



Regulatory instruments to control environmental externalities from the transport sector

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Abstract

This study reviews regulatory instruments designed to reduce environmental externalities from the transport sector. We find that the main regulatory instruments used in practice are fuel economy standards, vehicle emission standards and fuel quality standards. While industrialized countries have introduced all three standards with strong enforcement mechanisms, most developing countries have yet to introduce fuel economy standards. The emission standards introduced by many developing countries to control local air pollutants follow either the EU or U.S. standards. Fuel quality standards, particularly for gasoline and diesel, have been introduced in many countries mandating 2 to 10 percents blending of biofuels, 10 to 50 times reduction of sulfur from 1996 levels and banning lead contents. Although inspection and maintenance (I/M) programs are in place in both industrialized and developing countries to enforce regulatory standards, these programs have faced several challenges in developing countries due to a lack of resources. The study also highlights several factors affecting the selection of regulatory instruments, such as countries' environmental priorities and institutional capacities.

Keywords: Transport sector externalities; Emissions; Regulatory policy instruments.

1. Introduction

Regulatory instruments are legal, enforceable, 'command and control' type instruments aimed at reaching desired, prescribed environmental quality targets or performance standards by regulating the behavior of individuals and/or firms (Seik, 1996). In the transport sector, regulatory instruments induce adjustment of market participants' behavior (e.g., purchasing more fuel efficient vehicles, lowering operator speeds, optimizing logistics in freight transport, changing the modal split) by establishing suitable incentives (Ahrens, 2008). Examples of these instruments include the following: Corporate Average Fuel Economy (CAFE) standards established in the United States in line with the 1975 Energy Policy Conservation Act; On-Road Vehicle

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