CURRENT THEMES IN INTERNATIONAL AND EU CLIMATE POLICY

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The need for a strict, global climate treaty

Global negotiations on the new emission reduction agreement, which is to take effect in 2020, started in 2011. The second commitment period (2012-2020) of the Kyoto Protocol only concerns a small share of global emissions. Global ADP negotiations have been given time until 2015 to agree upon a new protocol. The nations' commitments and efficient mitigation measures are still clearly divergent in practice.

The area making up EU-27 produced 19% of global CO2 emissions in 1990. In 2010, EU-27's share was at 12%. In the future, the EU's share of all global CO2 emissions is expected to decrease in all the scenarios predicted by the International Energy Agency (IEA) due to the strong growth of developing countries. According to IEA, the EU-27 area will produce less than 10% of global emissions in 2020. By 2035, the share will have fallen to 7-8%, depending on the scenario.

Carbon leakage describes a situation where, due to costs, businesses transfer production to countries where emission limits and climate policy are more lax. Energy-intensive sectors, such as cement, iron, steel, wood processing and aluminium industries, have a higher risk of carbon leakage. The OECD estimates that if the EU was the only area to reduce GHG emissions by 50% compared to the 2005 emission levels, 12% of the reductions would be negated due to increased emissions from other countries.

If this reduction were to be realised by decreasing CO2 emissions only, carbon leakage would be at approximately 16%. If all Annex I Parties implemented an equivalent reduction, carbon leakage would decrease to approximately 2% (OECD, 2009). It is evident that with attempts to aspire to even stricter long-term targets, the scope of climate policy will become an even more significant issue. For instance, the EU's ambitious and unilateral advance would likely increase carbon leakage in the short-term. However, with the current situation, it is difficult to consider the establishment of an ambitious international agreement without the EU showing equivalent commitment to emission reduction targets.

The EU has been a key pioneer

The EU has pioneered the adoption of emissions trading. The EU's role in promoting emissions trading has been significant particularly considering the possibility of a global climate treaty, as the Emissions Trading System started by the EU in 2005 has been the only convincing international emission policy instrument. Emissions trading systems with a legally binding emission ceiling have been established in New Zealand (2010) and Australia (2012). Equivalent regional systems have been established in the United States (RGGI 2009, California 2013), Canada (Quebec 2013) and Japan (Tokyo 2010). The integration of Australian emissions trading with the European system, ensuring a shared coal price in the future, was crucial for adopting the system in Australia.

The EU-ETS is the Union's most important policy instrument. The EU-ETS is probably the only instrument representing a linked system which in the future can cover the countries producing the most emissions and thus expand the impact zone of carbon emissions

prices. In recent years, various trade arrangements based on emissions or energy efficiency have been planned and implemented in both developed and developing countries.

Even from a global perspective, the EU's renewable energy policy has had an interesting impact on wind and solar power technology and costs, even though the policy has been very expensive for the Union. The production costs of wind and solar energy have dropped significantly, and China has become a global leader in wind and solar energy production. Economies of scale have refocused the production from Europe to Asia, although a considerable portion of the industry's added value returns to Europe due to European technological know-how. Estimates on the effect of renewable energy incentives vary according to whether the same or possibly a more comprehensive effect could have been achieved with a stricter emission ceiling and a higher price for emission allowances. The question remains whether a higher price for emission allowances would have contributed more diversely and led to new solutions, as supporting renewable energy has brought mostly familiar technology to the market.

The EU's actors have contributed greatly to Clean Development projects in the developing countries, and most of the emission allowances have drifted over to the EU area. With the collapse in emissions trading prices, operations have now become significantly less active. As the introduction of new technology and transfer of know-how have led to significant emission reductions, it is crucial that the EU again actively participates in the projects of developing countries.

The EU must reinforce the role of emissions trading in its internal climate policy by setting a strict emission reduction target for 2030

Discussions regarding the alternatives for the EU's internal climate policy after 2020 have started (Green Paper, March 27, 2013). The numeric GHG reduction target uses emissions trading as a key policy instrument and is a cost-effective mechanism for achieving the Union's climate targets. Other requirements aiming to reduce emissions – such as reserving a particular share of the energy system for renewable energy – raise the overall cost of reaching the reduction target when the emission allowances are priced low.

At the moment, a significant problem in the EU's internal climate policy is the large surplus and low price of emission allowances stemming from the second trading period of the EU-ETS. The surplus is a consequence of a lax emission reduction target, a large amount of Emission Reduction Units (approximately 900 megatonnes of CO2), Clean Development Mechanisms, economic recession and establishing overlapping policy instruments with, for instance, the Renewables Directive. Although the emissions in the EU-ETS have fallen below the set limit, the price of Assigned Amount Units does not direct investments towards low-carbon production. Instead, low-carbon production is promoted expensively either from state budgets or increased consumer prices for electricity.

Presently, emissions trading gives incentives for measures which have a price level of 3 € per tonne CO2. This means emission allowance prices seldom factor in market-based measures. In comparison, the non-emissions trading sector regularly implements measures costing up to 50-60 € per tonne CO2. Increasing the use of biofuel in traffic is even more expensive. In a context of cheap emission allowances, overlapping policy

instruments do not consistently support the development of diverse climate change mitigation technology and export opportunities.

The EU should implement measures that limit emission allowances to increase the price level directing actions in the EU-ETS. The Union should already decide on a strict emission reduction target for the emissions trading sector for 2030. However, this alone is not sufficient to direct the non-emission trading and the land use sectors – such as construction and traffic – which require designated policy instruments. Furthermore, low-emission resources should be used effectively to increase their potential in replacing high-emission fuels and raw materials. The competitiveness of energy-intensive industry may pose a problem on the global market with higher prices for emission allowances. This should be taken into account in the initial allocation of emission allowances in the future, but without lowering the general price level through various incentives.

Energy efficiency measures and renewable energy – while retaining emission trading as an effective policy instrument

Energy efficiency is a key principle for the efficient use of resources that does not allow wasteful exploitation of even low-emission energy sources and thus reduces emissions. Emissions trading encourages energy efficiency indirectly, but it is not the optimal way to encourage energy efficient consumption of energy resources.

Supplementary requirements – such as including a minimum share of renewable energy in the energy system – raise the cost of reaching the emission reduction target when the price of emission allowances is low. Energy subsidies for renewable energy technology (solar, wind) result in their increased use, which decreases the demand for emission allowances and lowers their price, subsequently reducing the price of high-emission resources, such as coal. Consequently, innovative product development and emission reducing solutions in coal energy technology are not pursued. Besides renewable energy, there is a need for a market mechanism in the form of emissions trading to direct the system. If emissions trading had high enough pricing, budget-straining subsidies would be unnecessary.

Additional targets are necessary because they clarify the long-term political environment for the implementation of structural changes required by climate change targets. Additional targets can also mobilise new actors outside emissions trading. For instance, emission reduction measures for traffic are generally rather expensive, and its structural changes require supplementary action. Renewable energy and energy efficiency targets facilitate participation from outside emissions trading, for both businesses and private citizens. No scientific research exists on how to arrange an overlapping system with two objectives (emissions trading and supplementary obligations). If other means of regulation are used alongside emissions trading, they should be implemented simultaneously to ensure a sufficiently strict emissions trading quota. This means that the emission reductions achieved through other policy instruments must be deducted from the quota.

Global biofuel production and food security

The production of biofuels is expected to multiply in the coming decades. There are ongoing efforts to increase the share of non-food crops as raw material through, for example, developing technologies that can use different raw materials in a more versatile way. According to IEA, the surface area of biofuel production will grow from the current

approximately 30 million ha to an estimated 60 million ha by 2030 and will reach a surface area of roughly 100 million ha by 2050. Meanwhile, the planet's land area is shrinking due to rising sea levels. 40% of the world's population lives in coastal areas. Due to climate change, large, densely populated areas are infrastructurally and socially highly vulnerable, particularly when it comes to extreme weather phenomena. Climate change also leads to increased aridity in existing agricultural areas. The use of biofuel in energy production must be implemented in relation to food security which, in addition to immediate food raw material for humans, includes livestock fodder. Food security is a key element in the future and must be taken into account in biofuel production. It is difficult to give an estimation of the emissions caused by indirect changes in land use related to biofuels, but they have potential to be highly significant.

Emissions from deforestation make up around 5-15% of the world's overall emissions (Global Carbon Project 2012). Deforestation takes place mainly in the tropical areas of developing countries where the readiness to conserve forests and use their resources responsibly is insufficient.

The high international market price of oil and efforts to decrease oil dependence

It is likely that the global demand for oil will continue to grow. The demand will increase particularly outside the OECD countries; however, it may even decrease in OECD countries. China's share makes up approximately 50% of the growing global demand for oil. Production will increasingly use unconventional sources, such as light tight oil in the US and oil sands in Canada. IEA estimates that the United States may become nearly self-sufficient in oil by 2035. A global, strict climate policy would decrease the growth of oil demand and could lower market prices significantly compared to the baseline scenario. Nevertheless, it is unlikely that the international market price of oil would fall from its current, historically very high level. Therefore the planned measures to decrease oil use and dependence in Finland are advisable. It is justifiable to move household heating away from oil and decrease oil use in the traffic sector with national regulation and policy instruments.

Market-based, structural changes towards a low-carbon society are not progressing in Europe – shale gas unlikely to change the situation during this decade

Shale gas has rapidly changed the global gas market. With its commercial implementation, the United States has become self-sufficient in gas which in turn has lowered the demand for coal in the country. The European natural gas market reacts to change more slowly as the bulk of European natural gas trading is based on long-term, bilateral delivery agreements tied to, among other things, oil price. Shipment costs make up a significant portion of the cost of liquefied natural gas and therefore it is unlikely that the price will drop in Europe like it has done in the US. It is also unlikely that the European shale gas reserves would be used on a broad scale during this decade. If the supply of shale gas grew in the future in the EU as well, the EU would reach emission reduction targets more easily than estimated. The possible large scale use of shale gas in some member states could significantly affect the EU's internal markets by upsetting established arrangements and dependencies.

The international market price of coal has remained inexpensive partially due to the decrease in demand in the US. Combined with the low market price of CO2 emissions, the fuel choices of actors in the EU are currently being directed towards coal rather than

natural gas. This means that the desired, market-based structural change towards lower emissions is not being realised in the emissions trading sector at the moment. Instead, in many EU countries, the price still directs investments – if new ones are made – towards coal and lignite. By and large, the uncertain market status discourages energy companies from making market-based investments in Europe. It is also interesting to compare the situation to the United States where the EPA has proposed an emission limit of 454 g CO2/kWh for new electric power plants. In practice, the proposal would require CCS technology to be installed in new coal power plants by the 2020s at the latest. Canada will soon implement a similar emission limit of 420 g CO2/kWh. Emission limits of this level do not allow the construction of coal or oil power plants without CCS technology or a significant share of biomass fuel.

Sources:

EC 2013b. Brussels, 27.3.2013 COM (2013) 169 final. GREEN PAPER. A 2030 framework for climate and energy policies.

Global Carbon Project 2012. The Global Carbon Budget 1959 – 2011. http://www.globalcarbonproject.org/carbonbudget

OECD, 2009. The Economics of Climate Change Mitigation: Policies and Options for Global Action Beyond 2012.