

ENERGY EFFICIENCY

Gains and losses across Europe

Energy Effic. <http://doi.org/cz7z> (2019)

Energy efficiency is often considered a low-hanging fruit amid attempts to reduce energy demand. Many policies and targets across sectors and nations have been implemented in a bid to increase efficiency. As part of its 2030 Energy Strategy, the European Union (EU) has set a target of at least 27% (compared with projections) improvement in energy efficiency. The majority of states in the United States have also now adopted energy efficiency policies to curb electricity usage. To help understand the impact of such targets and the wider role of energy efficiency, it is instructive to investigate the factors contributing to final energy consumption. Towards this aim, Matthias Reuter and colleagues in Germany, Switzerland and the Netherlands examined the energy consumed across five sectors — industry, households, transport, services and agriculture — between 2000 and 2015 for the EU.

The research team exploited a variety of data sources on the EU and its 28 member states (excluding Malta and Luxembourg due to lack of available data) to build a picture of final consumption across sectors, looking at a combination of different underlying factors for each sector. For example, industry was decomposed by changes in activity (a measure of gross value added), changes in structure and energy efficiency improvements. At the EU

level, the researchers found a substantial increase in activity across sectors, as well as a large increase due to changes in social and behavioural factors. However, changes in energy efficiency (predominantly in the industrial and then household sectors) led to an overall reduction in final energy consumed of some 48 million tonnes of oil equivalent. Reuter and colleagues then looked at the evolution of consumption in Germany and Poland, considering them as proxies for established and new member states, respectively. The analysis highlighted reductions in German final consumption driven by efficiency savings, while in Poland the efficiency savings were insufficient to overcome the increases in other factors. At a sectoral level, German efficiency gains were limited in industry but much better for households and transport; in Poland, transport led to an increase in consumption but industrial energy efficiency gains were strong. The researchers suggest that, while EU and national efficiency policies appear to be working, more focus should be given to exploiting opportunities for efficiency gains in the transport sector.

Nicky Dean

Published online: 13 February 2019
<https://doi.org/10.1038/s41560-019-0343-0>