Rewarding Learning

GCE LEVEL

FACT FILE

Environmental Technology

For first teaching from September 2013

For first award in Summer 2014

Carbon Trading

environmental technology

FACT FILE

Carbon Trading

environmental technology

Specification Content

Students should be able to:

- Explain the concept of carbon trading
- Comment on the value of carbon trading schemes as a viable option for reducing global carbon emissions.

Course Content

Carbon trading: the concept:

Carbon trading is a concept which has developed from the Kyoto Protocol agreed by some countries at the climate change summit in 1997 in an attempt to curb emissions of carbon dioxide or greenhouse gases. Countries which ratified the agreement are assigned maximum carbon emission levels. Emitting more than the assigned limit would result in the country being penalised by the application of a lower limit in the following year. On the other hand, a county which emits lower than its limit can trade units of "emissions" to other countries who need them – *carbon trading*.

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The Kyoto Protocol separates countries into two groups.

- Annex I includes developed nations
- Non-Annex I refers to developing countries.

Emission limitations are only placed on Annex I countries. Non-Annex I nations participate by investing in projects that lower emissions in their own countries. For these projects, they earn carbon credits. These credits can be traded or sold to Annex I countries, which allow them a higher level of maximum carbon emissions for that period.

Carbon trading has both advocates and critics. Some of the advantages and disadvantages of the system are outlined below.

The case for carbon trading

Environment

A carbon trading system should result in an improvement of environmental air quality by reducing carbon emissions because of the costs involved. This should result in less carbon entering the air so reducing the greenhouse effect and the associated potential damage to climate change.

Control

Carbon trading should provide a government control of the carbon emitted by its industries. A government can reduce the number of carbon credits available so reducing carbon emissions in its area of control.

Incentive
Companies could react to the incentive provided by the ability to sell unused credits on the open market which have been produced by the modernisation of existing equipment and processes so releasing less harmful emissions into the air. Theoretically any organisation which has earned unused credits could put these up for sale on the open market.

Flexibility
A carbon trading scheme can allow businesses to change processes at a speed which suits them. Small companies can invest in new technology so reducing the need for carbon emission in a short period of time. This can provide larger industries the opportunity to purchase credits until they become fully modernised.

The case against carbon trading

Complexity of the market
A global framework for trading is yet to be formulated. As most of the trading happens in the international markets, it is difficult for some regional businesses to engage with the system. Developed countries can maintain existing levels of emissions whereas poorer developing countries may not be able to afford the infrastructure to produce low emission economies. The market can also be open to fraud and manipulation.

Economy
Some businesses could be unwilling to get involved in the trade, as they do not want to incur costs that will reduce profit margins. Companies which already have low emission levels may be prepared to bear the cost of credits rather than incurring extra costs in reducing their levels of emission. High emission companies could potentially go to higher emissions, with only a minor incentive to reduce emissions i.e. the cost of trading.

Size of credits
A criticism of the system is that the credit limits available in a country may be too high to produce a significant decrease in harmful emissions.

Measuring emissions
The measurement of carbon emissions is very difficult and potentially unreliable with large errors of margin in the values obtained.

Activity

Produce a PowerPoint presentation outlining the concept of carbon trading and the case for and against the scheme.

Websites/Resources

https://extension.psu.edu/basics-of-anaerobic-digestion#:~:text=An%20Introduction%20to%20Anaerobic%20Digesters,and%20a%20nutrient%2Drich%20effluent

https://www.spglobal.com/commodityinsights/en/market-insights/blogs/energy-transition/061021-voluntary-carbon-markets-pricing-participants-trading-corsia-credits

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