

# KYOTO, COP21 AND EMISSION TRADING



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Climate change is a global issue that affects all countries; with some responsible for emitting a greater percentage of GHGs and others suffering more from the effects of climate change. A few attempts have been made to develop international agreements in order to reduce or stabilise the amount of GHGs in our atmosphere.

## The Kyoto protocol

This international agreement adopted in 1997, commits its parties (currently consisting of 192 countries or nations) to set emission reduction targets. Although the protocol was signed almost twenty years ago, its first commitment period only started in 2008, ending in 2012. During this first

period, the target for participating countries was to reduce the overall GHG emissions to at least 5.2% of the overall emission levels in 1990.

Mechanisms for reaching the emission reduction targets include:

- **International emission trading:** This mechanism allows countries to sell their excess emission capacities (the amount of carbon they emitted minus their set target) to other countries, which may have exceeded their target amount of GHG emissions.
- **Clean Development Mechanism (CDM):** This allows a country with an emission target under Kyoto, to implement an emission-reduction project in developing countries who haven't committed to the protocol. This mechanism enables the country to earn certified emission reduction (CER) credits, which can be traded in the emission trading scheme.
- **Joint Implementation:** Similar to CDM, this mechanism allows a country with an emission reduction target under Kyoto to earn CERs, by implementing an emission-reducing project in another participating country.

Although many signed the Kyoto protocol, a number of countries responsible for significant GHG emissions, did not sign or ratify it. As a result, by the end of the third period in 2012, we were a long way off reducing the global target of reducing emissions by 5.2%, or seeing the levels of GHGs stabilise.

## COP21

During the 2015 Conference of Parties in Paris (COP21), consensus was reached and a legally binding agreement was prepared, that aims to keep the rise in global temperature to well below 2.0 C. Participating countries are obliged to submit regular reports regarding their GHG emissions and mitigation efforts. Developed countries also agreed to provide \$100 billion per year until 2025 to support the financing of mitigation, 117 parties have signed this agreement so far.

You can read more about the Paris Agreement in another University of Reading course on FutureLearn: ['Our Changing Climate: Past, Present and Future'](#).

## Carbon or emission trading

It isn't possible to trade Carbon in the form of emitted CO<sub>2</sub> or CH<sub>4</sub>, but it is possible to sell or buy units of CO<sub>2</sub> allowance, to or from another partner. This principle not only works between networks of countries, such as those signed up to the Kyoto protocol, it can also be applied on a smaller economic scale; for example amongst businesses or even individuals.

There are different forms of carbon trading. As in the Kyoto protocol, a partner who produces a lot of GHGs, can buy the surplus allowance to produce GHGs from a partner who produces quantities that are below the legal limit. Clearly, this system only works if there are partners who produce less.

On a smaller scale, businesses and organisations can reduce their carbon footprint by investing in projects promoting GHG reducing technologies, renewable energy and reforestation. For example, a partner could buy a piece of forest or invest in the planting of trees that uptake an amount of CO<sub>2</sub>

equivalent to the amounts of CO<sub>2</sub> produced, for example by the burning of fossil fuels. If you've booked a plane ticket recently, it is very likely that you will have been asked whether or not you would like to pay for the CO<sub>2</sub> equivalents produced by the plane to transport your bodyweight to your final destination. Money raised in this way, is often invested in projects that finance a transition to new renewable technologies or CO<sub>2</sub> uptake.

Although the principle of carbon trading works in theory, it has been criticised for a number of reasons:

- Buying emission capacities from other partners can allow wealthy partners to emit more GHGs compared to others.
- Putting a price on emissions is highly complex. Firstly you have to be able to measure the amount of GHGs produced. Secondly, how do you determine the price for a unit CO<sub>2</sub>?
- Carbon trading does not reduce the actual amount of CO<sub>2</sub> emitted. Plant photosynthesis is still the most efficient 'technology' humans can use to reduce CO<sub>2</sub> from the atmosphere. Emissions may be reduced by a variety of different mechanisms, but the actual concentration of CO<sub>2</sub> in the atmosphere can only be reduced by increased storage of carbon in plants, soils, or the ocean (although the latter is less desirable as we have no control and it leads to an acidification of the water which can harm marine ecosystems and organism).

An alternative to trading emissions is to tax them. Again, putting a price on emissions is difficult and without upper legal limits, taxing may allow rich parties to produce more GHG emissions. However, carbon markets do have the potential to facilitate the adoption of low-emission practices and technologies by injecting money into these sectors.

### Further reading:

You can find out more about the Kyoto Protocol on the UNFCCC website:  
[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

Or read more about the negotiations in COP21 on the official website: <http://www.cop21paris.org/>

There is a report on agricultural carbon markets, prepared by PwC with support from the Rockefeller Foundation. You can read this here: <https://www.pwc.co.uk/assets/pdf/agricultural-carbon-markets.pdf>