

Reduction of energy consumption and CO₂ emissions—promotion or steering?

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Credit: Swiss National Science Foundation (SNSF)

Policy interventions to reduce energy consumption and CO₂ emissions have a variety of effects on the economy and on households. A study carried out as part of the National Research Programme "Managing Energy Consumption" (NRP 71) has provided the first detailed impact assessment of the efficiency and social balance of the energy policy measures "steering" and "promotion".

Energy policy has two basic strategies for pursuing the consumption targets of Energy Strategy 2050 and CO₂ legislation: steering

consumption by taxing [energy](#) and CO2 (incentives) or promoting the targets through market mechanisms (e.g. taxes and subventions) or mandatory requirements (e.g. efficiency standards for electrical appliances or emission limits for cars).

"The question of how policy measures to reduce [energy consumption](#) and CO2 emissions can best be selected and designed must look not only at the overall costs, but also at how the benefits and burdens are distributed among different socio-economic groups," explains Sebastian Rausch. Rausch, who is Professor of Energy Economics at the Center for Economic Research at ETH Zurich, carried out the study as part of the National Research Programme "Managing Energy Consumption" (NRP 71).

The hidden costs of promotion

The study concludes that, in overall economic terms, steering is substantially more efficient and up to five times less expensive than promotion. However, households have a different perception since energy prices increase more sharply in response to steering measures and people fail to consider the redistribution of income to households and companies. "Promotion measures lead to only small energy price increases," Rausch says. "But the lower costs that this suggests are illusory. Promotion interventions only reduce energy consumption where the promotion is directed, and some things that are already happening anyway are also being promoted. Steering, on the other hand, has an impact everywhere and on every single energy-relevant decision taken by households and companies. As steering takes effect across the board, it therefore results in considerably lower overall costs than targeted promotion. The higher total costs of the promotion strategy are hidden. Ultimately, though, households and companies have to foot the bill for these extra costs," Rausch explains.

Treat everyone the same, or permit winners and losers?

The study shows that both steering and promotion affect individual households differently because their energy consumption and income differ – there are "winners" and "losers" in both strategies. There are, however, three fundamental differences between the strategies:

1. Steering leads to a substantially wider scattering of the effects on disposable income among households because it results in bigger changes in energy prices.
2. Most households are better off with steering than with promotion.
3. Nearly all households lose out under the promotion strategy, while steering actually leaves one third of households better off.

The winners and losers of steering are determined to a large extent by the mechanism used to redistribute the income from steering and by the energy expenditure and income of the households in question. On average, per capita redistribution of tax revenues protects lower-income households from rising energy costs, house owners are left worse off than tenants, and households in rural areas lose out compared with households in towns and conurbations.

Looking at households in detail

The [households'](#) perspective is particularly significant because, as employees and consumers of energy and goods, householders are affected in many ways by [energy policy](#) measures.

"The findings help to increase the social acceptance of this type of market intervention," Rausch notes. "The aim of the study is not,

however, to evaluate specific policy measures but to highlight the fundamental differences between an energy and climate policy based on [promotion](#) and one based on [steering](#)."

More information: [www.nfp71.ch/SiteCollectionDoc ...
1_prostep_report.pdf](http://www.nfp71.ch/SiteCollectionDoc...1_prostep_report.pdf)

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