

development and improvement of the quality of life for the poorest of people in the poorest countries. Rebounds, if real, would provide basic energy services to those who vitally need them.

Projections of global energy demand assume that poor nations continue to strive for maximizing economic development, and thus are based on projections of rapidly growing energy service demands. But these demands should not be construed as rebound effects without evidence, and there is almost no evidence that supports a hypothesized link to efficiency policy.

Any energy reduction strategy that ultimately requires much of the population to maintain a lower standard of living is an untenable strategy. Advocates of policies based on rebound theory have yet to explain how recommendations of less reliance on energy efficiency policy avoid such a consequence.⁸⁸ Energy efficiency is a strategy that allows people to live a higher standard of living, with increased energy services, while decreasing their energy consumption. If these advocates agree that populations need not maintain lower standards of living, and are still concerned about reducing energy consumption, they should not disparage efficiency, but rather work to accelerate it.

VI. Conclusions

We have shown theories that predict large rebounds are difficult to specify in terms that are

⁸⁸ Jevons himself indicated that the ultimate solution requires a lower standard of living: “It is thence simply inferred that *we cannot long continue our present rate of progress*. [A]fter a time we must either sink down into poverty, adopting wholly new habits, . . .” Jevons, 18.

scientific and testable. We frame the most scientifically rigorous versions possible. We also propose unbiased formulations that would measure both positive and negative rebounds. We call for a balanced approach to research on second order effects.

Of the testable hypotheses, we analyze the available data. Those data show that end-use level rebounds are small, that economy-wide rebounds are trivial, and may be positive. They also show that negative rebounds are decreasing over time, as efficiency increases.

Assessing rebound theorists’ proposed solutions to climate change, we find that even if one believed that economy-wide rebounds not accounted for in energy models were significant, it would not change the policy prescriptions compared to what the energy efficiency advocacy community has been promoting: a combination of a greenhouse gas emissions cap and energy efficiency policies.

We analyze the qualitative nature of rebounds and find that efficiency policies are largely providing basic energy services to low-income communities and those in developing countries, and that rebounds would amplify this effect. We find that energy efficiency provides a solution that allows us to reduce energy consumption without stifling the standard of living for many poor and developing populations around the world. ■