

Comparison of Fossil-Fuel Subsidy and Support Estimates



Getting Fuel Prices Right: All organizations wish to see efficient fossil-fuel pricing. This means removing consumer and producer subsidies for these fuels as a major step towards rationalizing energy prices, fully charging for supply costs and addressing the environmental damages caused by fossil-fuel use.

This primer compares efforts by international organizations to measure subsidies and other government support for fossil fuels, which is useful for countries seeking to understand, track and manage these incentives. For the most part, these measures focus on direct fiscal incentives. However, the International Monetary Fund's measure of "post-tax subsidies" also includes support implicit in the failure to charge for environmental damages and other consumption externalities and from exempting fuels and electricity from general consumption taxes.

Estimates of fossil-fuel subsidies also differ for the following reasons:

- the estimates often cover different types of support (which, due to their different effects and nature, need to be measured using different techniques);
- the coverage of the estimates, notably which countries and fuels are included;
- time periods covered differ.

OECDⁱ

IEAⁱⁱ

IMFⁱⁱⁱ

GSI^{iv}

Headline Estimate:				
Estimate (US\$ billion; dates)	55-90 (Annually during 2005-2011)	544 (2012)	Pre-tax: 492 Post-tax: 2,000 (2011)	Country and sector specific
Reference	<i>Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels</i>	<i>World Energy Outlook 2013</i>	<i>Energy Subsidy Reform – Lessons and Implications</i>	Various: www.iisd.org/gsi
Coverage – countries:				
Countries included	34 OECD member countries ^v	40 countries, primarily emerging and developing	176 countries	Study dependent
Coverage – energy carriers:				
Petroleum products	✓	✓ ^{vi}	✓176 countries ^{vii}	✓
Coal	✓	✓	✓56 countries	✓
Natural gas	✓	✓	✓56 countries	✓
Electricity ^{viii}	×(unless exclusively fossil-fuel generated)	✓ (non-fossil power subsidies excluded)	✓77 countries	✓
Coverage – subsidy and support incidence:				
Producer	✓ (including General Services Support Estimates, GSSE)	×	✓(including OECD Producer Support estimates, excluding GSSE)	✓ For specific countries
Consumer	✓	✓	✓	✓
What is included within the benchmark against which subsidies or support are estimated:				
Fossil-fuel reference prices	International price	International prices (in country average cost prices)	International price or cost-recovery price in the case of electricity	International price
Consumption-based taxes	✓VAT (Value-added Tax) or GST (Goods and Service Tax), excise	✓VAT or GST	× Pre-tax ✓ Post-tax: VAT actual and estimated (at regional rate)	✓ VAT or GST, excise
Non-internalized negative externalities	× (includes exemption of applied carbon taxes)	×	× Pre-tax ✓ Post-tax: various ^{ix}	× (non-application of environmental legislation)
Methods for defining and measuring subsidies and support:				
Definition	Government, producer and consumer support mechanisms.	Government actions that result in prices paid by end users below the full cost of supply (based on international benchmarks).	Pre-tax: price paid by consumers below a benchmark price, producers above the benchmark. Post tax: pre-tax plus taxes below efficient levels.	World Trade Organization Agreement on Subsidies and Countervailing Measures (WTO ASCM), Article 1.1
Method	Inventory approach. Two thirds of subsidy mechanisms currently identified are preferential tax treatment.	Price-gap (fuels); average cost plus transport & distribution, capped at cost of a combined cycle gas turbine power plant (power).	(i) Price-gap approach for consumer subsidies and (ii) inventory approach for producer subsidies.	Inventory approach. WTO ASCM interpreted as around 30 energy subsidy types.
Data sources	Based on official government data, with inputs from experts.	IEA and secondary data sources, and an annual survey identifying countries that set energy prices below the full cost of supply.	Based on IMF, IEA, and OECD data. Wider sources for post-tax estimates.	Official data as far as possible. In-country research with experts.
Units of measurement (country data)	Reported by country currency, line by line for each subsidy item	Average subsidization rate (as a proportion of the full cost of supply) % USD\$/person % share of GDP USD\$ by fuel type	% of government revenue % of GDP by country and region	Country total in US\$ and national currency

ⁱ Organization for Economic Co-operation and Development (OECD) (2013), *Inventory of estimated budgetary tax support and expenditures for fossil fuels 2013* (Paris: OECD Publishing).

ⁱⁱ International Energy Agency (IEA) (2013), *World energy outlook 2013* (Paris: OECD/IEA).

ⁱⁱⁱ International Monetary Fund (IMF) (2013), *Energy subsidy reform: Lessons and implications* (Washington, D.C.: IMF).

^{iv} Global Subsidies Initiative (GSI) (2010), *A how-to guide: Measuring subsidies to fossil-fuel producers* (Winnipeg, MB: IISD).

^v Work is underway to expand coverage to major emerging economies.

^{vi} Gasoline, diesel, kerosene, liquefied petroleum gas (LPG) and heavy fuel oil.

^{vii} Gasoline, diesel and kerosene petroleum products.

^{viii} Subsidies to renewable and nuclear energy are excluded in all cases. Estimates of subsidies to other energy types are made separately.

^{ix} Global warming (\$34 per tonne CO₂ in 2007 US dollars [US IAWG, 2013]), health impacts linked to local air pollution and road accidents, and other externalities linked to traffic congestion and road damage.



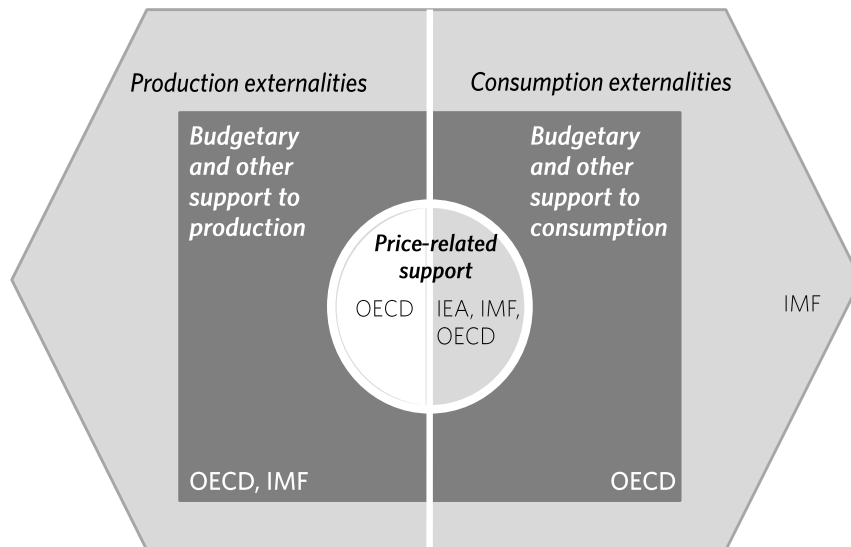
The Inventory Approach

The OECD's approach involves constructing an inventory of government support policies affecting the production and consumption of fossil fuels. Its approach derives from the Producer Support Estimate and Consumer Support Estimate (PSE-CSE) framework that it also uses for agriculture. This framework allows for the estimation of transfers that are observable through deviations in internal prices from international reference prices. However, given that the prices of fossil fuels in most OECD countries are at least as high as an international reference price, the Inventory does not currently include estimates of market transfers (see "The Price-Gap Approach," below). The number of measures applied across its 34-country membership is large, and in producing its first set of estimates choices had to be made about where to set the boundaries. Currently, for example, the OECD Inventory includes only budgetary transfers and tax expenditures. It is developing a method for estimating risk transfers (such as those provided through loan guarantees and concessional loans and insurance), and the subsidy element of equity capital injected into state-owned enterprises. These improvements are expected to increase the overall magnitude of reported subsidies. In contrast with the work done by other organizations, the OECD has also included a number of measures applied by sub-national jurisdictions. The OECD's estimates are derived mainly from publicly available data reported by the respective governments. Tax expenditures benefitting consumers refer mainly to reductions or exemptions from VAT and fuel excise taxes.

The Price-Gap Approach

The price-gap approach estimates the gap between domestic fuel prices and reference prices (the "price-gap"). If the domestic price is lower, a consumption subsidy is deemed to exist. The IEA and IMF use this method within the studies compared within this document and use international fuel prices within the reference price. The calculation of reference prices for electricity is based on the cost of production, transmission and distribution of electricity in individual countries. This method is also used for fossil-fuel exporting countries, which means the subsidy represents the opportunity cost of selling fuels at below-market prices domestically, rather than a measure of direct expenditure. Using the price-gap approach alone is useful in order to enable comparisons among countries where the main form of support is through administrative pricing or export restrictions, but it does have some draw-backs.^x For example, a price-gap analysis will not reveal producer subsidies that arise when energy producers are inefficient and make losses at benchmark prices nor consumption subsidies provided through, for example, fuel vouchers or other payments made directly to low-income households.

^x Koplw, D. (2009), *Measuring Energy Subsidies Using the price-gap approach: What does it leave out?* (Winnipeg, MB: IISD).



This figure is not indicative of relative magnitude of each component but illustrates the approach taken by different agencies to measure subsidies.

Figure 1: Comparison of subsidy or support estimates

More detailed information on different methods can be found at:

IEA: www.worldenergyoutlook.org/resources/energysubsidies/

IMF: <http://www.imf.org/external/np/exr/bforums/2013/energysub/>

OECD: <http://www.oecd.org/site/tadffss/>

GSI: <http://www.iisd.org/gsi/>