

Global personal emissions quota

-Preliminary model on how to tackle climate change in economically and ethically sustainable fashion

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Introduction

Climate change made its breakthrough into politics – both national and international – during last year (2006). The more and more extreme weather throughout the world, painstaking lobbying by the environmental organizations, growing worry by the scientific community and the several films made about the topic – like “Al Gore’s” Inconvenient Truth – skyrocketed the issue into political agenda in Finland as well as throughout the world.

In the Kyoto Accord signed in 1997 the signatories agreed to cut their greenhouse gas emissions by 5.2% from the 1990 level by years 2008-2012 (the average of these years). The Accord included a mechanism that allowed the signatories to trade emissions credits with each other. These credits have been given to the signatories who have given (or auctioned) them to their industries.

The Kyoto Accord is – at best – only a first step towards a sustainable level in global greenhouse gas emissions. According to experts the emissions should be cut as much as 60-80% in order to prevent a catastrophic global warming. This fact makes it extremely worrying that some nation states – including US and Australia – have not agreed even on this first step and have not signed the Accord. The basic reason for their refusal to take part lays in the so-called “tragedy of the commons”. It means a situation where a resource – in this case the unpolluted air – is free commodity for all the actors which lead to overusing and economically inefficient outcome.

The purpose of this essay is to introduce a model – which has gathered some hype throughout the world – that would solve the “tragedy of the commons” in economically and ethically efficient fashion. Because of the limited length of the essay it focuses on analyzing the economical aspects and dynamics of the model (Global Personal Emissions Quota). First the nature and scope of the problem will be discussed. Secondly the model itself will be introduced and lastly its economic effects will be analyzed.

Climate change – the nature and scope of the problem

There is a strong consensus within the scientific community that the climate change is manmade and this consensus has finally reached the political level as well. By now it is also known that climate change will be an ecological, social and economic disaster never seen before in the human history. That is if radical measures will not be implemented without further delays. The consequences of the climate change – raising sea level,

widening deserts, erosion, extinction of species, destruction of crops, and massive amounts of climate refugees – will be felt on every one's pockets and lives in long term.

In order to do something about the problem the measures would have to be both radical and global. According to Athanasiou and Baer (2002, 51) the highest bearable level of temperature rise would be 2 degrees Celsius. This would mean halting the greenhouse gas levels to about 450 ppm (Stern [2006, vii] regards this goal almost impossible). In emissions this would mean that the global emissions will have to be cut in half by year 2060 (from the level of year 2000). What makes this extremely difficult is the fact that the developing countries – most importantly China – are just getting industrialized which means that their emissions will grow no matter what. In other words the industrialized countries will have to cut their emissions far more than 50% in order for the global emissions to reach the target.

According to Stern (Ibid.) the climate change will be cheaper the more radically and earlier the global community begins to really work to prevent it. So it would be in everyone's interest to begin to work on solving the problem together and using commonly agreed methods. Here, however, lays the aforementioned problem with the tragedy of the commons: if there isn't a common accord accepted by all the agents it is not rational to independently throw away own interests for the common good – and this works on the national as well as the consumer level. The global economy has made the problem even worse because the corporations, workers and capital can easily move to the country where it's most profitable for them to do business. This often means same as the lowest environmental regulation.

Climate change can be dealt with only by enforcing innovative, exhaustive, economically efficient and ethically sustainable global agreement. Kyoto is none of the aforementioned but a first step and a sort of practice before a new more ambitious agreement that lives up to all of those five vital aspects.

Global Personal Emissions Quota

There has been some discussion on the personal emissions quotas in Great Britain and United States. The British Secretary of State for Environment David Miliband commissioned a study (Roberts & Thumin 2006) on the possibility of implementing a sort of carbon credit card. More ambitious plan has been proposed by SkyTrust-organization that proposes (<http://www.skyowners.org/>) auctioning the US greenhouse emission quotas to industry and banking the income generated to a fund which pays it evenly to every US citizen as a dividend. This idea has also been applied to a global scale (Athanasiou & Baer 2002, 84-87). In these models the global emissions quota has been shared evenly to all the people in the world. The most active marketers of the idea have been Tom Athanasiou and Paul Baer whose pamphlet, published in 2002, *Dead Heat: Global Justice and Global Warming* analyzed the need for the model and its political dimensions.

The purpose of this short essay is to introduce a version of global personal emissions quota that focuses on its economic dynamics and effects. The model has been influenced by the ideas of Athanasiou and Baer as well as SkyTrust but differs from these both in scale and in certain details. In short the model can be introduced in five phases:

1. The global community negotiates and chooses the highest acceptable and realistically possible (in terms of economy, technology etc.) global temperature rise. Scientists will then convert this into ppm in atmosphere and cumulative amount of CO₂e (CO₂ equivalent) emissions. Based on this cumulative figure they then generate a year to year decreasing global emissions quota.
2. Nation states are given these quota-credits in relation to their population. Industrialized countries can – and should! – give these credits (de facto stocks) straight to their citizens. Those countries in which this is technically impossible the state will function as the seller and the funds will be used in best interest to the people or straight to them as basic income. All this possibly under UN supervision in order to prevent fraud. Also in industrialized countries the quotas could be sold automatically by government and then given to people as basic income. All of the quotas will be sold.
3. Global Emissions stock is founded. There the credits are being sold straight to the polluters.
4. Industry – that buys the quotas – will have to buy them according to the greenhouse emissions it causes.
5. The price of credits is build into every good and service sold in the market.

Every one of these five needs to be explained more thoroughly but that cannot be done in this essay because of the limits in its length.

The dynamics and effects of the model

The basic idea of the model is to make the markets benefit the nature. If supervision is effective, the amount of emissions cannot exceed the favored level because it is fixed. This means that the markets have a clear limit to which it has to adapt. This adaptation will happen through innovation in fields of technology, quality, producing near the markets and revolutionizing the service-economy.

Because the emissions markets are global, the credits cost the same everywhere. This means no country will benefit from loose environmental regulation. The competitive advantage comes mostly from applying environment-friendly technology in which huge amounts of capital would be invested if the model would become reality. Quality and lifespan of a product would also be of great importance and would begin to replace quantity. What would also be of great importance is the dramatic rise of the cost of transportation. This would lead to a world in which the production is near to the markets in order to gain the competitive advantage.

The model would revolutionize the product repertoire. When the cost of emissions would be in the prizes the products people do not really need would vanish and be replaced by products that have long lifespan and also services. Because the overall volume of the

goods manufactured would diminish, the markets would get rid of the products that are least needed. Whole industries would vanish in way of new ones when the economy would increasingly move from material goods to immaterial. Services have much smaller economic footprint than material products and would thus gain huge competitive benefit.

The global wealth differences would diminish radically when purchase power would flow to the developing countries from the credits sold. Hundreds of millions of people would be drawn into truly global economy which would create new innovations and new markets for new kinds of goods. Because of the rising transportation costs, industries would follow the money to developing countries and plants would be more evenly located in terms of geography than before. The negative side would be the fact that the mineral reserves of the countries would be less egalitarian this way because it would be more expensive to transport them. The country that has them in its soil would benefit more than today making their citizens wealthier.

On the other hand this trend would be balanced by the fact that the credit given to every person in the world would be de facto basic income. The rate of the basic income would come from the rise of demand of the goods and services. This would mean that every economic transaction would benefit everybody as it would lift the value of their credits. This would lead to less aggregate work in the world because of two reasons. Firstly the income generated just from selling one's credits would be enough to generate an amount of money that would be enough for many. Secondly the overall wealth would not grow so much in the function of work done any more because of the emissions limit. Innovations would be far more important in generating wealth. On the other hand new service sectors would create fresh possibilities in getting wealthy which would lift the incentives to work.

Summary

Global personal emissions quota is a model that comprises “realism” and “utopia” in productive way. It is realistic because every radical (read: really effective) way to prevent rampaging climate change have many problems known to game theory inherent in them. In the accords between nation states there is always the prisoner's dilemma, tragedy of the commons as well as free riding. It seems impossible to negotiate an ecologically and economically effective accord in nation state level in a world in which every country is after its own narrow interest first (and foremost).

Already the schism between the industrialized countries and developing countries is fatal to these accords. The developing countries would never accept an accord in which they – the ones who suffer most from climate change – would not be given the chance to become wealthy. Of course there are “winners” and “losers” in the model introduced in this essay as well. But the logic of it is easy to understand and lies in firm normative ground and is economically efficient which are strong arguments against the critic from the “losers”.

The model is utopian in a sense that it would be a solution not only to climate change but also global unfairness. In a sense it could be asked whether it is even possible to solve the

one without the other because of the aforementioned schism. It is utopian also because this solution would not mean free-falling living standards. This, of course, if the huge incentives build in it would attract the markets to develop new innovations in the fields of ecological technology.

Maybe the most utopian feature of the model is that it would not be harmed by game theoretical issues. On the contrary, it would create a global community in which zero-sum logic would be vanished in economy (in a wide sense) and turned more and more into a non-zero-sum logic. This would mean a leap into a new global level in cultural evolution because of the ecological necessity. In this sense the idea of a global personal emissions quota could be even considered “human destiny”. This term is used by Robert Wright (2000, 209-229), who regards the disappearance of the zero sum games between ever larger levels in human societies and interaction the main trademark of cultural evolution.

Literature

Athanasίου, Tom & Paul Baer. 2002. *Dead Heat: Global Justice and Global Warming*. New York: Seven Stories Press.

Roberts, Simon & Joshua Thumin. 2006. *A Rough Guide to Individual Carbon Trading. The ideas, the issues and the next steps. Report to Defra*. Centre for Sustainable Energy. <<http://www.cse.org.uk/pdf/pub1067.pdf>> (luettu 27.5.2007)

Stern, Nicholas. 2006. *The Economics of climate change: The Stern Review*. Cambridge: Cambridge University Press.

Wright, Robert. 2000. *Nonzero – The Logic of Human Destiny*. Lontoo: Little, Brown and Company.