel supply by giving everyone a carbon allowance, made up of carbon tokens, for instance, 25kg per week
2. Every citizen gets this allowance, while companies, corporations and organisations do not, although they are allowed to use them
3. Tokens are like money. "The King promises to allow on demand a fossil fuel company to extract hydrocarbon fuels which when burnt create one kilo of CO_2 for the benefit of the bearer"
4. If you want to buy a loaf of bread, you are going to have to pay the baker money as usual, say £5 for your delicious crusty seeded loaf
5. You must now also pay carbon tokens! This is 1 kilo for a loaf according to Mike Berners-Lee's How Bad are Bananas book, but in the carbon currency world, the baker will decide the carbon price
6. Why would the baker, how would the baker know what carbon price to set?
7. Think how a baker will bake bread: in an oven at high temperature, fired by large quantities of gas from the national gas pipeline network

8. The gas is carbon-based and when burnt, releases CO_2. Its production and use is controlled by the government and when bought, must be paid for with tokens and money
9. The baker will create the carbon price because the baker needs to manage a carbon budget, buy stuff, and pay for it all with carbon tokens as well as money.

What happens when the Baker gets an Electric Oven?

The first benefit is that the baker no longer has to pay lots of carbon tokens (or cash) for the fossil gas.

The baker at this point should choose an electricity provider who provides zero carbon energy. Electricity providers who generate energy from fossil fuel power stations will have to charge carbon tokens for their energy, so the baker is obviously going to seek out an electricity provider who generates wind, solar, geothermal, nuclear or some other clean energy.

What happens when the Baker Sticks with Fossil Fuels?

The baker pays the gas supplier with cash as before and with carbon tokens.

The gas supplier is the gas pipeline network operator who sells gas to all domestic and business consumers, often storing the gas in gas holders and at the end of the day, purchasing it from the original fossil fuel extractors, paying in cash and carbon tokens of course

The fossil fuel extractor has to collect carbon tokens on all the fossil fuel it sells, because it has to surrender carbon tokens to the government to match the amount of carbon it has dug or pumped out of the ground.

This system covers the whole economy. The baker will have other reasons to spend carbon tokens. The production of flour, water, sewage, central heating for the bakery, delivery vans and everything else will initially be fueled by fossil fuels and cost carbon tokens to buy.

Incomprehensible Risks: the 21st Century Minefield

Psychology dictates that a reader will single out one of the following scenarios as the most believable one, and then use that decision as the foundation for almost all further thinking. In reality, all of the following have a significant chance of occurrence.

What does the future hold and what is humanity heading into? [1] [2] Here is the spectrum of different outcomes for civilisation in 2050 or 2100 in order of increasing concern:

- ⊗ Extreme weather and impacts assimilated with insignificant social and economic disadvantage, long term impacts of rising sea-levels ameliorated by economic growth
- ◕ Economic development impacted, GDP growth reduced
- ◕ Nations face increasingly severe & frequent recessions
- ◕ Decline in living standards & life expectancies
- ◕ Extensive decline in habitable regions especially in most affected nations in Global South
- ◕ Refugee crises, within and between nations
- ◕ Ecological impacts damage economic resilience, outstrip capacity for adaptation
- ⚠ Decline in economic production capacity, rise in absolute mortality and morbidity rates
- ⚠ Significant decline in size of habitable regions in wealthy nations
- ⚠ Difficulty maintaining functioning infrastructure & critical food supplies
- ⚠ Major losses of habitable regions, outdoor agriculture, ordered society
- ⚠ Increasing unpredictability of and wider devastation from climate impacts
- ⚠ Climate tipping point cascade as domino effect triggered on global scale
- ⚠ Start of uncontrollable slide of Earth system to new stable state with accompanying mass extinction event and collapse of world civilisations.

1. Institute and Faculty of Actuaries' 2023 report warning of significant underestimation of climate risks
2. Millions of pensions at risk because investment consultants overlook threat of climate tipping points - Carbon Tracker Initiative

Our Mission

Our vision is for a world in control of CO_2 emissions - a fair social and economic approach that motivates and supports people and organisations to reduce their carbon footprints. To achieve this across society, business and government, our mission is based on four principles.

1. Fair

Fair access for everyone in every nation to fossil fuel energy in decreasing amounts

2. Sustainable

Respects nature and the environment as a whole, including a strong but non-exclusive focus on the burning of fossil fuels

3. Broad-based

Ambitious, collaborative policies and practices, creating synergies, not side-effects

4. Efficient

An economy-wide carbon price based on carbon allowances, to drive business innovation and adaptation

Our Mission

✓ Demonstrate that living within a carbon budget is a liveable lifestyle

It will take early adopters who are more committed to fighting the climate crisis than average to be the first to test this lifestyle. The North London EcoCounts carbon footprinting group is demonstrating and evolving this as a community-based approach.

✓ Show that businesses can account for carbon in the same way they account for money

A business can manage its carbon budgets like it manages its financial budgets - with different managers along the chain managing the carbon budgets for their teams.

✓ Bind together decarbonisation efforts by citizens, business and the public sector via a carbon currency

Persuade the public and businesses that they can take meaningful action using the carbon currency based on carbon allowances, and that governments should introduce the same mechanism to reach science-based emissions reductions targets on a national basis to bring the whole economy under the umbrella.

Key Points

Policy

Governments Doubling Down on Fossil Fuels

Economic and Political Inertia

In the Global North political parties, economists and media outlets frequently advocate for minimal government and laissez-faire policies, ignoring the environment as an 'externality' and arguing that business and industry can find a voluntary solution. Many of these players hugely underestimate the risks, just as many did before the Global Financial Crisis in 2008. For years, mainstream economists have ignored the evidence and predicted that 4°C of global warming will have a minimal impact on economic growth.[1] [2] [3] [4]

Much of the world, including the economic working group of the United Nations Intergovernmental Panel on Climate Change (UN IPCC), most major national governments, and global institutions such as the World Bank, are only now, in the third decade of the 21st century, discussing the economic imperative to take action, thanks to increasingly dramatic and catastrophic extreme weather events.

Yet even at this point, after the invasion of Ukraine and Russia's machinations to leverage its position as the world's second-largest fossil fuel producer, national governments are still pursuing policies that double down on the fossil fuel economy.[5]

Instead of truly leveraging the growth of renewables, we satisfy ourselves that the growth of the fossil fuel economy and associated emissions are not as great as before.

Bringing the world back on to a path compatible with respect for planetary boundaries[6] is not possible under conventional socio-economic scenarios and even optimistic scenarios require incisive and immediate action.[7]

1. See Stern N., Stiglitz J.E., Taylor C.: The Social Cost of Carbon, Risk, Distribution, Market Failures: An Alternative Approach. National Bureau of Economic Research No. w28472 (2021)
2. Keen S.: The appallingly bad neoclassical economics of climate change Globalizations 1-29 (2020)
3. Bastien-Olvera B.A., Moore F.C.: Use and non-use value of nature and the social cost of carbon. Nature Sustainability 4 101–108 (2020)
4. Institute for Policy Integrity: *Gauging Economic Consensus on Climate Change* Institute for Policy Integrity (2021)
5. Climate Action Tracker Massive gas expansion risks overtaking positive climate policies
6. Planetary boundaries delimit the significant conditions needed for humanity to thrive on Earth.
7. Potsdam Institut für Klima Second major planetary boundaries update

Questioning Existing Climate Policies

Do we just need to implement existing policies, or are they fundamentally flawed?

EcoCore's economic climate policy is built on a simple principle: if we want to stop CO_2 levels rising, fossil fuel use must be reduced. If society had started to redesign the economy 50 years ago when the need first became clear, there would have been multiple options. But the two main alternatives are now seriously inappropriate in terms of an effective, timely reaction to climate change:

Carbon taxes

Taxes like the UK fuel price escalator may be appealingly simple but they:

- create a much weaker carbon price signal as they are only additions on to the cash price
- only provide incomplete coverage
- do not provide an absolute cap
- are often ineffective, due to e.g. constant oversupply of credits to emissions trading schemes[1]
- are subject to easy reversal and loopholes[2]
- are unrealistic at the required scale, as governments prefer low energy prices[3]

Climate regulations

State controls and subsidies are the first port of call to change the way the system works, but:

- they must be numerous
- they must be extensive and far reaching
- they are usually complex
- they must be frequently updated

1. See Ember-Sandbag Report (2017): An agenda for strategic reform of the ETS. What's the future for EU carbon pricing?
2. See Lilliestam J., Patt A., Bersalli G.: The effect of carbon pricing on technological change for full energy decarbonization: A review of empirical ex-post evidence in WIREs Climate Change 12,1 (2020), where carbon pricing refers to carbon taxes.
3. During the Russian invasion of Ukraine, governments have shown themselves to be strongly committed to avoiding the high prices on fuel which would be necessary for successful decarbonisation.

New Focus

In 2022 the UN Intergovernmental Panel on Climate Change's working group on mitigation recommended demand-side strategies to governments for the first time[1], with a new focus on collective action, social movements and lifestyle changes.

A similar shift in narrative was present for the first time from the influential International Energy Agency in their first 2022 report.[2]

The UK government advisory body the Climate Change Committee says that greater than 50% of CO_2 emissions reduction must come from voluntary personal choices[3]. Research shows that greater success with industrial decarbonisation is neither feasible nor probable[4]. Personal action by citizens is essential.

Supply-side restrictions coupled with personal carbon allowances represents a fair, effective and non-prescriptive means of delivering such policy. Plus, when citizens know their carbon footprint, they tend to shift their purchasing habits towards lower-carbon products and services and thus drive new markets and innovations from the bottom up, while supply-side restrictions provide the driver from the top down.

Research demonstrates that citizens across the globe are aware, concerned and engaged but simply unwilling to take effortful personal action to reduce CO_2 emissions[5]. The logical conclusion is that some degree of obligation is inescapable.

1. Shukla P.R., Skea R., Slade R. et al.: Climate Change 2022: *Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* IPCC, Geneva, Switzerland (2022)
2. International Energy Agency: *A 10-Point Plan to Cut Oil Use* IEA, Paris, France (2022)
3. See the CCC Independent Assessment of UK Net Zero 2050 Strategy
4. See *(In)Sufficiency of industrial decarbonization to reduce household carbon footprints to 1.5° C-compatible levels* Elsevier Sustainable Production and Consumption (2024)
5. See Vlasceanou, M et al: *Addressing climate change with behavioral science: A global intervention tournament in 63 countries* Science 10.6 (2024)

EcoCounts

The UK's fair share of the global carbon budget, taking into account the development needs of the poorest parts of the world, will be exhausted before 2030. Forget 2050. The science is clear. Delay is tantamount to capitulation.

— Prof. Tim Jackson, Director, CUSP, University of Surrey

Designing climate policy rules that are hard to break

Carbon taxes have only ever been implemented at a level that results in small CO_2 emissions reductions compared to what is needed. Large cap-and-trade schemes like the EU ETS tell a similar story.

Fossil fuel producers are the only source of fossil fuels and therefore the primary source of CO_2 emissions. The most effective pollution regulations have control mechanisms which target pollution at its source.

The success of the US Acid Rain SO_2 "Cap and Trade" Program is a great example of what does work[1]. The only sources of SO_2 are coal-fired power-stations and that is the program's focus.

With carbon allowances, government-issued carbon tokens flow from citizens in transactions through the supply chain to the original producer of the fossil fuels, who must match tokens against production quantities extracted from the ground. This matching of tokens to fossil fuel supplies under audit in the oil, coal and gas industry would provide a guarantee of the amount of emissions reduction taking place.

1. See Giles C.: *Next Generation Compliance: Environmental Regulation for the Modern Era* Oxford University Press, NY (2020)

Breaking down wicked problems

> **We can't solve problems by using the same kind of thinking we used when we created them.**
>
> — Albert Einstein

The Curse of Efficiency

Efficiency measures reduce people's and business's energy costs, but with no other measures in place, studies show the savings are used immediately to take advantage of the extra resources that were freed up. This is the rebound effect (Jevons Paradox). The restrictive dynamic of carbon tokens makes the economic system and people's and businesses' choices more sophisticated, locking in efficiency gains.

Fossil Fuel Subsidies

One of the most effective climate policy actions would be the removal of state subsidies to the fossil fuel industry. Worldwide there has been very little progress on this. Subsidies make fossil fuels cheaper and investments more profitable but implementation of supply-side control via carbon tokens would make this issue far less important in the drive to reduce emissions. This is a major advantage in comparison to carbon taxes and other attempts to reduce CO_2 emissions by making them more expensive.

Comprehensive Coverage

Since every entity within a carbon token-based economy needs carbon tokens to survive, loopholes and special interests would not be technically possible. Instead anything requiring exemption would only be freed from the carbon token system by government subsidy in the form of carbon tokens or the funds to purchase them.

The economy-wide use of carbon tokens results in the inclusion of various 'hard-to-reach' sectors such as shipping, aviation, the health service and the defence sector.

Cleaning Up Remaining Fossil Fuel Extraction

Controlling and charging tokens for all fossil fuels released, accidentally or on purpose, will incentivise fossil fuel producers to clean up their operations. A perfect extraction operation with no escape of gases or other side-effects will allow the producer to charge 1 tonne of carbon tokens on every tonne of carbon sold.

The dirtier their operation and the more carbon they allow to escape, the more tokens the producer must recoup from the sale of their product. The same applies to energy-intensive fossil fuel extraction such as tar sands. A fossil fuel producer that burns 8 barrels of oil in order to bring 1 barrel to market must charge 9 barrels equivalent in carbon tokens.

> **Methane – the gas CH_4 – accounts for over 30% of all global warming to date and the escape of massive quantities of methane, coal mine methane and other side-effects of fossil fuel extraction contribute 35% of all the methane pollution today.**
>
> International Energy Authority, Global Methane Tracker

Methane and Other Sources of Greenhouse Gases

To bring methane usage and emissions under the umbrella of the carbon token system, methane-producing activities should be regulated by the government under licences paid for in carbon tokens, linking the activities to development of the wider carbon economy.

Farmers with methane-producing beef cattle, or cement or concrete manufacturers would be required to buy licences to emit the greenhouse gases they produce, charged in carbon tokens at the CO_2-equivalent rate in tonnes and kilos.

Breaking down wicked problems

Key Points

Society

The Mathematics of the Just Transition

How a carbon token-based economy reveals the price of an equitable approach to global reductions in CO_2 emissions

Fossil fuel usage is enormously inequitable. Those who emit the most CO_2 suffer the least from its impacts, while those who emit the least are losing their homes, their livelihoods and their lands. Justice is important if society is to succeed at stopping CO_2 emissions, both within and between nations, as parties who sense injustice will only object and hinder progress, whether they are voices within nations answering populist narratives, or whole nations themselves acting on the global political stage.

An equitable approach to carbon accounting must succeed in multiple ways:

- distributive justice, including those previously left behind or excluded by trade, business or state aid
- historical justice to make good the disproportionate harm caused by the arbitrary playing-out of climate damages across the globe that has resulted in the impacts of global warming being felt most strongly by those peoples and nations who have caused the least greenhouse gas emissions
- just development of climate solutions and adaptations. Economic growth and the historically associated greenhouse gas emissions have not occurred equally around the world, challenging nations' rights to participate in, contribute to, and enjoy economic, social and political development, something needed now more than ever in the light of growing threats from extreme weather and rising sea levels.

Through the use of an international carbon allowance system, the right to development can be upheld clearly and transparently for countries who have historically contributed less to global CO_2 emissions.

Climate Justice defined

The ideal of fairness, equity and truth in judgement, not in reference to punishment of wrong-doing or blame or reparation, but applied to society-wide efforts to mitigate and adapt to climate change and ensure a liveable future for all.

Significantly more than half the people in any nation have a below average carbon footprint, because the average is skewed upwards by the disproportionately high carbon footprints of the very wealthy.[1]

Due to this strong correlation between wealth and CO_2 emissions, the wealthy - the 'high burners' - would need to purchase extra carbon tokens to support their high emissions lifestyles from people on lower incomes with lower emissions, creating a de facto basic income[2] for the poor[3]. This could be both within nations and internationally. It would help end extreme poverty and fund resilience in communities as they adapt to future climate scenarios.

The national carbon price in this model, created by citizens and organisations trading carbon tokens for cash, provides a definitive value for real, desired or prospective CO_2 emissions in various decision-making scenarios:

- how much would potential increases or decreases to a nation's CO_2 fossil fuel supply cap, determined by the nation's climate targets, affect the national carbon price?
- how much should a household or organisation invest in low carbon tech and energy efficiency if it will save carbon token expenditure in future?
- on an international level, a nation with a long history of CO_2 emissions will seek to negotiate a settlement with a nation having a recent history of severe climate impacts. For both parties to have a clear idea of the value of their costs would bring transparency and fairness to the negotiating table.
- how much are carbon sinks worth? The guardians of carbon sinks would receive a constant stream of carbon tokens from the central supply that can be used to fund the upkeep and conservation of the sink. Nations with above average carbon sink capacity could leverage this on an international level.

The richest 10% of people in the world are responsible for around 50% of global emissions.

1. Oxfam International - Report: Extreme Carbon Inequality
2. For more on universal basic income, see Hensher M.: *Covid-19, unemployment, and health: time for deeper solutions?* British Medical Journal 371 m3687 (2020)
3. Wollberg P., Hallegatte S. & Mahler D.G.: *Ending extreme poverty has a negligible impact on global greenhouse gas emissions* Nature 623 pp982–986 (2023)

EcoCounts: Trailblazing Sustainable Change

EcoCounts is based in London and is bringing together a group of people along with the personal, community and technical support needed for participants to get to grips with reducing their CO_2 emissions.

The emphasis is to reach out to and include people on lower incomes who are more likely to be impacted by the climate crisis, while leveraging more environmentally active people's expertise and lived experience to benefit the group. This mix of participants should combine well as a strengths-based approach, using citizens assembly-based decision-making to steer future development of the technology, participant support, future direction, management of participant motivation and enhancing their commitment.

Effective social change must have two principal lines of action[1]: grassroots projects independent of government, and a mass movement to change government policies and the practices of business and industry. EcoCounts puts the flesh on the dry bones of the EcoCore concept. When society finally offers the opportunity for transformational change, the grassroots support and the socio-economic thinking must be in place already.

- We start off with our own carbon footprint, recording our actual day-to-day personal carbon data, not some vague, assumption-laden generalisation from an online carbon calculator
- Working as a group, communicating and collaborating builds progress to create a blueprint to implement anywhere
- Creating an app and database makes emissions tracking easy
- Teaming up with local businesses and councils allows creation of carbon labels, local low carbon services, and automating data collection from companies like our energy provider or our supermarket loyalty cards

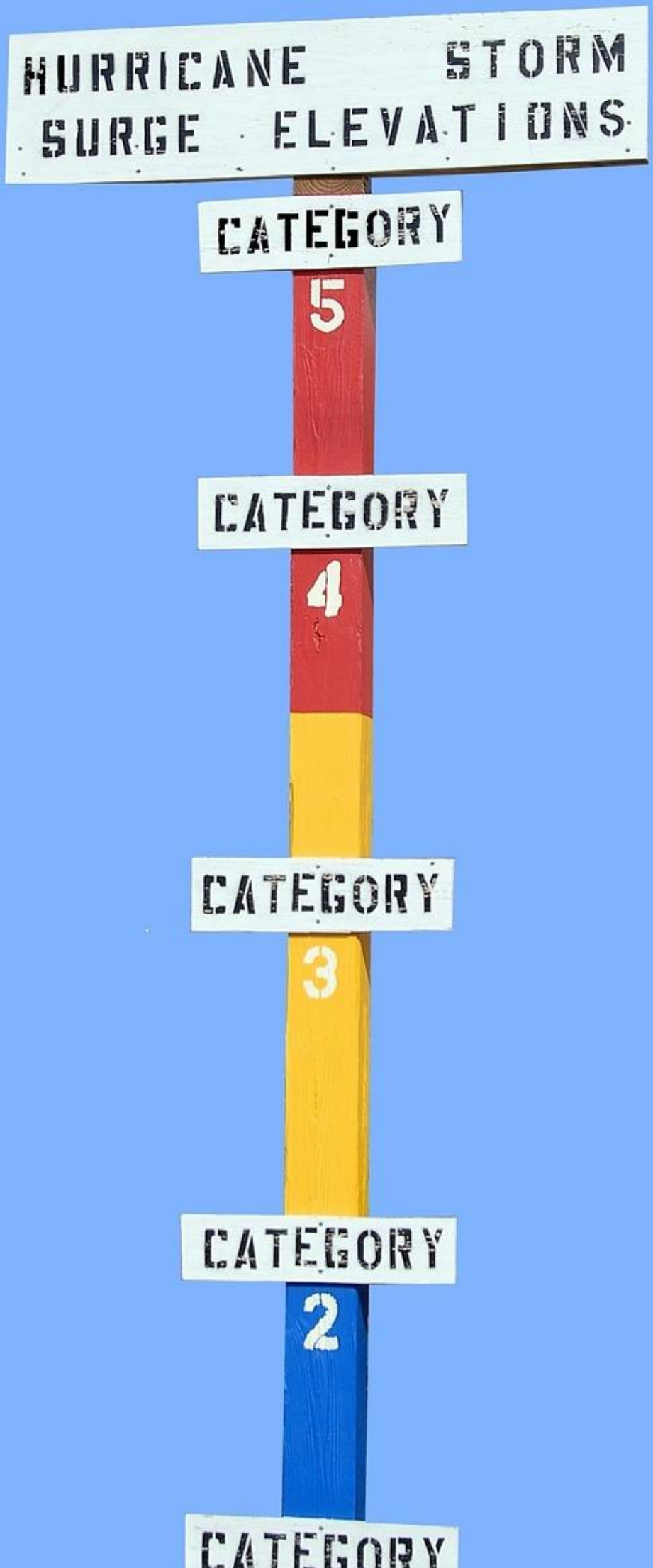
1. See: Diesendorf M. & Taylor R.: *The Path to a Sustainable Civilisation* pp 269-270 Palgrave Macmillan (2023)

10 years ago, no-one tracked how much they were walking each day. Now everyone has a pedometer in their pocket and if someone said to you - I've walked 30,000 steps today, you would know that was a lot! The CO_2 emissions issue is in exactly the same place as physical fitness 5 years ago.

One of the key factors that motivates people to engage with EcoCounts is that together we are more impactful. Telling a person to live differently will not work, but our actions can demonstrate to others what can be done. That means we can show business what zero emissions customers look like, and provide evidence to government to put the right policies in the right place.

The goal is to promote individual responsibility for CO_2 emissions, empowering people to take action, not because our individual contributions will save the planet, but because we can tell a story that prompts society to choose this way forward for our government, our industry and commerce, and our personal lives.

> **Governments are quick to act in self-interest and slow to act in response to reasoned argument in the public interest, unless it is supported by a large number of citizens who could possibly remove that government from office.**
>
> *"The Path to a Sustainable Civilisation"* by Diesendorf & Taylor. Palgrave Macmillan 2023

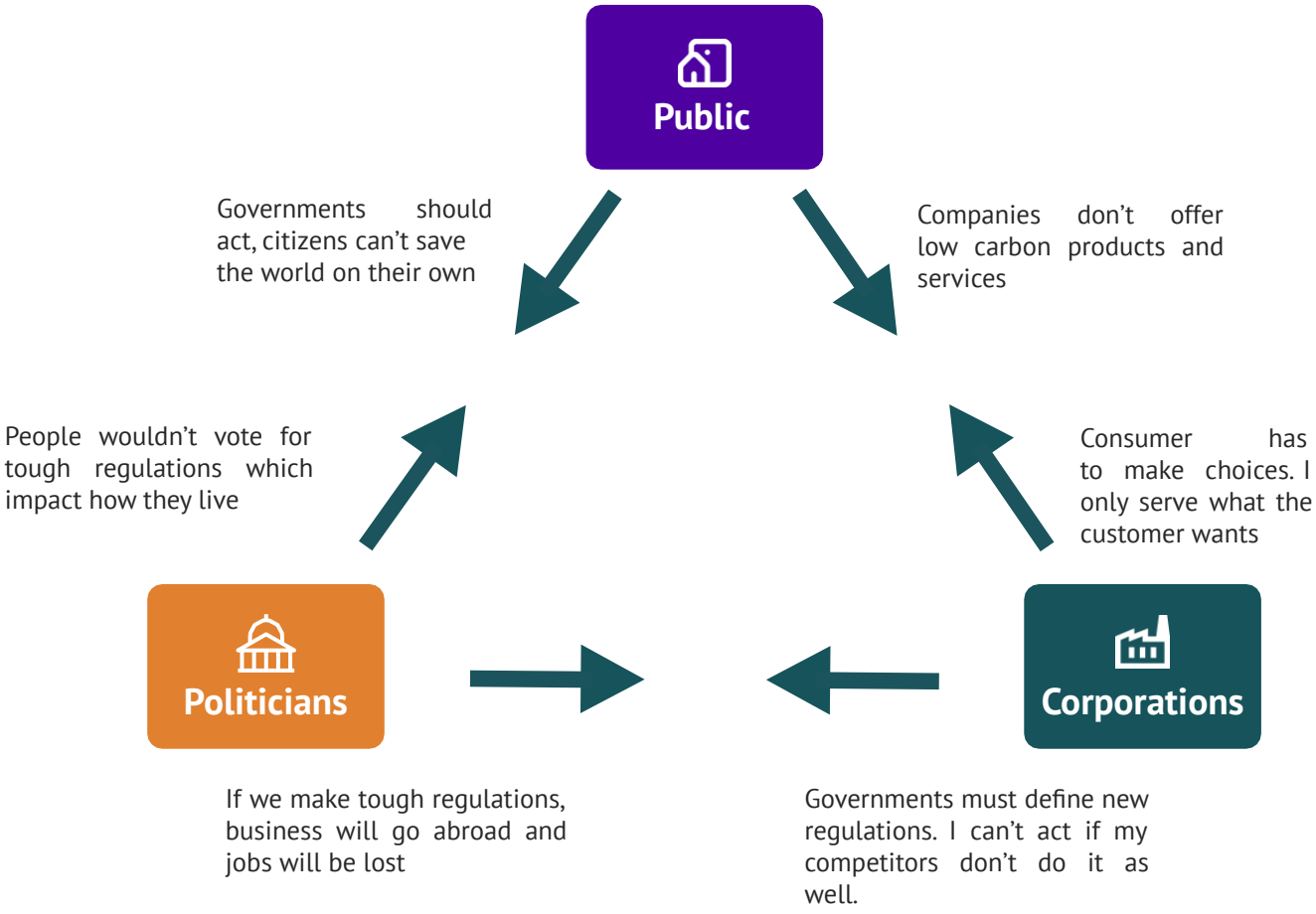

HURRICANE STORM
SURGE ELEVATIONS
CATEGORY
5
CATEGORY
4
CATEGORY
3
CATEGORY
2
CATEGORY

Triangle of Responsibility

Overcoming Inertia

Real and rapid progress to reduce CO_2 emissions is hard, as shown by the shocking risks the world is taking with the climate. Typically we point the finger at other people and groups. Who will make the hard choices? Citizens won't, when they believe individual action is insignificant. The corporations won't, if money is the only measure that matters. The politicians won't, if they make climate an election issue and lose.

Push-back against action



Being a mix of "all in it together" for the public, the least worst option for political leaders, and pragmatism and transparency for business, the carbon allowances as a currency concept offers a way to break out of this deadlock.

Reframing the Narrative

For people to be willing to adopt a new carbon currency with carbon allowances requires a major shift in voters' thinking, inspired by a strong positive narrative. These psychological hurdles must be overcome to foster real, rapid progress:

- A sense of unfairness and injustice in the system
- A perceived personal cost to action, both financially and socially
- A sense of futility that personal action will make no difference unless backed by business and enforced by government
- A lack of government urgency on climate matters
- The presence of strong opposing or distracting voices
- The triangle of inertia, as citizens, business and government wait for the other to move first

The EcoCore concept tackles most of these issues head-on. We aim to create a public narrative around our idea, with stories based on lived experience from EcoCounts participants.

In combination with the proliferating news headlines showing extreme weather impacting ordinary people, we believe there is now an opportunity for the message to be heard.

We are drawing together writers, designers, film-makers and social media experts to collaborate with and reaching out to like-minded NGOs to create a narrative that puts the concepts of citizen responsibility, carbon allowances, fairness and business behaviour change firmly on the table.

EcoCore & EcoCounts Roadmap

01

The EcoCounts grassroots group adopts voluntary carbon accounts to record their everyday CO_2 emissions

Growing our membership and reputation

02

We start reframing the narrative around CO_2 emissions, responsibility, alternative futures

Creating a carbon footprint app

03

Start pilot project with personal carbon trading, participants stick to a personal carbon budget, buying or selling carbon so everyone in the group can stay within their budget.

National publicity

04

Working with academics, research into social & governance impacts, feasibility of EcoCore's policy, just transition, economic modelling of the impact of a carbon currency.

Collaboration around the world

05

EcoCounts is guided by a Citizens Assembly, with participants in charge of changes and adaptations to keep the group on the cutting edge.

Advocacy by EcoCore brings recognition and adoption of core principles by NGOs, policy makers, politicians

We create an EcoCounts blueprint to set up more groups around the country with the same strategy and infrastructure

BURCHARDKAI
Hapag-Lloyd
BRAKE

Key Points

Business

Boosting the Slow Business Cycle

Business wants a carbon price & clarity around responsibility for CO_2 emissions

Progress towards zero emissions relies heavily on both the energy transition from fossil fuels to renewables and the reduction of energy use through efficiency savings. There is a strong desire in the business world to see this happen, but the requirement to maintain competitive pricing and turn a profit defines and limits the extent of what they can do. The widely accepted Greenhouse Gas Protocol Corporate Accounting and Reporting Standard[1] currently defines scopes 1, 2 & 3 for commercial CO_2 emissions:

- **Scope 1** - the fossil fuels a company burns
- **Scope 2** - the fossil fuels other companies burn for this company
- **Scope 3** - all other related carbon e.g. the emissions caused during the use of a product such as a motorcar

Companies have no realistic control over their scope 3, yet typically it makes up 80% of a company's emissions. Due to the uniqueness of every company's scope 3 emissions, cataloguing, standardising, verifying and certifying such emissions is a huge task and with low disclosure rates, variable data quality, and poor comparability, the potential for legal dispute around overlap is huge.[2][3]

Currently companies in a supply chain run annual (or even less frequent) carbon audits.

Improvements in their carbon footprint and changes in the price are only passed on after the next audit, slowing the spread of innovation and inventiveness and so slowing the energy transition.

Carbon price of any product or service is added to incrementally at every step along the supply chain as businesses or traders add their own CO_2 emissions to the total. The carbon cost of any item is cumulative and builds up along the supply chain, added to by each step in a mechanistic process. This carbon cost on the price tag can be reduced by firms as more zero carbon options become available for doing whatever they do to add value to their products.

1. From the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD)
2. See Stenzel, A., Waichman, I. Supply-chain data sharing for scope 3 emissions. Nature Portfolio Journal Climate Action 2, 7 (2023)
3. See BNN Bloomberg: Investors Wrestle With the 'Scope 3 Conundrum'

The independent, mechanistic carbon price setting by vendors of products and services is dynamic and responsive, and obviates the need for a centralised carbon price catalogue. This leads to faster decarbonisation across the economy. There is no time lag as person or business waits for their suppliers to complete their annual carbon footprint or sustainability report.

The introduction of rigorous carbon accounting through this new set of rules enables real-time thinking about the emissions of every business decision throughout all levels of leadership at a company. It is a low cost way to make faster and more effective lower carbon investment and finance decisions from research and development through to supply chains and strategic planning.

Driving fossil-free innovation

Carbon accounts and carbon trading

Citizens receive their personal allowance of tokens at the start of every allowance period and must ensure it suffices - but businesses receive no allowance. They are required to charge their customers for payment in carbon tokens as well as cash, in order to pay their suppliers in carbon tokens for all they purchase.

£4.3 billion

In 2022, the UK was paying £100 per tonne of CO_2 on the European Emissions Trading Scheme. In total, business paid £4.3 billion for 43 Mt of hard-to-abate industrial emissions.[1]

Every business would need to run a carbon budget in its own carbon account.

As carbon accounts become a feature in the personal lives of every business's innovators, they would bring those learnings and experiences to work with them. Increasing knowledge of complexities surrounding CO_2 emissions in the economy within business, like any relevant knowledge, should have profound effects upon business innovation and technological advances.

CO_2 emissions would be paid for at every step of the supply chain, raising its visibility and creating a new double bottom line of cash and carbon.

Large organisations such as the UK NHS would deal with CO_2 emissions at the lowest level within their organisation's budgetary hierarchy rather than creating large scale estimates of emissions and generalised decarbonisation plans. Employees' greater carbon literacy and carbon prudence would stimulate more innovative and targeted decision-making at these lower levels.

> **UK CO_2 emissions of 700 megatonnes CO_2e pa in 2020[2] can be used to set the first annual carbon budget under this plan - a realistic starting point for the introduction. This creates a total carbon token supply of 70 billion tonnes, or, at a carbon price of £100/tonne, £70 billion.**

Even with the data and the insights on CO_2 emissions, it must be in a format that people can understand, act upon, and use to drive different outcomes. A carbon account expresses its costs and benefits in the native language of business: value.

1. Statista, Ember: UK-ETS carbon pricing (2023)
2. Defra UK: Measuring UK greenhouse gas emissions (2021)

A Paradigm Shift for the Voluntary Carbon Markets

Business wants a carbon price & clarity around responsibility for CO_2 emissions

The carbon markets with their vast pool of existing carbon credits have two primary purposes:

1. To make the CO_2 emissions more costly for carbon credit purchasers
2. To provide funding to projects that reduce or capture CO_2 emissions

To produce carbon credits for today's markets, a range of factors must be met, including measurability, permanence, non-additionality, verifiability, harmlessness and uniqueness. There are huge amounts of carbon credits on the market which are very low quality when measured by these standards and they do not expire.[1]

The standards bodies which carry out the carbon credit verification process are mostly private and their reputations vary, so there are good grounds to doubt the carbon credit markets' effectiveness at contributing to CO_2 emissions reduction.[2]

1. See Turner G., Grocott H., Maslin M. et al: *The Global Voluntary Carbon Market – Dealing with the problem of historic credits* Trove Research Report (2020)
2. See the World Economic Forum on Measuring, reporting and reducing scope 3 emissions | World Economic Forum

By contrast, the EcoCore framework fulfils the two primary goals more robustly:

1. Carbon tokens are paid by purchasers in the business supply chain as part of the dual cash and carbon prices of materials and services. This token price covers suppliers' Scope 1 & 2 emissions and the use of tokens by their suppliers and customers covers Scope 3 emissions.
2. CO_2 drawdown via forests, kelp farming or soil regeneration and mechanical CO_2 capture and sequestration would be paid in carbon tokens matching the amount of sequestered CO_2. These payments would come from the same national carbon budget used to distribute tokens to citizens.

The overarching strategy brings control of inducing CO_2 emissions reduction and stimulating CO_2 drawdown under one umbrella, with robustness and transparency.

€881 billion

the value of traded global markets for carbon dioxide (CO_2) permits reached a record 881 billion euros ($948.75 billion) in 2023[1]

$500 billion

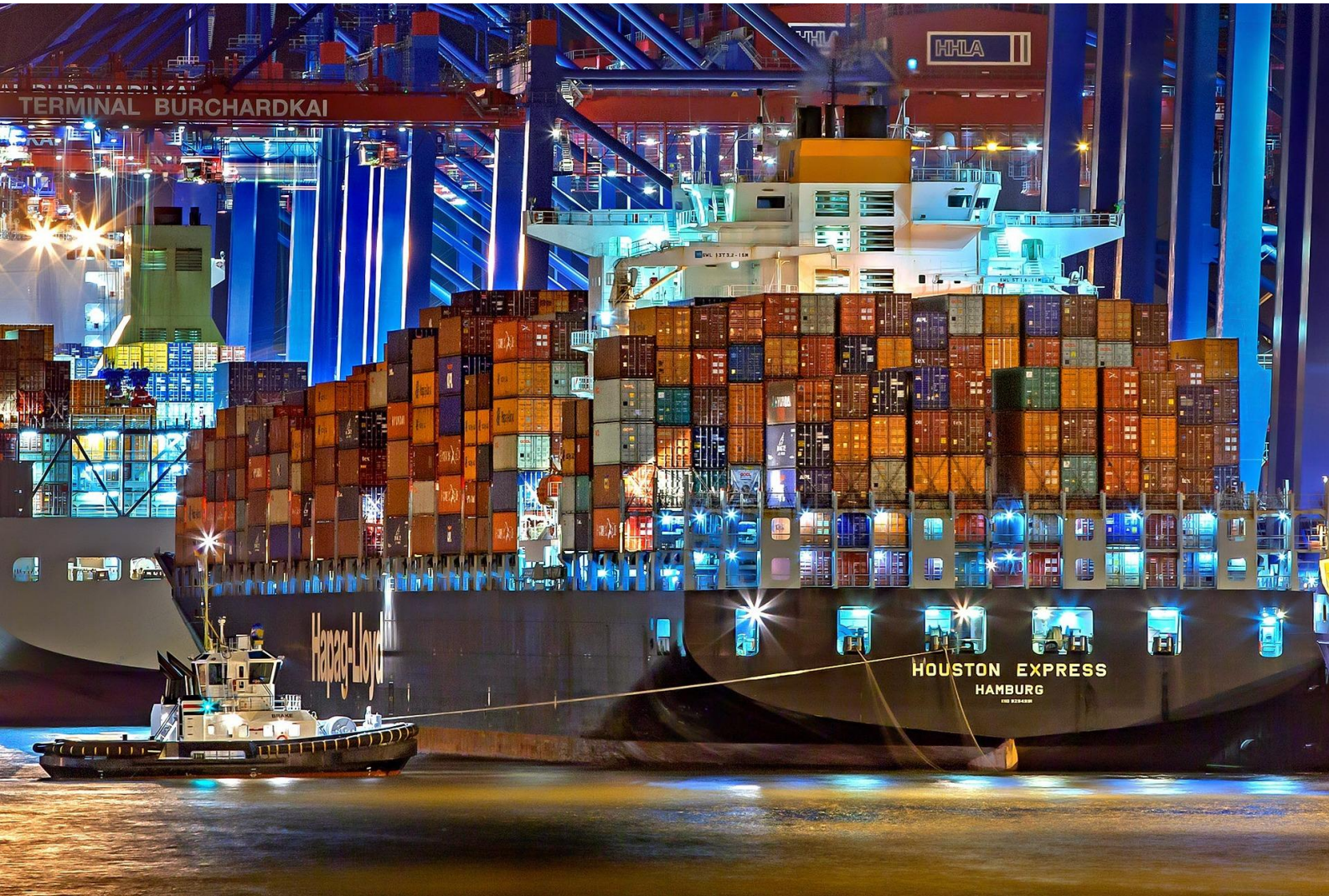
invested globally in 2022 in electrification and efficiency for transport, heating, & infrastructure. Without realistic carbon pricing, investment is guided by state subsidies or the lure of greater market share. Under the EcoCore system when forecasting the ROI of an investment in low emissions technology, the national carbon price as an input parameter would become highly relevant if not essential[2].

1. Global carbon permit markets reach record €881b in 2023
2. IRENA: Investments in Renewables Reached Record High, But Need Massive Increase and More Equitable Distribution (2023)

Trade borders and CO_2 emissions charges

The Carbon Border Adjustment Mechanism, as proposed by the EU for 2026 and potentially leading to a major trade wars when China and many other nations become aware of its full impacts, is essentially a tariff imposed on imports into a trading block to protect the block's low emissions investments from being outcompeted on price by the import of cheap high emissions foreign goods.

To facilitate international trade, a nation using carbon allowances and carbon tokens would mandate that all importers pay the appropriate carbon price of whatever goods it imports, based on the total carbon footprint of the actual goods. Two importers importing the same goods but from different manufacturers would probably be required to pay different carbon prices, depending on the actual CO_2 emissions caused by the different manufacturers.



Transparent, Equitable Payment for Carbon Drawdown

How carbon accounting can be used to reward those pulling CO_2 out of the atmosphere

Carbon drawdown - pulling CO_2 out of the atmosphere - whether it is ecosystem-based or mechanical, is a significant component of most of the UN IPCC's more likely projected pathways by which civilisation could get back to a stable climate. Currently, many of these carbon drawdown projects are funded from the sale of carbon credits but under the EcoCore framework they would be paid for in carbon tokens from the government's national carbon budget alongside the regular allocations to citizens.

The guardians of forests and other natural carbon sinks, farmers and other stewards of natural environments would be remunerated directly in carbon tokens according to centralised standards. The recipients of these payments would be free to sell their tokens and the income would encourage the maintenance and expansion of such natural carbon sinks, benefitting nature at the same time.

Carbon tokens decay in value to discourage stockpiling and speculation.

Summary

The magnitude of the social and economic changes that EcoCore is proposing are considerable. But so are the dangers that come with climate change. Society cannot pick and choose its future: we must bear every eventuality in mind, including the worst case scenarios of cascading tipping points and breached planetary boundaries. Even if it is difficult for many to comprehend the risks that society is exposing itself to, the bottom line is that new, challenging, scalable and equitable policies like the EcoCore framework have to be examined and developed without delay. From the small and local with EcoCounts to the global and ambitious with a global carbon currency, society must take every chance that presents itself to steer a course to a world where humanity can thrive.

What can you do to help?

If you make decisions on behalf of your:

- **Household** - Sign up to EcoCounts, follow what we do, get involved online, determine your everyday CO_2 emissions
- **Organisation** - Get in touch and help EcoCounts to change the way your organisation accounts for its CO_2 emissions from Scopes 1, 2 or 3 to the actual carbon footprint
- **Municipality or Government** - Work with us to create strategies for your citizens and businesses to realise and benefit from this real, tangible carbon economy

Appendix: the EcoCore Model Definition

A national CO_2e emissions cap reflecting national climate targets is implemented as carbon tokens given to citizens on an equal per capita basis as a regular but decreasing allowance. These tokens are spent in the purchase of all goods and services in the economy. All vendors must demand a token price on the sale of their goods and services, to balance their organisation's carbon account, with the same prudence as for money. Organisations must in turn pay the token price on all purchases. At the start of every supply chain, fossil fuel producers extract gas, oil or coal and demand carbon tokens on its sale in addition to the cash price. This point of control is where fossil fuel producers surrender their tokens to the state, as a measure of and license for what they have extracted. Hence all organisations in the supply chain from fossil fuel company to citizen add incrementally to the carbon token price with every transaction as the products or services are developed and passed down the line from business to business. All are allowed to participate, businesses, citizens and state, in personal carbon trading of wanted or unwanted tokens for cash, which creates the national carbon price. Overall this creates a robust, transparent carbon accounting framework for business. Carbon drawdown is rewarded centrally from the national carbon token supply from the token supply pool for citizens, replacing all carbon credit markets. Voluntary and mandatory carbon accounting by organisations are replaced by carbon accounts based on income and expenditure of carbon tokens.

One can see from space how the human race has changed the Earth. Nearly all of the available land has been cleared of forest and is now used for agriculture or urban development. The polar ice caps are shrinking and the desert areas are increasing. At night, the Earth is no longer dark, but large areas are lit up. All of this is evidence that human exploitation of the planet is reaching a critical limit. But human demands and expectations are ever-increasing. We cannot continue to pollute the atmosphere, poison the ocean and exhaust the land. There isn't any more available.

Behind the booklet

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EcoCore

Ecocore.org is a community interest company based in London, registered in the UK, reg #13707292, which focuses advocacy and research on cross-cutting environmental challenges with pragmatism and objectivity.

Website: https://ecocore.org/
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EcoCounts

EcoCounts CIO is a charity registered in the UK, reg #1196590. We promote grassroots climate action through the adoption of carbon accounts.

Website: https://ecocounts.community

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