# Emissions Trading and Energy Policy – Worldwide Trends and Current Problems

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The reduction in global greenhouse gas emissions, and especially $CO_2$ emissions, required to fight climate change has been a top priority on the political agenda for some time. The introduction of a global emissions trading system is still considered to be the most effective way of reducing global $CO_2$ emissions. Such a system effectively limits the emission of $CO_2$ and also ensures that the reduction of $CO_2$ emissions is cost-effective. Ultimately, it is also much easier to implement politically than alternative measures like the direct taxation of $CO_2$ emissions. The most influential system of this type is currently the European Emission Trading System (EU ETS), which accounts for around 50 percent of $CO_2$ emissions in Europe.

Since the power sector is the most important sector in the EU ETS – a good 40 percent of emissions covered by this system come from this sector – climate policy is also simultaneously energy policy. This implies that any direction set in terms of climate policy has a significant influence over the fuel sources – fossil, nuclear energy and renewable energy – used to generate energy. On the other hand, however, it also means that measures that taken with a view to increasing supply security or the economic efficiency of power generation are also to be constantly considered from a climate policy perspective.

There is certainly a long way to go on the road to a worldwide emission trading system. It is encouraging, however, to see that a growing number of countries and/or regions are introducing or contemplating the introduction of this type of system. At the same time, it is nevertheless clear that there is still room for improvement as far as the smooth functioning of the EU ETS is concerned. This article summarises worldwide trends and examines the current problems with the EU ETS.

Figure 1 clearly illustrates that there are currently several independent trading systems in Europe, North America, New Zealand and Japan.[1] These systems differ in terms of their size and design, but all share the universal goal of reducing $CO_2$ emissions.

The EU ETS is by far the biggest active emissions trading system. It was founded in 2005 and covers Iceland, Liechtenstein and Norway in addition to the 27 EU states. In the USA efforts are currently concentrated on a regional level with the Regional Greenhouse Gas Initiative (RGGI), which took effect as of 2009. RGGI is a union of eight states from the North East of the USA, which have set up a common emissions trading system. Other regions that already have legally binding systems include New Zealand (NZ ETS), Australia (NSW Greenhouse Gas Reduction Scheme), Japan (Tokyo and Suitama) and the UK (CRC Energy Efficiency Scheme; covers organisations that are not part of the EU ETS).

The introduction of further systems is either in the pipeline or about to take place in various locations across the world. The Western Climate Initiative (WCI), which consists of California and four Canadian provinces, is planning to introduce a trading system in 2013. An internal system is also soon to be launched in California. Pilot projects will also be set up next year in seven provinces of China, which should be expanded to form a national system by 2016. National trading systems are planned for 2015 in both Australia and South Korea. Other countries like Mexico and Brazil, for example, are also cur-

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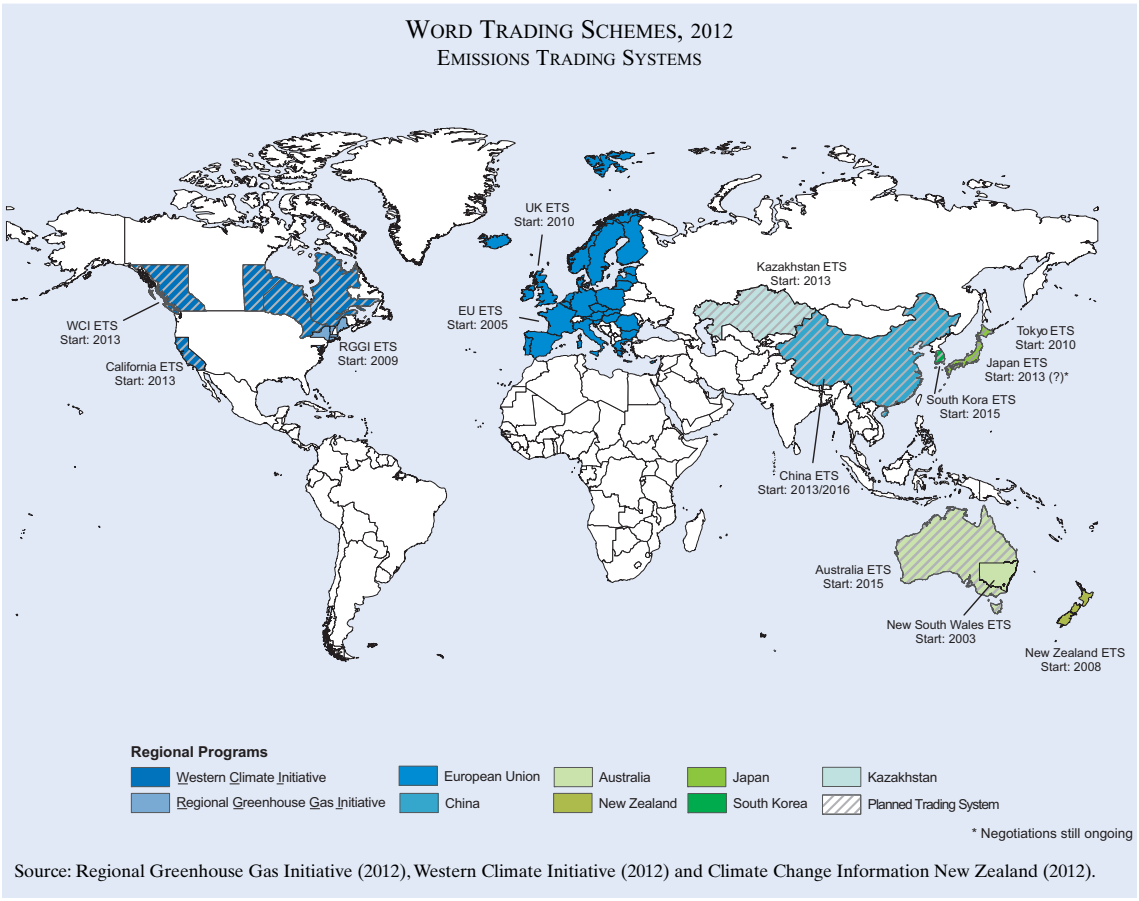
**Figure 1**




Source: Regional Greenhouse Gas Initiative (2012), Western Climate Initiative (2012) and Climate Change Information New Zealand (2012).

rently attempting to create the institutional and legal framework conditions required to set up trading systems. At the end of August it was announced that the EU ETS will link up to the Australian trading system as of 2015.[2] It has been specifically agreed that only certificates from the EU ETS can be transferred to Australia initially. As of 2018 this link should be completed and a transfer should be possible in both directions.

Links between emission trading systems are fundamentally positive, since they make it possible to exploit the cheap $CO_2$ emission reduction measures that exist in the various regions of the world more effectively, and thus to increase cost efficiency – see for example Edenhofer, Flachsland and Marschinski (2007). Moreover, in a recent investigation Grüll and Taschini (2012) show that the systems to be linked up must be sufficiently similar to enable full exploitation of this potential. Constraints in this respect could take the form of restrictions on the number of certificates that can be transferred from one system to another. This kind of constraint can be introduced so that measures to reduce $CO_2$ emission are not only implemented abroad, but that incentives are also created to make similar efforts domestically. A further constraint on complete price convergence between two linked systems can be the introduction of price floors and ceilings, which can be introduced to reduce uncertainty regarding fluctuations in certificate prices, for example.

Such links can only be seen as constructive in terms of creating a worldwide emissions trading system. In this respect the largest existing trading system at present, namely the EU ETS, can be seen as a model. This is precisely why the current condition of the system gives cause for concern as it seems in a position to lastingly erode confidence in emissions trading as a policy instrument. The focus at the moment is on the excessively low price of certificates, which has been hovering for some time at around EUR seven per ton $CO_2$. In the past this price reached EUR 30 per ton. One of the main reasons cited for the drop in prices is the current over-supply of certificates due to the lasting economic and financial crisis, which has led to a considerable decline in economic perfor-

[2] See European Commission (2012).

mance and thus of $CO_2$ emissions. Another reason is the announcements made by the European Commission regarding its initiation of further measures to improve energy efficiency, and counter the over-allocation of certificates in Eastern Europe.[3]

Today's low prices are generally considered as an insufficient incentive for climate-friendly investments, and have therefore led to calls from many quarters for corrective measures. These measures specifically include plans by the European Commission to withhold a share of certificates in the forthcoming year in order to increase the current price, and to bring these certificates back into the market at a later point in time.[4] However, this temporary intervention is seen by some as inadequate and there are calls for lasting changes like a boosting of the EU's climate targets from 20 to 30 percent or the permanent liquidation of a part of the excess certificates.[5] It would also be theoretically conceivable to introduce lower price limits for certificates, although this is not yet under discussion at a policy level.[6] Moreover, these discussions seem to be taking place without taking into consideration the fundamental long-term consequences of the various options. In the end, it is imperative not to erode confidence in emissions trading as an instrument – especially since this is a market created by policy. However, interventions such as the introduction of a lower price limit are also under critical discussion from a scientific point of view. This kind of intervention implies that the trading system can no longer be described as a pure emissions trading system, but must be understood as a hybrid system consisting of a mix of emission trading and a tax on $CO_2$ emissions. According to Grüll und Taschini (2011) a price floor would be easy to introduce in principle and would lower investment uncertainty. The regulatory authority is nevertheless faced with the difficult task of deciding on the number of certificates that must be removed from the market in order to ensure compliance with the lower price limit. A further measure for reducing pricing uncertainty often discussed in literature on this topic is the introduction of price ceilings, which, combined with a price floor, would then form a price collar. For obvious reasons this is currently not under political discussion, but it nevertheless remains worth mentioning since the environmental goal will not necessarily be achieved by this kind of system. These comments should illustrate that there is a need to take action to lead European emissions trading out of its current crisis on the one hand, but that this calls for well-informed decision-making.

The problem of the present over-supply of certificates mentioned above could have potential repercussions on the discussion of the interaction between emissions trading and other energy policy instruments, like the promotion of renewable energy with the help of feed-in tariffs, or the phase-out of nuclear energy that Germany is aiming to achieve. The Scientific Advisory Committee to the Federal Ministry of Economics and Labour (BMWA 2004) pointed out that, citing the example of the promotion of renewable energy in Germany, the expansion of renewable energy has no impact on $CO_2$ emissions in Europe, since the energy sector is subject to emissions trading and emissions are established by this system. This argument is often cited in the context of the debate over the energy turnaround in Germany and is currently taken up by RWI (2012). In principle, this argument can also be applied to the phase-out of nuclear energy.

Moreover, the extent of the current over-supply of certificates is considerable: for the period from 2008–2012 it is currently estimated at up to 1.5 billion certificates, which corresponds to around 75 percent of the upper ceiling for emissions for 2013, see DEHSt (2012) and KfW/ZEW (2012). Forecasts by the Öko-Institut (2012) and estimates by market experts (Fenwick 2012) suggest that this over-supply is not set to fall by 2020. Should these forecasts prove true, this would mean that the reduction in $CO_2$ emissions through the EU ETS is not binding. In this case, the interaction of emissions trading and other energy policy measures would have to be reassessed. Trends in the over-supply of certificates should therefore be observed and taken into consideration in the shaping of energy policy measures related to the energy policy turnaround.

[3] For a detailed overview of the current situation in the EU ETS see KfW/ZEW (2012), Öko-Institut (2012) or UBA (2012).
[4] This measure is described as the "set-aside" of certificates, see European Commission (2011).
[5] See DEHSt (2012), Öko-Institut (2012) or UBA (2012). A summary of the viewpoints of emission trading analysts can be found in Fenwick (2012).
[6] The introduction of a unilateral lower price limit is currently under discussion in the UK, while Australia has abandoned its planned introduction of a lower price limit for the time being due to its alliance with the EU ETS.

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