Fossil-Fuel Subsidy Reform Mitigating emissions through getting the price right

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Fossil-Fuel Subsidies

- Consumer Subsidies: **\$548 billion** (2013), Producer Subsidies: est. \$88 billion
 - A fossil-fuel subsidy is any government action that lowers the cost of fossil-fuel energy production, raises the price received by energy producers or lowers the price paid by energy consumers.
 - An issue for developed and developing countries.
- Governments matter
 - Shape markets within which private firms and individuals operate, move subsidies to consumers away from incumbents (fossil-fuels) towards newentrants (renewables)
 - Have tax raising powers that can lead to donor independence, conventional taxation of gasoline and diesel based on GST or VAT or environmental costs
 - Can invest in large projects, welfare systems, and direction of a national and the domestic economy, away from welfare distributed through cheap fossil fuels towards targeted welfare systems
 - Are currently trying to reform their fossil fuel subsidies.



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 subsid for these fuels as a major step towards rationalizing energy prices, fully charging for supply costs and addressing the environmental res caused by fossil-fuel use.

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

of fossil-fuel subsidies also differ for the following reasons

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

	OECD	IEA	IMF"	GSI≊
Readline Estimat	•••			
Extimate (US\$ billion; dates)	55-90 (Annually during 2005-2011)	544 (2012)	Pre-las: 492 Ptel-las: 2,000 (2011)	Country and sector specific
Reference	Inventory of Extimated Budgetary Support and Tax Expenditures for Recall Fants	World Energy Outlook 2012	Rentgy Subskip Reform – Linearies and Implications	Vetous <u>www.llsd.org/tel</u>
Coverage - count	ries:			
Countries included	34 OEED member countries*	40 countries, primarily emerging and developing	176 countries	Study dependent
Coverage - energ	y carriers:			
Petroleum products		20 C	<176 countries*	1
Coal	· · · · · ·	1	✓56 countries	1
Natural gas.	1	· · · · · · · · · · · · · · · · · · ·	✓56 countries	1
Electricity ^{ee}	 Aurilees exclusively local-fuel generated) 	✓ (non-lossil power subsidies excluded)	√77 countinion	1
Coverage - subsi	dy and support incidence:			
Producer	 Oncluding General Services Support Estimates, GSSE) 		 (Including DECD Producer Support estimates, excluding GSSE) 	For specific countries
Conumer	1 A A A A A A A A A A A A A A A A A A A	1	1	1
What is included	within the benchmark again	nst which subsidies or support are	estimated:	
Foxuli-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 beam	+"VAT (Value-added Tax) or GST (Goods and Service Tax), excise	VAT or GST	>> Pro-bax √ Pord-bas: VAT actual and estimated (at regional rate)	✓ VAT or GST, eache
Non-internalized negative externalities	 (Includes ecomption of applied carbon Lasos) 	*	>> Pro-tax < Post-tax: vericus*	 (non-application of environmental legislation)
Methods for defin	dag and measuring subsidi	es and support:		
Definition	Government, producer and consumer support mechanisms.	Government actions that result in prices paid by ord usars below the full cost of supply (based on international benchmarks).	Pro-Lee: price paid by consumers below a benchmark price, producers above the benchmark. Post tee: pre- tex plus teens below efficient levels.	World Trade Organization Agreement on Subsidies and Countervailing Measures (WTD ASDM), Article 13
Method	Insentory approach. Two thirds of subsidy mechanisms currently identified are preferential tax insernent.	Price-gap (fusic); average cod plus transport & distribution; capped at cost of a combined cycle gas turbine power plant (power).	(1) Price-gap approach for consumer subsidies and (1) Investory approach for producer subsidies.	Investiony approach. WID ASCM Interpreted as around 20 energy subsidy types.
Dela sources	Based on official government data, with inputs from experts.	EA and secondary data sources, and an annual survey identifying countries that set energy prices below the full cost of supply.	Based on IME, 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\$/benon % share of GDP USD\$ by fast type	% of government revenue % of GDP by country and region	Country total in US\$ and national currency
International Control Agency International Monetary Fund Caluar Valenties Initiative (C	regreation and Development (CRCD) (2010), in (UA) (2010), Work/wengy collects 2011/Parts CR (MP) (2010), Energy solidally reference reasons and (20) (2020). A how-to-gaide Messawing-solidation converge to reagine receiping as uncertainty.	ingliation (Washington, DC-(1MP).	jaal juris 200 (Paris CBCD Politiking).	

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Figure 1: The Nesting Doll of Subsidy Definitions

Definitions	Consumer Fossil-fuel Subsidies	Producer Fossil-fuel Subsidies	
	Fossil fuels exempt from social cost of externalities (non-internalized externalities).		
	Fossil fuels sold below regional or international taax levels.	Government tax and regulation levels below regional or international levels.	
	Fossil fuels exempt from VAT, GST and carbon taxes	Government revenue forgone (reduced and exempt tax rates).	
		Government provided or purchased goods and services (above or below market rates).	
	Fossil fuels sold below the cost of production, imports and international benchmark price to consumers	Direct transfers or potential direct transfers of funds to producers.	
		Income or price support (above market rate prices for producers).	

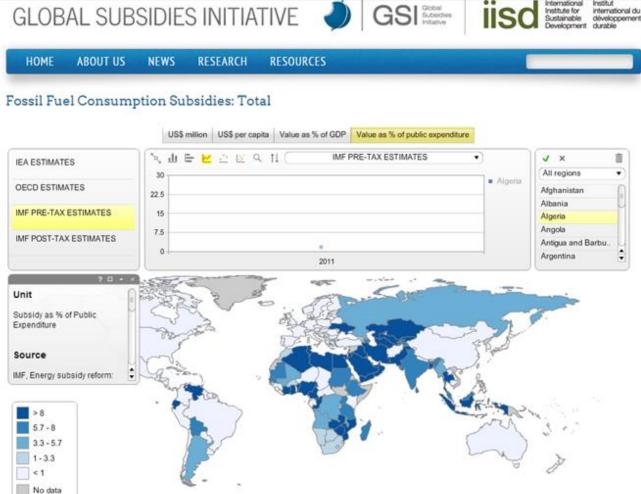
Explanation: '... 'the term "subsidy" can be visualized as a matryoshka nesting doll—at the centre of the definition are ideas that everyone agrees on, but as the definition expands to include other layers, it becomes more complicated and more controversial (see Figure 1).' (Gerasimchuk et al, 2012). For more information on definitions of subsides and support to fossil fuels see IEA, WB, OECD, IMF and GSI, 2014 'Comparison of Fossil-fuel Subsidy Support Estimates'. *Source:* GSI-IISD, October 2014, based on: Gerasimchuk, I.; Bridle, R.; Beaton, C.; and Charles, C. (2012) 'State of Play on Biofuel Subsidies: Are Policies ready to shift?' IISD-GSI, and GSI (2010) 'A How-to Guide: Measuring Subsidies to Fossil-fuel Producers'.





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Distribution: GSI Interactive Map

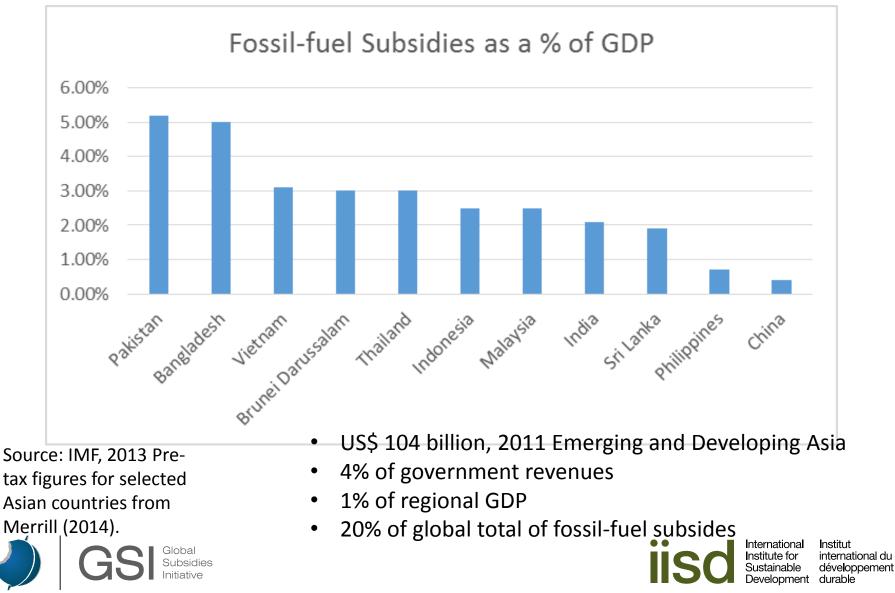


Source: http://www.iisd.org/gsi/fossil-fuel-consumption-subsidies-total

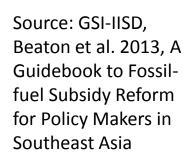


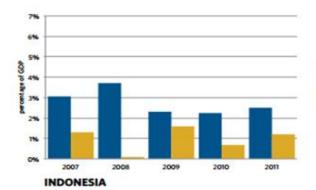


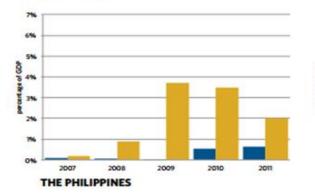
Emerging and Developing Asia

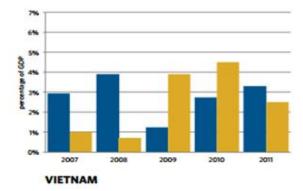


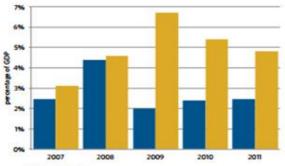
Consumer subsidies: Economic Impacts



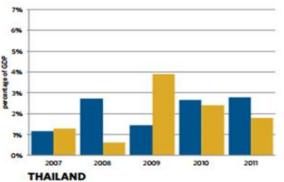


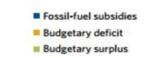






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Source: IISD-GSI calculations based on IEA (2012) subsidy estimates, derived using the price-gap method, and ADB (2012) data on GDP and budgetary deficits and surpluses.

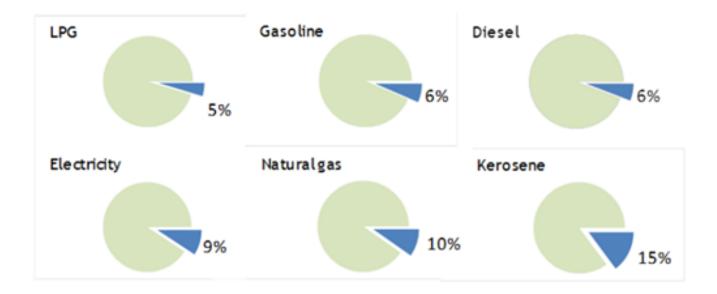
http://www.iisd.org/gsi/fossil-fuel-

Global Subsidies subsidies/guidebook

International Institute for Sustainable Development

Fossil fuel subsidies: Social impacts Goal 1: End poverty, Goal 10: Reduce Inequality

Share of fossil-fuel subsidies received by the lowest 20% income group, 2010



Subsidies are an extremely inefficient means of assisting the poor: only 8% of the \$409 billion spent on fossil-fuel subsidies in 2010 went to the poorest 20% of the population

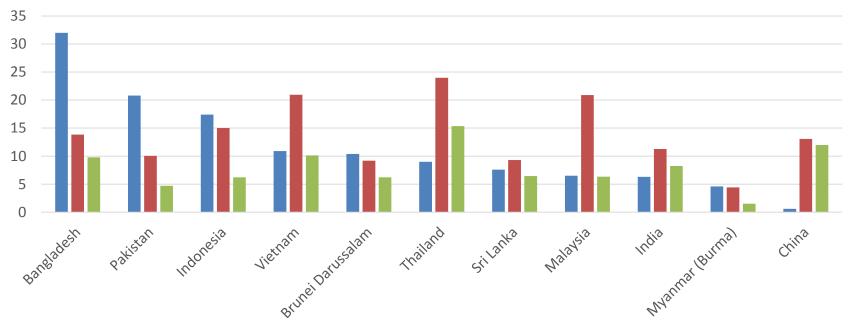
Source: OECD/IEA, World Energy Outlook, 2011



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Consumer subsidies: Social Impacts, health and education



Fossil-fuel consumer subsidies, (% of public expenditure)

■ Public spending on education, (% of government expenditure)

Government spending on health, (% of government expenditure)

Source: GSI-IISD, Financing the Sustainable Development Goals through Fossil-fuel Subsidy Reform, Opportunities in Southeast Asia India and China (Merrill, 2014)

GSI Global Subsidie Initiative



2014

Understanding and maximising the environmental benefits of subsidy reform

- 2010 GSI reviewed 6 major multi-country fuel studies on environmental impacts of reform including Burniaux et al. (2009) CO₂ down 13% and GHG emissions down 10% by 2050.
- Dwarfing climate finance US\$35 billion for climate change (2010-2012) (Nakhooda et al 2013), \$480 billion for pre-tax fossil-fuels (2011) (IMF,2013)
- **\$544 billion** fossil fuels, 5 times more than renewable energy, **\$101 billion**.
- 15% of global CO₂ emissions receive an incentive of \$110 per tonne in the form of fossil fuel subsidies, with only 8% subject to carbon pricing.
- A recent report from the IMF suggests that by removing fossil fuel subsidies and then taxing fossil fuels correctly (based on the cost borne to society through air pollution, carbon emissions and accidents) could lead to a decline in CO₂ emissions by 23 percent globally (IMF, 2014). IMF Getting Energy Prices Right



The Effects of Fossil-Fuel Subsidy Reform: A review of modelling and empirical studies

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Getting Energy Prices Right From Principle to Practice



Ian Parry, Dirk Heine, Eliza Lis, and Shanjun Li

INTERNATIONAL MONETARY FUND



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PAYING THE POLLUTER

How fossil fuel subsidies hold us back from a low-carbon future

HARMFUL INCENTIVES



15% of global CO2 emissions receive an incentive of \$110 per tonne in the form of fossil fuel subsidies, while only 8% are subject to a carbon price.



Fossil fuel subsidies stood at \$548 billion dollars in 2013. This is four times the value of subsidies to renewable energy. It is also more than four times the amount invested globally in improving energy efficiency. (1)

OPPORTUNITY FOR CHANGE

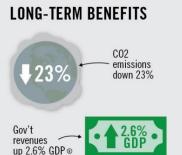
Renewable energy targets until 2020 in the Middle East and North Africa could cost up to:



This is less than one year's worth of fossil fuel subsidies in the region, which total:



WRONG PRIORITIES



By removing subsidies and taxing carbon correctly, we could reduce global CO2 emissions by 23% and raise government revenue through savings and taxation, equivalent to 2.6% of global GDP.





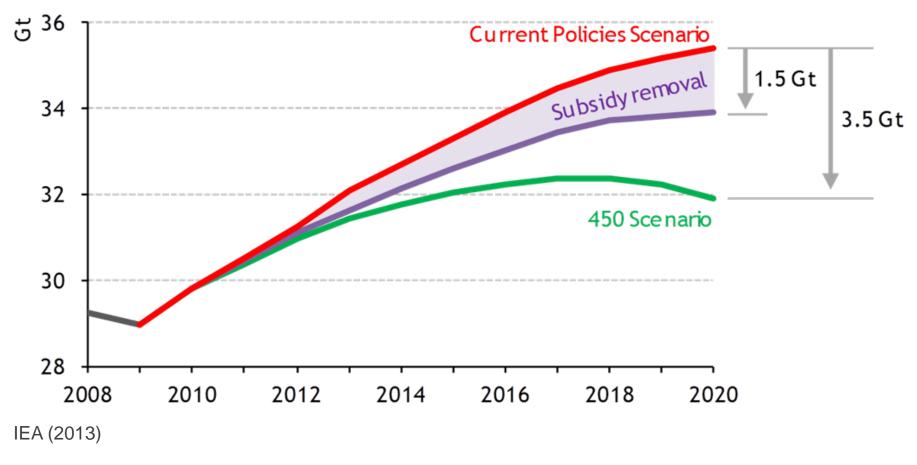
WWW.IISD.ORG/GSI

Designed by: Ben Barrett-Forrest Written by: Laura Merrill

- International Energy Agency (IEA) 2013, 'Redrawing the Energy-Climate Map.'
 IEA (2014), 'Energy Efficiency Market Report 2014'

- [14] (2014). Using a Internet y market nepox 12014
 [14] (2014). World Energy Outlook. Energy Subsidies is Greater than the Total Cost of Meeting 2020 Renevable Energy Targets in the Middle East and North Africa', The Global Subsidies Initiative OMF (2014). Greating Energy Prices Right

Consumer subsidies: Environmental impacts

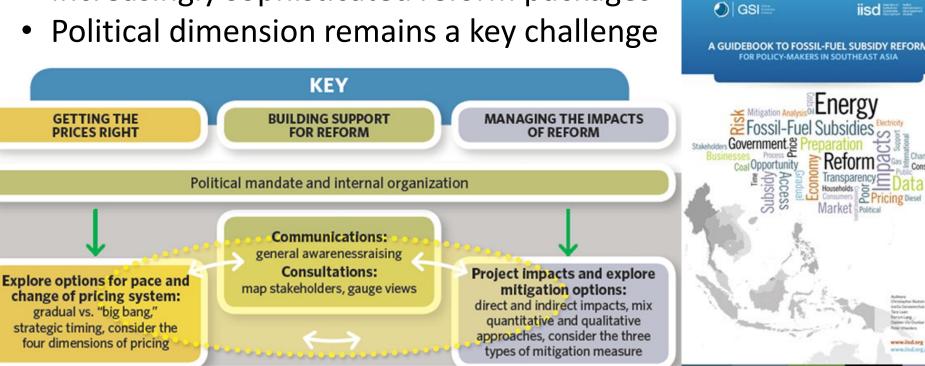






Consumer subsidies: National action

Increasingly sophisticated reform packages



Source: GSI-IISD, Beaton et al. 2013, A Guidebook to Fossil-fuel Subsidy Reform for Policy Makers in Southeast Asia,

http://www.iisd.org/gsi/fossil-fuel-subsidies/guidebook

GSI Global Subsidi Initiative



Indonesia

- Package of measures to mitigate the impacts of reform (2005, 2008, 2013) and being considered again ...
 - One off cash transfer schemes (2005, 19 million families)
 - unconditional cash transfer scheme introduced in 2013 (the Bantuan Langsung Sementara Masyarakat (BSLM), or "temporary direct cash assistance")
 - Building an ongoing social welfare system (2013, US\$ 2.9 billion)
 - *Jamkesmas* a public health insurance
 - Raskin A subsidized rice program
 - Bantuan Siswa Misking, or BSM "assistance for poor students"
 - PKH the conditional cash transfer launched in 2007, Program Keluarga Harapan (PKH, or The Family of Hope Program)
 - Infrastructure and works programme
 - Acceleration and Expansion of Development Program or P4 (*Program Percepatan dan Perluasan Pembangunan*). Housing infrastructure, water (drinking and irrigation), transport, sanitation etc.

Sources: Perdana, A. (2014). The future of social welfare programs in Indonesia: From fossil-fuel subsidies to better social protection. Geneva: GSI. http://www.iisd.org/gsi/sites/default/files/ffs_indonesia_briefing_welfare.pdf And GSI (2014). Indonesia Energy Subsidy Briefing August 2014 IISD-GSI http://www.iisd.org/gsi/sites/default/files/ffs_newsbriefing_indonesia_july2013_eng.pdf





Consumer subsidies: National action

- Highly dynamic, since 2009 at least partial reforms attempted in many countries, including:
 - Argentina, Bolivia, Egypt, Ghana, Morocco, Mozambique, India, Indonesia, Malaysia, Nigeria, Pakistan, Sudan, Thailand, Vietnam, Yemen, Zambia
 - 30 countries in 2014 alone
- Not a question of <u>if</u> but <u>how</u>
- Now a question of <u>ensuring quality of reforms, moving savings</u> <u>towards:</u>
 - Re-investment into energy infrastructure, low carbon energy and mass transit systems
 - Re-investment into health and education
 - Development of comprehensive health care systems
- Subsidies of fossil-fuels to provide on going revenue Studies Uniteditional du développement du dévelopment du dével



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- Side event Wednesday 10th December 15.00-16.30 on fossilfuel subsidies
- New report GSI around the impact of fossil-fuel subsidies and renewables
- Imerrill@iisd.org

Maximizing Contributions to Emissions Mitigation from Fossil-Fuel Subsidy Reform



Wednesday 10 December 15:00 – 16:30 CoP 20, Machu Picchu Room, Cuartel General del Ejercito del Peru, Lima, Peru

According to the International Georgy Agency, solvicities to Neudi Rachi technical amount \$548 billion in 2012, which is rear-ethan how tames the value of plated advectifies to rememble mergy-mit is also more than four tames the amount invested globally in improving energy efficiency. However, in the last pair above almost 320 countries across the globe have made serious efforts to diametelling globally in improving energy efficiency. However, in the last on diametelling globally in improving energy efficiency. However, in the last to diametelling government support and tobolidies to hould beels. This posed discousion will address the link between local-fuel solubidies, their enform and a low-cattors than. The second will softee the support available to countries unsingoing relation, the opportunities to strengthen the process and direct sovings towards investment is socherable energy systems, and how count in cat addice encicions andigation from subsidy reform within the UMECC process, e.g., through post-2020 national constraints in the socherable.

The event is acquisited by the Friends of Foss II find Solvidy, Belarm (Conta Bica, Desmark, Ethiopia, Folland, New Zealand, Nerway, Serden and Switzerbard) in comparchina with the Goldal Solvidate Initiative of BSD. The power includes Ministers, officials, representatives from Insteiness, development banks and integravemental organizations. The Friends group advocates for a reform of Social-fuel addetion. Integravemental organizations and development banks support coverings in measuring and removing such solutions. Bosinesses recognize how basil-fuel subsidies impact on the reveables inductory. The GSI will also be releasing a new report regarding the impact of focal-fuel subsidies on temperatures of the same day.

