

# Activities for the promotion of FCV in Japan and WP.29 activities for the development of HFCV gtr

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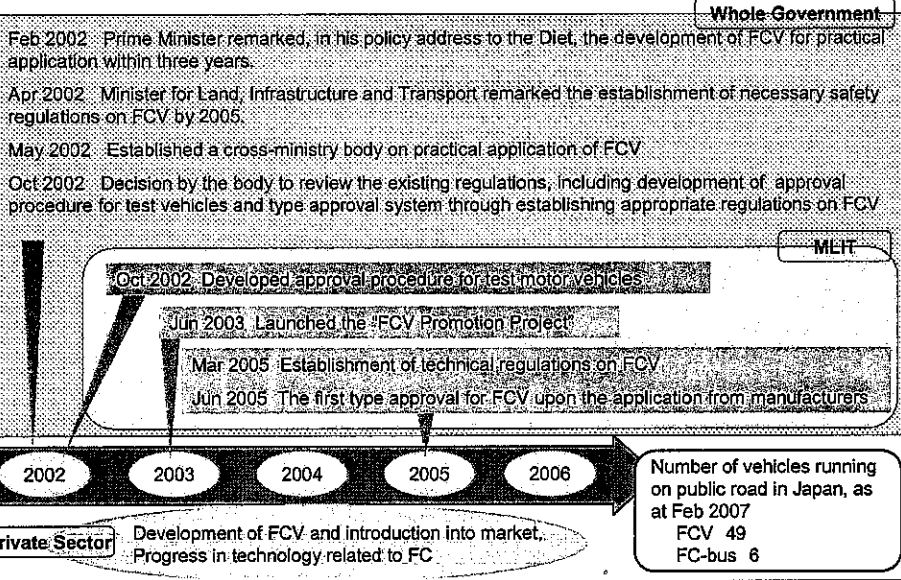


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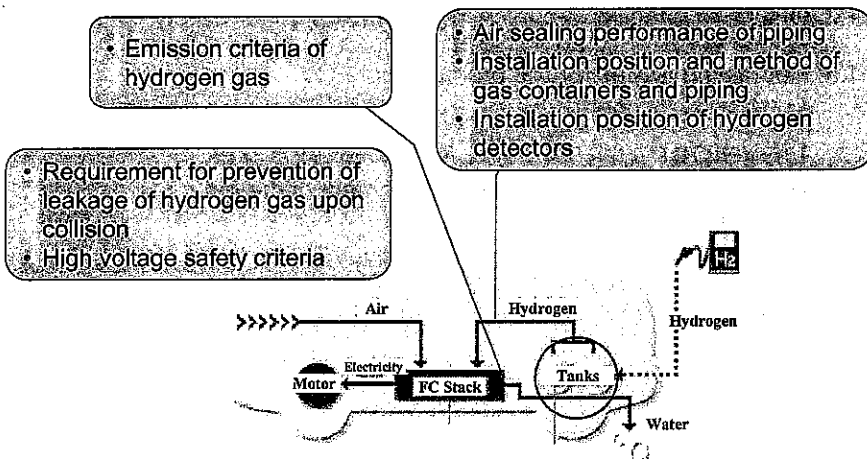
# 1. Activities on FCV in Japan

## 1.1. Activities for the promotion of FCV



# 1. Activities on FCV in Japan

## 1.2. Outline of principal technical requirements under Safety Regulations for Road Vehicles in Japan



## 1. Activities on FCV in Japan

### 1.3. Remaining issues for the promotion of FCV

#### Challenges in front of FCV

- Cost reduction (Current: several hundred thousand in USD)
- Increase of durability (Current: 3-5years)
- Improvement of hydrogen storage technology (Current: compressed hydrogen gas in containers)

#### To resolve the issues

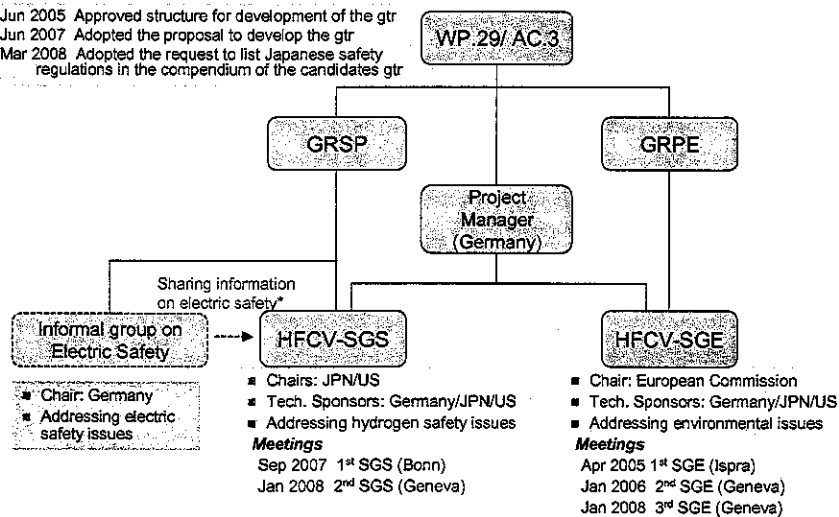
- Further studies on technologies related through running test on public road;
  - Promotion of fundamental scientific research on hydrogen storage technology, metal fatigue under hydrogen environment;
  - Promotion of construction and operation of hydrogen supply infrastructure; etc.
- are necessary.

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## 2. Development of HFCV gtr at WP.29

### 2.1. Organizational Chart for the development of the gtr

Jun 2005 Approved structure for development of the gtr  
 Jun 2007 Adopted the proposal to develop the gtr  
 Mar 2008 Adopted the request to list Japanese safety regulations in the compendium of the candidates gtr



\* TBD. TOR of the I/G will be submitted to the 145<sup>th</sup> session of WP29.

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## 2. Development of HFCV gtr at WP.29

### 2.2. Gtr development process

- Development of the gtr in two phases

#### **Phase1: gtr for hydrogen-powered vehicles**

- Establish a gtr by 2010 for hydrogen-powered vehicles
- Japanese regulation will be used as a basis for the development

##### **KEY AREAS**

- Component and subsystem level requirements (non-crash test based)
  - Performance requirements for fuel containers, pressure relieve devices, FC, etc.
  - Electrical isolation, safety and protection against electric shock (in-use)
  - Performance and other requirements for subsystems integration in the vehicle
- Whole vehicle requirements (crash test based)
  - Existing crash tests (front, side and rear) already applied in all jurisdictions
  - Electrical isolation, safety and protection against electric shock (post-crash)
  - Maximum allowable hydrogen leakage

#### **Phase2: Assess future technologies and harmonize crash tests**

- Update the gtr established in phase1, taking account of:

##### **KEY AREAS**

- Changes in the state of the technology beyond 2010
- Discussion of how to harmonize crash test requirements

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## 2. Development of HFCV gtr at WP.29

### 2.3. Current discussion under the subgroups

#### **HFCV-SGS**

- Agreed in the group to start discussion of the following items:
  - FC, ICE, CGH2 and LH2;
  - category 1-1 vehicles at first;
  - hydrogen leakage in the three situations: in-use, malfunction under in-use and post-crash; etc.
- Developing comparison table on container requirements in each member state.

#### **HFCV-SGE**

- Preparing technical reports among members for each of an agreed list of environmental topics including fuel consumption, emissions, reference fuel specification, etc., for the detailed work towards the gtr.

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### 3. Conclusion

- Expecting FCV to be one of the countermeasures contributing to the global warming issues and diversification of energy sources, and to be expanded as an environment-friendly transportation source,
- giving particular attention to “the explosibility of hydrogen” and “protection of passengers from high voltage”, etc.,
- the Government of Japan has worked on the commercialization and propagation of fuel cells since 2002, while studying ways to ensure safety in their use.
  
- Japan will continue proactive contribution to the development of HFCV gtr under WP.29, making the best use of its research results, experience, knowledge, etc. gained in the domestic process for the development of regulations on FCV.



**Providing Information Tools for  
Consumers:  
The Australian Green Vehicle Guide  
& the Fuel Consumption Label**

Presentation by Peter Robertson  
General Manager, Vehicle Safety Standards



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**Outline**

- Vehicle Fuel Efficiency Work
- Role of Information
- Current Australian Information Tools
- The Australian Government's Green Vehicle Guide



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## Vehicle Fuel Efficiency Work

- The Council of Australian Governments has established a working group to look at measures to encourage the uptake of fuel efficient and low (greenhouse) emission vehicles, both passenger and freight
  - Measures being considered include regulations, standards, codes and labelling requirements
  - Public consultation document expected to be issued in mid 2008
  - Working group is reporting to transport and environment Ministers' councils



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## Role of Information

- Well informed consumers key element in any strategy to increase proportion of EFV's in the market
- Without reliable, objective information...
  - Consumers can't respond or could be misinformed
  - Manufacturers can't promote good performers to consumers
- Importance of environmental information on vehicles now recognised by many governments
  - Challenge is to provide it in a form that is accurate, objective and understandable to consumers
- Governments often well positioned to provide information



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## Australia's Current Information Tools

- Australia's current information delivery mechanisms are:
  - Mandatory fuel consumption label
  - Green Vehicle Guide
- Labelling in place since 2002
- Green Vehicle Guide since August 2004
  - Guide is more comprehensive and a recognition of the limitations of labelling



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## Fuel Consumption Labelling (ADR)

- Australian Design Rule ADR81/01 requires mandatory fixing of a label to the windscreen of new vehicles
  - Label can be removed after delivery to customer
- Label displays certification data on fuel consumption and CO2 emissions
  - In L/100km and g/km respectively
- Style and format mirror energy labelling for whitegoods
- New label (ADR81/02) will provide breakdown of fuel consumption number into urban and extra-urban modes



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## Current Label Format

### FUEL CONSUMPTION

USE THIS LABEL TO COMPARE DIFFERENT MODELS

<b>Comparative fuel consumption</b>
<div style="background-color: black; width: 50px; height: 20px; margin: 0 auto;"></div> litres per 100 km
<b>Comparative CO<sub>2</sub> emissions</b>
<div style="background-color: black; width: 50px; height: 20px; margin: 0 auto;"></div> grams per km

This label is applied in accordance with ADR 81/01 Under the Motor Vehicle Standards Act 1989.

- Carbon dioxide (CO<sub>2</sub>) is the main greenhouse gas responsible for global warming.
- Actual fuel consumption and CO<sub>2</sub> emissions depend on factors such as traffic conditions, vehicle condition and how you drive.

Visit [www.greenvehicleguide.gov.au](http://www.greenvehicleguide.gov.au) for more information.



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## New Label Format (to apply from 1/10/08)

### FUEL CONSUMPTION

MAKE MODEL VARIANT  
6 CYL STATION WAGON

<b>Fuel Consumption (L/100km)</b> <div style="background-color: black; color: white; font-size: 24px; padding: 5px; margin: 5px auto;">12.4</div> Combined Test <hr/> <div style="background-color: black; color: white; font-size: 24px; padding: 5px; margin: 5px auto;">10.7</div> Urban <hr/> <div style="background-color: black; color: white; font-size: 24px; padding: 5px; margin: 5px auto;">15.0</div> Extra Urban	<b>CO<sub>2</sub> Emissions (g/km)</b> <div style="background-color: black; color: white; font-size: 24px; padding: 5px; margin: 5px auto;">291</div> Combined Test <hr/> Carbon dioxide (CO <sub>2</sub> ) is the main contributor to climate change.
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Vehicle tested in accordance with ADR 81/02.  
 Actual fuel consumption and CO<sub>2</sub> emissions depend on factors such as traffic conditions, vehicle condition and how you drive.

More information at [www.greenvehicleguide.gov.au](http://www.greenvehicleguide.gov.au)



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## Green Vehicle Guide

- Website providing access to a searchable database
  - Sole source of model specific environmental data on all light vehicles in the Australian fleet
  - Covers new vehicles released on the market from mid 2004 onwards
- Presentation will cover (briefly)
  - Design
  - Operation
  - Promotion / Awareness



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## GVG Design Principles

- Environmental information must be model specific
  - generic information little help to new car buyers
- Performance measures to address all key areas
  - conventional air pollution emissions
  - greenhouse emissions
  - fuel consumption
- Comprehensive coverage of light vehicles (<3.5 tonnes)
  - aim to cover all makes, models and variants
  - not just the top performers



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## GVG ratings

- Greenhouse rating (score out of 10)
  - Based on CO2 emissions value measured under standard Australian Design Rule (ADR) test
- Air pollution rating (score out of 10)
  - Based on emission limits of the ADR standard to which vehicle is certified in Australia
- Star rating (1/2 – 5 stars)
  - The sum of the greenhouse and air pollution ratings converted to a star rating



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## Greenhouse rating

- Simple and straightforward calculation
- Based on CO2 emissions measured under standard test conditions
  - Utilises CO2 certification values for combined cycle from UN ECE Reg101
- Guide also displays the actual CO2 value in g/km



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Rating	Range of CO <sub>2</sub> Emissions (g/km)	Approximate Equivalent Fuel Consumption* (L/100km)
10	≤ 60	≤ 2.5
9 ½	61 - 80	> 2.5 to 3.4
9	81 - 100	> 3.4 to 4.2
8 ½	101 - 120	> 4.2 to 5.0
8	121 - 140	> 5.0 to 5.8
7 ½	141 - 160	> 5.8 to 6.7
7	161 - 180	> 6.7 to 7.5
6 ½	181 - 200	> 7.5 to 8.4
6	201 - 220	> 8.4 to 9.3
5 ½	201 - 240	> 9.3 to 10.1
5	241 - 260	> 10.1 to 10.9
4 ½	261 - 280	> 10.9 to 11.8
4	281 - 300	> 11.8 to 12.6
3 ½	301 - 320	> 12.6 to 13.4
3	321 - 340	> 13.4 to 14.3
2 ½	341 - 360	> 14.3 to 15.1
2	361 - 380	> 15.1 to 16.0
1 ½	381 - 400	> 16.0 to 16.9
1	401 - 420	> 16.9 to 17.8
½	421 - 440	> 17.8 to 19.0
0	≥ 441	> 19.0

\* Based on fuel consumption of petrol vehicles



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## Air pollution (AP) rating

- More complex underlying methodology than greenhouse rating
- Based primarily on the emission standard to which the vehicle is certified in Australia
- Australia's Design Rules (ADRs) for light vehicle emissions:
  - minimum currently Euro 3 (Euro 4 for diesels)
  - Euro 4 will phase in from mid 2008 for petrol & LPG
- Many E4 petrol models already on the market
- Finalisation of E5/E6 in Europe → GVG ratings for E5
  - to enable manufacturers certified to E5 ahead of ADRs to get recognition



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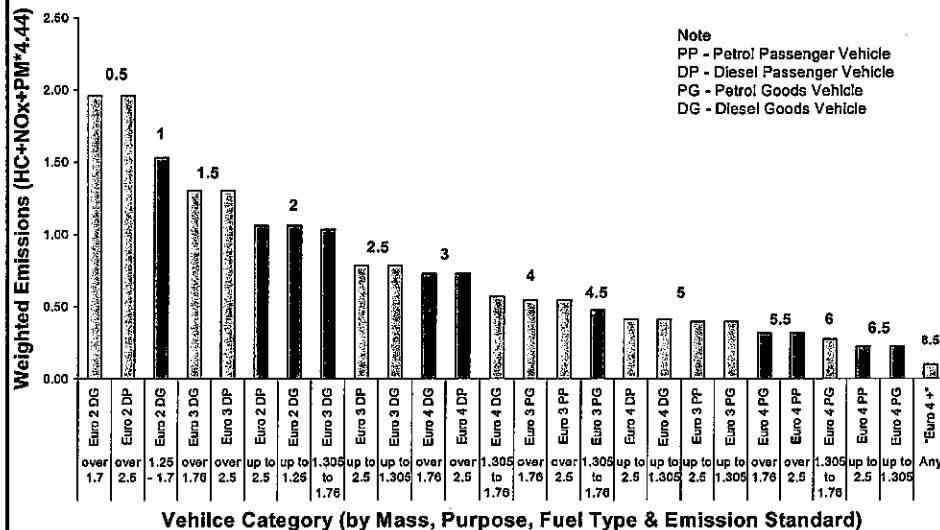
## Additional factors in AP Rating

- Air pollution rating is supplemented by two factors:
  - Relative health impact of emissions
  - Recognition of exceptional performers
- Particulates are recognised as having a much higher health impact
  - Weighting is applied to PM emission limits
  - PM weighted approx 4.5 times greater than HC and NOx
- Euro 4 compliant vehicles with very low emission values get extra points ("Euro 4+")
  - If emissions values are 65% better than Euro 4 limits for petrol car (the toughest standard at the time)



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## Allocation of Air Pollution Ratings



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## Overall star rating

- Star rating is simple, consumer friendly, measure of overall performance
- Star rating is sum of greenhouse (x/10) and air pollution rating (x/10)
  - Score out of 20 converted to a star rating (1-5 stars)
- Greenhouse and air pollution weighted equally
- Rating is a “whole of fleet” rating
  - Ratings based on vehicle class create significant anomalies
- Top star rating is difficult to achieve – need to perform well on both greenhouse and air pollution
  - Currently only 4 models achieve 5 stars
  - Around 15 achieve 4.5 stars



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## Allocation of Star Ratings

Overall Rating	Combined Air Pollution & Greenhouse Score
★★★★★	combined score $\geq 16$
★★★★☆	$15 \leq$ combined score $< 16$
★★★☆☆	$14 \leq$ combined score $< 15$
★★★☆☆	$11.5 \leq$ combined score $< 14$
★★★☆☆	$9.5 \leq$ combined score $< 11.5$
★★★☆☆	$8 \leq$ combined score $< 9.5$
★★★☆☆	$6.5 \leq$ combined score $< 8$
★★★☆☆	$5 \leq$ combined score $< 6.5$
★★★☆☆	combined score $< 5$



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## Guide Operation –Administration Site

- Data is provided voluntarily by the manufacturer
- Manufacturer completes on-line data entry form
  - Form contains information on:
    - make, model, variant details
    - engine, transmission and body details
    - fuel type
    - vehicle mass
    - CO2 emissions and fuel consumption data
    - ADR compliance level
    - emissions data (if seeking Euro 4+ rating)
- Department reviews form to check for errors
  - can cross check with certification system to confirm data
- Department rejects or approves for publication on GVG



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## Guide Operation –Public Site

- Website is designed to provide environmental data in a user friendly format
  - Without compromising the integrity of the underlying data
- Website provides tools which enable consumers to readily:
  - search, compare and sort on a range of criteria
  - develop short lists tailor made to their vehicle requirements
  - print/download results
- Website also provides email feedback link
  - assist public understanding about environmental impact of vehicles
  - assists the Department in improving the design and operation of the site



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**MENU**

- > What's New
- > How to use the guide
- > Salience vs Performance
- > Climate Change
- > Air Pollution
- > Vehicle emissions
- > Ratings & measurement
- > New Air Pollution Ratings
- > Frequently asked questions
- > Choosing a new car
- > Greener motoring
- > Search the guide
- > Related links


**TOP PERFORMERS**

1. Holden Commodore
2. Toyota Corolla
3. Mazda 3
4. Ford Falcon
5. Toyota Yaris
6. Toyota Camry
7. Toyota Hilux 4x4
8. Toyota Aurion
9. Hyundai Getz
10. Nissan Navara

> Top Performers


### Make a smarter choice


By choosing a greener vehicle, you can make a real difference.




The Green Vehicle Guide helps you by rating new Australian vehicles based on greenhouse and air pollution emissions.

The rating is calculated using data provided by manufacturers from testing the vehicle against Australian standards.

 When buying an older vehicle, check the Fuel Consumption Guide.

 Don't forget to check the fuel consumption label on all new vehicles.

 Request your free Green Vehicle Guide kit featuring guide and bumper stickers.

**GUIDE COMPARE**

Vehicle 1

Make:

Model:

Variant:

Vehicle 2

Make:

Model:

Variant:

Vehicle 3

Make:

Model:

Variant:

**ADVANCED SEARCH**

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


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Vehicle 3

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Variant:

**ADVANCED SEARCH**

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http://www.greenvehicleguide.gov.au/CGI/SEARCH/CompareWebForm.asp?CurrentTab=0&D=13&P=4151&S=44116311631

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**Search Results (1-3 of 3 results)** Sort By: Overall Rating

Overall Rating	Vehicle Details	Fuel Type	Fuel Cons. Litres/100km	Greenhouse Rating (10 = best)	Air Pollution Rating (10 = best)	Tick to Compare Vehicles
★★★★★	Honda Accord VE S.I.L. 6cyl., Auto 5 speed, Sedan, 5 seats, 2WD	Petrol SIRON	11.8	5	5	<input type="checkbox"/>
★★★★	Ford BF MK II Falcon XR8 S.I.L. 6cyl., Man 5 speed Sedan, 5 seats, 2WD	Petrol SIRON	13.8	3	5	<input type="checkbox"/>
★★★★	Ford BF MK II Falcon XR8 S.I.L. 6cyl., Auto 5 speed, Sedan, 5 seats, 2WD	Petrol SIRON	13.7	3	5	<input type="checkbox"/>

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**Compare Vehicles** Sort By: Overall Rating

Overall Rating	Vehicle Details	Release Year	Current Model	CO <sub>2</sub>	Fuel Type	Fuel Cons. Litres/100km	Greenhouse Rating (10 = best)	Air Pollution Rating (10 = best)	Tick to Compare Vehicles
★★★★★	Honda Accord VE S.I.L. 6cyl., Auto 5 speed, Sedan, 5 seats, 2WD	2005	Yes	229	Petrol SIRON	11.8	5	5	<input type="checkbox"/>
★★★★	Ford BF MK II Falcon XR8 S.I.L. 6cyl., Man 5 speed Sedan, 5 seats, 2WD	2005	Yes	259	Petrol SIRON	13.8	3	5	<input type="checkbox"/>

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**Advanced Search**  
Search by more detailed criteria or by vehicle class

Search for current models only  OR Search in archives

**Detailed Criteria:**

Make: All makes  
Model:   
Variant:   
Transmission: All types  
Drive: All drive  
Fuel Type: All  
Seats: All from 2 to 8  
Returns: All top 20 vehicles  
Sort By: Overall Rating

**Vehicle Class:**

2 Seater Car  
 Small Car  
 Medium Car  
 Large Car  
 Oversized Vehicle  
 Low or Light Truck  
 3+ Seater Car  
 Van  
 All Vehicles

**TOP TEN SELLERS:**

1. Holden Commodore
2. Toyota Camra
3. Mazda 3
4. Ford Falcon
5. Toyota Yaris
6. Toyota Corolla
7. Toyota Hilux 4x4
8. Toyota Aurion
9. Hyundai Getz
10. Nissan Navara

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**Search Results (1-50 of 1678 results)** Sort By: Overall Rating

Overall Rating	Vehicle Details	Fuel Type	Fuel Cons. (lt/100km)	Greenhouse Rating (0-9)	Air Pollution Rating (0-9)	Tick to Compare Vehicles
6.0	Ford S500 1.8L 4cyl. Other 5 speed Sedan, 5 seats, 2WD	Petrol	5.0	6.0	6.0	<input type="checkbox"/>
6.0	Toyota Prius 1.8L 4cyl. CVT Hatch, 5 seats, 2WD	Hybrid/Elect	4.4	6.0	6.0	<input type="checkbox"/>
6.0	Ford Focus 1.8L 4cyl. 5 speed Sedan, 5 seats, 2WD	Petrol	5.7	6.0	6.0	<input type="checkbox"/>
6.0	Ford Focus 1.8L 4cyl. 5 speed Sedan, 5 seats, 2WD	Petrol	5.9	6.0	6.0	<input type="checkbox"/>
6.0	Ford Focus 1.8L 4cyl. 5 speed Sedan, 5 seats, 2WD	Petrol	5.9	6.0	6.0	<input type="checkbox"/>
6.0	Chrysler PT CRU 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	6.2	6.0	6.0	<input type="checkbox"/>
6.0	Chrysler PT CRU 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	6.2	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
6.0	Holden Astra CD 1.8L 4cyl. Man 5 speed Hatch, 5 seats, 2WD	Petrol	7.4	6.0	6.0	<input type="checkbox"/>
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Compare Vehicles

Sort By: Overall Rating

Overall Rating	Vehicle Details	Release Year	Current Model	CO <sub>2</sub>	Fuel Type	Fuel Cons. (L/100km)	Greenhouse Rating (1-5)	Air Pollution Rating (1-5)	Tick to Compare Vehicles
☆☆☆☆	Flat 500 1.2L 4cyl - Other 5 speed Sedan, 4 seats, 2WD	2008	Yes	118	Petrol 5SPDN	5.7	5	4.5	<input type="checkbox"/>
☆☆☆☆	Flat Punto 1.4 77hp 1.4L 4cyl - Other 5 speed Sedan, 5 seats, 2WD	2008	Yes	124	Petrol 5SPDN	6.7	4	3.5	<input type="checkbox"/>
☆☆☆☆	Flat Punto 77hp 3DR 1.4L 4cyl - Other 5 speed Sedan, 5 seats, 2WD	2008	Yes	140	Petrol 5SPDN	8.9	3	2.5	<input type="checkbox"/>
☆☆☆☆	Chrysler PT CRU 1.8L 4cyl - Man 5 speed Hatch, 5 seats, 2WD	2008	Yes	148	Petrol 5SPDN	6.2	4	3.5	<input type="checkbox"/>
☆☆☆☆	Holden Astra CD 1.8L 4cyl - Man 5 speed Hatch, 5 seats, 2WD	2007	Yes	177	Petrol 5SPDN	7.4	3	2.5	<input type="checkbox"/>
☆☆☆☆	Holden Astra CD 1.8L 4cyl - Man 5 speed Coupe, 5 seats, 2WD	2007	Yes	177	Petrol 5SPDN	7.4	3	2.5	<input type="checkbox"/>
☆☆☆☆	Holden Astra CD 1.8L 4cyl - Man 5 speed Wagon, 5 seats, 2WD	2007	Yes	177	Petrol 5SPDN	7.4	3	2.5	<input type="checkbox"/>

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## Promotion & Raising Awareness

- Guide of little value if no-one knows it exists
- Department has used range of communication strategies to raise awareness
  - Limited initial advertising in key print media
  - Briefings for specialist motoring journalists
  - Production of information kits for distribution at conferences, environmental events
  - Providing data links to suitable 3<sup>rd</sup> party websites
- Market research before launch and 2 years later
  - Indicating high user satisfaction with website
  - But raising awareness of its existence still a challenge



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## Conclusions

- The Guide has become the recognised information resource on environmental performance of vehicles in Australia
  - Used by private and commercial consumers, fleet buyers and motoring press
- Key element in raising awareness of environmental performance of vehicles
  - And highlights that good performers don't have to be exotic high tech vehicles or be expensive
- Demonstrates Governments' unique capacity to provide comprehensive & credible environmental information
  - with the support of the vehicle industry
  - challenge is to maintain the integrity of the data while presenting the information in a consumer friendly format



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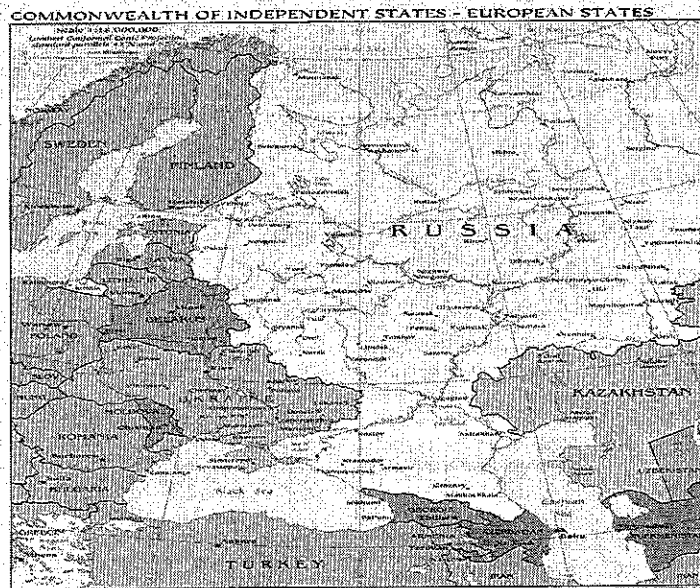
# ENVIRONMENTAL PERFORMANCES OF MOTOR VEHICLES AND FUELS IN RUSSIAN FEDERATION AND CIS COUNTRIES

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Scientific and Research Institute of Motor Transport (NIAT)

Russian Federation

## Commonwealth of Independent States (CIS)





## Overview of the CIS states

Country	Parameter	Territory, thousand km <sup>2</sup>	Population, million people	GDP, billion \$	Vehicle fleet, thousand units
Armenia		29,7	3,2	7,6	229,8
Belarus		207,6	9,7(2006)	22,9 (2004)	2600 (2004)
Azerbaijan		86,1	8,5 (2006)	59,7 (2006)	585,9
Georgia		69,7	4,4 (2005)	17,9 (2006)	328,4
Kazakhstan		2669,8	15,4 (07.2007)	143,1 (2006)	>2000
Kyrgyzstan		191,3	5,2 (2006)	10,7 (2006)	275,2 (2005)
Moldova		33,4	4,3 (07.2007)	2,9 (2005)	489,4 (2006)
Russia		17098,2	142,2 (12.2006)	1030 (2006)	32546 (2006)
Turkmenistan		488,1	6,8 (03.2006)	42,8 (2006)	336,4 (2004)
Tajikistan		142,7	7,1 (07.2006)	9,5 (2006)	300,0 (2004)
Uzbekistan		425,4	26,5 (2006)	55,75	1196,7 (2006)
Ukraine		603,7	46,5 (07.2007)	355,8 (2006)	6000,0 (2005)

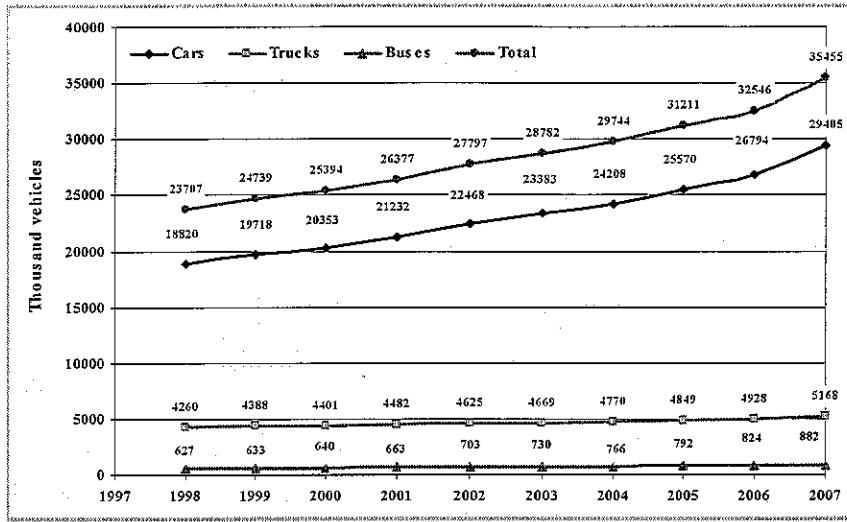


## Dynamics of the main motor transport activity parameters in Russian Federation

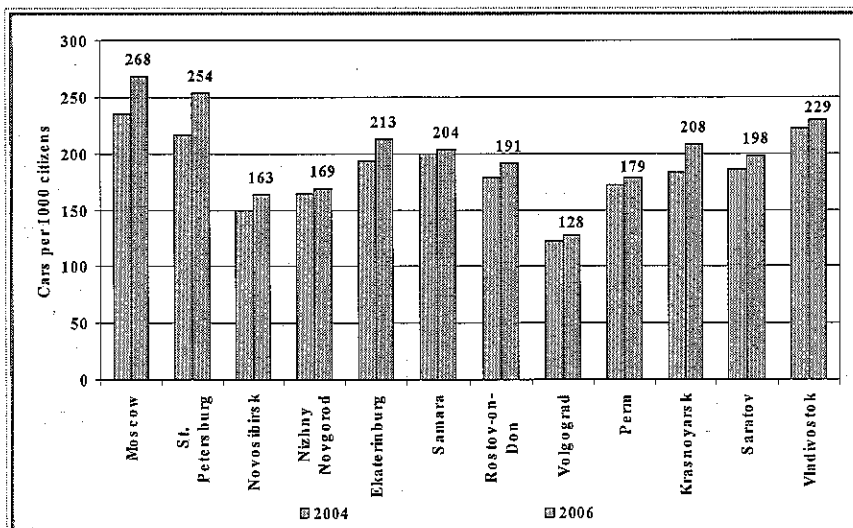
Parameter	2001	2002	2003	2004	2005	2006	2007
Freight volume, million tons	6125	6348	6469	6568	6684	6753	6860
Cargo turnover, billion tons*km	159,9	167,2	173,2	182,1	193,6	198,8	205,9
Passenger transportation volume, million people	20883	19620	17898	16552	16084	15782	14736
Passenger turnover, billion passengers*km	155,1	150,1	138,6	129,6	137,7	134,7	148,0



### Russian vehicle fleet dynamics



### Urban motorization levels in Russia



**Motor fleet structure by age in CIS countries (cars),%**

Age \ Country	0-5	6-10	11-15	16-20	> 20
Uzbekistan	11.0	13.0	22.0	26.0	28.0
Russia	21.6	27.7	50.7		
Turkmenistan	n/d	n/d	n/d	n/d	n/d
Moldova	8.9	10.8	25.8	27.5	27.0
Kazakhstan	n/d	n/d	n/d	n/d	n/d
Kyrgyzstan (all motor vehicles)	1.6	6.3	21.4	70.7	
Georgia	4.4	12.2	26.3	24.6	32.5
Azerbaijan	15.8	26.2	58.0		
Armenia	n/d	n/d	n/d	n/d	n/d

n/d - no data

**Motor fleet structure by age in CIS countries  
(buses),%**

Age \ Country	0-5	6-10	11-15	16-20	> 20
Uzbekistan	11.0	13.0	22.0	26.0	28.0
Russia	26.2	26.8	47.0		
Turkmenistan	n/d	n/d	n/d	n/d	n/d
Moldova	2.8	9.0	25.9	37.1	25.2
Kazakhstan	n/d	n/d	n/d	n/d	n/d
Kyrgyzstan (all motor vehicles)	1.6	6.3	21.4	70.7	
Georgia	2.3	1.2	38.4	36.0	22.1
Azerbaijan	11.8	20.0	68.2		
Armenia	n/d	n/d	n/d	n/d	n/d

n/d - no data



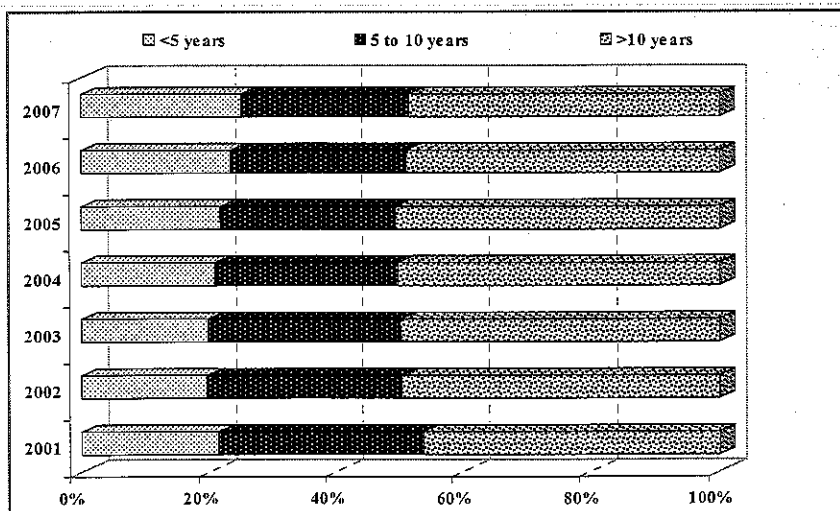
### Motor fleet structure by age in CIS countries (trucks and light duty),%

Country \ Age	0-5	6-10	11-15	16-20	> 20
Uzbekistan	2.1	7.6	26.3	64.0	
Russia	14.0	23.5	62.5		
Turkmenistan	n/d	n/d	n/d	n/d	n/d
Moldova	3.8	18.1	22.1	29.7	26.3
Kazakhstan	n/d	n/d	n/d	n/d	n/d
Kyrgyzstan (all motor vehicles)	1.6	6.3	21.4	70.7	
Georgia	2.2	9.2	18.1	43.3	27.2
Azerbaijan	7.7	15.3	77.0		
Armenia	n/d	n/d	n/d	n/d	n/d

n/d - no data



### Age structure of the Russian car fleet





## Motor vehicle production in the CIS

Country	Production in 2007	Plans for 2008	Production capacities to be introduced in 2009-2010	Brand
Russia	1169904	1478280 (+26,3%)	820 000	Lada, Chevrolet, GAZ, VAZ, KIA, VW, Ford, Skoda, Opel, Toyota, Renault, Fiat, Hyndai, Ssang Yong, Great Wall, Geely, FAW, Chery
Ukraine	386070	518600 (+34,3%)		ZAZ, Daewoo, Lada, Opel, Chery, Chevrolet, KIA, Hyndai, Great Wall, VW, Skoda, Seat
Belarus	232	2000 (8,6 times)		Iran Knodro
Uzbekistan	170 000	200 000 (+17,6%)	30 000	Daewoo
Kazakhstan	6311	8500 (+34,7%)		Lada, Skoda, Chevrolet
Azerbaijan	n/d	n/d		
<b>Total:</b>	<b>1732517</b>	<b>2207380 (+27,4%)</b>	<b>850 000</b>	

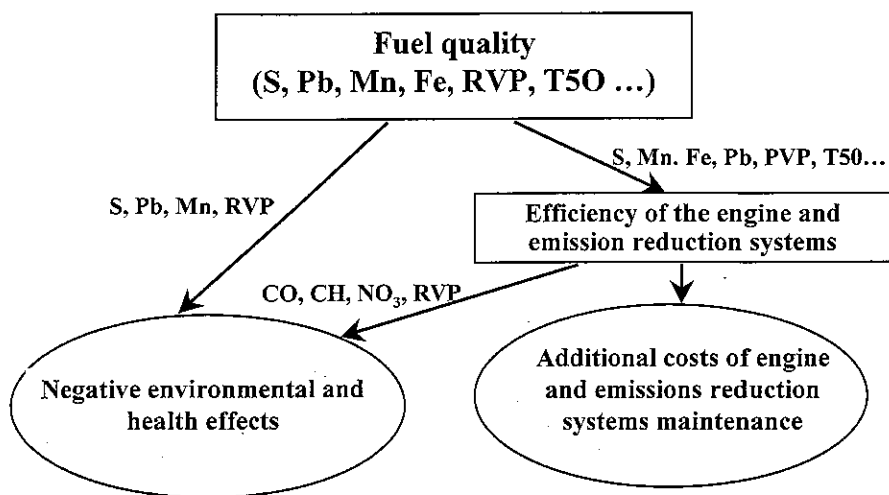
n/d - no data



## Motor vehicle industry in CIS countries



## Environmental, health-related and economical impacts of fuel quality



## Some problems which define negative environmental and health impacts of motor transport in CIS countries

- Inconsistence between motor fleet growth and development of road infrastructure, resulting in traffic congestion;
- Shortcomings in traffic engineering and control, lack of parking policy in cities;
- Lack of public transport financing, insufficient quality of its services;
- Insufficient rate of vehicle fleet renewal and suboptimal structure of the fleet (mainly concerns truck and bus fleet);
- Insufficient quality of produced and retailed motor fuels, lack of system of "assured provision" of consumers with the appropriate fuel;
- Insufficient use of alternative fuels.

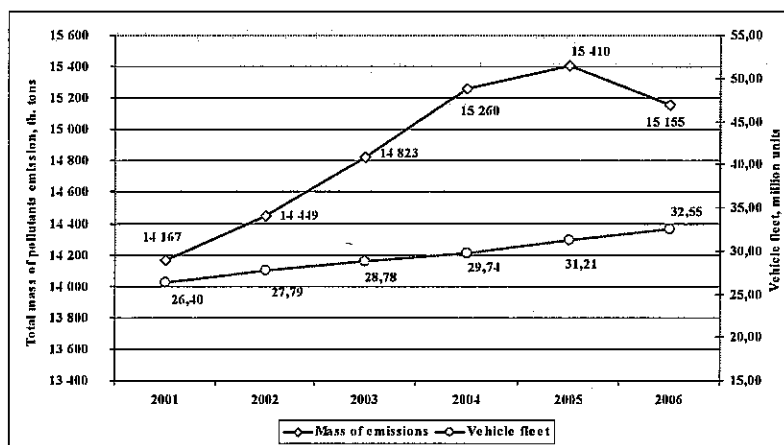


### Pollutant emissions from Russian motor vehicle fleet (2006)

Pollutants	CO	VOC	NO <sub>x</sub>	PM	SO <sub>2</sub>	Total
Total mass of emissions, th tons	11202	1723,8	2055	53,91	119,8	15154,8
% to level of 2005	96,1	100,3	110,5	110,3	98,3	98,3



### Dynamics of pollutant emissions by the Russian motor vehicle fleet



## Improvement of vehicle fleets' environmental performance across CIS

Measures	Russia	Uzbekistan	Turkmenistan
Ban on production and import of vehicles not complying with EURO requirements	from 01.01.06 ≥ EURO-2 from 01.01.08 ≥ EURO-3 from 01.01.10 ≥ EURO-4 from 2014 ≥ EURO-5 (cars)	from 01.03.07 ≥ EURO-2 from 01.01.10 ≥ EURO-3 (import only)	-
Ban on sale of the new cars without catalytic converters	from 01.01.06	-	-
Availability of emission standards for:			
• new motor vehicles (produced and imported)	UN ECE Requirements	UN ECE Requirements	
• vehicles in operation	New national standards harmonized with EU Directive	Russian standards (previous version)	Russian standards (previous version)
Mandatory environmental technical inspection	+	+	+
Tax differentiation	-	-	-
Subsidies	-	-	-
Programmes for vehicle fleet modification	+	+	planned
Ban on access of motor vehicles not complying with EURO requirements to city centres	+	-	-
Renewal of bus fleet with EURO-2+ vehicles	+	+	+
Programmes for transfer to CNG and other alternative fuels	+	no data	planned

## Improvement of vehicle fleets' environmental performance across CIS

Measures	Moldova	Kazakhstan	Kyrgyzstan
Ban on production and import of vehicles not complying with EURO requirements	Age restrictions for imported vehicles: • cars ≤ 7 years • trucks ≤ 10 years	from 01.01.09 ≥ EURO-2 from 01.01.11 ≥ EURO-3 from 01.01.14 ≥ EURO-4	Age restrictions for imported vehicles under consideration
Ban on sale of the new cars without catalytic converters	-	-	-
Availability of emission standards for:			
• new motor vehicles (produced and imported)	-	-	-
• vehicles in operation	Russian standards (previous version)	Russian standards (previous version)	Russian standards (previous version)
Mandatory environmental technical inspection	+	+	+
Tax differentiation	-	-	-
Subsidies	-	-	-
Programmes for vehicle fleet modification	-	no data	-
Ban on access of motor vehicles not complying with EURO requirements to city centres	-	-	-
Renewal of bus fleet with EURO-2+ vehicles	-	no data	-
Programmes for transfer to CNG and other alternative fuels	+	no data	-

## Improvement of vehicle fleets' environmental performance across CIS

Measures	Georgia	Azerbaijan	Armenia
Ban on production and import of vehicles not complying with EURO requirements	no data	Decree on age restrictions for imported vehicles is being prepared	Ban on import of motor vehicles without catalytic converters since 01.01.07 Maximum permitted age of small buses and taxis is 15 years
Ban on sale of the new cars without catalytic converters	no data	-	-
Availability of emission standards for:			
- new motor vehicles (produced and imported)	-	-	-
- vehicles in operation	-	Russian standards (previous version)	no data
Mandatory environmental technical inspection	-	+	+
Tax differentiation	-	-	+
Subsidies	-	-	-
Programmes for vehicle fleet modification	-	-	-
Ban on access of motor vehicles not complying with EURO requirements to city centres	-	-	-
Renewal of bus fleet with EURO-2+ vehicles	-	-	-
Programmes for transfer to CNG and other alternative fuels	-	no data	planned

## CIS countries where the use of leaded petrol is still not prohibited

- Uzbekistan: leaded petrol constitutes about 10% of total petrol production;
- Kyrgyzstan: use of leaded petrol is prohibited in the capital city of Bishkek only;
- Tajikistan: there is no official ban on the use of leaded petrol. It is estimated that leaded petrol will be in the country's fuel market at least until 2009.



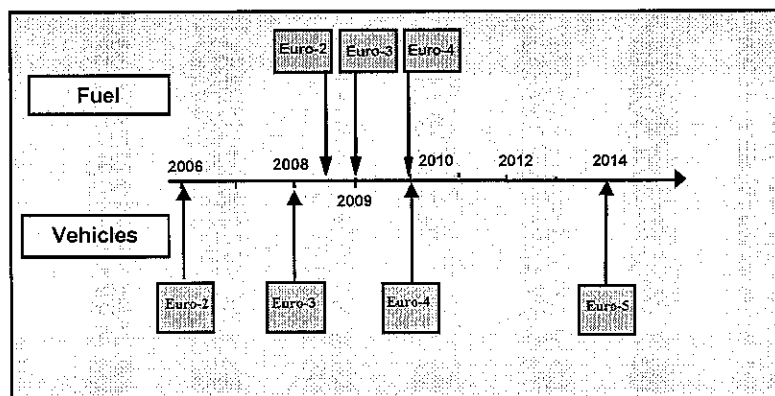


### Schedule of introduction of environmental requirements to motor vehicles and fuels in Russia

Requirements	Year of introduction					
	Vehicle emissions		Petrol		Diesel fuel	
	Western Europe	Russia	Western Europe	Russia	Western Europe	Russia
EURO-2	1996	2006	1994-1995 (EN 228:1993)	1997 (GOST R 51105)	c 01.1996 EN-590:1996	-
EURO-3	2000	2008	2000 (EN 228:1999)	2002 (GOST R 51866)	2000 EN-590:1999	2005 ГОСТ Р 52368
EURO-4	2005	2010	2005 (EN 228:2004)	2005 ( TU 38.401-58-350-2005)	2005 EN-590:2004	2005 ГОСТ Р 52368

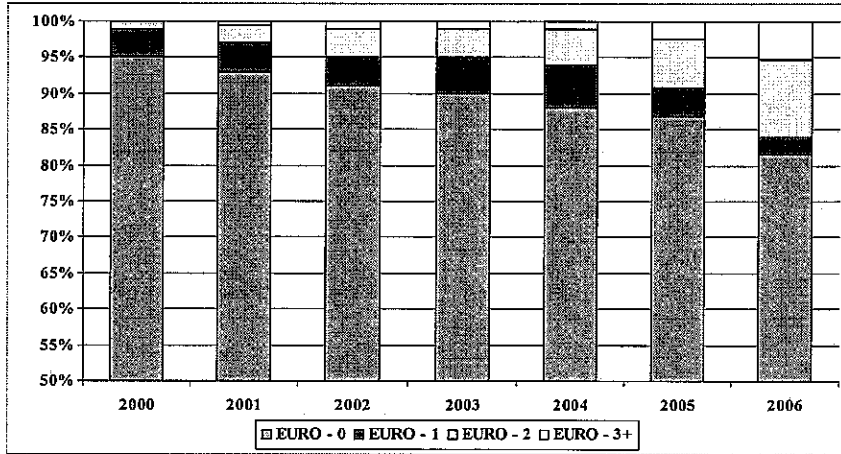


### Schedule of introduction of environmental requirements to motor vehicles and fuels in Russia

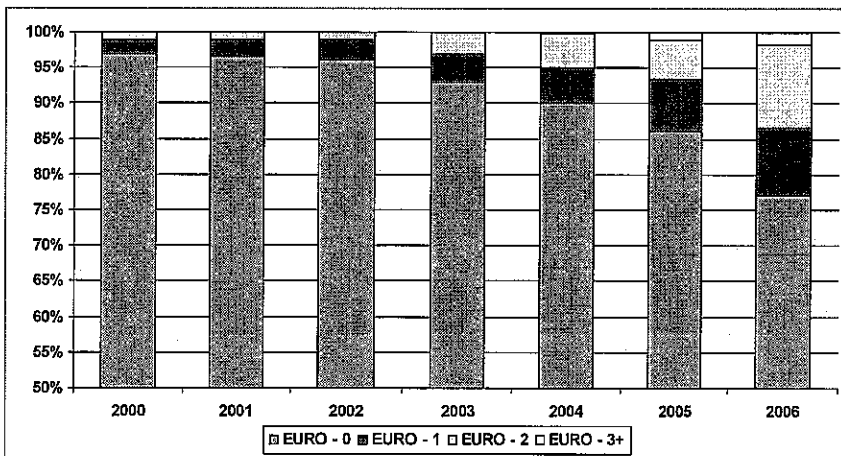




### Russian car fleet structure by environmental class

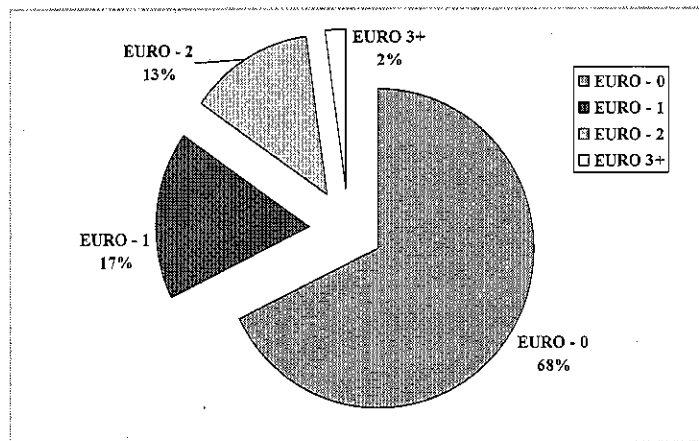


### Russian truck fleet structure by environmental class





### Russian bus fleet structure by environmental class (2006)



### Fuel specifications in CIS countries

Petrol				
	GOST 2084-77	GOST R 51105-97	GOST 31077-2002	EN 228:2004 (EURO-4)
Lead, g/dm <sup>3</sup>	0.013	0.010	0.010	0.005
Benzene, vol%	-	5.0	5.0	1.0
Aromatics, vol%	-	-	55	35
Sulfur, ppm	1000	500	500	50 or 10

Diesel fuel			
	GOST 305-82	EN 590:1993 (EURO-2)	EN 590:2004 (EURO-4)
Cetane number	45	49	51
Density at 15°C, kg/dm <sup>3</sup>	830 - 860	820 - 860	820 - 845
Polyaromatics, wt%	-	11	11
Sulfur, ppm	2000/ 4000/ 5000	2000	50 or 10



### Main environmental parameters of motor fuel in Russia

Parameter	Unit	Environmental class and duration of requirements			
		EURO-2 (up to 31.12.2008)	EURO-3 (up to 31.12.2009)	EURO-4 (up to 31.12.2012)	EURO-5 (under discussion)
<b>PETROL</b>					
Maximum sulfur content	ppm	500	150	50	10
Maximum volume fraction of aromatics	%	-	42	35	35
Maximum volume fraction of unsaturated hydrocarbons	%	-	18	18	18
Maximum volume fraction of benzene	%	5	1,0	1,0	1,0
Maximum lead concentration	mg/dm <sup>3</sup>	< 5	< 5	< 5	< 5
<b>DIESEL FUEL</b>					
Maximum sulfur content	ppm	500	350	50	10
Minimum cetane number		45	51	51	51
Maximum mass fraction of aromatics	%	-	11	11	11

<sup>\*)</sup> – The appropriate Technical Regulation was adopted by the Government in February 2008, and will come into force after six months.

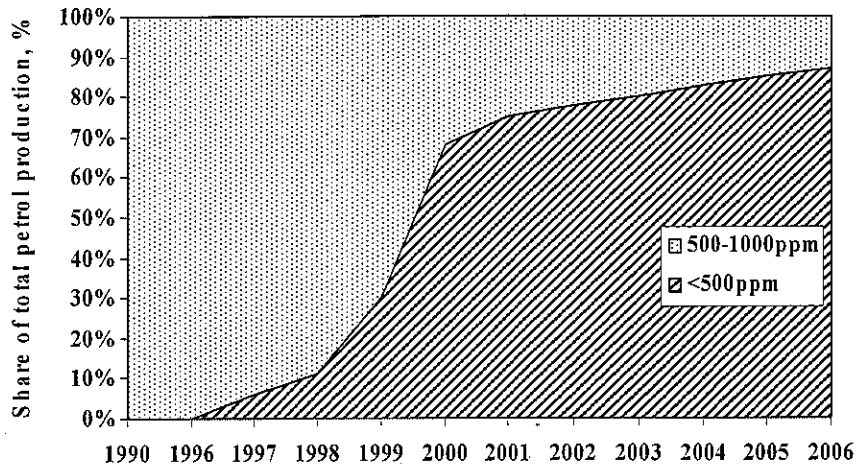


### Structure of petrol production in Russia, %

Petrol \ Year	1990	1995	2000	2005	2006
Total petrol production, million tons	40,6	27,4	27,2	29,5	34,4
A-72	5,7	0,2	-	-	-
A-76(AИ-80)- EURO-1,2	78,3	76,3	55,3	39,6	31,3
AИ-93(AИ-91,92)- EURO-2	15,4	22,2	38,3	47,5	55
AИ-95 (AИ-96)- EURO-2,3	0,4	1,1	6,2	12,6	13,3
AИ-98 - EURO-2,3	0,2	0,2	0,2	0,3	0,4
Share of leaded petrol, %	61,3	53,1	2,3	-	-
Share of unleaded petrol, %	38,7	46,9	97,7	100	100



### Structure of Russian petrol production by sulfur content



### Structure of Russian diesel fuel production (by sulfur content, %\*)

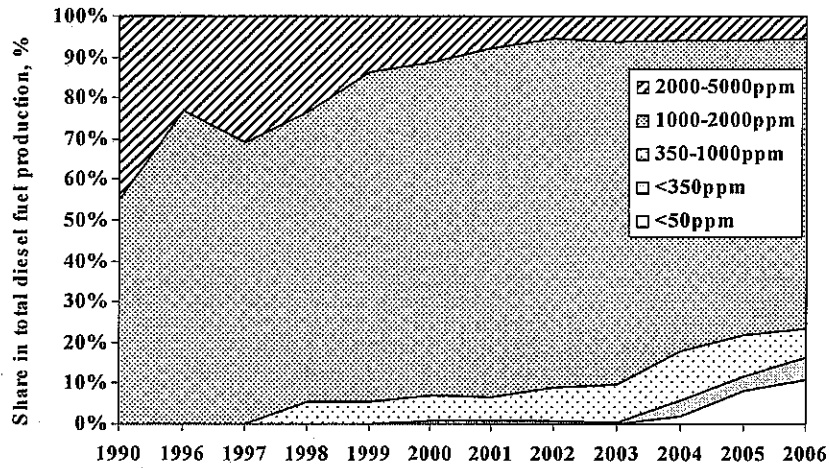
Maximum sulfur content, ppm	2000	2001	2002	2003	2004	2005	2006
10(Евро-5)**)	-	-	-	-	-	0,8	1,7
50(Евро-4)**)	-	-	-	-	-	7,5	9,1
350(Евро-3)**)	-	-	-	3,5	5,3	3,5	5,7
500	9,8	11,7	12,2	11,3	1,6	7,8	4,4
1000	6,3	3,9	3,1	-	1,4	2,4	2,6
2000	72,3	77,1	78,1	79,2	75,5	72,3	70,9
5000	11,6	7,3	6,6	6,0	6,2	5,7	5,6
<b>Итого</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

\*) - Excluding oil refineries owned by JSC Gazprom and MINI-NPZ

\*\*\*) - EN-590



### Structure of Russian diesel fuel production by sulfur content



### Main environmental parameters of Russian EURO-3 and EURO-4 petrols produced by some Russian companies

Parameter	Requi- rements	Petrols					
	EURO-3 EURO-4	Surgut oil refinery (owned by JSC "Gazprom")		JSC «JANOS»	JSC «NU NPZ»	JSC «NK NPZ»	
		"Regular- 92"	"Premium- 95"	"Premium- 95"	"Regular- 92"	"Regular- 92"	"Premium- 95"
Maximum lead content, mg/dm <sup>3</sup>	5	< 5	< 5	< 5	< 5	< 5	< 5
Maximum volume fraction of hydrocarbons, % , including:							
▪ Unsaturated hydrocarbons	18	0	0,2	2,2	1,8	1,1	0,4
▪ Aromatics	42/35	35	41	32	36	32,5	37,8
▪ Benzene	1,0	0,7	0,8	0,4	0,7	0,7	0,8
Maximum sulfur content, ppm	150/50	50	50	140	140	50	40
Maximum oxygen content, %	2,7	1,5	2,4	2,0	0,5	1,8	2,5

## Use of CNG as a motor fuel in CIS countries

- Russia: about 70 000 motor vehicles are operated on CNG (during Soviet time – about 200 000);
- Ukraine: 100 000 motor vehicles (1.5% of the fleet) are operated on CNG;
- Moldova: about 5 000 motor vehicles are CNG-fueled;
- Belarus: there is a national programme of gasification of the country's vehicle fleet;
- Tajikistan: there are 10 600 motor vehicles operated on CNG;
- Kyrgyzstan: CNG-fuelled motor vehicles numbered about 6 000 in 2007;
- Georgia: Ministry of Environment reported about 1.7% of motor vehicles using CNG (2005);
- Armenia: 1 394 vehicles are fueled by CNG (2007).

## Production of bio-fuels in CIS countries

- Russia: a National Programme for production of bio-fuels is currently being developed. In accordance with it in 5 years annual production of bio-fuels will reach 2 million tons;
- Ukraine: in February 2007 the Government has adopted a plan to introduce ethanol for public transport in cities with over 500 000 population before 2010. There are many other projects under consideration. In 2007 3 biodiesel plants were put into operation (mainly working for export);
- Moldova: In 2007 the plans to build an ethanol plant processing grain, and a bio-fuel plant converting cellulose-based biomass into biogas, ethanol and synthetic diesel fuel. All produced bio-fuel will be exported;
- Belarus: Since 01.02.2007 there is a new diesel specification, allowing use of fatty acid methyl ether (FAME) in automotive diesels;
- Kazakhstan: Since September 2006 ethanol fuel is produced at one plant, and 3 more plants are scheduled for construction. All produced fuel is meant for export.

## **Recommendations of the Conference on Cleaner Fuels and Vehicles for Eastern Europe, Caucasus and Central Asia**

- Monitoring fuel quality at fuel stations with responsibility of specific government and involvement of independent auditors;
- Carrying out of periodic vehicle emission inspections in centralised facilities under governmental oversight and withdrawal of failed vehicles from operation;
- Imported vehicles have to have a functioning catalytic converter. This have to be assured by importer;
- Vehicles over 12 years old have to be inspected at least every six months;
- Fuel and vehicle requirements have to be introduced together as a corresponding system;
- Fuels at retail points have to be clearly labeled to indicate their compliance with "EURO" standards;
- Taxation policies and incentives serve to stimulate production, import and consumption of cleaner fuels;
- Use of sustainable alternative fuels in addition to conventional petrol and diesel fuels have to be considered and supported to reduce emissions;
- Countries have to strengthen the systems for enforcement of and compliance with the above suggestions.

## **Steps recommended by the Conference on Cleaner Fuels and Vehicles**

### For countries:

- Consider putting in place a Programme of Actions ("roadmap") on implementation of cleaner fuels and vehicles;
- Consider possibility of leapfrogging from early "EURO" standards right to EURO-4 or EURO-5;
- Consider possibility to introduce incentives to encourage early implementation of cleaner fuels and vehicles;

### For participants and organizers (REC Caucasus, PCFV):

- Actively assist in organization of information and data exchange on cleaner fuels and vehicles;
- Report on the progress of implementation of cleaner fuels and vehicles in EECCA region on a regular basis;
- Develop an informal network to include Conference participants and other interested parties;
- Assist countries to disseminate outcomes of the meeting and routinely update EECCA information on the PCFV website ([www.unep.org/pcfV](http://www.unep.org/pcfV));
- Assist (in co-operation with other international forums) in leveraging additional international support for realization of the Conference's recommendations;
- Assist in collection and dissemination of national level information on liquid biofuels.



**Thanks for your attention!**



Report of 30/VSHG, Manila, 2008/04/14-15

1. Outcome of 29/VSHG

Noted : the Chairman's summary of the discussions at 29/VSHG:

- there had been presentations on progress with the implementation of the ECE Regulations
- the group had agreed that VSHG was a good forum for sharing and resolving practical problems in implementing ECE Regulations

2. Report on the work of WP29

Noted : the Chairman's summary of 144/WP29

- : the GTR on headrests had been passed after considerable discussion and with an agreement that further work was needed on some aspects of the regulation
- : the text for the GTR on electronic stability control (ESC) would go to the June WP29

3. Progress report on introduction of ECE Regulations

3.1 Report from Australia

Noted : Australia's progress report (*Annex 1*)

- : Australia was now a signatory of the 1998 Agreement
- : Australia had introduced a scheme for subsidizing the installation of seatbelts on school buses
- : a motorcycle safety summit had been held in Canberra during the previous week and a report would be available to the Land Expert Group meeting in Peru

3.2 Report from Japan

Noted : the presentation from Japan (*Annex 2*), including the study of the necessary elements for the certification system under the 1958 Agreement

: WP29 was working to make the worst case selection transparent

Agreed : Australia would make a presentation on their certification system and how they dealt with worst case issues at the next meeting

3.3 Report from Philippines

Noted : the report from the Philippines (*Annex 3*)

- : there were problems for locally-produced, unique vehicles in relation to harmonization and the administration had had to devise a means of dealing with these vehicles
- : the accession to the 1958 Agreement was targeted for 2008 and a committee was already studying which regulations to adopt

3.4 Report from Singapore

Noted : Singapore hoped to be able to sign the 1958 Agreement by 2010

### 3.5 Thailand

Noted : the Minister would approve the introduction of type approval according to the 1958 Agreement Regulations during 2008

## 4. Regulation and Standard-setting

Noted : Australia's presentation on Regulation and Standard-setting, as well as the changes that they had made as a result of joining the UN regulation system (*Annex 4*)

## 5. Technical discussions

### 5.1 1998 Agreement Programme

Noted : the presentation from the USA (*Annex 5*)  
: work on fuel quality had also started in GRPE, as this was increasingly important for the emissions regulations

Agreed : Australia would prepare a presentation comparing the 1998 and 1958 Agreements for the next VSHG meeting

### 5.2 Motor coach crash test

Noted : the presentation from the USA (*Annex 6*)

### 5.3 Fuel-cell vehicles (FCV)

Noted : Japan's presentation on national and UN/ECE discussions (*Annex 6*)

### 5.4 The Australian Green Vehicle Guide

Noted : the Australian presentation (*Annex 7*)  
: future plans included an expansion to cover safety items, e.g. the NCAP scores, as well as purchase and running costs  
: there was a difference in fuel consumption when all the systems on the vehicle were in use or, for example, if it was towing a trailer. This was covered in a general explanation section  
: manufacturers had not objected to the idea but had been concerned by the additional information required to enable the market models covered to be identified  
: Japan had a similar system, linked to tax incentives  
: Australian States determined the level of taxes and some of them gave tax incentives

### 5.5 Environmental performance in Russia

Noted : the presentation from Russia (*Annex 8*)

## 6. Future directions for VSHG

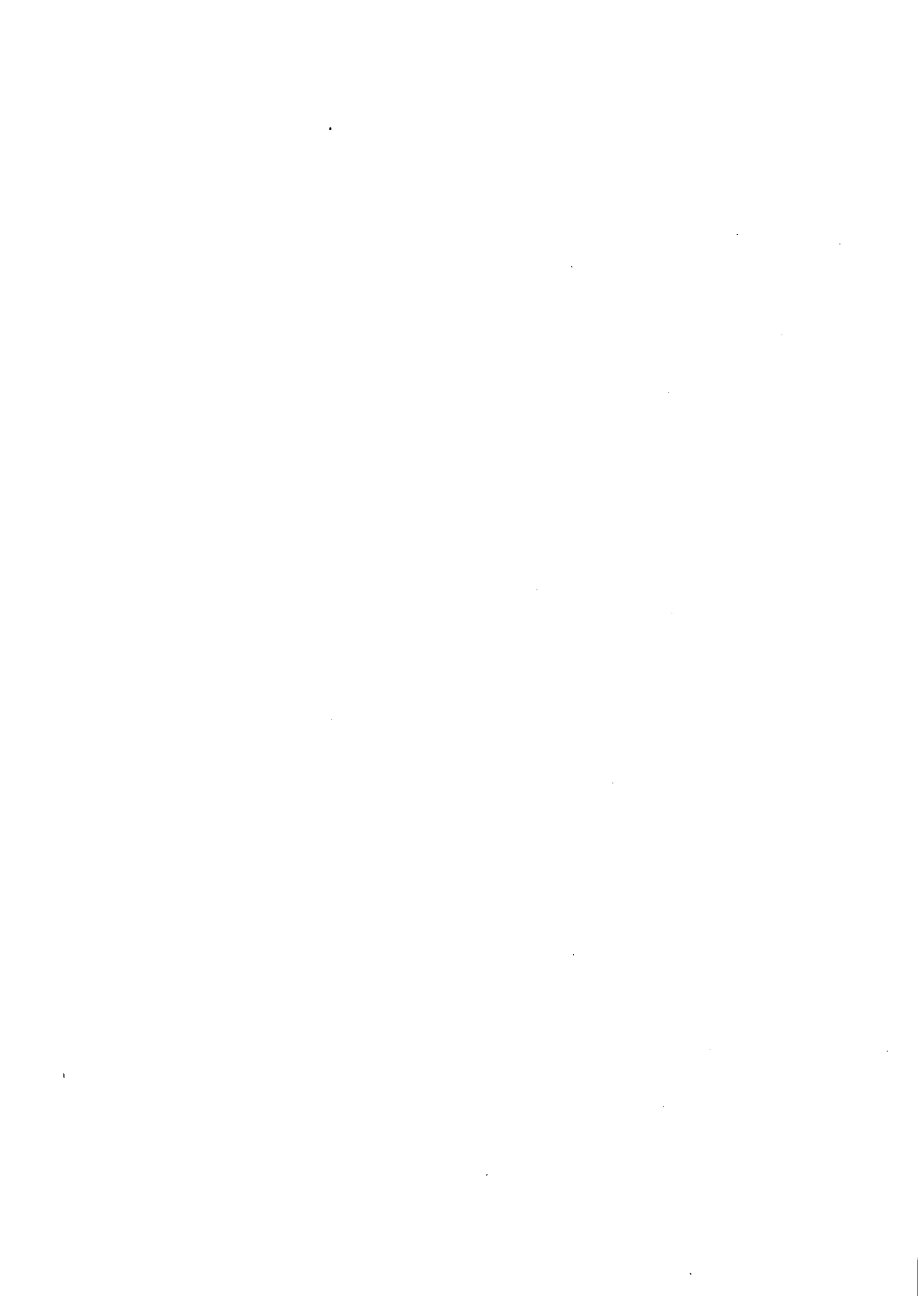
Noted : the group found the subjects covered useful, in particular:

- reports on the work in WP29
- the economy progress reports on the introduction of ECE Regulations
- exchange of information on vehicle environmental strategies, as allocated by the LEG

- background information on technology issues
- as a new activity to have explanations on what changes were being proposed for the ECE Regulations and why
- reports on new items and problems arising in the Member economies which the group could discuss
- bench-marking of type approval systems

Agreed: for the next VSHG meeting:

- all economies would provide an update on their harmonization progress
- all economies would make a presentation on their type approval systems
- members would discuss seatbelts in school buses
- IMMA would prepare an Excel sheet for reporting progress with the adoption of the motorcycle regulations





**Asia-Pacific  
Economic Cooperation**

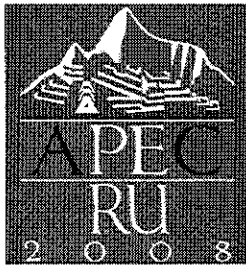
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**2008/TPT-WG30/CLOSING PLEN/LEG FINAL REPORT/01 AGENDA 2**

## Final Report of the Land Experts Group

Purpose: For Consideration

Submitted by: Land Experts Group Chair



**30th APEC Transportation Working Group Meeting  
Makati City, The Philippines  
14-18 April 2008**

## **Land Experts Group: Final Report**

### **1. Introduction**

The LEG Chair welcomed the 37 delegates from twelve (12) economies namely, Australia, Brunei Darussalam, Canada, Chinese Taipei, Indonesia, Japan, Korea, New Zealand, Philippines, Russia, Singapore and Thailand and a representative of the International Motorcycle Manufacturers Association and thanked them for coming to the Philippines and participating in the APEC - TPTWG30.

#### **1.1 Meeting of R-SAF and VSHG on 14-15 April 2008.**

Eleven delegates attended the R-SAF meeting, representing eleven (11) economies of: Australia, Canada, Chinese Taipei, Indonesia, Japan, Korea, New Zealand, Philippines, Russia, Thailand and Viet Nam.

The VSHG meeting was attended by delegates coming from nine (9) economies namely: Australia, Chinese Taipei, Indonesia, Japan, Korea, Philippines, Russia, Singapore and Thailand.

### **2. Matrix Project for Individual Economies to Share Information on their Road Safety Strategies (Australia) (Annex 1)**

Australia, which is the lead economy for this project, provided a presentation on three matrixes which had been developed.

By way of background, it was noted that it was agreed at TMM5 that each APEC economy would have a comprehensive road safety strategy with realistic but challenging fatality and injury reduction objectives. At TPT-WG29 in Chinese Taipei in July 2007 it was decided that a project be initiated for individual APEC economies to share information on their road safety strategies. The project was to be led by Australia with support from Indonesia, Malaysia, New Zealand, Thailand and Viet Nam.

It was noted that this project is a very important step forward in sharing information on road safety among economies.

Changes to Matrix 1 (National Road Safety Strategies and Targets in APEC Economies) were discussed and agreed. These were:

- \* Column 2 to read: Lead or responsible agency/agencies and contact details.
- \* Column 3 to read: Title of national plan and period.
- \* Column 5: Deleted.

No changes were made to Matrix 2 (National Road Safety Strategies in APEC Economies: Status and Information Sources).



It was noted that Matrix 1 and Matrix 2 were intended to be used by economies to share information on national road safety strategies and targets.

Matrix 3 (Planning Matrix for Implementing a National Road Safety Strategy) is a basic structured tool to assist economies which do not yet have a national strategy. It is intended as an optional planning tool and could be enhanced to suit the individual needs of economies.

It was agreed that Matrix 1 and Matrix 2 be adopted by economies for reporting purposes and that any further amendments to the two matrixes suggested by economies would be considered at future meetings. Economies should be encouraged to provide information in the formats of Matrix 1 and Matrix 2. This would make it easier to report progress at the next Ministerial meeting.

### **3. R-SAF Economy Reports**

#### **3.1 Philippines**

##### *National Road Safety Strategy (Annex 2)*

There is increased potential for accidents due to growth in population, GDP and vehicles registered. Inaccurate data is a major concern. Discrepancies in accident figures are attributable to under-reporting to police and different agencies involved in data collection.

Key issues and challenges are: no centralised and organised database; no methodical reporting system; no government agency in charge; and drastic increase in two wheel and jeep accidents. More than 80 per cent of accidents are attributable to human factors.

Targets are:

- \* reduce by half the annual growth rate of fatalities from 4.2 per cent to 2.1 per cent over the next five years
- \* reduce death rate (deaths per 10,000 vehicles) by 20 per cent over the next five-year period
- \* mitigate the huge economic losses sustained over the years (1 per cent of the country's GDP annually).

The Philippine Road Safety Action Plan 2004-2008 is modeled after successful plans implemented by other countries. The Revised Philippine Road Safety Action Plan 2007-2010 updates the key points of implementation. It involves more government agencies and private organisations and includes more short-, medium- and long-term activities. Key performance indicators have been formulated in all 15 sectors such as funding, legislation, research and vehicle standards.

An example of a successful road safety strategy is the Traffic Discipline Zone (TDZ) project.

The task was to reduce the number and severity of accidents at the SLEX – a 51 km expressway – attributable to undisciplined drivers, laxity of enforcement and poor road conditions. The strategy involved implementation of a memorandum of agreement between the Government and the expressway operator. The Government trains patrol officers and provides technical assistance, while the operator provides resources and upgrades to facilities according to standards set by law.

The project started in June 2001 when 1,671 minor and 365 major accidents were recorded. In 2005, 1,781 minor accidents were reported and major accidents were reduced to 10.

### **3.2 New Zealand**

#### *New Zealand's Road Safety Strategy to 2010: Development and Implementation (Annex 3)*

Road safety strategic goals are built around the three Es – engineering, education and enforcement. There was widespread community consultation on risks and costs.

Specific goals by 2010 are no more than 300 road deaths and no more than 4,500 hospitalisations. Policy work on the third implementation package commenced in 2005. Community engagement 'Safe As' workshops were conducted at 16 venues throughout New Zealand.

Ministers announced the package in December 2007 involving: recidivist speeders and speed; intersection behaviour; seatbelt wearing; young and novice drivers; and motorcyclists. First regulations to give effect to the package will be in May 2008 and the final legislative package will be delivered in June 2009.

For road safety strategies it is important to secure buy-in for communities, Government and other stakeholders. Implementing strategies involves very hard work and often represents the best balance rather than a single best solution. It is important to have a lead organisation to drive the strategy.

#### *Wake up to Driver Fatigue – Driver Fatigue as a Road Safety Risk (Annex 4)*

Driver fatigue is difficult to define precisely. Most definitions include the concept of some form of deterioration in performance due to extended effort in work output, physiological well being or feelings.

The key cause of fatigue is lack or loss of sleep. In New Zealand, the impact of driver fatigue between 2002 and 2006 contributed to 256 fatalities and 4,351 injuries resulting in a social cost of NZ\$1,579.06 million.

The warning signs of fatigue are:

frequent yawning  
drooping head, eyes closing  
eyes feeling sore or heavy

vision blurring or dimming  
daydreaming or inattention  
being unaware of other traffic  
having feelings of hunger or thirst  
stiffness or cramp  
driving speed fluctuating  
crossing the centerline, out of the lane or to the road edge  
no memory of the last few kilometers traveled.

Fatigue interventions involve planning:

the trip with a good night's sleep  
to not travel for more than 8-10 hours per day  
to take regular breaks  
to start the trip early in the day and try to not drive into the night  
to stay somewhere overnight  
to check prescription medicine as some can cause drowsiness.

During the drive it is important to:

check the freshness or recirculation of the air in the vehicle  
eat well balanced meals at usual meal times  
share the driving if possible  
take a power nap if tired.

Infrastructure measures include rumble strips and roadside improvements.

A number of measures can also be taken in regard to work time, including prescribing maximum working hours and minimum rest periods.

New Zealand has just released a driver fatigue strategy.

### **3.3 Thailand**

#### *Implementation of Road Safety Action Plan in Thailand 2004-2008*

Thailand's Road Safety Action Plan was approved by the Cabinet in September 2003. The target is to reduce the annual percentage increase in fatalities by half and to reduce the annual rate of road fatalities (deaths per 100,000 population and per 10,000 vehicles).

Thailand adopts the 5Es approach:

Enforcement: helmets, alcohol, safer motorcycles, safety belts, licenses and speed control  
Engineering: black spot treatment, road safety audit, vehicle inspection  
Education: education for children, licensing, road safety campaigns  
EMS: emergency service – hotline 1996  
Evaluation: Road Safety Operation Centre Committee, Government and private sector funding, data collection, road accident costs and research.

There were 14,446 fatalities in Thailand in 2003, falling to 12,492 in 2007. Fatalities are particularly high during the New Year festival and Songkran festival.

All stakeholders need to be involved for the second stage of Road Safety Action Plan (2009-2013).

More research and development are required for road safety implementation. There is also a need for more investment and increased capacity building for road safety.

#### **4. VSH Economy Reports**

##### **4.1 Progress report of Economies on the introduction of ECE Regulations**

\* Report from Australia

Noted : Australia's progress report

: Australia was now a signatory of the 1998 Agreement

: Australia had introduced a scheme for subsidizing the installation of seatbelts on school buses

: a motorcycle safety summit had been held in Canberra during the previous week and a report would be available to the Land Expert Group meeting in Peru

\* Report from Japan

Noted : the presentation from Japan (**Annex 5**), including the study of the necessary elements for the certification system under the 1958 Agreement

: WP29 was working to make the worst case selection transparent

Agreed : Australia would make a presentation on their certification system and how they dealt with worst case issues at the next meeting

\* Report from Philippines

Noted : the report from the Philippines (**Annex 6**)

: there were problems for locally-produced, unique vehicles in relation to harmonization and the administration had had to devise a means of dealing with these vehicles

: the accession to the 1958 Agreement was targeted for 2008 and a committee was already studying which regulations to adopt

\* Report from Singapore

Noted : Singapore hoped to be able to sign the 1958 Agreement by 2010

\* Report from Thailand

Noted : the Minister would approve the introduction of type approval according to the 1958 Agreement Regulations during 2008

##### **4.2 Regulation and Standard-setting**

Noted : Australia's presentation on Regulation and Standard-setting, as well as the changes that they had made as a result of joining the UN regulation system (**Annex 7**)

#### **4.3 Technical discussions**

##### **1998 Agreement Programme**

Noted : the presentation from the USA (*Annex 8*)

: work on fuel quality had also started in GRPE, as this was increasingly important for the emissions regulations

Agreed : Australia would prepare a presentation comparing the 1998 and 1958 Agreements for the next VSHG meeting

#### **4.4 Motor coach crash test**

Noted : the presentation from the USA (*Annex 9*)

#### **4.5 Fuel-cell vehicles (FCV)**

Noted : Japan's presentation on national and UN/ECE discussions (*Annex 10*)

#### **4.6 The Australian Green Vehicle Guide**

Noted : the Australian presentation (*Annex 11*)

- future plans included an expansion to cover safety items, e.g. the NCAP scores, as well as purchase and running costs
- there was a difference in fuel consumption when all the systems on the vehicle were in use or, for example, if it was towing a trailer. This was covered in a general explanation section
- manufacturers had not objected to the idea but had been concerned by the additional information required to enable the market models covered to be identified
- Japan had a similar system, linked to tax incentives
- Australian States determined the level of taxes and some of them gave tax incentives

#### **4.7 Environmental performance in Russia**

Noted : the presentation from Russia (*Annex 12*)

### **5. Projects Completed and Results Achieved**

#### **Mass Passenger Surface Transport Security Conference, April 10-11, 2008, Manila, Philippines**

The speakers and delegates exchanged views and opinions on the matters raised in the various presentations. Areas of discussion included, the need to adopt different approaches and responses in the mass passenger environment to those used in other transport modes (e.g. aviation), importance of ensuring that staff are adequately trained, privacy issues surrounding the use of CCTV, use and effectiveness of canine patrols and cultural issues around the use of various screening technologies.

Also, the discussion explored a range of issues including the application of ISR, different strategies for raising public awareness and maintaining awareness over time and the use of incremental security measures when the risk level is raised.

## **6. Ongoing Projects**

### **6.1 Initial Report on the Implementation of Land – ISCAP (Philippines)**

Project Schedule:

+ Start: February 27, 2008

+Analysis of Existing Philippine Situation: Feb 27 to Mar 31, 2008

- \* Land/Rail transport stakeholders consultative congress (Feb 27, 2008)
- \* Documentation of information (Feb 28 to Mar 7, 2008)
- \* Records exploitation/data gathering
- \* Inspection of facilities and infrastructures
- \* Interviews and round table consultations
- \* SWOT Analysis (Mar 10 to 24, 2008)
- \* Draw up initial Terms of Reference / Rules of Engagement (Protocol)

+ APEC-Wide Situation: Apr 1 to July 31, 2008

- \* Design/disseminate survey form (Apr 1 to 11, 2008)
- \* Follow up responses to survey form (Apr 14-May 19, 2008)
- \* Dialogues/consultation/teleconferencing (May 12-16, 2008)
- \* Prepare draft TOR and Draft policies (May 19 to June 30, 2008)
- \* Prepare for Seminar/Workshop (Jul 1 to 15, 2008)
- \* Seminar/Workshop (3rd week of July 2008)

### **6.2 Progress Report on IWGLTS (Japan)**

The third meeting of IWGLTS was held in Tokyo, Japan last February 2008 and was attended by economies and organization from Australia, Canada, France, Germany, India, Japan, Malaysia, Russia, Singapore, South Korea, Spain, U.K., U.S. and EC.

Member economies shared information on terror attacks and security measures particularly on surveillance system, security management system and legal framework.

Japan developed a report on “Raising Public Awareness” and Germany on “Security Partnership between Operators and Authorities”.

The IWGLTS also developed practices for “Raising Public Awareness” which includes:

- Request for passenger cooperation when they find suspicious objects/persons
- Notification of the reinforcement of surveillance
- The measure for trashcans
- Other ways to encourage passenger vigilance

## **7. New Project Proposals and Emerging Issues**

It was agreed that draft project proposals shall be submitted by concerned economies in time for the next APEC meeting in August 25-29, 2008 at Lima, Peru to meet the September 4, 2008 BMC meeting. LEG shall coordinate closely with the APEC Secretariat for the QAF process prior to TPT-WG31. The following road safety concerns shall be developed into project proposals:

- Best practices compendium on motorcycle safety
- A study on driver fatigue and its impact on road safety

## **8. Progress on TMM5 Directives to LEG (Annex 13)**

Note: Each economy provided an update on its road safety strategy.

There were a number of difficulties in implementing national strategies including rising rates of motorisation with rapidly increasing motorcycle use and issues relating to coordination among institutions. Several economies were finding it difficult to meet their targets.

## **9. Future Work Program**

### **9.1 Road Safety**

- a. Further development of the matrix project for information sharing.
- b. Developing strategies to improve motorcycle safety.
- c. Developing strategies to improve public awareness of driver fatigue and its impact on road safety.
- d. Inventory of economies with Comprehensive Road Safety Agenda

### **9.2 Vehicle Standards Harmonization**

Noted : the group found the subjects covered useful, in particular:

- a. Reports on the work in WP29
- b. The economy progress reports on the introduction of ECE Regulations
- c. Exchange of information on vehicle environmental strategies, as allocated by the LEG
- d. Background information on technology issues
- e. As a new activity to have explanations on what changes were being proposed for the ECE Regulations and why
- f. Reports on new items and problems arising in the Member economies which the group could discuss

g. Benchmarking of the Economies' Type Approval System

h. Update of the Economies' Harmonization Progress

i. Project Proposal on the Standard Reporting System of the Economies' Emission Standards

j. Members would discuss seatbelts in school buses

k. IMMA would prepare an Excel sheet for reporting progress with the adoption of the motorcycle regulations

## **10. Appointments**

LEG approved the R-SAF recommendation for Ms. Daisy Jacobo of the Philippines be appointed as Deputy Chair of LEG-SAF.



**Attachment**

**List of Participants  
Meeting of Land Experts Group  
TPT-WG30, Makati City, The Philippines**

<b>No</b>	<b>Title M/F</b>	<b>Name &amp; Position</b>	<b>Organisation, Phone</b>	<b>Email</b>
1.	Mr.	Peter Andrew Robertson General Manager	Vehicle Safety Standards, Maritime and Land Transport Department of Infrastructure, Transport, Regional Development and Local Government, Australia Office No. +61262746271	
2.	Mr.	Alan Raymond Gascoyne Section Head	Transport Security Strategies, Office of Transport Security Department of Infrastructure, Transport, Regional Development and Local Government, Australia Office No. 0061262746917	
3.	Mr.	Joe Motha	Australia	
4.	Mr.	Hj Omar bin Hj Slrat Acting Senior Special Duties Officer	Transportation Division, Ministry of Communications, Brunei Darussalam Office No. 6732383838	

5.	Ms.	Nina Frid Director	Policy Rail and Urban Transport Security Transport Canada Office No. 6139497792	
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7.	Mr.	Baitul Ihwan Deputy Director for Legal Affair	Directorate General of Railways, Ministry of Transportation, Indonesia Office No. +62213856836	
8.	Mr.	Karlo Manik		
9.	Mr.	Eddy Gunawan Deputy Director of Land Transport Safety	Directorate of Land Transport Safety, Ministry of Transportation, Indonesia Office No. +62213862220	
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<b>17.</b>	Mr.	Cecilio Penilla Administrator	Office for Transportation Security Department of Transportation and Communications, Philippines Office No. 6328552418	
<b>18.</b>	Ms.	Daisy Jacobo	Land Transportation Office, Philippines	
<b>19.</b>	Mr.	Roberto Valera	Land Transportation Office, Philippines	
<b>20.</b>	Mr.	Arnel Manresa	Metro Rail Transit 3, Philippines	

No	Title M/F	Name & Position	Organisation, Phone	Email
21.	Mr.	Exequiel Mangahas	Toll Regulatory Board, Philippines	
22.	Ms.	Cecile Santiago	Philippines	
23.	Mr.	Homer Maranan	Philippines	
24.	Mr.	Nabor Gaviola	Philippines	
25.	Ms.	Eloisa Pilapil	Philippines	

No	Title M/F	Name & Position	Organisation, Phone	Email
26.	Mr.	Camilo Napone	Philippines	
27.	Mr.	Gerardo Reglos	Philippines	
28.	Mr.	Felipe Ablong	Toll Regulatory Board, Philippines	
29.	Ms.	Eleanor Domingo	Light Rail Transit Authority, Philippines	
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