Mitigation potential of removing fossil fuel subsidies: a general equilibrium assessment

J.M. Burniaux and J. Chateau[1]
Organisation for Economic Co-operation and Development[2]

ABSTRACT

Quoting a joint analysis made by the OECD and the IEA, G20 Leaders committed in September 2009 to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption". This analysis was based on the OECD ENV-Linkages General Equilibrium model and shows that removing fossil fuel subsidies in a number of non-OECD countries could reduce world Greenhouse Gases (GHG) emissions by 10% in 2050 (OECD,2009). Indeed, these subsidies are huge. According with IEA estimates, total fossil fuel subsidies in 2008 amounted to USD 557 billions (IEA,OPEC,OECD, World Bank, 2010). This represents almost six times the yearly aid flows to developing countries defined as the Official Development Assistance (ODA). This paper discusses the assumptions, data and both environmental and economic implications of removing these subsidies. It shows that, though removing these subsidies would amount to roughly a seventh of the effort needed to stabilize GHG concentration at a 450ppm, the full environmental benefit of this policy option can only be achieved if, in parallel, emissions are also capped in OECD countries. Finally, though removing these subsidies qualifies as being a "win-win" option at the global level, this is not true for all countries/regions. The paper also provides some discussion about the robustness of these results.

JEL codes: H23, O41, Q56
Keywords: fossil-fuel subsidies, general equilibrium models, GHGs emissions

[1] The authors would like to express gratitude to T. Morgan from the International Energy Agency who has extensively worked on some of the fossil fuel subsidies databases used in this paper. The authors would also like to thank Jan Corfee-Morlot, Rob Dellink, Ron Steenblik, Helen Mountford, Cuauhtemoc Rebolledo-Gomez and Romain Duval from the Organisation for Economic Co-operation and Development for their input, suggestions and comments.

[2] The views of the authors do not necessarily represent the views of the OECD or of its member countries.