

Urban Transport Situation and Challenges in Yerevan

Martiros Tsarukyan
Ministry of Nature Protection - Armenia

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sustainable and healthy urban transport
policies in South-east Europe**

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Structure of presentation

1. **Brief description of Yerevan**
 2. **Analysis of the current situation**
 3. **Main problems**
 4. **Required steps**
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1. Brief description of Yerevan

- Age- 2792 year
 - Population - 1.1 million
 - Territory - 227 km²
 - Population density - 4859 people per km²
 - 0.76% of the territory of the Republic
 - 34% of the all population
 - Altitude - 850-1420m above sea
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2. Analysis of the current situation

2.1 Vehicle use

2.2 Fuel Consumption

2.3 Fuel quality

2.4 Use of emissions standards, catalytic converters

2.4 Vehicle fleet

2.5 Vehicle impacts

2.6 Costs of fuel and public transport fares

2.7 Vehicle disposal

2.8 Infrastructure

2.9 Legal framework

2.1 Vehicle use

■ Passenger by mode

Passenger transportation in the Republic in 2000 - 137.2 million, in 2008 – 247.5 million passengers.

from which in 2008

Buses and Microbuses – 84%

Taxi - 6%

Underground lines – 7.6%

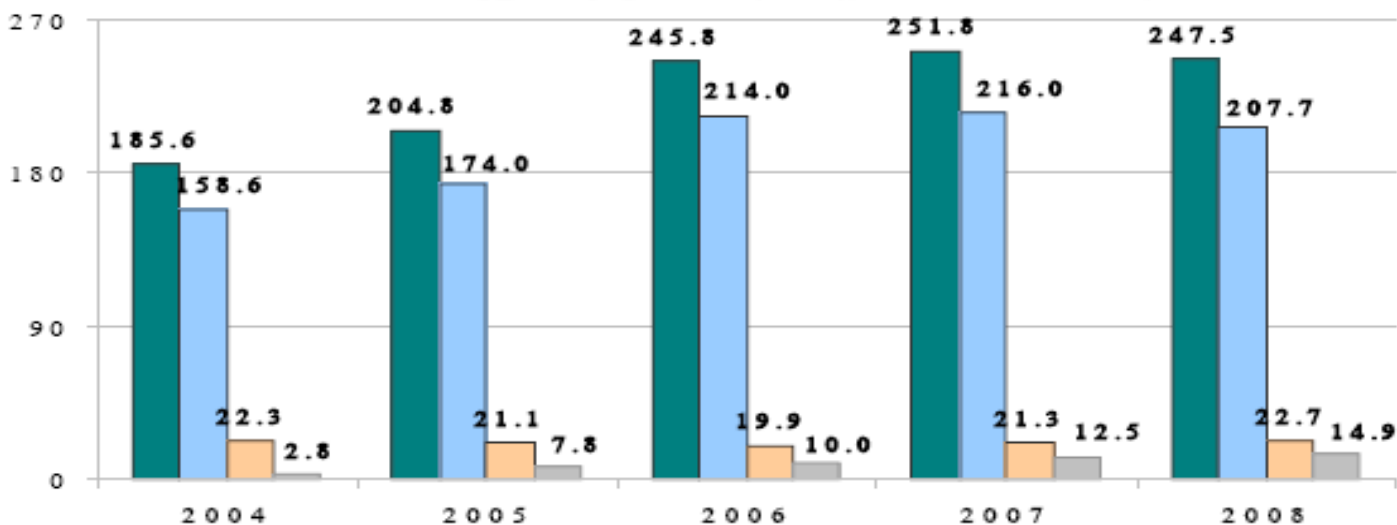
Trolleybuses – 1.4%

2.1 Vehicle use (continuation-1)

■ Passenger by mode – trends

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PASSENGERS TRANSPORTATION BY TYPES OF GENERAL PURPOSE TRANAPORT
ПЕРЕВОЗКИ ПАССАЖИРОВ ПО ВИДАМ ТРАНСПОРТА ОБЩЕГО ПОЛЬЗОВАНИЯ

մլն լան ուղևոր - million passengers - миллион пассажиров



■ տրանսպորտի բոլոր տեսակները -all kinds of transport - все виды транспорта

■ ավտոմոբիլային - motor vehicles - автомобильный

■ էլեկտրատրանսպորտ -electric transport - электротранспорт

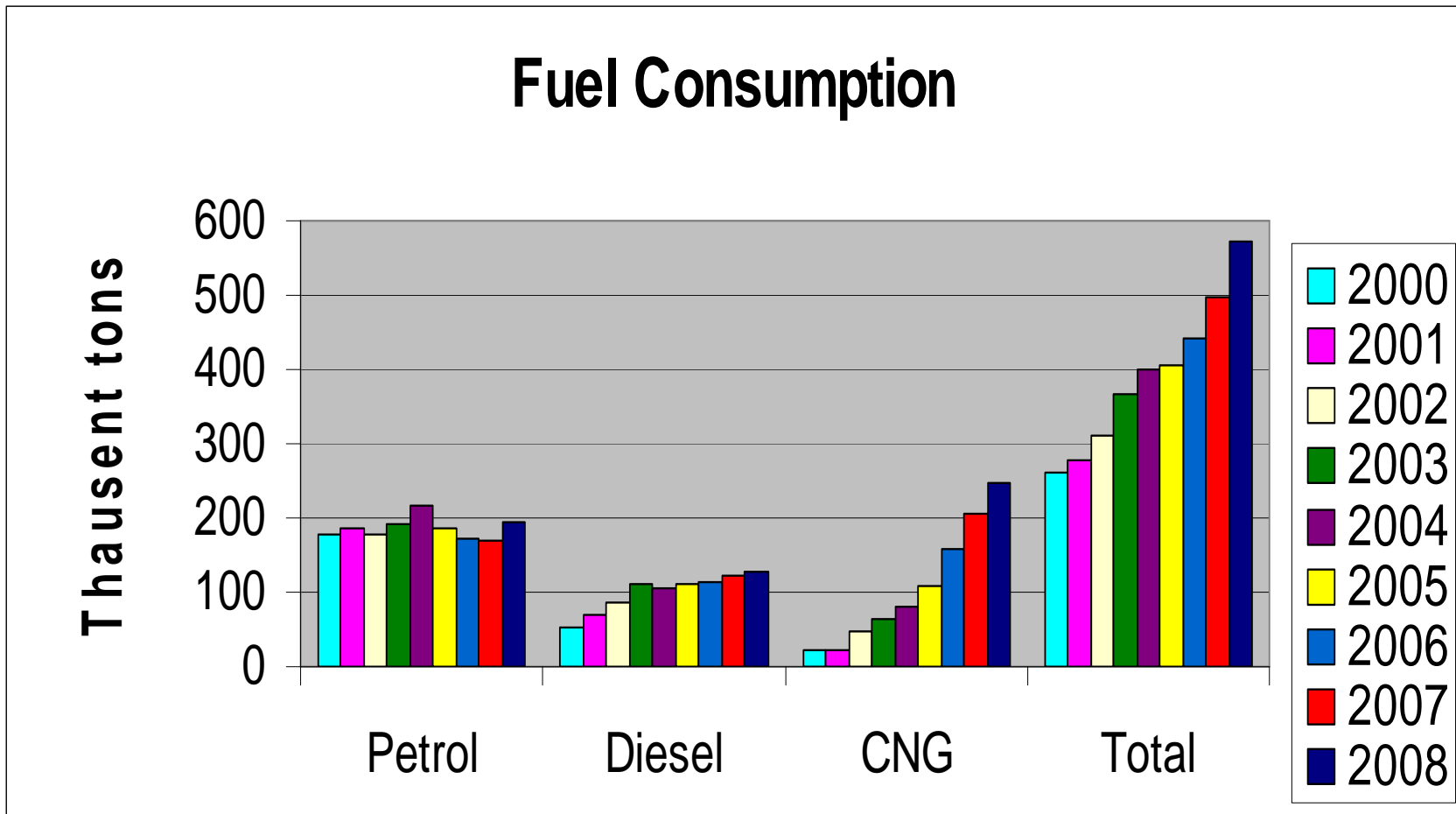
■ քերև մարդատար տարիներ -passenger taxi - легковые такси

2.1 Vehicle use (continuation-2)

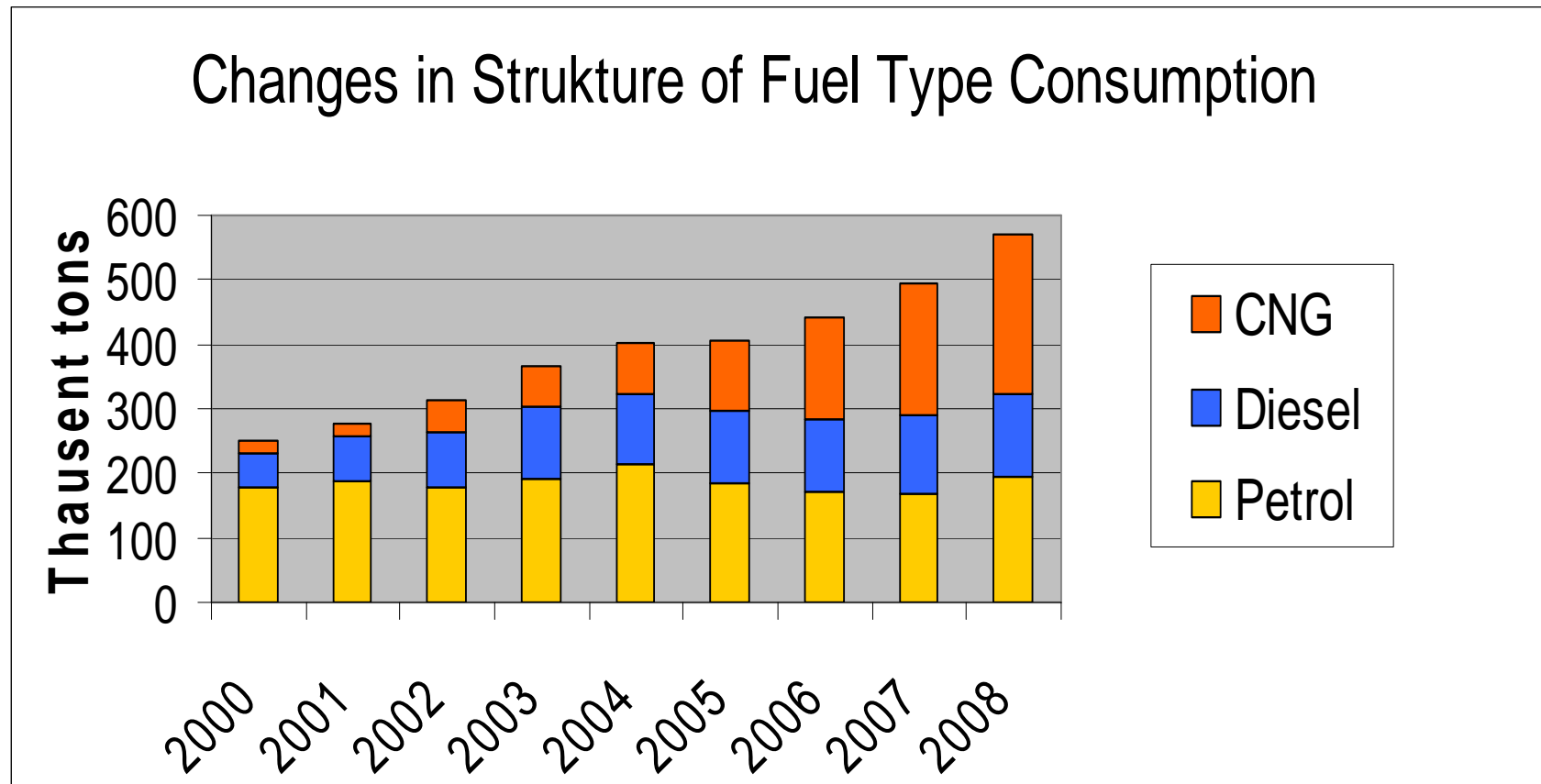
- **Occupancy rates of public transport - experts assessment**

Mode	rush-hours	other times
Minibuses	>100%	70-80%
Buses	100%	30-40%,
Underground	100%	50-40%,
Trolleybuses	40%	10-20%.
Cars	1.5 passengers per car	

2.2 Fuel Consumption



2.2 Fuel Consumption (cont.-1)



2.3 Fuel quality

- fuel quality standards
 - lead – 5 mg/dm³
 - sulfur – 10 mg/kg.
 - No biofuels
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2.4 Use of emissions standards, catalytic converters

- **The emissions standards are in compliance with UNECE regulations N 49-02, N 49-03, N 49-04, N 96-01, N24-03, N 83-04 and N83-05**
 - **Number of vehicles with neutralizers is very small**
 - **Ban on import of cars without neutralizers from 1st January 2007**
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2.5 Vehicle fleet

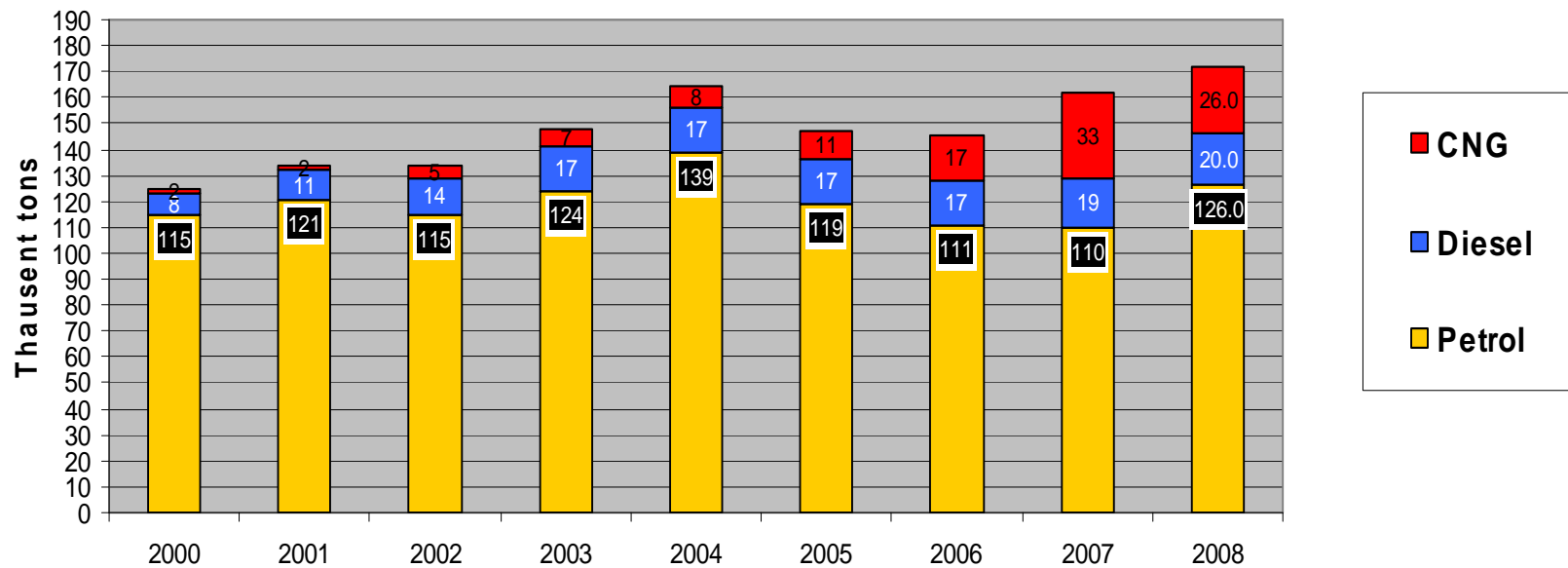
- ❑ **50% of transport means are in Yerevan**
 - ❑ **25% are more than 20 years old,**
 - ❑ **60% are between 10 and 20 years old**
 - ❑ **15% are less than 10 years old**
 - ❑ **and only 3% are less than 1 year old**
 - ❑ **Only 20% of cars imported in 2008 were new**
 - ❑ **Age restrictions - minibuses - 15 years, taxi-10 years**
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2.6 Vehicle Impacts- Air quality

- The average annual recorded level of air pollution, Yerevan-2008
 - ❑ dust – 1.3 MPL (maximum permissible levels)
 - ❑ nitrogen dioxide -1.7 MPL
 - ❑ tropospheric ozone – 1.5 MPL
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2.6 Vehicle Impacts - Emissions

Mobile Emissions Differentiated by Fuel Types



2.6 Vehicle impacts-2

- Noise – no studies
- Congestion - one of main problems
- Accidents

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 TRAFFIC ACCIDENTS¹
 ДОРОЖНО-ТРАНСПОРТНЫЕ ПРОИСШЕСТВИЯ¹

	2004	2005	2006	2007	2008	
Պատահարների քանակը	1164	1312	1574	1943	2202	Number of accidents Число происшествий
Պատահարներից տուժել է, մարդ.						Number of suffered from accidents, persons: Пострадало от происшествий, человек:
զոհվել է	259	310	332	371	407	killed погибло
վիրավորվել է	1492	1774	2089	2720	3125	injured ранено

¹ Փաստացի պատահարների քանակն ըստ ՀՀ կառավարության աղբյուրի ՀՀ ոստիկանության տվյալների:
 Number of actual accidents according to the data of Police RA by the Government of RA.
 Фактическое число происшествий, по данным Полиции РА при Правительстве РА.

2.7 Costs of fuel and public transport fares

- **Petrol - 1 USD/liter,**
 - **Diesel - 0.9 USD/liter,**
 - **CNG - 0.5 USD/liter.**
 - **The public transport fares are the following:**
 - **Microbuses, Buses - 0.26 USD,**
 - **Electric transport - 0.13 USD,**
 - **Taxi - 0.26 USD/km.**
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2.8 Infrastructure

- **Length by mode 2000-2008 years**
 - railways - 731.9km,
 - roads - from 7527km to 7704km,
 - tramways decreased from 43.1km to 0 km,
 - Trolleybus ways from 174.3km decreased to 92.6km,
 - underground - 12.1km
 - Rope-way (in Yerevan) - 5.7km to 0 km,
 - The total road area in Yerevan-15.9 million m² (7%)
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2.9 Legal Framework

- **Main new laws in recent years are**
 - **Concept on Reduction of Hazardous Emissions from Motor Vehicles**
 - **Action Plan on Reduction of Emissions from Motor Vehicles**
 - **New emission standards**
 - **Ban of leaded petrol**
 - **Ban on import of the cars without hazardous emissions neutralizers**
 - **On establishment of the technical inspection network**
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3. Main Problems

- **No Strategy or Action Plan on Transport Development**
 - **No Assessment of Impact on Health**
 - **Inadequate Monitoring of Air Pollution**
 - **Small share of electric transport in passenger transport**
 - **Not effective system of technical service**
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3. Main Problems – cont.

- **Bad management of traffic**
 - **No accepted strategy or perspective plan on public transport development**
 - **No steps on reduction of transportation general demand**
 - **Great number of out-of-order cars**
 - **Insufficient control**
 - **Low awareness level**
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4. Required steps

- **Developing of Strategy or Action Plan on transport development in compliance with environmental and health requirements.**
 - **Carry out studies for determination of negative impact of noise on health and environment in Yerevan**
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4. Required steps – cont.1

- **Awareness raising in the field of sustainable transport.**
 - **Developing of activities aimed at reduction of general transport demand**
 - **Development of activities contributing to restriction of passenger cars use and their intensity**
 - **Development of activities aimed at fuel efficiency increasing**
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4. Required steps – cont.2

- **Developing of activities aimed at increasing of share of electric transport in passenger transportation**
 - **Developing of activities aimed at traffic management improving (one-sided traffic systems, bus zones creation, etc),**
 - **Elaborating of measures aimed at improving of road quality and road network development.**
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4. Required steps – cont.3

- **Improving of driver's behavior with integration of “Environmentally Reasonable Driving” project and trainings**
 - **Developing activities for encouraging the use of cars with emissions neutralizers**
 - **Development of measures aimed at reduction of out-of-order cars**
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4. Required steps – cont.4

- **Encouraging of use of environmentally cleaner fuel**
 - **Periodical improving of fuel and lubricating oil standards and strengthening of control**
 - **Creation of effective technical service system**
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Thank You

Martiros Tsarukyan
Chief specialist
Environment Protection Department
Ministry of Nature Protection of the Republic of Armenia
Tel: (37410) 58 39 34
Fax: (37410) 58 39 33
E-mail: martiros@nature.am
