

# Partnership for Clean Fuels and Vehicles



*Outcome and  
Influence Evaluation  
of the UNEP Based  
Partnership for Clean  
Fuels and Vehicles  
(PCFV)*



*The views expressed in this report are not necessarily the opinion of and/or endorsed by all  
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**Outcome and Influence Evaluation  
of the UNEP Partnership for Clean Fuels and  
Vehicles (PCFV)**

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**Evaluation Office**

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## ABBREVIATIONS AND ACRONYMS

BLL	Blood Lead Levels
CAI-SSA	Clean Air Initiative for Sub Saharan Africa
CH	Clearing House
CSD	United Nations Commission on Sustainable Development
DTIE	Division of Technology, Industry and Economics (UNEP)
ECOWAS	The Economic Community of West African States
ESMAP	Energy Sector Management Assistance Programme (World Bank)
FIA	Federation Internationale de l'Automobile
IPIECA	International Petroleum Industry Environmental Conservation Association
KPRL	Kenya Petroleum Refineries Ltd.
LRA	Lead Replacement Additive
MMT	Methylcyclopentadienyl Manganese Tricarbonyl
Mogas	Motor gasoline (petrol)
MOU	Memorandum of Understanding
NEPAD	The New Partnership for Africa's Development
NGO	Non Governmental Organisation
NRDC	Natural Resource Defence Council
Pb	Lead
PCFV	Partnership for Clean Fuel and Vehicles
PES	Propriete, Sante et Environnement (Burundi NGO)
PIEA	Petroleum Institute of East Africa
RON	Research Octane Number
SACU	Southern Africa Customs Union
SADC	Southern Africa Development Community
SD	Sustainable Development
SSA	Sub Saharan Africa
ULG	Unleaded Gasoline (petrol)
UNEP	United Nations Environment Programme
US EPA	United States Environment Protection Agency
US\$	United States Dollar
VSR	Valve Seat Recession
WHO	World Health Organisation
WSSD	World Summit on Sustainable Development
g/l	grams per litre
mg/dl	milligrams per decilitre
mtons	metric tons

## Executive Summary

- A: This report presents the findings of an evaluation of the contribution of the UNEP Partnership for Clean Fuels and Vehicles to the phase out of leaded petrol in Sub Saharan Africa.
- B: The Partnership for Clean Fuels and Vehicles (PCFV) is a global initiative to promote and support better air quality through the introduction of cleaner fuels and vehicles in developing and transitional countries. It is a public-private partnership launched by a group of committed partners from governments, international organisations, industry and non-governmental organisations (NGOs). The United Nations Environment Programme (UNEP) - based Partnership Clearing-House provides technical, networking and financial support for improved capacity and technology transfer through regional, national and local activities related to cleaner fuels and vehicles.
- C: There was one main objective of the initial support provided by the Partnership in Sub Saharan Africa (SSA), namely the total phase-out of leaded petrol in SSA by the end of 2005. If this state were attained, the Partnership would have achieved its objective.
- D: In mid-2001, Sudan was the only SSA country to have totally removed leaded petrol from use within its borders. This meant that some 48 Sub-Saharan Africa countries remained with total or (in a few cases) partial use of leaded petrol, which would need to be reversed within a period of four and a half years.
- E: By the deadline of the end of 2005, the target of helping Sub Saharan Africa to be totally free of leaded petrol was attained.
- F: In order to assess the results of the Partnership, a hypothetical “business as usual” counterfactual scenario was calculated.

The reduction achieved in use of leaded fuel in SSA was of the order of Metric Tons (MT) 17,745 per annum at the end of 2005, rose to about MT 20,138 per annum in 2010 and to MT 23,071 p.a. by 2015. This gives a total of approximately Metric Tons 90,000 avoided by mid 2010, rising to MT190,690 by 2015 and to MT 304,770 by 2020. We cannot precisely predict how long it would have taken to achieve the phase out without the contributions of PCFV and other players. However, it is clear that there had been very little progress prior to the original Dakar Conference in 2001, with only Sudan totally lead-free and motorists in South Africa, Namibia and Botswana having limited access to unleaded fuel. This suggests that, as a very conservative estimate it would have taken ten years rather than five to achieve and that, on this basis, the total amount of leaded petrol avoided would have been at least MT 190,000; with a strong likelihood that this figure would have actually been nearer to MT300,000, in view of the minimal progress, which had been made prior to the Dakar Conference and the establishment of the PCFV. The urban population potentially benefitting from these reductions was expected to rise from 411 million in 2000 to 470 million by 2015.

- G: Research on the connection between Blood Lead Levels (BLLs) and health across continents indicates that the phase out of leaded petrol is the critical factor in reducing overall human exposure to lead. Evidence from Hungary and Thailand is consistent with that for the United States; whilst PCFV-supported research in Ghana showed dramatic decreases in BLLs after the phase out in that country. It is therefore clear that the Partnership contributed to substantial health benefits in Sub Saharan Africa; which in turn promoted social and economic gains through reduced sickness and improved physical and mental development, particularly of children in urban areas.
- H: UNEP made a substantial contribution to this process, operating at three levels. As an institution, often represented at the highest level, UNEP promoted and reaffirmed the importance and achievability of the objective at a series of conferences throughout the region. The widely-respected expertise of UNEP in the realm of international environmental management, coupled with its perceived absence of vested interests was a critical factor in enrolling national political support at the highest levels, which was essential to ensure that intentions were followed through with the intensity and persistence required to phase-out leaded petrol throughout the region.
- I: As a member of PCFV, UNEP helped to bring into the Partnership a broad range of stakeholders and to maintain their commitment through regular and ad hoc meetings. The experience of the organisation in promoting regional (and even global) environmental management initiatives was invaluable in ensuring that the process occurred in a cost effective manner.
- J: At the level of day to day guidance of the process, the UNEP-based and supported Clearing House (CH) provided effective support with, initially, very limited resources. Gradually, the range of activities increased, as did the available resources. The CH enabled PCFV to operate by coordinating, advising, supporting the preparation of documentation, publishing and a range of activities without which the Partnership could not have been effective. As funds increased, from UNEP and other sources, the CH also played a vital role in managing Partnership financial and other support to organisations in SSA countries, to hold meetings, run advocacy campaigns, conduct research and engage in activities essential to underpin the process of change; which often started from a low level of public knowledge and even substantial misconceptions concerning unleaded fuel.

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