

Effectiveness of Climate Policies: Carbon Pricing vs. Subsidizing Renewables

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Most but not all economists view carbon pricing as most effective to combat carbon emissions, whereas other policies are widely applied and highly debated. We quantify the effectiveness of climate policies in the form of pricing carbon and subsidizing renewable energies for Germany's and Britain's power sectors. While Germany relies on heavy subsidies for renewables but on a weak price for carbon certificates (EUA) from the EU Emission Trading System (ETS), its emissions hardly declined. To underpin the low EUA price, Britain introduced a unilateral tax on power sector emissions, the Carbon Price Support (CPS). Within only five years, carbon emissions declined by 55%. Our results demonstrate that in the power sector, even a modest carbon price ($\sim \text{€}(30)/\text{tCO}_2$) can induce significant abatement at low costs within a short period as long as "cleaner" gas plants exist to replace "dirty" coal plants. We also find that carbon pricing is superior to subsidizing wind or solar power in these two countries.