

DENR ADMINISTRATIVE ORDER
No. 2000-82

**SUBJECT: INTEGRATED AIR QUALITY IMPROVEMENT FRAMEWORK-AIR
QUALITY CONTROL ACTION PLAN**

Pursuant to Section 7 and 8 Republic Act No. 8749, otherwise known as the Philippine Clean Air Act of 1999, the attached Integrated Air Quality Improvement Framework-Air Quality Control Action Plan is hereby adopted. The same shall serve as the official blueprint with which all government agencies must comply with to attain and maintain clean and healthy air.

This order shall take effect immediately.

(Sgd.) **ANTONIO H. CERILLES**
Secretary

Prepared and Recommended for Approval by:

The Environmental Management Bureau
And
The Inter-Agency Technical Committee for the
IRR of the Clean Air Act of 1999

(Sgd.) **PETER ANTHONY A. ABAYA**
Director, EMB
Chairman, Inter-Agency Technical Committee

Integrated Air Quality Improvement Framework -- Air Quality Control Action Plan

1. INTRODUCTION

1.1 Purpose

This document is intended to provide a basis for development and understanding of rules supporting the implementation of the Philippine Clean Air Act (CAA) of 199 (RA 8479). The CAA describes requirements for a comprehensive air pollution management and control program designed for the Republic of the Philippines.

1.2 General

In order to provide the basis for comprehensive air pollution management and control program, the CAA requires that an Integrated Air Quality Improvement Framework

(**IAQIF**) be developed. The IAQIF (provided in Part 2, below) defines goals and supporting management strategies and control measures intended to achieve healthful air in the Philippines, including:

- Emission reduction goals;
- Time period (s) for achieving emission reduction goals;
- Institutional framework to support the implementation of the IAQIF; and
- Other supporting elements, such as description of economic incentives, collective action, and environmental education and information.

In addition, the CAA requires that a National Air Quality Control Plan (NAQCAP) be developed. The NAQCAP (PROVIDED IN Part 3) is intended to spell out specific methods and means to achieve the intent of the CAA, using strategy described in the IAQIF. The NAQCAP will include:

- Enforceable air emission limitations and a description of other control measures, considering the current situation and types of industries, emission, and existing or anticipated new sources;
- Schedules and timetables for compliance;
- A description of airsheds (and criteria of definition of airsheds) to be utilized as part of the air quality management strategy;
- A designation of airsheds (and criteria of definition of airsheds) to be utilized as part of the air quality management strategy;
- A description of a program to prevent significant deterioration of air quality, including use of economic incentives, management strategies, environmental education and dissemination of information;
- A description of a program to enforce the requirements of the CAA as embodied in the Implementing Rules and Regulations (IRR), with respect to pollution from area sources, stationary sources and mobile sources;
- A description of other measures necessary for the effective control and abatement of air pollution.

1.3 Acronyms

Table 1
Acronym

Acronym	Name
AAQM	Ambient Air Quality Monitoring
AAQS	Ambient Air Quality Standards
ADB	Asian Development Bank
AQCAP	Air Quality Control Action Plan
AQIs	Air Quality Indices
AQMF	Air Quality Management Fund
AWMA	Air and Waste Management Association
BOT	Build Operate Transfer
BPS	Bureau of Production Standards
CAA	Philippine Clean Air Act of 1990
CEM	Continuous Emission Monitoring
CFCERT	Committee on Fuel Conservation of Energy in Road Transport
CNG	Compressed Natural Gas

CO	Carbon Monoxide
COC	Certificate of Conformity
CPAS	Computerized Permitting Administrative System
DBM	Department of Budget and Management
DECS	Department of Culture and Sports
DENR	Department of Natural Resources
DILG	Department of Interior and Local Government
DOE	Department of Energy
DOF	Department of Finance
DOH	Department of Health
DOJ	Department of Justice
DOST	Department of Science and Technology
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
EMB	Environmental Management Bureau
EMPs	Environmental Management Plan
EMS	Environmental Management System
ENRO	Environment and Natural Resources Office
EO	Executive Order
FY	Fiscal Year
GB	Governing Board
IAQIF	Integrated Air Quality Improvement Framework
IRS	Implementing Rules and Regulations for the CAA
LPG	Liquefied Petroleum Gas
LTO	Land Transportation Office (within DOTC)
MBIs	Market Based Instruments
MDPPA	Motor Cycle Development Program Participants Association
MMAQISDP	Metro Manila Air Quality Improvement Sector Development Program
MMDA	Metropolitan Manila Development Authority
MOA	Memorandum of Agreement
MVIS	Motor Vehicle Inspection Station
MVR	Motor Vehicle Registration
NAAQG	National Ambient Air Quality Guidelines for Criteria Pollutants
NAAQS	National Ambient Air Quality Standards - Source-Specific Air Pollutants
NAQAP	National Air Quality Action Plan
NAQCAP	National Air Quality Control Action Plan
NCR	National Capital Region
NEDA	National Economic Development Authority
NESSAP	National Emission Standards for Source-Specific Air Pollution
NGO	Non-government Organizations
NSCB	National Statistical Coordination Board
NTRC	National Tax and Revenue Committee
PAB	Pollution Adjudication Board
PCMU	Program Coordination and Monitoring Unit
PEPP	Philippine Environmental Partnership Program
PIP	Philippine Institute of Petroleum
PM	Particular Matter
PNS	Philippine National Standards

POs	Private Organizations
PCSD	Philippine Council for Sustainable Development
SIDA	Swedish International Development Authority
SVPCF	Special Vehicle Pollution Control Fund
TA	Technical Assistance
TC	Technical Committee
TOR	Terms of Reference
TSP	Total Suspended Particulars
US EPA	United States Environmental Protection Agency
USAEP	United States-Asia Environmental Partnership Program

2. INTEGRATED AIR QUALITY IMPROVEMENT FRAMEWORK

2.1 Goal

2.1.1. General

The primary goal of the CAA is to achieve and maintain healthful air for all areas of the Philippines. Healthful or "healthy" air meets (has pollutants levels less than or equal to) the National Ambient Air Quality Guidelines for Criteria Pollutants, as defined in Section 12a of the CAA, or as subsequently amended. Recognizing that manmade air pollution is largely caused by economic activity (transportation, manufacturing, etc.), a parallel goal is to achieve the primary goal while minimizing associated negative impacts on the economy of the Philippines. In summary, the goal of the CAA is to: **achieve and maintain air quality that meets the National Ambient Air Quality Guidelines for Criteria Pollutants, throughout the Philippines, while minimizing possible associated negative impacts on the economy of the Philippines.**

This Framework document describes a National Air Quality Management System, designed to achieve the goal of the CAA.

2.1.2. Compliance Schedule for Ambient Air Quality

The schedule for achievement of healthy air will be set on an airshed-specific basis, and is based upon the degree of difficulty anticipated in achieving compliance with the National Ambient Air Quality Guidelines for Criteria Pollutants in each airshed that is designated as a non-attainment area for one or more pollutant. Airsheds, "attainment areas" and "non-attainment areas" are discussed below.

The following preliminary compliance schedule for achievement of the National Ambient Air Quality Guidelines may be revised from time to time. The responsibility for such revisions rests with EMB who will carry out broad consultations before making such revisions. For example, review and possible revision of the schedule will occur after a baseline study of ambient air conditions in the Philippines has been completed. The baseline study, together with meteorological and other data, will be utilized as inputs for a program of dispersion modeling, designed to assess present and future air quality in each airshed, and to define or confirm the definition of the airsheds. Further revisions may follow after more regular monitoring data become available on ambient air quality, after the capacity for ambient air quality monitoring has been strengthened. The preliminary compliance schedule is estimated as follows:

- "Moderate" non-attainment areas: 10 years from the date of promulgation of the IRR for the CAA.
- "Severe" non-attainment areas: 20 years from the date of promulgation of the IRR for the CAA.

Definitions of "Moderate" and "Severe" non-attainment will be based amongst others on criteria established in Air Quality Indices. (like the air quality indices established in DAO 14).

2.2 Partnership Approach to Healthy Air

The CAA envisions a multisectoral participatory approach to the achievement and maintenance of healthy air in the Philippines. Key features of this approach are (i) the solicitation of ideas and comments from the private sector, including representatives of industry, NGOs, and the general public; (ii) the public disclosure of large amounts of information; (iii) the introduction of citizen suits, which will allow concerned citizens to become actively involved in addressing non-compliance. In addition the CAA calls for the establishment of multisectoral governing boards to oversee the planning and implementation of air quality management policies in individual airsheds. Making the IAQIF a successful reality will be aided by linking to ongoing mulsectoral initiatives such as the Philippine Environmental Partnership Program (PEPP). (this is a government-industry partnership initiative, established by the DENR through the EMB, with support from other relevant Government agencies, institutions, the business community and other stakeholder groups). Consistent with the PEPP, the National Air Quality Management System will encourage dialogue with industry, LGUs, NGOs and the general public to facilitate implementation of the requirements of the CAA.

2.3 Basic Concepts

2.3.1 Airsheds

Airsheds (geographic areas with similar characteristics pertinent to air quality) will be defined for the purpose of assessing and managing air quality. These "similar characteristics" include factors such as climate, meteorology and topology that affect the interchange and diffusion of pollutants in the air.

2.3.2 Attainment and Non-Attainment Areas

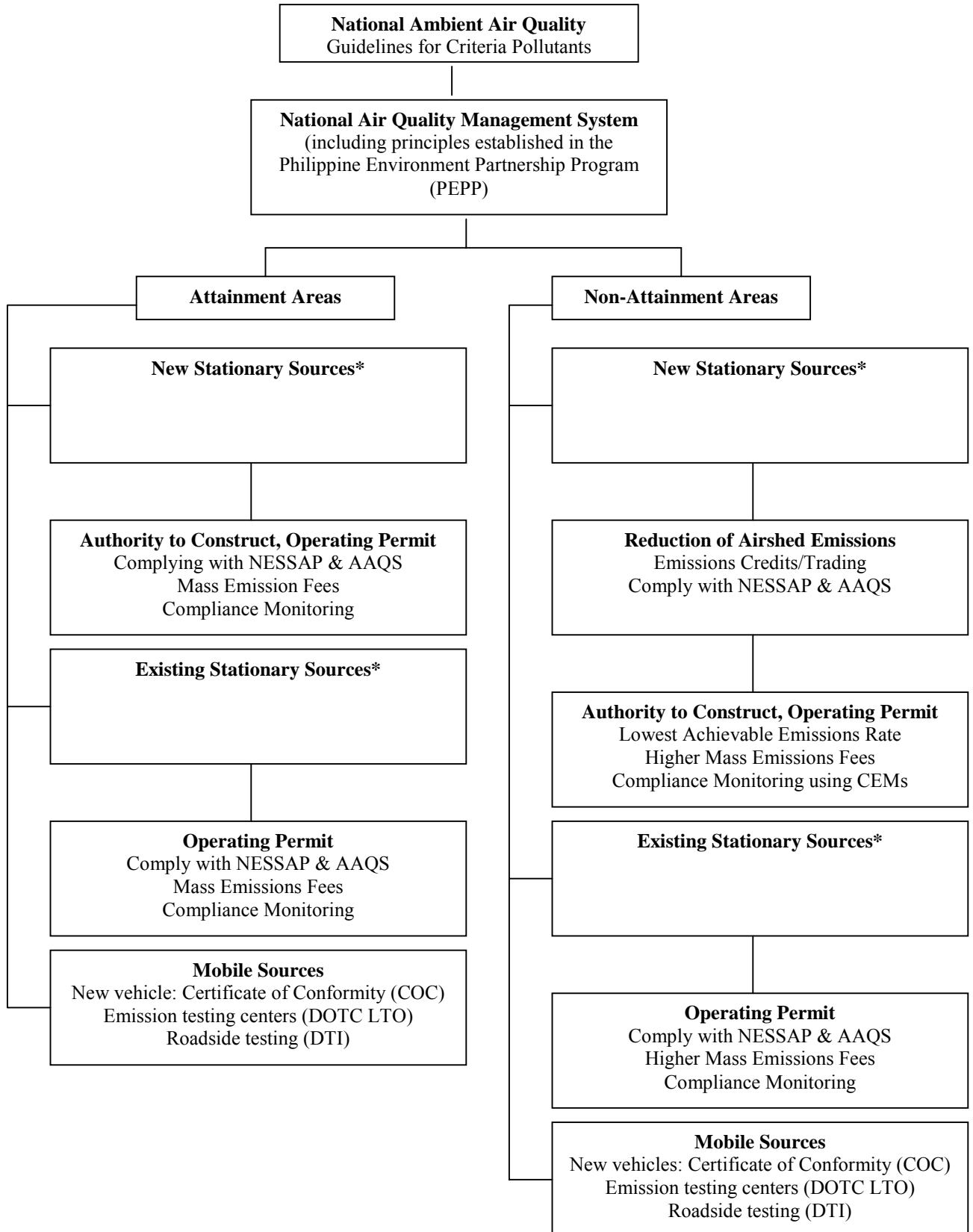
Airsheds, or parts of airsheds, will be designated as "attainment areas" (in conformance with National Ambient Air Quality Guidelines for Criteria Pollutants) (criteria pollutants are those which have been defined in Schedule 1 of Section 12 of the Clean Air Act.), or as (non-attainment areas" (areas that do not conform to the Guidelines). Attainment will be determined based on airshed ambient air quality as reported in annual Air Quality Status Reports that will be generated for each airshed.

An airshed, or parts of it, may be a non-attainment area for one or more Criteria Pollutants and an attainment area for the remaining Criteria Pollutants.

The overall air pollution control/management program, including the general relationship of attainment areas, non-attainment areas, and air emissions source requirements in depicted is depicted in Figure 1.

Figure 1

AIR POLLUTION CONTROL/MANAGEMENT PROGRAM



2.3.3. National Air Quality Management System; Permits

The IAQIF envisions a national air quality management system to manage and enforce the requirements of the CAA and its IRR. A fundamental tool under this national air quality management system will be the concept that all sources of air pollutant emissions will require a permit to operate. In the case of stationary sources, the permit will contain operational and other requirements designed to assure compliance of the emissions source with the relevant provisions of the CAA and its IRR. For mobile sources, the permit to operate will incorporate in the vehicle registration. The procedures to register the vehicle for the first time and the subsequent annual renewal of the registration include requirements to be met to ensure compliance with the emission standards outlined in the CAA and IRR. Area sources are currently not yet regulated by permits. EMB will study the desirability and feasibility to introduce a permit system to deal with area sources of pollution.

2.4 Stationary Sources

2.4.1. General

All stationary sources of air emissions must comply with National Emission Standards for Sources Specific Air Pollution (NESSAP) and Ambient Air Quality Standard (AAQS) pertaining to the source. Additional requirements are summarized in the following paragraphs. "Stationary Sources" may generally be defined as individual points of air emissions (e.g. smokestacks).

2.4.2. Existing Stationary Sources in an Attainment Area

Existing stationary sources of air emissions located within an attainment area for a particular pollutant or pollutants will be required to pay a fee for the mass rate of emissions for those pollutants. At the discretion of EMB, an existing stationary source located in an attainment area may be considered to consist of a group of emissions points (facilities source or the "bubble" approach to air emissions compliance).

2.4.3. New or Modified Stationary Sources in an Attainment Area

New or modified stationary sources of air emissions that are located within an attainment area will be required to control their emissions to achieve emissions control requirements as defined in the IRR using the "Best Available Control Technology." New or modified stationary sources or air emissions located within an attainment area will be required to pay a fee for the mass rate of air emissions (pollutants) of the source. No new source may be constructed or existing source modified if emissions from the proposed source or modification will, based on computer dispersion modeling, result in an exceedance of the National Ambient Air Quality Guideline Values; or an increase in existing ambient air levels above the increment levels defined in the IRR.

2.4.4. Existing Stationary Sources in a Non-Attainment Area

Existing stationary sources of air emissions located within a non-attainment area for a particular pollutants will be required to pay a higher fee for the mass rate or emissions for those pollutants than for equivalent sources of air emissions located within an attainment area.

2.4.5. New or Modified Stationary Sources in a Non-Attainment Area

New or modified stationary sources of air emissions located within a non-attainment area will be required to demonstrate a reduction of air emissions (for the particular pollutant(s) that cause the designation of non-attainment) within the non-attainment area such that the reduction exceeds by a specified amount the new emissions that will be caused by the new source. In this way, the total emissions in the non-attainment area will gradually be reduced over time, until the goal of attaining healthy air is attained.

In addition, more stringent emissions control standards will be applied to new sources located within a non-attainment area, including a requirement for the use of relevant air pollution control technology that will provide the "Lowest Achievable Emission Rate" of the pollutant for which the area is designated non-attainment.

New or modified stationary sources of air emissions located within a non-attainment area for a particular pollutant or pollutants will be required to pay a higher fee for the mass rate of emissions for those pollutants than would be the case for equivalent sources of air emissions located within an attainment area.

2.4.6. Permitting

New or modified sources of air emissions will be required to obtain a formula "authority to construct" before physical construction of the new source is permitted to proceed. The application for the authority to construct must demonstrate that the new or modified source will meet applicable air emissions requirements under the CAA, as promulgated in the IRR.

Existing and new or modified sources of air emissions will be required to obtain a permit to operate. The permit must demonstrate that the source will meet applica

2.4.7.

The fees will be determined based on the type of pollutant, the mass emission rate at the source, and the type of airshed (attainment or non-attainment) into which the emissions occur. Higher fees will be charged for emissions located within a non-attainment area. A schedule of fees for mass emissions for various pollutants may also be developed on an airshed-specific basis.

Fees will be paid into the Air Quality Management Fund, which will ensure that money raised will actually be used for air quality management purposes.

Mass emission rates for a particular source shall be calculated using one of the following procedures;

- (1) Measures concentrations of pollutants at the point of emissions. Measure volumetric flow rate associated with these emissions. Determine approximate relationship between air emissions source operation or production rate, and observed emissions and volumetric flow rate. Based on annual production or operation data, calculate annual mass emissions rate for applicable pollutants.
- (2) Estimate annual mass emissions rate for applicable pollutants based on fuel usage and type, or other relevant parametric data. Such estimates shall be based on a "conservative" approach, using EMB-approved, recognized procedures or algorithms, so as to avoid underestimating actual mass emissions rates.

This approach provides two types of economic incentives to owners of air emissions sources:

- An incentives to measures actual emissions using stack sampling or continuous emissions monitoring (CEM) techniques, and to provide verifiable analytical and other data related to the stack sampling or CEM results to the EMB. This incentive is based on the expectation that directly-measured air mass emissions rates using procedure (1) above will be lower than those conservatively estimated emissions based on parametric data using procedure (2). Because fees are associated with mass emissions rates, a reduction in fees will be associated with a reduction in the mass emission rate from a conservatively estimated level to a (lower) directly-measured level.
- An incentive to continue to reduce actual air mass emissions rates, based on the cost of fees associated with the air mass emissions rates.

As noted above, a higher fee for mass emission rates for a particular pollutant will be charged for sources located in a non-attainment area for the pollutant.

In addition, the CAA envisions tax incentives (e.g. tax credits and/or accelerated depreciation deductions) for owners of facilities that install or retrofit qualifying (approved by EMB for this purpose) air pollution control devices that reduce air pollution.

Should a facility fail to comply with the schedule provided in its Compliance Plan, or otherwise fail to comply with the requirements of the Implementing Rules & Regulations (such as failing to submit a self-monitoring report within

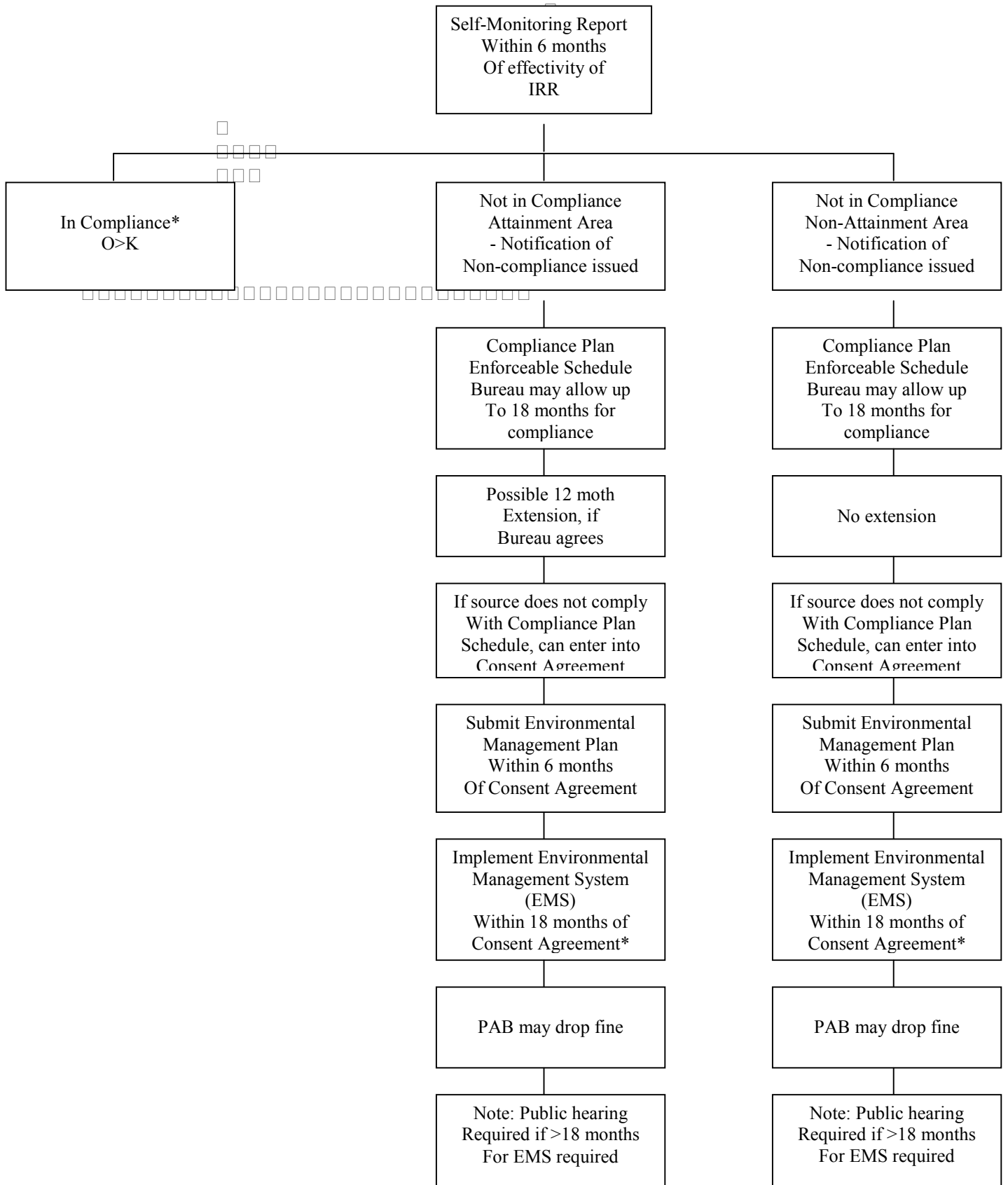
the specified period) the Department through the Pollution Adjudication Board (PAB) may take enforcement action against the facility or its owner. In this case, if the owner enters into a Consent Agreement with the Department, the Department through the PAB may waive certain penalties or fines to be imposed upon stationary sources proven to exceed emission rates provided that the Consent Agreement includes enforceable provisions indicating that the responsible party shall:

- a) Implement an Environmental Management System (EMS) within eighteen (18) months of entering into said agreement using scope and procedures specified in Philippines National Standard 1701 on establishing an EMS;
- b) Submit an approvable Environmental Management Plan (EMP) derived from the EMS process within six (6) months of entering into a Consent Agreement. The EMB shall specify a timetable for attaining compliance with all environmental regulations as well as the means with which to accomplish compliance, with emphasis on pollution prevention methods and not limited to installation of pollution control devices; and
- c) Post a performance bond acceptable to the PAB, not to exceed P500,000 but not less than P50,000 depending on the size of the facility, which shall be forfeited upon failure to submit proof of an approved EMS within eighteen (18) months, and provided that an extension of not more than twelve (12) months may be allowed by the Bureau Regional Office on meritorious grounds.

The Consent Agreement shall incorporate requirements for environmental performance through timetable and reporting of performance, in addition to commitments and procedures adopted in the EMP. Sources proposing timetables longer than eighteen (18) months for reaching compliance shall be required to first conduct a public consultation before the Consent Agreement may be finalized.

The compliance sequence described above is depicted in Figure 2.

Figure 2
Compliance Sequence for Existing Sources



2.4.8. Emissions Credits

New or modified stationary sources of air emissions located within a non-attainment area will be required to demonstrate a reduction of air emissions (for the particular pollutant(s) that caused the designation of non-attainment) within the non-attainment area such that the reduction exceeds the new emissions that will be caused by the new source. A program defining credits based on the air mass emissions rate reductions will be developed and implemented by EMB. EMB shall have responsibility to certify the resulting credits. Upon certification, such credits can be purchased or traded, and utilized to demonstrate the required reduction of air emissions, necessary to obtain the authority to construct a new air emissions source in a non-attainment area.

In an attainment area, an existing facility can purchase air emissions credits as part of a compliance plan to meet the emissions requirements of the IRR. This will not be allowed in a non-attainment area.

2.4.9. Flexibility in Permitting Process; Compliance Sequence

An existing facility (stationary source) shall submit to the Bureau Regional Office where the facility is located as self-monitoring report of its emission rates, indicating the status of compliance with the requirements of the Clean Air Act Implementing Rules & Regulations. The self-monitoring report shall be submitted to the Bureau Regional Office within six months of the effectivity of these Implementing Rules & Regulations, and within six months of each official revision of emission standards applicable to the source. The Bureau Regional Office may also inspect the facility and check the facility's emissions rates.

The Bureau will issue a notification of non-compliance with the facility, if the facility is not in compliance with the requirements of the Implementing Rules & Regulations. A facility that is not in compliance shall take action to achieve compliance. Such a facility is required to submit a "Compliance Plan" with the Bureau Regional Office. A Compliance Plan is a plan submitted to the Bureau Regional Office for approval which details how an existing stationary air emissions source will be brought into compliance. The owner of the facility must submit the plan within two months of notification of non-compliance by the Bureau. The plan must include a schedule that will be enforceable.

The Compliance Plan for a facility located in an attainment area is required to achieve compliance within a period of time set forth in the approved Compliance Plan schedule. This period of time may be up to 18 months from the date of notification of non-compliance. A facility located in a non-attainment area is required to achieve compliance within 12 months of the date of notification of non-compliance, if the facility is out of compliance with requirements for one or more of the pollutants for which the area is designated as non-attainment.

The Bureau may grant an extension of up to 12 months for good-faith actions from the source owner, for a facility located in an attainment area. An extension will not be granted for a facility located in a non-attainment area, if the facility is

out of compliance with requirements for one of the pollutants for which the area is designated as non-attainment.

2.5. Mobile Source

2.5.1. General

A program of permitting and monitoring, coupled with emissions control requirements, will be established for mobile sources of air emissions. This is intended to control pollution from motor vehicle. Compliance with emissions limits must be demonstrated for each vehicle as described below. Furthermore, through the imposition of specific fuel standards a contribution will be made as well to reduce emissions from mobile sources.

2.5.2. Emission Standards

Emission standards are in place already to control the release of harmful pollutants by motor vehicles. These standards set the maximum emission limits for gaseous and other pollutants which motor vehicles must not exceed. Motor vehicle emissions of Carbon Monoxide (CO), Hydrocarbons (HC), NOx, and Particulate Matter (PM) are regulated by the Standards. It is the policy of the Department of gradually adopt more strict standards.

New vehicle types will be subjected to type approval standards. The current standards adopted in the Philippines as well as the proposed future standards are commonly know as the ECE standards. At present all new light duty vehicles are required to comply with ECE regulation R. 15-04. With effect from 1 January 2003 Euro 1 standards will be adopted, this requires compliance with standards as formulated in European Union Directives 91/441, 93/59 and 91/542 (Step 1), respectively. It is expected that future review of the standards will lead to the adoption of Euro 2 or 3 standards by 2005 or the following years.

The in use emission standards to be adopted are linked to the type approval standards. This means that in use standards will be made more strict upon the adoption of the new type approval standards in 2003. The specific in use standards which a vehicle will have to comply with are determined by the age of the vehicle and the type approval standards that were valid at the time of the first registration of the vehicle.

To ensure that all existing vehicles meet the in use standards it was decided that rebuilt and imported second hand vehicles and/or engines will have to meet in use standards.

Considering the number of motorcycles and the rapid growth of the number of motorcycle registrations the EMB will be develop more detailed type approval and in use emission standards for motor cycles.

EMB and DOTC reserve the right to impose more restrictive air emission limits for vehicles (or limits on the use of such vehicles in certain areas), based on the condition of the particular airshed in which a vehicle is operated, changes in technology, or other factors.

2.5.3. Permitting, Testing and Monitoring

A program of permitting and monitoring, coupled with emissions control requirements, will be established for mobile sources of air emissions. This is intended to control pollution from motor vehicles. Compliance with emission limits as described in the CAA must be demonstrated for each vehicle.

A Certificate of Conformity (COC), to be issued through DENR will document compliance for new or locally-assembled vehicles. A COC is required before such a vehicle can be sold or registered for use by DOTC/LTO. The emission tests to be carried out to determine compliance with the type approval emission standards are part of what is known as the type approval test, which is carried out under the responsibility of DOTC/LTO.

A special procedure is developed to ensure that the large number of rebuilt vehicle and imported second hand vehicles will be properly tested prior to their initial registration. Vehicles which have passed this test, which will be based on the in use standards will be issued with a Certificate of Compliance to Emission Standards by DENR before they can be registered by DOTC/LTO.

Used (in-use) vehicles shall be required to meet emissions standards contained in the IRR in order to renew their registrations. This compliance shall be demonstrated through mandatory yearly inspections, to be carried out through the Motor Vehicle Inspection System (MVIS), operated by the Department of Transportation and Communication / Land Transportation Office (DOTC/LTO), or its authorized private MVIS.

DOTC/LTO will oversee the implementation of roadside apprehension activities for vehicles, which do not comply with the in use emission standards. In coordination with DTI, it will oversee the establishment of transport and effective procedures, which will allow private emission testing centers to conduct officially sanctioned tests to determine whether drivers or owners of vehicles apprehended for smoke belching have complied to the standards after adequate repairs vehicles have been made.

2.5.4. Regulation of Fuel Specifications - Mobile Sources

The Department of Energy (DOE) will regulate fuel specifications to address air pollution by attaining better fuel quality. The Clean Air Act contains fuel specifications, which shall be imposed to reduce and/or eliminate the toxicity of fuel. With the phase out leaded gasoline, other fuel improvements shall be imposed. The anti-knock index, Reid vapor pressure, volume of aromatics and benzene in unleaded gasoline shall comply with the fuel specifications set in the CAA and the IRR. The sulfur content in diesel will also be gradually reduced according to a time frame indicated in the CAA.

Compliance with emission standards is partly determined by emission technology, which the vehicle is equipped with. Fuel specifications are an important determinant of the type of technology that can be used in vehicles (examples of this are the need to use unleaded gasoline or low sulfur diesel in

order to be able to use catalytic converters). It is therefore important that the adoption of new stricter emission standards is done in a coordinated manner, whereby it is ensured that the required vehicle technology can be adopted on the basis of availability of appropriate types of fuel.

DOE in coordination with DENR and the Bureau of Product Standards regulate the use of fuel and fuel use. DOE, in consultation with concerned government agencies, representatives of the fuel and automotive industries, academia and consumers will set specifications for all types of fuel and fuel-related products, including fuel additives, which will subsequently be adopted as Philippines National Standards.

As part of its comprehensive fuels strategy, the DOE shall continue to conduct and/or support research on the use of alternative fuel or power sources for motor vehicles such as Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG) or electricity.

2.5.5. Standards for Vehicle Technology

The DENR, in coordination with DTI and DOTC and in consultation with the vehicle manufacturers, civil society, and other stakeholders, shall impose standards to promote the use of available state-of-the-art vehicle technology for the reduction and/or elimination of gaseous and other pollutants emitted by motor vehicles. These standards will be imposed for the improvement of the emission control devices used by the vehicle fleet. As explained, imposing standards for vehicle technology will require a close linkage with the review and revision of emission standards and review of fuel specifications.

2.5.6. Transport Planning

Measures to improve public transport services shall be undertaken by the DOTC and other concerned government agencies. This will include amongst others (i) promote public transport to increase passenger capacity and reduce number of private vehicle trips; (ii) strengthen traffic planning and traffic management, (iii) stimulate land use planning, with a strong associated focus on transport planning. (iv) promote the operation of environmentally friendly-fueled mass transit systems, and (v) introduce travel demand management measures. These combined measures aim at improving vehicular traffic flow and thus reducing time and associated emissions required for vehicular trips.

2.5.7. Economic Incentives

Mobile sources of air emissions will be required to pay a fee related to the mass of pollutants that they may emit to the atmosphere. The fee will be included in the registration fee, based on a system to be determined by DOTC. The system is based on weight of the vehicle. The proceeds of the fee, which is levied through the Motor Vehicle Users Charge, will be deposited in the Special Vehicle Pollution Control Fund. This fund which will be under the administration of the DOTC will be used to fund activities outlined in the NAQAP, that are directly or indirectly or indirectly related to the reduction of pollution resulting from vehicle emissions.

2.6. Area Sources

As noted above, "stationary sources" may be defined generally as individual points of air emissions (e.g. smokestacks). By contrast, an "area source" is a source of air emissions that is not confined to a discrete point or points of emission. Examples of area sources and their associated air emissions include but not limited to the following:

- Unpaved roadways (dust; TSP or PM-10);
- Construction site (dust; TSP or PM-10);
- Lagoons (photochemically reactive compounds and/or other emissions
- Industrial facilities with many small or generalized potential sources such as valves, seals, etc. (photochemically reactive compounds and/or other emissions); and
- Common generally industrial, small, non-regulated point sources (e.g. dry cleaners and gasoline stations) where the point source(s) cannot feasibly or practically be measured.

Area sources emissions shall comply with the AAQS. If a facility with stationary source(s) covered by a permit includes area sources of emissions, these emissions must be estimated and included in the application for a permit to operate (and, in the case of a new facility, in the application for authority to construct). EMB will study the desirability and feasibility to set up a permitting system for other types of area sources which can be controlled and managed, e.g. construction sites.

2.7. Fuels

In addition to the regulation of fuel specification in connection with pollution from mobile sources an important component of the overall approach to air quality is the specification of fuels for use by industry and by the general public. In particular the content of lead, sulfur and other compounds may have a significant effect on the potential emissions from fuel handling and combustion.

2.8. Institutional Context

The CAA clearly states that success air quality management will require strong coordination within the government as well as between government and other sectors in society. The CAA includes a number of provisions, which will provide the basis for a successful multisectoral approach to air quality management.

2.8.1. Mandates of Government Agencies

The CAA stipulates that the DENR will be primary government agency responsible for the implementation and enforcement of the Act. Within the DENR a distribution of responsibilities has been agreed upon between the Department and the Environmental Management Bureau (the Bureau). According to this general distribution of responsibilities DENR is responsible for the regulation of air quality, and enforcement of the CAA and the IRR, and to maintain overall coordination with other relevant Government agencies. EMB

shall administer and enforce the requirements of the IRR as regards mobile sources.

DENR has the following authority, among others:

- a) To set Ambient Air Quality Guidelines Values and Ambient Air Quality Standards;
- b) To promulgate rules and regulations as may be necessary to implement the intent and provisions of the CAA;
- c) To revise, from time to time, the designation of airsheds utilizing eco-profiling techniques and scientific studies;
- d) To designate areas where specific pollutants have already exceeded ambient standards as non-attainment areas and to revise the designation of such areas after broad based consultations;
- e) To closely supervise all or parts of the air quality action plans until such time that the local government concerned can assume the function to enforce the standards set by the DENR;
- f) To administer the Air Quality Management Fund;
- g) To establish a broad based National Research and Development Program for the prevention and control of air pollution;
- h) To institute administrative proceedings pursuant to Section 40 of the CAA and to impose fines, through the Pollution Adjudication Board, for violations of standards for stationary sources; and
- i) To exercise such other authority vested by the CAA and as provided for in the IRR.

EMB has the following powers and functions, among others:

- a) To oversee ambient air quality monitoring and to prepare annual National Air Quality Status Reports pursuant to Section 6 of the CAA;
- b) To design and develop, in cooperation with the National Statistical Coordination Board (NCSB), an information network for data storage, retrieval and exchange, which will serve as the central depository of all data and information related to air quality;
- c) To issue and, from time to time, revise information on air pollution control techniques upon consultation with the appropriate committees, government agencies and local government units (LGUs);
- d) To, in coordination with other concerned agencies, review and/or revise and publish annually a list of hazardous air pollutants with corresponding ambient guidelines values and/or standards necessary to protect public health and safety, and general welfare;
- e) To design, impose on and collect regular emission fees from industrial dischargers as part of the emissions permitting system based on environmental techniques;
- f) To review, or as the need therefore arises, and revise and publish emission standards to further improve the emission standards for

stationary sources of air pollution as well as emission standards for motor vehicles;

- g) To develop, implement and monitor the functioning of permitting system as it may determine necessary for the prevention and abatement of air pollution by stationary sources, which amongst other addresses the need for program and project proponents to put up financial guarantee mechanisms to finance the needs for emergency response, clean-up or rehabilitation of areas that may be damaged during the program or project's actual implementation;
- h) To monitor compliance with emission standards for stationary sources. EMB has the right of entry or access to any premises including documents and relevant materials; to inspect any pollution or waste source, control device monitoring equipment or method required; and to test any emission;
- i) To require any person who owns or operates any emission source or who is subject to any requirement of the CAA to (i) establish and maintain relevant records; (ii) make relevant reports; (iii) install, use and maintain monitoring equipment or methods; (iv) sample emission, in accordance with the methods, locations, intervals, and manner prescribed by the DENR; and (v) keep records; and
- j) To exercise such other powers and functions as provided by the law, the CAA and its IRR.

Other agencies primarily responsible for the implementation of the CAA are the Department of Transportation and Communication (DOTC), the Department of Energy (DOE), the Department of Trade and Industry (DTI),

DOTC, shall have the following authority, amongst others:

- (a) Implement the emissions standards for motor vehicles set pursuant to and as provided in the Act;
- (b) Participate in the formulation of an Action Plan for the control and management of air pollution from motor vehicles;
- (c) Contribute towards the establishment of procedures for inspection of motor vehicles, assist in the formulation and implementation of the national motor vehicles, inspection and maintenance program;
- (d) Authorize private emission testing centers (duly accredited by DTI);
- (e) Establish a roadside inspection system
- (f) Contribute towards design of training program for law enforcement officials and deputized agents on vehicle emission testing

DTI shall have the following authority, amongst others;

- (a) Participate in the formulation of an Action Plan for the control and management of air pollution from motor vehicles;

- (b) Contribute towards the establishment of procedures for inspection of motor vehicles, assist in the formulation and implementation of the national motor vehicle inspection and maintenance program;
- (c) Accredite private emission testing centers (duly authorized by DTI);
- (d) Develop and implement standards and procedures for the certification of training institutions, instructors and facilities and licensing of qualified private service centers and their technicians;
- (e) Prescribe regulations requiring the disclosure of odometer readings and use of tamper-resistant odometers, including tamper resistant fuel management systems

DOE shall have the following authority, amongst others:

- (a) In coordination with other relevant agencies set the specifications for all types of fuel and fuel related products;
- (b) Specify allowable content of additives in all types of fuel and fuel related products;
- (c) In coordination with DENR and BPS regulate the use of any fuel or fuel additive.

2.8.2. Local Government Units

LGUs have the following roles within their respective territorial jurisdictions:

- a) To share responsibility in the management and maintenance of air quality within their respective territorial jurisdiction;
- b) To implement air quality standards set by the Governing Board, consistent with Section 7, 8 and 9 of the CAA;
- c) To establish an Environment and Natural Resources Office (ENRO) in every province, city, or municipality which shall be headed by the environment and natural resources officer appointed by the chief executive of every province, city or municipality in accordance with the provisions of Section 484 of the R.A. 7160 and to exercise powers and duties set forth in Section 37 of the CAA;
- d) To prepare and develop, with the assistance from the DENR, an action plan consistent with the Integrated Air Quality Framework to attain and maintain the ambient of air quality standards with their respective airsheds as provided in Section 9 of the CAA;
- e) To prepare and implement a program and other measures including relocation, whenever necessary, to protect the health and welfare of residents in the area;
- f) To develop and submit to the DENR a procedure for carrying out the action plan for their jurisdiction, provided that the DENR shall maintain its authority to independently inspect the enforcement of procedure adopted; and

- g) To perform such other powers and functions as may be provided by applicable laws, rules and regulations.

2.8.3. Coordination Mechanisms

To ensure coordination among government agencies and between government agencies and the private sector and civil society DENR will set up a Multi-sector Coordination Body. This to replace the Presidential Air Quality Commission, established by virtue to EO 16 (1998), which was repealed by the passing of the Clean Air Act. It is important to maintain a coordination body at the national level also after the establishment of governing boards for the individual airsheds. This related to review and revision of standards, national research and development program, review of national action plans for management and control of stationary sources of pollution and for mobile sources of pollution. These issues require a national level approach and can not be addressed an individual airsheds governing boards.

Coordination with individual airsheds will be carried out through Governing Boards. Governing boards shall be headed by the Secretary of the Department of Environment and Natural Resources as chairman. The members shall be as follows:

- a) Provincial Governors from areas belonging to the airshed;
- b) City/Municipal Mayors from areas belonging to the airshed;
- c) A representative from each concerned government agency;
- d) Representatives from people's organizations;
- e) Representatives from nongovernment organizations; and
- f) Representatives from the private sector.

To facilitate the functioning of the governing boards an Executive Committee will be formed consisting of 7 persons. Technical working groups will be formed to ensure broad-based participation in the work of governing boards. Each governing board will be assigned a full time technical-administrative secretariat with a separate budget.

Role and functions of governing boards: pro-active stance with respect to implementation of Clean Air Act. Set priorities for air quality management in the airshed and actively coordinate and stimulate initiatives. This will include:

- a) Formulation of policies;
- b) Preparation of a common action plan;
- c) Coordination of functions among its members; and
- d) Submission and publication of an annual Air Quality Status Report for each airshed

Governing Boards will in certain cases initiatives activities. In most cases it will coordinate activities. In all cases it is expected that implementation of activities will be through organizations (government, private sector, civil society) that are part of the governing board. Governing Board will assist in identifying funds for specific activities that are part of the CAP for the airshed. In majority of cases it is expected that LGUs will not formulate independent action plans for the

management and control of air quality but they will base on the CAP for the airshed that they are part of.

Governing boards will be introduced in a phased manner in line with the designation of airsheds.

2.8.4. Funding for air quality management

One of the most serious potential threats to a successful implementation of the CAA is the lack of funding for its implementation. While a substantial part of provisions of the CAA can be implemented without direct government funding, e.g. compliance of private sector with emission standards for stationary sources and mobile sources there are also a large number of areas which will require government funding for the years to come. This includes amongst others: resources for standard setting and review, monitoring, enforcement, awareness raising. There is a wide spread acknowledgement that substantial capacity building efforts will be required in these areas, in the form of additional staff, additional equipment as well as operation costs.

It is planned that funding for air quality management in support of the implementation of the Clean Air Act will come from:

- a) Special allocation of Peso 750 million made in the CAA for the initial implementation of the CAA;
- b) Annual appropriations for Departments involved in the implementation of the CAA;
- c) Contributions by donor organizations, either in the form of Technical Assistance Grants or in the form of Loans;
- d) Special Vehicle Pollution Control Fund. This fund, which will be administered by DOTC will receive 7.5% of the collections under the Motor Vehicle Users Act (Republic Act 8749);
- e) Air Quality Management Fund. This fund is to be administered by the EMB as a special account in the National Treasury. One build of the fund will be reserved for national purpose while remaining two-thirds will be allocated among the airsheds.

2.9. People Driven approach to air quality management

Air quality management should be people driven. This implies that both rights and responsibilities should be taken in consideration in the manner in which air quality management and control is structured in future

2.9.1. Basic rights and responsibilities

Citizens have the following basic rights and responsibilities:

- a) The right to breathe clean air;
- b) The right to utilize and enjoy all natural resources according to the principle of sustainable development;
- c) The use of property bears a social function. It is the responsibility of every citizen to ensure that the use of his property does not cause any

harm to the health of other citizens and to the eco-system of which (s)he is part

2.9.2. Access to information and participation in formulation of environmental and development policies

The CAA indicates the importance for broad based participation in the formulation of environmental and development policies. To achieve this private citizens will have:

- a) The right to be informed of the nature and extent of the potential hazard of any activity, undertaking or project and to be served timely notice of any significant rise in the atmosphere of harmful or hazardous substances;
- b) The right of access to public records which a citizen may need to exercise his or her rights effectively under this Act;
- c) The right to participate in the formulation, planning, implementation and monitoring of environmental policies and programs and in the decision-making process;
- d) The right to participate in the decision-making process concerning development policies, plans and programs projects or activities that may have adverse impact on the environment and public health;
- e) The right for citizens to be represented through civil society groups in the monitoring of compliance with emissions standards.

2.9.3. Citizen Suit

Clean Air Act creates the possibility of citizens suit to (a) promote the participation of the citizens in the enforcement of the Act and (b) serve as a prod to government officials to take the necessary and appropriate action to abate and/or control pollution.

The legal actions shall be against:

- a) Any private natural or juridical person, including government owned and controlled corporations, who violates or fails to comply with the provisions of this Act;
- b) Any Government agency which may issue any order or rules inconsistent with this Act. For this purpose, unless the inconsistency is so blatant as to manifest evident bad faith, the action available under this heading shall only be civil in nature, such as for declaratory relief and/or injunction. The government official who was made a respondent in said civil action shall be sued in his official capacity and shall not be liable for damages.
- c) Any public officer who willfully or grossly neglects to perform the duties provided for under this Act. or who abuses his authority or in any manner improperly performs his duties under this law and its implementing rules.

In addition citizens will also have the right to bring action in court or quasi-judicial bodies to enjoin all activities in violation of environmental laws and regulations, to compel the rehabilitation and cleanup of affected area, and to seek

the imposition of penal sanctions against violators of environmental laws; and the right to bring action in court for compensation of personal damages resulting from the adverse environmental and public health impact of a project or activity.

2.10. Public Information

2.10.1. General

The emphasis in the development of public education and information campaigns will be on: (a) describing causes and consequences of air pollution; (b) dissemination of information on technological and non-technological options to prevent and/or control air pollution; (c) outlining the health and economic benefits to be derived from reduced emissions and (d) possibilities within the law to address air pollution.

To strengthen the effectiveness of Public Information Campaigns the following general measures will be taken:

- a) strengthening Public Information strategy: increased emphasis on specific target groups, more attention for prevention and addressing causes,;
- b) strengthen capacity to implement Public Information campaigns: both within government as well as within other sectors of society, strengthening both in terms of quantity (larger numbers of Public Information in order to raise its efficiency and effectiveness)
- c) networking of Public Information campaigns and initiatives;
- d) provide more resources for Public Information campaigns: both from government as well as through other (private sector - civil society) sources.

2.10.2. Air Quality Indices

In order to enhance public understanding of air quality, Air Quality Indices (AQIs) may be defined for key air pollutants such as particulate matter, sulfur dioxide, photochemical oxidants or ozone, carbon monoxide, and nitrogen dioxide. Levels of air quality may be defined for these indices, such as: Good; Moderate; Unhealthy for Sensitive Groups; Very Unhealthy; and Hazardous.

3. NATIONAL AIR QUALITY CONTROL ACTION PLAN

3.1 Ambient Air Quality Management

Component and sub-component	Performance standard	Responsible	Remarks
<ul style="list-style-type: none"> • Based on assessment of current methods propose refined methodology 	Within six months of issuance IRR	DENR/EMB	Methodology to address adequacy of data, Quality assurance and quality control, and reliability. Methods to build on work conducted already by MMAQISDP and SIDA project
<ul style="list-style-type: none"> • Ensure availability of 	Within 6 months	DENR/EMB	Equipment for Metro Manila airshed

adequate monitoring equipment	of issuance of IRR for Manila airshed, within 18 months for rest of country		to be provided from MMAQISDP program and SIDA program. Other areas possibly from AQMF
<ul style="list-style-type: none"> Conduct ambient air quality monitoring based on agreed upon methodology 	Manila airshed: 06 - 12/2001, other initially designated airsheds: 06/2003, rest of country: 06/2005	EMB, private sector	Data collection will be outsourced in various parts of country, as part of provision of equipment. Ensure appropriate communication interface between supplier and EMB.
<ul style="list-style-type: none"> Develop overall database on air quality and mechanism to transfer data on regular basis to EMB Central Office 	Within 6-12 months of issuance of IRR	EMB Central Office	With support from MMAQISDP and SIDA Program. In coordination with Bureau of Statistics. This is based on assumption that Airviro system will be used as central system for ambient air quality monitoring.
<ul style="list-style-type: none"> Prepare and distribute annual air quality status report 	Within three months after end of each monitoring year	EMB	Report will be gradually grow in coverage of number of pollutants and area covered. SIDA TA 2 will include training activities to support this.
3.1.2. Designation of Airsheds			
<ul style="list-style-type: none"> Finalize designation of initial airsheds 	06/2001	EMB	This will be for the airsheds, which are designated on a preliminary basis during formulation of IAQIF/AQAP. This will involve validation of data.
<ul style="list-style-type: none"> Designation airsheds rest of the country 	06/2002	EMB	
<ul style="list-style-type: none"> Develop procedures for re-designation of airsheds 	12/2000	EMB	These will include the mechanisms for public consultation called for in CAA
3.1.3 Designation of non-attainment areas			
<ul style="list-style-type: none"> Finalization of designation of first batch of non-attainment areas 	12/2000	DENR/EMB	To be based on preliminary designation arrived at during drafting IAQIF/AQAP. Prior to formal designation validation of data to be carried out. Final designation will take place through formal DENR promulgation
<ul style="list-style-type: none"> Re-designation of existing non-attainment and designation of further non-attainment areas. 	Periodic and when needed	DENR/EMB	To be based on reliable data. Formal designation through DENR promulgation.
3.1.4. Socio-			

**Economic Cost
Benefit Analysis of
CAA**

- Study which assesses costs and benefits for country available by 12/2001 NEDA with assistance from PCSD PCSD and DENR to advice NEDA

**3.1.5. Capacity
Building Plan**

- Conduct needs assessment in terms of manpower and skills requirement at national and regional level Before 03/2001 EMB Needs assessment will also cover other agencies and groups utilizing ambient air quality data. Needs assessment to cover both ambient air quality monitoring and stationary sources. To be funded from MMAQISDP TA
- Put in place first batch of additional staff 12/2002 EMB-DBM This concerns 40 staff to be recruited with support MMAQISDP, currently requested from DBM,
- Ensure full utilization of current EMB staff in the regions in air quality management 06/2001 EMB This concerns involvement in both ambient air quality monitoring and management of pollution from stationary sources. This will be done based on detailed needs assessment.
- Put in place additional staff 07/2001 beyond EMB-DBM Based on needs assessment and further organizational strengthening of EMB as line bureau additional staff will become available. Placement will be in phased manner and will follow designation of airsheds and non-attainment areas.
- Conduct regular training Periodic EMB SIDA TA 2 to make contribution. Training will be partly in country and abroad. Training to be aimed not only at EMB staff but also at users of data. Training to be phased with expansion of AAQM network.

**3.1.6. Public
Awareness on
Ambient Air Quality**

- Develop overall communication strategy to inform general public on ambient air quality Before 12/2000 DENR/EMB, NGOs with inputs from other concerned groups esp. PIA To be part of MMAQISDP work on public awareness. Additional support from US EPA and USAEP. NGOs are expected to play important role in this component of air quality management
- Set-up air quality indices, and develop channels to inform public on regular Design indices and system before 06/2001, after that DENR/EMB, NGOs and other concerned Air quality indices are expected to be modeled on earlier versions. Input from SIDA loan project expected.

basis	ongoing information of public	groups	
<ul style="list-style-type: none"> In addition to ongoing information provision conduct periodic special campaigns Integrate awareness raising on air quality issues in primary, secondary and tertiary education 	<p>According to plan</p> <p>Ongoing after initial strategy formulation</p>	<p>DENR/EMB, NGOs and other concerned groups</p> <p>DECS, CHEDS, TESDA, and private education facilities, and DENR/EMB</p>	<p>Active cooperation with ongoing and new initiatives from private sector and NGOs will be sought. e.g. Bantay Kalikasan</p> <p>Initial limited funding from MMAQISDP, subsequent additional funding required</p>

3.2 Mobile Sources Component and sub-components
3.2.1. Review and Revise Emission Standards

	Performances standard	Responsible	Remarks
<ul style="list-style-type: none"> Revalidate feasibility of introduction of Euro 1 standards by 01-01-2003 	Review to be completed by 12/2001	DENR/EMB, DOE, DOTC, DTI/BPS in consultation with car manufacturer s, oil industry and transport sector	Special attention to be given to linkage with adoption of 0.05% sulfur standard for diesel scheduled for 01-01-2004 and the gasoline specifications
<ul style="list-style-type: none"> Prepare groundwork and timetable for the introduction of Euro 2 or 3 standards 	Review completed and recommendations drafted for decision making by June 2004	DENR/EMB, DOE, DOTC, DTI/BPS in consultation with car manufacturer s, oil industry and transport sector	Adoption of Euro 2 or 3 standards will depend on availability of appropriate fuels
<ul style="list-style-type: none"> Study the need and possibility for specific emission standards for motorized tricycles Assess the need for additional testing facilities for testing motor cycle emissions 	<p>To be started ASAP and to be completed by June 2001</p> <p>Assessment with respect to in-use standards by 12/2000, type approval testing by 06/2001</p>	<p>DOST, MDPPA, DENR/EMB, DILG, DOTC</p> <p>DOTC/LTO - DENR/EMB</p>	<p>Tricycles also need general technical standards, to be drawn up in parallel with possible special emission standards</p> <p>Required in light of additional standards for new motor cycles effective 2003 and increased emphasis on in-use testing. To be funded from SVPCF.</p>

3.2.2. Develop Capacity for Type Approval Testing

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none"> • Allocate specific institutional responsibility within DOTC | <p>Required instructions to be issued before 10/2000</p> | <p>DOTC Secretary</p> | |
| <ul style="list-style-type: none"> • Design Facility | <p>Construction Plans approved, site selected by 12/2001</p> | <p>DOTC with external inputs</p> | <p>To be funded through the Special Vehicle Pollution Control Fund (SVPCF) and Grants</p> |
| <ul style="list-style-type: none"> • Construct Facility | <p>Construction to be completed, including commissioning of equipment by 12/2002</p> | <p>Outsourced or through internal DOTC arrangements</p> | <p>To be funded through the Special Vehicle Pollution Control Fund (SVPCF) and Grants</p> |
| <ul style="list-style-type: none"> • Allocate staff and train staff | <p>Staff training to commence June 2002, which will allow start functioning of facility upon completion</p> | <p>Human Resource Division DOTC/LTO with external inputs</p> | |

3.2.3. Strengthen MVIS

- | | | | |
|--|--|---|---|
| <ul style="list-style-type: none"> • Obtain MVIS implementation approval | <p>First pass approval of BOT scheme to be issued by 09/2000</p> | <p>NEDA, DOTC</p> | <p>Based on the assumption that strengthening of MVIS will be on the basis of BOT procedure</p> |
| <ul style="list-style-type: none"> • Develop LTO regulatory capacity over MVIS operated by private sector | <p>Needs assessment to be carried out prior to 06/2001, capacity to be in place by 06/2002</p> | <p>DOTC/LTO, support from DBM and DENR</p> | <p>MMAQISDP capacity building component foresees setting up special unit in LTO for this purpose</p> |
| <ul style="list-style-type: none"> • Finalize negotiations with private sector proponents | <p>To be completed 12 months after First Pass has been issued by NEDA</p> | <p>DOTC/LTO</p> | |
| <ul style="list-style-type: none"> • Introduction MVIS | <p>Within Metro Manila by 01/2003 and Nation wide by 01/2004</p> | <p>Private Proponents with support DOTC/LTO</p> | <p>Private proponents will be required to provide inter-connection with LTO IT scheme</p> |
| <ul style="list-style-type: none"> • Develop and implement public awareness campaign | <p>Metro Manila 09/2002 onwards,</p> | <p>DOTC/LTO, active involvement</p> | <p>This specific awareness campaign to be part of overall awareness raising campaign to be developed with</p> |

to support introduction and functioning MVIS	Nationwide 09/2003 onwards	of private proponents	MMAQISDP support in second half 2000
<ul style="list-style-type: none"> Develop interim capacity for emission testing pending strengthening of MVIS 	Selected MVR stations in NCR to be equipped and trained by 11/2000 and 06/2001 nationwide	DOTC/LTO, with support from DBM and DENR	MMAQISDP to fund NCR and SVPCF to fund rest of the country
3.2.4. Strengthen Road Side Inspection			
<ul style="list-style-type: none"> Agree on the standardized test methodology and equipment 	Completed by 08/2000	DENR, DOTC/LTO, DTI	
<ul style="list-style-type: none"> Procurement of mobile smoke emission testers 	Completed by 12/2000	LTO, DBM	Funding by MMAQISDP for Metro Manila Airshed and SVPCF for the rest of the country
<ul style="list-style-type: none"> Study feasibility of outsourcing roadside inspection and apprehension to private sector 	Initial recommendations by 9/2000. To be followed by detailed arrangement in place by 06/2001	DOTC/LTO, MMDA	External inputs provided through consultancy input in context of MMAQISDP in MMDA
<ul style="list-style-type: none"> Training of Inspectors, Apprehending Officers and Deputized Agents 	Ongoing-Periodic	LTO, DENR/EMB, DTI	Training design and duration to be reviewed. Private Sector to provide inputs and to act as observers during training
<ul style="list-style-type: none"> Review and standardize detailed apprehension procedures 	To start on immediate basis and to be completed by August 2000	LTO, DOTC	This would address the apprehension procedures itself, the subsequent testing and procedures to pay fines and reclaim plates.
<ul style="list-style-type: none"> Develop appropriate linkage between apprehending teams and LTO 	For Metro Manila by 03/2001, other parts of country in phased manner	LTO, deputized agents	Interconnection to be established with LTO IT system. Metro Manila to be funded from MMAQISDP, other parts of country from SVPCF
<ul style="list-style-type: none"> Establishment of one stop shop for accreditation and authorization of private sector emission testing centers 	One month after issuance of IRR	DOTC/LTO, DTI	This concerns third party emission inspection stations.
<ul style="list-style-type: none"> Establishment of 	To be in place in	Qualified	Testing rates to be reviewed by DTI

- | | | | |
|--|---|---|---|
| Private Sector Emission testing centers | 12/2000, based on interest demonstrated by private sector | Private Proponents | and DOTC. Re-capitalization will be required by 2003 to comply with LTO IT to be established |
| • Public Information Campaign | Three months after IRR effectivity | DOTC, PIA, NGOs and other concerned groups | This specific awareness campaign to be part of overall awareness raising campaign to be developed with MMAQISDP support in second half 2000. Bantay Kalikasan initiative to be integrated |
| • Develop and Implement Self Regulation Projects | Plans to be submitted by 01/2001 and when appropriate | Transport Sector Organization s to initiate Plans, DOTC/LTO to evaluate and approve if all conditions are met | Self Regulation Projects should meet ALL the requirements outlined in the February 2000 MOA on Elimination of Smoke Belching. It is expected that there will be active involvement of Swisscontact preventive maintenance program in design and implementation Self Regulation Projects |

3.2.5. Formulate and implement vehicle standards and parameters

- | | | | |
|--|-----------------|--|---|
| • Review technical standards for rebuilding and re-manufacturing of vehicles and engines | By 06/2001 | BPS (TC 44), DOTC | To be part of Vehicle Road Safety |
| • Design and implement appropriate preventive maintenance systems for public transport vehicles | 10/2000 onwards | CFCERT/DOE, DOTC Transport Sector Swisscontact | This program aims at reduced fuel consumption and reduced emissions due to improved maintenance |
| • Encourage wider research and development for appropriate vehicle technology and emission control devices | Ongoing | DOST - private sector | |

3.2.6. Strengthen land use and transport planning

- | | | | |
|--------------------------------|--|------------|--|
| • Strengthen land use planning | | MMDA, LGUs | To be carried out in context of other initiatives. Emphasis will be on ensuring that emission reduction is on the agenda |
|--------------------------------|--|------------|--|

- Review of ongoing transport plans
DOTC, MMDA, LGUs, NGOs
To be carried out in context of other initiatives. Emphasis will be on ensuring that emission reduction is on the agenda, and on encouraging non-motorized transport.
- Traffic Engineering
MMDA, LGUs, DPWH
To be carried out in context of other initiatives. Emphasis will be on ensuring that emission reduction is on the agenda

3.2.7. Develop and Introduce Market Based Instruments and Incentives to reduce Vehicle Emissions

- Study the feasibility of programs that can provide incentives for transport sector enterprises that successfully comply with emission standards or which are operating environment friendly vehicles
First phase of study to be completed by 03/2001. Further work will follow.
DOF, DTI, DOTC, Transport sector
Initial study to be part of work on MBIs carried out in context of MMAQISDP.
- Study the use of MBIs to promote reduction in vehicle emissions
First phase of study to be completed by 03/2001. Further work will follow.
DOF, DTI, DOTC, Transport sector
Initial study to be part of work on MBIs carried out in context of MMAQISDP.

3.2.8. Formulate and Implement Capacity Building Program

- Needs assessment and formulation of capacity building program for DOTC/LTO at national and regional level
To be completed by 01/2001
Human Resource Development Division DOTC and outside consultants
It is expected that the needs assessment will take into account the requirements of other government agencies involved with mobile sources as well as transport sector. Funding from MMAQISDP and SVPCF.
- Implement capacity Building Programs
02/2001 onwards
DOTC/LTO, DBM, Transport sector
Avail multilateral facilities
- Strengthen Traffic Adjudication Services
Initial strengthening be completed by 12/2001
DOTC/LTO, DBM
Additional staff will be required, pending formal approval use will be made of contractual staff. Funding: SVPCF

3.2.9. Monitoring impact mobile sources on air quality

- | | | | |
|---|---|------------------------------------|--|
| <ul style="list-style-type: none"> Carry out baseline studies concerning contribution of mobile sources to deterioration of air quality | To be determined | DENR/EMB - DOTC | To be linked to availability of reliable ambient air quality monitoring data |
| <ul style="list-style-type: none"> Conduct monitoring studies to review impact of various measures to reduce emissions from mobile sources | Monitoring periodic and related to availability equipment. Objectives, strategy and approach by 03/2001 | DENR/EMB, DOTC/LTO, DOH and others | It is expected that this will include special impact studies by DOH |

3.3 Stationary Sources Component and sub-component

3.3.1. Review and Revise Standards

- | | Performance standard | Responsible | Remarks |
|--|--------------------------------------|---|--|
| <ul style="list-style-type: none"> Formulate criteria for review and revision (health based) | Within 2 years after issuance of IRR | EMB, concerned departments and industries | Rationalization of standards to be considered. Standards based on mass rate of emission to be re-examined. |
| <ul style="list-style-type: none"> Following sets of standards to be reviewed/revise: 1) ambient air quality standards, 2) source emission standards for specific pollutants, 3) ambient air guideline values | Every two year or on as need basis | EMB, concerned departments and industries | This includes the development of reference values for CO ₂ and O ₂ |

3.3.2. Strengthening of Permitting system

- | | | | |
|---|------------------------|---------------------------------|--|
| <ul style="list-style-type: none"> Internal permitting guidelines to be developed and issued to Regional offices | Before 12/2000 | EMB Central Office | Rationalization and harmonization with the EIS system to be considered. |
| <ul style="list-style-type: none"> Activation of computerized Permitting Administrative System (CPAS) | Operational by 06/2001 | EMB Central and Regional Office | Support available in context of MMAQISDP for overall design and Metro Manila Airshed. Introduction in rest of the country is expected to be done in a phased manner, which could be linked to designation of airsheds. This will include a review of |

<ul style="list-style-type: none"> • Procurement of additional equipment 	Before 11/2002	EMB Central and Regional Offices, DBM	individual steps and paperwork involved.
3.3.3. Develop and Introduce MBIs			
<ul style="list-style-type: none"> • Developed program to phase out Bio-Medical Incinerators 	Initial program design 03/2001. After that implementation of program in line with targets set up to July 2003	EMB, in consultation with affected groups	
<ul style="list-style-type: none"> • Developed program to phase out non-complaint incinerators 	Initial program design 03/2001. After that implementation of program in line with targets set up to July 2003	EMB, in consultation with affected groups	This will require close-intensive monitoring by EMB
<ul style="list-style-type: none"> • Conduct study on the impact on productivity, efficiency and cost to industries and employment 	The result of the study shall be submitted to the EMB on or before 31 December 2001 and to be implemented on or before 17 July 2003	DTI	The study will include the use and application of mechanisms and technologies designed to make emissions from existing incinerators non-toxic and non-poisonous
3.3.5. Awareness Raising			
<ul style="list-style-type: none"> • Carried out in context of overall awareness raising activities 		DENR, EMB, NGOs, Pos, LGUs, DECS	See for detailed description section on Awareness Raising under Ambient Air Quality Monitoring
3.3.6. Strengthening of Monitoring			
<ul style="list-style-type: none"> • Development of monitoring methodology approval system 	Before July 2003	EMB	
<ul style="list-style-type: none"> • Implement intensified stack monitoring program 	Metro Manila airshed start by 06/2001, rest of country in phased manner on airshed basis	DENR/EMB	Metro Manila monitoring program to be funded from MMAQISDP. This will be outsourced activity with limited capacity building support for DENR/EMB

3.3.7. Strengthen Industry - Government cooperation in ensuring the reduction of air pollution by stationary sources

- | | | | |
|---|---|---|---|
| <ul style="list-style-type: none"> Operationalize Environmental partnership program | <p>Initial operationalization by 12/2002, after that branch specific agreements</p> | <p>EMB, DOST and other signatories of MOA on partnership</p> | <p>This activity builds on the initiative of the IISE (Industrial Initiatives for a Sustainable Environment) project to develop environmental partnerships between government and private sector.</p> |
| <ul style="list-style-type: none"> Establish/maintain database of Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER) technology | <p>Establish initial database by 06/2001</p> | <p>DOST with input from DENR</p> | |
| <ul style="list-style-type: none"> Develop detailed procedures for designing, submitting and monitoring of compliance plans for non complying industries in attainment and non-attainment areas, and for EMPs to be submitted as part of EMS for industries desiring to make use of grace period under Sect. 19 of CAA | <p>By 06/2001. To be reviewed on regular basis and revised on as need basis</p> | <p>EMB in consultation with AWMA and sector branch organizations / associations</p> | |

3.3.8. Capacity Building

- | | | | |
|---|--|-------------|--|
| <ul style="list-style-type: none"> Hiring of additional staff for CAA implementation | <p>Detailed approach agreed upon by 03/2001, implementation of strengthening plan according mile stones outlined in plan</p> | <p>DENR</p> | <p>See activities under Capacity Building in Section on Ambient Air Quality Monitoring
This is part of the TA under the MMAQISDP</p> |
|---|--|-------------|--|

3.3.9. Monitoring impact of stationary sources on air quality

- | | | | |
|---|---|--------------------------|--|
| <ul style="list-style-type: none"> Carry out baseline studies concerning contribution of stationary sources to deterioration of air quality | To be determined | DENR/EMB | To be linked to availability of reliable ambient air quality monitoring data |
| <ul style="list-style-type: none"> Conduct monitoring studies to review impact of various measures to reduce emissions from stationary e sources | Monitoring periodic and related to availability equipment. Objectives, strategy and approach by 03/2001 | DENR/EMB, DOH and others | It is expected that this will include special impact studies by DOH |

3.4 Area Sources

Component and sub-component	Performance standard	Responsible	Remarks
------------------------------------	-----------------------------	--------------------	----------------

3.4.1. Develop profiles of Area Sources

- | | | | |
|---|------------|---|--|
| <ul style="list-style-type: none"> Carry out desk study of local and international information | By 12/2001 | DENR/EMB with involvement of other Departments where required | Conduct workshop upon completion to inform concerned groups. |
|---|------------|---|--|

3.4.2. Allocate Institutional Responsibilities for management of air pollution from Area sources

- | | | | |
|---|------------|--|---|
| <ul style="list-style-type: none"> Develop agreement on concerned departments on permitting and monitoring of area sources | By 12/2000 | EMB in coordination with other departments | It is suggested that industrial facilities will be regulated as part of permitting process for stationary sources. Construction sites permits are responsibility of LGUs. |
|---|------------|--|---|

3.4.3. Develop monitoring methodologies for specific area sources

- | | | | |
|--|------------|---------------------------|---|
| <ul style="list-style-type: none"> Monitoring approaches to be elaborated and | By 06/2001 | EMB and other departments | Limited funding available for study on potential to reduce emissions from gasoline stations from MMAQISDP |
|--|------------|---------------------------|---|

documented

if allocated
institutional
responsibility

3.4.4. Develop Administrative Actions and Fines and Penalties for Air Pollution from Area Sources

- Formulate concerned actions and fines EMB, PAB and other departments if allocated institutional responsibility

3.4.5. Develop and Implement Capacity Building Program for Area sources

- Identify capacity building needs and implement program 12/2000 EMB and other departments if allocated institutional responsibility Emphasis will be on required skills and knowledge. For the time being it is not assumed that this will result in substantial additional staff in various organizations

3.5. Fuel Specifications Component and sub-component

3.5.1. Implement fuel specifications

- | | Performance standard | Responsible | Remarks |
|--|---|---|--|
| • Review, and revalidate 2001, 2002, 2003 and 2004 fuel specs for viability | Initial review in 2001 and subsequent revalidation in 2002, 2003 and 2004 | DOE, oil industry, PIP, DTI, DENR, and others | Linkage with emission standards to be considered. |
| • Conduct study on impact of CAA on oil industry | To be completed before 02/2001 | DOE | Emphasis of study will be on the timing of fuel specifications. Study to be funded from MMAQISDP |
| • Adopt feasible fuel specifications as Philippines National Standards (PNS) | 2000 / 2001 / 2002 / 2003 in line with changing fuel specifications 12/2000 | Reconstituted Technical Committee 12 | |
| • Procurement of additional testing equipment | | DOE | Completion of ongoing establishment of Fuel monitoring laboratory |
| • Formulation of additional staff requirements and | New staff to be in place by 09/2001. | DOE | Focused on monitoring and testing of fuel specifications |

<ul style="list-style-type: none"> training of new and existing staff 	Training to start in 09/2000		
<ul style="list-style-type: none"> Conduct regular sampling and testing of fuels 	Ongoing-periodic	DOE	
<ul style="list-style-type: none"> Review PNS re bunker fuel sulfur content 	To be completed by 06/2001	DENR, DOE, DTI	Consider reducing maximum sulfur content
<ul style="list-style-type: none"> Develop penalty provisions for violation and non-compliance with fuel specifications 	Before 12/2000	DOE with input from TC 12	To be issued through DOE Administrative Order. This will also require establishment or strengthening of quasi judicial body in DOE.
3.5.2. Conduct research on, and introduce alternative fuels and fuel additives			
<ul style="list-style-type: none"> Pilot test alternative fuels, e.g. CNG, LPG and electric 	Ongoing	DOE, DOST, DOTC and Private sector (oil and gas industry, transport sector and others)	CNG tests ongoing, limited funding available from MMAQISDP, additional funding from SVPCF
<ul style="list-style-type: none"> Study potential of fuel additives to reduce vehicle emissions 	Continuing	DOST, DOE, private sector	This will involve review of experiences in other countries.
3.5.3. Awareness raising programs on cleaner fuels			
<ul style="list-style-type: none"> Information, education, campaigns 	Ongoing, linked to changing fuel specifications	DOE, Coalition for cleaner fuels	
3.5.4. Review, Develop and Introduce MBIs to achieve cleaner fuels			
<ul style="list-style-type: none"> Rationalization of fuel taxes 	Within 6 months after issuance of IRR	DOE, NTRC, DOE, NEDA	To ensure that fuels used for power generation are taxed in proportion to their potential contribution to emissions. Not intended to change overall amount of taxes raised.
3.5.5. Monitor Impact of changing fuel specifications on ambient air quality			
<ul style="list-style-type: none"> Formulate and 	Monitoring	DENR/EMB,	It is expected that this will include

conduct monitoring studies to review impact of changes in fuel specifications on ambient air quality

periodic and related to availability equipment. Objectives, strategy and approach by 03/2001

DOE, DOH and others

special impact studies by DOH

3.6. Institutional Development

Component and sub-component

Performance standard

Responsible

Remarks

3.6.1. Establishment of Governing Boards

- Issuance of Operational Guidelines

Within 90 days after the issuance of the IRR. Review of operational guidelines 18 months from the effectivity of guidelines or as the need arises

DENR

Involve DILG, DOTC, and other Government Agencies as well as private sector and civil society groups. Operational guidelines to call for submission of Business Plan, Performance Indicators, alongside with Annual Air Quality Status Report for Airshed. PCMU support to be utilized to draw up guidelines.
- Establishment of individual Boards

For the initially designated airsheds 90 days after effectivity of Operational Rules, subsequent Boards within 90 days after designation

DENR
- Establishment of Executive Committee in Individual Board

Within 15 Days after establishment of Board

Governing Board

EMB to monitor establishment activities of GB
Executive Committee is a subset of GB. Expected is that Executive Committee will be multisectoral in composition
- Adoption of House Rules

Within 30 days from establishment of GB

Governing Board
- Appointment of Technical Secretariat

Within 60 days from establishment of GB

Governing Board

Technical Secretariat Metro Manila Airshed Technical Secretariat to be funded from MMAQISDP

3.6.2. Joint Oversight Committee

- Appoint committee

Immediate Basis

Senate and

There is a need for clarification of the

members

the House of Representatives

nature of the JOC, is it a standing committee or an ad-hoc committee

3.6.3. Establishment of Air Quality Management Council

- Develop agreement on functions and composition of such body

Within 90 days after issuance of IRR (for draft EO to be submitted to Office of the President)

DENR et. al.

Determine need for EO. The Council will be follow-up of the Presidential Air Quality commission and will act as national forum for discussions on air quality management. It will be a multisectoral council with representatives from government, private sector and civil society.

3.6.4. Set up Air Quality Management Fund (AQMF)

- Validate sources of fund and identify new sources
- Develop Fund Management Rules and Regulations

Within 60 days from effectivity of IRR of CAA

DENR, DOF

Within 180 days from effectivity of CAA

DENR, DBM

Management Rules to include guidance on allocation mechanism to individual airsheds. Develop institutional capacity for oversight AQMF

- Annual Costings of Action Plans

Within 90 days after the end of fiscal year for input to the following FY budget

DENR, Governing Boards

Based on IRR provision that 1/3 of AQMF will be allocated for national purposes and 2/3 to individual airsheds

- Annual Report on Use and Effectiveness

90 days after end of Fiscal Year

DENR (external auditor as required)

Report to be published within 60 days of submission

- Develop and Implement awareness raising campaign on AQMF

Within 90 days after approval of Rules and Regulations for use of AQMF

DENR, GB's

Integrate within overall awareness raising campaign.

3.6.5. Set up a CAA implementation coordination Unit in EMB

- Develop TOR for coordinating unit

Within 60 days after IRR issuance

DENR

Important elements facilitate multisectoral review IRR, IAQIF/NAQAP. Act as secretariat for National Air Quality Management Council

- Provide staffing

Within 90 days after IRR

DENR, EMB

To be included in new EMB structure

issuance

3.6.6. Periodic Review of IRR, and IAQIF

- Monitor implementation of Clean Air Act
To be carried out on six monthly basis
CAA implementation on monitoring unit, together with focal points in concerned departments and organizations
Information to be used for National Air Quality Management Council
- Review IRR and provide suggestions for revisions
To be carried out on annual basis or when needed
CAA implementation on monitoring unit, together with focal points in concerned departments and organizations
Decision to modify IRR rests with DENR and Departments which have specific responsibility allocated in CAA
- Review and update IAQIF/NAQAP
Framework to be reviewed on annual basis, Action Plan on six monthly basis.
CAA implementation on monitoring unit, together with focal points in concerned departments and organizations
Revisions in IAQIF/NAQAP to be approved by DENR upon recommendation of National Air Quality Management Commission

3.6.7. Access to Information

- Develop detailed guidelines and procedures on information which will be made available to public concerning air quality management
12/2000
DENR/EMB
This in coordination with other departments involved in the implementation of the Clean Air Act
- Put in place the necessary information systems to ensure that information will be available in efficient
06/2001
DENR/EMB

and effective manner

3.6.8. Introduce Citizens Suits

- | | | | |
|---|--|---|---|
| <ul style="list-style-type: none"> • Produce a bench-book on court adjudication of air pollution cases to support the Rules of Court | <p>Draft available within six months of issuance of IRR</p> | <p>DENR, Supreme Court</p> | <p>Bench book to be issued by Supreme Court. Production Bench book to be part of MMAQISDP Legal TA or other external donor assistance</p> |
| <ul style="list-style-type: none"> • Develop detailed procedures, which outline citizens involvement in administrative actions | <p>Within 3 months after issuance of IRR</p> | <p>DENR, DOTC, DOE</p> | <p>In line with concerned provisions in IRR</p> |
| <ul style="list-style-type: none"> • Support the creation of environmental courts | <p>Three months from issuance of Bench book</p> | <p>Supreme Court</p> | |
| <ul style="list-style-type: none"> • Develop and implement capacity building program | <p>Ongoing, starting after issuance of Bench book</p> | <p>DENR, Supreme court, Department of Justice</p> | |
| <ul style="list-style-type: none"> • Develop Public Awareness Program to inform general public | <p>Ongoing after issuance Bench book and creation environmental courts</p> | <p>DENR, DOJ and others Awareness arising program to be fitted in with overall awareness raising program, which is supported by MMAQISDP or other external donor assistance</p> | |

3.6.9. Develop Research and Development Program

- | | | | |
|---|---|--|----------------------------|
| <ul style="list-style-type: none"> • Develop institutional mechanism | <p>Within 9 months from issuance of IRR</p> | <p>DENR, DOST, Private Sector, Academe, NGOs and Pos</p> | <p>DOST as lead agency</p> |
|---|---|--|----------------------------|

- | | | | |
|---------------------------------|---------------------------------------|---|---|
| • Formulate research priorities | Within 12 months from issuance of IRR | DENR, DOST, Private Sector, Academe, NGOs and Pos | Should address technology transfer. Linkage with Clean production initiatives |
| • Organize funding for research | Continuous/Ongoing | By agreed upon institutional mechanism | Possible source are special funds AQMF and SVPCF |
| • Develop knowledge basis | Continuous/Ongoing | By agreed upon institutional mechanism | Possible source are special funds AQMF and SVPCF |
| • Develop Public awareness | Continuous/Ongoing | By agreed upon institutional mechanism | Possible source are special funds AQMF and SVPCF |

3.7 Ozone and Greenhouse Gases

Component and sub-component	Performance standard	Responsible	Remarks
• Monitor implementation of Chemical Control Order (CCO)	Continuous/Ongoing	DENR/EMB	
• Implementation of the Philippines Country Program	On-going	DENR/EMB, concerned government agencies	
• Preparation of the national ODS Phase out Strategy	Ongoing	DENR/EMB, WB, LBP, private sector, concerned government agencies	
• Preparation of the Refrigeration Management Plan	Ongoing	DENR/EMB, SIDA	
• Study and formulate control mechanisms for importation of second hand ODS-consuming equipment	Within 1 year	DENR/EMB, BOC, DTI	Policy mechanisms for the 3 government agencies will be incorporated as amendment to the CCO
• Conduct regular sampling and testing of ODS - consuming enterprises /	Periodic	DENR/EMB	Monitoring equipment will be provided by UNDP

industries				
• Information, education and awareness raising campaigns on ODS	Continuous, ongoing	DENR/EMB		
• Monitoring of ODS phase out investment projects	Continuous	DENR/EMB		
• Develop database for ODS monitoring	Within 1 year	DENR/EMB	To be incorporated in the National Phase out strategy	
• Capacity building	Periodic	DENR/EMB, WB, UNDP	Focused on prospective project grantees	