## Carbon trading – college essay



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I Setting a A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas ith a carbon dioxide equivalent (tC02e) equivalent to one tonne of carbon dioxide. Carbon credits and carbon markets are a component of national and International attempts to mitigate the growth In concentrations of greenhouse gases (GHGs). One carbon credit Is equal to one metric tonne of carbon dioxide, or In some markets, carbon dioxide equivalent gases.

Carbon trading is an application of an emissions trading approach.

Greenhouse gas emissions are capped and then markets are used to allocate the emissions among the group of regulated sources. The goal is to allow arket mechanisms to drive industrial and commercial processes in the direction of low emissions or less carbon Intensive approaches than those used when there Is no cost to emitting carbon dloxIde and other GHGs Into the atmosphere. Since GHG mitigation projects generate credits, this approach can be used to finance carbon reduction schemes between trading partners and around the world.

There are also many companies that sell carbon credits to commercial and individual customers who are interested in lowering their carbon footprint on a voluntary basis. These carbon offsetters purchase the credits from an investment fund or a carbon evelopment company that has aggregated the credits from Individual projects.

Trade Exchange, which is like a stock exchange for carbon credits. The quality of the credits is based in part on the validation process and

sophistication of the fund or development company that acted as the sponsor to the carbon project.

This is reflected in their price; voluntary units typically have less value than the units sold through the rigorously validated Clean Development Mechanism. Background 3urning of fossil fuels is a major source of industrial greenhouse gas emissions, specially for power, cement, steel, textile, fertilizer and many other industries which rely on fossil fuels (coal, electricity derived from coal, natural gas and oil). The major greenhouse gases emitted by these industries are carbon dioxide, methane, nitrous oxide, hydro fluorocarbons (HFCs), etc. all of which increase the atmosphere's ability to trap infrared energy and thus affect the climate.

The concept of carbon credits came into existence as a result of increasing awareness of the need for controlling emissions. The IPCC (Intergovernmental Panel on Climate Change) has observed that: Policies that provide a real or implicit price of carbon could create incentives for producers and consumers to significantly invest in low-GHG products, technologies and processes.

Such policies could include economic instruments, government funding and regulation, while noting that a tradable permit system is one of the policy instruments that has been shown to be environmentally effective in the industrial sector, as long as there are reasonable levels of predictability over the nitial allocation mechanism and long-term price. The mechanism was formalized in the Kyoto Protocol, an international agreement between more than 170 countries, nd the market mechanisms were agreed through the subsequent Marrakesh Accords.

The mechanism adopted was similar to the successful US Acid Rain Program to reduce some industrial pollutants. Climate change emerged on the political agenda in the mid-1980s with the increasing scientific evidence of human nterference in the global climate system and with growing public concern about the environment The United Nations Environment Programme (UNEP) and the World Meteorological Organizations (WMO) established the Intergovernmental Panel on Climate Change (IPCC) to provide policy makers with authoritative scientific information in 1988.

In its first report in 1990, IPCC concluded that the growing accumulation of human made green house gases in the atmosphere would "enhance the green-house effect, resulting in an additional warming of the Earth's surface" by the next century, unless measures were adopted to limit emissions. The UN general assembly responded to this by launching negotiations to formulate an International treaty on global climate protection which resulted in completion of the United Nations Framework Convention on Climate Change (UNFCCC) in May 1992.

The convention was opened for signature at the Earth Summit in Rio de Janeiro in June 992, when it was signed by 154 states and European Community.

It entered into force on March 21, 1994. India signed UNFCCC on 10th June 1992 and ratified that in 1993. Emission allowances Under the Kyoto

Protocol, the ' caps' or quotas for Greenhouse gases for the developed Annex 1 countries are known as Assigned Amounts and are listed in Annex B.

The quantity of the initial assigned amount is denominated in individual units, called Assigned amount units (AAUs), each of which represents an allowance to emit one metric tonne of carbon dioxide equivalent, and these are entered into the country's national registry. In turn, these countries set quotas on the emissions of installations run by local business and other organizations, generically termed operators'. Countries manage this through their national registries, which are required to be validated and monitored for compliance by the UNFCCC.

Each operator has an allowance of credits, where each unit gives the owner the right to emit one metric tonne of carbon dioxide or other equivalent greenhouse gas. Operators that have not used up their quotas can sell their unused allowances as carbon credits, while businesses that are about to exceed their quotas can buy the xtra allowances as credits, privately or on the open market. As demand for energy grows over time, the total emissions must still stay within the cap, but it allows Industry some flexibility and predictability in its planning to accommodate this.

By permitting allowances to be bought and sold, an operator can seek out the most cost- effective way of reducing its emissions, either by investing in ' cleaner' machinery and practices or by purchasing emissions from another operator who already has excess capacity'. Since 2005, the Kyoto mechanism has been adopted for C02 trading by all he countries within the European Union under its European Trading Scheme (EU ETS) with the European Commission as its validating authority.

From 2008, EIJ participants must link with the other developed countries who ratified Annex I of the protocol, and trade the six most significant anthropogenic greenhouse gases.

In the United States, which has not ratified Kyoto, and Australia, whose ratification came into force in March 2008, similar schemes are being considered. Kyoto's ' Flexible mechanisms' As nations have progressed we have been emitting carbon, or gases which result in Narming of the globe.

Some decades ago a debate started on how to reduce the emission of harmful gases that contributes to the greenhouse effect that causes global warming. So, countries came together and signed an agreement named the Kyoto Protocol.

The Kyoto Protocol has created a mechanism under which countries that have been emitting more carbon and other gases (greenhouse gases include ozone, carbon dioxide, methane, nitrous oxide and even water vapour) have doluntarily decided that they will bring down the level of carbon they are emitting to the levels of early 1990s.

Developed countries, mostly European, had said that they Nill bring down the level in the period from 2008 to 2012. In 2008, these developed countries have decided on different norms to bring down the level of emission fixed One, it can reduce the GHG (greenhouse gases) by adopting new technology or improving upon the existing technology to attain the new norms for emission of gases. Or it can tie up with developing nations and help them set up new technology that is eco-friendly, thereby helping developing country or its companies ' earn' credits.

India, China and some other Asian countries have the advantage because hey are developing countries. Any company, factories or farm owner in India can get linked to United Nations Framework Convention on Climate Change and know the ' standard' level of carbon emission allowed for its outfit or activity. The extent to which I am emitting less carbon (as per standard fixed by UNFCCC) I get credited in a developing country. This is called carbon credit.

These credits are bought over by the companies of developed countries mostly Europeans because the United States has not signed the Kyoto Protocol A tradable credit can be an emissions allowance or n assigned amount unit which was originally allocated or auctioned by the national administrators of a Kyoto-compliant cap-and-trade scheme, or it can be an offset of emissions.

Such offsetting and mitigating activities can occur in any developing country which has ratified the Kyoto Protocol, and has a national agreement in place to validate its carbon project through one of the UNFCCC's approved mechanisms.

Once approved, these units are termed Certified Emission Reductions, or CERs. The Protocol allows these projects to be constructed and credited in advance of the Kyoto rading period. The objectives of the Protocol are the reduction of emissions of greenhouse gases and their increased uptake by natural sinks, promoting specific goals and deadlines for the shares.

Flexibilizadoras and binding measures act in the double sense of pressing the goals and encourage a practical and cheap way of reach them.

The Kyoto Protocol provides for three mechanisms that enable countries or operators in developed countries to acquire greenhouse gas reduction credits. 1 Under Joint Implementation 01) a developed country with relatively high costs of omestic greenhouse reduction would set up a project in another developed country. Two early examples are change from a wet to a dry process at a Ukraine cement works, reducing energy consumption by 53 percent by 2008-2012; and rehabilitation of a Bulgarian hydropower project, with a 267, 000 ton reduction of C02 equivalent during 2008-2012.

Under the Clean Development Mechanism (CDM) a developed country can ' sponsor' a greenhouse gas reduction project in a developing country where the cost of greenhouse gas reduction project activities is usually much lower, but the atmospheric effect is globally equivalent. The developed country would be given credits for meeting its emission reduction targets, while the developing country would receive the capital investment and clean technology or beneficial change in land use. To get a CDM project registered and implemented, the investing country' has to first take approval from the designated national authority in the host country, establish " Additionally", define baselines and get the project validated by a third party agency, called a Designated Operational Entity (DOE). The Executive Body of CDM registers the project and issues credits, called Certified Emission Reductions CERs), or carbon credits, where each unit is equivalent to the reduction of one metric tonne of. C02 or its equivalent. There are more than 4200 CDM projects in the pipeline as on 14.

3. 2010.

The expected CERS till the end 00012 \* Replacing the use of dirty fossil fuels with renewable energy; \* Reducing the use of fossil fuels through energy efficiency; or \* Capturing and storing already released carbon in trees and other plants. " hat is " Additionality" in a CDM project ? The feature of " additionality" is a crucial element of a CDM project it means that the ndustrialized country that is seeking to establish the CDM project in the developing country and earns carbon credits from it has to establish that the planned carbon reductions would not have occurred on its own, in the absence of the CDM project.

They have to establish a baseline of the project. Which is the emission level that Nould have been there in the absence of the project.

The difference between this baseline level and the (lower) emission level achieved as a result of the project is the carbon credit due to the investing country " hat are some of the concerns regarding CDM ? The risk of " false Credits" is a cause for concern with regard to CDM projects. If a project does not actually offer an additionally and the reduction in emission would have happened anyway Even without the project. . Under International Emissions Trading (IET) countries can trade in the international carbon credit market to cover their shortfall in Assigned amount units. Countries with surplus units can sell them to countries that are exceeding their emission targets under https://assignbuster.com/carbon-trading-college-essay/

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Annex B of the Kyoto Protocol. These carbon projects can be created by a national government or by an operator within the country.

In reality, most of the transactions are not performed by national governments directly, but by operators who have been set quotas by their country.

How buying carbon credits can reduce emissions Carbon credits create a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air. Emissions become an internal cost of doing business and are visible on the balance sheet alongside raw materials and other liabilities or assets. For example, consider a business that owns a factory putting out 100, 000 tonnes of greenhouse gas emissions in a year. Its government is an Annex I country that enacts a law to limit the emissions that the business can produce. So the factory is given a quota of say 80, 000 tonnes per year.

The factory either reduces its emissions to 80, 000 tonnes or is required to purchase carbon credits to offset the excess. After costing up alternatives the business may decide that it is uneconomical or infeasible to invest in new machinery for that year. Instead it may choose to buy carbon credits on the open market from organizations that have been approved as being able to sell legitimate carbon credits. We should consider the impact of manufacturing alternative energy sources. For example, the energy consumed and the Carbon emitted in the manufacture and transportation of a large time. One seller might be a company that will offer to offset emissions through a project in the developing world, such as recovering methane from a swine farm to feed a power station that previously would use fossil fuel.

So although the factory continues to emit gases, it would pay another group to reduce the equivalent of 20, 000 tonnes of carbon dioxide emissions from the atmosphere for that year. \* Another seller may have already invested in new low-emission machinery and have a surplus of allowances as a result. The factory could make up for its emissions by buying 20, 000 tonnes of allowances from them.

The cost of the seller's new machinery would be subsidized by the sale of allowances. Both the buyer and the seller would submit accounts for their emissions to prove that their allowances were met correctly. Credits versus taxes : Carbon credits and carbon taxes each have their advantages and disadvantages.

Credits were chosen by the signatories to the Kyoto Protocol as an alternative to Carbon taxes. A criticism of tax-raising schemes is that they are frequently not hypothecated, and so some or all of the taxation raised by a government would be applied based on what the particular nation's government deems most fitting.

However, some would argue that carbon trading is based around creating a lucrative artificial market, and, handled by free market enterprises as it is, carbon trading is not necessarily a focused or easily regulated solution. By treating emissions as a market commodity some proponents insist it becomes easier for businesses to understand and manage their activities, while economists and traders can attempt to redict future pricing sbe: \* the price may be more likely to be perceived as fair by those paying it.

Investors in credits may have more control over their own costs. the flexible mechanisms of the Kyoto Protocol help to ensure that all investment goes nto genuine sustainable carbon reduction schemes through an internationally agreed validation process. \* some proponents state that if correctly implemented a target level of emission reductions may somehow be achieved with more certainty, Nhile under a tax the actual emissions might vary over time. \* it may provide a ramework for rewarding people or companies who plant trees or otherwise meet standards exclusively recognized as " green. The advantages of a carbon tax are argued to be : \* possibly less complex, expensive, and time-consuming to implement.

This advantage is especially great when applied to markets like gasoline or home heating Oil. \* perhaps some reduced risk of certain types of cheating, though under both credits and taxes, emissions must be verified. \* reduced incentives for companies to delay efficiency improvements prior to the establishment of the baseline if credits re distributed in proportion to past emissions. \* when credits are grandfathered, this puts new or growing companies at a disadvantage relative to more established companies.

allows for more centralized handling of acquired gains \* worth of carbon is stabilized by government regulation rather than market fluctuations. Poor market conditions and weak investor interest have a lessened impact on taxation as opposed to carbon trading. Creating real carbon credits : The principle of Supplementarity within the Kyoto Protocol means that internal abatement of emissions should take precedence before a country buys in carbon Mechanism by which capped entities could develop real, measurable, permanent emissions reductions voluntarily in sectors outside the cap.

Many criticisms of carbon credits stem from the fact that establishing that an emission of C02-equivalent greenhouse gas has truly been reduced involves a complex process. This process has evolved as the concept of a carbon project has been refined over the past 10 years. rhe first step in determining whether or not a carbon project has legitimately led to the reduction of real, measurable, permanent emissions is understanding the CDM methodology process.

This is the process by which project sponsors submit, through Designated Operational Entity (DOE), their concepts for emissions reduction creation.

The CDM Executive Board, with the CDM Methodology Panel and their expert advisors, review each project and decide how and if they do indeed result in reductions that are additional. Additionality and its importance I This section includes a list of references, related reading or external links, but its sources remain unclear because it lacks inline citations. Please improve this article by introducing more precise citations.

I lt is also important for any carbon credit Offset) to prove a concept called additionality.

The concept of additionality addresses the question of whether the project would have happened anyway, even in the absence of revenue from carbon credits. Only carbon credits from projects that are ' additional to" the

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business-as-usual scenario represent a net environmental benefit. Carbon projects that yield strong financial returns even in the absence of revenue from carbon credits; or that are compelled by regulations; or that represent common practice in an industry are usually not considered additional, although a full determination of additionality requires specialist review.

It is generally agreed that doluntary carbon offset projects must also prove additionality in order to ensure the legitimacy of the environmental stewardship claims resulting from the retirement of the carbon credit (offset). According the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) : " GHG emission trading programs operate by capping the emissions of a fixed number of individual facilities or sources. Under these programs, tradable ' offset credits' are issued for project-based GHG reductions that occur at sources not covered by the program.

Each offset credit allows facilities whose emissions are capped to emit more, in direct proportion to the 3HG reductions represented by the credit.

The idea is to achieve a zero net increase in GHG emissions, because each tonne of increased emissions is ' offset' by project- based GHG reductions. The difficulty is that many projects that reduce GHG emissions (relative to historical levels) would happen regardless of the existence of a 3HG program and without any concern for climate change mitigation.

If a project would have happened anyway,' then issuing offset credits for its GHG reductions will ctually allow a positive net increase in GHG emissions, undermining the emissions target of the GHG program. Additionality is thus https://assignbuster.com/carbon-trading-college-essay/

ograms that recognize project-

critical to the success and integrity of 3HG programs that recognize projectbased GHG reductions. " Criticisms rhe Kyoto mechanism is the only internationally agreed mechanism for regulating carbon credit activities, and, crucially, includes checks for additionality and overall effectiveness.

Its supporting organisation, the UNFCCC, is the only organisation with a global mandate on the overall effectiveness of emission control systems, although nly applies for five years between 2008 and 2012. The first phase of the EIJ ETS system started before then, and is expected to continue in a third phase afterwards, and may co-ordinate with whatever is internationally agreed at but there is general uncertainty as to what will be agreed in Post-Kyoto Protocol negotiations on greenhouse gas emissions. As business investment often operates over decades, this adds risk and uncertainty to their plans.

As several countries responsible for a large proportion of global emissions (notably USA, Australia, China) have avoided andatory caps, this also means that businesses in capped countries may perceive themselves to be working at a competitive disadvantage against those in uncapped countries as they are now paying for their carbon costs directly.

A key concept behind the cap and trade system is that national quotas should be chosen to represent genuine and meaningful reductions in national output of emissions.

Not only does this ensure that overall emissions are reduced but also that the costs of emissions trading are carried fairly across all parties to the trading system. However, governments of capped countries may seek to https://assignbuster.com/carbon-trading-college-essay/

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unilaterally weaken their ommitments, as evidenced by the 2006 and 2007 National Allocation Plans for several countries in the EIJ ETS, which were submitted late and then were initially rejected by the European Commission for being too lax. A question has been raised over the grandfathering of allowances. Countries within the EIJ ETS have granted their incumbent businesses most or all of their allowances for free.

This can sometimes be perceived as a protectionist obstacle to new entrants into their markets.

There have also been accusations of power generators getting a 'windfall' profit by passing on these emissions 'charges' to their customers. As the EIJ ETS moves into its second phase and Joins up with Kyoto, it seems likely that these problems will be reduced as more allowances will be auctioned. Setting a market price for carbon by introducing more precise citations. I Unchecked, energy use and hence emission levels are predicted to keep rising over time.

Thus the number of companies needing to buy credits will increase, and the rules of supply and demand will push up the market price, encouraging more groups to undertake environmentally friendly activities that create carbon credits to sell. An individual allowance, such as an Assigned amount unit (AAU) or its near-equivalent European Union Allowance (EUA), may have a different market value to an offset such as a CER. This is due to the lack of developed secondary market for CERs, a lack of homogeneity between projects Nhich causes difficulty in pricing, as well as questions due to the principle of supplementarity and its lifetime.

Additionally, offsets generated by a carbon project under the Clean Development Mechanism are potentially limited in value because operators in the EIJ ETS are restricted as to what percentage of their allowance can be met through these flexible mechanisms.

Yale University economics professor Nilliam Nordhaus argues that the price of carbon needs to be high enough to motivate the changes in behavior and changes in economic production systems necessary to effectively limit emissions of greenhouse gases. Raising the price of oods and services are high-carbon ones and should therefore be used more sparingly.

Second, it will provide signals to producers about which inputs use more carbon (such as coal and oil) and which use less or none (such as natural gas or nuclear power), thereby inducing firms to substitute low-carbon inputs. Third, it will give market incentives for inventors and innovators to develop and introduce low- carbon products and processes that can replace the current generation of technologies.

Fourth, and most important, a high carbon price will economize on the information that is required to do all three of these tasks.

Through the market mechanism, a high carbon price will raise the price of products according to their carbon content. Ethical consumers today, hoping to minimize their " carbon footprint," have little chance of making an accurate calculation of the relative carbon use in, say, riving 250 miles as compared with flying 250 miles. A harmonized carbon tax would raise the price of a good proportionately to exactly the amount of C02 that is emitted in all the stages of production that are involved in producing that good. If 0. https://assignbuster.com/carbon-trading-college-essay/ 1 ofa ton of carbon emissions results from the wheat growing and the milling and the trucking and the baking of a loaf of bread, then a tax of \$30 per ton carbon will raise the price of bread by \$0. 30. The " carbon footprint" is

automatically calculated by the price system. Consumers would still not know how much of the price is due to carbon missions, but they could make their decisions confident that they are paying for the social cost of their carbon footprint.

Nordhaus has suggested, based on the social cost of carbon emissions, that an optimal price of carbon is around \$30(US) per ton and will need to increase with inflation.

The social cost of carbon is the additional damage caused by an additional ton of carbon emissions. The optimal carbon price, or optimal carbon tax, is the market price (or carbon tax) on carbon emissions that balances the incremental costs of reducing carbon emissions with the incremental benefits of reducing climate damages. If a country wished to impose a carbon tax of \$30 per ton of carbon, this would involve a tax on gasoline of about 9 cents per gallon. Similarly, the tax on coal-generated electricity would be about 1 cent per kWh, or 10 percent of the current retail price.

At current levels of carbon emissions in the United States, a tax of \$30 per ton of carbon would generate \$50 billion of revenue per year. How does it work in real life? Assume that British Petroleum is running a plant in the United Kingdom. Say, that it IS emitting more gases than the accepted norms of the UNFCCC. It can tie up with its wn subsidiary in, say, India or China under the Clean Development Mechanism.

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It can buy the ' carbon credit' by making Indian or Chinese plant more ecosa'. n. y with the help of technology transfer.

It can tie up with any other company like Indian Oil , or anybody else, in the open market. In December 2008, an audit will be done of their efforts to reduce gases and their actual level of emission.

China and India are ensuring that new technologies for energy savings are adopted so that they become entitled for more carbon credits. They are selling their credits to their counterparts in Europe. This is how a market for carbon credit is created. Every year European companies are required to meet certain norms, beginning 2008.

By 2012, they will achieve the required standard of carbon emission. So, in the coming five years there Nill be a lot of carbon credit deals. Carbon credits SPOT trading safety SPOT trading safe. Bluenext announced on 13.

04. 2011 Safe harbour initiative . Commodity Exchange Bratislava opened on March 1 lth, 2011 the Suspicious carbon credits registry. The SCC Registry is free to use to check the block serials safety. SCC Registry asks emitters to report the stolen credits as soon as possible.

How does MCX trade carbon credits? MCX:- This entire process was not understood well by many.

Those who knew about the possibility of earning profits, adopted new technologies, saved credits and sold it to improve their bottomline. Many companies did not apply to get credit even though they had new technologies. Some companies used management consultancies to make https://assignbuster.com/carbon-trading-college-essay/ their plan greener to emit less GHG. These management consultancies then scouted for buyers to sell carbon credits. It was a bilateral deal.

However, the price to sell carbon credits at was not available on a public platform. The price range people Nere getting used to was about Euro 15 or maybe less per tonne of carbon.

Today, one tonne of carbon credit fetches around Euro 22. It is traded on the European Climate Exchange.

Therefore, you emit one tonne less and you get Euro 22. Emit less and increase/add to your profit. We at the MCX decided to trade carbon credits because we are in to futures trading. Let people Judge if they want to hold on to their accumulated carbon credits or sell them now. MCX is the futures exchange. People here are getting price signals for the carbon for the delivery in next five years.

Our exchange is only for Indians and Indian companies.

Every year, in the month of December, the contract expires and at that time people who have bought or sold carbon will have to give or take delivery. They can fulfill the deal prior to December too, but most people will wait until December because that is the time to meet the norms in Europe. Say, if the Indian buyer thinks that the current price is low for him he will wait before selling his credits. The Indian government has not fixed any norms nor has it made it compulsory to reduce carbon emissions to a certain level. So, people who are coming to buy from Indians are actually financial investors. They are thinking that if the Europeans are unable to meet their target of reducing the emission levels by 2009 or 2010 or 2012, then the demand for the carbon will increase and then they may make more money. So investors are willing to buy now to sell later. There is a huge requirement of carbon credits in Europe before 2012. Only those Indian companies that meet the UNFCCC norms and take up new technologies Nill be entitled to sell carbon credits. There are parameters set and detailed audit is one before you get the entitlement to sell the credit.

In India, already 300 to 400 companies have carbon credits after meeting UNFCCC norms.

Till MCX came along, these companies were not getting best-suited price. Some were getting Euro 1 5 and some were getting Euro 18 through bilateral agreements. When the contract expires in December, it is expected that prices will be firm up then. On MCX we already have power, energy and metal companies who are trading.

These companies are high- energy consuming companies. They need better technology to emit less carbon. Is this market also good for the small investors?