

1,500 policies to fix global warming were implemented in 41 countries. Here are the ones that worked best

By Laura Paddison and Ella Nilsen, CNN - Thu August 22, 2024

As the need for effective global climate action becomes ever more urgent, a “first-of-its-kind” analysis has identified policies around the world that have done the most to rein in planet-heating pollution — with some surprising results.

Researchers from several European climate institutions analyzed the effectiveness of 1,500 climate policies across 41 countries over the past two decades, in a study published Thursday in the journal *Science*.

They found just 63 “success stories” — standalone policies or combinations that achieved large cuts in climate pollution. While the relatively small number may be “sobering,” the researchers said in a statement, the findings provide a blueprint for what works.

The researchers trawled through vast amounts of climate data to find countries that had significant downturns in pollution — average reductions of 19% — in their building, electricity, industry and transportation sectors between 1998 and 2022. Then they mapped these against the policies those countries introduced or strengthened during the same period.

“We basically do the reverse of what other people have done before,” said Nicolas Koch, an environmental economist at the Mercator Research Institute on Global Commons and Climate Change in Germany, and a lead author on the study. “We first look at (climate pollution) effects, and then try to explain the effects with policies.”

Some of the findings were unexpected, Koch told CNN.

When it came to popular climate policies, such as bans on new coal-fired power plants or gas-guzzling cars, “the surprising finding, really, is that we never detect successful large emission reductions if these policy tools are used alone,” he said.

That’s not to say they shouldn’t be implemented, Koch added, but rather they need to be accompanied by other measures, like taxes or price incentives.

Bans on their own “are not credible if the phase-out plan is just out there,” Koch said. But if policy makers also introduce additional measures — a gas-powered car ban plus a climate tax on fuel — then it becomes more credible and changes investor and consumer expectations, he said.

Policy combinations, rather than standalone policies, had the greatest level of success, according to the study.

The United States, for example, experienced a significant reduction in planet-heating pollution from its transportation sector after the 2008 financial crisis. This was due to a mix of tax breaks for low-carbon vehicles as well as a reform in fuel efficiency standards, the study found.

“That combination turned out to be effective ... so this really a good news story for the US,” Koch said.

It’s a model Democrats replicated on steroids in 2022 when they passed President Joe Biden’s climate law; pairing a massive amount of tax breaks for electric vehicles, solar panels and energy-efficient home appliances, along with with federal rules to slash emissions from the most-polluting sectors: natural gas and oil, transportation and power generation.

The UK made a big cut in planet-heating pollution from electricity in 2015 and 2016 following a coal phase-out plan, a carbon minimum price for UK power producers, stricter air pollution standards and subsidies for renewable energy.

The policy that did show big climate impacts when implemented alone is arguably one of the least socially popular: taxation.

But a tax on carbon can be complemented with more socially acceptable policies, Koch said, to ensure the burden doesn’t fall on those least able to shoulder it.

Carbon taxes are widely unpopular in the US Congress, but there have been several bills introduced that would implement a “carbon border adjustment tax,” which would tax imported products based on how much pollution they emitted in the country where they were created. Those bills are seen as a response to a similar EU measure passed last year.

Which policies work best varies across countries and sectors and follow-up research is needed to better understand how to design climate policy mixes that work in specific contexts, Koch said.

“This is the most sophisticated study to date,” said Michael Grubb, a professor of international energy and climate change at University College London, who was not involved in the research. “It’s an important step forward in analysis of ‘what works,’” he added.

However, he added, the focus only on big emissions cuts means “they miss the impact of thousands of smaller efforts globally.”

100 Hanna Fekete, a co-founder of the NewClimate Institute who was also not involved in the research, said the study provides yet more evidence that “current climate action is insufficient.”

105 Even if the most successful policies implemented so far were scaled up to a global level, it would still not close the gap between where emissions are heading and where they need to be in order to rein in catastrophic warming, she said.

110 She called on countries to develop a clear vision of where they want to be in 30 or 40 years time, “and then really implement policies today and make them future proof.”

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