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**Policy issues: State of the environment  
Outcome of the World Summit on Sustainable Development**

**PROGRESS IN PHASING OUT LEAD IN GASOLINE**

Note by the Executive Director

The present note contains information on progress in phasing out lead in gasoline in keeping with Governing Council decision 21/6 of 9 February 2001. The content of this note has been reproduced without formal editing.

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\* UNEP/GC.22/1.

## **Background**

Human exposure to lead represents a serious environmental health problem. Vehicular traffic is the largest source of lead exposure in many urban areas, often accounting for 80 to 90 % of airborne lead. Highly significant relationships have been found between the use of lead additives in gasoline and the blood levels of exposed populations. Children are especially sensitive to lead. They are exposed to more, absorb and retain more and a given body burden will cause greater damage in children compared to adults.

Decision-makers in an increasing number of countries have meanwhile recognized that eliminating the use of lead additives in gasoline is a cost-effective way of reducing lead poisoning, especially of children. As a result, the phase-out of lead from gasoline has gained wide support.

Recalling the Programme for the Further Implementation of Agenda 21, adopted by the General Assembly at its nineteenth special session in 1997, in which the Assembly emphasized the importance of accelerating the process of eliminating the unsafe uses of lead, including the use of lead in gasoline, worldwide, the UNEP Governing Council Decision 21/6 on Lead in Gasoline adopted in February 2001, expressed concern about the health risks to humans, especially children, caused by exposure to lead, and called upon Governments that have not yet done so to eliminate the use of lead in gasoline. The Decision, further urged Governments, intergovernmental organizations, the Intergovernmental Forum on Chemical Safety and civil society to participate actively in assisting national Governments in this phase-out, including by making available information, technical assistance, capacity-building, and funding necessary to enable developing countries, especially least developed countries and countries with economies in transition, to take an active part in the phase-out.

In order to prepare this report on progress in phasing out lead in gasoline a questionnaire has been sent by the Executive Director of UNEP to all UNEP official contact points requesting their assistance in providing information relevant to their respective Government s actions regarding the use of lead in gasoline. The questionnaire requested information on bans and other actions to phase out and restrict lead in gasoline, as well as information on market shares of leaded versus unleaded gasoline. This report also covers activities of UNEP and other international organizations that were requested to provide information on activities related to this issue.

## Responses Received to the Questionnaire on the Status of Governments Efforts to Phase Out Lead in Gasoline

Responses from Governments to the questionnaire were received from sixty-two countries; 11 from Africa; 9 from North and Central America and the Caribbean Regions; 6 from South America; 11 from Asia; 23 from Europe; and 2 from Oceania. Information received through these responses has been compiled in Annex 1 "Compilation of responses received to the Questionnaire on the Status of Government Efforts to Phase Out Lead in Gasoline".

Figure 1  
Countries that have provided responses to the  
"Questionnaire on the Status of Government Efforts to Phase Out Leaded Gasoline"  
Source: Annex 1



Summary of available information on Governments efforts to phase out lead in gasoline

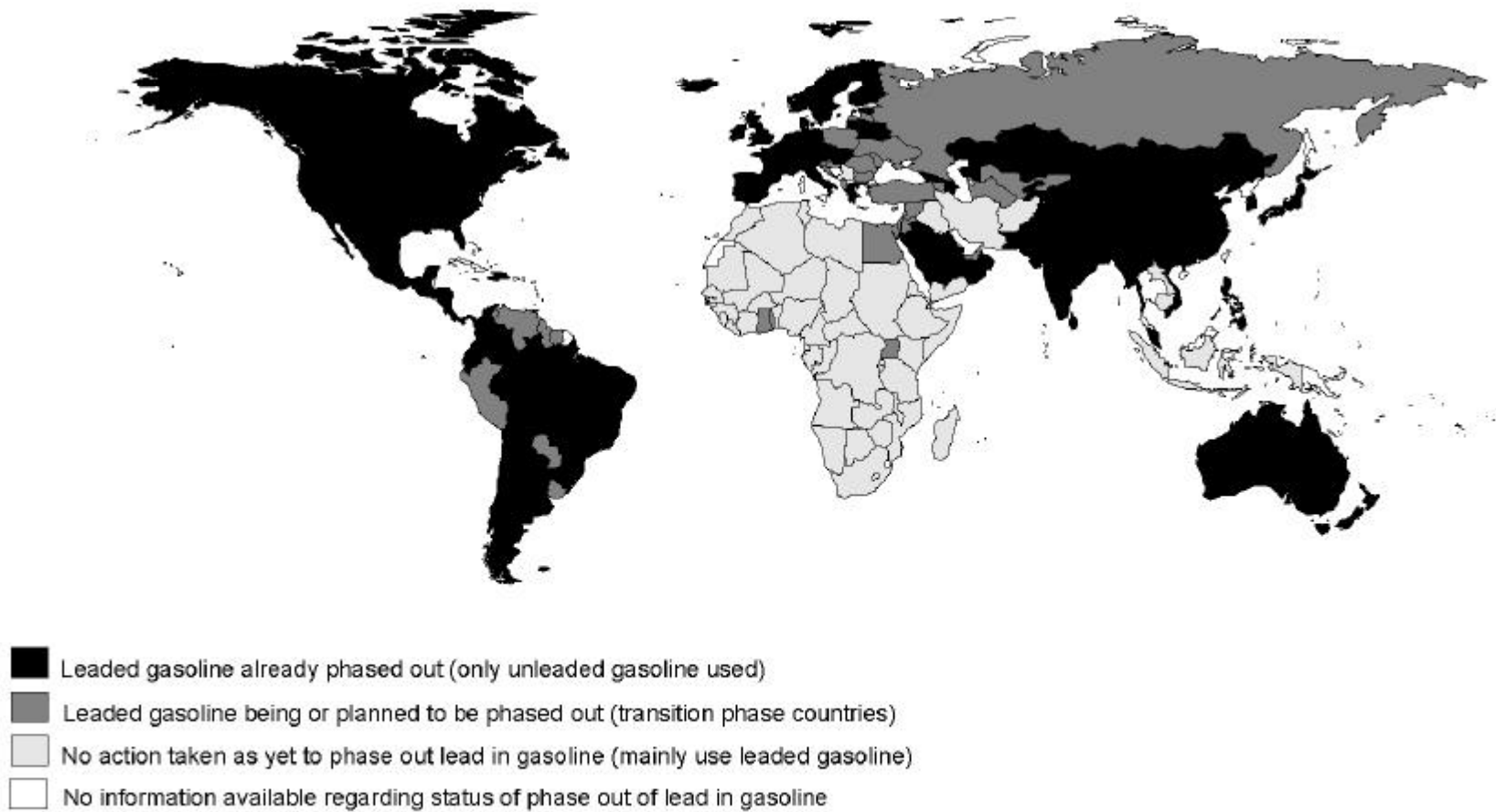
In order to obtain a better understanding of the actual status of Governments efforts to phase out lead in gasoline, the information received through the responses to the questionnaire were completed with information that could be obtained from the open literature using the references listed in Annex 2 Summary of available information on Governments efforts to phase out the use of lead in gasoline . All available information has been consolidated in Annex 2. Based on this it can be concluded that:

- in Africa most countries have not yet initiated any action to phase out lead in gasoline;
- in North and Central America and the Caribbean Regions all countries, for which information could be obtained, phase out has been completed or initiated;
- in South America all countries have either already taken or initiated action to phase out lead in gasoline;
- in Asia a majority of countries have completed or initiated the phase-out of lead in gasoline while there are still 7 - 10 countries that have not, as yet, initiated any action;
- in Europe, all countries, except for two unknowns , have phased out or initiated action to phase out lead in gasoline; and
- in Oceania, Australia and New Zealand have taken action to phase out lead in gasoline while no information could be obtained regarding the situation in the Pacific island states except for Nauru that imports unleaded gasoline since 1999 due to lower prices.

Figure 2

### Summary of Available Information on Government Efforts to Phase Out Leaded Gasoline

Source: References 1-7 from Annex 2



## **Summary of responses received from Governments regarding the market share of unleaded versus leaded gasoline**

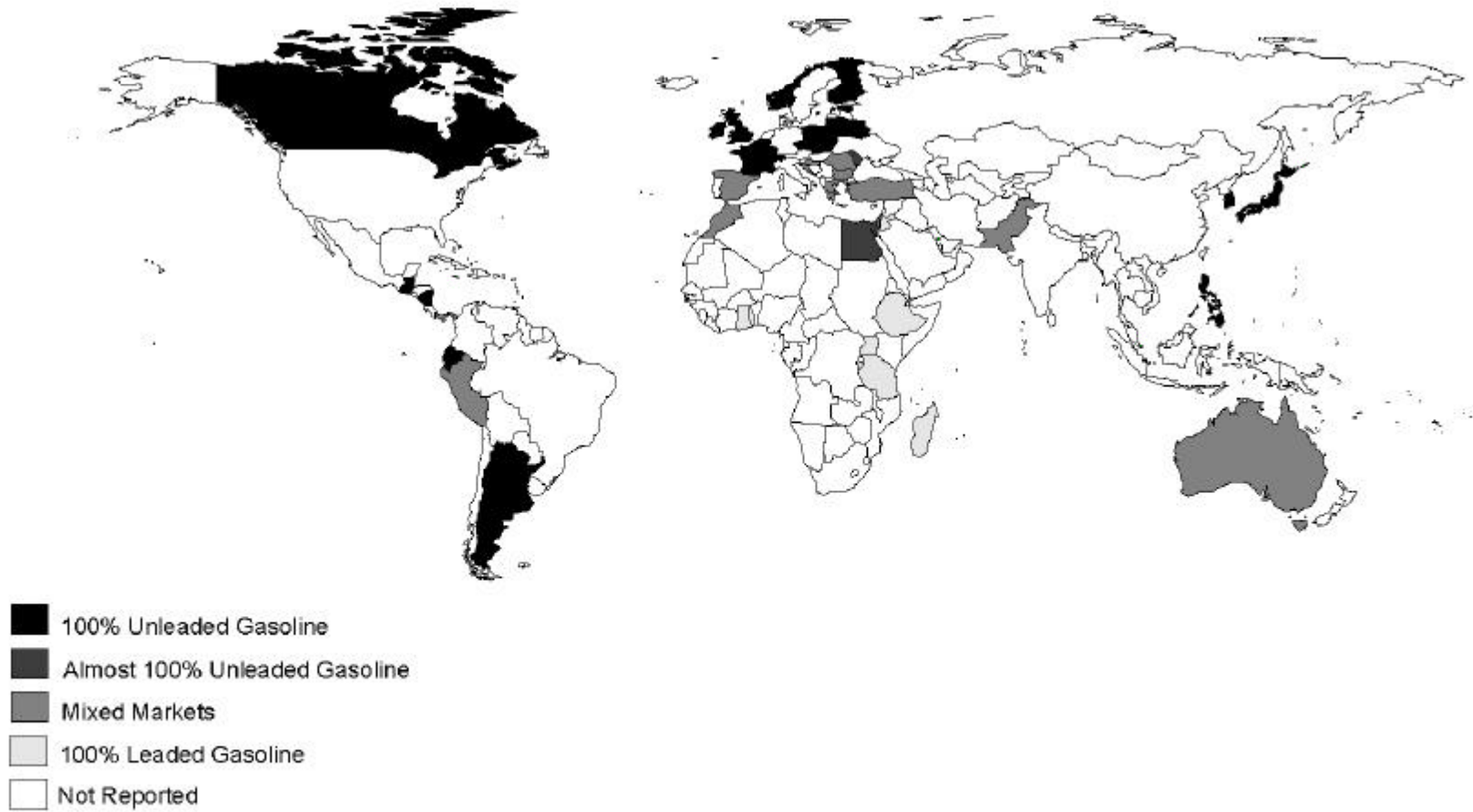
Information regarding the market share of leaded versus unleaded gasoline between 1995 and 2001 was obtained from most of the sixty-two countries that responded to the questionnaire. The results are compiled in Annex 3 Summary of responses received on the market share of unleaded versus leaded gasoline and can be summarized as follows.

- Africa: in all reporting countries, except Egypt and Morocco, the market share of leaded gasoline is 100% in the most recent years.
- North and Central America and the Caribbean Regions: all reporting countries have now a market share of 100% for unleaded gasoline with one country reported to be in transition to 100% unleaded gasoline in 2002.
- South America: of the countries responding to the questionnaire, four countries reported a complete switch to unleaded gasoline, and one reported a market share for unleaded gasoline of 90%, while in one country the market share of leaded gasoline was still above 50% in 2001.
- Asia: of the countries reporting five had a market share of 100% for unleaded gasoline, while three reported market shares of 39-77% for leaded gasoline in 2000-2001 and one reported a market share of 99% for leaded gasoline.
- Europe: The majority (14) of the countries reported a complete phase out of leaded gasoline on the market, one had almost phased it out with the market share of unleaded gasoline of almost 99% and six countries still had a market share of 20-75% for leaded gasoline in 2000-2001.
- Oceania: The market share for unleaded gasoline was 86% in Australia in 2001 and Nauru Islands reported that import was restricted to unleaded gasoline since September 1999 due to lower prices.

Figure 3

### Market shares of unleaded versus leaded gasoline

Source: Annex 3



## **Regional Activities**

Under the auspices of the United Nations Economic Commission for Europe (UN/ECE), and the 1979 "Convention on Long-Range Transboundary Air Pollution on Heavy Metals" the "Aarhus Protocol on Heavy Metals" was adopted in 1998. Presently the Protocol received 36 signatures and 13 ratifications and it will enter into force on the ninetieth day after the sixteenth ratification, acceptance, approval or accession.

The Protocol requires that no later than 6 months after the date of entry into force of this Protocol, the lead content of marketed petrol shall not exceed 0.013 g/l. Under special conditions this time may be extended to a period of up to 10 years, during which a Party may market leaded petrol with a lead content not exceeding 0.15 g/l. A Party is permitted to market small quantities, up to 0.5 % of its total petrol sales, of leaded petrol with a lead content not exceeding 0.15 g/l to be used by old on-road vehicles.

The European Community (presently 15 member countries) is going beyond these measures. In the European Community the marketing of leaded petrol is banned since 1 January 2000 according to Directive 98/70/EC. The maximum content of lead in unleaded petrol is 0.005 g/l. By way of derogation, a Member State may be allowed on request to continue to permit the marketing of leaded petrol until at the latest 1 January 2005. Member States may continue to permit the marketing of small quantities of leaded petrol, up to a maximum of 0.5 % of total sales, to be used by old-timers or museum vehicles. The lead content of leaded petrol shall not exceed 0.15 g/l.

## International Activities

Over the last few years, a number of international organisations, including WHO, UNEP and the World Bank have issued decisions, recommendations, resolutions or policy declarations committing their members, where necessary, to further reduce the risk posed by exposure to emissions from automobiles that use gasoline with lead additives. A high priority is given to a worldwide phase out of leaded gasoline.

Much remains to be done, however, especially in countries where lead is still heavily used in gasoline, and rapid urbanization and motorization pose an increasing threat to exposed populations. The phase-out of lead from gasoline makes good economic sense since relatively simple and inexpensive technical solutions are available to prevent large social damages.

The World Bank is one of the leading organizations in raising political awareness of the problem and supporting national programs, regional initiatives on the global phase-out of lead from gasoline. The Bank is assisting governments in their efforts to increase public awareness of the problem, design lead phase-out strategies, set in place supporting fiscal policies, and mobilize financing for refinery modifications. The Clean Air Initiative is a partnership that advances innovative ways to improve the air quality in cities around the world by sharing knowledge and experiences and facilitating technical assistance for clean air action planning. The major goals of the Clean Air Initiative are to share knowledge and experiences on air quality management; improve policy and regulatory frameworks at the regional level; promote the implementation of integrated air quality strategies and pilot projects to encourage innovation.

The initiative includes activities in Asia, Latin America, Europe and Central Asia and in Sub-Saharan Africa. In each regional initiative, partnerships have been developed with a diverse group of organizations, the cities themselves, development agencies, nongovernmental organizations and private sector companies. The Clean Air Initiative aims to promote the adoption of urban air quality management strategies based on the reduction of vehicle pollution. The Initiative is particularly concerned with the phase-out of lead from gasoline in Sub-Saharan Africa

A "Regional Conference on the Phasing-Out of Leaded Gasoline in Sub-Saharan Africa" was organized from 26-28 June 2001 in Dakar, Senegal. Participants from twenty-five Sub-Saharan African countries attended the conference. The resulting "Declaration of Dakar" called for a complete phase-out of leaded gasoline in all Sub-Saharan African countries at the latest by 2005 and recommended Governments to reduce the lead content in gasoline (currently 0.8 g/l in most countries) to 0.4 g/l by 2002 and to 0.2 g/l by



2003. Within the declaration, participants agreed to complete sub-regional action plans within 12 months framing the respective national clean air programs. The declaration also requested WHO, UNEP, the World Bank and bilateral environmental agencies to support Sub-Saharan African stakeholders in developing the capacity to implement the lead phase-out programs within air quality management. At the conference an AFRICACLEAN network of air quality practitioners was created with both regional and international coverage. (The Proceedings and the Declaration of Dakar are available at: <http://www.worldbank.org/cleanair/caiafrica/africaenglish/learningactivities/dakar.htm> ).

As a follow up to the Conference it was agreed to organize sub-regional conferences and workshops for countries in West Africa, Nigeria and Neighbours, and East Africa inter alia to develop actions plans on the phase-out of leaded gasoline. One national conference was held in Nigeria in November 2001. The workshop on the Phase out of Leaded gasoline in East Africa was organized, also in response to decision 21/6 (Lead in Gasoline), by UNEP and the International Petrol Industry Environmental Protection Association (IPIECA), in Nairobi, from 5 to 7 June 2002 through funds provided by the United States Environmental Protection Agency, the World Bank, IPIECA, and UNEP. UNEP is closely involved in the implementation of the action plan that was developed at the workshop for phasing out leaded gasoline in East Africa. A website for the workshop has also been established by UNEP available at: [www.unep.org/dpdl/urbanenvironment/workshop](http://www.unep.org/dpdl/urbanenvironment/workshop) .

### **Actions Related to Lead in Gasoline at the World Summit on Sustainable Development**

The Plan of Implementation of the World Summit on Sustainable Development of September 2002 expresses the urgent need to address causes of ill health, including environmental causes, and commits to reduce respiratory diseases and other health impacts resulting from air pollution, with particular attention to women and children by supporting the phasing out of lead in gasoline; and to phase out lead in lead-based paints and other sources of human exposure, work to prevent, in particular, children's exposure to lead, and strengthen monitoring and surveillance efforts and the treatment of lead poisoning.

UNEP was a key player in establishing the Global Partnership for Cleaner Fuels and Vehicles for Cleaner Air during the World Summit on Sustainable Development in September 2002. Together with partners including the United States Government, The Netherlands Government, the Canadian Government, the International Fuel Quality Centre (IFQC), the UN Department for Economic and Social Affairs (UNDESA), several NGOs and representatives from the oil and automotive industry, a global partnership was launched to address the urgent issue of vehicle-related emissions in developing countries. Many other partners, Governments, international organizations, private sector and civil society organizations, have since joined this partnership or are in the process of doing so. The partnership is open for new members at any time. The Partnership will facilitate, support and coordinate initiatives to promote cleaner fuels and vehicles in developing countries. The implementation of the global goal to phase out leaded gasoline by 2005 is a major objective to be supported by the Global Partnership. At a first meeting of the partners that took place on 14 and 15 November in New York it was decided that UNEP will host the Clearing House for this partnership. A work-plan for the implementation of the Partnership, in which the phase out of leaded gasoline worldwide will play a key role, is now being developed.

## ANNEX 1

## Compilation of Responses received to the "Questionnaire on the Status of Government Efforts to Phase Out Lead in Gasoline"

AFRICA						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline is banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Burundi	X					Leaded gasoline is not controlled.
Comoros	X				0.013 g/l	No control action was taken. The maximum allowed lead content in gasoline is 0.013 g/l in 2002
Egypt	X				0.013 g/l	Tetraethyllead is added only to one type of gasoline in only one (of nine) refinery. Maximum lead content in gasoline grade 80 is 0.5 g/l. Share of leaded gasoline decreased from 83.8 % in 1995 to 8.4 % in 2001. Environmental law is under modification to add some restrictions for lead content in gasoline. Plans to reform the only refinery that produces gasoline aim at a phase out of leaded gasoline within five years (before end of 2007).
Ethiopia	X					Leaded gasoline is not controlled.
Ghana		01 Apr 2003	31 Dec 2003	01 Jan 2004	0.013 g/l	1997-2001 Lead content restricted to 0.15 g/l for leaded gasoline.
Madagascar	X					Only leaded gasoline, two types: Essence tourisme RON 87 with a maximum of 0.3 ml Pb-tetraethyl/l. Super carburant RON 95 with a maximum of 0.6 ml Pb-tetraethyl/l.
Malawi	X					No control action planned as yet.

Morocco		01 Sep 2005			0.013 g/l	Presently three types of gasoline are being marketed: leaded super with 0.5 g/l, unleaded super with 0.013 g/l and leaded regular with 0.5 g/l. As of 01 September 2005 it is planned to reduce the lead content in leaded super to 0.15 g/l in the unleaded super to 0.005 g/l and to eliminate lead in regular gasoline.
Tanzania	X					Leaded gasoline is not controlled. Super: max. 0.4 g/l. Feasibility study on how to phase-out leaded gasoline is being undertaken. No results yet.
Togo		From the strategy adoption	30 Dec 2004			National Action Plan according to the "Declaration of Dakar" has been established. two types of gasoline (Essence Super, Essence Ordinary) with a mean lead content in 2000 of 0.105 g/l.
Uganda	X	Dec 2003		No date set		Presently gasoline on the local market has a lead content of about 0.4 g/l. As from Jan 2003 the lead content will be max. 0.15 g/l. No regulations established yet.

<b>NORTH AMERICA, CENTRAL AMERICA AND CARIBBEAN REGIONS</b>						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline is banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Antigua and Barbuda				1991		Voluntary phase out by private sector. No laws enacted since it was a voluntary action taken by the private sector.
Bahamas				No specific date*		Phase out of leaded gasoline in the Bahamas has been primarily due to its phase out in the United States. Thus, no leaded gasoline is used in the Bahamas.

Voluntary phase out no regulatory action taken

Barbados				01 May 2000*	0.01 mg/l	The use of leaded gasoline was completely eliminated as from 01 May 2000. Although there is no legislation on this, the policy of the Government of Barbados is that no leaded gasoline be imported. Gasoline is tested in Trinidad before import. In Barbados, all of the Petroleum Products are imported by the BNTCL which no longer imports leaded gasoline. Thus, Barbados is only using unleaded gasoline since 2001.
Belize				Aug 1996		Belize has completely phased out the use of leaded fuel since August 1996. All gasoline with the exception of aviation gas imported into Belize, are lead free and controlled primarily through the import/export licensing system in Belize. (Only one main importer). No legislation in force yet, but there are plans to include the explicit prohibition of leaded fuel through the revision of the pollution legislation SI NO.56 of 1996, currently being amended.
Canada				01 Dec 1990	0.005 g/l	The introduction of the Gasoline Regulations in 1990 virtually removed leaded fuels from use in Canada.
Guatemala				01 Apr 1991	0.013 g/l	Since 1992, Guatemala is only using unleaded gasoline.
Jamaica				01 Jul 2003	0.013 g/l	
Nicaragua				01 Aug 1996	0.013 g/l	Since 1997, Nicaragua is only using unleaded gasoline.
Panama				01 Jan 2002	0.013 g/l	Between 1998 and 2002, a process was put in place to reduce the content of lead in gasoline. In accordance with the regulation of 2002, only unleaded gasoline is allowed with exception of gasoline for aviation.

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Voluntary phase out no regulatory action taken

<b>SOUTH AMERICA</b>						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline is banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Argentina				05 Oct 1998 Jan 1996	0.013 g/l	Since 1996, the leaded gasoline was voluntarily removed from the Argentinean market in response to taxing policies. Since 1996, Argentina is only using unleaded gasoline.
Brazil				01 Jan 1989	0.0005 g/l	Brazil has two types of gasoline: Common (Type A and Type C) and Premium (Type A and Type C). All types of gasoline have the same maximum lead content (0.0005 g/l).
Chile				01 Apr 2001	0.013 g/l	On 01 Apr 2001 the National Petrol Company jointly with the National Commission for the Environment have announced the elimination of leaded gasoline. Since 2001, Chile is only using unleaded gasoline.
Colombia				18 Dec 2000	0.0013 g/l	As from 28 May 1994, Colombia restricted leaded gasoline on the market.
Ecuador				30 Mch 1998		Since 1998, Ecuador is only using unleaded gasoline.
Peru		14 Jul 1998	31 Dec 2004	01 Jan 2005		1998 Jun 2003 Gasolina 84 RON 0.84 g/l. Jul 2003 Dec 2004 Gasolina 84 RON 0.14 g/l. As from Jan 2005 unleaded.

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Voluntary phase out no regulatory action taken

ASIA						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Bahrain				01 Jul 2002		Since 2001, Bahrain is only using unleaded gasoline.
Bangladesh		Jul 1999		Jul 1999 for regular gasoline	0.013 g/l	Government of Bangladesh reduced the maximum allowable (0.5 g/l) lead content in gasoline to 0.013 g/l for regular gasoline and 0.84 g/l for octane from July 1999.
Israel			Jan 2003	Planned for Jan 2003	0.005 g/l	The marketing of leaded gasoline is not controlled. Maximum lead content in leaded gasoline (Octane 96) is 0.1 g/l. As from January 2003 it is planned to use a potassium-based additive and to prohibit leaded gasoline.
Japan				01 Apr 1996	<0.001 g/l	Since 1995, Japan is only using unleaded gasoline.
Jordan		Planned for 2003				Without legal commitment Jordan Petroleum Refinery restricts the lead level in gasoline to a maximum of 0.15 g/l during the last 15 years. Actual lead conc. in gasoline is even lower (2000 0.065 g/l, 2001 0.092 g/l).
Oman				01 Aug 2001		Since August 2001, Oman is only using unleaded gasoline.
Pakistan		01 Oct 2001	01 Jul 2002			Switch over to unleaded gasoline was based on a request of the Government of Pakistan and was voluntarily adopted by the three refineries of the country. Two Refineries produced unleaded gasoline as from October 2001 and one as from July 2002.

Philippines				23 Dec 2000	0.013 g/l	Since 2001, Philippines is only using unleaded gasoline.
Singapore				1999		The maximum of lead in gasoline was reduced by several control actions from 0.84 g/l in 1981 to 0.15 g/l in 1987. In 1991, the unleaded gasoline was introduced in Singapore. Since 1999, Singapore is only using unleaded gasoline.
South Korea				2 Feb 1997	0.013 g/l	Catalytic converters since 1987; lead in gasoline controlled since 1991.
Turkey		13 Oct 1998	01 Jan 2005		0.005 g/l	As from 01 August 2002: Premium Super RON 95 with lead content max.0.10-0.15 g/l. Unleaded RON 95 with lead content max 0.013 g/l.

EUROPE						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline is banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Andorra						Andorra imports gasoline from France and Spain, so the specifications correspond to those of these two countries. The importation of leaded gasoline has gradually decreased in the last years. The share of gasoline with lead imported from Jan to Jul 2002 was 0 - 0.58%.

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Voluntary phase out    no regulatory action taken



Belarus				01 Jan 1998		Concentration of lead in ethylated automobile petrol must not exceed 0.15 g/l. Transition in 1990 to 1992 to the use of non-ethylated automobile petrol. Since 1998, Belarus is only using unleaded gasoline.
Belgium				01 Jan 2000	0.005 g/l	Since 01 Apr 1999, lead was replaced in leaded gasoline by lead substitute and no leaded gasoline was used after this date. The use of lead substitute gasoline has decreased from 7,5% in 2000 to 4,6% in 2001.
Bulgaria		27 Apr 1998	31 Dec 2003	01 Jan 2004	0.013 g/l	Until 31 December 2003, two types of gasoline will be used in Bulgaria. The leaded gasoline with a maximum of 0.15 g/l and unleaded gasoline with maximum of 0.013 g/l. From 01 January 2004 unleaded gasoline with a maximum of 0.005 g/l will be on the market.
Croatia				01 Jan 2006	0.005 g/l	Leaded petrol until 2006: 0.15 g /l. Permissions have to be granted for gasoline with lead levels up to 0.4 g/l. The use of leaded gasoline has decreased from 413 Mt in 1995 to 262 Mt in 2000 and the unleaded gasoline has increased from 145 Mt in 1995 to 502 Mt in 2000.
Czech Republic				01 Jan 2001	0.005 g/l	Since 2001, the Czech Republic is only using unleaded gasoline.
Estonia				01 Jan 2000	0.013 g/l	The lead gasoline used in Estonia had a maximum of 0.15 g/l. Since 2000, Estonia is only using unleaded gasoline. Leaded gasoline is not allowed on the market since 01 January 2000.
Finland				01 Jan 2000	0.005 g/l	Until 1980 the maximum lead content of petrol was 0.7 g/l. It was decreased step by step from 0.4 g/l in 1985 to 0.005 g/l in 2000.

France				01 Jan 2000	0.005 g/l	Since 2000, France is only using unleaded gasoline.
Greece				01 Jan 2002	0.005 g/l	The use of leaded gasoline has decreased from 77.2% in 1995 to 20% in 2001 and the unleaded gasoline has increased from 22.8% in 1995 to 80% in 2001.
Hungary				01 Apr 1999		Use and trade of lead gasoline has been banned from 1 <sup>st</sup> April 1999. The trend of the transport related lead emissions have decreased from 100 t/a in 1995 to 0 t/a in 2000.
Ireland				01 Jan 2000	0.005 g/l	Since 2000, Ireland is only using unleaded gasoline.
Lithuania				01 Jan 1998	0.013 g/l (0.005 g/l from Jan 2004)	According to the Order No.438/268/266 of Ministers of Environment, Economy and Transport, the maximum lead content of gasoline must be 0.005 g/l from 1st January 2004. Since 1998, Lithuania is only using unleaded gasoline.
Malta				31 Dec 2002		At present the limit is 0.15 g/l in leaded gasoline. The use of leaded gasoline has decreased from 84% in 1995 to 60% in 2001 and the unleaded gasoline has increased from 16% in 1995 to 40% in 2001.
Moldova		29 May 1996	23 May 2002	Before middle 2003	0.013 g/l	Gradual phase-out. Ratification of the "Aarhus Protocol on Heavy Metals" in 2002. Only about 1 % market share for leaded gasoline since 2000.
Monaco				01 Jan 2000	0.005 g/l	Monaco does not produce any gasoline. The gasoline consumed in Monaco comes from France. Thus, the French and EU regulations are applied to the gasoline imported to Monaco. Since 2000, Monaco is only using unleaded gasoline.

Norway				01 Jun 2000	0.005 g/l	The level of lead for leaded gasoline was limited to maximum 0.15 g/l from 01 January 1987.
Poland		1992	2005	Jan 2002	0.005 g/l (From 01 Jan 2003)	The recent regulation of the Ministry of Economy laid down provisions on permissible contents of lead in gasoline as follows: 0.005 g/l for leaded gasoline from 01 January 2003 and 0.000 g/l from 01 January 2005. In practice from the beginning of 2002 unleaded gasoline is being used in Poland.
Romania		01 Jan 1998	01 Jan 2005	01 Jan 2007	0.005 g/l	In 1998, the production of leaded gasoline contained 0.32 g/l and between 1998 and 2001, it was reduced to 0.15 g/l for leaded gasoline in accordance with EU regulations. Between 2005 and 2007, only unleaded gasoline containing 0.005 g/l. will be placed on the market for use.
Slovakia				01 Jan 1998	0.005 g/l	Since 1995, leaded gasoline is not produced in Slovakia. Trade amounts of leaded gasoline come from state reserves.
Spain		1995	2001	01 Aug 2001	0.005 g/l	Since August 2001, lead replacement is being used.
Switzerland				01 Jan 2000	0.005 g/l	Banned as from 1985 for "normal quality" gasoline and as from 2000 for "super quality". Since 2000, Switzerland is only using unleaded gasoline.
United Kingdom				01 Jan 2000	EU 0.005 g/l	Since 2000, UK is only using unleaded gasoline. After 01 Jan 2000 leaded gasoline was substituted by lead replacement gasoline (super unleaded gasoline with a potassium based additive). By way of derogation about 3000 t (0.01% of total sales) of leaded gasoline is sold annually for old cars (according to EU Directives up to 0.5% of total sales is allowed).

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Voluntary phase out no regulatory action taken

<b>OCEANIA</b>						
Country	No action taken as yet to phase out lead in gasoline	Use of lead in gasoline being phased out		Use of lead in gasoline is banned/phased out as from	Maximum lead content in <b>unleaded</b> gasoline	Remarks
		as from	completed			
Australia				01 Jan 2002	0.005 g/l	Under the fuel Quality Standards Act 2000 a standard of 0.005 g/l has been implemented for maximum levels of lead in all grades of petrol from 01 January 2002. These standard facilities a residual level of lead only and effectively bans the use of lead in all petrol supplied in Australia.
Nauru Island				10 Sep 1999		No law or regulation. Nauru stopped purchasing leaded petrol because unleaded petrol was cheaper.

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Voluntary phase out    no regulatory actioin taken

ANNEX 2

**Summary of Available Information on Government Efforts to Phase Out Lead in Gasoline**

UNEP Chemicals received to its "Questionnaire on Status of Government Efforts to Phase Out Lead in Gasoline" answers from 62 countries. For a complete survey on the worldwide status on phasing out leaded gasoline, it was necessary to use further sources of information dealing with this issue.

The following references were selected:

- (1) Responses to the UNEP "Questionnaire on Status of Government Efforts to Phase out Lead in Gasoline", sent out in July 2002, final answering date 30 October 2002.
- (2) Manufacturers of Emission Controls Association (MECA), 2002: The Case for Banning Lead in Gasoline, Washington, DC, August 2002. <http://www.meca.org/lead.PDF>
- (3) Lovey, Magda, 1998: Phasing Out Lead from Gasoline: Worldwide Experience and Policy Implications, World Bank Technical Paper No. 397, Pollution Management Series, January 1998. ISBN 0-8213-4157-X
- (4) Communication from UNEP Regional Office for West Asia (UNEP-ROWA), October 2002
- (5) Global Lead Network <http://www.globalleadnet.org>
- (6) International Lead Management Center: Lead in Gasoline Phase-Out Report Card <http://www.ilmc.org/rptcard.pdf>
- (7) Vietnam Switches to Unleaded Gasoline <http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20019302~menuPK:34457~pagePK:34370~piPK:34424~theSitePK:4607,00.html>

In the following table countries are organized by continent and the number of relevant reference used is provided in parenthesis along with the country name together with the year of the action (if available). When countries have answered to the UNEP questionnaire (referenced as "(1)"), further references are not given. When references gave different information for the same country, information from the most recent reference is provided.

AFRICA			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only <b>unleaded</b> gasoline is used).
	Algeria (2) (3)		
	Angola (2) (3)		
	Benin (2) (3)		
	Botswana (2) (3)		
	Burkina Faso (2) (3)		
	Burundi (1)		
	Cameroon (2) (3)		
	Cape Verde (2)		
	Central African Republic (2)		
	Chad (2) (3)		
	Comoros (1) (2)		
	Congo (2)		
	Côte d'Ivoire (2) (3)		
	Democratic Republic of Congo (2)		
	Djibouti (2)		
		Egypt (1) 2007	
	Equatorial Guinea (2)		
	Eritrea (2)		
	Ethiopia (1)		
	Gabon (2) (3)		
	Gambia (2)		
		Ghana (1) 2004	
	Guinea (2)		
	Guinea-Bissau (2)		
	Kenya (2) (3)		
	Lesotho (2)		
	Liberia (2) (3)		
	Libya (2) (3)		
	Madagascar (1)		
	Malawi (1)		
	Mali (2) (3)		
	Mauritania (2) (3)		
	Mauritius (2) (3)		
		Morocco (1) 2005	
	Mozambique (2) (3)		
	Namibia (2) (3)		
	Niger (2) (3)		
	Nigeria (2) (3)		
	Rwanda (2)		
	Sao Tome and Principe (2)		

	Senegal (2) (3)		
	Seychelles (2)		
	Sierra Leone (2)		
	Somalia (2)		
	South Africa (2) (3)		
	Sudan (2)		
Swaziland			
	Tanzania (1)		
		Togo (1) 2005	
	Tunisia (2) (3)		
		Uganda (1) no date set yet	
	Zambia (2)		
	Zimbabwe (3)		
<b>NORTH AMERICA, CENTRAL AMERICA AND THE CARIBBEAN REGIONS</b>			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only unleaded gasoline is used).
	Antigua and Barbuda (1) 1991		
	Bahamas (1) no date		
	Barbados (1) 2000		
	Belize (1) 1996		
			Canada (1) 1990
			Costa Rica (2) (3) (5) (6) before 1999
Cuba			
Dominica			
			Dominican Republic (2) (5) (6) before 1999
			El Salvador (2) (5) (6) before 1999
Grenada			
			Guatemala (1) 1991
			Haiti (2) (5) (6) before 1999
			Honduras (2) (3) (5) (6) before 1999
		Jamaica (1) 2003	
			Mexico (2) (5) (6) before 1999
			Nicaragua (1) 1996
			Panama (1) 2002
Saint Kitts and Nevis			
Saint Lucia			
Saint Vincent and the Grenadines			

			Trinidad and Tobago (2) (6) expected in 2000
			United States of America (2) (3) (6) 1996
<b>SOUTH AMERICA</b>			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only <b>unleaded</b> gasoline is used).
			Argentina (1) 1998
			Bolivia (2) (3) (5) (6) 1995
			Brazil (1) 1989
			Chile (1) 2001
			Colombia (1) 2000
			Ecuador (1) 1998
		Guyana (2)	
		Paraguay (2)	
		Peru (1) 2005	
		Suriname (2)	
		Uruguay (2)	
		Venezuela (2)	
<b>ASIA</b>			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only <b>unleaded</b> gasoline is used).
	Afghanistan (2)		
		Armenia (2)	
			Azerbaijan (2)
			Bahrain (1) 2002
		Bangladesh (1)1999	
			Bhutan (2)
			Brunei Darussalam (2)
	Cambodia (2)		
			China (2) (6) expected in 2000
		Cyprus (2)	
East Timor			
			Georgia (2)
			India (2) (5) (6) expected in 2000
	Indonesia (2)		
	Iran (2) (3)		



	Iraq (2) (3)		
		Israel (1) 2003	
			Japan (1) 1996
		Jordan (1) no date set	
			Kazakhstan (2)
Korea, Democratic People's Republic of			
			Kuwait (4), 1999
		Kyrgyzstan (2)	
	Lao People's Democratic Republic (2)		
		Lebanon (4) no date	
			Malaysia (2) (6) before 1999
Maldives			
			Mongolia (2)
Myanmar			
			Nepal (2) (6) expected in 2000
			Oman (1) 2001
			Pakistan (1) 2002
			Philippines (1) 2000
			Qatar (2)
			Saudi Arabia (4) (5) 2001
			Singapore (1) 1998
			South Korea (1) 1997
			Sri Lanka (2)
		Syria (4) no date	
			Tajikistan (2)
			Thailand (2) (3) (5) (6) before 1999
		Turkey (1) 2005	
		Turkmenistan (2)	
		United Arab Emirates (4) 2007	
		Uzbekistan (2)	
			Viet Nam (2) (5) (7) 2001
	Yemen (2) (3)		

<b>EUROPE</b>			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only <b>unleaded</b> gasoline is used).
		Albania (2)	
	Andorra (1) (2)		
			Austria (EU)
			Belarus (1) 1998
			Belgium (1) EU 2000
Bosnia and Herzegovina			
		Bulgaria (1) 2004	
		Croatia (1) 2006	
			Czech Republic (1) 2001
			Denmark EU 2000
			Estonia (1) 2000
			Finland (1) EU 2000
			France (1) EU 2000
			Germany EU 2000
			Greece (1) EU 2002
			Hungary (1) 1999
			Iceland (2) (5) (6) before 1999
			Ireland (1) EU 2000
			Italy EU 2000
		Latvia (2)	
			Liechtenstein (2)
			Lithuania (1) 1998, 2004
			Luxembourg EU 2000
		Malta (1) 2003	
		Moldova, Republic of (1)	
			Monaco (1) 2000
			The Netherlands EU 2000
			Norway (1) 2000
		Poland (1) 2003	
			Portugal EU 2000
		Romania (1) 2007	
		Russian Federation (2) (3)	
		San Marino (2)	
			Slovakia (1) 1998
		Slovenia (2)	
			Spain (1) EU 2001
			Sweden (2) EU 2000
			Switzerland (1)

The former Yugoslavian Republic of Macedonia (2)			
		Ukraine (2)	
			United Kingdom (1) EU 2000
	Yugoslavia (Serbia/Montenegro)		
<b>OCEANIA</b>			
No information available regarding status of phase out of lead in gasoline	Countries which have not as yet taken any action to phase-out lead in gasoline and mainly <b>use leaded gasoline</b>	Countries which are phasing-out or <b>plan to ban/phase-out leaded gasoline</b> . (Transition phase countries.)	Countries which already have <b>banned/phased-out leaded gasoline</b> . (only <b>unleaded</b> gasoline is used).
			Australia (1) 2002
Fiji			
Kiribati			
Marshall Islands			
Micronesia, Federated States of			
			Nauru (1) 1999
			New Zealand (2) (5) (6) before 1999
Palau			
Papua New Guinea			
Samoa			
Solomon Islands			
Tonga			
Tuvalu			
Vanuatu			

## ANNEX 3

### Summary of Responses Received on Market Share of Unleaded Versus Leaded Gasoline

The information from the responses received on Market shares of unleaded versus leaded gasoline together with total sales information is included in tables by country below. Where the total sales are provided in other units than amount metric tons the following conversion factors have been used in order to arrive at comparable figures.

Liters: With a specific gravity for vehicle gasoline of 0.738 the conversion factor to metric tonnes is 0.000738 (0.001 x 0.738).

Cubic meters (m<sup>3</sup>): With a specific gravity for vehicle gasoline of 0.738 the conversion factor to metric tonnes is 0.738.

Barrels: With a petroleum barrel corresponding to 159 liters, the conversion factor to metric tonnes will be 0.117 for a specific gravity of 0.738.

Gallons: With a gallon equal to 3.79 liters the conversion factor to metric tonnes is 0.0028 for a specific gravity of 0.738 (3.79 x 0.000738)

### AFRICA

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Burundi	1995				
	1996				
	1997				
	1998				
	1999	100	0	26 370 000 l	19 461 t
	2000	100	0	33 794 000 l	24 940 t
	2001				

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported Mtons <sup>1</sup>	Total Amount in metric tonnes
Egypt	1995	84	16	1.972 Mtons	1 972 000 t
	1996	84	16	2.002 Mtons	2 002 000 t
	1997	20	80	2.112 Mtons	2 112 000 t
	1998	18	82	2.207 Mtons	2 207 000 t
	1999	17	83	2.301 Mtons	2 301 000 t
	2000	17	83	2.356 Mtons	2 356 000 t
	2001	8	92	2.384 Mtons	2 384 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported MT <sup>2</sup>	Total Amount in metric tonnes
Ethiopia	1995	100	0	133 414 MT	133 414 t
	1996	100	0	140 913 MT	140 913 t
	1997	100	0	147 495 MT	147 495 t
	1998	100	0	128 345 MT	128 345 t
	1999	100	0	134 512 MT	134 512 t
	2000	100	0	143 791 MT	143 791 t
	2001	100	0	127 450 MT	127 450 t

<sup>1</sup> Mtons assumed to mean million tonnes

<sup>2</sup> MT assumed to mean metric tonnes

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported MT <sup>3</sup>	Total Amount in metric tonnes
Ghana	1995	100	0	359.255 MT	359.255 t
	1996	100	0	373.742 MT	373.742 t
	1997	100	0	364.193 MT	364.193 t
	1998	100	0	406.879 MT	406.879 t
	1999	100	0	450.217 MT	450.217 t
	2000	100	0	529.665 MT	529.665 t
	2001	100	0	514.894 MT	514.894 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Mada-gascar	1995	100	0	99.725 m3	73 600 t
	1996	100	0	109.212 m3	80 600 t
	1997	100	0	121.619 m3	89 800 t
	1998	100	0	136.814 m3	101 000 t
	1999	100	0	153.803 m3	113 500 t
	2000	100	0	144.209 m3	106 400 t
	2001	100	0	142.527 m3	105 200 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Morocco	1995	97.2	2.8	513.842 m3	379 200 t
	1996	96.1	3.9	510.385 m3	376 700 t
	1997	94.5	5.5	517.363 m3	381 800 t
	1998	92.1	7.9	523.935 m3	386 700 t
	1999	90.8	9.2	556.392 m3	410 600 t
	2000	88.2	11.8	550.132 m3	406 000 t
	2001	84.9	15.1	546.449 m3	403 300 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported MT <sup>4</sup>	Total Amount in metric tonnes
Tanzania	1995	100	0	480935 MT	480 935 t
	1996	100	0	524742 MT	524 742 t
	1997	100	0	475630 MT	475 630 t
	1998	100	0	421601 MT	421 601 t
	1999	100	0	306204 MT	306 204 t
	2000	100	0	378812 MT	378 812 t
	2001				

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Togo	1995	100	0	133.676 m3	98 650 t
	1996	100	0	123.655 m3	91 250 t
	1997	100	0	119.343 m3	88 100 t

<sup>3</sup> MT assumed to mean metric tonnes

<sup>4</sup> MT assumed to mean metric tonnes

	1998	100	0	127,636 m3	94 200 t
	1999	100			
	2000	100			
	2001	100			

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Uganda	1995	100	0	166,048 m3	122 500 t
	1996	100	0	181,777 m3	134 200 t
	1997	100	0	177,044 m3	130 700 t
	1998	100	0	191,977 m3	141 700 t
	1999	100	0	202,626 m3	149 500 t
	2000	100	0	190,021 m3	140 200 t
	2001	100	0	200,021 m3	147 600 t

#### NORTH and CENTRAL AMERICA and the CARIBBEAN REGIONS

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Antigua and Barbuda	1995	0	100		
	1996	0	100		
	1997	0	100		
	1998	0	100		
	1999	0	100		
	2000	0	100		
	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Bahamas	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Barbados	1995	79	21	541 716 barrels	63 400 t
	1996	76	24	543 695	63 600 t
	1997	71	29	578 370	67 700 t
	1998	55	44	561 467	65 700 t
	1999	44	55	607 439	71 100 t
	2000	4	96	663 052	77 600 t
	2001	0	100	708 213	82 900 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Belize	1997	0	100		
	1998	0	100		
	1999	0	100		

	2000	0	100		
	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Canada	1995	0	100		
	1996	0	100		
	1997	0	100		
	1998	0	100		
	1999	0	100		
	2000	0	100		
	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Guatemala	1995	0	100	174 980 400 gallons	490 000 t
	1996	0	100	186 740 400 gallons	523 000 t
	1997	0	100	211 881 600 gallons	593 000 t
	1998	0	100	199 529 400 gallons	559 000 t
	1999	0	100	251 193 538 gallons	703 000 t
	2000	0	100	268 556 610 gallons	752 000 t
	2001	0	100	292 488 000 gallons	819 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Jamaica	1995	61	39	2 821 818 barrels	330 000 t
	1996	57	43	3 613 988 barrels	423 000 t
	1997	48	52	3 709 099 barrels	434 000 t
	1998	39	61	3 840 960 barrels	449 000 t
	1999	30	70	4 059 959 barrels	475 000 t
	2000	8	92	4 038 942 barrels	473 000 t
	2001	0	100	4 109 815 barrels	481 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Nicaragua	1995	100	0	950 000 barrels	111 000 t
	1996	50	50	475 000 barrels	56 000 t
	1997	0	100	990 000 barrels	116 000 t
	1998	0	100	1 140 000 barrels	133 000 t
	1999	0	100	1 260 000 barrels	147 000 t
	2000	0	100	1 325 000 barrels	155 000 t
	2001	0	100	1 405 000 barrels	164 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Panama*	1995				
	1996	90	11	112835 303 gallons	316 000 t

	1997	85	15	121154 059 gallons	340 000 t
	1998	78	22	135615 609 gallons	380 000 t
	1999	68	32	142766 848 gallons	400 000 t
	2000	54	46	139128 766 gallons	390 000 t
	2001	24	76	132692 494 gallons	370 000 t

\*Only unleaded gasoline permitted as from 1 January 2002

## SOUTH AMERICA

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Argentina	1995	20	80	6 456 000 m3	4 760 000 t
	1996	0	100	6 391 000 m3	4 720 000 t
	1997	0	100	5 957 000 m3	4 400 000 t
	1998	0	100	5 574 000 m3	4 110 000 t
	1999	0	100	5 216 000 m3	3 850 000 t
	2000	0	100	4 722 000 m3	3 480 000 t
	2001	0	100	4 239 000 m3	3 130 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported kL <sup>5</sup>	Total Amount in metric tonnes
Brazil	1995	0	100		
	1996	0	100		
	1997	0	100		
	1998	0	100		
	1999	0	100		
	2000	0	100		
	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Chile	1995	72	28	2 752 000 m3	2 030 000 t
	1996	60	40	2 946 000 m3	2 170 000 t
	1997	49	51	3 064 000 m3	2 260 000 t
	1998	40	60	3 198 000 m3	2 360 000 t
	1999	36	64	3 266 000 m3	2 410 000 t
	2000	32	68	3 205 000 m3	2 370 000 t
	2001	10	90	3 049 000 m3	2 250 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Colombia	2001	0	100	93 KBCD	

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Ecuador	1995	60	40	740 000 t	740 000 t

<sup>5</sup> kL assumed to mean thousand liters



	1996	65	35	830 000 t	830 000 t
	1997	80	20	930 000 t	930 000 t
	1998	0	100	1 000 000 t	1 000 000 t
	1999	0	100	1 063 000 t	1 063 000 t
	2000	0	100	1 150 000 t	1 150 000 t
	2001	0	100	1 306 000 t	1 306 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Peru	1995				
	1996				
	1997				
	1998	59	16	28 400 barrels/day	1 200 000 t
	1999	57	15	27 800 barrels/day	1 170 000 t
	2000	57	14	25 400 barrels/day	1 070 000 t
	2001	53	12	23 100 barrels/day	970 000 t

## ASIA

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Bahrain	1995	100		379,167 liters	280 t
	1996	100			
	1997	100			
	1998	100			
	1999	100			
	2000	50	50		
	2001	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Israel	1995				
	1996				
	1997				
	1998				
	1999				
	2000	39	61	2 082 t	2 082 t
	2001				-

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported kL <sup>6</sup>	Total Amount in metric tonnes
Japan	1995	0	100	50,955,000 kL	37 600 000 t
	1996	0	100	52,818,000 kL	38 980 000 t
	1997	0	100	54,220,000 kL	40 010 000 t
	1998	0	100	55,362,000 kL	40 860 000 t
	1999	0	100	56,841,000 kL	41 950 000 t
	2000	0	100	58,201,000 kL	42 950 000 t

<sup>6</sup> kL assumed to mean thousand liters

	2001	0	100	58,681,000 kL	43 310 000 t
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Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Jordan	1995	>99	<1	483542 Ton	483 542 t
	1996	>99	<1	510353 Ton	510 353 t
	1997	>99	<1	528372 Ton	528 372 t
	1998	>99	<1	525391 Ton	525 391 t
	1999	>99	<1	545506 Ton	545 506 t
	2000	>99	<1	596586 Ton	596 586 t
	2001	99	1	625376 Ton	625 376 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported (metric tonnes)	Total Amount in metric tonnes
Pakistan	1995	100		1 160 421 t	1 160 421 t
	1996	100		1 220 490 t	1 220 490 t
	1997	100		1 276 282 t	1 276 282 t
	1998	100		1 300 373 t	1 300 373 t
	1999	100		1 245 994 t	1 245 994 t
	2000	100		1 192 191 t	1 192 191 t
	2001	77	23	1 120 696 t	1 120 696 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Philippines	1995				
	1996	89	11	19,933 000 barrels	2 332 000 t
	1997	85	15	21,579 000 barrels	2 525 000 t
	1998	82	18	22,641 000 barrels	2 649 000 t
	1999	79	21	23,333 000 barrels	2 730 000 t
	2000	52	48	22,823 000 barrels	2 670 000 t
	2001	0	100	23,095 000 barrels	2 702 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Singapore	1995	34	66	856,678 m3	632 200 t
	1996	30	70	879,220 m3	648 900 t
	1997	24	76	852,169 m3	628 900 t
	1998	9	91	867,618 m3	640 300 t
	1999	0	100	Not available	
	2000	0	100	Not available	
	2001	0	100	Not available	

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
South Korea	1995		100		
	1996		100		

	1997		100		
	1998		100		
	1999		100		
	2000		100		
	2001		100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Turkey	1995	96	4	3 946 118 t	3 946 118 t
	1996	94	6	4 255 225 t	4 255 225 t
	1997	88	12	4 338 620 t	4 338 620 t
	1998	81	19	4 474 526 t	4 474 526 t
	1999	75	25	4 306 266 t	4 306 266 t
	2000	62	38	3 655 878 t	3 655 878 t
	2001	52	48	3 169 713 t	3 169 713 t

## EUROPE

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Belarus	1995	20	80	1 836 000 t	1 836 000 t
	1996	2	98	1 749 000 t	1 749 000 t
	1997	<1	>99	1 527 000 t	1 527 000 t
	1998	-	100	1 240 000 t	1 240 000 t
	1999	-	100	1 038 000 t	1 038 000 t
	2000	-	100	918 000 t	918 000 t
	2001	-	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Belgium	1995	31	69	2 832 973 t	2 832 973 t
	1996	26	74	2 738 785 t	2 738 785 t
	1997	21	79	2 535 155 t	2 535 155 t
	1998	18	82	2 511 940 t	2 511 940 t
	1999	13	87	2 393 828 t	2 393 828 t
	2000	0*	100	2 244 723 t	2 244 723 t
	2001	0*	100	2 185 712 t	2 185 712 t

\*as from 2000 lead substitutes are being used representing a market share of 7.5% in 2000 and 4.6% in 2001

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Bulgaria	1995				
	1996				
	1997	94	6	598 900 t	598 900 t
	1998	89	11	798 900 t	798 900 t
	1999	81	19	783 700 t	783 700 t
	2000	62	38	655 600 t	655 600 t
	2001	32	68	583 000 t	583 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported (Mt <sup>7</sup> )	Total amount in metric tonnes
Croatia	1995	74	26	558 Mt	558 t
	1996	69	31	610 Mt	610 t
	1997	50	50	659 Mt	659 t
	1998	50	50	721 Mt	721 t
	1999	45	55	759 Mt	759 t
	2000	34	66	764 Mt	764 t
	2001				

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total amount in metric tonnes
Czech Republic	1995	53	47	1675.5 (no unit given)	
	1996	45	55	1846.7	
	1997	38	62	1937.2	
	1998	34	66	1782.4	
	1999	30	70	1972.3	
	2000	19	81	1917.9	
	2001	0	100	1974.4	

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total amount in metric tonnes
Estonia	1995	45	55	245 000 t	245 000 t
	1996	30	70	280 000 t	280 000 t
	1997	20	80	305 000 t	305 000 t
	1998	10	90	294 000 t	294 000 t
	1999	5	95	219 000 t	219 000 t
	2000	0	100	282 000 t	282 000 t
	2001	0	100	310 000 t	310 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total amount in unit reported	Total amount in metric tonnes
Finland	1995	0	100	1 897 000 t	1 897 000 t
	1996	0	100	1 834 000 t	1 834 000 t
	1997	0	100	1 881 000 t	1 881 000 t
	1998	0	100	1 858 000 t	1 858 000 t
	1999	0	100	1 850 000 t	1 850 000 t
	2000	0	100	1 785 000 t	1 785 000 t
	2001	0	100	1 809 000 t	1 809 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
France	1995	50	50	15 650 500 t	15 650 500 t
	1996	44	56	14 997 800 t	14 997 800 t
	1997	39	61	14 633 200 t	14 633 200 t
	1998	35	65	14 550 000 t	14 550 000 t
	1999	29	71	14 455 600 t	14 455 600 t

<sup>7</sup> Mt assumed to mean metric tonnes

	2000	0	100	13 781 200 t	13 781 200 t
	2001				

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Greece	1995	77	23	366 837 t	366 837 t
	1996	75	25	462 857 t	462 857 t
	1997	78	22	458 607 t	458 607 t
	1998	58	42	655 582 t	655 582 t
	1999	37	63	730 179 t	730 179 t
	2000	13	87	838 137 t	838 137 t
	2001	20	80	693 288 t	693 288 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Ireland	1995	42	58	1 037 000 t	1 037 000 t
	1996	35	65	1 099 000 t	1 099 000 t
	1997	26	74	1 175 000 t	1 175 000 t
	1998	15	85	1 306 000 t	1 306 000 t
	1999	8	92	1 414 000 t	1 414 000 t
	2000	0	100	1 493 000 t	1 493 000 t
	2001	0	100	1 525 000 t	1 525 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Lithuania	1995	22	78	603 000 t	603 000 t
	1996	2	98	660 100 t	660 100 t
	1997	1	99	657 900 t	657 900 t
	1998	0	100	631 000 t	631 000 t
	1999	0	100	494 900 t	494 900 t
	2000	0	100	380 600 t	380 600 t
	2001	0	100	375 300 t	375 300 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Malta	1995	84	16	74 000 t	74 000 t
	1996	81	19	77 000 t	77 000 t
	1997	77	23	77 000 t	77 000 t
	1998	72	28	75 000 t	75 000 t
	1999	68	32	75 800 t	75 800 t
	2000	64	36	73 288 t	73 288 t
	2001	60	40	70 249 t	70 249 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Moldova	1995	43	57	249 700 t	249 700 t
	1996	4	63	220 000 t	220 000 t
	1997	27	73	270 600 t	270 600 t

	1998	10	90	212 800 t	212 800 t
	1999	30	70	117 000 t	117 000 t
	2000	0.33	99,67	122 100 t	122 100 t
	2001	1.1	98.9	130 600 t	130 600 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Monaco	1995				
	1996				
	1997				
	1998	25	75	11,341 million litres	8 370 t
	1999	22	78	11,626 million litres	8 580 t
	2000	0	100	11,032 million litres	8 140 t
	2001				

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Norway	1995	8	92	2204 million litres	1 627 000 t
	1996	<1	>99	2285 million litres	1 686 000 t
	1997	0	100	2248 million litres	1 659 000 t
	1998	0	100	2273 million litres	1 677 000 t
	1999	0	100	2257 million litres	1 666 000 t
	2000	0	100	2189 million litres	1 615 000 t
	2001	0	100	2270 million litres	1 675 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Poland	1995			4 777 000 t	4 777 000 t
	1996				
	1997			4 954 000 t	4 954 000 t
	1998			4 982 000 t	4 982 000 t
	1999	30	70	5 743 000 t	5 743 000 t
	2000			4 999 000 t	4 999 000 t
	2001				
	2002	0	100		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Romania	1995				
	1996				
	1997				
	1998				
	1999				
	2000				
	2001	75	25		

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes

Slovakia	1995	2	98	560 000 t	560 000 t
	1996	1	99	580 000 t	580 000 t
	1997	0.5	99.5	616 000 t	616 000 t
	1998	0.7	99.3	713 428 t	713 428 t
	1999	0	100	685 870 t	685870 t
	2000	0	100	628 000 t	628 000 t
	2001	0	100	644 246 t	644 246 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Spain	1995	71	29	9 168 126 t	9 168 126 t
	1996	66	34	8 992 500 t	8 992 500 t
	1997	60	41	8 960 382 t	8 960 382 t
	1998	52	48	8 999 813 t	8 999 813 t
	1999	46	54	8 920 808 t	8 920 808 t
	2000	37	63	8 526 589 t	8 526 589 t
	2001	26.5*	73.5	8 479 984 t	8 479 984 t

\*sales include gasoline with lead substitutes since 1.8.2001

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Switzerland	1995	16	84	3 590 000 t	3 590 000 t
	1996	13	87	3 682 000 t	3 682 000 t
	1997	10	90	3 823 000 t	3 823 000 t
	1998	7	93	3 851 000 t	3 851 000 t
	1999	4	96	3 979 000 t	3 979 000 t
	2000	0	100	3 983 000 t	3 983 000 t
	2001	0	100	3 873 000 t	3 873 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
United Kingdom	1995	38	62	18 100 000 t	18 100 000 t
	1996	32	68	22 400 000 t	22 400 000 t
	1997	28	72	22 200 000 t	22 200 000 t
	1998	21	79	21 800 000 t	21 800 000 t
	1999	13	87	21 600 000 t	21 600 000 t
	2000	0 *	100	21 400 000 t	21 400 000 t
	2001	0 *	100	20 900 000 t	20 900 000 t

\* Since 2000 lead replacement is used.

About 3000 t of leaded petrol is sold annually for old cars, representing 0.01% of total sales (up to 0.5% of total sales is allowed according to EU Directives).

## OCEANIA

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Australia	1995	44	56	17752.6 ML <sup>8</sup>	13 100 000 t
	1996	40	60	17885.8 ML	13 200 000 t
	1997	36	64	17905.0 ML	13 210 000 t
	1998	31	69	17950.2 ML	13 280 000 t
	1999	26	74	18229.7 ML	13 450 000 t
	2000	19	81	18178.8 ML	13 420 000 t
	2001	14	86	18431.2 ML	13 600 000 t

Country	Year	% leaded gasoline	% unleaded gasoline	Total Amount in unit reported	Total Amount in metric tonnes
Nauru Island	2000	0	100		
	2001	0	100		

<sup>8</sup> ML assumed to mean million liters



## Annex 4

## References

1. Alliance to End Childhood Lead Poisoning: Myths and Realities of Phasing Out Leaded Gasoline  
<http://www.globalleadnet.org/myths.pdf>
2. Manufacturers of Emission Controls Association (MECA), 2002: The Case for Banning Lead in Gasoline, Washington, DC, August 2002.  
<http://www.meca.org/lead.PDF>
3. Lovey, Magda, 1998: Phasing Out Lead from Gasoline: Worldwide Experience and Policy Implications, World Bank Technical Paper No. 397, Pollution Management Series, January 1998. ISBN 0-8213-4157-X
4. Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/13/EEC, Official Journal of the European Communities, 28 December 1998, L350, page 58, 1998.
5. Global Lead Network  
<http://www.globalleadnet.org>
6. International Lead Management Center: Lead in Gasoline Phase-Out Report Card  
<http://www.ilmc.org/rptcard.pdf>
7. Unleaded Gasoline in Bangladesh: an Overnight Success. Bangladesh marks one-year anniversary of going "lead free" .  
<http://lnweb18.worldbank.org/sar/sa.nsf/Countries/Bangladesh/E8864F3B7624F84885256914004B4773?Open>
8. Vietnam Switches to Unleaded Gasoline  
<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20019302~menuPK:34457~pagePK:34370~piPK:34424~theSitePK:4607,00.html>
9. World Bank, 1998: Removal of Lead from Gasoline, Pollution Prevention and Abatement Handbook, World Bank Group, July 1998  
[http://www.worldbank.org/cleanair/global/documents/lead\\_phaseout.pdf](http://www.worldbank.org/cleanair/global/documents/lead_phaseout.pdf)
10. UNEP/UNICEF/UNITAR 1998: Global Opportunities for Reducing the Use of Leaded Gasoline  
<http://www.chem.unep.ch/pops/pdf/lead/toc.htm>
11. United Nations Economic Commission for Europe (UN/ECE), Environment and Human Settlements Division, 1998: Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Heavy Metals  
[http://www.unece.org/env/lrtap/hm\\_h1.htm](http://www.unece.org/env/lrtap/hm_h1.htm)
12. Unleaded Gasoline in Bangladesh: an Overnight Success. Bangladesh marks one-year anniversary of going "lead free" .  
<http://lnweb18.worldbank.org/sar/sa.nsf/Countries/Bangladesh/E8864F3B7624F84885256914004B4773?Open>