HOW TO:

SOUND LIKE YOU UNDERSTAND CARBON PRICING

BY THE ZERO CARBON CAMPAIGN

CARBON PRICING SUMMARY:

IT'S NOT THE BRAD PITT OF CLIMATE SCIENCE, BUT IT IS VERY IMPORTANT.

CONTENTS:

We believe that carbon pricing can play a pivotal role in fighting climate change around the world.

But we also understand that the process of attaching a cost to the production of greenhouse gas emissions is extremely complicated; it's easier to care about a turtle with a plastic straw up its nose, than it is to try and understand how we might price something that we can't see, in a bid to stop our planet from warming to levels that we can't imagine.

This guide is intended to help you understand what carbon pricing is and how it works, so that you can join us in our mission to put carbon pricing at the top of the UK's environmental agenda.

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WHAT IS CARBON PRICING

Carbon Pricing is a highly effective policy instrument. It drives accountability for the production of Greenhouse Gas (GHG) emissions, and encourages those who produce and consume them to change their behaviour.

Under a carbon pricing system, a cost is attached to each unit or tonne of carbon dioxide (CO_2) and CO_2 equivalent* that is produced. The higher the carbon price, the bigger the incentive to reduce the amount of emissions you produce, either by using fewer fossil fuels, or converting to less polluting (lower carbon) methods of production. This process is called emissions abatement.

"WE NEED TO PUT A PRICE ON CARBON"

ANTONNEIÓ GUTERRES - UNITED NATIONS SECRETARY GENERAL, MARCH 2020

As of 2019, 57 carbon pricing policies are either in place or scheduled for implementation around the world, covering 20% of global GHG emissions. Prices range from 1 - 101 £/tCO_2e.

Without greater coverage (volume of total GHG emissions that are priced) and stronger pricing, we will not achieve the ambition set out in the 2015 Paris Agreement - a commitment to ensuring that Global Warming does not exceed 2 degrees above 'pre industrial' levels. (The Paris Agreement states that ideally, Global Warming will not exceed 1.5 degrees Celsius).

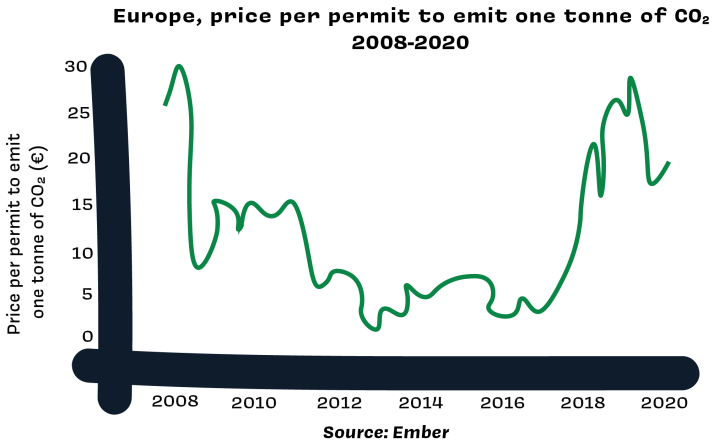
*Carbon Dioxide is the main GHG, but others can also be priced according to their 'carbon equivalent' metric (CO_2e). This is done by using their Global Warming Potential (GWP) to work out much of one GHG is required to produce the equivalent GWP of a unit of CO_2. Carbon prices can then be applied across all GHG emissions as a price per tonne of carbon-dioxide equivalent (£/tCO_2e)

HOW DOES IT WORK

There are two main methods of carbon pricing: emissions trading and fixed carbon pricing. There are pros and cons to both systems, which can be applied on their own, or in tandem as a 'hybrid' system (i.e by applying a fixed carbon price to fuel use, but enabling certain industries to trade carbon credits on an open market).

Emissions Trading Scheme (ETS). An ETS enables those involved to trade 'credits' (or tradable carbon permits) on an open market. Each credit corresponds to a unit or tonne of CO_2e. An ETS will place a 'cap' on the total amount of emissions (or credits) allowed on that market, which will decline over time.

If you have produced more emissions than you have credits, you can buy more - ensuring the number of credits you have matches the volume of emissions that you've produced. If you produce fewer emissions than expected, you can sell your excess credits. This means that the carbon price in an ETS is determined by supply and demand, and fluctuates over time.



Whilst an ETS enables flexibility - and allows you to make guarantees about the volume of emissions which will be produced - trading systems are extremely complicated and relatively inaccessible. Often, a surplus of credits on the market can lower the carbon price, which takes away the incentive for those involved to abate (produce fewer emissions). This can be addressed through the introduction of a Carbon Price Floor (to ensure the price does not fall below a certain level) and Supply Adjustment Mechanisms (which are triggered when there are too many credits on the market, and can lead to some credits being removed).

Examples: European Union and New Zealand

Fixed Carbon Price / tax. A fixed carbon price is applied to each tonne of CO_2e that is produced (£/tCO_2e). This price is set to increase over time, in line with the price that is needed to drive the reduction in emissions that is required. The revenue can be 'hypothecated' (ring-fenced) to offset increased households costs (i.e. via the 'fee and dividend' model), to invest in decarbonisation of industry (i.e. R&D), or for general government spending.

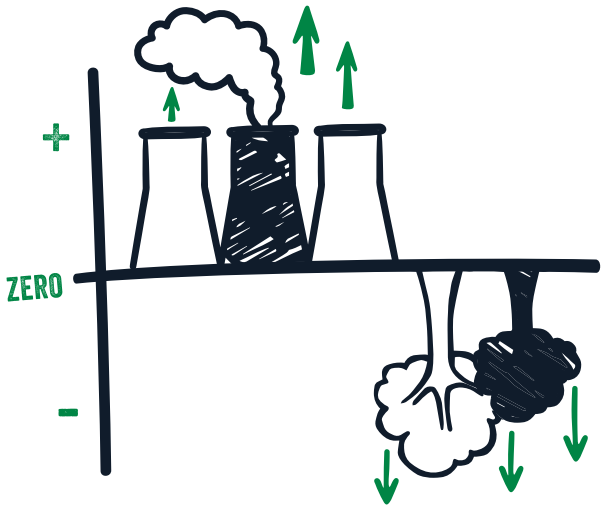
Calculating the carbon price to ensure it is consistent with climate ambitions can be complicated, as can ensuring the price trajectory is secure (i.e will not be frozen or changed by different administrations). However, fixed carbon pricing is much more accessible than an ETS, provides more reliable revenue streams, and makes it easier for businesses to make long-term investment decisions. This is why many businesses who are not subject to either system may use a 'shadow' carbon price to guide their thinking.

Examples: British Columbia (Canada) and Sweden

Administration. Carbon pricing tends to be centrally managed (i.e designed and implemented by Governments) and levied upstream - at the source where emissions from fossil fuels are produced, rather than downstream - at the point of purchase.

This is a way of ensuring that producers (rather than consumers) take responsibility for decarbonisation, as well as avoiding the inherent complexities of 'carbon footprinting' - the process of counting all of the emissions that have gone into making an individual product, including through supply chains.

Negative Emissions. Some carbon pricing systems account for 'negative' emissions - those removed from the atmosphere by technical or natural means (i.e woodland creation). This is known as carbon sequestration.



Most climate targets - including the UK's 2050 'net zero' target - require a certain level of emissions to be removed from the atmosphere to be achieved. Under a carbon pricing system, companies may be allowed to 'offset' the emissions they've produced with those they've removed, so that they just pay for their 'net' emissions. Alternatively, they may received direct payments for negative emissions, which can also be traded on some emissions markets.

THE ISSUE OF CARBON LEAKAGE

'Carbon Leakage' refers to the 'offshoring' of carbon emissions. When companies and manufacturers face especially stringent domestic carbon pricing policies, they may elect to move their production processes oversees. This is not just an issue in terms of domestic job creation, but also in terms of Global Warming; we need to reduce the emissions that are being produced across the world, not just move them to somewhere we don't have to take responsibility for them.

Although the threat of 'Carbon Leakage' is often exaggerated (the Committee on Climate Change (CCC) found in a 2016 review that current UK climate policy poses little threat to business competitiveness) it has often shaped carbon pricing policy. Carbon Leakage tends to be addressed in one of two ways:

1. Free Allowances:

Free Allowances are a form of subsidy. They can be applied under any carbon pricing system, but mostly occur in Emissions Trading Schemes. Countries will analyse which industries they consider to be under threat of carbon leakage, on account of their being 'trade exposed' (i.e. subject to international competition). According to the level of exposure, companies will be issued with a certain number of 'Free Allowances', which entitle you to produce a set number of free or 'non priced' carbon emissions. These can either be deducted from annual emissions totals before a fixed carbon price is applied, or they can be used as free carbon credits under an ETS.

2. Border Carbon Adjustments

A Border Carbon Adjustment (BCA) is a way of addressing concerns about carbon leakage, without resorting to subsidy. A BCA enables

you to apply the domestic carbon price to imports at the country or jurisdiction border, so that competitors face the same carbon price as domestic producers. This ensures carbon pricing does not drive emissions abroad, and that other jurisdictions are incentivised to develop their own carbon pricing policies (because most countries would rather pay a carbon price to their own Government, than to someone else's).

BCAs can be contentious (both under World Trade Organisation rules, and to countries that haven't ratified - or signed - the Paris Agreement) and complicated; it's almost impossible to accurately work out the carbon footprint of every product that enters a country, so applying an carbon price on the border is difficult.

However, BCAs are starting to gain some traction, especially amongst the European Union - where a BCA is a central component of the European Green New Deal. It is possible to implement a WTO-compliant BCA, which might work as such:

1. **Develop a series of product 'standards',** based on the average emissions used to produce certain products or product types

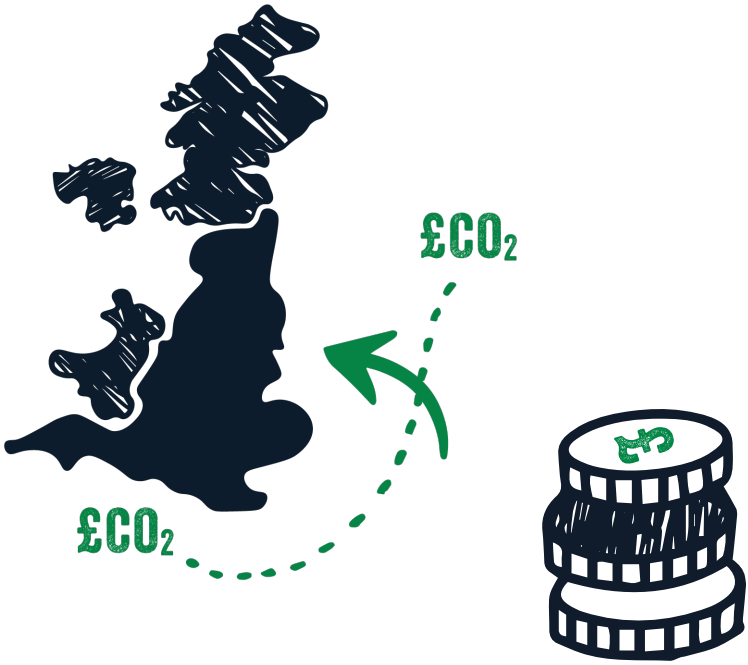
2. **Apply a set BCA charge (£/tCO_2e) to any products that have a higher carbon footprint than those standards.** (The BCA carbon price is set based on the product standard, rather than the footprint of the imported product)

3. **Provide a rebate or exemption to anyone who has already paid an equivalent carbon price in their own country,** or anyone who can prove that their products have a lower footprint than the stated standard

4. **Provide a carbon price rebate** (based on the product standard) on export to jurisdictions without an equivalent carbon price

Given the complexities of BCAs, it's helpful to have a degree of multilateral (i.e more than one country) support before you

implement one, such that countries with equivalent carbon prices can trade with each other in carbon bubbles, without having to adjust costs at the border, or enter into complex trade agreements.



USEFUL QUOTES

We've compiled a list of **clever phrases** that people tend to use when talking about Carbon Pricing, along with some *handy translations* (incase you get thrown in at the deep end). This is not exhaustive, but we hope it proves useful:

'But where's the abatement incentive?'
How are we going to motivate people to move away from producing and consuming greenhouse gas emissions when there is no incentive (price or otherwise) for them to do so?

'There are no two ways about it - we have to price the externalities of carbon'
The negative impacts of carbon emissions on the health of people and planet need to be factored into the price of carbon

'I understand that Carbon pricing is not a silver bullet - we need regulation too - but it can certainly act as a catalyst for decarbonisation'
Carbon Pricing alone won't change the world, but it can mobilise people to act. We need regulatory policies (i.e end dates for coal-fired power plants) to complement market-based measures (i.e carbon pricing) if we want to drive the levels of emissions reductions required to prevent runaway global warming

'That's the beauty of carbon pricing, you don't have to pick winners, you can let them emerge'
No one knows what the world will look like in 2030, and what technologies are going to solve the climate crisis. By putting a price on carbon, you drive high emitters towards low cost low carbon solutions, without having to make a gamble now about the future success of a particular technology

'We just *have* to take responsibility for our consumption emissions'
The UK's legally binding carbon budgets only include our territorial emissions (i.e emissions produced on and around UK soil). If we want to take responsibility for the UK's entire carbon footprint, we have to include the emissions that are produced in other countries, for consumption in the UK

'To be fair, I'd consider CCUS at thirty pounds a tonne'
I'd invest in removing carbon dioxide from the atmosphere (via Carbon Capture, Utilisation and Storage technology) if it meant I saved thirty pounds a for every tonne of CO_2e that I produced

'Don't get me *started* on the co-benefits'
It's not all about emissions targets - decarbonisation can improve health, provide jobs, reduce air pollution and ensure the protection of nature too.

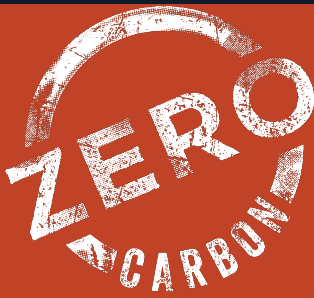
'She does have a point - their effective carbon price is pretty substantial'
The sum of all of the different carbon taxes and tradable permits that they are paying for is quite high

'Hypothecation does seem to make it more palatable'
Ring-fencing the revenue from a carbon price for specific ends (i.e investing in decarbonisation projects, or giving money back to the public) tends to lead to higher levels of support

ABOUT THE ZERO CARBON CAMPAIGN

The Zero Carbon Campaign was founded in July 2019 following the announcement of the Government's 2050 'net zero' legislation. We want the UK Government to implement stronger and more consistent carbon pricing across more of the economy - because we don't think we're going to effectively address climate change without it.

In January 2020, we formed the Zero Carbon Commission to develop a proposal for implementing a fair and effective carbon pricing policy in the UK. You can find out more about our work - and their proposals - at zeroc.org.uk



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