

There is a growing awareness that the significant reduction in greenhouse gases required to meet ambitious post-Kyoto targets have to include the transport sector. Irrespective of the future role of emission trading, all countries are facing the challenge of changing their transport systems towards more sustainable solutions that address growing CO<sub>2</sub> and that will increase energy efficiency across the sector. The key strategies for this are:

- to reduce the need for transport,
- shift to more environmental friendly transport modes,
- provide more choice and
- identify technical solutions to support future low-carbon transport systems.

## Tackling the problem of urban transport

The transport sector plays a critical, overarching role in the global economy facilitating access to jobs, education, health care, markets as well as for social and leisure activities. Yet transport also has a detrimental effect on the environment and human health, resulting in conflicts in the development and the application of transport policy.

**Urban centres generate the prosperity of countries. In Europe more than 70% of its wealth comes from its metropolitan areas, so in this period of economic down-turn it is more important than ever to address how people are able to move about and get to jobs and education.** Yet in most cities, and almost all of those in the developing world, mobility is hampered by the present model of development based on high levels of auto dependence rather than a combination of modes.

Land-use and transport systems in developing countries are presently following the route of motorisation, ignoring the experience of Annex 1 countries; where this has produced high levels of GHG, local pollution, health problems due to air pollution, congestion and reduced the accessibility for the poorer sectors of society.

**Motorization rates are increasing in cities around the world.** Traffic fatalities, injuries, the direct effects of transport air pollutants on mortality and respiratory disease, annoyance and impairment due to transport-related noise, well documented as negative externalities, are also on the increase. There is now an urgency to address these as well as the greenhouse gas emissions from urban transport. The adverse effects of traffic are worse in the developing world where transport fleets tend to be older and less well maintained (or technically inefficient) and resources are more limited.

It is well known that CO<sub>2</sub> emissions globally from transport are growing. In Europe as much as 40% of the CO<sub>2</sub> emissions coming from transport are generated from metropolitan areas. It comes as no surprise that transportation was established as a priority by the Conference of the Parties 10 (COP 10), with a focus on developing and considering new methodologies.

**Transport intensity, and therefore its carbon footprint, depends largely on its availability and affordability.** In the

past 50 years the availability and affordability of motorised transport has been dramatically reduced for much of the world. The full effect of rising incomes in the developing world is only just beginning to be felt – and as long as we do not include the negative effects it has on the environment, human health and in particular the climate – we are locked into depending on fossil fuels to get around.

**Unfortunately, more than three years after COP 10, transport is not well represented in the CDM project portfolio.** Of the roughly 1,300 registered CDM projects, only a handful are in the transportation sector, with only two projects involving public transport (the Transmilenio in Bogotá and the Delhi Metro). In other words the signals from the industrialised countries towards the developing worlds encouraging them to invest in sustainable transport networks as part of their burden sharing towards global actions to address climate change are simply not there.

### Key points

- 1 More people are living in cities than in rural areas (UNHABITAT) so the influence of urban transport on CO<sub>2</sub> levels can no longer be neglected.
- 2 The present carbon financing mechanisms are not helping governments in the developing world make the necessary investments to achieve sustainable urban transport networks
- 3 Measures and policies that change individual behaviour will help fill the gap before cleaner technologies in urban transport become mainstream.
- 4 New, better adapted flexible financing mechanisms appropriate to changing the present paradigm of urban transport networks must be part of the post Kyoto 2012 agreement.
- 5 Leadership from the industrialised world has to become a priority.

<sup>1</sup> The Tenth Session of the Conference of the Parties was held on 6-17 December 2004 in Buenos Aires, Argentina ([http://unfccc.int/meetings/cop\\_10/items/2944.php](http://unfccc.int/meetings/cop_10/items/2944.php)).

## What are we asking for:

- 1 A sectorial approach as put forward in the Bali Road Map to be applied to the transport sector, with special considerations for the different modes of transport.
- 2 The complexity in understanding the different mobile sources of GHG from transport and the fundamental differences between the modes and subsectors – maritime, aviation, road, rail, passenger and freight – should be more broadly recognised.
- 3 Urban passenger transport is set to grow and this needs special attention in the post Kyoto 2012 period
- 4 CDM and other flexible mechanisms need to be better adapted to help finance and send clearer signals to the developing world of the need to invest in comprehensive and sustainable transport systems.
- 5 A clear proposal for a pilot period post 2012 specifically addressing urban transport and maximising energy efficiencies.



## Business as usual:

- The current trajectory is one of increasing emissions from transport.
- Deep cuts in emissions are needed.

The urgency to address transport has become imperative as technologies and developments will take too long to make the required reductions.

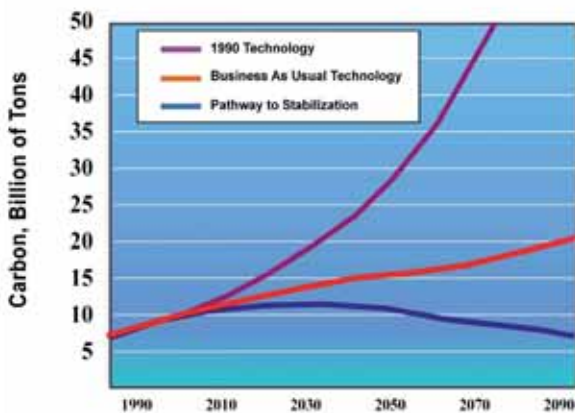
**It is clear that the more we emit in the near term the more we must reduce later.** Few countries are managing to contain their emissions from transport and all modes need to take responsibility to reduce their own emissions and increase their energy efficiency.

**Transport needs to be tackled as a whole system – where the sustainability assets of each mode are exploited.**

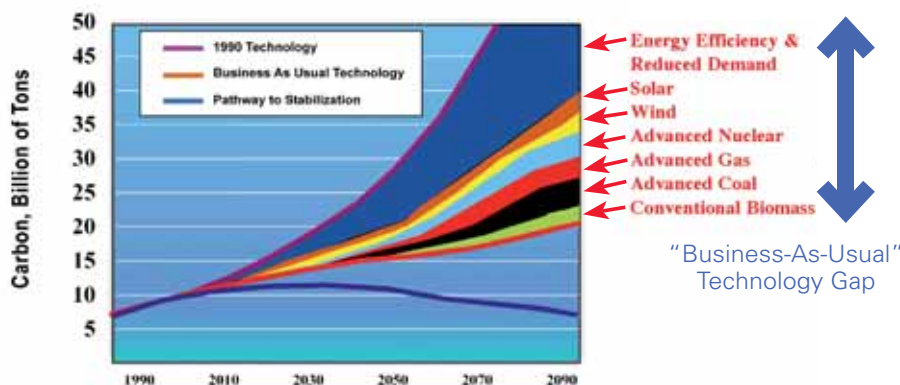
Railways cause as little as 1% of the global CO<sub>2</sub> emissions from the transport sector. To take the train is the one of the most sustainable and energy efficient way of travelling and transporting goods. A single person in a car is emitting 3-10 times as much CO<sub>2</sub> emissions as a person in a train, depending on the load and energy used for traction. CO<sub>2</sub> emissions for freight transport can be reduced 3-6 times by shifting from road to rail. Investment in rail based systems become affordable if they are integrated with other modes for maximum efficiency.



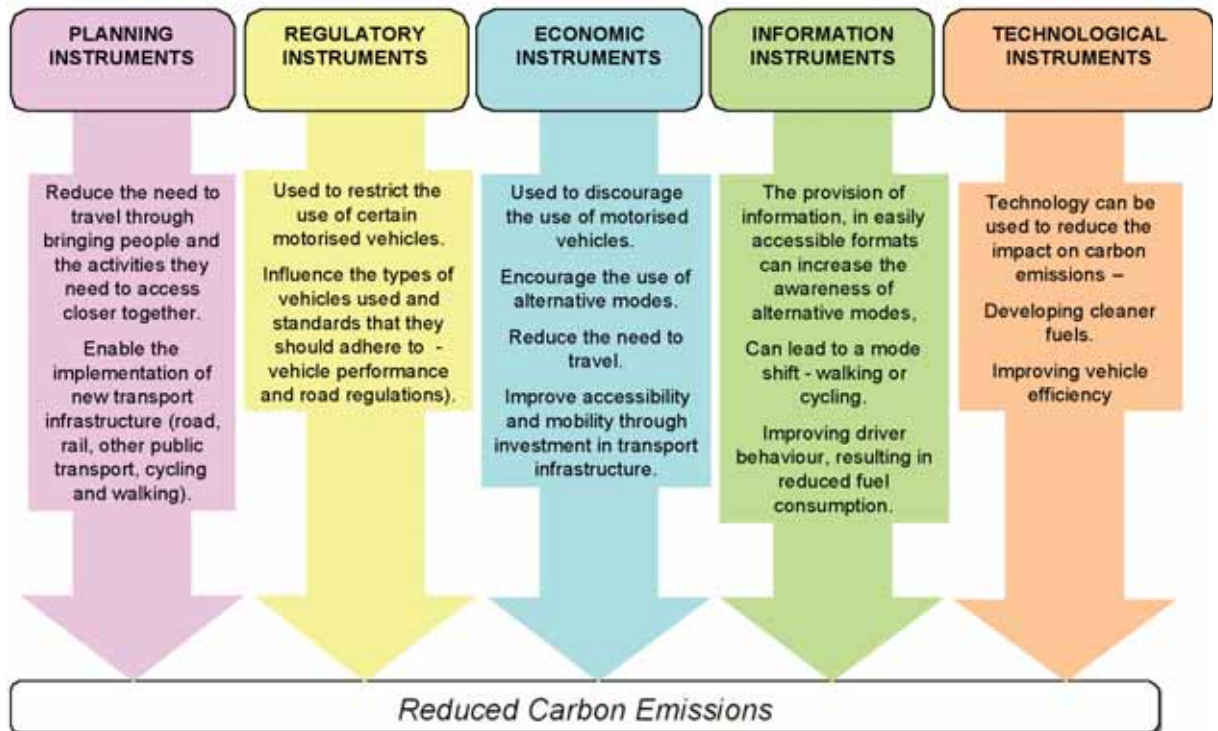
### Carbon Emissions



### Carbon Emissions



# Sustainable Transport Instruments



Source: Holger Dalkmann, TRL & GTZ

## Greenhouse gas abatement does not operate in a vacuum

**Technology cannot remain the cornerstone of effective climate policy and behaviour change must accompany new technologies in order to close the gap between now and 2050.** Behaviour change does not always mean a reduction in freedom but can also mean a realignment of mobility choices, readjusting what we understand by the notion of affordability.

Despite the difficulty that urban transport emissions stem from millions and millions of small decentralised sources, a large number of policy instruments exist to reduce emissions. Avoiding trips, shifting to less polluting modes and improving existing modes are the three major starting points for climate change mitigation in transport. The relevant policy instruments include planning, regulatory and economic measures, information as well as technical instruments.

**Make the climate right for public transport and public transport helps make the climate right.**

In Europe 80% of the population live in urban areas, producing most of the wealth and GDP for the region, but also a large proportion of the emissions. Globally emissions from transport will grow fastest in the developing world, especially in economies such as India, China and Brazil, but also in metropolitan regions in the industrialized world. The impact that cheap cars and cheap fuel has on the climate is enormous and even with new, cleaner technology demand will outstrip gains in energy efficiency and cleaner energies.



## The Organisations



TRL is one of the largest and most comprehensive independent centres for transport research and consultancy services in the world. It has developed a research-based technical knowledge that enables it to provide practical advice on sustainable transport and (Post-Kyoto) policy options for a low carbon future.

**Contact:** Holger Dalkmann, Head of The Environmental Assessment Group at the Centre for Sustainability (C4S) at the Transport Research Laboratory (TRL), UK ([hdalkmann@trl.co.uk](mailto:hdalkmann@trl.co.uk))



The GTZ is an international cooperation enterprise for sustainable development with worldwide operations. The GTZ Sustainable Urban Transport Project (SUTP) has developed an effective approach at raising awareness and understanding as well as improving capacity of policymakers, planners, engineers and academia in cities of the developing world.

**Contact:** Manfred Breithaupt, GTZ Senior Transport Advisor and Project Director of SUTP, Germany ([Manfred.Breithaupt@gtz.DE](mailto:Manfred.Breithaupt@gtz.DE))



The International Union of Railways (UIC) is the world-wide organisation for international cooperation among railways and promotion of the rail transport mode. Since 2006 the main UIC mission consists in promoting Rail transport at World level in order to meet challenges of Mobility and Sustainable Development. UIC's 171 members include railways, rail operators, infrastructure managers, railway service providers, and public transport companies on all 5 continents.

**Contact:** Margrethe Sagvik, Senior Environment Manager ([sagevik@uic.asso.fr](mailto:sagevik@uic.asso.fr))



UITP, the International Association of Public Transport, with 3000 members in 90 countries covers all modes of public transport. It is headquartered in Brussels with 9 offices worldwide. Its members include both private and public operators of public transport, the service and supply industry, organizing authorities, research and academic institutes. It is currently working with its members on calculating carbon avoidance.

**Contact:** Heather Allen, Senior Manager Sustainable Development ([heather.allen@uitp.org](mailto:heather.allen@uitp.org))

## Sources and further reading

**GTZ** publishes since 2001 their series "Sourcebook for Policy-Makers in Developing Cities" on Sustainable Urban Transport. It addresses the key areas of a sustainable transport policy framework for developing cities. The Sourcebook has more than 26 modules including one on 'Transport and Climate Change' and one on "The CDM in the Transport Sector" and is complemented by a series of training documents and other material available from their website (<http://www.sutp.org> and <http://www.sutp.cn> for Chinese users).

**UITP** has a charter of sustainable development and inventory of climate change action plans. It is also working with other partners on creating a standard methodology for calculating greenhouse gas emissions from public transport taking displaced trips into account. A position on low carbon future with public transport is available from UITP's web site [www.uitp.org](http://www.uitp.org) and its electronic library of information and data on public transport Mobi+.

**UIC**, its European members, IFEU (German Institute for Environment and Energy) and IVE GmbH have developed a user-friendly internet calculator to compare the energy consumption, CO<sub>2</sub>- and exhaust atmospheric emissions for planes, cars and trains for passenger transport in Europe covering most countries. This tool challenges other existing methodologies by taking into account the whole energy chain and the life cycle costs of energy for the transport mode, helping both decision makers and consumers become better informed.

**UNEP Risoe Centre (URC)** report 'A Reformed CDM – Including New Mechanisms for Sustainable Development'. Finance for Sustainable Urban Transport is in the section Reforming CDM and Scaling up : <http://cd4cdm.org/Publications/Perspectives/ReformedCDM.pdf>