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Zooming in on...

Personal CO2-price rebates for more climate justice in Europe?

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Background

In Europe, **CO2 pricing** is regarded as a central market-orientated instrument of climate protection policy. In the form of taxes or emissions trading systems, households and companies are subject to an **increasing financial burden** when using fossil fuels. This is intended to **reduce consumption and thus emissions** by incentivising the more economical use of fossil fuels, as well as the switch to alternative sources of energy and investment in CO2-neutral technologies. In addition to the European Emissions Trading Scheme (EU ETS) introduced in 2005, the EU has adopted a second emissions trading system (ETS-2) for the transport and buildings sectors, which have not yet been covered. This is due to come into effect from 2027, meaning that an emissions certificate must be purchased for every tonne of CO2. The quantity of certificates is limited and will be reduced over time, meaning that the prices for the increasingly scarce certificates will rise. **However, rising CO2 prices for end consumers pose socio-political challenges**. As low- and middle-income households spend a higher percentage of their income on energy, they are burdened more than wealthier households. Forecast scenarios CO2 prices show a very wide range rising sharply in some cases. Compensation instruments to avoid social hardship and reduce inequalities are therefore of great importance. Otherwise, the acceptance and enforceability of rising carbon prices would also be increasingly limited.

European and national CO2 pricing systems - how expensive will it be?

At European level, two emissions trading systems cover different sectors. The EU ETS applies to the energy sector, energy-intensive industries and intra-European aviation and, most recently, maritime transport. It covers a good 40% of European emissions. The newly adopted second trading system, ETS-2, covers emissions from fossil fuels in the transport and buildings sectors. Independently of this, additional national CO2 pricing schemes already exist in in 22 European countries. These are usually either allowance systems or forms of taxation. In 13 of these countries, emissions from buildings and transport are also or exclusively covered.[1] Among the first nations to adopt such a system in the 1990s were Norway, Denmark and Finland. In 2021, Germany has introduced a national emissions trading scheme for fuels in transport and heat generation, which initially sets fixed prices that increase annually. From 2026, the system will switch to trading within price corridors.

[1] Countries in Europe with a national form of carbon pricing covering emissions from road transport and buildings: Austria, Denmark, Finland, France, Germany, Iceland, Ireland, Liechtenstein, Norway, Portugal, Slovenia, Sweden, Switzerland.
Countries in Europe with carbon pricing systems focusing on industry and/or energy production: Estonia, Hungary, Latvia, Luxembourg, Netherlands, Poland, Spain, Ukraine, United Kingdom.

These various national systems overlap to some extent with ETS-2 and must either be adapted to the European system or transferred completely by the end of June 2024, the deadline for its implementation. Prior to the introduction of ETS-2 from 2027, it is still very unclear at what level and with what fluctuations the CO2 price will settle over time. In order to avoid initially high price spikes, a reserve of emission allowances is meant keep the price at a maximum of €45 per tonne of CO2. It is not certain whether the reserve will be sufficient in the event of high demand. Various estimates indicate theoretical ranges of €50 to, in extreme cases, €350 per tonne of CO2 over the course of the reduction pathway for certificates. On average, a €100/t CO2 price means a price increase of around 30 cents per litre of heating oil or diesel fuel. Roughly calculated, this would correspond to additional costs of around €300 per year for a car travelling 15,000 km, which is more or less the average yearly mileage in Germany. In addition, there would be further direct increases in heating costs for households, for example in a poorly renovated house over €1000 per year with gas heating. It must also be taken into account that the future ETS-2 will lead to an EU-wide uniform CO2 price. This will have a very different impact depending on the country and its purchasing power.

Socially fair approaches for a CO2-price rebate: the model makes the difference

One proposed solution to compensate for the unequal effects of rising CO2 prices aims to **refund** the **revenue from CO2 pricing to households in the form of a climate premium**. Similar compensation mechanisms already exist in Switzerland, Austria and Canada. Not all European countries are pursuing a compensation of rising CO2 prices via a climate premium payout. They are focussing rather on promoting building insulation, solar installations or electric cars, for example, in order to reduce consumption and therefore costs. Nevertheless, studies have shown that at least a transitional climate premium can be useful/effective to cushion social hardship until energy savings take effect, for example through building refurbishment or switching to other modes of transport.

One possible form of climate premium is its payment as a **flat-rate per capita climate premium**. It is currently being debated in Germany, but its mode of operation and distribution effect also generally inform the debate around similar mechanisms elsewhere. The premium would be **paid out uniformly to every citizen regardless of income and the amount of CO2 emissions caused**. Supporters of this concept see it as a **progressive instrument**, as lower-income households emit less CO2 than wealthier groups due to their lower consumption of goods and services. As the carbon tax leads to higher prices for emission-intensive products, those who already use low-carbon options or simply consume less will be less affected. It is therefore often argued that the introduction of a climate premium for low-income households could even lead to net relief. However, in view of the ongoing climate-neutral transition, it is by no means certain that this assumption will remain true in the future. It is more likely to be the upper middle and upper classes who will soon be able to live in renovated buildings or new builds with low emissions and switch to electric cars. At the same time, for many low-income households, the cost increases for fossil-fuelled electricity and heat are likely to significantly exceed the sums currently being discussed as part of the climate bonus.

Studies by the Macroeconomic Policy Institute (IMK) show that a lot of households would certainly benefit from a climate fee. However, **for 44 per cent of households in Germany, a flat-rate climate premium** would **not be enough to** cover the additional costs of carbon

pricing. 50 per cent of these heavily burdened households belong to the bottom 60 per cent of the income distribution (deciles one to six), i.e. have a low to medium income. It is therefore assumed that a climate allowance of 100 to 150 euros per person per year, as is currently being discussed in Germany, will not be enough to compensate for rising CO2 prices. Wealthier households, on the other hand, who have less difficulty living, eating and travelling with low emissions, could benefit from the climate premium.

What is revealing about the IMK study is that it is based on income and consumption samples as well as on regional types; this also includes the housing situation, whether rented or owned. The case of Germany shows that **general relief for lower incomes does not automatically work for all consumer groups**, for example in rural areas with long commutes and in poorly insulated homes. This is also likely to apply to other countries to varying degrees.

An unequal distribution of costs due to carbon pricing could be reduced if the premium is not paid out as a per capita lump sum, but is linked to social factors as a base for a **socially graded system**. With such a system based on hardship criteria **the focus is on vulnerable groups**. In addition to household income, other household and building characteristics as well as the type of heating can be used as criteria, so that for example residents of buildings with a poor energy balance in particular are relieved.

An important question, particularly in the case of socially differentiated models, is **the most feasible bureaucratic implementation**. In order to identify low-income households with a poor energy balance, it is necessary to have the appropriate data available and a suitable administrative body to collect and validate it. A practicable **payment mechanism is** also needed to ensure that the money reaches the target groups, whether as a per capita lump sum or on a socially differentiated basis. Here again, various models are conceivable, ranging from direct payment, cheque systems or, for example, credit notes on energy bills. Here too, it is important to decide which administrative body is most suitable to do so based on access to the relevant population data.

What experience have pioneering countries gained?

Switzerland introduced a carbon tax back in 2008. Alongside Sweden and Liechtenstein, it is one of the countries in the world with the highest CO2 price. According to the Swiss Confederation, around two thirds of this revenue is redistributed to the population and the economy. The rest of the money is used to support energy-efficient renovations and renewable heating energy. In concrete terms, **each person resident and insured in Switzerland** currently receives CHF 61.20 (€64.09) per year. **The redistribution of the levies is carried out by the health insurers**. As basic insurance is compulsory in Switzerland and the health insurers have access to current resident data. The repayment process involves little cost and effort and reaches the entire group of recipients. However, the payment mechanism in Switzerland illustrates the need for appropriate communication when introducing a climate premium. This is because the payment is not very visible; it is made by offsetting it against the contributions paid to the health insurance funds. This means that the actual relief is not immediately apparent. According to a representative survey **almost half (48 per cent) of the participants did not even notice the deduction**. Although 30 per cent noticed the deduction, they were unable to identify what it was and only 21 per cent of respondents knew that the

refund was a climate bonus. According to a survey of the population of Geneva, four years after the introduction of the CO2 tax, only 40 per cent of respondents were aware of the existence of this tax. However, the visibility of the tax relief is extremely important in order to achieve support for climate protection measures. According to studies by the journal *Nature Climate Change*, support for existing and future CO2 taxes increases when the actual amount of the climate premium is disclosed to respondents.

Austria has also an annual climate bonus for its citizens since 2022. Unlike in Switzerland, however, not every citizen receives the same amount. The Austrian model is staggered and takes into account citizens' ability to switch to climate-friendly behaviour. Initially, an annual basic amount is paid out to every person living in Austria; in 2023, this was 110 euros. In a next step, there is a regional differentiation according to the **urban-rural typology** developed by the Austrian Federal Statistical Office. The typology is based on the quality classes for public transport. The compensation based on these regional factors increases the less public transport is available in the municipality. The accessibility of facilities such as secondary schools, hospitals and public administration offices is also taken into account. Households in rural areas receive higher payments, as they are likely to consume more energy due to the longer daily journeys. The additional regional compensation amounts to €40, €75 or €110 per year. In Austria, **payment is made by the Climate Ministry without need for application by the citizens**. The necessary data is provided by the Ministry of Finance or the pension insurance fund. Citizens either receive a transfer to their account - in the event that the state regularly pays out child benefit, pension or care allowance, for example - or they receive a voucher by post.

In **Canada,** the Climate Action Incentive Payment (Climate Action Incentive Payment, CAIP) is similar, as its amount is also partly based on the geographical location of the municipalities. The CAIP is tax-free and consists of a basic amount and a supplement for residents of small and rural communities amounting to 10 per cent of the basic sum.

Other models for compensating CO2 pricing

Instead of the direct payment of a climate premium, Scandinavian countries have introduced alternative ways of relieving the burden on households through the CO2 tax. In **Finland**, for example, the CO2 tax system has been regularly adjusted since 1990. Finland has a comparatively high CO2 price. Social compensation is sought with the help of tax shift packages. To compensate for the tax increase, other taxes such as **income tax** are **reduced**. The system in **Sweden** works in a similar way. Their entire tax system was reformed together with the introduction of the CO2 tax and the income tax, for example, was reduced. The resulting fall in revenue was in turn financed by the new CO2 pricing.

In **France,** a model was introduced at the beginning of 2024 in which low-income households are supported through subsidised leasing rates for electric cars instead of a climate allowance. The programme is called "social leasing" and subsidises each car with 13,000 euros. The monthly rates for users are then between 50 and 150 euros depending on the vehicle model. The offer is aimed at households with an income of less than 15,400 euros per year and a minimum distance from the workplace of 15 kilometres.

The question of financing and compatibility with the EU ETS

For all EU countries with their own national carbon pricing system beyond the EU ETS, the question arises as to how the ETS-2 will be legally implemented from mid-2024, whether it will replace the existing national carbon pricing system or supplement it in a certain form. Closely linked to this is the question of how to finance a climate premium. In principle, two mechanisms are envisaged from the European side to mitigate social impacts: firstly, the use of revenues from the EU ETS and secondly, the newly established European Climate Social Fund, which is fed by part of the ETS-2 revenues. According to a study by the Stiftung Umweltenergierecht (Environmental Energy Law Foundation), it appears **difficult** to **finance the climate premium from both EU ETS revenues and the EU Climate Social Fund.** This is because, according to the reformed European Emissions Trading Directive, there is a clear requirement to fully use revenue from the EU ETS for climate friendly measures. Positive environmental impacts would have to be proven and guaranteed when using the revenue for a climate premium system. A reimbursement of CO2 prices and a simultaneous reduction in emissions from the affected households would probably be difficult to prove in every case. Apart from this, in the German case the revenue from the German share of the EU ETS and the national carbon price on fuels goes into the German Climate and Transformation Fund. However, this fund is already fully committed, so as it stands that additional expenditure for a climate premium would not be covered.

According to the same study, the situation is similar when it comes to **financing a climate premium from the European Climate Social Fund**. The European Climate Social Fund was designed to cushion the financial burden of ETS-2 for financially disadvantaged households and is fed by the revenue from ETS-2. Although financing the climate premium would be possible in general, it would not be compatible with all of the models discussed above. Relief could only be paid out to disadvantaged households and transport users as direct income support and would therefore not be an option for a flat-rate premium. This also increases the difficulty of finding a suitable payment mechanism. Additionally, the compensation would also be limited in time and would have to decrease over time.

Conclusions

- The expected price increases and fluctuations of fossil fuels via ETS-2 have different distributional effects on the various income, consumer and social groups. **Compensation mechanisms are therefore necessary to cushion the social impact on vulnerable groups** for a transitional period until climate-neutral alternatives show effect. Socially graded progressive systems for CO2-price rebates should focus in particular on severely affected income groups with high consumption patterns.
- In addition to direct price rebates, it is equally important **to facilitate the switch to the use of climate-neutral alternatives, which usually require a high level of investment**. This can be done by promoting private and public investment in sustainable infrastructure, such as easier access to public transport, building insulation, renovation loans, e-car premiums or leasing models. Moreover, these are more clearly covered by the financing requirements of the EU ETS than CO2-price rebates. In addition, studies show a particularly high level of acceptance of carbon pricing when various forms of compensation or support are

combined, such as a mixture of a flat-rate CO2 price premiums, targeted hardship instruments and support for climate-friendly investments.

- A close correlation between the CO2 price and the compensation mechanisms is of central importance for the understanding and acceptance of CO2 pricing. A climate premium should therefore be **appropriate in terms of amount, clearly communicated and paid out as promptly and clearly recognisable as possible** in connection with the CO2 price charge.

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