International Transport Forum Leipzig 2008

*Transport CO₂ Emissions in Emerging Economies*

**Tackling the Problem: Policy and Planning Instruments to Integrate Climate Change in Sustainable Urban Transport Strategies**

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GTZ

Leipzig, May 28th
Tackling climate change in the transport sector is difficult…

…since emissions stem from millions and millions of small decentralised sources and are the results of transport choices that billions of people make every day…
Unprecedented road investments
View from World Bank Beijing office
The magnitude of the problem clearly indicates that previous policies to mainly focus and rely on improving vehicle technology and fuel quality will be by far not sufficient to break the trend.

To stabilise or even reduce global emissions requires a combination of measures and policy instruments which address transport demand in a comprehensive manner.

Smarter approaches in transport policy are urgently needed!!

Source: IEA/ITF 2008
The three basic routes to tackle the problem

**REDUCE**
- Reduce or avoid travel or the need to travel
- Integration of transport and land-use planning
- Smart logistics concepts
- ...

**SHIFT**
- Shift to more environmentally friendly modes
- Mode shift to Non-Motorized Transport
- Mode shift to Public Transport
- Public Transp. Integration
- Transport Demand Management (TDM)

**IMPROVE**
- Improve the energy efficiency of transport modes and vehicle technology
- Low-friction lubricants
- Optimal tire pressure
- Low Rolling Resistance Tires
- Speed limits, Eco-Driving (Raising Awareness)
- Shift to alternative fuels
- ...

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*Reduced Carbon Emissions*
A toolbox of instruments

**PLANNING INSTRUMENTS**
Reduce the need to travel through bringing people and the activities they need to access closer together.
Enable the implementation of new transport infrastructure (road, rail, other public transport, cycling and walking).

**REGULATORY INSTRUMENTS**
Used to restrict the use of certain motorised vehicles. Influence the types of vehicles used and standards that they should adhere to - vehicle performance and road regulations.

**ECONOMIC INSTRUMENTS**
Used to discourage the use of motorised vehicles. Encourage the use of alternative modes. Reduce the need to travel.
Improve accessibility and mobility through investment in transport infrastructure.

**INFORMATION INSTRUMENTS**
The provision of information, in easily accessible formats can increase the awareness of alternative modes, can lead to a mode shift - walking or cycling.
Improving driver behaviour, resulting in reduced fuel consumption.

**TECHNOLOGICAL INSTRUMENTS**
Technology can be used to reduce the impact on carbon emissions – developing cleaner fuels.
Improving vehicle efficiency

Transport Integration - Transport Demand Management - Capacity Building

Reduced Carbon Emissions
Mind the gap… Transport mode CO₂ comparison

Source: Straße und Schiene – Die ökologischen Vor- und Nachteile der Verkehrsmittel. Institut für Energie- und Umweltforschung (IFEU), Heidelberg 2007
Transport Demand Management

The challenges in urban transport and **TDM**

- Urban areas require proper road networks
- New roads attract more traffic and reduce the viability of public transport
- Transport benefits will be offset by future congestion

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**Transport Demand Management shall...**

- reduce the total volume of traffic
- promote shifts towards more sustainable modes of transport

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**...with the objectives to...**

- reduce traffic congestion
- reduce adverse effects on the environment or public health
- generate additional revenue to improve public transport and NMT by pricing mechanisms
Transport Demand Management measures
(including fiscal policies)

- Land use development controls
- Public transport integration
- Parking controls and management
- Regulatory controls such as odd/even systems
- Physical measures such as bus and pedestrian priority
- Pricing & charges through fuels, annual taxes
- Congestion charging

Fiscal policies cannot be implemented as isolated instruments, but – for being successful – have always to be embedded in a comprehensive framework of Transport Demand Management measures.
Transit-oriented development and efficient use of urban space (just as an example for supporting TDM measures)
Successful TDM measures in Hong Kong have ensured the bus industry remains viable, with buses dominating city traffic.

TDM measures in Curitiba, combined with integrated transport and land use planning, ensure buses continue to retain market share.
TDM: GTZ International Fuel Prices -
A global perspective on fuel prices

The survey:
- 170 Countries
- Diesel and Gasoline
- Last survey in November 2006
- November 2007: Flash survey Africa
- Next survey in November 2008

www.gtz.de/fuelprices
Why fuel taxation?

Level of fuel taxation (and of total costs of car based transport) has direct or indirect impact

- Speed
- Improved lubricants
- Correct tire inflation
- Improved Inspection and Maintenance
- Eco-Driving (Raising Awareness)
- More efficient vehicles
- Transport Demand Management & Mobility management
- Replacement of vehicle fleet / higher share of NMT/IMT
- Priorization of NMT and Public Transport
- Integration of Transport and Land-use planning
- New vehicle concepts
- Shift to alternative fuels
Indonesia: High fuel subsidies favour strong individual motorisation (in comparison to public transport)
In 11 auctions held 2007, the average bid was more than 40,000 yuan per plate.

Source: own compilation, Jan 2008
Singapore’s comprehensive approach to TDM

- Vehicle taxation to influence travel demand.
- Vehicle taxes are imposed at various points, including import, sale, and annual registration.
- Singapore has been the major exponent of vehicle taxation as a means of reducing transport demand, with a tax structure aimed at discouraging older vehicles. Yet even with high taxes vehicle ownership continued to increase, leading in 1990 to the application of an absolute quota system limiting the number of vehicles.
World’s First Road Pricing System

Implemented 1975

Area Licensing Scheme (ALS)

Since 1998

Electronic Road Pricing (ERP)
Cost of Vehicle Purchase in Singapore

Open Market Value (OMV)

- OMV is assessed by the Customs & Excise Department, taking into account the purchase price, freight, insurance, handling and all other charges incidental to the sale and delivery of the car from country of manufacture to Singapore.

Registration fees

- Registration Fee (RF) $140
- Additional Registration Fee (ARF):
  - 110% of OMV\(^1\) or 130% of OMV\(^2\)
- Certificate of Entitlement (COE) Bid
- Customs Duty 20% of OMV
- Goods & Services Tax: 5% based on the CIF value (cost, insurance & freight)

Same vehicle - huge price differences
2008 Honda Civic sedan VTi-S AT (1,8L AT)

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<th>Country</th>
<th>Price (Currency)</th>
<th>Equivalent (S$)</th>
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<td>21,300</td>
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<td>RM113,800</td>
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<tr>
<td>Singapore</td>
<td>S$ 77,800 (including $8,000 COE)</td>
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Source: Time Out Magazine Singapore, March 2008
The reality in most developing cities:

In contrast to Europe, where Transport associations exist and tariff integration is applied since decades, in developing countries:

- public transport is underdeveloped, not attractive enough for customers (often 2-4 tickets are required to get to work per direction)
- there exist often stand alone systems (Bangkok, Manila, Kuala Lumpur.….) without proper physical-, time table- and fare-integration
- urban transport responsibilities are often fragmented between various ministries, provincial and municipal level

Outlook:

- Public transport integration is the challenge during common years for to considerably increase attractiveness of PT
- Sao Paulo and Santiago de Chile recently achieved a partial integration, other cities still need to follow.
No remarkable changes without Leadership

World’s best systems were developed with high levels of political support.

With strong political will, changes are possible.
The SUTP Project

- Based on GTZ’s over 30 years experience with urban transport projects, also in large agglomerations, we decided a few years ago to condense and update our experience and make it available for decision makers and urban transport planners in Developing Cities. We call the major publication the Sourcebook, with meanwhile 26 modules, being translated in various languages.

- Following the overwhelming success of the Sourcebook and following many requests we decided to embark on a capacity building program focussing on main areas of sustainable urban transport.

- We are working together with various organisations in this regard.
Material for Sustainable Transport

- Sourcebook (at present 26 modules)
  - print
  - online version
  - PDF
  - HTML format
  - PowerPoint presentations

- Training material
  - print
  - online version
  - PDF
  - PowerPoint presentations

- Online training courses material

- Photo CDs/DVD

- Videos
Capacity Building

Sustainable Urban Transport Training Courses
(Mexico Sept 2006)
Training courses on sustainable urban transport topics delivered until May 2008
Web site access- 3 languages

English (Asia, Africa)

www.SUTP.org (Chinese website: www.SUTP.cn)
Module 5e: Transport and Climate Change

- Key issues of linkage between Transport and Climate Change
- Planning, Economic, Technological and other instruments and how they can be applied
- CDM methodologies
- GEF financing
- Translated to Spanish, Chinese
For more information and documents

[www.gtz.de/climateandtransport](http://www.gtz.de/climateandtransport)
[www.sutp.org](http://www.sutp.org)

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Transport and Climate Change
Module 11
Sustainable Transport: A Handbook for Policy-makers in Developing Cities

The CBD in the Transport Sector
Module 10
Sustainable Transport: A Handbook for Policy-makers in Developing Cities