Recommendations
UITP the international association of public transport recommends:

International agencies and bodies
- Strengthen international and national agreements to bring down the overall emissions from transport and keep both local and international levels under control.
- Build more cross-sector, multi-stakeholder alliances between international agencies and all public transport actors that can influence and increase the awareness of the positive contribution that public transport and citizens’ behaviour changes can bring during the transition period until technology can bring really effective change thereafter.
- Identify key business and investment risks and opportunities.

National and regional governments
- Strengthen institutional frameworks and incentives for change and higher energy efficient transport such as environmental tax measures and/or road charges in urban areas targeting at increasing the costs of private car use.
- Increase transparent disclosure of urban transport sectors’ share of GHG production and the measures being taken to mitigate these impacts.
- Invest and allocate funds from taxes to public transport with priority given to high energy efficiency and low GHG emissions.
- Stimulate the market for alternative energies and clear, low emission technologies.

Local Authorities
- Increase the introduction of policies and measures to shift more trips to public transport.
- Invest more strongly in making urban areas more energy efficient and providing better infrastructure for public transport to increase its energy efficiency and general attractiveness.
- Advise citizens on climate change, and the risks and responsibilities of present transport modes and choices.

Operators (all modes)
- Declare climate action policies and evaluate the risks of inaction.
- Assess the risks of climate change.
- Communicate the benefits of public transport to all stakeholders.
- Increase transparent disclosure of urban transport sectors’ share of GHG production and the measures being taken to mitigate these impacts.
- Invest and allocate funds from taxes to public transport with priority given to high energy efficiency and low GHG emissions.
- Stimulate the market for alternative energies and clear, low emission technologies.

UITP position paper
The risk of climate change and the related impacts on transport and climate change can be downloaded from the UITP website www.uitp.com

Scientific Community
- Help clarify the scientific evidence and make it more transparent.
- Play a more proactive role with politicians and help them make informed decisions based on scientific knowledge.

All Citizens
- Make conscious decisions to reduce the overall number and to change trips that can be made by public transport, walking or cycling.
- Be more aware of the risks of climate change.

Related UITP information
Fuel choices for public transport, Environmental demands and efficiency (November 2006) – UITP position prepared by the Bus Committee
An annex to this position with complementary information on transport and climate change can be downloaded from the UITP website www.uitp.com

The contribution of public transport to reducing carbon use and the mitigating the risk of climate change; this paper will provide a short background on greenhouse gases (GHG), define the share and responsibility for public transport and provide recommendations.

Background
- Man-made emissions and increasing levels of carbon dioxide are altering the natural climate cycles; bringing extremes in weather all over the world. The extent of the impact and how reversible these effects are may still be unknown, but the direct and indirect consequences of the changes that we are already experiencing present risks that should not be ignored. For example, the weather-related economic losses of Hurricane Katrina, which hit the United States in summer 2005, are estimated at US$45 billion. As global warming continues the annual toll could reach US$150 billion in the next 10 years and US$300 billion by 2050. Reducing the risk of extreme weather and operation costs caused by climate change is therefore of crucial importance.

A low carbon future with public transport

Focus

What is the Greenhouse Gas effect?
The earth is protected from the sun by a blanket of gases. Some of the sun’s energy penetrates this layer and the reverse allows energy to escape into space. Excess GHGs change the balance of this naturally occurring process and alters the thickness of this layer, meaning that more heat/energy is trapped and the temperature around the planet increases. The Intergovernmental Panel on Climate Change (IPCC) believes that the warming of the Earth should be limited to 2°C, this means limiting the concentration of CO2 in the atmosphere to 450 parts per million.
GHG Emissions from transport

Global emissions of carbon dioxide from transport are growing faster than for any other sector and now represent around 26% of the total global emissions (UNECE). Furthermore, GHG from transport are negating the efforts being made by other industries to reduce their emissions.

A range of steps need to be put in place in the transport sector to deliver reductions in transport emissions including behavioural, physical and fiscal measures that will help stimulate the transition to cleaner transport technologies. There is also scope for accelerating the implementation of some new technologies.

Relaying exclusively an technology is high risk

New engine technology, better fuels and other improvements have not had the required significant overall impact on emissions in recent years due to the offset by sheer growth in traffic, particularly in urban areas. However, measures that help stimulate the transition to cleaner technologies are urgently needed. There is also scope for accelerating the implementation of some new technologies.

Technologies have developed in recent years to reduce CO2 emissions per passenger per kilometre of public transport. While electric vehicles currently have a small market share, it is envisaged that the technology will develop rapidly to facilitate significant reductions in CO2 emissions from urban transport over the next few decades.

Technology will only make a difference by 2040

Predictions of 1.6 billion cars by 2030 and the present focus on fuel and propulsion based improvements will help not deliver the required change within an appropriate timeframe. GHG emissions from transport growing annually, there has been little progress in recent years.

Society must reduce its dependence on cars and embrace the use of public transport as a key tool to combat global warming.

This was the message that was delivered on behalf of Jean Paul Bailly, UITP President to the United Nations Conference on Climate Change in Kyoto on 5 December 1997 at the beginning of the Kyoto Process. With emissions from transport growing annually, there has been little progress in recent years.

Changes in the climate due to increased emissions are difficult to measure but scientists unanimously agree that the world is warming.

In the context of Kyoto, the developed world must not only set an example of good practice but also encourage developing countries to follow suit.

A combination of measures to lower the per capita emissions from transport in each country is now urgent, with every citizen responsible for their transport choices and taking actions to reduce their individual carbon use. Governments and local authorities can stimulate these actions but without attractive alternatives and an integrated approach to land use planning and energy policy, this will not become a sustainable reality.

New engine technology, better fuels and other improvements have not had the required significant overall impact on emissions in recent years due to the offset by sheer growth in traffic, particularly in urban areas. However, measures that help stimulate the transition to cleaner technologies are urgently needed. There is also scope for accelerating the implementation of some new technologies.
Changes in the climate due to increased emissions are difficult to measure but scientists unanimously agree that GHG emissions are accelerating any natural change cycles. Natural cycles and fluctuations associated with the greenhouse effect also mean that CO₂ concentrations remain in the atmosphere for as long as 150 years; thus we are only experiencing today the effects of CO₂ increases from the Industrial Revolution.

An increasingly urbanised World
The impact of increased urbanisation cannot be ignored as more and more people migrate to cities. By 2050 there will be over 6 billion urban dwellers in the world, of which 5.5 billion will be found in Asia and China alone. Cities currently account for over 2/3 of all energy use and 75% of all resources. Two-thirds of global urban growth will take place in the developing world over the next 25 years. Cities must therefore play a key role in reducing CO₂ emissions.

GHG Emissions from transport

Global emissions of carbon dioxide from transport are growing faster than for any other sector and now represent around 26% of the total global emissions (UNECE). Furthermore, GHG from transport are negatively affecting the efforts being made by other industries to reduce their emissions. A range of policies need to be put in place in the transport sector to deliver reductions in transport emissions including behavioural, physical and fiscal measures that will help to tackle emissions quickly until cleaner technologies mature. There is also scope for accelerating the implementation of some new technologies.

Reliably exploiting an entirely new technology

New engine technology, better fuels and other improvements have not had the required significant overall effect on CO₂ emissions, at least in part due to the offset by the sheer growth in traffic, particularly in urban areas. The relatively low carbon intensity of many urban transport networks can thus reduce the carbon footprint of these fast growing metropolitan areas.

As more than 50% of urban trips made by car or an urban rail transport system, and many cities experience severe commuter peaks, city authorities will need to focus on how transport networks can be designed to deliver an improved urban travel experience while reducing CO₂ emissions. The role of passenger rail and integrated urban transport systems is essential. A focus on the urban transport system and the transport network can deliver a significant CO₂ reduction.

Global Measures to support Low Carbon Transport

Carbon Trading

One option is to develop better calculated GHG emissions on regional and local basis and investigate the possible role of urban transport and policy and GHG emissions, comparing the different impacts of transport policy and climate change.

It is important to adapt the present system used for carbon trading such as the Clean Development Mechanism (CDM) to stimulate building efficient urban transport networks in developing countries and to improve public transport's recent improvements in automotive technology. In peak hours when most transport problems occur, urban centres produce on average as much CO₂ as 100% of transport in the world. Therefore, reducing CO₂ by 50% will probably double from

Forecast of CO₂ emissions

Forecast of CO₂ emissions until 2050: Note: Source: Facts and Trends to 2050 Energy and Climate Change.

Technology will only make a difference by 2040

Predictions of 1.6 billion cars by 2030 and the present focus on fuel and propulsion-based improvements will help not deliver the required changes within an appropriate timeframe. However, the effectiveness of GHG emissions from transport is improving. In general, CO₂ emissions from transport are improving; in 2007, there have been significant reductions in the past years. New engine technology, better fuels and other improvements have not had the required significant overall effect on CO₂ emissions, at least in part due to the offset by the sheer growth in traffic, particularly in urban areas. The relatively low carbon intensity of many urban transport networks can thus reduce the carbon footprint of these fast growing metropolitan areas.

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Changes in the climate due to increased emissions are difficult to measure but scientists unanimously agree that GHG emissions are accelerating any natural change cycles. Natural changes and fluctuations associated with the greenhouse effect also mean that CO₂ concentrations remain in the atmosphere for as much as 150 years; thus we are only experiencing today the effects of CO₂ increases from before 1950s onwards.

An increasingly urbanised World

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A combination of measures to lower the 25% emissions from transport is now urgent. A large number of cities are recognising their responsibility for their transport choices and taking actions to reduce their individual carbon use. Governments and local authorities can stimulate these actions without attracting alternative services and an integrated approach to land use planning and energy policies will thus not become a sustainable reality.

New engine technology, better fuels and other improvements have not had the required significant overall impact on a global scale. Despite efforts the offset by the sheer growth in traffic, particularly in urban areas, means that transport emissions have not decreased enough to yield cleaner technology matures. There is also scope for accelerating the implementation of some new technologies.

The re-consideration of the world developing in the 2010s is urgent. New car models have increased engine efficiency but as more people migrate to cities. By 2010 more than half the world’s population will live in cities, there has been little progress in nearly ten years.

A combination of measures to lower the average occupancy car: 1,2 persons, bus: 16 persons. Despite this, it is still necessary for public transport to demonstrate that it is working on improving its efficiency. As more than 50% of urban trips made by car an car share is below 50% in urban areas. Higher comfort levels in many vehicle specifications such as air conditioning and GPS will help to increase energy use per capital in cities should therefore be reduced.

Technology will only make a difference by 2040

Predictions of 1-2 billion cars by 2020 and the present focus on fuel and propulsion based improvements will help to not deliver the required change within an appropriate frame within other measures and changes in our mobility behaviour. Today about 750 million Light Duty Vehicles (LDV) worldwide. Signatories have committed to ensure that GHG emissions from non-polluting and renewable sources. Other solutions include ignoring the problem of CO₂ on a global scale. Despite the efforts to mitigate climate change on their business. Companies must then implement those measures, putting the citizen, and not the car, at the centre of urban development creating sustainable communities designed around walking, cycling and collective public transport.

The Way Forward – The Role of Public Transport

There is just one responsibility for all transport actors to play a role in reducing their carbon impact. Public transport authorities and operators have a vested interest in not only their own carbon emissions, but also in ensuring that their urban transport sector to deliver reductions in transport sector to deliver reductions in transport emissions including behavioural, physical and fiscal measures that will help to support these efforts only in the future.

Global Measures to support Low Carbon Transport

Carbon Trading

Market based solutions to better calculate GHG emissions on national, local and basis and investigate the different policies of transport network and GHG emissions, comparing the different impacts of measures more easily and quickly. It is important to adopt the present schemes used for carbon trading such as the Clean Development Mechanism (CDM) to stimulate building effective, efficient, and reduced traffic flow and congestion. Urban sprawl makes all urban transport less attractive alternatives and an integrated approach to land use planning and energy policies will thus not become a sustainable reality.

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A low carbon future with public transport

THE CONTRIBUTION PUBLIC TRANSPORT MAKES TO REDUCING CARBON USE AND THE MITIGATING THE RISK OF CLIMATE CHANGE, THIS PAPER WILL PROVIDE A SHORT BACKGROUND ON GREENHOUSE GASES (GHG), IDENTIFY THE SHARE AND RESPONSIBILITY FOR PUBLIC TRANSPORT AND PROVIDE RECOMMENDATIONS.

Background

Man-made emissions and increasing levels of carbon dioxide are altering the natural climate cycles; bringing extremes in weather all over the world. The extent of the impact and how irreversible these effects are may still be unknown, but the direct and indirect consequences of the changes that are already occurring present risks that should not be ignored. For example, the weather-related economic losses of Hurricane Katrina, which hit the United States in August 2005, were estimated at US$100 billion. As global warming continues the annual toll could reach US$150 billion in 2050, US$300 billion by 2060 and US$1 trillion by 2090. Reducing the risks of extreme weather and operational costs caused by climate change is therefore of crucial importance.

The earth is protected from the sun by a blanket of gases. Some of the sun’s energy penetrates this layer and the reverse allows energy to escape into space. Excess GHGs change the balance of this naturally occurring process and alters the thickness of this layer, meaning that more heat energy is trapped and the temperature around the planet increases. The Intergovernmental Panel on Climate Change (IPCC) believes that the warming of the Earth should be limited to 2°C, this means limiting the concentration of CO2 in the atmosphere to 450 ppm.

1 Greenhouse Gas.
3 January 2007
4 Source Sustrans UK
5 Related UITP information
6 UITP position paper
8 This Focus Paper has been produced by the UITP Sustainable Development Commission and has been approved by the UITP Policy Board.
9 This is an official position of UITP, the International Association of Public Transport. It has over 2700 members in 56 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organizational and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.
10 The role of public transport to reduce climate change and improve energy efficiency UITP’s European position on climate change and energy prepared by the EU committee (January 2006)
11 Munro, J., The role of public transport: reducing climate change and improving energy efficiency UITP’s European position on climate change and energy prepared by the EU committee (January 2006)
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Background
Maine-emissions and increasing levels of carbon dioxide are altering the natural cycles; bringing extremes in weather all over the world. The extent of the impact and how irreversible these effects are may still be unknown, but the direct and indirect consequences of the changes that we are already experiencing present risks that should not be ignored. For example, the weather-related economic losses experiencing present risks that should not be ignored. For example, the weather-related economic losses and the reverse allows energy to escape into space. Excess GHG change the balance of this naturally occurring process and alters the thickness of this layer, meaning that more heat energy is trapped and the temperature around the planet increases. The intergovernmental Panel on Climate Change (IPCC) believes that the warming of the Earth should be limited to 2°, this means limiting the concentration of CO₂ in the atmosphere to 550 ppm.

What is the Greenhouse Gas effect?
Climate change is defined as the long-term alteration in climate that can be attributed to human activities. Climate change is caused mainly by the increased production and release of greenhouse gases (GHG) such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These gases trap heat in the atmosphere, causing the Earth's temperature to rise.

The role of public transport in reducing climate change and improving energy efficiency UITP's European position on climate change and energy prepared by the EU committee (January 2006)

An annex to this position with complementary information on transport and climate change can be downloaded from the UITP web site www.uitp.com.

A low carbon future with public transport

The contribution public transport makes to reducing carbon use and the mitigating the risk of climate change, this paper will provide a short background on greenhouse gases (GHG), initiatives, the share and responsibility for public transport and provide recommendations.

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