

Executive summary

Taxes can integrate the costs of environmental and health damage and of climate change associated with energy use into its price. There is strong evidence that taxes are one of the most cost-effective ways to curb these negative side-effects of energy use. To what extent does this recognition drive the actual practice of energy taxation? Based on the systematic analysis in this report of effective tax rates on energy use in 41 countries, the answer is readily apparent: with very few exceptions, taxes on energy use do not reflect its negative side-effects. The policy implication is that even where taxes on energy use are also determined by other policy objectives, there is considerable scope for improving their effectiveness.

This report describes in detail the structure and the level of energy use taxes in Argentina, Brazil, People's Republic of China, India, Indonesia, Russian Federation and South Africa, countries that represent a large and growing share of global energy use and carbon emissions. It also draws on *Taxing Energy Use: A Graphical Analysis* (OECD, 2013b) to provide a comparative analysis of energy use and taxation in the 41 countries analysed in both reports, namely all OECD countries and the seven countries just listed. Together, these countries accounted for just over 80% of global energy use and for nearly 84% of carbon emissions from energy use in 2009.

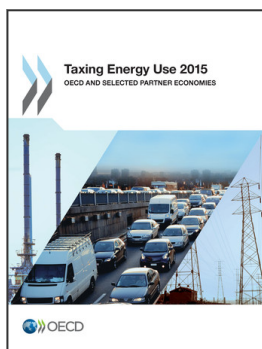
Countries differ widely in terms of their energy mix, the energy intensity of their economies and how energy is taxed. The overall economy-wide level of energy taxation ranges from just over EUR 0 per GJ and per tonne of CO₂ in Indonesia and Russia to EUR 6.58 per GJ in Luxembourg, and EUR 107.3 per tonne of CO₂ in Switzerland. Countries with higher per capita GDP tend to both use more energy per capita and to tax energy use at higher effective rates. Higher effective tax rates on energy also correlate with lower carbon intensity of the economy, although other factors such as energy prices or subsidies and resource availability can affect carbon intensity, and relatively more so where taxes on energy use are lower.

While the level of energy taxation differs strongly across countries, the structure of these taxes reveals some common features. Taxes on energy used in transport are consistently higher than those on other types of energy use. Oil products are taxed markedly more frequently and heavily than other energy sources, with tax rates of just under EUR 14 per GJ in the United Kingdom to less than EUR 5 per GJ in several countries, particularly in Asia and the Americas. Other fossil fuels are taxed at lower rates and are more commonly untaxed. Taxes on natural gas are regularly lower than taxes on oil products, and taxes on coal in particular are often low or zero. The high tax rate on oil products is partially due to the higher tax rates on transport fuels, as transport is heavily reliant on oil products and represents a large share of the total use of oil. Nevertheless, taxes on oil products for non-transport use are also relatively high.

The overall landscape of energy taxation in most countries does not correspond well with the features commonly associated with effective environmental taxation. Taxes on energy use for heating and process energy and taxes on energy used to generate electricity are usually too low to reflect negative side effects and they are frequently lower for more polluting fuels, notably coal. Taxes on road transport are high and may in some cases reflect negative side effects of road transport, but the taxes do not align well with the strong variation of these negative impacts over time and place. For example, pollution and congestion costs are high in cities during peak hours, but fuel taxes are the same as in off-peak hours in rural areas. Regardless of the level applied, the differentiation of taxes on fuels used for similar purposes can be (and frequently is) counterproductive: effective tax rates on diesel are in almost all countries analysed lower than these on gasoline for road use, despite the greater harm associated with diesel use.

In addition to specific energy taxes, many other government policies influence energy prices and usage patterns. These include non-tax policies, differential rates of value-added taxes, and tradable carbon permit systems. These policies can enhance or undermine the use of energy taxation to influence energy prices. For example, among the 41 countries included in the analysis, nineteen apply a differential VAT rate to certain energy products. These are almost uniformly concessionary, so that energy use becomes cheaper relative to other forms of consumption, running counter to effective environmental taxation.

The low tax rates on many harmful forms of energy, and the existence of other measures that provide countering signals, strongly suggest that with few exceptions the 41 countries considered in this report do not harness the full power of energy taxes to reduce environmental harm in a cost-effective way. There is evidence, however, that awareness of the negative side-effects of some sources of energy use, and interest in taxes on energy for managing them, is rising in many countries, who are reconsidering energy taxation and pricing policies and are investing in renewable energy sources. Such policies are indispensable to the promotion of sustainable development, which will require accommodating strong growth of energy use while containing its negative side-effects. In this context, reconsidering the structure and level of taxes on energy can assist countries in pursuing their economic, social, and environmental objectives as effectively as possible.



From:
Taxing Energy Use 2015
OECD and Selected Partner Economies

Access the complete publication at:
<https://doi.org/10.1787/9789264232334-en>

Please cite this chapter as:

OECD (2015), "Executive summary", in *Taxing Energy Use 2015: OECD and Selected Partner Economies*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264232334-2-en>

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