



# Mobilizing for Cleaner Air

Milestones in implementing the  
Clean Air Act

**May 2004**



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## Milestones in Implementing the Clean Air Act

Clean air, like water, is life. Each of us can be a clean air advocate by simply practicing a clean and healthy lifestyle. We can also take active part in programs and campaigns for clean air.

In 1999, the Philippines enacted Republic Act (RA) No. 8749 or the Clean Air Act (CAA). Five years after the passage of such Act, it is important to take stock of headways made.

### Achievements After Five Years

- From one of the badly polluted cities in Asia, in terms of suspended particulates, Metro Manila has achieved notable improvement in air quality. Air quality standards are monitored with the use of the latest technologies.

## **Air Quality Framework and Action Plan**

The *Integrated Air Quality Improvement Framework (IAQIF)* and the *Air Quality Control Action Plan (AQCAP)* were formulated and adopted in 2000 pursuant to provisions of the CAA.

The IAQIF is the official blueprint to attain and maintain ambient air quality standards. The Framework defines the goals and supporting management strategies and control measures – emission reduction goals, timeframe for emission reduction goals, economic incentives, collective action, and environmental education and information.

The AQCAP spells out specific methods and means to achieve the intent of the CAA.

## **Designation and Management of Airsheds**

The Clean Air Act divides the entire country into airsheds to facilitate monitoring of air quality. Airsheds refer to areas with common weather or meteorological conditions and sources of air pollution that affect the interchange and diffusion of pollution in the surrounding atmosphere.

Fourteen airsheds so far have been designated – Metro Manila, Metro Cebu, geothermal areas (Leyte, Southern Negros and Bacon-Manito), Davao City, Cordillera Autonomous Region (CAR), Agusan del Norte, Naga City, Cagayan de Oro City, Zamboanga City, Northeastern Pangasinan, Metro Tuguegarao and North Cotabato.

- The Metro Manila airshed covers 17 cities and municipalities in Metro Manila, Region III or Central Luzon (excluding Nueva Ecija) and Region IV-A (excluding Quezon province).
- The Metro Cebu airshed covers the municipalities of Naga, Minglanilla, Cordova, Consolacion, Liloan, Compostela and the cities of Talisay, Cebu, Mandaue, and Lapu Lapu.
- The Geothermal airshed is a special airshed and is designated in geothermal areas in Leyte, Southern Negros and Bacon-Manito.
- The Davao City airshed covers the whole area of the city.
- The CAR airshed covers Baguio City and the municipalities of La Trinidad, Itogon, Sablan, and Tuba (BLIST).



tal Suspended Particulates (TSP) in the area. TSPs are small solid and liquid particles suspended in the air and include dust, smoke, metallic and mineral particles, soot, mist, and acid fumes.

Rehabilitation and upgrading of eight Ambient Air Quality Monitoring Stations

(AQMS) were completed under the MMAQISDP. These stations, which will provide real time air quality data that the public can view through an electronic billboard, are located strategically all over the Metro Manila airshed, specifically in:

- Manila Observatory, Ateneo de Manila University, Quezon City
- Marulas Transmitter Station, Valenzuela City
- 600<sup>th</sup> Air Base Wing, Philippine Air Force, Clark Air Base, Angeles City
- Cavite State University, Indang, Cavite
- Mass Communications Compound, Polytechnic University of the Philippines, Sta. Mesa, Manila
- Bureau of Plant Industry, Los Baños, Laguna
- Provincial Agri-Vet Office, Batangas City
- NAMRIA Compound, Fort Bonifacio, Taguig City
- Muntinlupa City (ongoing installation)
- Valle Verde, Pasig City (ongoing installation)

Outside Metro Manila, there are 63 manual air monitoring stations installed. Automatic (open path) stations are in Cagayan de Oro and Cebu. EMB regional offices have been provided with three-gas samplers.

For Metro Manila, the EMB is working out ways to make available up-to-date information on the metropolis' air quality, as well as tips on cleaning the air, initiated the launching in November 2003 of the first fully-furnished Air Quality Monitoring Display Boards (AIRBoards) along Katipunan Avenue in Quezon City.

certify that a new motor vehicle type complies with the numerical emission standards set by the IRR of the Clean Air Act. As of 2002, it has already issued 300 Certificates.

As of October 2003, the DENR has issued 412 Certificates of Conformity to motor vehicles; and 202 for motorcycles.

### **Motor Vehicle Inspection System and Private Emission Testing Centers**

The LTO requires a valid certificate of emission compliance with emission standards before the annual renewal of registration. Emission testing is conducted by the LTO through the Motor Vehicle Inspection System (MVIS)/Emission Testing Centers, and accredited and authorized Private Emission Testing Centers (PETCs).

Individuals or companies interested to set up a PETC are required to obtain accreditation from the Department of Trade and Industry (DTI) and authorization from DOTC prior to setting up PETCs. As of October 2003, a total of 158 PETCs have been accredited nationwide. A total of 59 are in Metro Manila, 64 in other parts of Luzon, 19 in the Visayas, and 16 in Mindanao.

The EMB issues certificates for emission test equipment to ensure that the equipment of PETCs and LTO emission testing centers conform with CAA specifications. The basic testing equipment is a gas analyzer for gasoline-fed vehicles and an opacimeter for the diesel-fed vehicles. As of October 2003, the DENR has certified 43 brands of emission test equipment (22 opacimeters and 34 gas analyzers).

### **Anti-Smoke Belching Program**

Considering that motor vehicles account for about 70 percent of overall air pollution level in Metro Manila, the anti-smoke belching (ASB) program is an effective anti-pollution strategy pursued by the LTO, MMDA, LGUs, and *Bantay Kalikasan*.

In addition to Metro Manila, the anti-smoke belching campaign is also implemented in other regions. It involves roadside emission testing and apprehension of vehicles which fails the test.

For Metro Manila, the program is implemented by anti-smoke belching units (ASBUs) of the 17 local government units (LGUs) in Metro Manila, MMDA, LTO and ABS-CBN *Bantay Kalikasan-Bantay Usok*. Under the Metro Manila Air Quality

Lowering of aromatics in unleaded gasoline to 45 percent maximum took effect in January 2000 and to 35 percent in January 2003. Lowering of benzene in unleaded gasoline from 4 percent to 2 percent took effect in January 2003.

Lowering of sulfur content of industrial and automotive diesel fuel by 75% began its implementation in January 2004. The DOE and DENR have forged partnerships with oil companies for the early reduction of sulfur in diesel from 0.2 percent to 0.05 percent, two months ahead of schedule set by the CAA.

Introduction of pure diesel (with 0.05 percent S) as the first CAA compliant diesel fuel was made available by the five new oil players, i.e., City Oil, Eastern Petroleum, Jetty, Seaoil and Unioil, starting September 2003.

Monitoring conducted by the DOE in early 2003 showed that 96 percent of gas stations in Metro Manila comply with the provisions of the CAA. Among the 93 samples tested by the DOE, 89 samples obtained from gas stations passed the standard for benzene content while 92 samples passed the aromatics requirement.

### **Alternative Fuels**

Use and promotion of alternative (clean) fuels, e.g., compressed natural gas (CNG), liquified petroleum gas (LPG), and cocomethyl ester (CME) or cocodiesel have made significant headway.

According to the Philippine Council for Industry and Energy Research and Development (PCIERD), CNG is a good substitute for diesel. The Natural Gas Vehicle (NGV) Program for Public Transport was launched in late 2002. A mother-daughter fueling system will be set up in Batangas and Metro Manila to promote the use of the CNG by 100 public buses.

The Development Bank of the Philippines (DBP) approved the loan application of several companies for acquisition of CNG buses. Incentives and privileges include income tax holiday for qualified NGV industry, related activities under the Board of Investments 2003 Investment Priority Plan, and one percent rate of duty on imported NGVs, NGV engines and other related equipment, facilities, parts and components as certified by the DOE.

Largely used for cooking, LPG can be an alternative to diesel and gasoline. Current initiatives on the use of automotive LPG are private sector-led. An example is the Emerson Taxi Company in Cebu which has a fleet of 50 taxicabs fueled by LPG and supported by Shell Gas LPG which installed an LPG refueling

A number of studies on the health impact of air pollution have been done in the past:

- Metro Manila Air Pollutant Characterization and Source Identification (1996 to date – Philippine Nuclear Research Institute and IEA)
- Environmental Health Risk Assessment of Particulate Pollution and Chronic Mortality in Metro Manila, Philippines (2002)
- Baseline Health Profile of Communities Located in the Metro Manila Airshed (2000-DOH)
- Philippine Environment Monitor (2000-World Bank)
- Urban Air Quality Management Strategy in Asia, URBAIR, Metro Manila Report, MEIP (October 1996- World Bank)
- Philippine Environmental Health Assessment (1995-World Bank)
- Health Profile of Child Scavengers in Smokey Mountain Dumpsite, Balut, Tondo, Manila (1993)
- Environmental Health Surveillance in the Surrounding Communities of an Industrial Estate in Leyte, Philippines (1994)
- Impact of Vehicular Emissions on Vulnerable Populations in Metro Manila (1994)
- Cross-Sectional Study on the Respiratory Health of Jeepney Drivers, Air-Conditioned Bus Drivers and Commuters and their Exposure to Air Pollution in Metro Manila (1991)
- Field Survey Component of the Metro Manila Air Quality Improvement Sector Development Program (2002 to date-DOH)





## Ozone and POPs

Chlorofluorocarbons (CFCs) are various compounds used as aerosol, propellants, solvents, and refrigerants which, when released into the atmosphere, contribute to the breakdown of the ozone layer.

The Philippines is committed to the Montreal Protocol which provides for the phase-out of CFCs by 2010. In 2002, the estimated CFC consumption stood at 1,263 MT compared with the protocol commitment of 3,018 MT.

Another international commitment is the Stockholm Convention on Persistent Organic Pollutants (POPs). Adopted in May 2001, it seeks the elimination of POPs. The Philippine Senate has already ratified this treaty on February 27, 2004 and becomes legally binding on May 27, 2004, as announced by United Nations Environment Programme (UNEP). POPs are chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk to human health and the environment. They are classified as pesticides (e.g., aldrin, chlordane, dieldrin), industrial chemicals (e.g., polychlorinated biphenyls or PCBs) and unintended by-products (e.g., dioxins and furans).



Since 2000, the PAO and EEID have produced about 30 different printed IEC materials using various formats – primer, poster, comics, calendar, flyer, and book. Some of these materials were produced in cooperation with other government offices such as the DTI (e.g., primer on Private Emission Testing Centers) and MMDA (e.g., Question and Answer on Smoke Belching) and complement the printed materials produced by NGO partners.

Continuing media relations activities have ensured sustained coverage of clean air issues. Initiatives include regular press and photo releases by PAO and EEID published in newspapers or aired over radio and television (TV). Advertorials have been published in various newspapers including tabloids. Press conferences have been convened, complemented by radio guestings by

DENR officials.

Broadcast plugs produced by partners continue to be aired. Among these are the TV plugs developed by *Bantay Kalikasan* of ABS-CBN Broadcasting and PCA. These plugs were either aired in ABS-CBN Channel only, or on all free channels nationwide. Several 30-second TV plugs developed under the Program will be aired soon.

Six 10 to 15-minute video documentaries on the following topics have been developed: (a) Causes of Air Pollution, (b) Health Effects of Air Pollution, (c) Clean Air Act, (d) Working Together for Cleaner Air, (e) Towards Cleaner Air, and (f) Cleaning the Air.

Billboards and exhibit sets have likewise been produced.

“Breathe Clean Air Modules” for teachers and students in early high school levels have been produced by the DENR with the Philippine Association of Tertiary Level Educational Institutions in Environmental Protection and Management

ish International Development Agency, and United States Trade and Development Agency.

The DENR is the lead implementing agency with the following as implementing agencies of specific program components: MMDA, DPWH, DOTC-LTO, LLDA, DTI, DOH, DOE and the Land Bank of the Philippines. While the MMAQISDP covers the Metro Manila airshed only, many of its components are actually implemented nationwide such as the production of clean fuels, emission testing prior to registration, industrial air pollution abatement, public awareness and capacity-building.



### **Root Cause Approach to Control Vehicle Emissions in Metro Manila Project**

This USAID-funded project, which is implemented by the private sector, seeks to implement a systematic approach to address the root cause of air pollution arising from excessive vehicle emissions in Metro Manila.

Project strategies include: (1) comprehensive training and technical assistance on proper vehicle maintenance and injection pump calibration to help reduce emissions while increasing number of trips and less fuel consumption, (2) capability-building for public utility vehicle (PUV) operators and drivers as champions in advocating and institutionalizing preventive maintenance practices and systems, (3) establishment of a calibration center to provide systematic injector calibration and vehicle maintenance services for PUV operators and drivers, and (4) program monitoring and documentation for skills upgrading and technology transfer.