



DRAFT

Report of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa — Technical Segment

I. Opening of the meeting

1. The Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa was held at the headquarters of the United Nations Environment Programme (UNEP) in Nairobi from 5 to 7 May 2004.
2. The Conference was opened by the moderator, Ms. Mary Mukindia, at 9.30 a.m. on Wednesday, 5 May 2004. She outlined the Agenda for the Conference, emphasizing the need for clear goals to be defined, and introduced a five-minute video presentation on the phase-out of leaded gasoline. The Agenda is reproduced in Annex I to the present report.
3. Mr. Newton Kulundu, Minister of Environment, Natural Resources and Wildlife for Kenya, welcomed the participants to Kenya and thanked UNEP, the World Bank and other partners for organizing the Conference, whose subject was an issue that affected the population as a whole but children in particular. The successful phase-out of leaded gasoline in Sub-Saharan Africa depended on close collaboration between Governments, industry and civil society and he urged participants to learn from the experiences of countries that had already phased out leaded gasoline, and to focus on the target set in the Dakar Declaration¹ to phase out leaded gasoline in Sub-Saharan Africa by December 2005. Mr. Kulundu pointed out that the Government of Kenya has taken the decision to become lead-free by December 2005.
4. He emphasized the need for a subregional approach to fuel centres and specifications in the wake of globalization; in that connection, the Conference would provide an excellent opportunity for harmonizing regional fuel standards. He described the evolution of the debate on the phase-out of leaded gasoline, the establishment of the global Partnership for Clean Fuels and Vehicles,² coordinated by UNEP, which had collaborated with the World Bank Clean Air Initiative³ to assist countries in the region in developing their phase-out programmes. In 2001, only one country of the 49 in Sub-Saharan Africa had phased out leaded gasoline. To date, eight countries had completely phased out lead from gasoline while a

¹ See <http://www.unep.org/pcfV/Documents/DataDakarDecl.pdf>.

² See <http://www.unep.org/pcfV/main/main.htm>.

³ See <http://www.cleanairnet.org/ssa/1414/channel.html>

number of others had introduced unleaded gasoline and had drawn up action plans and set target phase-out dates; the remaining countries in the region should emulate them.

5. Mr. Frank Sprow, Vice-President of ExxonMobil and representative of the International Petroleum Industry Environmental Conservation Association (IPIECA), emphasized the commitment of IPIECA members to phase out leaded gasoline completely in every country in the world and to provide technical and cost data to Governments to assist them in the preparation and implementation of leaded gasoline phase-out action plans. He presented a recent IPIECA publication entitled *Getting the lead out*,⁴ which had been distributed to participants. Notwithstanding the larger negative impacts of diseases such as malaria and HIV/AIDS on public health in Sub-Saharan Africa, removing lead from gasoline was a contribution that IPIECA members, including private and State oil companies, and regional and international trade organizations, could make to benefit the health of the population.

6. Mr. Sprow urged participants to learn from the Partnership for Clean Fuels and Vehicles, which comprised over 60 diverse co-operating groups including industry, the World Bank, UNEP, non-governmental organizations and Governments and focused on the two issues of lead phase-out and sulphur reduction in gasoline and diesel. In that connection, he highlighted the construction of a pipeline from Cameroon to Chad, which had depended on collaboration between oil companies, the World Bank and the local population to bring the oil of Chad to the world market. The task, which had been described by many as impossible, had depended on over 35,000 workers from the two countries working to connect the pieces of the pipeline together along its 1,100-kilometre route. He urged participants to work together to make new commitments to implement and complete the phase-out of leaded gasoline from Sub-Saharan Africa.

7. Ms. Evelyne Keumejio of the Ministry of Urban Affairs of Cameroon observed that the Conference was a decisive step towards phasing out leaded gasoline by the end of 2005. Representatives of Governments, industry and civil society had made a commitment at the Regional Conference on the Phasing-out of Leaded Gasoline in Sub-Saharan Africa, held in Dakar in June 2001, to pool their efforts to formulate and implement programmes to phase out leaded gasoline in Sub-Saharan Africa by 2005, with support from the World Bank as part of its global strategy to make cities more viable and provide poor people in urban areas with better living conditions. Governments had an important role to play by: organizing information and awareness-raising campaigns in collaboration with non-governmental organizations; creating platforms for consultation with representatives of the oil supply chain to improve facilities; harmonizing standards and technical specifications for gasoline; and promoting cooperation to prioritize the phase-out of leaded gasoline.

8. She stated that after the Conference, Governments would develop plans to implement its recommendations, with the support of development partners; in that connection, she observed that any development process that did not put humankind and the environment at the heart of its concerns would be both ephemeral and ineffective. Participants must work together in international, multi-sectoral cooperation towards the common goal.

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See http://www.ipieca.org/downloads/fuels/Lead_-_WEBSITE_revised.pdf.

9. Ms. Anne Njora, Project Coordinator, Environmental Liaison Centre International, highlighted the role of civil society in the phase-out of leaded gasoline in Sub-Saharan Africa. Leaded fuel was a prime source of airborne disease, with considerable negative effects on human health in general and in children in particular. In addition to the positive impact of leaded gasoline phase-out on public health, studies had shown that the use of unleaded fuel in vehicles was cost-effective, resulting, among other things, in increases in spark plug life of up to 80% and reduced engine corrosion.

10. Ms. Njora stated that the role of non-governmental organizations was crucial in leaded gasoline phase-out, particularly in the area of interaction with grassroots society. They played an important advocacy role in lobbying Governments to review policies on energy, health and the environment, as well as in public education through awareness-raising campaigns about the negative effects of leaded fuel. Other activities included information gathering and dissemination, and research and monitoring. She described the work of Environmental Liaison Centre International in Kenya and abroad, highlighting the problems of limited financial resources to undertake activities and the lack of availability of unleaded gasoline in some areas.

Attendance

11. The technical segment was attended by representatives of the following countries: Angola, Belgium, Benin, Burkina Faso, Cameroon, Canada, Côte d'Ivoire, Congo, Democratic Republic of the Congo, Djibouti, Ethiopia, France, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Netherlands, Nigeria, Rwanda, Senegal, Somalia, South Africa, Swaziland, Togo, Uganda, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Zambia and Zimbabwe.

12. Representatives of the following United Nations agencies attended the meeting: UNEP, UN-HABITAT.

13. Representatives of the following Bretton Woods institution attended: The World Bank.

14. Representatives of the following academic institutions attended: Jomo Kenyatta University of Agriculture and Technology, University of Nairobi.

15. The meeting was attended by representatives of the following companies: ADEME, BP, CORAF, Downstream Oil Advisors Ltd., Ethiopian Petroleum Enterprise, ExxonMobil Corporation, Indeni Refinery, Kenya Petroleum Refinery Ltd., Kenya Pipeline Company Ltd., Nigerian National Petroleum Corporation, Shell Kenya, Shell Oil Products Africa, SONABHY; Sonangol, Sonara Refinery, Tema Oil Refinery, Total and Toyota East Africa, and by representatives of the following industry associations: Association of Automobile Manufacturers of Southern Africa, Comité des constructeurs français d'automobiles, International Petroleum Industry Environmental Conservation Association (IPIECA).

16. Representatives of the following media organizations attended: Biosafety News, Business Africa.

17. The meeting was also attended by representatives of the following non-governmental organizations: AfricaClean, Cerveau International; Cohort for Research on Environment, Urban Management and Human Settlements, Community Development Resource Network, Environment Liaison Centre International, Environmental and Energy Technology and Policy Institute, Environmental Justice Networking Forum, Friends of the Earth, Lawyers' Environmental Action Team, Solidarité internationale sur les transports et la recherche en Afrique subsaharienne, Standards Organisation of Nigeria and Trust for Lead Poisoning Prevention.

II. Conference objectives: Ongoing experiences on lead phase-out and overall assessment of progress

18. On behalf of UNEP and The World Bank, Mr. Rob de Jong, Programme Officer, UNEP, gave a presentation on the Conference's objectives and expected outputs. He observed that the phase-out of leaded gasoline would have a positive impact for rich and poor alike, and he outlined the steps taken towards that end from the Declaration of Dakar in June 2001 through the World Summit on Sustainable Development to the five subregional workshops and subsequent action plans. The 2004 assessment report by The World Bank, which had been distributed to participants, took stock of the position to date and showed that over half the gasoline currently sold in Sub-Saharan Africa was unleaded. Communication between the national, subregional and regional levels was of critical importance and there was a need to look at motor vehicle specifications, decision-making processes at the national level and knowledge of parameters.

19. The objectives of the Conference included taking stock of the progress made in each region on phase-out, identifying key issues and constraints, recommending further measures, and debating general issues of urban air pollution. The main focus of the two-day technical segment would be the five working groups, which would make recommendations to the ministerial segment to be held on 7 May. Expected outputs included: the assessment of the progress of action plans; and the identification of key actors, agreed milestones, and actions to be taken at the national level to meet the target of the complete phase-out of leaded gasoline in Sub-Saharan Africa by December 2005. Discussions of technical, legal and policy issues would be required, with translation into action through output sheets for all levels, and recommendations that were clear, implementable and would produce measurable results.

20. Mr. F. Sexsmith of Downstream Oil Advisors Ltd. gave a presentation on the assessment of progress made in the five subregions of Sub-Saharan Africa. Half the gasoline sold in nine countries, Cape Verde, Eritrea, Ethiopia, Ghana, Mauritania, Mauritius, Nigeria, Rwanda and Sudan, was already unleaded and the probability that a complete phase-out of lead in gasoline would be achieved by the end of 2005 was high. However, follow-up of progress in the reduction of emissions from vehicles had been limited; accordingly, he pointed out that as Governments were responsible for unleaded gasoline specifications, it was incumbent upon them to enforce them.

21. Mr. Sexsmith noted that refinery investments were completed in Ghana and Nigeria and were under way in one refinery in South Africa. Distribution and

marketing constraints on unleaded fuel were minimal, and in the particular case of countries where only one grade of gasoline was sold, those countries could make a one-time switch to unleaded. He emphasised that Governments must set the specifications for fuel, however, and one way of advancing leaded gasoline phase-out would be to make use of working groups, which should take into account international realities, at the national, subregional and regional levels. At the subregional level, working groups could prove necessary to achieve the harmonization of specifications and thus each country should decide with which countries it wanted to harmonize its specifications. He expressed the view that working groups would in fact be crucial for the harmonization of specifications for the whole of Sub-Saharan Africa.

22. Mr. Yigzaw Mekonnen, General Manager, Ethiopian Petroleum Enterprise, gave a presentation on Ethiopia's experience in phasing out leaded gasoline. Ethiopia, a landlocked country, had no refinery of its own and imported all its petroleum products. He identified success factors, including: the availability of unleaded gasoline at no additional cost; the Government's commitment to the Dakar Declaration; setting specifications for unleaded gasoline; holding a stakeholder workshop on unleaded gasoline; an official announcement on the use of unleaded gasoline; and a conducive infrastructure. Possible constraints included: obtaining the commitment of government as it was not always clear which ministry or authority must be addressed; awareness-raising, which involved designing coherent messages and selecting the appropriate media; costs and evaluation; and flushing-out time.

23. He emphasised that whereas the commitment of government was critical, importers and distributors had a significant role to play. Also, he said there must be no switch-over costs. Phasing out lead was the first step in air quality management, which called for vehicle emission controls and legislation. Vehicle emission standards must be set and catalytic converters made mandatory. Fuel specifications and emissions standards should be harmonized at the regional level as part of the ongoing process of air quality management.

24. Mr. E.K. Quartey, General Manager, Environment, Occupational Health, Safety and Security, Tema Oil Refinery, Ghana, gave a presentation entitled "Experience from refining countries: Lessons from Ghana". The use of leaded gasoline had been banned in Ghana through the Petroleum (Amendment) Regulations, 2003. He stated that the use of methylcyclopentadienyl manganese tricarbonyl (MMT) as an additive in unleaded gasoline was recommended in Ghana as there had been no adverse findings on its use. The Environment Protection Agency of Ghana had conducted a baseline study to assess the level of manganese in the air and to guide future policy as part of the air quality management programme. The main stakeholders in phasing out leaded gasoline were the ministries of energy, health, transport and environment, the Ghana Automotive Distributors' Association, oil marketing companies, the non-governmental organization AfricaClean, the Energy Commission, and the Ghana Standards Board.

25. He added that the mandate of the Tema Refinery was to identify optimum technical options for lead phase-out, to evaluate the best mode of public education, and to monitor compliance with and enforcement of recommendations. The recommendations had been to: retain a single grade of unleaded gasoline of 91 RON (research octane number) for the three years 2004–2006 and a long-term grade of 93

RON; replace lead with MMT as an economic option in the transition; monitor lead in blood and manganese in air; and review technical unleaded gasoline specifications in 2006. Transition challenges included reconfiguration of the operations of the refinery and processing cleaner fuels to reflect the world environmental mandate. Also, he said the technical specification of the gasoline must be consistent with vehicle engine performance, human health, the environment and economics. He identified success factors in the phase-out process such as: awareness of the public health issue; transparency about the limitations of technical options; refinery modifications and additives; stakeholder participation; public policy and enabling legislation; and political will and commitment.

26. In the ensuing discussion, one expert enquired how unleaded gasoline was transported in Ethiopia. Mr. Mekonnen replied that national vehicles were used to transport petroleum products to the nearest railheads, whence they were transported to the regions for distribution to gasoline stations.

27. In response to a query as to whether The World Bank could provide financial assistance to countries for phasing out leaded gasoline, a representative of The World Bank informed the meeting that any request for financial assistance should be addressed to the International Finance Corporation (IFC). The World Bank, however, could provide technical assistance, including in the form of studies.

28. One expert enquired whether the use of MMT at the Tema Oil Refinery had been driven by economic or environmental/health considerations. Mr. Quartey replied that the use of the chemical had been based on economic considerations.

29. In response to a query as to whether there were any organizations that could assist countries in phasing out leaded gasoline, a representative of UNEP replied that UNEP was ready to support the sharing of information between countries and advised participants that countries should forward specific requests to UNEP so that the latter could decide how UNEP could assist.

30. During the afternoon session of 5 May, participants met in five sub-regional working groups that assessed progress made in each sub-region on the phase out of lead from gasoline. On the morning of 6 May, following the showing of a film on the phase-out of leaded gasoline, produced by the World Bank Clean Air Initiative Africa,⁵ results of the working groups were presented (see Agenda in Annex 1).

III. Presentation of 2004–2005 action plans

A. West Africa

31. The representative of the West African group described the major recommendations of the group – which comprised 19 participants from Burkina Faso, Côte d’Ivoire, France, Gambia, Ghana, Guinea, Liberia and Senegal – for the phase-out of leaded gasoline, by December 2005, in each of the participating countries. The recommendations included:

⁵ See <http://www.worldbank.org/cleanair/>.

- data collection and analysis;
- awareness-raising campaigns;
- technical assessment of vehicles;
- periodic monitoring of air quality;
- harmonization of specifications;
- investment in infrastructure;
- establishment of a database on lessons learned and best practices;
- capacity-building; and
- cost assessment of the phase-out.

Several countries had requested financial and technical support from UNEP and The World Bank for their national action plans. At the regional level, recommendations included:

- harmonization of regulatory and technical measures, both for countries with and without oil refineries, under the auspices of the Economic Organization of West African States (ECOWAS);
- assistance to gasoline-importing countries in monitoring and controlling border activities;
- imposition of higher taxes on users who were not in compliance with regulations;
- improvement of road infrastructure;
- improvement of gasoline quality; and
- improvement and promotion of alternative systems of transport.

At the subregional level, recommendations included: setting a deadline; awareness-raising; control of illegal practices; development and promotion of alternative transport systems in urban areas; and the promotion of unleaded petrol and avoidance of diesel.

B. Nigeria and neighbouring countries

32. The representative of the Nigeria and neighbouring countries group – comprising 14 participants from Benin, Nigeria and Togo – outlined the group’s major recommendations at the national level. Leaded gasoline had already been phased out in Nigeria but remaining tasks at the national level included the decommissioning of leaded gasoline handling facilities. A regulatory legal framework had been established in Benin for the complete phase-out of leaded gasoline by the end of 2004. Work would continue on customs tariffs for unleaded gasoline, and on formalizing gasoline imports from Nigeria.

33. An action plan on the phase-out of leaded gasoline had yet to be ratified by the Government of Togo, which requested both technical and financial assistance to implement the plan. At the subregional level, recommendations included:

- harmonization of gasoline standards;
- formalization of the gasoline trade;
- holding a subregional workshop to assess achievements and further steps to phase out leaded gasoline;
- establishment of regional air quality standards; and
- holding regional workshops on the air quality in the main cities.

Overall urban air quality recommendations included:

- the formulation of air quality emissions standards;
- the review of sulphur limits in diesel;
- periodic urban air quality surveys in major cities;
- Government support to ban the import of second-hand motorcycles;
- promotion of four-stroke engine motorcycles;
- implementation of national strategy documents on urban air quality;
- establishment of national standards on air quality;
- promotion of urban public transport;
- development of alternative occupations for motorcycle taxi drivers; and
- studies on air quality.

C. East Africa group

34. The representative of the East Africa working group, comprising participants from eight — Djibouti, Ethiopia, Kenya, Mauritius, Rwanda, Somalia, Uganda and the United Republic of Tanzania — of the 13 countries in the region, presented the recommendations for the subregion. Leaded gasoline had already been phased out in Ethiopia and Mauritius. In the other countries of the subregion, major recommendations included:

- the development of action plans;
- harmonization of fuel specifications in the subregion;
- public awareness-raising programmes and workshops;
- stakeholder meetings to decide on a realistic date for the phase-out of leaded gasoline; and
- vehicle emission standards and regulations.

Capacity-building was required in various areas, including training, environmental laboratories and the design of standard information for public awareness-raising. Developments in Kenya were of strategic importance to the subregion as it provided gasoline to neighbouring countries. A final decision on the way forward for the oil refinery in Kenya and the provision of unleaded gasoline to the cities of Eldoret and Kisumu were seen as vital steps for the subregion. However, the countries of the

subregion would require financial and technical assistance from UNEP and The World Bank.

D. Central Africa

35. In the Central Africa subregion, it was expected that all stakeholders would be brought on board and that fraud control boards would be established. The Governments of the subregion would organize awareness-creation campaigns. Cameroon intended to develop capacity for finance. Congo expected to develop a decree banning all products containing lead and would sensitize operators. The first action in the action plan of Gabon was to set up a regulatory framework. It was expected that an awareness-creation campaign would be conducted for all stakeholders. Air quality control would be conducted throughout the country and an anti-fraud body would be established. Gabon required technical support from the United Nations Development Programme (UNDP) and IPIECA.

E. Southern Africa

36. The Southern African subregion covered the 11 countries of the Southern African Development Community (SADC) – Angola, Botswana, Lesotho, Madagascar, Malawi, Mozambique, South Africa, Swaziland, Zambia and Zimbabwe. All the countries of the region intended to conduct awareness-creation campaigns. In Zambia, the recommended actions included the announcement of a Government policy for the implementation of lead phase-out, the translation of that policy into legislation, and setting the date for phasing out leaded gasoline completely. Zambia needed technical assistance in terms of expertise. The lead content in gasoline in Zambia had been reduced from the beginning of 2004. In South Africa, there were plans to hold the final round of stakeholder consensus talks and the action plan was at an advanced stage of finalization. Intended actions were the enhancement of stakeholder participation and awareness-creation. Mozambique was in the process of finalizing data collection and was seeking technical and financial assistance. Zimbabwe needed to hold a stakeholder symposium. Malawi had yet to develop an action plan and Madagascar was planning to translate product specifications into legislation. Lesotho was in the process of obtaining cabinet approval for going unleaded. It intended to review legislation, including gasoline specifications, and to build the capacity of non-governmental organizations and the public sector. The recommendations for Swaziland included updating the petroleum legislation, establishing a petroleum unit by the end of 2004, and harmonization of petroleum product specifications. In Angola, there were plans to put legislation in place and to identify the investments to be made to train relevant personnel and institutions.

F. Question-and-answer session

37. In the ensuing discussion, the issue of octane specifications was discussed at length. It was pointed out that the issue affected all African countries. The participants felt that octane specifications were crucial for preventing the corruption and adulteration of products. One representative of an oil company pointed out that in the country in which he was based, there had been several discussions on the

elimination of lead from gasoline but no decision had been reached. He expressed the fear that even if a decision were reached, it would be unlikely that it would be implemented within the next three years. The oil industry was anxious for a decision to be reached so that unleaded gasoline could be brought onto the market. It was pointed out that there was a need to set a measurable target for the establishment of a minimum octane number as refineries needed it to be able to phase out lead. Most of the representatives of the participating countries suggested a minimum octane number of 91 RON. A representative of the vehicle manufacturing industry noted that the octane number varied from country to country, with some countries favouring 91 RON, others 95 RON and yet others 98 RON. In that connection, South Africa was manufacturing the latest-technology vehicles for a market that extended to Europe and, if 95 RON were not available, it could not manufacture vehicles for the European market. However, most second-hand vehicles could run on 91 RON and he suggested that 91 RON should be the minimum requirement from the point of view of vehicle manufacture.

38. One expert said that since blending of additives was likely to take place, it was important to know the effects of those additives so that a situation did not arise where an additive was removed only to be replaced with another that would prove harmful in the long run and would eventually need to be replaced.

39. Another participant noted that only Governments possessed the equipment to monitor air quality systematically and expressed the view that civil society needed training and equipment to be able to do so too, particularly where government failed to do so competently. In response to that concern, a representative of UNEP said that UNEP had made considerable effort to involve non-governmental organizations in the issue of lead in gasoline but not many had shown interest to date.

40. With regard to the use of catalytic converters, one expert cautioned that socio-economic implications should be taken into account. For example, the life of a catalytic converter was no more than 10 years. To that end, assistance was needed for creating awareness among consumers in order to avoid complications and misunderstandings when they started using unleaded gasoline. UNEP should give countries assistance in implementing phase-out and particularly for awareness-creation among consumers. In response, a representative of UNEP pointed out that materials on awareness-creation were available at UNEP in English and French. Countries could request those materials from UNEP. To a query as to whether UNEP was doing anything to directly promote the elimination of lead in gasoline, the representative of UNEP replied that UNEP was making efforts to bring the phase-out debate to public attention through the media.

41. One expert from a country that had recently suffered civil strife enquired whether that country could be assisted as it did not yet have an action plan in place. In response, the representative of UNEP informed the meeting that some funds were available from the United States of America and Canada to assist Sub-Saharan African countries in phasing out lead in gasoline. He clarified that those funds were not intended for the development of infrastructure, however.

42. A representative of a research institution appealed to The World Bank and developed countries to provide his institution with funds to conduct research on childhood lead poisoning. In response, the representative of UNEP informed him that material on that issue was available from UNEP.

43. The experts generally agreed that awareness-creation had a crucial role to play in phasing out lead in gasoline. It was pointed out that awareness campaigns should target not only the general public but also political leaders (members of parliament and cabinet ministers), who should be made aware of the magnitude of the problem.

44. It was pointed out that there was a need to review infrastructure resources because they affected standards in neighbouring countries and that equipping countries with laboratories and other facilities should be considered a priority. Countries that had not started leaded gasoline phase-out should be assisted in launching their action plans, and technical specifications should be harmonized. Harmonization of legislative measures should also be considered a priority. The infrastructure for monitoring air quality should be developed, and that development could possibly be integrated into existing poverty alleviation programmes.

45. The output sheets of the five working groups are provided in Annex II to the present report.

IV. Framework for follow-up and implementation

A. Existing networks of expertise and monitoring

46. Mr. S. Ababacar Ndiaye, of AfricaClean, a network spanning 20 countries, gave a presentation on existing networks of expertise and monitoring. The network included members from over 20 areas of specialization including lawyers, chemists, meteorologists, epidemiologists and doctors. It had been established to promote a healthier environment in the urban areas of Sub-Saharan Africa and had developed a subregional plan of action aiming to create awareness amongst the general public and public authorities. The network enjoyed fruitful collaboration with all stakeholders including The World Bank, through its Clean Air Initiative; African Governments; ECOWAS, and the New Partnership for Africa's Development (NEPAD). He outlined current problems, which had all contributed to increased levels of leaded gasoline use, including increasing numbers of vehicles on the roads, population growth, lack of public transport systems, the import of second-hand vehicles, aging vehicle fleets and lack of technical monitoring.

47. He suggested that the experts present at the Conference should consolidate national networks and work to raise awareness of the issues, in collaboration with non-governmental organizations and civil society. The World Bank could assist the network to become more widely known, and UNEP could decentralize its activities to achieve greater use of local expertise, and could make use of the network. It was very important to implement awareness-raising and air quality monitoring programmes. Regional organizations should increase their involvement in environmental activities, and Governments should demonstrate their political commitment to the environment by enacting appropriate legislation. AfricaClean would continue to work on awareness-raising and air quality monitoring in the two years to come. Some of AfricaClean's activities were detailed on the organization's website <http://www.africaclean.sn/> (in French).

B. Unleaded gasoline and the use of catalytic converters

48. Mr. J. Mooney, of the Environmental and Energy Technology and Policy Institute, gave a presentation on unleaded gasoline and the use of catalytic converters. He highlighted the report of the Valve Seat Recession Working Group to the Partnership for Clean Fuels and Vehicles,⁶ which concluded that valve seat recession was a non-issue. Noting the natural progression from unleaded gasoline to the use of catalytic converters, he described in detail the function of a three-way catalytic converter and observed that, in addition to the advantages in terms of air quality, the converter could function well whether at altitude or at sea level, and in all types of weather conditions. Catalytic converters were able to compensate for variations in fuel and were extremely durable. Although they were thermally very resistant, even a small amount of lead or oxides in gasoline would cut performance. Catalytic converters were able to operate with any type and octane of unleaded fuel, and their use in African cities would have a considerable positive impact on air pollution.

49. He emphasised the importance of establishing emissions standards for both new and for pre-owned vehicles, and for other petrol engines including heavy- and medium-duty engines, two-wheeled vehicle motors and stationary engines. There were good examples of emissions standards worldwide of proven effectiveness that could be applied in African countries. Regulations and standards for new vehicles were crucial to improving air quality, coupled with a pre-owned vehicle plan and an efficient inspection and maintenance system to ensure effective emissions control.

C. Monitoring lead phase-out and urban air quality

50. Mr. Eleodoro Mayorga Alba, of the Energy Sector Management Assistance Programme (ESMAP) of The World Bank, gave a presentation on monitoring lead phase-out and urban air quality. ESMAP aimed to: help improve management of the energy sector in developing countries; find sustainable solutions to increase access of the poor to modern energy forms; and reduce the social and environmental impacts of air pollution. Deteriorating urban air quality caused significant health problems and economic losses in countries of Sub-Saharan Africa, estimated at between 0.5 to 2.5 per cent of GDP. Vehicle emissions were major contributors to urban air pollution and particularly affected children and the poor. The two main air pollutants were lead, which even in small amounts caused serious health problems and resulted in losses of between 3 to 6 intelligence quotient points in children in urban areas, and particulates, which were particles smaller than a few microns in size and a major cause of respiratory disease. In the mid 1990s, ESMAP had launched a programme to phase out leaded gasoline in Latin America and had learned important lessons, including the importance of working with all stakeholders and on country-specific programmes.

51. Mr. Mayorga said there were no serious constraints to eliminating lead from gasoline, as all gasoline-driven vehicles could run on unleaded gasoline without other additives and without catalytic converters, and refineries could adjust easily to producing unleaded gasoline by various means. The administrative process in Sub-Saharan Africa in that regard must be accelerated, as phasing out leaded gasoline was a win-win decision and a first step to improving air quality. World gasoline consumption was currently 85% lead-free, including over 50% lead-free in Sub-

⁶ See <http://www.unep.org/pcfv/Documents/VSR-FinalDraft.pdf>.

Saharan Africa, and it was clearly possible for leaded gasoline to be phased out worldwide by between 2005 and 2010. Toward that end, policy decisions were vital but policy-makers faced problems such as: scarce, unreliable air quality data; inadequate vehicle registration systems; poor vehicle maintenance, including corruption in vehicle inspection centres; and weak monitoring and enforcement capacity for fuel and emissions standards. Governments must decide on taxation policies and technical specifications to promote the phase-out. In that connection, he highlighted the trend towards single-grade gasoline and growing concerns about olefins and aromatics such as benzenes, and about sulphur content in diesel, which increased particulate emissions.

52. He suggested that regional harmonization of fuel specifications could provide significant benefits, although the administrative process could be lengthy. Adulteration of fuel quality reduced tax revenues, caused damage to vehicles and increased air pollution. Concerted efforts were required to develop proper monitoring and control procedures, and to inform consumers. Obvious decisions that would reduce emissions would be the mandatory use of catalytic converters on new cars and fining gross polluters. Other measures included efficient inspection and maintenance programmes, integrated land use planning to reduce the length of trips, and traffic segregation and efficient public transport systems with adequate and safe pedestrian and bicycle facilities. It was important to make use of the large resource of best practices and lessons learned, so that the target of a phase-out of leaded gasoline in Sub-Saharan Africa by 2005 could be achieved.

V. Next steps in addressing urban air quality improvement in Sub-Saharan Africa

53. Mr. T. Kasten, Chief, Policy Analysis, Development and Partnerships Branch, UNEP, gave a presentation on addressing urban air quality in Sub-Saharan Africa. There was a need to address urban air quality in Sub-Saharan Africa because of the rapid pace of urbanization and the rapid increase in the number of vehicles and therefore in air pollution, whose main source was the transport sector. There was also a need to look at other issues such as transport planning, urban planning and industrial air pollution. Also, local emissions had increasing national, regional and global impacts, including climate change.

54. Promotion of catalytic converters was crucial because they reduced harmful emissions of NO_x, sulphur dioxide, carbon monoxide and hydrocarbons. Catalytic converters needed unleaded gasoline and most imported cars in Sub-Saharan Africa – both new and second-hand – could have catalytic converters. Even where leaded gasoline had not been eliminated, there was a need to put in place regulations that would ensure that all imported cars were equipped with converters.

55. Sulphur levels in fuels used in Sub-Saharan Africa were very high, with 1% sulphur content in diesel not being uncommon. Lowering sulphur content lowered direct particulate and sulphur dioxide emissions and allowed the use of some advanced diesel NO_x/particulate control technologies. Lower sulphur also improved the performance of other advanced technologies.

56. The actual air quality in many cities in Sub-Saharan Africa was not known, but it was evident that cities and vehicle populations were increasing. There was a

need for more information on the situation, and hence air quality monitoring, for use as a basis for decision-making for the next steps and in increasing public awareness. In that connection, UNEP and the United States of America Environmental Protection Agency (USEPA) would be working on an urban air quality monitoring project.

A. Next steps: cleaner fuels and vehicles for improved urban air quality in Sub-Saharan Africa — Question-and-answer session

57. One expert noted that there was a need to move towards the use of catalytic converters but wondered what would be done about the existing vehicle fleet to minimize pollution. In response, another expert observed that Africa was the last continent to eliminate lead from gasoline and that fact constituted a major restriction on vehicle dealers as very few manufacturers still produced vehicles designed to use leaded gasoline. However, existing new and second-hand vehicles entering the Sub-Saharan Africa car fleets could and should be fitted with catalytic converters. A representative of a vehicle manufacturer pointed out that cars fitted with catalytic converters needed to be well tuned and that the cost of fitting needed to be taken into account. Also, the heat produced by the catalytic converter must be taken into account to avoid heat damage to other components. Another expert suggested that regulatory bodies should be established to control the quality of imported fuel.

58. It was pointed out that there was a need to take into account the issue of fuel adulteration in harmonization issues; the example was cited of adulteration at borders and hawking of gasoline, which led to very high pollution in cities such as Bamako, where those practices were rampant.

59. One expert expressed the view that keeping prices as low as possible should be considered one of the major objectives in phasing out lead, and if vehicles could run on gasoline of the octane achievable without additives, then no additives should be used.

60. It was agreed that there was a need to review standards and specifications for new vehicles and to have a plan for used vehicles. There was also a need to produce simple repair guidelines for vehicles. It was noted that many vehicles in Sub-Saharan African countries were not properly maintained and consequently emitted huge amounts of carbon monoxide. One expert noted that vehicle maintenance was central to air quality in Africa.

61. It was recalled that currently some fuels sold in Sub-Saharan Africa had very high sulphur content, in the 7,000–10,000 ppm range. Fortunately, sulphur levels could be reduced drastically at very little cost and countries were encouraged to reduce levels to 2,000 ppm.

VI. Closure of the technical segment

62. Following the customary exchange of courtesies, Mr. P. Bultynck of The World Bank discussed what was learned from the lead phase-out process and why lead phase-out is essential, highlighting urban air pollution as a major challenge. The Executive Director then declared the Technical Segment of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa closed at 6.40 p.m. on Thursday, 6 May 2004.

Report of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa – Ministerial Segment

Introduction

63. The Ministerial Segment of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa was held at the headquarters of the United Nations Environment Programme, Nairobi, on 7 May 2004. It was preceded by the Technical Segment on 5 and 6 May 2004. The objective of the Ministerial Segment was to receive, review and adopt the recommendations of the technical segment of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa.

I. Opening of the meeting

64. The Ministerial Segment was opened by Mr. Ochillo Ayacko, Minister of Energy of Kenya, at 10 a.m. on Friday, 7 May 2004. It was co-chaired by Mr. Ayacko and Ms. Syda Bbumba Namirembe, Minister of Energy of Uganda.

65. Mr. Ayacko expressed gratitude to UNEP, The World Bank and other partners for holding the Conference in Kenya and for providing a forum for the Ministers to meet and advance the environment agenda, which was of importance to all African countries. Significant progress had been made since the Regional Conference in Dakar in June 2001, and he expressed appreciation for the involvement of the international partners which had made it possible to make that progress. UNEP and The World Bank were particularly to be commended for supporting programmes that had advanced the objective of African countries of phasing out leaded gasoline by the end of 2005. The Partnership for Clean Fuels and Vehicles and the Clean Air Initiative of the World Bank had been particularly supportive of efforts to improve urban air quality. He called on all countries to put in place appropriate measures that would ensure phase-out of leaded gasoline in Sub-Saharan Africa by December 2005. He confirmed the decision of his government to phase out leaded gasoline by December 2005.

66. Mr. Klaus Töpfer, Executive Director of UNEP, welcomed the Ministers to the Conference. He pointed to the need to combine the issues of environment and development because both were important to achieving poverty alleviation and development that was sustainable.

67. He said that as a result of the very high rate of urbanization in Africa, the number of vehicles in African cities continued to increase drastically. Unfortunately, compared to vehicles in other countries of the world, African vehicles were very old, were not always well maintained, and lacked modern pollution control technologies such as catalytic converters. As a result, air pollution had increased rapidly in African cities, with severe health effects. Those health effects also had economic impacts. The effects of lead in the air were heart attacks, strokes, premature deaths and impairment of brain development in children.

68. There was general agreement that phasing out leaded gasoline was one of the most important measures that could be taken to improve urban air quality in countries that were still using leaded gasoline. It was very important to work in

partnership to do so, and he noted with satisfaction that much progress had been realized since 2001, when only one country in Sub-Saharan Africa had eliminated lead in gasoline. Since then, eight other countries had followed suit and many more countries had set dates for the complete phase-out of leaded gasoline. Now that only a few countries in Sub-Saharan Africa were not yet involved in the common effort to phase out leaded gasoline, one of the objectives of the Conference must be to obtain the commitment of all the Governments of Sub-Saharan Africa to ensure that leaded gasoline was completely phased out lead by the end of 2005.

69. Mr. Ntagazwa, Minister of State responsible for environment, United Republic of Tanzania, expressed the view that lead poisoning was one of the most serious problems in African cities. Also, the use of leaded fuel prevented the use of catalytic converters, which could reduce vehicle emissions by 90%. He commended the Executive Director for ensuring that UNEP had committed itself strongly to supporting initiatives to phase out leaded gasoline. The elimination of lead from gasoline was also one of the priorities of the United Nations: the Secretary-General had included the phase-out of lead as a top priority in his report, "Implementing Agenda 21",⁷ for the World Summit on Sustainable Development. He expressed gratitude to the partners in the global Partnership for Clean Fuels and Vehicles, in particular IPIECA, the US Environmental Protection Agency, The World Bank, and the Governments that had provided financial support for the Partnership, one of the most successful partnerships to arise out of the World Summit on Sustainable Development.

70. Mr. Otafiire, Minister of Water, Lands and Environment of Uganda, announced that Uganda intended to approach the phase-out of leaded gasoline constructively by working with other stakeholders, particularly the private sector, to address the economic, political and economic barriers to quick action. He commended the Sub-Saharan African countries that had already phased out or had set timelines for the elimination of lead in gasoline. He emphasized that industry had a key role to play in facilitating the phase-out of leaded gasoline, and that the process could proceed most effectively if there were a partnership between Government, the private sector, United Nations agencies and multilateral organizations. UNEP, The World Bank and international oil companies were therefore to be commended for initiating and supporting the debate on the phase-out of leaded gasoline in Sub-Saharan Africa.

71. Ms. Mary Mukindia, Managing Director, Kenya National Oil Corporation, who had acted as moderator for the Technical Segment of the Conference, gave a synopsis of the proceedings of the Technical Segment.

Attendance

72. The Ministerial Segment was attended by ministers of environment of Benin, Burkina Faso, Cameroon, Djibouti, Democratic Republic of the Congo, Eritrea, Gabon, Ghana, Guinea, Lesotho, Liberia, Madagascar, Mozambique, Niger, Rwanda, Senegal, Somalia, Uganda, United Republic of Tanzania and Zambia. It was also attended by ministers of energy of Burundi, Congo, Côte d'Ivoire, Kenya,

⁷ E/CN.17/2002/PC.2/7.

Malawi, Senegal, South Africa, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

II. The impacts of unleaded gasoline on and the benefits of phasing out leaded gasoline in Sub-Saharan Africa

73. Mr. Eleodoro Mayorga Alba, The World Bank, gave a presentation on experience and lessons in the elimination of leaded gasoline. He emphasises that air quality mattered: deteriorating urban air quality caused significant health problems and economic losses in Sub-Saharan African countries, estimated at 0.5 to 2.5 per cent of GDP; vehicular emissions were major contributors to urban air pollution; and children and the poor were particularly impacted. The main air pollutants emitted by vehicles were lead and particulates. There was documented evidence that lead had a negative impact on health, even in small quantities. Also, leaded gasoline precluded the use of catalytic converters in vehicle exhaust systems. Particulates, which were particles smaller than a few microns in size, were a major cause of respiratory diseases.

74. The urgency of eliminating lead could be demonstrated: in Jakarta alone, it was estimated to cause over 4,000 premature deaths and 1.5 million asthma attacks annually. There was an average loss of 3 to 6 intelligence quotient points in urban children in large cities such as Bangkok, Cairo, Manila and Mexico City. There were no serious constraints to prevent the elimination of lead from gasoline. All vehicles could run on unleaded gasoline; even older cars without catalytic converters ran better on unleaded gasoline and valve seat recession had been shown not to be an issue. Most refineries could adjust to producing unleaded gasoline by lowering octane to 90-91 RON and blending it with higher-octane imported gasoline, possibly including additives such as ethanol or MMT, and investing in process changes such as catalytic cracking, reforming, isomerization and alkylation. No investments were required in distribution and marketing facilities and there was no price increase to be taken into consideration.

75. After the elimination of lead, there would still be a need to reduce the content of aromatics, benzenes, olefins and sulphur in gasoline and diesel. A trend towards reduced sulphur content was already beginning to emerge. A high sulphur content in gasoline reduced the efficiency of catalytic converters while in diesel it increased emissions of particulates. Given the type of vehicle fleets prevalent in Sub-Saharan Africa, however, ultra-low sulphur fuels were not yet cost-effective. Although efforts to reduce high sulphur content in diesel to between 2,000 and 3,000 ppm should be encouraged, to reduce it to 500 ppm when the diesel engines which would use such fuel were not equipped with emission control devices was uneconomic.

76. Mr. Mayorga Alba concluded that to obtain benefits in terms of urban air quality, on-going efforts to improve fuel quality should be followed by similar efforts to enforce regulations on new and second-hand vehicles, which should be equipped with functioning catalytic converters, and on existing vehicles, whose emissions should be restrictive to a level compatible with good maintenance and tune-up practices.

III. Presentation on the report of the Technical Segment: where we stand and the way forward

77. A representative of the working groups of the Technical Segment gave a presentation on the outcomes of the Technical Segment of 5 and 6 May 2004, which had included over 140 participants from the private sector, Governments, civil society, non-governmental organizations and others, and highlighted the main concerns of the five subregions. The Nigeria and neighbouring countries group needed support to phase out leaded gasoline in the areas of public awareness-raising, harmonization of standards and review of sulphur content standards. The Central Africa group highlighted the need for support in public awareness-raising and other technical and financial support. Priorities for the East Africa group included upgrading of infrastructure, harmonization of petroleum product specifications and monitoring of urban air quality and health impacts. Countries in the West Africa group required assistance with programmes to start phasing out leaded gasoline and also with partnerships, harmonization of specifications, awareness-raising, and monitoring of air quality. The Southern Africa group of countries wanted to establish a task force to work on phasing out leaded gasoline in the subregion and required assistance for the harmonization of octane levels and awareness-raising, including awareness-raising for senior government officials.

78. He said that countries in Sub-Saharan Africa should carry out awareness-raising campaigns to educate all stakeholders on issues relating to phasing out lead in gasoline. Detailed recommendations were contained in the output sheets of the Technical Segment of the Conference (provided in Annex II to the present report). Among the findings of the Technical Segment had been that: the 2005 goal for the phase-out of leaded gasoline in Sub-Saharan Africa was on track; all countries in Sub-Saharan Africa had expressed their commitment to phasing out leaded gasoline; valve seat recession was not an issue; and an octane level of 91 RON should be the common minimum standard for the region. Next steps for the region included the promotion of the use of catalytic converters and monitoring of urban air quality.

Question-and-answer session

79. In response to several requests for clarification as to what was required from politicians to assist in the phase-out of leaded gasoline, the representative of the Technical Segment informed ministers that all importing companies needed specifications for petroleum products, which should be regulated by a Government agency under the direction of political leaders. Also, countries with refineries must mobilize large amounts of money to modify them.

80. A representative of an oil company informed the meeting that oil companies had decided individually and through IPIECA to take part in improving the quality of gasoline. It was up to Governments, however, to decide on the quality of products sold in their countries, and although oil companies did not have any role in decision-making they were willing to assist Governments in harmonizing specifications and in making informed choices.

81. One representative expressed some confusion regarding what the choice of a single grade of octane for the region should be, following conflicting advice from

different sources. An expert from South Africa noted the experience in that country where, because of its geography of highlands and coastal areas, it had previously been thought that octane number needed to increase by one for every 300 metres of altitude. Following a scientific and technical study, it had been established that 91 RON was the appropriate single national grade, which all cars could run on efficiently. A dual structure had been introduced with both 91 RON and 95 RON gasoline, in order to provide for highly technically advanced cars, which made up a small proportion of the country's vehicle fleet. A price differential was being contemplated to promote the use of 91 RON.

82. A representative from East Africa asked when the appropriate infrastructure would be in place to allow for the provision of unleaded gasoline through Kenya – at Eldoret and Kisumu – to neighbouring importing countries. A representative from Kenya noted that work was progressing on the provision of unleaded gasoline by using separate storage tanks at the loading points and on the pipeline from the coast. Another representative urged East African countries to agree on a temporary closure of the Mombasa refinery and to lobby through the New Partnership for Africa's Development (NEPAD) for its rehabilitation.

83. One representative expressed the view that, given the factors of poverty and the growth rate of the national fleet, it could take almost 10 years in some developing countries to renew the national fleet and have cars that were equipped with catalytic converters and were therefore able to use unleaded fuel. An expert reiterated that all cars, with or without catalytic converters, were able to run on unleaded gasoline.

84. Another representative noted that in his country, where leaded gasoline had been phased out and where the age of the national fleet averaged 20 years, vehicles were running on unleaded fuel without any problems. Also, the oil refineries in the Middle East did not produce leaded gasoline any more and it was currently more problematic to find leaded gasoline than unleaded.

85. In response to a query on how the general public could be persuaded to switch to unleaded gasoline, a representative of UNEP noted that the Partnership for Clean Fuels and Vehicles had established a working group on public awareness-raising and that films, publications and other tools to raise awareness were available through UNEP. He noted, however, that once people had been informed, it was important that they should be able to buy unleaded gasoline: political decision-making and technical measures were therefore required before such awareness-raising took place.

86. One representative highlighted the problem of imports of used vehicles to African countries, which were a major source of air pollution. A number of African countries had taken steps to ban the import of used vehicles or vehicles older than five years. Developed countries, which were the sources of the imports, should support those efforts to prevent the dumping of such vehicles in African countries. In response, a representative noted that in his country it would be mandatory, from 2005, for all imported and newly homologated vehicles to be equipped with catalytic converters, while another representative recommended a ban on the import of two-stroke motorcycles in the first instance, and four-stroke motorcycles thereafter.

87. In response to a question on the comparative cost of leaded gasoline and unleaded gasoline, one representative of an oil refinery observed that adding lead to gasoline had made economic sense in the past, as leaded gasoline was cheaper to produce than unleaded gasoline of the same RON.

88. Responding to a query on the use of unleaded fuel in boats and ships, an expert described a case study carried out in Mauritania, where fishing was an important industry, in which it had been found that fishing boat engines ran efficiently on unleaded fuel. Further investigation had revealed that most of the fishing boat engines had been manufactured in Japan, which was the first country in the world to phase out leaded gasoline – in the 1970s – and were already designed to run on unleaded fuel.

IV. Ministerial consultations: the way forward

89. Following a short video presentation by The World Bank on the phase-out of leaded gasoline, the Chair urged participants to develop clear ideas to implement and follow up the phase-out of unleaded gasoline in Sub-Saharan Africa.

90. A number of representatives requested independent technical support from UNEP to define fuel specifications in their countries, and financial assistance to complement steps already taken to implement the phase-out of leaded gasoline.

91. One representative expressed doubts about whether the changeover to unleaded fuel was as simple as it appeared and suggested that the issue should be raised at the forthcoming meeting of the African Ministerial Conference on the Environment, in Tripoli in June 2004.

92. A representative of UNEP expressed the view that there was no hindrance to switching to unleaded fuel in countries that imported their gasoline. There were, however, cost implications for those countries with oil refineries, which would require rehabilitation.

93. In response to a comment regarding the negative impact of diesel emissions on human health, a representative of UNEP informed the meeting that the issue of sulphur in diesel was currently under discussion, and that it would certainly be an important issue to consider after the leaded gasoline had been phased out.

94. An expert pointed out that vehicle manufacturers, especially those in the United States and Japan, often recommended the use of 91 RON fuel for optimal use of the cars they made. Some cars required 95 RON fuel for optimal use but could run very well on 91 RON. However, other characteristics of gasoline, including gum, benzene and olefin content, must also be taken into consideration.

95. Several representatives outlined steps taken in their countries to phase out leaded gasoline, including the implementation of national action plans, holding of multi-stakeholder technical information workshops, public awareness-raising and implementation of the polluter pays principle.

96. One representative wondered whether unleaded gasoline resulted in harmful emissions that contributed to global warming and, noting the development of biodiesel research at the University of Dar-es-Salaam, whether alternative sources of renewable energy were being considered. In response, an expert noted that

different environmental threats should be addressed at different levels: the impact of lead emissions on health was an issue that could be tackled at the local level.

97. One representative informed the meeting that in his country, which had a refinery, studies had been conducted on lead elimination at the refinery and that the refinery was waiting for a legal text to implement the recommendations of those studies. It would, however, be useful for his country to have consultations at the regional level before any decisions in that regard were implemented. In that connection, one expert expressed the view that the idea of regional consultations was a good one as there was a need for harmonization of standards at the regional level. In addition, there was a need to have sufficient facts before deciding to substitute lead with another additive to make sure that the additive would not be found to have adverse effects after it was introduced. It was also necessary to decide what to do during the transition phase, before the ideal grade of gasoline was achieved, since refineries could not simply be closed. He said that methyl tertiary butyl ether (MTBE), MMT and ethanol were possible substitutes that were harmless.

98. Another representative informed the meeting that his country had banned the import of motorcycles and intended to ban the import of second-hand vehicles that were over five years old, and appealed for the support of other Sub-Saharan African countries in the latter effort. Vehicle-exporting countries should be encouraged to stop exporting vehicles that were too old. In response to that concern, the Chair observed while everybody agreed that older vehicles caused more pollution, the issue could be discussed at the national level only given that some countries were poorer than others and were not in a position to force their citizens to import newer and therefore more expensive vehicles.

99. It was pointed out that in phasing out leaded gasoline, it was important to ensure that pump prices did not rise, as any price increases attributable to the phase-out would create other problems. To keep prices low, there was a need for landlocked countries to hold consultations with the countries through which their petroleum products transited. It was also agreed that capacity-building was needed in the phase-out process, in particular for monitoring after the phase-out action plans had been put into operation. The representatives of a number of countries stated that they would need technical and financial assistance for that purpose.

100. It was generally agreed that there was a need to hold regional consultations for harmonization of standards. It was necessary, for example, to agree at the regional level on the additive to be used (if used) once leaded gasoline had been phased out.

101. It was also generally agreed that once lead in gasoline had been phased out, the next step would be to reduce the sulphur content of gasoline and diesel. Although it was agreed that the sulphur content in diesel should be reduced, the question remained of how much should be removed. The Executive Director of UNEP concluded that there was a need for further consultations before a decision on reducing sulphur content could be made so that the decision could be based on relevant data and information as to which options should be selected, and intimated that UNEP would assist countries in carrying out studies on that issue.

102. At the conclusion of the ministerial consultations, the Chair commended the experts, the ministers and the representatives of multinational oil companies on their

work. All countries in Sub-Saharan Africa were committed to the elimination of lead in gasoline by the end of 2005, and the ministers and experts could now return to their countries and implement the recommendations of the Conference.

103. The following recommendations were made:

- a. The Dakar Declaration, which states that leaded gasoline should be phased out of Sub-Saharan Africa before the end of 2005, should be fully implemented;
- b. Countries that have not set timelines for elimination of lead in gasoline before the end of 2005 should do so as soon as possible;
- c. Governments from importing countries should immediately stop importing leaded gasoline and switch to importation of unleaded gasoline;
- d. Governments were informed of the conclusions of a UNEP/Partnership for Clean Fuels and Vehicles sponsored study that confirmed that the recession of valve seats – a problem potentially affecting old vehicles – was not an issue to be considered in Sub-Saharan African countries;
- e. A minimum octane number of 91RON is sufficient for Sub-Saharan African countries;
- f. Harmonization of standards should be done at the sub-regional level; the petroleum industry was encouraged to make proposals as regards the future quality of fuels in different Sub-Saharan African sub-regions;
- g. Countries supplying petroleum products to other Sub-Saharan African countries should switch to unleaded gasoline as soon as possible, as to allow the importing countries to also go unleaded and meet the Dakar Declaration deadline;
- h. Governments/Ministries need to raise the issue of clean fuels and vehicles for better urban air quality and to raise awareness on this issue with decision-makers, the general public and the private sector;
- i. UNEP, within the framework of the Partnership for Clean Fuels and Vehicles, will complete a study on possibilities for reducing the sulphur content of fuels in developing countries;
- j. Governments should introduce emission standards for new and second-hand vehicles and limit, where possible, the age of the imported vehicles.
- k. Governments of countries that have gone unleaded should ensure that all imported vehicles, new and second-hand, are equipped with catalytic converters;
- l. There is a need to monitor the air quality in Sub-Saharan African cities; and
- m. UNEP, the Partnership for Clean Fuels and Vehicles and The World Bank/ Clean Air Initiative are requested to provide technical and financial support to the efforts of Sub-Saharan African Governments and their partners to phase out leaded gasoline and address urban air quality issues.

V. Closure of the meeting

104. At the final session of the Ministerial Segment, the Executive Director expressed gratitude to the ministers and experts who had attended the Conference and observed that while the issue of implementation had not been raised at the Earth Summit in Rio de Janeiro in 1992, the World Summit on Sustainable Development in Johannesburg in 2002 had come up with clear timetables for implementation, including the target of reducing poverty by half by 2015. The World Summit on Sustainable Development had also recommended working on programmes in partnership; thus, the current Conference was very important both for Africa and for the credibility of UNEP and other partners. He emphasized the need for Governments, industry, non-governmental organizations and civil society to work together. In the fight against poverty it was important for people to be mobile, but that such mobility should not entail additional risk to people's health.

105. Mr. Patrick Bultynck of The World Bank congratulated all African countries for making a decision to switch to unleaded petrol, to change their petrol specifications, and to ban the import of leaded gasoline and the intentional addition of additives anywhere in the domestic fuel manufacturing and distribution system. He noted, however, that after lead had been eliminated, huge amounts of mobile source air pollution would remain that must be brought under control. Consequently, a sound system of laws, regulations and standards needed to be established. Fortunately, catalytic converters were available and had been in use since 1977, and were now available on about 90% light-duty vehicles in the world. Catalytic converters had destroyed billions of tons of engine exhaust gas pollutants to date.

106. The Executive Director declared the Ministerial Segment of the Conference on the Progress Made in the Phase-out of Leaded Gasoline in Sub-Saharan Africa closed at 5.10 p.m. on Friday, 7 May 2004.

Annex I - AGENDA

WEDNESDAY 5 MAY			
Location	Time	Subject	Speaker(s)
Outside Conf. Room 1	08:30-09:30	Registration	
Opening session			
Conf. Room 1	09.30-09.35	Film on the phase out of leaded gasoline	UNEP/Partnership for Clean Fuels and Vehicles
Conf. Room 1		Introduction of Hon. Dr. Kulundu, Minister of Environment, Natural Resources and Wildlife, Kenya	Conference Moderator, <i>Ms. M. Mukindia</i>
Conf. Room 1	09.35-09.50	Conference opening	<i>Dr. N. Kulundu</i> , Minister, Ministry of Environment, Natural Resources and Wildlife, Kenya
Conf. Room 1	09.50-10.45	Keynote addresses	<i>Mr. F. Sprow</i> , IPIECA/ Vice-President ExxonMobil <i>Ms. E. Keumejio</i> , Ministry of Urban Affairs, Cameroon <i>Ms. A. Njora</i> , Environmental Liaison Centre International
Conference's objectives. Ongoing experiences on lead phase-out. Overall assessment of progress			
Conf. Room 1	10:45-11:00	Objectives of the conference. Methodology and expected outputs	<i>Mr. P. Bultynck</i> , World Bank <i>Mr. R. de Jong</i> , UNEP
Conf. Room 1	11:00-11:30	Assessment of the progress made in the 5 sub-regions in Sub-Saharan Africa	<i>Mr. F. Sexsmith</i> , Downstream Oil Advisors Ltd
Conf. Room 1	11:30-11:45	Experience from importing countries: lessons from Ethiopia	<i>Mr. Y. Mekonnen</i> , General Manager, Ethiopian Petroleum Enterprise
Conf. Room 1	11:45-12:00	Experience from refineries countries: lessons from Ghana	<i>Mr. E.K. Quartey</i> , General Manager – Environment, Occupational Health, Safety and Security, Tema Oil Refinery, Ghana
Conf. Room 1	12:00-12:30	Questions/Answers on the presentations	Panel introduced and moderated by <i>Mr. M. Singh</i> , Ministry of Energy, South Africa. Panel consisting of <i>Y. Mekonnen</i> , <i>E. Quartey</i> , <i>P. Bultynck</i> , <i>R. de Jong</i> , and <i>F. Sexsmith</i> ,
	12:30-14:30	Lunch	
	14:30-17.30	<i>Working Groups to assess progress (at sub-regional level) and preparation of Action Plans 2004-2005</i>	
Conf. Room 1		West Africa	Moderator: <i>S. Yeye</i> (Ministry of Environment – Burkina Faso) Rapporteur: <i>I. Sow</i> (Ministry of Environment – Senegal)
Conf. Room 3		Nigeria and neighbouring countries	Moderator: <i>B. Oloude</i> , (Serhau-SA – Benin) Rapporteur: <i>A. Jalal</i> , (National Automotive Council – Nigeria)
Conf. Room 8		East Africa	Moderator: <i>R. Sinange</i> , (NEMA – Kenya) Rapporteur: <i>Y. Mekonnen</i> (EPE – Ethiopia)
Conf. Room 2		Southern Africa	Moderator: <i>M. Singh</i> (Department of Minerals and Energy – South Africa) Rapporteur: <i>W. Siwakwi</i> (Ministry of Energy and Water Development – Zambia)
Conf. Room 7		Central Africa	Moderator: <i>J-N. Sabbag</i> (Total – France) Rapporteur: <i>E. Keumejio</i> (Ministry of Urban Affairs – Cameroon)
Fountain area	17:30-18.30	Reception	

THURSDAY 6 MAY

Location	Time	Subject	Speaker
Conf. Room 1	09.30-09.35	Film on the phase out of leaded gasoline	The World Bank – CAI-Africa
Conf. Room 1	09:35-12:30	Presentation of the Action Plans 2004-2005	West Africa Nigeria and neighbouring countries East Africa Southern Africa Central Africa
	12:30-14:30	Lunch	
Framework for follow up and implementation			
Conf. Room 1	14.30-14.45	Existing networks of expertise and monitoring	<i>Mr. S. Ababacar Ndiaye</i> , AFRICACLEAN TBC, Implementation Committee
Conf. Room 1	14.45-15.00	Monitoring lead phase-out and urban air quality: experience and lessons from ESMAP	<i>Ms. D. Lallement</i> , Program Manager ESMAP, The World Bank
Conf. Room 1	15.00-15.15	Unleaded gasoline and the use of catalytic converters	<i>Mr. J. Mooney</i> , President, Environmental and Energy Technology and Policy Institute
Conf. Room 1	15.15-15.45	Discussion on implementation and follow-up	Conference Moderator, <i>Ms. M. Mukindia</i>
Next steps for Urban Air Quality Improvement in Sub-Saharan Africa			
Conf. Room 1	15.45-16.00	Other urban air quality issues in Sub Saharan Africa – activities from the World Bank/ Clean Air Initiative for Sub Saharan Africa	<i>Mr. E. Mayorga Alba</i> , Lead Petroleum Economist, The World Bank
Conf. Room 1	16.00-16.15	<i>Other urban air quality issues in Sub Saharan Africa – activities of UNEP/ The Partnership for Clean Fuels and Vehicles</i>	<i>Mr. T. Kasten</i> , Chief – Policy Analysis, Development and Partnerships Branch, UNEP
Conf. Room 1	16.15-17.00	Next steps: cleaner fuels and vehicles for urban air quality in SSA – Questions and Answers	Moderated by <i>Ms. M. Mukindia</i>
Closing ceremony			
Conf. Room 1	17.00-17.15	Wrap up and next steps	Moderated by <i>Ms. M. Mukindia</i>
Conf. Room 1	17.15-17.30	Closing address	<i>Mr. P. Bultynck</i> , Senior Urban Transport Economist, The World Bank <i>Dr. K. Toepfer</i> , Executive Director, UNEP
<p>Friday 7 May 2004 The third day of the Conference will be a Ministerial Session, where Ministers of Environment and Ministers of Energy of Sub-Saharan Governments will discuss the progress made thus far and the way forward on the basis of the report of the Technical Session. The Ministerial Session is by separate invitation.</p>			

Ministerial session

FRIDAY 7 MAY		
Time	Subject	Speaker
09.00 – 09.50	Welcome	<i>Dr. Newton Kulundu</i> , Minister of Environment, Natural Resources and Wildlife, Kenya, and morning session Chairperson
10.00 – 10.00	Films about the phase out of leaded gasoline in Sub Saharan Africa	<i>UNEP/Partnership for Clean Fuels and Vehicles</i> <i>The World Bank – CAI-Africa</i>
10.15 – 10.15	Keynote speech	<i>Dr. Klaus Toepfer</i> , Executive Director – UNEP
10.20 – 10.20	Opening Remarks	<i>Ms. Dominique Lallement</i> , Program Manager ESMAP, The World Bank
10.25 – 10.25	Meeting objectives	<i>Mrs. Mary Mukindia</i> , Managing Director – National Oil Corporation, Kenya
10.45 – 10.45	The Impacts of unleaded gasoline and benefits to phase out leaded gasoline in Sub-Saharan Africa	<i>Mr. Fred Sexsmith</i> , Consultant – Downstream Oil Advisors Ltd.
11.10 – 11.10	Presentation on the Report of the Technical Session: where we stand and the way forward	<i>A representative of the Technical Session</i>
12.00 – 12.00	Followed by a Question and Answer session with a panel of representatives (from each Sub-Saharan African sub-region)	<i>Representatives per Sub-Sahara African sub-region of the Technical Session</i>
12.30 – 12.30	Ministerial Consultations; the way forward	Moderated by <i>Mr. Ochilo Ayacko</i> , Minister of Energy, Kenya, and afternoon session Chairperson
14.30 – 14.30	Ministerial Lunch (by invitation)	
17.00 – 17.00	Ministerial Consultations; the way forward	Moderated by <i>Mr. Ochilo Ayacko</i> , Minister of Energy, Kenya
17.15 – 17.15	Chairpersons Summary	<i>Mr. Ochilo Ayacko</i> , Minister of Energy, Kenya and <i>Dr. Newton Kulundu</i> , Minister of Environment, Natural Resources and Wildlife, Kenya
17.30 – 17.30	Closing Remarks	<i>Dr. Klaus Toepfer</i> , Executive Director – UNEP
18.30 – 18.30	Reception	

Annex II – Output sheets of the five working groups of the technical session

CENTRAL AFRICA

Working group sub-region: Afrique Centrale
Moderator : Monsieur Jean-Nicolas Sabbag
Rapporteur : Madame Evelyne Dominique Keumejio
Number of participants: 19
Countries represented: Cameroun, Congo (Brazza), Gabon

Corrections :

- dans l'annexe B.2 : Cameroun et Congo Brazzaville sont dans la catégorie Low Lead
- en page 21 :
 - supprimer « bien que les réalisations formelles soient limitées »
 - au paragraphe 1 mettre « d'ici 2005 » au lieu de « d'ici 2004 »

Actions taken thus far:

1.1 Cameroun

- Participation à la conférence du Cap
- Comité technique
- Réunion des experts et des ministères techniques (pour faire le point des recommandations de Dakar et spécifications nationales)
- Atelier régional Douala
- Préparation de l'arrêté
- Mise en œuvre progressive au niveau de la raffinerie

1.2 Congo

- Test au niveau de la raffinerie : résultats positifs
- Concertation des ministères concernés

1.3 Gabon

- Notification par le Gouvernement à la SOGARA du passage à l'essence sans plomb
- Etude du dégoullottage du réformeur
- Spécification de l'essence arrêtée (RON 93)
- Réunion de concertation avec les parties prenantes
- Mise en place des textes législatifs
- Mise en place du Comité National de Suivi

Main bottlenecks and constraints encountered

2.1) Congo

- Pas de problèmes majeurs pour l'instant: processus en cours de démarrage

2.2) Gabon

- Lenteurs administratives
- Problèmes de communication
- Difficultés de rassembler les intervenants

Actions needed to meet the Dakar deadline (end 2005)

- Dépenses de démantèlement des stations d'injection de plomb : qui paye ?
- Mise en place des diverses réglementations : interdiction de l'utilisation plombée - nouvelles spécifications
- Harmonisation au niveau de la CEMAC (cf § 7)
- Politique : campagnes de sensibilisation

Need for/ experience with public information campaigns

- Pas de réalisation à ce jour
- Consensus sur la nécessité d'une campagne d'information en fonction de la stratégie de chaque pays
- Besoins de supports : S'inspirer des expériences existantes – Demander une version française du document IPIECA – Assistance de Total en matière de sensibilisation (raffineries)

Involvement of the private sector

- Nécessité de la part de toutes les parties prenantes de la chaîne de production : raffineurs, dépôts, transporteurs, distributeurs, concessionnaires de véhicules
- fuel adulteration issues
- Plomb / Sans Plomb : ne crée pas de nouveau problème sauf éventuellement pendant la période de passage au sans-plomb.....
- Contrôles à renforcer
- Création d'un comité national anti-fraude pour le suivi et le contrôle de la qualité des carburants

Regional harmonization

- Proposition par le pays le plus avancé sur la base du document de la conférence de Douala.
- Date butoir décembre 2005 – passage anticipé possible

Working group sub-region: CENTRAL AFRICA Main recommendations Actions required to reach the December 2005 deadline		
Country	Recommended Actions Indicate for each country in the sub-region, the necessary actions	Responsible (Support needed) Indicate who will be taking the action and what support is needed
Cameroun	1-Faire aboutir l'arrêté portant homologation des spécifications 2-Démantèlement de la station d'éthylation 3-Sensibilisation des différents acteurs 4-Préparation de la réunion CEMAC 5-Etat des lieux sur un échantillon de la population (santé) 6- Evaluation du plan d'action	a-Gouvernement a-SONARA a- Gouvernement – Sonara – SNH – Marketers – SCDP - ONGs a- Gouvernement a- Gouvernement a- Comité technique Besoins (Renforcement des capacités humaines, financières et infrastructurelles – Besoins en support de sensibilisation IEC)
Congo Brazzaville	1-Harmonisation au niveau de la CEMAC 2-Décret interdisant l'essence plombée 3-Décret fixant les nouvelles spécifications des essences 4-Campagne de sensibilisation des populations 5-Campagne de sensibilisation des opérateurs privés 6-Renforcement du contrôle anti-fraude 7-Démantèlement des stations d'éthylation	a- Ministère des Hydrocarbures a- Idem a- Idem a- Ministères des Hydrocarbures, Transports, de l'Environnement et de la Santé a- Ministère des Hydrocarbures a- Idem a- CORAF (Besoins financiers et logistiques – Supports de travail)

Gabon	1-Mise en place de la réglementation	a-Comité National
	2-Organisation de l'atelier national	a-Comité national (IPIECA – PNUE – Africa Clean)
	3-Campagne de sensibilisation	a-Atelier national
	4-Contôle de la qualité ?	a-Laboratoire des mines – CENAP (Appareils de mesure – renforcement des capacités)
	5-Mise en œuvre du comité anti-fraude	a-Ministère des Hydrocarbures
	6-Formation des partenaires	a- Ministère des Hydrocarbures et de l'Environnement
		Besoins (appui IPIECA/PNUE, fournitures didactiques, affiches, moyens de communications, appareil de mesures, renforcement des capacités humaines, financières et matérielles)

Overall urban air quality recommendations

Country level:

- Cameroun: contrôle des niveaux de benzène et des aromatiques dans l'essence, du soufre dans les gas-oils – contrôle technique du matériel roulant – diminution de l'évaporation au niveau de la distribution (pistolets des pompes).
- Congo : contrôle de la qualité de l'air, des rejets des véhicules, instauration des pots catalytiques
- Gabon : instauration des pots catalytiques – renforcement des contrôles techniques- création des espaces verts – amélioration du réseau urbain et inter-urbain – inventaire du parc automobile – campagnes de mesure de la qualité de l'air et des carburants – Donner une priorité aux transports en commun – Etablir une fiscalité incitative en matière d'importation de véhicules appropriés

Sub-regional level:

- Harmonisation des codes de bonne conduite au niveau de la CEMAC
- Harmonisation des spécifications dans un cadre de libre circulation des biens et des personnes.
- Respect des recommandations de l'OMS en matière de qualité de l'air.
- Etablir des normes d'émission des véhicules
- Création d'un fond multilatéral sous-régional pour la mise en œuvre du plan d'actions

EAST AFRICA

Working group sub-region: Eastern Africa

Moderator: Reuben Sinange

Rapporteur: Yigzaw Mekonnen

Number of participants: 29

Countries represented: Djibouti, Ethiopia, Kenya, Mauritius, Rwanda, Somalia, Tanzania and Uganda,

Working group sub-region: Eastern Africa		
Main recommendations		
Actions required to reach the December 2005 deadline		
Country	Recommended Actions Indicate for each country in the sub-region, the necessary actions	Responsible/Support needed Indicate who will be taking the action and what support is needed
1. Djibouti	1- Determined if supply is leaded or unleaded 2- Government to act on regulation 3- Organize workshop and public campaign	1- MoEnv. and MoEner. – 3 rd Week of May 2- MoEnv. & MoEner. – Technical assistance from Partners 3- Ditto
2. Kenya	1- Report on the Study of refinery 2- Decision on the fate of the refinery which is critical for the Kenya and its neighbors to meet lead phase out in gasoline deadline 3- a) Case 1 – Closure of the refinery/conversion of refinery into an import handling facility - b) Case 2 – Upgrading of refinery to produce unleaded gasoline 4- Reduce number of gasoline grades from 3 to 2 by eliminating the regular grade and setting minimum to 91 5- Harmonize the standard among neighbors 6- Public awareness campaign 7- Rationalize depots and pipeline to enable neighboring countries import and receive unleaded gasoline	1- MoEner. By Mid May 2004 2- MoEner. and refinery shareholders – until Dec-2004 3- a) Ditto - b) This will take 3 years. Target for lead phase out shifts to 2008. Stopgap measure to produce low octane gasoline and mix with imported high-octane fractions to produce unleaded gasoline while upgrade is continuing. Govn/Refinery by January 2006 OR - Import of 100% ULG January 2006 4- MoEner. and Kenya Bureau of Standards – By September 2004 5- Energy committee for East Africa Community – By June 2004 6- NEMA and ELCI – Up to June 2005. Financial assistance required from the Partners 7- MoEner., Kenya Pipeline Company
3. Rwanda	1- Public awareness campaign 2- Kenya to avail ULG at ELDORET & KISUMU	1- Private sector- Financial assistance from partners 2- Kenya Pipeline Company -
4. Tanzania	1- Public awareness campaign 2- Government issuing regulations	1- MoEner. & NGO's – Financial assistance from Partners 2- Government – By end of 2004
5. Uganda	1- Stakeholders meeting 2- Public awareness campaign	1. MoEner. – End of July – Financial assistance from Partners 2. MoEner. & NGO's –Financial assistance from Partners
6. Somalia	1- Establish office 2- Technical assistance 3- Mobilize stakeholders 4- Draft regulations	1- MoEner. – Financial assistance from partners 2- Ditto
7. Ethiopia	Has already gone 100% unleaded	
8. Mauritius	Has already gone 100% unleaded	

Overall urban air quality recommendations

Country level:

1. Government commitment for comprehensive AQM
2. Coherent campaign
3. Vehicle emission standards & regulations
4. Creation of a unit for air quality management under the relevant Government institution

Sub-regional level:

1. Harmonize fuel specs, emission norms and monitoring system
2. Capacity building
 - Training in AQM
 - Establish environmental laboratories
 - Design standard information dissemination modules and Materials
 - Formulation and consolidation of sub-regional network

NIGERIA AND NEIGHBOURING COUNTRIES

Working group sub-region: Nigeria and Neighboring Countries

Moderator : Mr Bachir Oloude

Rapporteur : Mr Aminu Jalal

Number of participants: 17

Countries represented: 5 (Nigeria, Benin, Togo, Canada, France)

Working group sub-region: Nigeria and neighbouring countries		
Main recommendations		
Actions required to reach the December 2005 deadline		
Country	Recommended Actions Indicate for each country in the sub-region, the necessary actions	Responsible/Support needed Indicate who will be taking the action and what support is needed
Nigeria	<p>Nigerian gasoline already unleaded since December 2002. However the following need to be done:</p> <p>a) Dispose of residual lead (TEL) stored at Warri Refinery by end of 2004.</p> <p>b) Decommission Lead handling equipment at Kaduna and Warri Refineries by end of 2004.</p> <p>c) Implementation investment recommendations of the TDA & CHiyoda (consultants) reports for Kaduna and Warri Refineries by Mid 2005. The estimated costs are US\$30 m for each refinery</p>	<p>a) Nigerian National Petroleum Corporation (NNPC)</p> <p>b) NNPC</p> <p>c) NNPC. Financial Support from IFC, etc required.</p>
Benin	<p>a) Set up regulatory/legal framework for zero lead in gasoline by end 2004.</p> <p>b) Utilisation of existing Infrastructure for stocking and distribution of unleaded gasoline with time allowed to flush out leaded gasoline.</p> <p>c) Adapt customs tariff to unleaded gasoline.</p> <p>d) Formalise gasoline import from Nigeria.</p>	<p>a) Ministries of Environment, Energy and Justice.</p> <p>b) Ministries of Environment, Energy and the Oil Companies. Technical and financial support needed.</p> <p>c) Ministries of Finance and Trade</p> <p>d) Ministries of Finance, Commerce, Energy and the Oil Companies. Technical and financial support from UNEP, World Bank and Partners needed.</p>
Togo	<p>a) Validate, adopt and implement action plan for lead phase-out in gasoline by end of 2004.</p>	<p>a) Ministries of Environment, Finance, Trade, Mines, Oil Companies, and Civil Society. Technical and financial support from UNEP, World Bank and Partners needed to validate, adopt and implement plan.</p>
Sub-regional	<p>a) Harmonise gasoline standards within the sub-region and ECOWAS by end of 2005.</p> <p>b) Formalise gasoline trade within the sub-region by end of 2005.</p> <p>c) Sub-regional workshop to assess the achievements by the first half of 2005</p>	<p>a) Sub-regional governments</p> <p>b) Sub-regional governments</p> <p>c) Sub-regional governments</p>

Overall urban air quality recommendations

Country level:

A. Nigeria

1. Formulation of vehicle emission standards and an implementation programme by the Federal Ministry of Environment (FMEnv) and the Standards Organisation of Nigeria (SON) by mid 2005.
2. Review of gasoline, diesel and fuel oil standards to lower their sulphur limit by SON mid 2005.
(Financial assistance for standard review meetings needed from World Bank, UNEP)
3. FMEnv to initiate periodic urban air quality surveys in major Nigerian cities by January 2005.
(Assistance from UNEP, World Bank required to obtain air quality measuring equipment and train staff.)
4. The Federal Ministers of Environment and Industry to ensure government support the recommendation on motorcycles submitted as part of the report of the Presidential Committee on the Automotive Industry. These are:
 - a) To ban the importation of second hand motorcycles.
 - b) To allow only the production and importation of 4-stroke engined motorcycles from January 2005.

B. Benin

1. Government to implement the National Strategy Document on urban air quality.
2. Establish national standards on air quality
3. Promote the urban public transport.
4. Renew the vehicle fleet of the country and promote the use of 4-stroke engined motorcycles.
5. Develop alternative occupations for the motorcycle taxi drivers.
6. Government to set up urban air quality observatory by end of 2005.

C. Togo

1. Establish national standards on air quality by end of 2005.
2. Initiate studies on urban air quality by mid 2005.
3. Promote the urban public transport.

Sub-regional level:

1. Establish regional air quality standards by end of 2005.
2. Hold regional workshops on air quality in the main cities by mid 2005.
(Financial assistance to hold meetings and workshop required from UNEP, World Bank)

SOUTHERN AFRICA

Working group sub-region: Southern Africa		
Main recommendations		
Actions required to reach the December 2005 deadline		
Country	Recommended Actions Indicate for each country in the sub-region, the necessary actions	Responsible/Support needed Indicate who will be taking the action and what support is needed
Angola	<ul style="list-style-type: none"> -Define the high octane components & additives. -Put legislation in place -Identify investments to be made -Working closely with environment and transportation entities -Training to relevant personnel & institutions -Awareness campaigns -Introduction of unleaded into the market. 	Action: 1 – Ministry of Petroleum 2 – Govt 3 – Sonangol and refinery 4 – Ministry of Petroleum, Sonangol and refinery 5 – Sonangol and refinery 6 – Sonangol 7 – Sonangol (Require technical assistance in defining high octane components and additives and awareness campaigns)
Lesotho	<ul style="list-style-type: none"> -Seek cabinet approval on going 100% unleaded -Review policies and legislation including petrol specifications -Engage stakeholder participation including private sector -Public awareness campaigns -Research impacts and perceptions -Capacity building for NGOs and public sector 	1 – Ministry of Energy and Environment 2 – Ministries of Energy, Environment and Health 3 – Same as above 4 – Ministry of Energy/Petroleum Fund and NGOs 5 – same as above (require financial assistance for formulation of action plan and review of legislation and the assistance in developing the standards, as well as awareness campaigns)
Madagascar	<ul style="list-style-type: none"> -Decide octane level -Translate product specifications into law -Awareness campaigns 	1 – Govt/OMH/Private sector 2 – Govt 3 – Govt and NGO (Require assistance for mounting awareness campaigns)
Malawi	<ul style="list-style-type: none"> -Target date for phase-out set for December 2004 -UNEP should facilitate meeting between Malawi and Mozambique in June 2004 to discuss storage arrangements for Malawi -Regulations on specifications to be gazetted in July 2004 -Public Awareness to start mid-May 2004 	1 – Ministry of Energy 2 – Petroleum Control Commission 3 – Ministry of Justice 4 – NGOS, etc (Require financial assistance for awareness from UNEP and World Bank)
Mozambique	<ul style="list-style-type: none"> -Data collection on national vehicle fleet -Review the national legislation related to fuel import and distribution -Studies on cost impact of unleaded petrol -Govt to approve the strategy and action plan -Public information campaigns 	1 – Ministry of Transport and Communication 2 – Ministry of Minerals and Energy 3 – Ministries of Energy and Finance 4 – Cabinet 5 – Ministries of Environment, Health, NGOs and private sector (require technical assistance on vehicle performance, unleaded impact on old vehicles, awareness campaigns)

	<ul style="list-style-type: none"> -Harmonisation with regional countries to coordinate process -Commence 100% importation of unleaded (in near future) -Monitoring and evaluation 	<p>6 – Ministries of Energy and Environment</p> <p>7 – Ministry of Mineral Resources and Energy, Mozambican Importing Agency</p> <p>8 – Ministries of Mineral Resources, Co-ordination of Environmental Affairs, Mozambican Importing Agency (require assistance in the analysis of unleaded petrol, air pollution control)</p>
South Africa	<ul style="list-style-type: none"> -Final round of stakeholder consensus on octane levels -Cabinet approval for revised fuel specifications and octane levels 	<p>1 – Department of Minerals and Energy; oil industry; automobile association</p> <p>2 – Department of Minerals and Energy; Dept of Environmental Affairs and Tourism (Plan in advanced stage of finalisation – the implementation to be done in 2006)</p>
Swaziland	<ul style="list-style-type: none"> -Update petroleum legislation -Establish petroleum inspection unit by 2004 -Harmonise petroleum specifications -Public awareness campaigns -Capacity building to relevant personnel and institutions 	<p>1 – Dept of Energy with stakeholder consultation (require funding to review current petroleum related legislation and produce a draft bill)</p> <p>2 – Dept of Energy (require funding for training of inspectors and purchase of pollutant and petroleum monitoring equipment)</p> <p>3 –</p> <p>4 – Dept of Energy, Ministry of Public Works and Transport, Transport Associations, Oil marketing companies, NGOs</p> <p>5 – Yet to identify institution to be responsible (funding required for this exercise)</p>
Zambia	<p>Govt. Policy Pronouncement Unleaded gasoline minimum 91 Ron 2004 – onwards (side by side with leaded 91 Ron) (To cater for current local consumption) 3- National Publicity Campaign. Translate Policy guideline into Law. Vehicle Emission Standards. Formation of National Task Team.</p>	<p>a- 1 – MiEWD b- 2 – MEWD c- 3 – MEWD/MTENR d- 4- MEWD e- 5- MTENR f- 6- MEWD</p>
Zimbabwe	<ul style="list-style-type: none"> -Engage oil industry players and other stakeholders – done (industry, suppliers, NGOs, etc.) -Liaise with other countries – in progress -Research and study vehicle fleet – in progress -Seek legal advice – in progress -Notify suppliers by 30 May 2004 -Awareness campaign by 1 June 2004 -Implementation of ULP by 1 July 2004 	<p>1 – Task force Committee</p> <p>2 – Ministry of Energy and Power Development (MEPD)</p> <p>3 – Ministry of Transport</p> <p>4 – MEPD</p> <p>5 – Oil marketing companies</p> <p>6 – MEPD and Ministry of Information and Publicity</p> <p>7 – All stakeholders (Financial assistance in awareness campaigns and technical assistance in product specifications)</p>

Sub-regional harmonization:

1. Set up regional task team.
2. Seek to harmonize fuel specification parameters
3. Link up with air pollution information network for Africa (APINA)

Overall urban air quality recommendations

Country level:

- implement legislation on mobile sources.

WEST AFRICA

Working group sub-region: Afrique de l'Ouest

Moderator : Mr Samuel Yeye

Rapporteur : Mr Ibrahima Sow

Number of participants: 21

Countries represented: Burkina Faso – Côte d'Ivoire – Guinée – France – Ghana – Sénégal – Liberia – Gambie – Mali

Working group sub-region: <u>Afrique de l'Ouest</u>			
Principales recommandations			
Actions required to reach the December 2005 deadline			
Pays	Actions nécessaires	Responsables	Besoins en assistance
Senegal Cf. rapport Sexsmith	lubrification: mesures a prendre	SAR	
	Essai sur les additifs	Min Mine et SAR	
	Choix des grades	Min Mine et SAR	
	Collecte , traitement info (AfricaClean)	AfricaClean	
	Sensibilisation	Cetud et Africaclean	Besoin de financement de la part du PNUE
	Visites techniques des voitures:	Dir Transports Terrestres	
	Suivi qualite de l'air: Creation labo, observatoire qualite de l'air	DENV/ CETUD	
Côte d'Ivoire Cf. rapport Sexsmith	Projet de Specifications techniques des carburants deja prepare	Ministeres Mines et Energie	
	Prop Harmonization des specifications a soumettre a la CEDEAO	Min Ener Conseil Min UEMOA	
	Sensibilisation	Min Env et Ener	Appui du PNUE pour mener une campagne de sensibilisation
	Chronogramme a respecter	SIR	
	Definir la positon par rapport a l'additif anti-recession des soupapes	SIR et MENER Recommandation attendue de la conf.	
Burkina Faso Cf. rapport Sexsmith	Projet FEM lutte poll amos(dev transport en commun)	Ministere Environment Municipalites	Appui pour mener une etude d'impact lie a la reconversion des engins a deux roues
	Creation d'une agence de controle de la qualite de l'air	Min Env et Municipalite Ouaga	
	Plan de communication	Min Environnement et Energie; et Societe Civile	
	Definition des specifications techniques	Min. Energie	
Guinee Cf. rapport Sexsmith	Investissements pour controle qualite de l'air	Min Env USEPA FEM	
Ghana Cf. rapport Sexsmith	Elargir le programme de controle du Pb dans d'autres villes du Ghana	Ghana EPA Ministere de la Sante Ministere Environnement	
	Reglementation emissions	Ghana EPA Societe civile (sensibilisation) Ministere Energie	

	Sensibilisation des populations	Ghana EPA Societe civile	Besoins de financement
	Surveillance de la qualite de l'air	Ghana EPA DVA MTTU Min Energy Ministry of road and Transport Africaclean et autres ONGs	Besoins de financement
	Suivi du manganese dans l'air	TOR /EPA	Assistance technique par Ethyl Corporation
	Investissements infrastructures	Ghana EPA	
Liberia Cf. rapport Sexsmith	Organiser un atelier pour le renforcement des capacites (Specification mesures legislatives et reglementaires)	Ministry of Lands, Mines and Energy National Energy Committee Environmental Protection Agency	Appui de la part du PNUE, de laBM, de l'IPIECA
Gambia Cf. rapport Sexsmith	Bilan de situation	Agence de l'Environnement NEA	
	Mise en place d'un groupe de Travail charge de planifier l'elimination de l'essence sans plomb	NEA	
	Developpement de programme bilateral	NEA	
	Renforcement des capacites	UNEP/WB	
	Surveillance qualite de l'air	NEA Departement Energy Société Civile Secteur Privé (Compagnies pétrolières)	
	Estimation cout d'elimination Pb	Gambia EPA, Societe civile	
Mali	Renforcement des capacites en ressources humaines	Min Env et Min Sante	
	Mise en place du cadre legislatif et normatif	Min Ind et Commerce, Min Mines et Energie	
	Limitation de l'importation a partir des pays producteurs d'essence au Pb	Min Economie et Finances	
	Lutte contre les ventes anarchiques de carburants	Ministere de la Securite et Min des Mines	
	Application de la visite technique	Min Equipement Et Transport	
	Limitation de l'importation des vehicules d'occasion (plus de cinq ans d'age)	Ministere Economie et Finances	
	Suivi de la qualite de l'air	Min Env et Sante	
Sous-Region	Harmonisation au niveau de la CEDEAO (Mesures techniques et reglementaires) Pour tous les pays disposant ou non de raffinerie) Introduire le pot catalytique dans les différents pays de la region Grade propose pour la sous region: minimum 91	CEDEAO Pays de la region	Aider les pays importateurs a mieux controler leurs frontieres

Overall urban air quality recommendations

Country level:

- Faire l'état des lieux concernant la qualité de l'air;
- Développer une base de données complète sur la qualité de l'air;
- Étudier les impacts de la pollution de l'air sur la santé et évaluer les coûts financiers y relatifs et alerter, au besoin, les gouvernements
- Assurer la surveillance continue de la qualité de l'air
- Informer les populations sur les niveaux d'émissions;
- Éduquer les populations sur les comportements citoyens (conduite responsable);
- Rendre obligatoire et effective la visite technique;
- Appliquer le principe du pollueur payer (taxes à la pollution)
- Améliorer les infrastructures routières;
- Améliorer la qualité des carburants
- Renouveler le parc automobile
- Promouvoir les modes de transports alternatifs moins polluants
- Promouvoir le transport en commun;
- Désengorger les grands centres urbains par la création de nouveaux pôles
- Contrôler la qualité des carburants au niveau national
- Envisager la création d'un fonds de dépollution

Sub-regional level:

- Fixer l'échéance pour respecter les recommandations OMS relatives à la qualité de l'air
- Harmoniser la qualité des carburants
- Sensibiliser les utilisateurs et les populations
- Lutter contre les pratiques frauduleuses (fabrication et ventes de carburants de mauvaise qualité), notamment au niveau des frontières
- Harmoniser le cadre législatif et réglementaire,
- Développer et promouvoir des plans cohérents de mobilité urbaine;
- Promouvoir l'utilisation de l'essence super par rapport au diesel pour les véhicules particuliers en gardant à l'esprit les contraintes liées aux avantages coûts/bénéfices
- Inscrire la lutte contre la pollution de l'air dans les stratégies de lutte contre la pauvreté

Liste des participants

Noms Prenoms	Pays	Institution
1. Quartey E K	Ghana	Tema Oil Refinery
2. Saho Bah	The Gambia	Energy Division Office of the President
3. Rufus Tarnue	Liberia	Ministry of Lands, Mines and Energy
4. Sagna Pascal	Senegal	Cetud Dakar
5. Ndiaye Seydi Ababacar	Senegal	AfricaClean
6. Ibrahima Sow	Senegal	Ministère Environnement
7. Soudou Diagne	Senegal	AfricaClean
8. Mamadou Nimaga	Senegal	Sar
9. Gbeuly Kale	Cote D'Ivoire	Ministère des Mines et de L'énergie
10. Kanga Konan	Cote D'Ivoire	Sir
11. Nandjui Danho Pierre	Cote D'Ivoire	Ministère des Mines et de L'énergie
12. Patrick Bultynck	Washington	Banque Mondiale
13. Kabore Hilaire	Burkina Faso	Min Environnement
14. Ouedrago Zephirin Athanase	Burkina Faso	Min Environnement
15. Yeye Samuel	Burkina Faso	Min Environnement
16. Elichegaray	France	Ademe
17. Catherine Asante Poku	Ghana	Tema Oil Refinery
18. Esi Merquaye Telleh	Ghana	Ghana Epa
19. Ebo Hammond	Ghana	Africaclean
20. Christian Fassinou	Cote D'Ivoire	Shell Africa
21. Kassambara Brehima	Mali	Ministères des Mines et de L'énergie