Putting a price on carbon – whether through a trading system, a carbon tax, or otherwise – will increase energy costs. These increases are regressive because the poor spend a larger portion of their budgets on gasoline, heating and power. But determining the ultimate distributive impacts of pricing carbon is not straightforward. Pricing carbon has a host of indirect effects that may affect wages and return on capital, which themselves will impact income distribution even apart from the direct effects of the tax. Economists use complicated models to try to trace these effects.

A key issue is: if we put a price on carbon, who ends up with the money? If the government gives away allowance in a cap-and-trade system, the value of allowances is captured by energy firms but then partly recaptured by the government in taxes on the increased profits. If the government collects the revenue from auctioning allowances, it can either spend the funds or reduce other taxes. This choice, too, will impact demand for energy by the recipients of the benefits, and hence energy prices and availability.

Untangling these effects is no simple matter, but it does seem likely that the overall effect is to burden poorer households more than richer ones. A 2002 analysis shows that, if the government gives allowances away and uses the increase in taxes on firm revenues to reduce the corporate taxes, the burden on lower-income households could reach as much as six percent of their income, whereas wealthy households actually see an increase in income. The study also found that international trading of allowance improved the situation of lower-income households compared with that of the wealthier by lowering the overall cost of carbon reductions.

The regressive effects of pricing carbon can be countered by changes in the income tax, or by using the proceeds to benefit lower-income groups in other ways. One recent study indicates that the distributional impacts are small if government revenues are returned in the form of a taxable “dividend” and can even be progressive if the revenues are used to improve the tax treatment of lower-income individuals.

Despite all the complexities, there seem to be three lessons from the economic studies.

1. Putting a price on carbon is likely to have a regressive effect, considered by itself.
2. This direct effect can be amplified or countered depending on how the allowances are distributed and what is done with government revenue.
3. We need to put a price on carbon, but there is no reason why we should do so in a way that harms the poor.