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Talking Point

# Carbon tax

## Better than the status quo, but not the optimal solution

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For both environmental and economic reasons, a carbon tax would be superior to the current patchwork of subsidies and regulatory law (standards, bans, caps, quotas etc.) which characterises climate policy. However, the tax has a key disadvantage: while it sets a price for carbon emissions, it does not set a cap. That is why emissions trading is even superior to a carbon tax. Despite the convincing advantages of market-based in-struments, a fundamental re-orientation of German and European climate policy unfortunately appears unlikely. Instead, existing instruments will probably be adapted again and again once their negative side effects become too obvious. This will make climate policy less efficient than it could be and more expensive than necessary.

The impact of most climate protection instruments used around the world during the last few years has been quite sobering; in fact, the adjective “desolate” would be more honest. Despite billions of subsidies for certain technologies (such as renewable energy generation or electrical mobility), legal requirements setting energy consumption limits for buildings, $CO_2$ limits for cars, efficiency standards for electronic consumer goods, bans of certain products (such as light bulbs) and energy taxes, global carbon emissions have continued to trend upwards. While the pace of the increase has at least slowed somewhat in the last few years compared to the first decade of the current century, we are still far away from reaching the official goals of halving carbon emissions by 2050 or decarbonising the global economy during the second half of the century.

National and international climate policies have obviously not yielded satisfactory results, which is why a renewed debate about optimal climate protection instruments has emerged. In fact, a carbon tax is once again the object of heated discussions, both in Germany and at the EU level. To put it short: for both environmental and economic reasons, a carbon tax would be superior to the current patchwork of subsidies and regulatory law (standards, bans, caps, quotas etc.) which characterises climate policy. A carbon tax is, in fact, a market-based instrument, even though this statement may surprise some of our readers. It helps to reduce carbon emissions in a cost-efficient way. Those who release carbon into the atmosphere will reduce their carbon emissions until the marginal costs for avoiding the last ton of carbon are equivalent to the tax debt. If the tax rate is the same for all types of carbon emitters, the marginal avoidance costs will be identical as well, which means that the precondition for cost efficiency is met. If the tax rate rises over time, it makes sense for polluters to take additional measures to prevent emissions.



**Carbon tax does not set a cap for carbon emissions**

The main disadvantage of a carbon tax is that, while it sets a price for carbon emissions, it does not set a cap. As long as polluters are willing to pay, emissions may therefore continue to increase. This is a well-known experience with energy taxes. However, an absolute cap on carbon emissions is what natural scientists are calling for and what policymakers have regularly promised.

That is why emissions trading is even superior to a carbon tax. Emissions trading schemes set an emissions cap and are therefore an effective environmental policy instrument. In fact, the cap may be reduced over time (this would be equivalent to raising carbon tax rates). Carbon emissions trading also has a second important advantage: it prevents carbon emissions in the most cost-efficient way. The price for carbon emissions avoidance (i.e. the marginal abatement cost) depends on supply and demand and is obviously the same for all polluters. Emissions trading is therefore economically efficient, too.

Even opponents of the EU Emissions Trading Scheme (EU ETS) cannot deny that emissions trading is the only climate-policy tool, which assures that the sectors included in the scheme actually reach the emissions reduction target for 2020. The EU should count itself lucky to have this instrument – after all, it is no minor administrative feat to establish it. Sectors such as transport or buildings (heating) which do not yet participate in the EU ETS might be included via a so-called upstream approach. This means that refineries or importers of oil, gas etc. would participate in emissions trading, not individual drivers or home owners. If the emissions trading scheme included all types of carbon emissions, all other instruments to address carbon emissions would be superfluous. In addition, it would no longer be necessary to set specific emission reduction targets for individual sectors, as it is currently done in Germany and the EU. Policymakers would “only” need to agree on the overall reduction target.

**Climate policy quite flawed so far**

From both an economic and environmental vantage point, comprehensive emissions trading would be the best tool to protect the climate. A carbon tax looks like the second-best option. Either is to be preferred to current climate protection policies, and in any case, the number of instruments would need to be reduced. The disadvantages of today’s climate protection measures are evident. Subsidies, for example, are usually not technology-neutral. Instead, they tend to push technology into a certain direction, which is not necessarily ideal. They may lead to other distortions as well. For example, the German Renewable Energy Act and its consequences (declining marginal costs in electricity generation due to renewable energies and priority feed-in) have caused more and more players (not least traditional power generation companies) to call for subsidies or compensation. Command and control legislation may be highly effective to protect the environment, in particular if it comes to preventing serious and acute environmental harm, but it is not economically efficient. After all, strict regulations do not take into account that compliance with the rules may entail different costs for the individual players, which means that emissions are not prevented in a cost-efficient way. Ultimately, tight financial resources are wasted.



**Is a carbon tax or emissions trading scheme actually realistic?**

So far, we have outlined the theoretical advantages of market-based instruments and the flaws of current climate policies. Of course, most economists are not naive when it comes to climate policy. For decades now, they have called for a comprehensive emissions trading scheme to combat climate change. However, there is still no system in sight, which would cover the OECD or G20 countries at least and provide ambitious carbon emission reduction targets (for example, by more than 50% by 2050). Policymakers are simply not willing to commit themselves to such a system. Even within the EU, they have regularly argued about the future development of the EU ETS. Right now, an extension of the system to transport or heating is not on the agenda.

The current discussions about a carbon tax show just how difficult it is to shift from the current system to a market-based instrument. Policymakers' statements about a carbon tax run roughly as follows: while they could imagine introducing a carbon tax, this tax must not put an overly large burden on poorer people and must not lead to any competitive distortions for companies.

Are policymakers, in the words of a leading German online news portal, simply "too stupid for climate protection"? Things are not quite that simple. Politics, including climate politics, have always been the art of compromise. And within Europe, the willingness to compromise depends on several different factors. With regard to a carbon tax, countries which generate a large share of their total electricity from coal (such as Poland), which derive much of their income from air tourism (such as Spain or Greece) or where manufacturing plays an important role for the economy (such as Germany or the Czech Republic) will necessarily take a different stance than countries which rely on nuclear power (such as France), which generate much of their income from services (such as the UK or France) or which, for topographic reasons, can rely to a large extent on hydro power and have become prosperous due to oil exports over the last few decades (Norway). Anyone who simply brushes off these different framework conditions is indeed naive.

**Distribution conflicts are on the cards**

Another political difficulty for the introduction of a carbon tax is that all climate policy instruments have an impact on social and competition issues. A carbon tax will hit poorer people harder because it will take out a larger percentage of their incomes compared to richer people, even though the latter emit more carbon per capita. In addition, if Germany or the EU unilaterally decide to introduce a carbon tax, their energy-intensive industries, for example, will suffer a competitive disadvantage at the global level; in fact, the capital stock of these industries has been shrinking for years in Germany. Both effects might be mitigated by redistributing any carbon tax revenues to polluters according to certain criteria. However, such a scheme would require considerable administrative effort and water down the tax's steering effect. In any case, distribution conflicts are on the cards.



Importantly, the social and competitive impact rises if the carbon reduction target becomes more ambitious. Taking into account currently available technologies and financial resources, a reduction by 80-95% by 2050, compared to 1990 (i.e. the EU's official target), is probably impossible without major restrictions of people's freedom to choose and of ownership rights and without significant changes to established consumption and production patterns. This would be difficult even if climate policy was highly efficient. After all, 2050 is just around the corner. Remember, the complete stock of German buildings would need to become largely carbon neutral within only 30 years – a truly Herculean task. So far, policymakers have not clearly outlined this conflict. It is dishonest to keep potential distribution conflicts and the issue of sacrifices out of the democratic debate about climate protection. Simply calling for "better climate protection" is much too vague.

**Where do we go from here?**

A fundamental re-orientation of German and European climate policy unfortunately appears unlikely. Instead, existing instruments will probably be adapted again and again once their negative side effects become too obvious. This will make climate policy less efficient than it could be and more expensive than necessary.

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