How the price of CO_2 will affect heating costs in Europe

The EU-wide carbon price planned for the buildings and transport sectors from 2028 will change heating costs for around 100 million households across the European Union. The effects will differ markedly between member states: A new study from the Bertelsmann Stiftung shows that in many member states, including Germany, the increases in heating costs are likely to be limited. In Scandinavia, households could even see lower heating costs, as substantial investments have already been made in climate-friendly heating systems. In parts of central and eastern Europe, however, heating costs would rise noticeably. The study also finds that, if used effectively, revenues from carbon pricing are sufficient to cushion the burden for particularly affected groups across Europe through national Social Climate Plans.

Gütersloh, January 22, 2026. Residential buildings account for around one-third of greenhouse gas emissions in the EU. So far, emissions in the buildings sector have not fallen fast enough to meet the EU's climate targets. The extension of the European Emissions Trading System under the ETS2 framework to the buildings sector is therefore intended to create incentives to modernise heating systems, improve the energy efficiency of buildings and reduce emissions in the long term.

The uniform CO_2 price planned under ETS2 will affect households very differently across European regions. In Germany and other western and northern European member states, where a carbon price for buildings already exists, costs are expected to rise on average by 17 EUR per household per year at an anticipated entry price of around 60 EUR/t CO_2. In Portugal, Ireland, Denmark and Sweden, heating could even become cheaper, as existing carbon prices in these countries already exceed 60 EUR/t CO_2.

In Poland, Hungary, Slovakia and other eastern European countries, decarbonisation of the buildings sector is less advanced, there is no existing carbon price and household incomes are lower. As a result, the introduction of an EU-wide price would have a much larger effect. At an ETS2 price of 60 EUR/t CO_2, average heating costs in these countries would increase by between about 100 and 400 EUR per household per year.

Particularly hard-hit households need targeted support

The study also identifies the highest concentration of particularly affected households in these countries. Rising heating costs hit low-income households hardest across all member states, as heating accounts for a larger share of their budgets. The 10% of households that face the greatest additional burden relative to income under ETS2 earn only about half of the average income of the overall population. Many of them live in single-family homes, and a large share of household members are women and/or pensioners. These households are most frequently found in Slovakia, Hungary, Romania and Poland.

To ensure that strongly affected households are not overburdened by higher fossil heating costs, effective and well-targeted compensation mechanisms are essential. 'For most European households, the introduction of a carbon price in the buildings sector is manageable. Our study shows which households will need support because they are particularly affected by higher costs. Revenues from carbon pricing are sufficient to provide this support, provided member states spend the money in a targeted way,' says Thomas Schwab, expert on European economics at the Bertelsmann Stiftung. Member states must submit national Social Climate Plans to the European Commission outlining how they intend to use these funds. 'The European Commission must ensure that strongly affected households are actually supported,' Schwab adds.

Additional investment support is needed

Beyond compensating vulnerable households, public support will also be required to enable the switch to climate-friendly heating systems. The investments needed to achieve this goal pose a major challenge for many homeowners. 'Linking climate protection with social justice depends on ensuring that subsidies and relief reach those who need them most,' says Sara Hagemann, economic policy expert at the Bertelsmann Stiftung. 'Revenues from carbon pricing are sufficient to cushion the immediate burden for the most affected households. But they will not be enough to support the large-scale shift to climate-friendly alternatives such as heat pumps or district heating. This will require additional funding programmes financed by the member states,' Hagemann says.

Additional information:
As of 2028, the EU's new ETS2 will extend carbon pricing to the buildings sector. Yet little is known about how this will affect households. In a new study, we model approximately 188 million households as a synthetic population to estimate the financial impact of ETS2. To do so, we integrate a wide range of data sources to construct detailed household profiles covering socioeconomic characteristics, geographic locations, heating technologies and energy expenditures. This high-resolution approach enables us to assess the effects of ETS2 carbon pricing at a highly granular level.

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work, we focus on people, because people are the drivers of change and can make the world a better place. We therefore engage in sharing knowledge, promoting expertise and developing solutions. A nonprofit foundation, the Bertelsmann Stiftung was established in 1977 by Reinhard Mohn.
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