

# Reducing the environmental impact of public ground transport in metropolitan areas

Forum: 2<sup>nd</sup> Committee (Environmental & Cultural)

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## **Introduction**

With the appearance of public ground transport in 1662 in Paris, the problem of environmental impact became more acute and affected virtually all states to a greater or lesser extent. Emissions from road transport vehicles are a major contributor to greenhouse gases and are suspected to cause respiratory problems and diseases. The environmental impact of transport burns most of the world's petroleum and is supposed to be a major user of energy. This creates air pollution and it is a significant contributor to global warming through emission of carbon dioxide (CO<sub>2</sub>). Public transport also causes acid rain, smog and climate change by ejecting toxic gases into the environment. The development of transport networks plays an essential role in the economies of the countries, makes the life of the population more comfortable and more convenient. Notwithstanding this at the same time by its' impacts on the environment in metropolitan areas it harms, firstly, the same population and, secondly, particular countries and the whole global society as ensuing consequence.

## **Definition of key terms**

Environmental impacts – possible adverse effects caused by a development, industrial, or infrastructural project or by the release of a substance into the environment.

Public transport – a shared passenger transport service which is available for use by the general public, distinct from modes such as taxicab, carpooling, hired buses, and space companies, which are not shared by the general public without private arrangement.

Greenhouse gases – gases whose absorption of solar radiation that are responsible for the greenhouse effect; include carbon dioxide, methane, ozone, and the fluorocarbons.

Respiratory problems and diseases – airborne problems and diseases.

Global warming – an increase in the average temperature of the Earth's climate system.

## **Background information**

The problem grew in parallel with the development of transport. The better transport sphere is developed, the more accessible and in demand different modes of transport are. Consequently, the more it is used and more energy resources are required. This means that the emission of harmful

substances and environmental impact in metropolitan areas increases at times. 21<sup>st</sup> century is a century of technical progress and the environmental impact of public ground transport in metropolitan areas is really strong. 15% of global CO<sub>2</sub> emissions are related to the transport sector. In 2002 Brookings Institution and the American Enterprise Institute found out that public transport in the U.S uses about a half the fuel required by cars, light trucks, and SUV's. In Europe, the European Commission insisted that from 2015 all new cars registered shall not exceed more than an average of 0.130 kg of CO<sub>2</sub> per kilometer (kg CO<sub>2</sub>/km). The aim is that by 2021 the average emissions for all new cars will be 0.095 kg of CO<sub>2</sub> per kilometer. Only in US public transportation with its overarching effects on land use is estimated to reduce CO<sub>2</sub> emissions by 37 million metric tons annually.

### **Major countries and organizations involved**

Especially highly developed countries are greatly involved because of their large cities.

Some of the most involved are:

- America
- Japan
- China
- Mexico
- India

Organizations:

- Global Green Growth Institute (GGGI)

The organization promotes green growth, a growth scheme characterized by a balance of economic growth and environmental sustainability. GGGI provides research and stakeholder involvement for green growth plans, aiming to replace the more typical paradigm based on industrial development, especially in developing countries.

- Intergovernmental Panel on Climate Change (IPCC)

The organization provides policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

- International Union for Conservation of Nature (IUCN)

The organization influences, encourages and assists societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

- United Nations Environment Program (UNEP)

The organization defines the global environmental agenda, promotes the coordinated implementation of the environmental component of sustainable development within the UN system.

- The Committee on Environmental Policy of the United Nations Economic Commission for Europe (UNECE)

UNECE's major aim is to promote pan-European economic integration.

### **Relevant treaties and UN resolutions**

1. Stockholm Declaration (accepted on the United Nations Conference on the Human Environment that was held in Stockholm, Sweden from June 5–16 in 1972)

Offers general principles for inspiration and leadership of the peoples of the world in the field of conservation and improvement of the human environment.

2. Kyoto Protocol (accepted in 1997 in Kyoto, Japan)

Proposes measures to reduce greenhouse gas emissions on the basis of scientific consensus that global warming is occurring and it is highly likely that CO<sub>2</sub> emissions from human exposure have mostly caused it.

3. The United Nations Framework Convention on Climate Change (UNFCCC) adopted at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992.

The framework establishes optional restrictions on greenhouse gas emissions for individual countries and does not contain enforcement mechanisms. The Convention suggests measures to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference in the climate system.

4. Paris Agreement (adopted in 2015 in Paris, France and entered into force 2016)

Deals with greenhouse gas emissions mitigation, adaptation and finance.

5. The Bali Action Plan (2007), the Copenhagen Accord (2009), the Cancún agreements (2010), and the Durban Platform for Enhanced Action (2012) were accepted by parties that have agreed to further commitments during UNFCCC Conferences of the Parties in addition to the Kyoto Protocol (and its amendment) and the Paris Agreement.

As well these agreements deal with greenhouse gas emissions mitigation, global warming, and other global problems of the environment.

## **Previous attempts to solve the issue**

In 2007 Brazil achieved a success in using biofuels and met 17% of its transport fuel needs from bioethanol. Actually, the success came because of specific local circumstances. Green vehicles are being created. This kind of transport produces less environmentally harmful impact than engine vehicles running on gasoline or diesel or other alternative fuels. These vehicles contribute to energy independence by reducing oil imports and consequently reducing greenhouse gas emissions and air pollution. Brazil manufactured cars that run on neat ethanol, though production was stopped. Enterprises converting a conventional gasoline-powered vehicle to allow the alternative use of Compressed Natural Gas became widely used. China, Brazil, Pakistan, Argentina, Iran, India, Italy have the largest fleets of natural gas vehicles in the world. All Western European countries except Italy and Luxembourg, plus the Czech Republic and Romania encourage buying of electric cars, plug-in hybrids, hybrid electric vehicles and natural gas vehicles by bonus payments, incentives consist of tax reductions and exemptions. Colombia; Portland, Curitiba, Brazil, Bogota, Oregon, Vancouver, Canada have included sustainability as a main consideration in transport and land use planning. The Transport Integration Act passed legislation in Australia and the state of Victoria in 2010.

## **Possible solutions**

- Formally integrate land-use and transport planning processes
- As a means to reduce unneeded traveling create programmes and policies that support Information and Communications Technologies (ICT) as internet access, telecommuting, teleconferencing
- Encourage an integration of sustainable and green
- vehicles Gardening of metropolitan areas
- Allocation of funds for the study and creation of a more environmentally friendly kind of fuel and types of public transport
- Support work towards more sustainable transport fuels and technologies, including greater market introduction of options as natural gas, hybrid technology vehicles operating on electricity generated from renewable sources
- Assess the economic impacts of noise and air pollution, and devise mitigation strategies, especially aiding sensitive populations near high traffic concentrations in order to promote controlling of the health impacts from transport emissions and noise, especially with regard to incidences of pulmonary diseases, heart diseases
- Keep track of fuel quality and tailpipe emissions of all vehicle types, both new and in-use vehicles.

## Reliable and Useful Sources

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