

Low Carbon Development
Summary Sheets

Fossil-fuel subsidies and low carbon development

Key message: Inefficient fossil-fuel subsidies hinder economic growth and low carbon development as they encourage wasteful consumption, distort markets and impede investment in clean energy sources. Furthermore, fossil-fuel subsidies are inappropriate for addressing poverty as, in most cases, higher income households benefit to a larger extent than poor households. Therefore, phasing out fossil-fuel subsidies presents a triple-win solution - it could contribute to enhance energy security, reduce greenhouse gas (GHG) emissions and result in economic growth.



Introduction

Given the critical role that energy plays in economic and social development, the reform of energy subsidies has to be seen in a context of the three pillars of sustainable development, namely, economic growth, poverty reduction and environmental dimensions (in particular the consequences for climate change).

1. The scale of fossil-fuel subsidies in developed and developing countries is significant.

According to the International Energy Agency (IEA), consumption subsidies worldwide amounted to USD312 billion in 2009, the vast majority of which was provided in non-Organisation for Economic Co-operation and Development (OECD) countries¹. The Global Subsidies Initiative estimates that subsidies provided to producers of fossil fuels, mostly given in OECD countries, are about USD100 billion per year². To put these numbers into perspective, the IEA estimates that, worldwide, government support to renewable electricity and biofuels amounted to USD57 billion in 2009 (not including renewable heat technologies or carbon capture and storage (CCS))¹.

2. Poorly implemented subsidies on the use of conventional energies contribute to increased emissions of GHG and other air pollutants, and pose a barrier to the widespread use of low carbon technologies.

Recent analyses by the IEA indicate that phasing out fossil-fuel consumption subsidies could reduce carbon dioxide (CO₂) emissions by 5.8%, or 2 Gt, by 2020¹. The OECD estimates a 10% reduction in global GHG emissions by 2050 compared with a business-as-usual scenario³.

3. Energy subsidies can hinder economic growth.

While subsidies might provide a short-term economic stimulus and help redistribute income, government intervention in the energy sector can be expensive in the longer term and become untenable at times of high international oil prices or low domestic supply, creating an impediment to sustained growth^{4,5}. Several multi-country, multi-fuel studies undertaken since the early 1990s have tried to assess the economic and environmental impacts of reform at a global level. A recent synthesis report of these studies issued by the Global Subsidies Initiative concluded

that reform and elimination of fossil-fuel subsidies could result in aggregate increases in gross domestic product in OECD and non-OECD countries, with predictions varying from 0.1% in total by 2010 to 0.7% per year by 2050⁶.

4. Fossil-fuel subsidies tend to benefit high-income households more than the poor households, due to the former's higher consumption levels.

For example, the Indonesian Government reported that the top 40% of high-income families absorb 70% of energy subsidies, while the bottom 40% of low-income families receive only 15% of the benefits⁷. These numbers are supported by recent cross-country analysis by the World Bank⁸. Nonetheless, some subsidies relating to fossil fuels can improve the environment or the welfare of the poor if they reduce the reliance on biomass in areas at risk of deforestation.

5. Suggested policy solutions include:

- Identifying those subsidies that are inefficient and lead to wasteful consumption.
- Addressing implementation challenges, including overcoming political obstacles and affordability constraints and facilitating the reform process through the use of targeted public assistance, safety nets and industrial restructuring support⁴.



Case study Indonesia

Indonesia has a long history of directly subsidising energy to support poor households. Previously, subsidies were available for industry and all segments of the population, but coverage has become more targeted and the number of subsidised fuels has declined. In 2010, Indonesia announced plans to eliminate energy subsidies totally by 2014. The gap between international and domestic prices is to be progressively reduced in an effort to minimise the impact on the poor. According to Indonesia's 2011 state budget, 11% of Government expenditure in 2011 will be devoted to subsidising energy use. This compares with 13% in 2010 and 19% in 2008. Indonesia has an ongoing programme to phase out the use of kerosene in favour of liquefied petroleum gas. The Energy Ministry is considering a new plan to restrict the use of subsidised fuel to motorcycle, public transport vehicles and cars purchased before 2005. In June 2010, the Indonesian Government raised power tariffs by an average of 10%. This will reduce the overall burden of electricity subsidies on the state budget and boost revenues for Indonesia's state power company.⁴

6. There are also alternative measures to regressive fuel subsidies to assist poor households more effectively:

- Well-designed rural electrification subsidies to make energy services affordable.
- Better targeted compensation packages or broader reforms aimed at protecting the most vulnerable.
- Moves towards automatic price adjustments mechanisms and fully liberalised systems for fossil fuels⁴.

7. Further research is needed into the social and economic effects of fossil-fuel subsidy reform and the policies to channel some of the saved subsidy expenditure towards social programmes. More evidence is also needed on producer subsidies, demand and supply elasticities for fossil fuels, and methods for more effectively incorporating social-impact analysis and environmental policies into economic analysis⁹.

References

¹ IEA, (2010), World Energy Outlook 2010, Paris.
<http://www.worldenergyoutlook.org/>

² Global Subsidies Initiative (2009), Achieving the G-20 Call to Phase Out Subsidies to Fossil Fuels, Policy Brief, October, International Institute for Sustainable Development, Geneva.
http://www.globalsubsidies.org/files/assets/l_policy_brief_on_G-20_Announcement_Oct_09-1.pdf

³ IEA, OECD, OPEC, World Bank (2010), Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative, Joint report prepared for submission to the G-20 Summit Meeting, Toronto (Canada), 26-27 June 2010.
http://www.iea.org/weo/docs/G20_Subsidy_Joint_Report.pdf

⁴ IEA, OECD, World Bank (2010), The Scope of Fossil Fuel Subsidies in 2009 and a Roadmap for phasing out fossil fuel subsidies, Joint Report prepared for the G20 Summit, Seoul (Republic of Korea), 11-12 November 2010.
<http://www.oecd.org/dataoecd/8/43/46575783.pdf>

⁵ IISD (2010), Lessons Learned from Brazil's Experience with Fossil-Fuel Subsidies and their Reform, by de Oliveira, A and Laan, T.
http://www.iisd.org/pdf/2010/lessons_brazil_fuel_subsidies.pdf

⁶ Global Subsidies Initiative (2010a), Untold Billions: Fossil-fuel subsidies, their impacts and the path to reform – A Summary of Key Findings, International Institute for Sustainable Development.
http://www.globalsubsidies.org/files/assets/synthesis_ffs.pdf

⁷ IEA, (2008), Energy Policy Review of Indonesia, OECD/IEA, Paris.
<http://www.iea.org/textbase/nppdf/free/2008/Indonesia2008.pdf>

⁸ Independent Evaluation Group (IEG) (2008), Climate Change and the World Bank Group, Phase 1 - An Evaluation of World Bank Win-Win Energy Policy Reforms, Washington, DC, World Bank.
http://siteresources.worldbank.org/EXTCLICHA/Resources/cc_full_eval.pdf

⁹ Global Subsidies Initiative (2010b), The Effects of Fossil-Fuel Subsidy Reform: A review of modelling and empirical studies, Jennifer Ellis, International Institute for Sustainable Development.
http://www.globalsubsidies.org/files/assets/effects_ffs.pdf

Other key publications:

Global Subsidies Initiative (2010c), Strategies for Reforming Fossil-Fuel Subsidies: Practical lessons from three countries, Laan, Beaton & Presta, International Institute for Sustainable Development.
http://www.globalsubsidies.org/files/assets/strategies_ffs.pdf

The World Bank (2010), Subsidies in the Energy Sector – An Overview, Washington DC.
http://siteresources.worldbank.org/EXTESC/Resources/Subsidy_background_paper.pdf

International Monetary Fund (IMF) (2008), Fuel and Food Price Subsidies: Issues and Reform Options. Prepared by the Fiscal Affairs Department (In consultation with other departments).
<http://www.imf.org/external/np/pp/eng/2008/090808a.pdf>

IMF (2010). Petroleum Product Subsidies: Costly, Inequitable, and Rising. By Coady D, Gillingham R, Ossowski R, Piotrowski J, Tareq S, and Tyson J. IMF Staff Position Note.
<http://www.imf.org/external/pubs/ft/spn/2010/spn1005.pdf>

Definitions

Low carbon climate resilient development combines key elements of mitigation, adaptation and development strategies. A 'triple win' is where low carbon development brings benefits in mitigation, adaptation and poverty reduction/economic development. A 'double win' is where benefits are seen in only two of these areas.

Climate resilience is used in this document to mean: The capacity of households and communities to manage change and maintain or transform their living standards in the face of climate induced stresses and shocks without compromising long term prospects.

USD is the US dollar

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