THE REGIONAL ENVIRONMENTAL CENTRE FOR THE CAUCASUS

Fuel Quality and Vehicle Emission Standards Overview for

the Azerbaijan Republic, Georgia, the Kyrgyz Republic, the Republic of Armenia, the Republic of Kazakhstan, the Republic of Moldova, the Republic of Turkmenistan, the Republic of Uzbekistan and the Russian Federation

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Based on the information gathered for and discussions during the first Conference on Clean Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia hosted by REC Caucasus
January 24-25, 2008, Tbilisi, Georgia

REC CAUCASUS

Partnership for Clean Fuels and Vehicles

THE REGIONAL ENVIRONMENTAL CENTRE FOR THE CAUCASUS (REC Caucasus) is a non-entrepreneurial (non-commercial) legal person established within the framework of the "Environment for Europe Process" in 1999 by the governments of Armenia, Azerbaijan, Georgia and the EU to assist in solving environmental problems as well as development of the civic society in the countries of the South Caucasus.

REC Caucasus successfully implements its mission through various programmes and projects throughout the Caucasus region. One of the tasks of REC Caucasus is to be a "bridge" between the public and governments. The Centre has proven to be a viable and independent organisation providing services to governments, local authorities, non-governmental organisations, businesses, media, international organisations and other environmental stakeholders. REC Caucasus plays an active role in interagency cooperation, too. The organisation together with active environmental NGOs and the ministries of environment promotes the idea of environmental protection and sustainable development in the South Caucasus countries.

For additional information about REC Caucasus, please, visit *www.rec-caucasus.org*

THE PARTNERSHIP FOR CLEAN FUELS AND VEHICLES (PCFV) is the leading global initiative promoting better urban air quality through the use of cleaner fuels and vehicles. Established at the World Summit for Sustainable Development in 2002, with over 110 member organisations including governments, international organisations, industry groups, and non-governmental organisations involved in efforts to eliminate leaded gasoline worldwide and promote low sulphur in fuels concurrently with the introduction of cleaner vehicles and vehicle technology.

The PCFV, whose Clearing-House is based at the United Nations Environment Programme (UNEP) headquarters in Nairobi, Kenya, provides technical, networking and financial support for regional, national and local activities promoting cleaner fuels and vehicles.

For more information on the PCFV and its work, please visit www.unep.org/pcfv

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BACKGROUND

Urban air pollution is a serious threat in many transition countries, affecting the health of urban residents. The transport sector is the main source for urban air pollution in most cities. The World Health Organisation (WHO) estimates that urban air pollution is responsible for over 800,000 deaths per year globally; the majority of this burden is borne by developing and transitional countries.

Air emissions from road transport have been the most rapidly increasing environmental problem in the EECCA region since the 1990s, owing to aging vehicle fleets, importation of substandard used vehicle technology, and the use of low quality fuel. Some countries have begun to address the negative effects of road transport with the introduction of unleaded petrol, new fuel quality standards, restrictions on the importation of used cars, and emission standards for road vehicles together with annual inspections. However, implementation and monitoring lags, with air quality, fuel and vehicle measures receiving little attention in terms of policymaking and compliance systems.

The Environmental Strategy for the EECCA countries acknowledges that "urban air pollution, particularly from mobile sources, has a major impact on human health" and that one of the main obstacles for the reduction of urban air pollution are the "inadequacies of regulation of road transport emissions." Two of the planned actions in this respect are the "optimization of standards, accounting for environmental and combined health impacts (based on WHO criteria)" and the "introduction of standards for products that directly affect the environment in the course of their use (road vehicles, fuel, etc.)". The Environmental Strategy also confirms that "the continuing expansion of transport demand, heavily dominated by road transport (further exaggerated by worn-out, high fuel-consuming and environmentally unfriendly vehicle fleet and transport infrastructure) raises serious concerns about the long-term sustainability of present mobility trends." Continuation of current transport trends in the region will aggravate environmental and health problems, particularly those related to air pollution, noise and land use. In addition, the continued of inefficient, polluting technology aggravates energy security concerns, along with trends for both CO_2 and non-CO_2 emissions (including black carbon, and the formation of ozone).

Implementing cleaner fuel and vehicle standards and programmes is one of the most resource efficient and effective ways of addressing vehicle emissions and air quality at the local, regional and trans boundary levels. Fuel quality directly affects vehicle emissions because the vehicle and its fuel form an integrated system. The vehicle-fuel system determines the quality and amount of emissions and the extent to which emission control technologies will be able to reduce them. Leaded petrol and high sulphur fuels, combined with ageing vehicles and a lack of emission controls, adversely affect this system, leading to higher vehicle emissions. Lead-free, low and ultra-low sulphur (less than 500 parts per million and 15 ppm respectively) enable the use of emission control technologies and immediately lower emissions from transport fleets.

Summary of Results

This report summarizes the result of data collection on fuel quality and vehicle emission standards and technology used at the national level in nine countries within the Eastern Europe, Caucasus and Central Asia (EECCA) region.

The high volume of transport emissions in the EECCA are determined by several factors. The most important are: 1) the low quality of automotive fuel, 2) the aging of the car fleet; and partly determined by the previous two: 3) insufficient use of modern technologies for control of emissions of automobiles.

The Report has shown that there is some progress already: All 9 countries of the EECCA region are gradually upgrading their standards of automotive fuel and introducing more stringent emission requirements for vehicles. In most countries leaded petrol is banned. Equally important is that allowed content of lead in unleaded petrol is also gradually decreasing. The content of sulphur in diesel fuel, however, still remains high in many countries and more efforts are necessary to foster further improvements.

The Partnership for Clean Fuels and Vehicles

The first Conference on Cleaner Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia was held in January 2008 in Tbilisi, Georgia. Following up on the Environment for Europe intergovernmental process, this meeting served as an initial step in engaging countries in further discussions and cooperation at the national level to create national action plans on the implementation of cleaner fuels and vehicles. Among the objectives of this regional and national approach were:

- the phase-out of leaded petrol in remaining countries (Uzbekistan and Tajikistan);
- a regional and sub-regional direction and strategy for reducing sulphur in fuels to at least 50 ppm, with time-lines and paths dependent on the country; and
- national-level follow up with countries on cleaner fuel and vehicle support initiative.

The EECCA region has sulphur levels in transporation fuels are high (ranging from 50 ppm to 5,000 ppm). In addition to an older vehicle fleet where most private cars are more than 10 years old and low maintenance and inspection rates, the rise in private vehicle ownership and increasingly low utilization of public transport stand to only worsen the existing situation.

The UNEP-based Partnership for Clean Fuels and Vehicles (PCFV) is partnering with the Regional Environmental Centre for the Caucasus (REC Caucasus) in Georgia, to initiate a regional discussion to assess the current status of fuels and vehicles in EECCA, progress made to date in fuel quality and vehicle standards, and the challenges remaining for the promotion of lead-free, low-sulphur fuels and improved vehicle standards. The goal the Conference was to develop a clear vision of the way forward (including strategies and timelines) for eliminating leaded petrol, lowering vehicle fuel sulphur levels, and promoting cleaner vehicle technology, along with the next steps to be taken at the subregional and national levels. The results of the research undertaken at the national level in 2007-2008 are summarized in this document.

The PCFV is the leading global initiative promoting better urban air quality through the use of cleaner fuels and vehicles. Established at the World Summit for Sustainable Development in 2002, as of 1 January 2006 it has over 110 member organizations including governments, international organizations, industry groups, and non-governmental organizations involved in efforts to eliminate leaded gasoline worldwide and promote low sulphur in fuels concurrently with the introduction of cleaner vehicles and vehicle technology. Significant progress has already been made with PCFV support on these issues, including the complete phase-out of leaded gasoline in Sub-Saharan Africa as of January 2006.

Partnership activities focus on building consensus between all sectors and facilitating the transfer of knowledge and technology on cleaner fuels and vehicles from developed to developing countries. The PCFV, whose Clearing-House is based at the United Nations Environment Programme (UNEP) headquarters in Nairobi, Kenya, provides technical, networking and financial support for regional, national and local activities promoting cleaner fuels and vehicles. For more information on the PCFV and its work, please visit www.unep.org/pcfv.

Data collection methodology

The information on fuel and vehicles as summarised in this publication has been collected using the special questionnaires developed by the Programme for Environmental Policy and NEAPs of the Regional Environmental Centre for the Caucasus in cooperation with PCFV secretariat at United Nations Environment Programme. The questionnaires consisted of the following four sections:

1. Personal information of the contact point;
2. Information concerning the air quality management in the country;
3. Information on fuel quality and its management in the country;
4. Information on national car park and emission control.

The questionnaires were distributed to all 12 countries of EECCA region (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan). However, the requested information could not be collected from Belarus, Tajikistan and Ukraine . None of the participating countries appeared to be able to provide the required information in full. Most of the countries were not able to provide information concerning the technical assistance received for capacity building in vehicle inspection and maintenance, number of vehicles in the country equipped with catalytic converters, information on retrofitting of imported fleets (e.g. bus fleets) with emissions control technologies or cleaner engines. The countries also had difficulties with providing information concerning number of newly registered passenger cars, used incentives for alternative fuels and vehicles, institutional framework for vehicle emission testing, planned measures with regard to vehicle emission control, fuel production by producers, description of fuel distribution network, results of regular testings of fuel quality (especially number of tests per month). Some countries could not even provide information on the number of imported vehicles. In some countries the total amount of imported, exported or used fuel was considered confidential and thus could not be made available.

As a result of the described difficulties the data collected from 9 countries was far from consistent or easily comparable. Nevertheless, the editors of this publication did their best to systematise the available information and provide an overall view of the situation, while making visible the similarities and differences between the countries, as well as the development trends in the region. For this purpose some materials for the above mentioned Conference were also used (background papers and presentations of speakers). We hope the publication offers some new information to decision-makers and other interested groups, hence facilitating further and faster improvement of the environmental situation in the EECCA region.

TABLE 1. *Experts involved in data collection*

Country	Expert involved in completing the questionnaire
Armenia	Mr. Martiros Tsarukyan, Senior Expert Environment Protection Department, Ministry of Nature Protection of the Republic of Armenia
Azerbaijan	Mr. Imran Ablulov, Deputy Head of the Division of Environment and Nature Protection Policy, Ministry of Ecology and Natural Resources, Azerbaijan Republic
Georgia	Mr. Levan Karanadze, Senior Specialist of the Ambient Air Protection Division of the Department of Integrated Environmental Management of the Ministry of Environment Protection and Natural Resources
Kazakhstan	Ms. Akmaral Kalmuratova, Director of the Independent Centre for Expertise of Oil Products ORGANIC
Kyrgyzstan	Ms. Biubina Djailobaeva, National Institute of Standards and Metrology, Head of Laboratory
Moldova	Ms. Liudmila Marduhaeva, Consultant of the Ministry of Ecology and Natural Resources
Russia	Mr. Vadim Donchenko, Deputy Director of the State Scientific and Research Institute of Road Transport Ministry of Transport
Turkmenistan	Mr. Dovran Ahmedov, Ecological Normative Elaboration and Ecological Expertise Department, Head of Department of Research and Production Centre of Ecological Monitoring of the National Institute of Desert, Flora & Fauna, Ministry of Nature Protection of Turkmenistan
Uzbekistan	Ms. Nadejda Dotsenko, Chief of Main Department of Air Protection of the State Committee for Nature Protection

Country Profiles

TABLE 2. *Territory, population and gross domestic product (GDP) per capita, 2005*

Country	Territory (thousand sq km)	Population (mln)	GDP Per Capita (billion USD)
Armenia	29.7	3.2	7.6
Azerbaijan	86.1	8.5	59.7
Georgia	69.7	4.4	17.9
Kazakhstan	2669.8	15.4	143.1
Kyrgyzstan	191.3	5.2	10.7
Moldova	33.4	4.3	2.9
Russia	17098.2	142.2	1030
Turkmenistan	488.1	6.8	42.8
Uzbekistan	425.4	26.5	55.75

AIR QUALITY MANAGEMENT

All countries of the EECCA region have state management of ambient air quality. It includes legal establishment of concentration limits for dozens of pollutants in the ambient air of human settlements. Usually in big cities of the region air quality is monitored on a regular basis by daily measurements of concentrations of 4-6 main pollutants (PM, CO, SO_2, NOx, PAH, O_3) in the ambient air. If the established limits are exceeded the state, or sometimes a local body responsible for air quality management has to elaborate the policies and measures for improvement of air quality.

In most of the big cities of the EECCA region road transport is a main polluter of the ambient air. Share of road transport in air pollution of the cities is usually estimated based on car park size, composition and automotive fuel consumption. The central and sometimes local environmental bodies are responsible for development and implementation of policies and plans for mitigation of air pollution from the transport sector.

Despite the existence of an institutional and legal structure for the management of ambient air quality, it is usual practice, in almost all big cities of the EECCA region, for the legally established air quality norms to be exceeded. This is partly due to the fact that the existing air quality norms are too strict, but also to the lack of effective enforcement mechanisms of the environmental requirements, and the vague responsibility of governance for the quality of environment.

Institutional framework of air quality management

All countries of the EECCA region have state bodies responsible for air quality management. Those bodies are in charge of elaboration of air quality standards, state monitoring of air quality and elaboration and implementation of policies and measures to ensure that established air quality limits are met.

Armenia. The Ministry of Nature Protection is in charge of enforcement of the Law on Atmosphere Protection. It develops concentration limits of pollutants in ambient air of human settlements (the limits are approved by the Government). The Ministry is in charge of the development of state plans for reducing emissions from main pollution sources (including road transport) in order to keep the level of concentration of pollutants in ambient air below the approved limits. At present, concentrations of main pollutants (dust, SO_2, $N0_2$, O_3) in ambient air of Yerevan exceed the limits by 1.8-2.7 times.

See Annex 3, page 39: *DIAGRAM 1. Dynamics of atmospheric pollution in Yerevan.*

Azerbaijan. The Ministry of Ecology and Natural Resources is the state body responsible for air protection in the country. The Department of Environmental Monitoring of the Ministry is carrying out regular monitoring of components of the environment, including the ambient air. The Department is also responsible for control of stationary and other sources of pollution and measures for pollution prevention.

Georgia. The Ministry of Environment Protection and Natural Resources is responsible for the protection of air quality. The Department of Integrated Environmental Management of the Ministry is developing state policies and plans to ensure air quality protection. The quality of air is being monitored by the National Environmental Agency (former Centre for Monitoring and Prognosis of the Ministry).

See Annex 3, page 39: *DIAGRAM 2. Map of Tbilisi, indicating the areas where NO_2 concentration exceeded EU limit of 40 mg/m^3 (data of 2002).*

Kazakhstan. The Environment Protection Ministry is in charge of the state policy on air protection. Air protection requirements are enforced by the Environmental Prosecutor and Municipal Environmental Divisions, in particular the Almaty City Environmental Department.

Kyrgyzstan. The State Agency for Protection of Environment and Forestry is the governmental body responsible for air quality protection in the country. The Ecological Monitoring service of the Agency measures the air quality and industrial emissions whileKyrgyzhydromet, under the Ministry of Emergency Situations, measures contents of pollutants in the air of the cities.

Moldova. The Ministry of Ecology and Natural Resources is the principal state body for air protection in the country. The Division on Environment Pollution Prevention of the Ministry is in charge of the elaboration of state policies, measures and programmes for atmospheric air protection, quality improvement and pollution prevention. The State Environmental Inspectorate is the state body for enforcement of environmental legislation in the country.

The Ministry of Health is also involved in air protection, as clean air is crucial for the health and well-being of the population. The Ministry is in charge of the development of limits of concentration of pollutants in the air.

The State Hydrometeorological Service, within its Division on Monitoring of Environment Quality, has a Centre on Monitoring of Atmospheric Air Quality. The Centre performs the monitoring, evaluation and prognosis of atmospheric air quality.

Russia. The Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet) and the Federal Service for Ecological, Technological and Nuclear Supervision (Rostechnadzor) are in charge of enforcement of federal legislation for protection of ambient air.

Turkmenistan. The Ministry of Nature Protection is the entity responsible for air quality management in the country. The Research and Production Centre of Ecological Monitoring has a Laboratory for control of air quality. The Department of Ecological Normative Elaboration and Ecological Expertise are involved in that activity.

Uzbekistan. The State Committee for Nature Protection is the principal body responsible for ambient air protection in the country. The Main Department of Air Protection is in charge of implementation of the state programme on control of pollutants' negative chemical impacts on air. The Committee coordinates the activities of the Ministries of Internal Affairs and Health Protection in the field of air protection.

The Ministry of Health Protection and its State Disease Control Department, as well as the Republican Centre of the State Disease Control (RCSDC), are in charge of implementation of the state programme of control of pollutants' physical impact on air and monitoring of population health problems attributed to the environment.

The Hydrometeorological Service Department under the Cabinet of Ministers and its Environment Monitoring Service are in charge of monitoring the condition of the environment, including air quality.

Air quality legislation

All reported countries have legally established limits of air pollutants in the ambient air of human settlements – so-called maximal allowed concentrations (MPC) of pollutants. Air protection legislation specifies the approach of the country towards guaranteeing those norms be met. Usually quality of ambient air in the cities is measured on a regular basis and if the concentration of one of the pollutants exceeds its MPC the relevant state or local body in charge has to take measures for reduction of the pollution.

TABLE 3. *Air quality legislation of the countries*

Country	Main legal acts[1]	Act requisites
Armenia	Law on Atmosphere Protection	1994
	Pollution Limits for Ambient Air in Human Settlements	Government Decision N160-N 02.02.2006
Azerbaijan	Law on Environmental Protection	
	Law on Atmospheric Air Protection	
	Rules for State Registration of hazardous emissions	
	Rules of state control of atmospheric pollution	
	Hygienic and ecological norms of ambient air quality	
	Certification rules on conformity of fuels, technological processes, vehicles, appliances with air protection requirements	
	Technical Norms of transport emissions	
Georgia	Law on Ambient Air Protection	22.07.1999
	Environment Quality Standards	Order of the Minister of Health No. 297 of 16.08.2001
Kazakhstan	Ecological Code	01.01.2007
Kyrgyzstan	Law on Protection of Environment	13.05.1999
	Law on Protection of Ambient Air	13.05.1999
Moldova	Law on Environment Protection	No.1515-XII, 16.07.1993
	Law on Atmospheric Air Protection	No. 1422-XIII, 17.12.1997
	Law on Ecological Expertise and Environmental Impact Assessment	No. 851-XIII, 29.05.1996
	Law on Environmental Taxes	No. 1540–XIII, 25.02.1998
	Law on Hydrometeorology	No. 1536-XIII of 25.02.1998
	Law on Sanitary-Epidemiological Protection of the Population	No. 1513-XII of 16.07.1993
Russia	Federal law on Protection of Environment	No. 7-FL, dd January 10, 2002
	Federal law on Protection of Ambient Air	No. 96-FL, dd. May 4, 1999
	Maximal Allowed Concentrations of the Pollutants in Ambient Air of Settlements	Hygienic Norms SN 2.1.6.1338-03
	Target Safe Impact Levels of the Pollutants in Ambient Air of Settlements	Hygienic Norms SN 2.1.6.1339-03
	Code of Administrative Violations (Articles 8.21-8.23)	No. 196-FL, dd. December 30 2001
Turkmenistan	Law on Air Protection	1996
	Law on Nature Conservation	1991
Uzbekistan	Law on Air Protection	

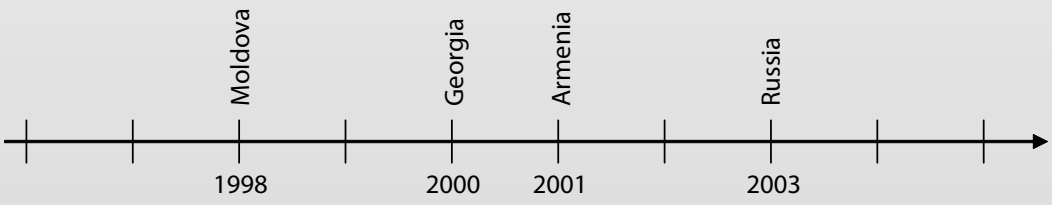
1 Titles indicated are descriptive, not exact.

FUEL QUALITY

In all the reported countries the state regulates the quality of fuel allowed for consumption in road vehicles. The state control is based on establishment of state standards (in some countries - technical regulations) of automotive fuel and restriction of distribution (in some countries - also use) of fuel not meeting those standards. In most of the countries implementation of such requirements of the law are verified by a statutory or other duly accredited body through sampling and measurements. Georgia is the only exception - there is no procedure for regular testing of the quality of automotive fuel.

The countries in the region are at different stages of transition from old Soviet fuel standards to EU standards, with Moldova leading the way. From old Soviet standards petrol quality is determined by GOST 2084/77, allowing lead content up to 0,13g/l and sulphur content up to 1,000 ppm. Soviet standard for diesel fuel is GOST 305/82 which allows sulphur content up to 5,000 ppm.

DIAGRAM 3. Timeline for ban of leaded petrol in some EECCA countries.



Institutional framework for fuel quality management

Armenia. The Ministry of Trade and Development is the institution responsible for state management of fuel quality. The institutions involved are: Standardization Research Division of the National Institute of Standards and the Octan-Test laboratory. Each imported consignment of fuel is tested as well as 50-100 samples a year from every gas station.

Azerbaijan. The Ministry of Industry and Energy is responsible for the implementation of the state policy in the fuel-energy sector. The fuel production enterprises are subordinate to the State Oil Company of Azerbaijan which controls the quality of fuel produced through its authorised testing laboratory.

Kazakhstan. The Committee for Technical Regulations and Metrology of the Ministry of Industry and Trade is in charge of accreditation, certification and metrological control, as well as control of certification bodies and certified production. In the city of Almaty, the special ecological programme is being implemented. In the framework of this programme, the fuel quality at each filling station is checked on a monthly basis. Testing is organised by the Department of Natural Resources of Almaty Municipality and carried out by the laboratory of Independent Centre for Expertise of Oil products ORGANIC accredited in accordance with ISO 17025.

Kyrgyzstan. The National Institute for Standards and Metrology is a state body responsible for Certification of imported oil products. The institute has 4 laboratories accredited according to ISO 17025. The private enterprise in the same field is Ltd Standardsertik with 1 accredited laboratory. Gosgortechnadzor at the Ministry of Emergency Situations is carrying out state supervision of the fuel quality.

Moldova. The National Energy Regulatory Agency is responsible for: regulation of market of oil products; licensing of importation, wholesale and retail trade in petrol, diesel fuel and liquefied gas as well as control of observance of licensing conditions; protection of the rights of consumers of natural gas and oil products. The Technical Centre of Industrial Safety and Certification effectuates control of quality and observance of conformity to the technical requirements and normative acts. The Service of Standardization and Metrology (subject to approval by Department of Emergency) is responsible for issuing the technical authorizations for exploitation of oil products storage and retail trade sites. The Ministry of Transport and Road Economy, on the advice of the Service of Standardization and Metrology issues authorizations for transportation means of oil products.

Russia. The federal authorities involved in fuel quality management are the Department for Technical Regulation and Metrology and the Technical Regulations Agency of the Ministry of Industry and Energy. At the regional level, the Regional Environment Protection Services are involved in these activities.

The fuel testing may be carried out by private or municipal testing laboratories accredited in the field of technical competence "Light Oil Products". In case of application of new technologies Interdepartmental Commission on Access to Production and Use of the Fuels, Oils, Lubricants and Special Liquids is in charge of testing of fuel.

Turkmenistan. The Division Turkmennebitonumleri ("Turkmenoilproducts") of the Ministry of the Oil and Gas Industry and Mineral Resources is responsible for fuel quality management in the country.

Uzbekistan. The State Inspectorate for Use of Oil Products and Gas under the Cabinet of Ministers of the Republic of Uzbekistan is responsible for state inspection of oil products and gas quality, motor-fuel sampling and quality analyses. Apart from this, two main producers of oil products: Fergana refinery and Bukhara refinery have laboratories where fuel sampling and quality analyses are undertaken on a constant basis.

TABLE 4. *Technical Assistance Received for Capacity Building in Fuel Quality Control*

Country	Received/perceived assistance
Armenia	To prevent increase in benzene content in petrol as a result of phasing out the lead from petrol, DANCEE will support the purchase of equipment to monitor the content of these substances in imported petrol.
Azerbaijan	Some technical assistance is received from USA, UK and Germany
Georgia	N/A
Kazakhstan	Almaty Municipality support
Kyrgyzstan	N/A
Moldova	Technical Centre of Industrial Safety and Certification within the Service on Standardization and Metrology received UV-spectrometer and 2 chromatograph as assistance from EU
Russia	N/A
Turkmenistan	State support
Uzbekistan	N/A

TABLE 5. *National fuel quality legislation*

Country	Main legal acts in the field of fuel quality[1]	Act requisites
Armenia	Ban on Production and Importation of leaded Petrol	Government Decision N913 29.09.2001
	Technical Regulation on Fuel for Internal-Combustion Engines	Government Decision N1592, 11.11.2004
Azerbaijan	Law on Energy	
	Standard for diesel fuel	GOST 305-82
	Standard for unleaded gasoline	AZS 059-2001
Georgia	Quality standard for petrol	Decree of Government No 124, 31.12.2004;
	Quality standard for diesel fuel	Decree of Government No 238, 28.12.2005
Kazakhstan	Law on Technical Regulations	
	Law on State Regulation and Control of Trade of Oil Products	
	Ecological Code	01.01.2007
	Technical conditions and standards	GOST 2084-77 TC 38.001165-2003 GOST P 51105-97 GOST 305-82 TC 38.101889-2004 TC 38.001355-99
Kyrgyzstan	Decree on Standards and Legal Acts in Force until Introduction of Technical Regulations	Decree of Government №473 dd. 30.06.06
	Provision on State Supervision	Decree №702 dd. 27.09.06
	Decree on Obligatory Conformity Approval of Products	№639
	Rules for Importation and Use of Products Subject to Compulsory Conformity Approval	Decree №8 dd. 11.01.06

Moldova	Law on Oil Product Market	No. 461-XV of 30.07.2001
	Law on Conformity Assessment of Products	No. 186-XV of 24.04.2003
	Law on Consumers Rights Protection	No. 105-XV of 13.03.2003
	Law on General Safety of Products	No. 422-XVI of 22.12.2006
	Law on Licensing of Certain Types of activities	No. 451-XV of 30.07.2001
	List of Products subject to obligatory certification of conformity	Decision of Government No. 1469 of 30.12.2004
	Regulation on Storage and Wholesale Trade (through the automated system) of Oil products	Decision of Government No. 1116 of 22.08.2002
	Regulation on Retail Trade of Oil Products	Decision of Government No. 1117 of 22.08.2002
	Concept of Quality Infrastructure in Moldova	Decision of Government No. 859 of 31.07.2006
	Regulation on National Energy Regulatory Agency and its Budget	Decision of Government No. 574 of 21.06.1999
Russia	Federal Law on Protection of Consumers' Rights	№2-FL
	Administrative Violations Code	№196-FL
	Federal Law on Technical Regulation	№184-FL
	Federal Law on Ambient Air Protection	№96-FL, dd. May 4 1999
	Federal Law on Ban of Production and Use of Leaded Gasoline	№34-FL, dd. March 22, 2003.
	More stringent requirements for automobile fuel sold in Moscow	Decree of Government of Moscow Municipality #952, 28.12.2004
	Technical conditions and norms for automobile fuels	inter alia: GOST R51105-97 TC 38.001165-2003 TC-38.401-58-171-96 TC 38.401-58-350-2005 (equal to Euro-4) TC 38-401-58-296-2001 (equal to Euro-4) TC 0251-018-00044434-2002 Diesel fuel Lukoil-Euro-4 Lukoil EN-590
Turkmenistan	Law on Hydrocarbon Resources	1996
	Law on Standardization and Metrology	1993
Uzbekistan	Law on Air Protection	1996
	Administrative Violations Code	1994
	Law on Ecological Expertise	2000
	Regulation on State Ecological Expertise	Resolution of Cabinet of Ministers № 491, 2001
	Technical Standards of petrol	GOST 2084-77 TSh 39.3-203:2005
	Technical Standard of diesel fuel	Oz'DSt 989:2001

1 Tndicated titles are descriptive, not exact.

Market fuel parameters

TABLE 6. *Parameters for Market Fuels Used in Vehicles with Spark Ignition Engines (petrol)*

Country, year	Parameter	Unit	Analytical and statistical results						Limiting value	
									National specification	
			No. of samples	Taken where	Min.	Max.	Mean	Standard deviation	Minimum	Maximum
Armenia 2006	Research octane No		287	customs border	91	98	95	---	91	---
	Vapour pressure, DVPE	kPa			45	72	58.5	---	45	100
	Distillation: Evaporated at 100˚C Evaporated at 150˚C	 %(v/v) %(v/v)			 46 77	 57 88	 50.5 79.5	 --- ---	 46 75	 71 ---
	Hydrocarbon analysis: Benzene	 %(v/v)			 0.8	 1.0	 0.95	 ---	 ---	 1.0
	Sulphur content	mg/kg			95	115	100	---	---	150
	Lead content	g/l			0.0048	0.005	0.0049	---	---	0.005
Azerbaijan	N/A									
Georgia	Research octane No		N/R	N/R	N/R	N/R	N/R	N/R	91	+
	Motor octane No		N/R	N/R	N/R	N/R	N/R	N/R	85.5	
	Vapor pressure, DVPE	kPa	N/R	N/R	N/R	N/R	N/R	N/R	48	60
	Distillation: Evaporated at 100˚C Evaporated at 150˚C	 %(v/v) %(v/v)	N/R	N/R	N/R	N/R	N/R	N/R	 46 75	 - -
	Hydrocarbon analysis: Aromatics Benzene	 %(v/v) %(v/v)	N/R	N/R	N/R	N/R	N/R	N/R	 - -	 42 5
	Sulphur content	mg/kg	N/R	N/R	N/R	N/R	N/R	N/R	-	500
	Lead content	g/l	N/R	N/R	N/R	N/R	N/R	N/R	-	0.013
Kazakhstan	Research octane No		1000	Almaty petrol stations	92	98	96	1.0	92	98
	Sulphur content	mg/kg			50	250	130	50		150 (500)
	Lead content	g/l			0	10				0.005 (0.01)
Kyrgyzstan	Research octane No		202	Railway tanks	80	85	82.5		80	
	Vapor pressure, DVPE	kPa			55	77	66		35	
	Distillation: Evaporated at 100˚C	 %(v/v)			 35	 65	 55		 35	
	Sulphur content	%			0.007	0.025	0.016			0.10
	Lead content	g/l			-	-				0.013
Moldova 2006	Research octane No		221				85.0			
	Motor octane No		314				85.2			
	Vapour pressure, DVPE	kPa	397				55.8			
	Hydrocarbon analysis: Aromatics Benzene	 %(v/v) %(v/v)	 501 501				 27.4 0.92			 42 5
	Sulphur content	mg/kg	451				200			500
	Lead content	g/l	391		not discovered					0.010

Russia	Research octane No		40	Moscow and Moscow Oblast	94	98	95.8	0.8	95	
	Motor octane No				83.5	86.4	85.2	0.8	85	
	Motor required octane No				92	98	95			
	Vapor pressure, DVPE	kPa			48	84	69.7	8	45	95
	Distillation: Evaporated at 100˚C Evaporated at 150˚C	 %(v/v) %(v/v)			 43 76	 69 92	 54 83	 9 14	 46 75	71
	Hydrocarbon analysis: — Olefins — Aromatics — Benzene	 %(v/v) %(v/v) %(v/v)			 0.5 30 0.8	 15 51 3.4	 7 39 2.1	 3.3 5.5 0.5		 21 42 1
	Oxygenates: Ethers with ≥5 C atoms	 %(v/v)			 0	 14.7	 5.8	 4.7		 15
	Sulphur content	mg/kg			50	250	130	50		150
	Lead content	g/l			0	10				0.005
Turkmenistan 2005	Research octane No			Petroleum storage depot	80.9	95.6			80	95
	Motor octane No				76.9	85.6			76	85
	Vapour pressure, DVPE	kPa			41.5	53.3			35	70
	Distillation: Evaporated at 100˚C Evaporated at 150˚C	 %(v/v) %(v/v)			 50 90	 50 90				
	Sulphur content	mg/kg			30	700			500	1000
	Lead content	g/l							0.01	0.01
Uzbekistan 2006	Research octane No		326	Fergana Refinery tank	84.3	85.7	-	-	80	-
	Motor octane No				76.4	77.7	-	-	76	-
	Vapour pressure, DVPE	kPa			45.3	63.0	-	-	-	66.7
	Distillation: -Evaporated at 100˚C -Evaporated at 150˚C	 %(v/v) %(v/v)			 38 89	 48 90	-	-	-	-
	End boiling point (EBP)	˚C			185	195	-	-	-	215
	Sulphur content	mg/kg			130	190	-	-	-	500
	Lead content: Leaded petrol Unleaded petrol	 g/l g/l			0.0023	0.0046	-	-	-	 0.15 0.013
	Research octane No		400	Bukhara Refinery tank	80	82.5	81.25	-	80	-
	Motor octane No				76	76.5	76.25	-	76	-
	Vapour pressure, DVPE	kPa			52	63	57.5	-	-	66.7
	Distillation: -Evaporated at 100˚C	 %(v/v)			90	95	92.5	-	-	-
	End boiling point (EBP)	˚C			185	195	190	-	-	215
	Sulphur content	mg/kg			200	300	250	-	-	500
	Lead content	g/l			0.006	0.007	0.0065	-	-	0.013

TABLE 7. *Parameters for Market Fuels Used in Vehicles with Compression Ignition Engines (diesel)*

Country Year	Parameter	Unit	Analytical and statistical results						Limiting value	
									National specification	
			No. of samples	Taken where	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum
Armenia	Cetane No		277		46.1	53	48.2		46	
	Density at 15˚C	kg/m³	277		821	842.5	832.4		820	845
	Dist. 95% Point	˚C	277		330	360	345			360
	Sulphur content	mg/kg	277		340	350	345			350
Azerbaijan			N/A		N/A	N/A	N/A	N/A	N/A	N/A
Georgia	Cetane No		N/R		N/R	N/R	N/R	N/R	N/R	45
	Density at 15˚C	kg/m³	N/R		N/R	N/R	N/R	N/R	N/R	845
	PAH	%	N/R		N/R	N/R	N/R	N/R	N/R	11
	Sulphur content	mg/kg	N/R		N/R	N/R	N/R	N/R	N/R	350
Kazakhstan	Cetane No		600	Almaty	45	54	49	4		
	Density at 15˚C	kg/m³			819	859	840	15	820	
	Dist.95% Point	˚C			320	362	340	15		
	Sulphur content	mg/kg			20	1250	300	300	10	
Kyrgyzstan	Dist.96% Point	˚C		Railway tanks	290	360	325			
	Sulphur content	mg/kg			1000	4000	2500		2000	
Moldova 2006	Cetane No									45
	Density at 20˚C	kg/m³								840
	Dist. 95% Point	˚C	936					355		
	Sulphur content	mg/kg	715					1100		2000
Russia 2005-2006	Cetane No		25	Moscow and Moscow oblast	45	54	50.5	3	45	
	Density at 15˚C	kg/m³			818	859	834	13	820	860
	Dist.95% Point	˚C			318	359	342	13.5		360
	PAH	%			2	10	6	2		11
	Sulphur content	mg/kg			20	1250	320	300		2000
Turkmenistan 2005	Cetane No			Oil storage facility	45	45	45			
	Density at 20˚C	kg/m³			840	860	830.6			
	Dist. 95% Point	˚C			22.6	24	22.6			
Uzbekistan 2006	Cetane No		688		45	56			45	
	Density at 20˚C	kg/m³			812	860		-		860
	Dist.95% Point	˚C			345	360		-		360
	Sulphur content	mg/kg			1500	5000		-	-	5000

TABLE 8. *Number of samples in month (diesel)*

Country	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Armenia		9	22	29	22	24	24	33	17	28	41	10	18	277
Azerbaijan		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Georgia	N/R													
Kazakhstan		50	50	50	50	50	50	50	50	50	50	50	50	600
Kyrgyzstan		24	18	19	33	25	15	21	15	27	19	21	21	258
Moldova		37	52	86	94	50	405	83	96	86	83	118	65	936
Russia	N/R													
Turkmenistan	2005	10	10	10	10	10	10	10	10	10	10	10	10	120
Uzbekistan	2006	58	41	58	81	65	51	54	72	48	75	42	43	688

National requirements for fuel quality

TABLE 9. *Main characteristics of national specifications for petrol*

Country	Lead content g/l		Benzene % (v/v)	Aromatic hydro-carbons %(v/v)	Sulphur content mg/kg		Remark
	Leaded petrol	Unleaded petrol			Normal	Regular	
Armenia		0.005	1-5	35	500	150 50 10	until 1 Nov 2008 from 1 Nov 2008 to 1Jan 2010 from 1 Jan 2010
Azerbaijan	N/A						
Georgia		0.013 0.005 0.005	5 3 1	42	500 250 100		until 1 Jan 2009 from 1 Jan 2009 to 1 Jan 2010 from 1 Jan 2010
Kazakhstan	Standards of Russia in force						
Kyrgyzstan	Standards of Russia in force						
Moldova		0.010	5	42	500		
Russia		<0.005	5 1 1 1	42 35 35	500 150 50 10		until 31.12.2008 until 31.12.2009 until 31.12.2012 under discussion
Turkmenistan		0.01			500-1000		
Uzbekistan	0.15	0.013			1000	5000	

TABLE 10. *Permitted sulfur content in diesel fuel*

Country	Sulphur content mg/kg	Remark
Armenia	350 50 10	until 1 Nov 2008-07-07 from 1 Nov 2008 to 1 Jan 2010 from 1 Jan 2010
Azerbaijan	N/A	
Georgia	350 50	until 1 Jan 2010 from 1 Jan 2010
Kazakhstan	N/A	
Kyrgyzstan	2000	
Moldova	2000	
Russia	500 350 50 10	until 31.12.2008 until 31.12.2009 until 31.12.2012 under discussion
Turkmenistan	N/A	
Uzbekistan	5000	

Fuel production, importation, export and consumption

TABLE 11. ***Fuel Production, import, export and consumption***

Country	Year	Fuel grade	Production (1000 t/year / *1000 m³/ year*)	Import (1000 t/year / *1000 m³/ year*)	Export (1000 t/year / *1000 m³/ year*)	Consumption by road transport (1000 t/year / *1000 m³/year*)
Armenia	2006	Leaded petrol	prohibited			
		Unleaded petrol		171.6		171.6
		Diesel		112.8		112.8
		LPG		no data		157.4
		CNG		157.4		
Azerbaijan	2006	Leaded petrol	0		0	
		Unleaded petrol	1136		756.3	NR
		Diesel	2117		1400	NR
Georgia	2006	Unleaded petrol	0	437	NA	NR
		Diesel	0	408	NA	NR
Moldova	2006	Leaded petrol	0	0	0	0
		Unleaded petrol	0	261	0	265
		Diesel		388	0	267
		LPG		50	0	5
		Other fuels		1418	0	5
Kazakhstan	2006	Leaded petrol	prohibited			
		Unleaded petrol	144359	N/A	10136	134223
		Diesel fuel		N/A		
		LPG	280937	N/A	100624	180313
Kyrgyzstan	2007	Unleaded petrol	13.2	440	0	
		Diesel fuel	31.4	290	0	
Russia	2006	Leaded petrol	prohibited			prohibited
		Unleaded petrol	34100		6000	28100
		RON: 80 RON: 92 RON: 95 RON: 98	10600 18800 4560 140			7500 16800 3700 100
		Diesel fuel	64000		37000	~15000
		LPG				680
		CNG				286000
Turkmenistan	2000	Crude oil distillate (initial processing)	12000			
		Leaded petrol	0			0
		Unleaded petrol	1012			
		Diesel	1453	0		N/A

Uzbekistan	2005	Total leaded and unleaded petrol	1389.6	NA	NA	1373.9
		Leaded petrol (RON<98, lead>0,013 g/dm^3)	NA	0	96.0%	NA
		Unleaded petrol (RON<95, lead≤0,013 g/dm^3)	NA	35.1%	3.9%	NA
		Unleaded petrol (RON≥95, lead≤0,013 g/dm^3)	NA	64.9%	0.01%	NA
		Diesel fuel	1437.1	NA	NA	1431.0
		LPG	211.5	NA	NA	NA
		CNG	50254.2	NA	NA	
	2006	Total leaded and unleaded petrol	1366.7	NA	NA	1358.2
		Leaded petrol (RON<98, lead>0,013 g/dm^3)	NA	1.5%	0	NA
		Unleaded petrol (RON<95, lead≤0,013 g/dm^3)	NA	0	100%	NA
		Unleaded petrol (RON≥95, lead≤0,013 g/dm^3)	NA	98.5%	0	NA
		Diesel fuel	1441.1	NA	NA	1362.8
		LPG	235.3	NA	NA	62.8
		CNG	37700.4	NA	NA	7371.7

TABLE 12. *Refining capacity of the EECCA countries*

Country	No of refineries	Total Capacity (Thousand barrels per day)
Armenia	0	
Azerbaijan	2	400
Georgia	0	
Kazakhstan	3	345
Kyrgyzstan	1	
Moldova	0	
Russia	40	5428
Turkmenistan	2	236
Uzbekistan	3	222

See Annex 3, page 39: *DIAGRAM 4. Dynamics of share of different types of fuel in automotive fuel consumption in Armenia*

Fuel distribution

TABLE 13. *Fuel distribution networks*

Country	Fuel distributors	Number of filling stations		
		Petrol and Diesel	CNG	LPG
Armenia		850	142	N/A
Azerbaijan	N/A	400		
Georgia	about 10	600		
Kazakhstan	KAZMUNAIGAZ	78		
	GELIOS	65		
	DOSTIK	16		
	NAROOIL	8		
	OIL TRADE CENTRE	2		
	Other companies	N/A		
Kyrgyzstan	21	370		
Moldova	PETROM REPUBLIC OF MOLDOVA	110		
	LUKOIL - REPUBLIC OF MOLDOVA	95		
	TIREX PETROL	81		
	VALIEXCHIMP	17		
	BASAPETROL	21		
	Other companies	Over 110		
Russia	ROSNEFT	738		
	TNK	1600		
	LUKOIL	920		
	PTK	134		
	MTK	300		
	NESTE SP	35		
	SLAVNEFT	30		
	SIBNEFT	455		
	RUSSNEFT	95		
	GAZPROMNEFT	900		
	SHELL	15		
	Other companies	Over 13000		
Turkmenistan	TURKMENNEBITONUMLERI	216		
Uzbekistan		Over1500	About 40	Over 100

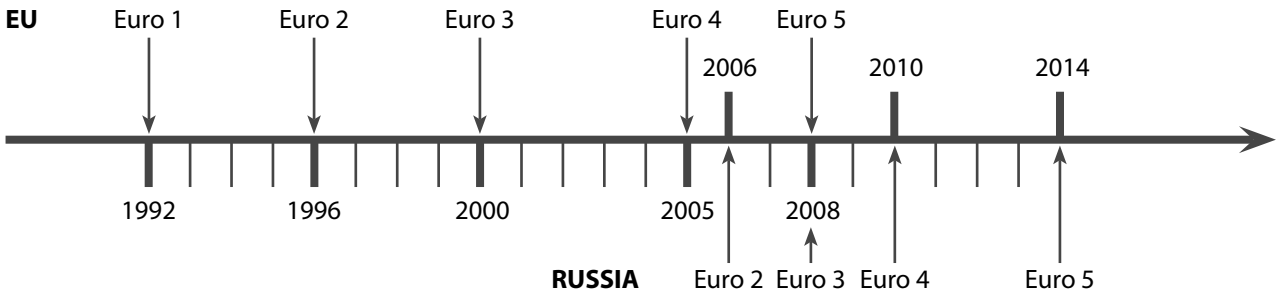
Promotion of environmentally friendly fuels

TABLE 14. ***Measures promoting environmentally friendly fuels***

Country	Measure
Armenia	• Production and importation of leaded petrol banned from September 29, 2001 • Size of environmental tax of vehicles depends on type of fuel used; • Possibilities and potential of biofuel production being considered.
Azerbaijan	• Leaded gasoline production stopped since 1995; • Harmonization with EU requirements of standards for produced diesel fuel and produced and imported fuel-lubrication materials planned for 2008-2012
Georgia	• Use of leaded petrol banned from January 1, 2000
Kazakhstan	• Leaded petrol banned
Kyrgyzstan	• Use of leaded petrol in Bishkek restricted
Moldova	• Use of leaded petrol banned from September 1, 1998 • Importation, storage and trade of leaded petrol prohibited in 2002 • Environment pollution tax for importation of leaded petrol and diesel fuel is 2 times higher than for unleaded petrol • Reduction of sulphur content in fuel planned • Switching of motor vehicles to gas planned • State stimulation of biofuel indicated in law • State Energy Strategy implies transposition of Directive 2003/30/EC into national legislation by 2020 and increase of use of cleaner fuels including gaseous motor fuel.
Russia	• Production and use of leaded gasoline is banned by federal law of 22.03.2003 • The stricter requirements for sulphur, benzene, aromatic hydrocarbons contents are set for the fuels sold in Moscow • Programme of Government of Moscow on Use of the Alternative Fuels (Natural Gas, synthetic, etc.) is being implemented • Draft technical regulations developed for introduction Euro-2, Euro-3 and Euro-4 standards for automobile fuel production and use.
Turkmenistan	• Switching of motor vehicles to cleaner fuel (CNG, LPG, unleaded gasoline) planned
Uzbekistan	• National programme of phasing out leaded petrol is elaborated • Fergana refinery eliminates use of lead additives to petrol by the end 2008 and is working for reduction of sulphur content in diesel to 0.5% • System of differentiated compensatory environmental payments for production and use of leaded petrol are under development

Russia. The Ministry of Industry and Energy has submitted to the government the draft technical regulation, according to which the Euro-3 standard for production of gasoline and diesel will be introduced in Russia from January 1, 2009, Euro-4 – from January 1, 2010, and Euro-5 – from January 1, 2013. The draft envisages 3 and 5-year transition period for producers and users of fuel. Namely, during 3-year transition period production and use of gasoline with octane numbers 80 and 92 will be allowed and during the 5-year transition period use of gasoline produced prior to the adoption of new technical regulations will still be allowed.

DIAGRAM 5. Comparison of timelines of introducing "EURO" fuel standards in the EU and Russia



VEHICLE EMISSIONS

State regulation of vehicle emissions

In the EECCA countries usually there is no specific state body with the explicit function or responsibility for regulating transport emissions. The central (in some countries - also local) environmental protection body responsible of "taking care" of the quality of air in human settlements and facing the fact that road transport is often the main pollutant of that air, has to take measures to regulateair pollution from transport sources. There is a substantial difference between the countries regarding the measures the state environmental body undertakes for regulation of road transport emissions. In some countries, state environmental bodies develop and implement specific policies, strategies or plans with the aim of reduction of road transport emissions including the whole range of measures from improvement of legislation to its enforcement and awareness raising and education of stakeholders. Though in other countries the activities of environmental bodies with regards to regulation of transport emissions is restricted only to elaboration (or participation in elaboration) of relevant norms/standards with no means of enforcement or control of their implementation. In some countries (e.g. Georgia) the central environmental protection body (the Ministry of Environmental Protection and Natural Resources) is almost completely excluded from state regulation of road transportation, including regulation of relevant emissions.

TABLE 15. *Institutional framework for control of vehicle emissions*

Country	Institution	Responsibility
Armenia	Ministry of Nature Protection	Development of state policies, plans, regulatory acts, licensing of vehicle testing stations
	Environmental Inspectorate	Environmental inspection of vehicles
	Customs	Implementation of restrictions on imported cars and importation tax differentiation measures
Azerbaijan	Ministry of Transport	Implementation of state policies in transport sector
	State Traffic Police of the Ministry of Internal Affairs	Carrying out technical inspection of the vehicles, controlling vehicle emissions
	Department for Environmental Protection of the Ministry of Ecology and Natural Resources	Controlling compliance with requirements of atmospheric air protection legislation, controlling emission level of vehicles
Georgia	N/A	N/A
Kazakhstan	Ecological Prosecutor Service	Enforcement of violations of ecological norms
Kyrgyzstan	Ecological Monitoring Service of State Agency for Protection of Environment and Forestry	Functioning of ecological checkpoints (recently stopped. recommencement planned)
Moldova	N/A	N/A
Russia	N/A	N/A
Turkmenistan	Traffic Police of the Ministry of Internal Affairs	
Uzbekistan	Main Department of Air Protection of the State Committee for Nature Protection	Coordination of activity carried out in frames of the State control of exhaust gas emission by vehicles.
	Republican and 12 Regional inspectorates for air protection, Tashkent metropolitan inspection for nature protection, interregional and cities inspectorates for nature protection - belonging to the State Committee for Nature Protection of the Republic of Karakalpakstan, 12 Regional Committees and Tashkent metropolitan Committees for Nature Protection;	State control of pollutants and exhaust gas emitted by vehicles at enterprises.
	Main Department of Traffic Safety of the Ministry of Internal Affairs	State control of pollutants and exhaust gas emission by vehicles on roads and during vehicles inspection.
	State Traffic Safety Service of Ministry of Internal Affairs	Implementation of the State programme of control of pollutants contained in exhaust gases of vehicles
	Territorial Administrations of Traffic Safety: in Tashkent, Samarqand and Fergana regions these are Departments of Traffic Safety (with diagnostic stations) under the Ministry of Internal Affairs; In other regions – Road Patrol Units under Departments of Traffic and Technical Supervision.	1. General activities aimed to protection of environment from negative impact of vehicles; 2. Control of observance of environmental regulations on control of vehicle exhaustion gases; 3. Enforcement of environmental regulations with regards to drivers.

TABLE 16. *Legislation regulating vehicle emissions*

Country	Main legal acts in the field[1]	Act requisites
Armenia	Concept on Reduction of Hazardous Emissions from Motor Vehicles	Government Decision N40, 14.10.2004
	Action Plan for Reduction of Emissions from Motor Vehicles	Government Decision N1033, 14.07.2005.
	Ban on Importation of Cars without Hazardous Emissions Neutralizers	Government Decision N220-N, 03.03.2005
	Licensing Procedure for Measuring of Vehicle Emissions	Government Decision N1600 15.09.2005
	List of vehicle exhaust pollutants to be measured at testing stations and methods to apply	Government Decision N1750 20.10.2005
	Technical Procedure for Environmental Safety of Transport Means in Use (emission standards of vehicles)	Government Decision N965 02.07.2006
	Law on Environmental Inspection	2005
	Procedures for measurement of motor vehicles emissions by environmental inspectorate	Government Decision N2410-N 29.12.2005
Azerbaijan	Law on Transport	
Georgia	Law on Safety of Road Traffic	#2050, 28.05.1999
	Technical Rules of Periodic Inspection of Different Vehicle Categories	United Transport Administration Order #36, 14.06.2007
Kazakhstan	Ecological Code	01.01.2007
	Technical Regulation on requirements for vehicle emissions	#1372, 29.12.2007
Kyrgyzstan	Standards on vehicle emission norms and measurement methods	GOST17.2.2.03-87 GOST 21.393-75
Moldova	N/A	N/A
Russia	Federal Law on Traffic Safety	№196-FL, dd. 10.12.1995
	Federal Law on Protection of Ambient Air	№96-FL, dd. 04.05.1999
	Provision on state technical inspection of vehicles and trailers	Decree of Government №880, dd. 31.07.1998
	Requirements for Emissions of Hazardous Substances by Vehicles	Technical Regulations 2005
Turkmenistan	N/A	N/A
Uzbekistan	Law on Air Protection	1996
	Provision on traffic safety	Resolution of Cabinet of Ministers № 539, 5.12.1997
	Administrative Violations Code	1994
	Standards on vehicle emission norms and measurement methods	GOST 17.2.2.03-87 GOST 21.393-75
	Regulation on mandatory technical inspection of vehicles	Resolution of Cabinet of Ministers #54, 31.01.2003
	Rules of execution of mandatory technical inspection of vehicles	Order of Ministry of Internal Affairs #56, 19.02.2003
	Instruction on execution of state supervision by State Service of Traffic Safety	Order of Ministry of Internal Affairs #137, 03.05.2003
	Requirements for imported vehicles	Decree of President #PP-531, 14.12.2006
	Adoption of standards of Russia: GOST R 41.24-2003, GOST R 41.49-2003, GOST R 41.83-2004, GOST R 51832-2001	Joint resolution of the Standardization, Metrology and Certification and the State Committee for Nature Protection, April 2007

1 Titles are descriptive, not exact

Vehicle Fleet Structure

TABLE 17. *Vehicle fleet structure*

Country	Year	Car type		Number (000s)	% of the total vehicle fleet
Armenia	2005	Total number of vehicles		229.8	
		Passenger Cars	Petrol	141.4	61.5
			Diesel	10.9	4.7
			CNG	28.2	12.3
			LPG	3.1	1.3
		Trucks	Petrol	15.9	6.9
			Diesel	10.1	4.4
			CNG	8.8	3.8
			LPG	0.9	0.4
		Buses	Petrol	1.0	0.4
			Diesel	1.3	0.5
			CNG	8.0	3.5
			LPG	0.3	0.1
Azerbaijan	2005	Total number of vehicles		585.9	
		Passenger cars		458.8	78.3
		Trucks		9.5	1.6
		Buses		90.9	15.5
Georgia	2004	Total number of vehicles		328.4	
		Passenger Cars	Petrol	243.3	74.1
			Diesel	11.9	3.6
		LDV	Petrol	8.7	2.6
			Diesel	10.5	3.2
		HDV	Petrol	23.5	7.2
			Diesel	14.9	4.5
		Buses	Petrol	3.1	0.9
			Diesel	2.5	0.8
Kazakhstan		Total number of vehicles		>2000	
Kyrgyzstan	2007	Total number of vehicles		318.6	
		Passenger Cars		230.0	72.1
		LDV and HDV		71.1	22.3
		Buses and minibuses		17.8	5.6

Moldova	2005	Total number of vehicles			447.1	
		Passenger Cars		Petrol	232.4	52.0
				Diesel	21.4	4.8
		LDV and HDV	Lorries of complete weight < 3500	Petrol	13.7	3.1
				Diesel	29.5	6.6
			Lorries of complete weight >3500 and< 12000	Petrol	12.5	2.8
				Diesel	11.4	2.6
			Lorries of complete weight > 12000	Petrol	0.9	0.2
				Diesel	8.1	1.8
		Buses and microbuses		Petrol	4.9	1.1
				Diesel	9.1	2.0
Russia	end of 2006	Total number of vehicles			32546	
		Passenger Cars		Petrol	26643	81.9
				Diesel	150	0.5
		LDV		Petrol	1055	3.2
				Diesel	306	0.9
		HDV		Petrol	958	2.9
				Diesel	2509	7.7
		Buses		Petrol	546	1.7
				Diesel	278	0.9
Turkmenistan	2005	Total number of vehicles			336.4	
		Passenger Cars		Petrol	217.6	64.7
				Diesel	1.9	0.6
		HDV		Petrol	88.1	26.2
				Diesel	4.2	1.2
		Buses		Petrol	22.3	6.6
				Diesel	2.3	0.7
Uzbekistan	2006	Total number of vehicles			N/A	
		Passenger Cars		Petrol	1037.5	5.5
				Diesel	98.0	
				gas	61.2	
		LDV		Petrol	N/A	80.2
				Diesel	N/A	0.4
		HDV		Petrol	N/A	7.4
				Diesel	N/A	3.7
		Buses		Petrol	N/A	2.0
				Diesel	N/A	0.8

Russia

See Annex 3, page 40: *DIAGRAM 6. Vehicle fleet dynamics in Russia*

Vehicle Aging

The old age of vehicles is a central problem of road transport in the EECCA countries. In all countries more than 80% of the car fleet is older than 5 years and more than half of cars in operation are more than 10 years. Even more alarming is the considerable number of cars in operation of 20 years or more. The main reason for such drastic prevalence of old vehicles in the car fleet of the EECCA countries is the massive importation of second-hand cars from developed countries (mainly from Europe).

Although only three countries have reported on proportion of new and second-hand vehicles among the newly registered passenger cars (as per 2005), it can be estimated that the situation in other countries is similar: 80-96% of newly registered passenger cars are second-hand vehicles. Only recently Moldova managed to reduce second-hand passenger cars to 65-70%, which is still quite high.

TABLE 18. ***Vehicle aging (vehicles registered in 2005)***

Country	Car type	0-5 years	6-10 years	11-15 years	16-20 years	>20 years
Armenia		N/R				
Azerbaijan	Passenger cars (%)	15.8	26.2	58.1		
	LDV (%)	5.7	16.5	77.8		
	HDV (%)	7.7	15.3	77.0		
	Buses (%)	11.8	20.1	68.1		
	Total (%)	14.3	24.3	61.4		
Georgia	Passenger cars (%)	4.4	12.2	26.3	24.6	32.5
	LDV (only minibuses) (%)	0.8	12.7	42.5	31.0	13.0
	HDV (%)	2.2	9.2	18.1	43.4	27.2
	Buses (%)	2.3	1.2	38.4	36.0	22.1
	Cars total (%)	3.9	11.7	26.9	27.1	30.4
Moldova[1]	Passenger cars (%)	6.51	7.93	18.89	20.15	19.81
	LDV and HDV (%)	0.85	4.01	4.87	6.59	5.83
	Buses and microbuses (%)	0.13	0.41	1.18	1.69	1.15
	Cars total (%)	7. 49	12. 35	24. 94	28. 43	26. 79
Kazakhstan		N/A	N/A	N/A	N/A	N/A
Kyrgyzstan	Passenger cars (%)	1.6	6.3	21.4	70.7	
Russia	Passenger cars (%)	21.6	27.7	50.7		
	LDV and HDV (%)	14.0	23.5	62.5		
	Buses and microbuses (%)	26.2	26.8	47		
	Cars total (%)	20.6	27.0	52.4		
Turkmenistan		N/R				
Uzbekistan	Passenger cars (%)*	11	13	22	26	28
	LDV (%)	18.2	27.8	20.6	33.4	-
	HDV (%)	2.1	7.6	26.3	64	-
	Buses (%)	11	13	22	26	28
	Cars total (%)	10.6	15.4	22.7	37.4	14.0

1 Data for 01.01.2008

TABLE 19. ***Share of new and second hand cars within the newly registered passenger cars***

Country	Year	Total number	Passenger cars			
			New		Second hand	
		000s	000s	%	000s	%
Armenia	2005	16.5	NR	NR	NR	NR
Azerbaijan	2005	71.0	5.0	3.55	66.0	96.5
Georgia	2000	23.1	1.7	7	21.5	93
	2001	28.9	1.0	4	27.7	96
	2002	30.9	1.3	4	30.0	96
	2003	33.1	1.4	4	31.8	96
	2004	37.6	1.5	4	36.1	96
	2005	44.2	1.9	4	42.4	96
Moldova	1995	1.8	0.1	3.3	1.7	96.7
	1996	21.1	1.6	7.5	19.5	92.5
	1998	18.4	1.4	7.7	17.0	92.3
	1999	12.6	1.4	11.0	11.2	89.0
	2000	13.3	1.2	9.0	12.1	91.0
	2001	13.1	1.8	13.6	11.3	86.4
	2002	15.7	1.9	12.4	13.7	87.6
	2003	27.6	2.5	9.2	25.1	90.8
	2004	16.0	2.8	17.3	13.2	82.7
	2005	22.3	3.5	15.5	18.9	84.5
	2006	16.1	5.0	30.9	11.1	69.1
	2007	18.2	6.3	34.9	11.9	65.1
Kazakhstan	N/A	N/A	N/A	N/A	N/A	N/A
Kyrgyzstan	N/A	N/A	N/A	N/A	N/A	N/A
Russia	N/A	N/A	N/A	N/A	N/A	N/A
Turkmenistan	N/A	N/A	N/A	N/A	N/A	N/A
Uzbekistan	2007	62761	N/A	N/A	N/A	N/A

Vehicle production and importation

Only two countries out of 9 have reported domestic vehicle production: Russia and Uzbekistan. Russia is the leading vehicle producer in the region but even its production can only cover about 30-40% of its own domestic demand. The rest is satisfied through imports.

Annual imports of road vehicles in the EECCA countries constitutes on average 5-7% of the size of the existing car fleet, varying from 3% in Russia to 13% in Georgia. As mentioned above, a substantial share of imported vehicles in the EECCA countries are second-hand cars from developed countries. Some countries have begun to establish age limits and other environmental requirements for imported vehicles in order to decelerate aging speed of its car park. Similar requirements are being introduced for domestically produced vehicles as well. The slow introduction of relevant requirements for the fuel substantially impedes the spread of environmentally friendly vehicles in the region.

TABLE 20. *Domestic vehicle production*

Country	Type	2003		2004		2005		2006	
		Total, 000s	%	Total, 000s	%	Total, 000s	%	Total, 000s	%
Armenia	Total vehicles	0	0	0	0	0	0	0	0
Azerbaijan	Total vehicles	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Georgia	Total vehicles	0	0	0	0	0	0	0	0
Kazakhstan	Total vehicles	N/A	N/A	N/A	N/A	N/A	N/A	6.3[1]	N/A
Kyrgyzstan	Total vehicles	0	0	0	0	0	0	0	0
Moldova	Total vehicles	0	0	0	0	0	0	0	0
Russia	Passenger cars	1010	78.6	N/A	N/A	1069	78.9	1173	78.2
	HDV	194.4	15.1	N/A	N/A	207	15.4	248	16.5
	Buses	80	6.2	N/A	N/A	78	5.7	79	5.3
	Total vehicles	1284.4	100	N/A	N/A	1354	100	1500	100
Turkmenistan	Total vehicles	0	0	0	0	0	0	0	0
Uzbekistan	LDV	40.5	99.3	70.1	99.6	101.0	99.7	N/A	N/A
	HDV	0.03	0.07	0.08	0.1	0.06	0.05	N/A	N/A
	Minibuses with 14 seats max	0.3	0.6	0.2	0.3	0.2	0.2	N/A	N/A
	Total vehicles	40.8	100	70.3	100	101.3	100	N/A	N/A

TABLE 21. *Quantity of imported vehicles*

Country	Type	2003	2004	2005	2006
Armenia	Passenger cars (%)	N/A	N/A	83	N/A
	LDV+ HDV (%)	N/A	N/A	14	N/A
	Buses (%)	N/A	N/A	3	N/A
	Total (1000s)	9.8	7.5	19.8	26.2
Azerbaijan	Passenger cars (%)	79.5	78.3	N/A	76.1
	LDV+ HDV (%)	20.3	21.5	N/A	22.9
	Buses (%)	0.2	3037	N/A	1.0
	Total (1000s)	28.3	30.9	N/A	38.1
Georgia	Passenger cars (%)	78.2	79.7	81.1	79.6
	LDV (Only minibuses) (%)	9.2	5.4	4.5	4.7
	HDV (%)	11.6	13.4	12.9	14.4
	Buses (%)	1.0	1.5	1.5	1.3
	Total (1000s)	33.1	37.6	44.2	57.6
Moldova		N/A	N/A	N/A	N/A
Kazakhstan		N/A	N/A	N/A	N/A
Kyrgyzstan		N/A	N/A	N/A	N/A
Russia	Passenger cars (%)	N/A	90.4	92.4	94
	LDV+ HDV (%)	N/A	7.6	6.2	4.9
	Buses (%)	N/A	2.0	1.4	1.1
	Total (1000s)	N/A	583	972	1116
Turkmenistan		N/R	N/R	N/R	N/R
Uzbekistan		N/A	N/A	N/A	N/A

1 Produced in 2007

TABLE 22. *Restrictions placed on imported vehicles*

Country	Restriction measures
Armenia	Importation of the cars without hazardous emissions neutralizers is prohibited from 1st January 2007.
Azerbaijan	Ban of importation of vehicles older then 5 years is being introduced
Georgia	No measures
Kazakhstan	N/A
Kyrgyzstan	Introduction of age limits is under consideration
Moldova	There are age limits for imported vehicles in force: • passenger cars – 7 years • lorries – 10 years • tractors – 12 years
Russia	Importation of vehicles of a class lower than Euro-2 is prohibited from 22.04.2006, Euro-3 from 01.01.2008 From October 2002 importation tariffs for the used cars older then 7 years have increased: 2 times for physical persons, 3-4 times for legal persons. From July 2003 this tariffs have been unified. As a result importation taxes for used cars for physical persons increased by 1-2 thousand USD.
Turkmenistan	N/A
Uzbekistan	For importation of vehicles of the types M2, M3 and N2 the following restrictions are introduced: • Importation of vehicles, not meeting Euro-2 ecological standard requirements is banned from 1 March 2007 • Importation of vehicles, not meeting Euro-3 ecological standard requirements is banned from 1 January 2010

Russia. The number of passenger cars with catalytic converters in Russia is estimated as 4-5 mln, which constitutes 15-20% of the total passenger car fleet. These are vehicles of environmental classes from Euro-1 to Euro-3. Following the introduction of environmental limits for both produced and imported cars, it is expected that the share of vehicles equipped with catalytic converters will grow speedily.

See Annex 3, page 40: *DIAGRAM 7. Dynamics of the structure of passenger car fleet of Russia by environmental class*

Uzbekistan. Uzbekistan produces and exports Matiz and Nexia cars with exhaust gas neutralization systems. In 2006, 78 thousand of these were produced.

Vehicle emission testing

All countries in the region, with the exception of Georgia, test emissions of road vehicles as a part of the regular procedure of technical roadworthiness, and is usually carried out on an annual basis. In some countries simple exhaust emission tests are also undertaken sporadically under the supervision of road police.

The regular annual technical testing of vehicles usually takes place at accredited/licensed technical stations. The state establishes, and often also issues, accreditation/licenses and controls meeting of requirements of those documents. Only one country reported receiving technical assistance for capacity building in vehicle emission testing.

TABLE 22. *Restrictions placed on imported vehicles*

Country	Institution name	Responsibility	Number of vehicles tested (veh/year)	Number of testing sites
Armenia	Ministry of Nature Protection	Development of regulations Licensing of testing stations		
	Environmental Inspectorate	Environmental inspection of vehicles		
	Private companies	Emission testing	All operating vehicles	51
Azerbaijan	State Traffic Police of the Ministry of Internal Affairs	Technical inspection of vehicles, emission testing		
	Department for Environmental Protection of Ministry of Ecology and Natural Resources	Emission testing	3783[1]	
Georgia	N/A			
Kazakhstan	N/A			
Kyrgyzstan	As-Aknazar Ltd.	CO and smoke tests on request of traffic police	1257[2]	
	Traffic Police of the Ministry of Internal Affairs	Annual technical inspection		
Moldova	Stations of technical testing (privately owned)	Personal responsibility, in conformity with legislation	29	19
	Services of environmental control (state)	In conformity with legislation	140	40
	Centres of environmental research within environmental agencies	In conformity with legislation	15	3
Russia	State Inspection for Safety of Traffic of the Ministry of Internal Affairs		80% of fleet	over 2000
Turkmenistan	Traffic police of the Ministry of Internal Affairs			
Uzbekistan	State Committee for Nature Protection	State control	205557	118
	Ministry of Internal Affairs	State control and testing	856000[3]	118
	JSC "Uzavtosanoat"	Manufacturing supervision	140000	2

1 Number of vehicles tested on the country's highways in August 2007 during the Clean Air Month action

2 Upon request of traffic police

3 Including emission tests during vehicle technical inspection

Armenia. According to the Law on Atmosphere Protection each vehicle has to pass technical inspection once a year. The vehicles operating as public transport have to pass technical inspection twice a year.

Emission tests are carried out at private testing stations, licensed by the Ministry of Nature Protection. The Ministry also develops list of pollutants to be tested, emission testing methodologies and licensing requirements for testing stations.

Georgia. According to the 2004 amendment to the Law on Traffic Safety (28.05.1999), annual technical inspection of vehicles is voluntary for private passenger cars until January 2013.

Moldova. According to the Law on Road Traffic Safety (7.06.2007) only vehicles, technical state and equipment which correspond to the technical norms and standards on traffic safety and environmental protection are permitted on the road. All registered vehicles have to pass periodical state technical inspection to be allowed on the road.

The Ministry of Internal Affairs is responsible for state technical control of vehicles. The technical testing of vehicles are carried out by relevant private companies, at duly authorized serving stations using duly approved and metrologically checked equipment. Road police are allowed to reveal technical disrepairs of vehicles on road. Car owners and drivers are responsible for timely submission of their vehicles for state technical inspection.

Uzbekistan. In accordance with the Law on Air Protection, state inspection of vehicle exhaust gases is carried out by environmental authorities, traffic safety authorities and epidemiological surveillance authorities.

Technical inspection of vehicles is an obligatory yearly procedure. Vehicles used as public transportation means are inspected twice a year. Traffic safety service under the Ministry of Internal Affairs is in charge of carrying out technical inspection of vehicles. Emission testing stations are established within eighteen regional branches of JSCs "Uzavtotehhizmat" and Uzavtosanoat" operating all over the country. 26 service stations and 2 car repair shops are operating with total capacity of 443 diagnostic stations equipped with gas-analysers and instruments for controlling toxicity level and smokiness of the exhaust gas. Technical service of vehicles includes testing and adjustment of emissions content on quarterly basis.

Uzbekistan received some international technical assistance for capacity building in vehicle inspection. Namely, the State Committee for Nature Protection, in the framework of UNDP project Assistance in Implementing Actions Aimed at Protecting the Environment and Energy Sources under the Country Programme Action Plan, received 16 gas analysers Avtotest-01.01 and 16 smoke analysers Meta-01 MP.

Environmental requirements for vehicle exhaust emissions

Until recently, environmental requirements for the exhaust gases of vehicles established by old Soviet GOSTs of 1975 and 1985 were in force, in most of these countries. Five countries reported recent switch to "Euro" requirements: Armenia, Georgia, Kazakhstan, Russia and Uzbekistan. The rest of the countries still continue to use Soviet standards to control vehicle emissions.

TABLE 24. ***National Vehicle exhaust emission requirements (only LDV/passenger cars)***

Country	Pollutant	Measurement unit	Petrol vehicles	Diesel vehicles (g/kw.hour)	Gas vehicles
Armenia	CO	vol.%	3.5	4.9	2.0 -3.0
	HC	ppm	1200	1.23	1000-2200
	NO_x			9.0	-
	PM	m^{-1}	-	-	2.26-1.065
		%			62-36
Azerbaijan	In conformity with GOST 17.2.2.03-87				
Georgia	In conformity with EU Directives 96/96/EC and 72/306/EEC				
Kazakhstan	Euro-2 from 2009				
Kyrgyzstan	In conformity with GOST 17.2.2.03-87			In conformity with GOST 21.393-75	N/A
Moldova	In conformity with GOST 17.2.2.03-87			In conformity with GOST 21.393-75	N/A
Russia	Euro-2 (Euro-3 from 01.01.2008)				
Turkmenistan	N/A				
Uzbekistan[1]	CO	g/km	2.2		
		%	1.5-2.0		
	CH	mm^{-1}	600-3000		
	$HC+NO_x$	g/km	0.5	0.7	
	PM			0.08	
	Opacity		Not established	40[2]	

Kazakhstan. Decree of the Government of Kazakhstan № 1372 of December 29, 2007 on Approval of Technical Regulation on Requirements for Emissions of Hazardous (Polluting) Substances by Vehicles Used on the Territory of the Republic of Kazakhstan sets the limit values for exhaust gases of the vehicles as followed:

Euro-2 is obligatory from 1 January 2009
Euro-3 is obligatory from 1 January 2011
Euro-4 is obligatory from 1 January 2014

Russia. Decree of the Government of Russia № 609 of October 12, 2005 on Approval of Special Technical Regulations on Requirements for Emissions of Hazardous (Polluting) Substances by Vehicles Used on the Territory of Russia accepts the EU environmental classification of vehicles (Euro-2, Euro-3, Euro-4, Euro-5) and sets a schedule of their introduction as obligatory requirements for produced and imported vehicles:

Euro-2 is obligatory from 23.04.2006
Euro-3 is obligatory from 01.01.2008
Euro-4 is obligatory from 01.01.2010
Euro-5 is obligatory from 01.01.2014

See Annex 3, page 40: *DIAGRAM 8. Comparison of timelines of introduction of "EURO" standards for fuel and for vehicles in Russia*

Uzbekistan. From 2003, the cars «Matiz - 0,8 l», «Matiz - 1,0 l», «Nexia - SONC» and «Nexia - DONC» produced in Uzbekistan meet the requirements of Euro-2 Standards (models E 93 equipped with catalytic converter operating on unleaded petrol). All cars are tested and certified for their conformity to the UN ECE Code № 83-04B.

From March 1, 2007 ecological vehicle standards of Russia corresponding to Euro-2 requirements were adopted. From January 1, 2010 the UNECE Rules № 24, 49 and 83 will be used as norms corresponding to Euro-3 standard. Relevant requirements for imported vehicles are established.

1 Emission Standards for vehicles imported to Uzbekistan and cars in service

2 Smokiness ratio at free acceleration with n/a engine, %

Plans and developments of vehicle emission control and inspection

Armenia. New procedures for technical inspection of vehicles (including emissions testing) are under development.

Azerbaijan. The Ministry of Ecology and the Ministry of Industry are conducting a Clean Air Month each year, in accordance with the joint plan. The event envisages inspection of transport companies, arrangement of additional checkpoints for vehicle emissions testing in the cities. In case of identification of violations the relevant measures are taken (penalties imposed, use of the vehicle restricted until necessary repairs performed, etc).

During 2008-2010 at the highways, cities and regions of the country installation of new stationary and mobile ecological control points equipped with the modern testing devices is planned.

It is planned to ensure that by 2010 technical inspection of vehicles in carried out in compliance with Euro-2 standard.

Moldova. New regulations on vehicle emissions are under development to ensure gradual harmonization with EU relevant directives.

Uzbekistan. In the framework of implementation of requirements of the Air Protection Law the new technical requirements have been developed for passenger cars MATIZ and NEXIA and light-duty commercial vans DAMAS bringing emissions of all these vehicles into compliance with standard Euro-0 (UN ECE # 83-92A). It is planned that starting from 2009, after complete ban of lead-based additives in petrol, all vehicles produced in the country will meet Euro-2 ecological standard.

Incentives for alternative fuels and vehicles

TABLE 25. ***Incentives for use of alternative fuels***

Country	Incentive
Armenia	CNG is about 3 times cheaper then petrol
Azerbaijan	LG price is lower then that of gasoline or diesel
Georgia	N/A
Kazakhstan	N/A
Kyrgyzstan	No incentives
Moldova	N/A
Russia	No incentives
Turkmenistan	N/A
Uzbekistan	Switching to LPG and CNG results in reduction of compensatory payments for air pollution

Promotion of environment friendly vehicles

TABLE 26. ***National measures for promotion of environmentally friendly vehicles***

Country	Measure
Armenia	Importation of cars without hazardous emissions neutralizers is prohibited from the 1st of January 2007.
	Rates of such payments for imported vehicles as environmental payments and payments for hazardous goods depend on car age, used fuel type, existence of exhaust gas neutralizers.
	Inspection and maintenance programme is in the process of establishment
	For cars in public transport age caps of 15 years are introduced
Azerbaijan	National Action Plan established for upgrade the technical inspection of the vehicles to Euro-2 standard by 2010
Georgia	N/A
Kazakhstan	N/A
Kyrgyzstan	It is planned to introduce age limitations for imported vehicles in 2008
Moldova	Inspection and maintenance programme is being duly implemented
	Restrictions on age of imported vehicles established
	The State Programme of checking of technical condition of all car fleet, including retrofitting and certification of vehicles as necessary is being implemented.
Russia	For municipal enterprises buses not lower then Euro-3 are purchased (Moscow programme)
	Ban on entering the central districts of Moscow for the trucks with emission standards lower then Euro-2 (from April 2008)
Turkmenistan	For municipal enterprises buses not lower then Euro-2 are purchased
Uzbekistan	Vehicle manufacturers are obliged to start meeting the requirements of Euro-2 ecological standard from 2009
	Compensatory payments for air pollution by vehicles depend on the used fuel.
	National Clean Air Campaign is being implemented jointly be the State Committee for Nature Protection and the Ministry of Internal Affairs. Joint Action Programme of state control for air protection is under development.
	A draft action plan developed for retrofitting the vehicles to gas and increase production of diesel vehicles. According to this plan the JSC "Uzavtotehhismat" and "Uzavtosanoat" started providing services on installation and maintenance of gas-cylinder equipment. 6 retrofitting stations were launched in Samarqand, Andijan, Navoi, Fergana and Surhandaria regions and their staff trained and certified. According to the plan 102 thousand vehicles will be reequipped for use of gas by January 2007. In total during 2007-2012 188 thousand vehicles shall be retrofitted for LPG and CNG, of which 100 thousand vehicles shall be retrofitted for LPG and more than 60 thousand vehicles for CNG.
	The JSC "Uzavtosanoat" is developing minibuses "Damas" equipped with the gas-cylinder equipment and meeting the ecological requirements of the Euro-2 standards.
	A plan is developed for gradual removing from service the buses being in operation more than 10 years.

CONCLUSIONS

Road transport emissions substantially determine the deteriorated air quality in the cities of the EECCA region. Despite the fact that legally the quality of ambient air in human settlements is legally established, there are no adequate mechanisms in place to ensure that transport emissions does not result in exceeding those legal limits. In some cities (Almaty, Moscow), local government tries to develop and implement some local policies to reduce transport-born air pollution but the results are usually quite moderate revealing that the problem of road transport emissions need nation-wide efforts and can not be solved at a level of any separate municipal entity.

The high volume of transport emissions in the EECCA are determined by several factors. The most important are: 1) the low quality of automotive fuel, 2) the aging of the car fleet; and partly determined by the previous two: 3) insufficient use of modern technologies for control of emissions of automobiles.

The Report has shown that there is some progress already: All 9 countries of the EECCA region are gradually upgrading their standards of automotive fuel and introducing more stringent emission requirements for vehicles. In most countries leaded petrol is banned. Equally important is that allowed content of lead in unleaded petrol is also gradually decreasing. The content of sulphur in diesel fuel, however, still remains high in many countries and more efforts are necessary to foster further improvements.

Although low quality of fuel objectively impedes wider introduction of modern emission controlling equipment for the car fleet it is important that once fuel quality improves, introduction of such equipment and the legal instruments are there to ensure stable and widespread use. Use of different types of incentives in transition stage would be useful.

Another good development is a substantial trend towards use of liquefied gas as an automotive fuel - partly induced by high prices of petrol and diesel but in some countries also encouraged by the government as more environmentally friendly fuel. It is useful to keep those trends from inverting due to changes in fuel prices.

The main impediment for reduction of vehicle-born air pollution in the EECCA countries and the most difficult one to deal with is the aging car fleet. The problem is that its grounds are of social-economic nature: low income rates does not allow the consumers to buy new cars and result in preference of the second-hand, mostly from the EU. Emission control equipment is usually removed from those vehicles and the old age of engine and other parts cause the high level of pollutants in the emitted gases. This problem can not be solved in one day or even one year. Comprehensive policies are to be elaborated in each of the countries to overcome it step by step. Use of different types of economic incentives is to be considered as a tool to increase share of new vehicles in the fleet.

Abbreviations

Following abbreviations are used in the report:

1. CNG - condensed natural gas
2. LPG - liquefied petroleum gas
3. MPC - maximal permitted concentration of pollutant
4. N/A - data gaps, no available data;
5. N/R - the data is not measured, monitored or reported in the respective country
6. PAH - polycyclic aromatic hydrocarbons
7. PCFV - The Partnership for Clean Fuels and Vehicles
8. PM – particulate matter, dust

ANNEX 1:

Recommendations of the Conference on Clean Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia

January 24-25, 2008
Tbilisi, Georgia

On January 24-25, 2008 the Partnership for Clean Fuels and Vehicles with support from the UNEP hold a Conference on Cleaner Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia. The Conference was attended by senior to middle level managers and policy makers from the Ministries of Environment, Energy, Transport of the countries of the region, representatives of NGOs involved in such environmental matters, refinery heads / local oil companies, vehicle manufacturers / retailers and institutions of higher learning. Participants of the Conference considered the existing situation in the EECCA region concerning vehicle-caused air pollution in the cities, trends and perspectives with regards to switching towards cleaner vehicles and fuel and came out with the list of recommendations for the governments of the EECCA region. Namely, the Conference recommended that:

1. Each country in the EECCA region monitors fuel quality at fuel retail stations, with a specific government body responsible for this and independent auditing to be carried out under government oversight. International transport corridors should be prioritized for fuel quality monitoring.
2. Countries carry out periodic vehicle technical emissions inspections (including the environmental parameters) and testing in centralized facilities for all classes of vehicles under oversight of the government. It is important for this to be a high priority step in controlling the emissions of in-use vehicles in every country. Vehicles that fail must be repaired sufficiently to meet the standards or otherwise scrapped.
3. When vehicles are imported into a country, the importer must assure the importing country that the vehicle has a functioning catalytic converter.
4. Vehicles over 12 years old are inspected at least every six months.
5. Countries strive to introduce fuel and vehicle requirements together as a corresponding system. As sulphur levels in fuels are reduced to those required for Euro II, III, IV or higher, corresponding new vehicle emission requirements should follow rapidly. Alternately, if new vehicle requirements for Euro II, II, IV, etc. are introduced, fuel parameters meeting those requirements should follow rapidly or simultaneously.
6. In order to receive full information on compliance of fuel with appropriate 'Euro' standards, it is necessary to clearly label the fuels in retail points.
7. Taxation policies and incentives serve to stimulate production, importation, and consumption of cleaner fuels.
8. Countries consider sustainable alternative fuels in addition to conventional petrol and diesel fuels in order to reduce emissions.
9. Countries consider and support a transition to sustainable alternative fuels that improve environmental parameters.
10. Countries strengthen the systems for enforcement and compliance of the above.

The Conference also proposed the next steps for effective introduction of cleaner fuel and vehicles in the EECCA region:

1. Each country should consider putting in place a roadmap by which it will adopt cleaner fuels and vehicles within specific timeframes, providing lead time to both the fuel and vehicle industries. The Partnership for Clean Fuels and Vehicles (PCFV), whose Clearing-House is hosted by the United Nations Environment Programme, may provide assistance in this process at the national level, as requested.
2. In laying out this roadmap countries may consider the possibility if leapfrogging from early 'Euro' standards right to Euro IV through Euro V.
3. Early introduction of cleaner fuels and vehicles can be encouraged through incentives, which can be part of the roadmap.
4. Participants/national focal points assist in finalizing the national questionnaires on fuels and vehicles and that the Conference organisers ensure that this information is provided to participants.
5. The organisers ensure that all participants receive the Conference information and recommendations to report to their respective governments.
6. The organisers and participants should plan to report on the progress of implementation of clean fuel and vehicle roadmaps during the next EECCA regional event and/or subregional events, as appropriate.
7. The organisers may ask for periodic updates on fuel and vehicle planning and progress from each country, on at least a semi-annual basis.
8. The organisers will develop an informal network through the REC Caucasus office on EECCA fuel and vehicle experts - to include Conference participants and other interested parties.
9. The PCFV will assist countries to disseminate outcomes of meeting at their request and will routinely update EECCA information on the PCFV website (www.unep.org/pcfv), with additional information on the benefits of clean fuels and vehicles.
10. The PCFV and other international forums are asked to help disseminate outcomes of the EECCA Conference (e.g. the European Conference of Ministers of Transport, the World Health Organisation PEP, and the United Nations Industrial Development Organisation) and to assist in leveraging additional international support for these actions and recommendations.
11. The organisers will assist in collection and dissemination of national level information on liquid biofuels (simple questionnaire on plans, incentives, etc.) to all Conference participants.

ANNEX 2:
Conference on Clean Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia

January 24-25, 2008
Tbilisi, Georgia
List of participants

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ANNEX 3:
Diagrams

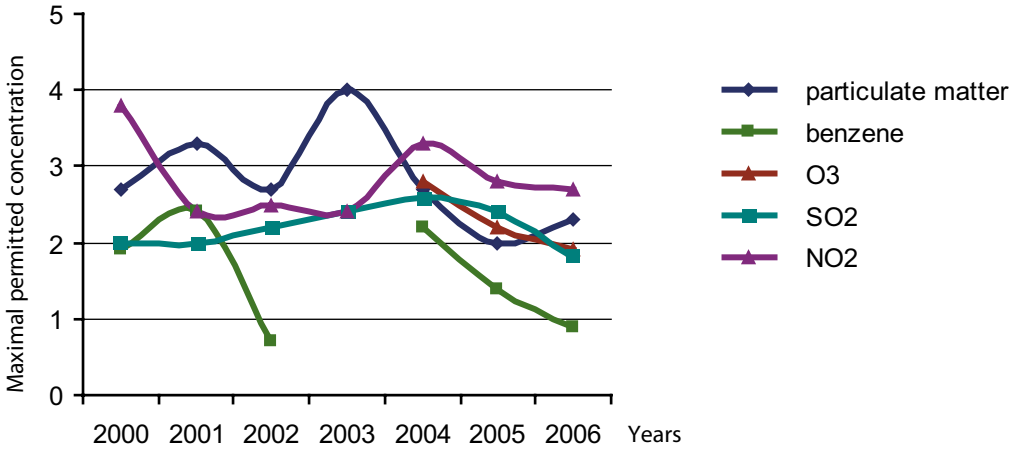

DIAGRAM 1. *Dynamics of atmospheric pollution in Yerevan.*

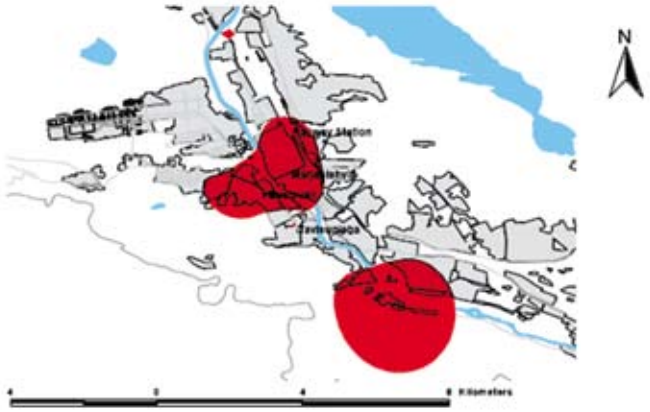

DIAGRAM 2. *Map of Tbilisi, indicating the areas where NO_2 concentration exceeded EU limit of 40 µg/m3 (data of 2002)*

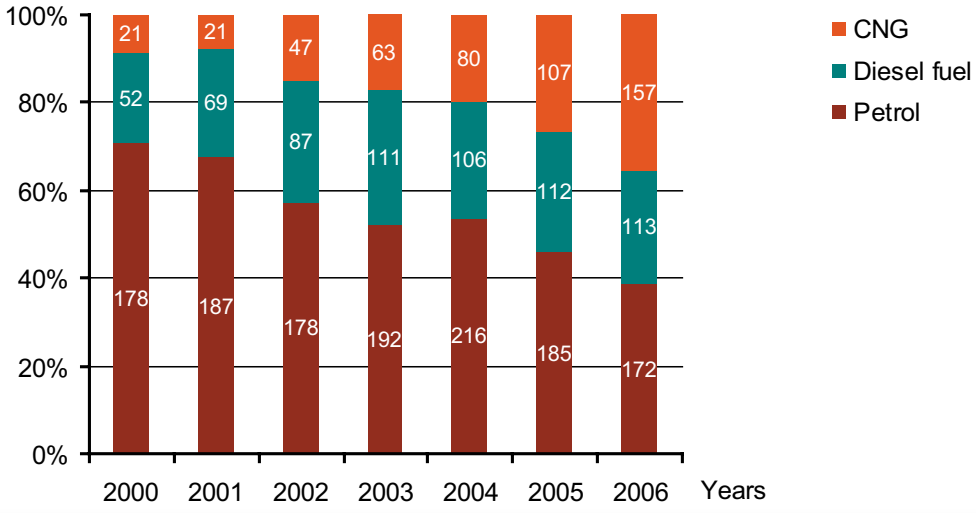

DIAGRAM 4. *Dynamics of share of different types of fuel in automotive fuel consumption in Armenia*

Note: labels on the diagram indicate amount of consumed fuel of the specific type in thousands of tons

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Diagrams

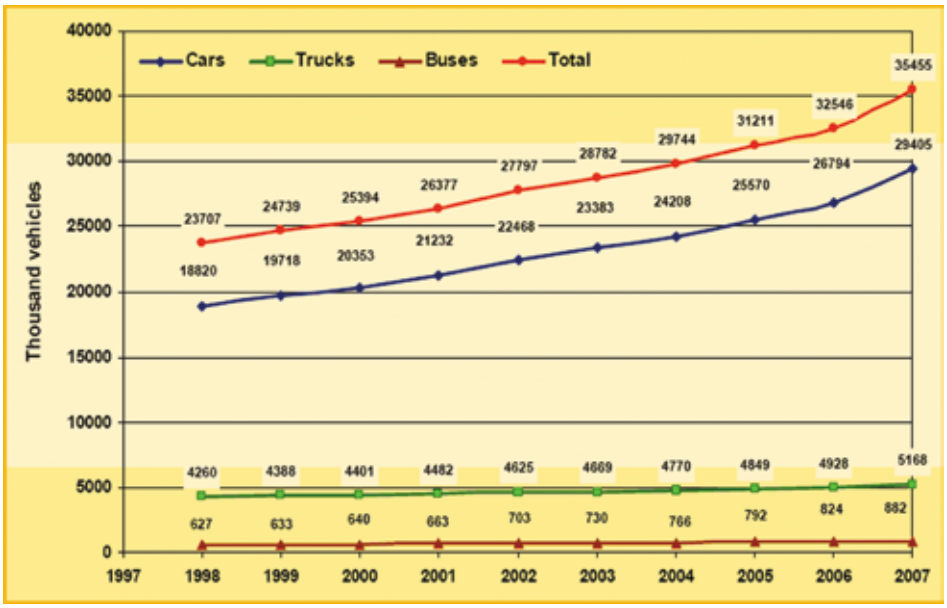

DIAGRAM 6. *Vehicle fleet dynamics in Russia*

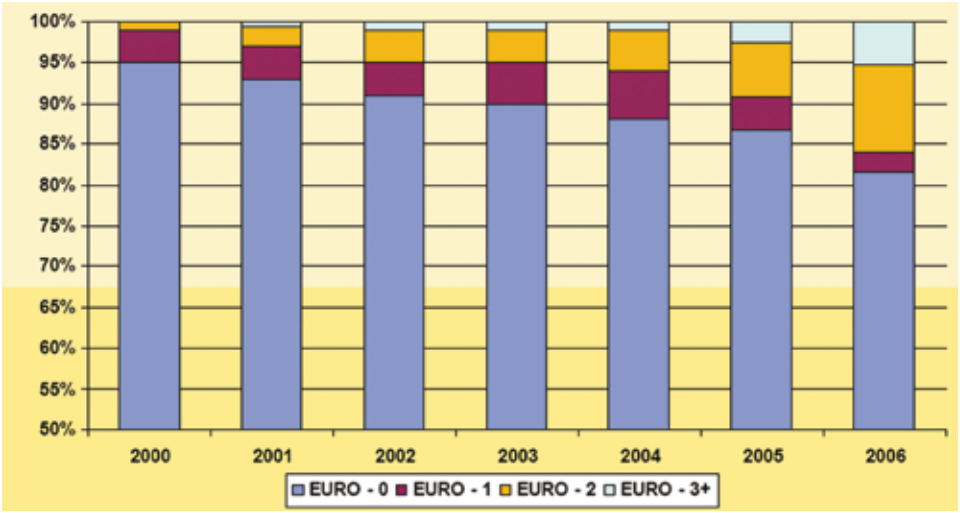

DIAGRAM 7. *Dynamics of the structure of passenger car fleet of Russia by environmental class*

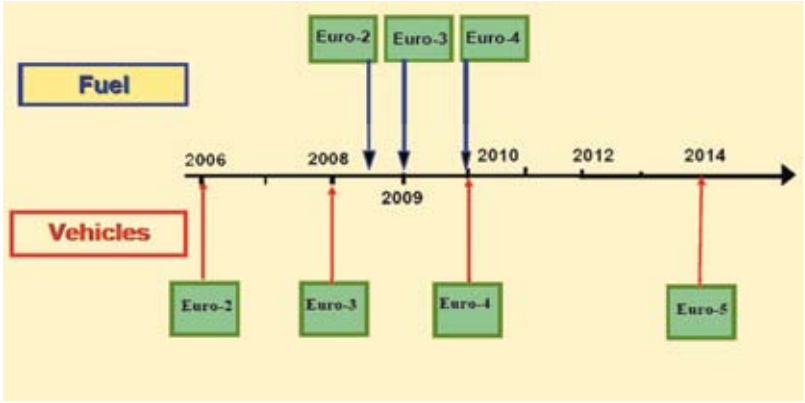

DIAGRAM 8. *Comparison of timelines of introduction of "EURO" standards for fuel and for vehicles in Russia*

THE REGIONAL ENVIRONMENTAL CENTRE FOR THE CAUCASUS

The Regional Environmental Centre for the Caucasus (REC Caucasus) is a non-entrepreneurial (non-commercial) legal person established within the framework of the "Environment for Europe Process" in 1999 by the governments of Armenia, Azerbaijan, Georgia and the EU to assist in solving environmental problems as well as development of the civic society in the countries of the South Caucasus.

REC Caucasus successfully implements its mission through various programmes and projects throughout the Caucasus region. One of the tasks of REC Caucasus is to be a "bridge" between the public and governments. The Centre has proven to be a viable and independent organisation providing services to governments, local authorities, non-governmental organisations, businesses, media, international organisations and other environmental stakeholders. REC Caucasus plays an active role in interagency cooperation, too. The organisation together with active environmental NGOs and the ministries of environment promotes the idea of environmental protection and sustainable development in the South Caucasus countries.

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