

Supplementary Materials

Note: The text box below was requested by a referee, but then the managing editor asked for us to remove it from the final draft because the *Review of Environmental Economics and Policy* cannot accommodate a text box in typesetting.

Four Key Points about the Rebound Effect

Without causality, there is no rebound

Energy demand can increase for a whole host of reasons, with economic growth and improved energy technology chief among them. But correlation is not causation, and causation must be established before anything can be labeled “rebound.”

The rebound in developing countries could be either larger or smaller than in developed countries

Although we might expect total energy demand to increase more quickly in developing countries, the relative size of the rebound effect is theoretically ambiguous. It depends on the link between energy services and other goods, like food and clothing. If they are substitutes, we could see a high rebound. If they are complements, the rebound would be lower. Ultimately, this is an empirical matter. Thus far, most estimates from developing countries are in line with those from developed countries.

The total rebound effect is likely to be smaller than the sum of its parts

The rebound consists of four components: direct, indirect, macro price, and macro growth. A full assessment needs to consider all four causal pathways. Yet the total effect may be smaller than their sum, because estimates may include multiple channels. In some situations, different channels may subsume or offset each other.

Don't mitigate rebound, maximize welfare

Perhaps the most serious misconception is one that focuses on the perceived ‘evil’ of the rebound itself. This notion implicitly has in mind energy-minimization as the objective, rather than welfare-maximization. Rebound occurs from consumers responding to changes in relative prices, so by revealed preference, it provides welfare benefits (relative to no response). In an energy efficiency policy evaluation, including the rebound effect is likely to add to the benefits and will only increase costs due to external costs from the additional usage.