

# Emissions in Austria are falling – but only partly due to climate policy

Only a quarter of the emission reduction is due to political measures, a study shows. Austria is lagging behind some OECD countries

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The metal industry is traditionally emissions-intensive. It has recently recorded the greatest savings (pictured is the Linz industrial site).  
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Since 2005, Austrian greenhouse gas emissions have fallen by 26 percent. But what proportion of this can be attributed to climate policy - and which measures were actually effective? The Fiscal Council looked into the cost-effectiveness of measures to reduce emissions just last week [https://www.derstandard.at/story/3000000257963/milliarden-fuer-klimaschutz-gut-angelegt-bei-e-autos-hinausgeworfenes-geld-beim-klimaticket] . Politicians are relying too heavily on popular but expensive subsidies such as the climate ticket, while unpopular measures such as a 100 km/h speed limit on motorways have a much higher savings potential, according to a recent study. Subsidies for electric cars and replacing heating systems, on the other hand, have shown a high level of effectiveness in achieving climate targets. Austria has committed to reducing emissions by 48 percent by 2030 compared to 2005.

Talis Tebecis and Jesús Crespo Cuaresma from the Vienna University of Economics and Business wanted to find out how much of a contribution political measures have made to reducing emissions. They chose a different approach than usual. Usually, attempts are made to evaluate the effects of individual measures in isolation after the fact. In the study, which was recently published in the journal *Scientific Data* [https://www.nature.com/articles/s41597-024-04321-w] , a so-called reverse causal policy assessment was carried out, i.e. significant changes in emissions were first identified and then attributed to probable causes.

To do this, the researchers examined the emissions of all OECD countries between 1995 and 2022 and compared them with the respective gross domestic product and population development. 'If you take these two main influencing factors out of the equation, fluctuations remain that are most likely due to climate policy,' says Tebecis. "These statistical outliers can often be linked to specific political measures." The data set can therefore serve as a basis for checking the effectiveness of climate measures. In addition to CO<sub>2</sub> emissions , the greenhouse gases methane, nitrous oxide and fluorinated gases were also included.

## Many outliers upwards

The researchers identified a total of 62 of these statistical outliers for Austria. "Compared to the other EU countries, that is very few - in Germany, for example, there were 131 and in Ireland as many as 261," says Tebecis. From a peak of 79 million tons, Austrian emissions have fallen by around 20 million tons to date. The researchers' data suggest that 6.1 million tons - a good quarter of this emission reduction - can be attributed to political climate measures.

The study does not specifically identify whether this is the CO<sub>2</sub> tax , green energy subsidies or transport policy measures. However, the data set can be used as a basis for analyzing climate policy measures, the researchers emphasize. Based on the timing of drops in emissions, conclusions can be drawn about which measures have been most effective. For example, a drop in transport emissions from 2010 onwards can be attributed to a truck tax introduced in 2009.

The study not only analyzed downward outliers, but also unusual increases in greenhouse gas emissions. It showed that Austria had 131 upward outliers, i.e. periods with increasing emissions. This puts it in fourth place among the countries with the most increases in emissions (after Spain, Greece and Portugal). Overall, Austria is in the middle of the pack among OECD countries.

## metal industry at the top

The economists also analyzed which domestic sectors of the economy have seen the greatest reduction in emissions. The metal industry ranks first in terms of reducing average emissions. The study authors suspect that national and European regulations have clearly had an effect in this traditionally very emissions-intensive sector.

Significant savings are also evident in biomass and waste incineration plants. This is a sign that the regulatory support for sustainable biomass production and the high efficiency standards in this area are taking effect," says Tebecis. According to the study, the Austrian electronics industry was also able to significantly reduce its emissions. In contrast, there were only small reductions in the areas of electricity and heat generation, wastewater treatment and manure management.

A total of 37 sectors were analyzed. For Jesús Crespo Cuaresma, head of the Department of Economics at WU, this data set is an important piece of the puzzle in research on climate policy: 'We hope that this data will help to make empirically sound climate policy decisions.' Not just for Austria - with the data material, which is freely available online, similar calculations and comparisons could be made for all OECD countries. (red, kri, February 24, 2025)

study

Scientific Data: "A dataset of structural breaks in greenhouse gas emissions for climate policy evaluation" [https://www.nature.com/articles/s41597-024-04321-w]

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