

Using Economic Instruments to Promote Environmentally Sustainable Transportation in the People's Republic of China

By Manmohan Parkash and David S. Sobel

- **Growing energy consumption in transport is unsustainable**
- **Current carbon dioxide emission levels need to be better controlled**
- **Economic instruments can promote environmentally sustainable transport**

The Asian Development Bank recently supported research emphasizing the growing importance of environmentally sustainable transport, which focuses on vehicle and fuel technology, infrastructure, and changes in transport activity and management.

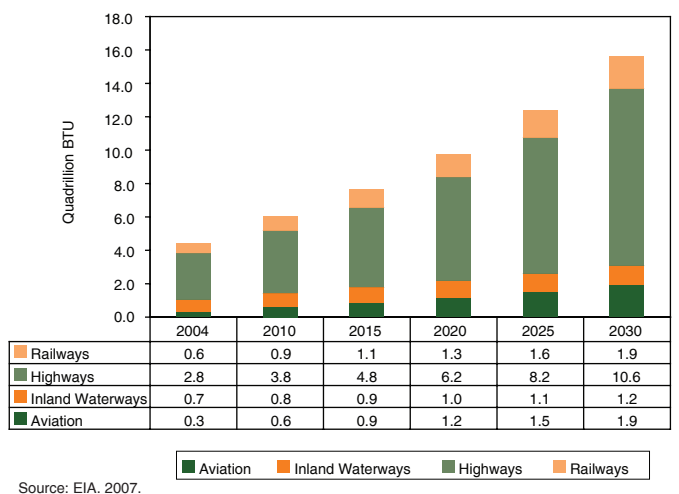
Energy consumption is growing. The People's Republic of China (PRC) is the world's second largest energy consumer, accounting for 10.8% of the world's annual production. This level of demand has resulted in the PRC becoming a net energy importer. It needs to double its electricity-generating capacity every decade to keep up with the rate of economic growth.

The transport sector accounts for much energy consumption. With its rapidly expanding transportation sector, the PRC is the world's fastest-growing oil consumer. The International Energy Agency states that road transport accounts for 35% of the PRC's crude oil consumption. Energy consumption in the transport sector is expected to continue to grow (see Figure).

Carbon emissions are on the increase and need to be contained. Reliance on coal for 70% of total energy consumption and a rapid increase in the number of vehicles is intensifying air pollution and greenhouse gas emissions. In 2005, the PRC's total emissions of carbon dioxide ranked second in the world. By 2020, carbon dioxide emissions are estimated to be 2.32 times the current level.

Environmentally sustainable transport can help address these issues. A new, target-oriented approach is needed that places energy efficiency and the environment at the top of the policy agenda for transport at all levels. Environmentally sustainable transport calls for a much greater emphasis on transport-demand management policies. Such transport involves the use of environmentally sound transport modes, changing mobility patterns and driving behaviors, and education about the efficient use of transport.

Projected Transportation Energy Consumption by Mode



Economic instruments can be used to promote environmentally sustainable transport

Implement a fuel tax system. The fuel tax reflects the "user-pays" principle and curbs excessive vehicle use. All revenues derived from the fuel tax should be used to fund maintenance and macro-control costs and research. Fuel-tax legislation is already enacted; implementation should be sped up.

Set up a national transportation fund. The fund would be financed by revenues from transportation taxes, the proposed fuel tax, and a share of revenue from the proposed increase in the value-added land tax. It should prioritize those areas of greatest need, such as urban public transportation, rural road construction and maintenance, development of sustainable transportation technology, transportation for the disadvantaged, and safer bicycle and pedestrian ways.

Strategically use incentives and taxes. Appropriate subsidies and incentive policies should be granted to sustainable transportation modes such as railways, waterways, and urban public transportation. Taxes should be levied on cars according to the costs that they impose on the environment in terms of energy use, traffic congestion, pollution, and traffic accidents.

For further information

Contact Manmohan Parkash, Principal Transport Specialist (mparkash@adb.org), and David S. Sobel, Senior Results Management Specialist (dsobel@adb.org), Asian Development Bank.

Climate Change and Transport: Promoting Environmentally Sustainable Transport in the People's Republic of China

<http://adbweb/Documents/Papers/Sustainable-Transport-PRC/default.asp>

Asian Development Bank is dedicated to reducing poverty in the Asia and Pacific region.

www.adb.org/knowledgeshowcases

The Knowledge Showcases highlight innovative ideas from ADB technical assistance and other knowledge products to promote further discussion and research.

The views expressed in this publication are those of the author(s) and do not necessarily reflect the views and policies of ADB or its Board of Governors or the governments they represent.