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Clean Fuels and Vehicles

Title: Clean Fuels and Vehicles
Program Area: Urban Energy
Mechanism: Interagency Agreement
Implementer: US Environmental Protection Agency
Geographic Focus: Africa, Mexico and Central America
Duration: 2003 – 2006



Polluted street in Manila, Philippines.

Project Background

Air pollution in many cities in the developing world is reaching crisis proportions. According to the World Health Organization, only 15% of the largest cities in developing countries have acceptable air quality. Poor air quality is related to approximately 3 million deaths each year, and contributes to the plight of millions more who suffer from asthma, chronic obstructive pulmonary disease,

cardiovascular disease, and lung cancer. Exposure to lead emissions is extremely harmful to children under age six, affecting the brain and nervous system and damaging organs. Motor vehicles account for a significant portion of urban air pollution in developing countries.

The Partnership for Clean Fuels and Vehicles was established at the World Summit on Sustainable Development in September 2002 to reduce vehicular air pollution in developing countries through the promotion of clean fuels and vehicles. This global partnership, headquartered in the United Nations Environment Program (UNEP), brings together governments, industry and non-governmental organizations to implement these efforts. The Partnership is initially focusing on two priority areas:

- The elimination of lead in gasoline; and
- The reduction of sulfur in diesel and gasoline, while concurrently adopting cleaner vehicle technologies.



Transporting LPG cylinder to fuel home cooking.

Approach

USAID is funding the US Environmental Protection Agency (EPA) to support Partnership activities in AID-assisted countries in Africa and Latin America.

This work includes:

- Presentations, seminars, workshops and training programs;
- Pilot projects on diesel retrofits for buses and trucks;
- Refinery modeling, to assist in decision making about appropriate technologies and costs for refinery upgrades;

- Cost-benefit analysis of diesel emissions;
- Work with policy makers to develop appropriate laws and regulations related to fuels and vehicles;
- Support for the Partnership Clearinghouse at UNEP; and
- Development of a roadmap for reducing sulfur in gasoline and diesel.

Project Activities

Regional Activities

EPA has utilized AID funding to collaborate with UNEP in lead phase-out activities in Sub-Saharan Africa, and has taken the lead in forming regional partnerships in Central America to address introduction of low-sulfur fuels and vehicles.

Working with the Comision Centro Americana del Ambiente y Desarrollo, EPA organized a regional workshop on clean fuels and vehicles in Guatemala in April 2004. This activity served as the first step in developing a regional working group that can draft an action plan to reduce sulfur in seven Central American countries.

Mexico City Bus Retrofit Pilot Project

In addition to regional activities, EPA is collaborating with Mexico to develop a pilot retrofit project for heavy-duty diesel buses in Mexico City. Diesel vehicles are a significant source of pollution there, contributing up to 30% of the overall particulate matter in the air. The project



will install retrofit technology on 20 vehicles in the city's bus fleet, RTP.

Modeled after similar projects in the US, the goals of the demonstration project are to:

- Demonstrate the effectiveness of EPA-verified diesel retrofit technologies on Mexican vehicles under Mexican operating conditions;
- Develop information on costs and emissions reductions;
- Develop a program appropriate for Mexico City that can be replicated with other fleets in Mexico (and in other countries); and
- Build technical capacity for retrofits in Mexico.

Project Partners

Mexico City, SEMARNAT, Pemex, UNEP, BP, MECA, International Truck and Engine, WRI, Center for Sustainable Transport.

Development Impact

The retrofit project will be carried out by the Center for Sustainable Transport, a Mexican NGO. EPA is also working with Mexican scientists, the Hewlett Foundation, PEMEX (Mexico's largest oil company), and SEMARNAT (the Mexican Ministry of Environment) to develop a cost-benefit analysis of low sulfur fuels to convince Mexico's Treasury Department of their enormous health benefits.

Low-sulfur fuels enable use of advanced emission control technologies -- the technologies and the cleaner fuel together remove up to 90% of particulates from diesel emissions. In the U.S., the health benefits of reduced sulfur emissions from trucks and buses have been estimated at \$70 billion. EPA expects similar health benefits could be achieved in Mexico.

Project Results

The Mexico City retrofit project was officially launched in June 2004. Monitoring will occur for a one-year period after the retrofit technology is installed.

USAID Contact

Pamela Baldinger
Office of Infrastructure and Engineering
+1 202 712 4185
pbaldinger@usaid.gov
www.epa.gov/otaq/retrofit/mexico_city

Project Contact

Jane Metcalfe
U.S. Environmental Protection Agency
+1 202 564 6451
metcalfe.jane@epa.gov
www.unep.org/pcf