

Environmental Policy & Vehicles Inspection in Indonesia

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I. Background

Motorized vehicles are the major source of air pollution in the big cities in Indonesia especially in Jakarta and are responsible for approximately 70% of the total emissions causing air pollution in the agglomeration. Main causes of air pollution are rapid motorization, inadequate infrastructure development, insufficient traffic management, fuel formulation / low fuel prices, outdated vehicle technology, poor engine maintenance, inadequate public transport systems, and poor urban planning.

II. Environmental Policy on Air Pollution Issues in Indonesia

2.1 Blue Sky Program

The main responsibility for environmental issues in Indonesia is in the hands of the National Environmental Impact Agency (Bapedal). The agency defines quality standards, sets up strategies and programs.

Air quality management is one of Bapedal's tasks, and air-related activities are put together in the "Blue Sky Program" that was launched in 1996. In reference to the Blue Sky Program, the objectives (including stationary and mobile sources) are:

1. Establish a working mechanism to control air pollution effectively and efficiently.
2. Control air pollution.
3. Set an ambient air quality that meets health standard for humans and other living creatures.
4. Encourage environmentally conscious human attitude.

Following the Blue Sky Program, the implementation priority has been set up and stated that Jakarta is a first priority and will be followed up by West Java, Central and East Java.

2.2 Current Situation and Future Requirements

In October this year a workshop on "Integrated Vehicle Emission Reduction Strategy" was held and organized by the multi stakeholder group in Jakarta. This workshop resulted in recommendations on Fuels, Traffic and Transport Management, Vehicles Inspection, Vehicle Technology and Emission Standard, and Air Quality Monitoring. Following the workshop an organization of "Clean Air Partnership" or "Mitra Emisi Bersih" (MEB) was established. It is expected that MEB will propose the short, medium and long - term strategies on motor vehicles emission reduction to the Government.

III. Current Situation of Vehicle Inspection in Indonesia

Vehicles inspection for new and in-use vehicles is regulated under Traffic Law No. 14/1992.

New Vehicles

Inspection for new vehicles has adopted TRIAS-Japan (STALDAT) but poor conditioned inspection facilities. Scope of inspection includes brakes, headlight, turning radius, horn level, front wheel alignment, speedometer, construction, weight, dimension confirmation, and exhaust emission. The exhaust emission is measured by idle test method. The emission standard for new vehicles refers to Ministry of Environmental Decree No. 35/MNLH/101/1993.

In Use Vehicles

Law No. 14/1992 on traffic and transportation states in article 50 that to prevent air pollution and noise each in-use vehicle is required to meet emission and noise standards. The following Government Regulation No. 44/1993 mentioned that the roadworthiness testing applies for commercial vehicles only with testing period every six (6) month it also stipulates that the testing

of passenger cars and motorcycles will be regulated in a separate regulation, but no such regulation has been passed until now.

Testing has to be conducted at inspection center (centralized system). Currently, there are 115 testing center in Indonesia, 5 of them located in Jakarta (2 facilities are private owned).

Items to be tested are exhaust emission, noise level, efficiency of main brake system, efficiency of parking brake system, tire system, horn level, headlight, turning radius and speedometer. The official tariff of each inspection is IDR 40'000.

Currently, commercial vehicles on the road are still smoke belching since the on-road check do not work and high incidence of bribery.

Jakarta has been developing the I&M System for private cars with considerations:

- A regulation on roadworthiness testing for passenger cars and motorcycles has not been developed yet. The I/M system is considered as part of roadworthiness testing with focus on emission as a first priority.
- There are 2 Ministerial Decree No. 551/1999 and 581/1999 regarding accreditation of workshops. Workshops can be assigned as testing center for vehicles inspection.
- In Jakarta, about 35% of the carbon monoxide, 25% of hydrocarbon, 30% nitrogen oxides, 20% of sulfur oxide and 20% of particulate matter of the total traffic emissions originate from private cars ¹. These cars are owned by approximately 10% of the citizens, but all citizens (and mainly the poor living and working close to roads) have to bear the impact.

IV. Set-up of the I/M pilot project DKI Jakarta

An Inspection and Maintenance System has the objective to ensure vehicular emissions are minimized to protect the environment. The focus is given on corrective measures such as cleaning, adjustment and repair.

Tests ² have clearly shown that private passenger cars with similar technology as operated in Indonesia requires maintenance at least once a year, otherwise emission is increasing rapidly. Such maintenance is by far not as expensive as a complete roadworthiness test and is not an unreasonable demand from vehicle owners. Therefore a yearly I/M for private car will be required.

The testing of emissions requires a 4-gas analyzer for gasoline vehicles and a smoke-meter for diesel vehicles. Both equipments are required in a service station to do proper engine adjustment. In Jakarta more than 200 repair shops are already equipped with such equipment.

The operators in the I/M system have to be highly skilled vehicle mechanics. Their task is to clean, adjust and maintain vehicles. The testing of the emission is a part of the engine adjustment.

I/M is best placed in vehicle repair shops (private workshops) that vehicle owner has to go only to one place to get emissions tested and his vehicle maintained properly. This avoids that the client (vehicle owner) has to spend a lot of time to pass his vehicle (one stop service). Since the equipment is anyway required in the repair shop, only small additional investment by the shop owner is required.

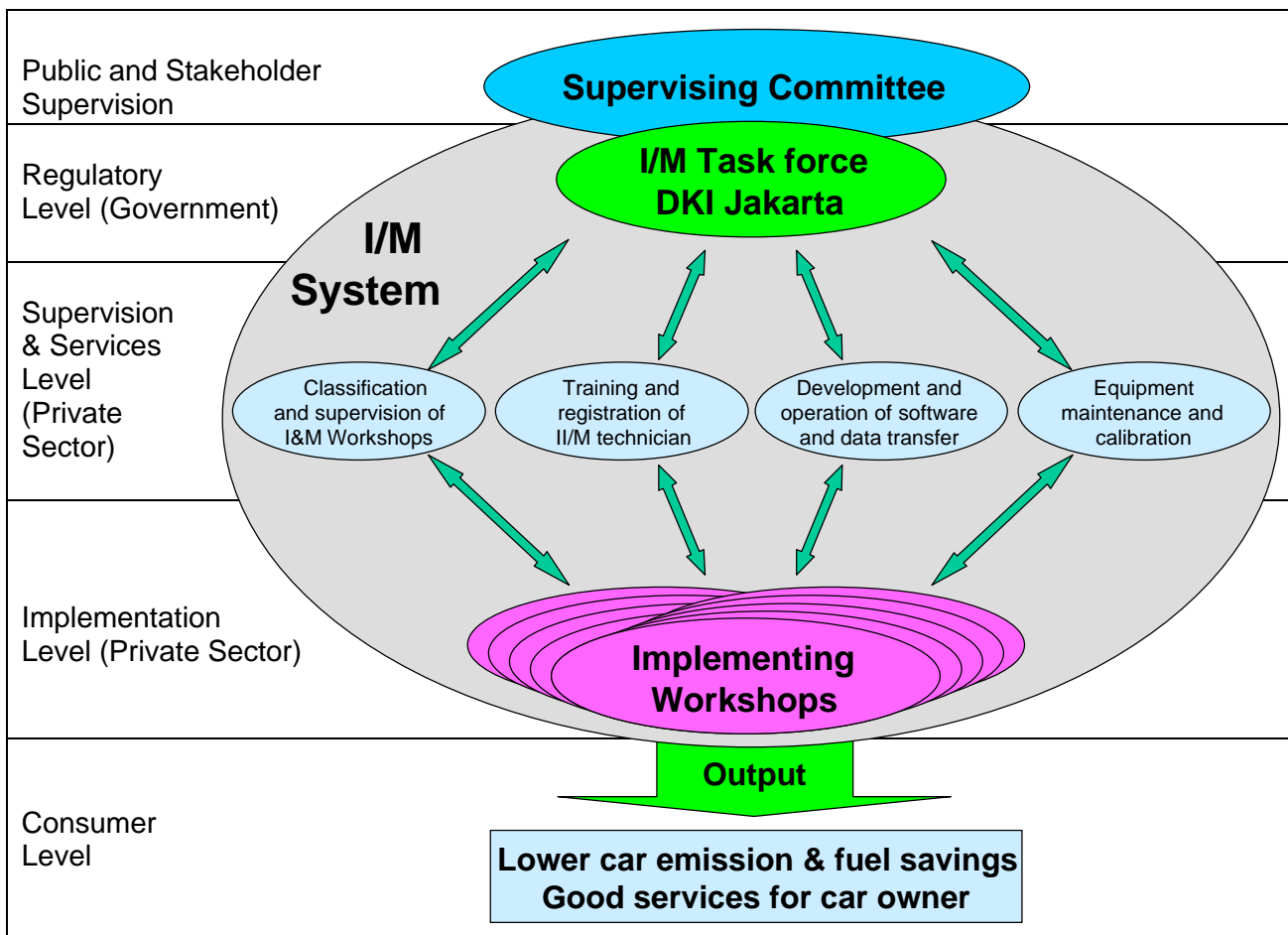
More than 85% of cars operated in Jakarta are so called "unstable emission cars". These cars normally use old technology, such as carburetor. To get direct result in the emission reduction, an inspection has to be followed by adjustment or maintenance.

The approximately 1'200'000 private passenger cars are not tested at all whereas more than 200 repair shops are equipped by emission check equipment.

¹ Study on integrated Air Quality Management 1997 (JICA/BAPEDAL)

² EPA Portland Study

V. Overview of the I/M pilot project in Jakarta

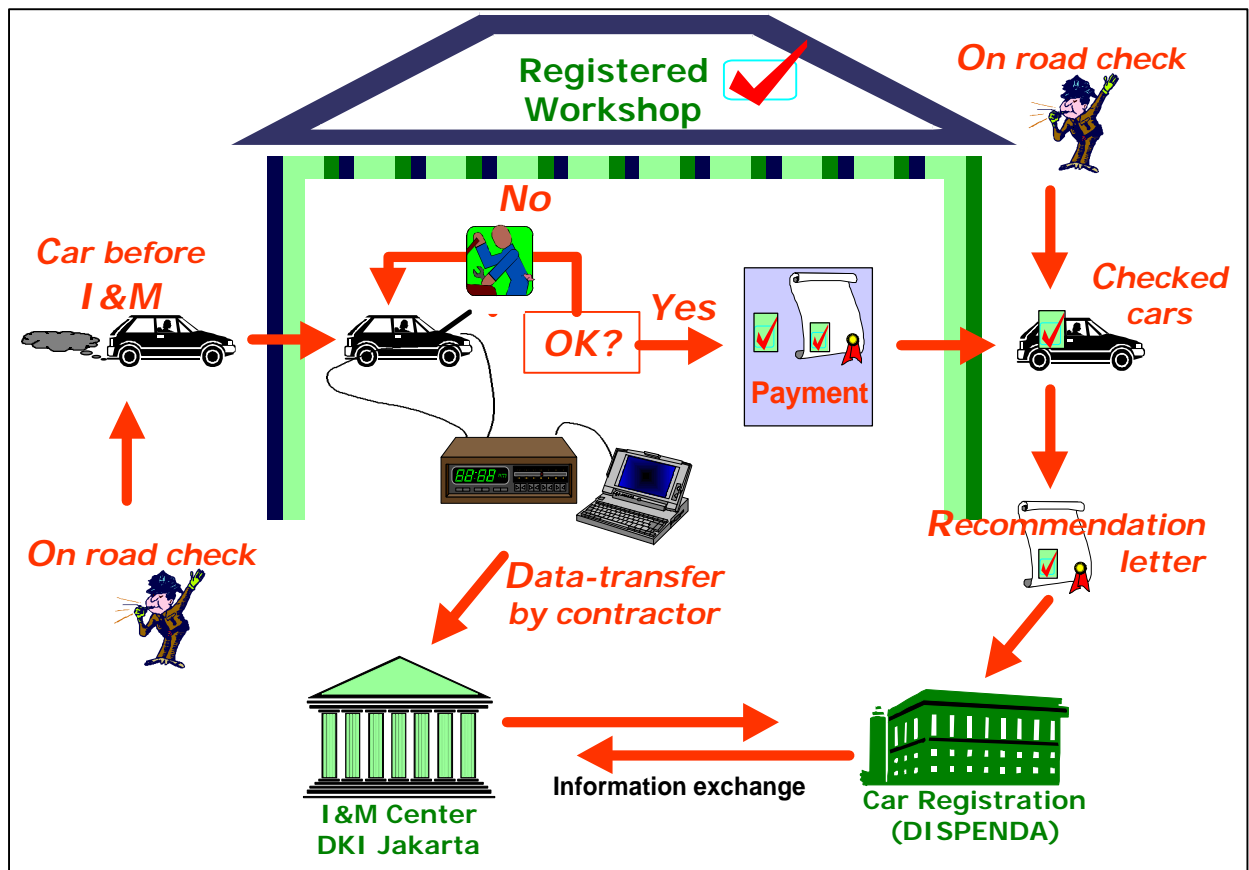


- ❑ Car's emission will be tested in the implementing workshops (private sector). To lower the emission cars has to be maintained in the workshop that is chosen by the car owner. To be assigned as implementing workshops surveillance companies will classify the workshops. With this classification workshop performance will be monitored and evaluate regularly by the surveillance companies. In case that the implementing workshops do not perform well the I/M task force can revoke the I/M implementing workshop assignment letter.
- ❑ The ability of I/M technicians on emission testing and analyzing the engine condition based on the emission test result will be tested by assigned training center. Only certified I/M technicians will be allowed to perform emission test. The performance of the I/M technicians will be also monitored and evaluated regularly.
- ❑ Emission test equipment will be connected with computer. Emission data will be transferred from the workshop to the mainframe via Internet (on-line). Software for data assessment and transfer will be developed and maintained by IT Company.
- ❑ Emission test equipment has to be maintained and calibrated regularly. Equipment suppliers will do the regular maintenance and certified company for the calibration.
- ❑ I/M task force, which consists of related government institutions, will develop regulations to support the I/M implementation, such as workshop classification, technician testing, assignment of the contractor, I/M implementation rules and regulation, and other required regulation. I/M task force will also monitor and evaluate the performance of contractor.
- ❑ Supervising committee, which consists of relevant government institutions, consumer organization, experts and other stakeholders will oversee the whole I/M system.

VI. Operational procedure

All private cars registered in DKI Jakarta will be required to check their emission in registered, private workshops on a yearly base. Car not fulfilling the emission standard has to adjust (tune-up) until comply the standard in the workshop as car owner's chosen base. Cars fulfilling the emission standard will be given a sticker and the recommendation letter. The recommendation letter shall be valid for one year and will serve the car owner to extend the annual registration and to operate his vehicle.

Random roadside tests by the police shall prove the validity of the recommendation letter and test the emission. If emissions measured are above the standard the car owner has to renew his recommendation letter.



VII. Institutional setting of the I/M system

The implementation of the I/M system will involve several government agencies due to its tasks and responsibilities. For example:

- Bapedalda or Environmental Office is responsible to coordinate the environmental management, including air quality management. Therefore the Governor of DKI Jakarta appointed BAPEDALDA to coordinate the I/M system development with concerned institutions.
- DLLAJ is responsible for road traffic and transport management, including conducting on-road test
- Industrials office issues the workshop license and supervise the operational of the workshop
- Law office is responsible for the issuance of any regulation.

Due to such condition and also to easy the coordination between agencies a task force consisting all relevant government agencies will be set-up. Task force as an interdepartmental organization will supervise the implementation of the I/M system. Head of Bapedalda will be acting as coordinator of the task force, but the responsibility for each section will be rest with relevant agencies.

VIII. Required regulations

The I/M system has been developed by BAPEDALDA in coordination with related institution such as DLLAJ, Industrial Office, Planning and Development Agency, and NGO's such as Swisscontact, KPBB, YLKI, GAIKINDO, etc.

For the implementation of the I/M system government of Jakarta has to developed following regulations:

1. Gubernatorial decision on the I/M system.
The Gubernatorial Decision No. 95/2000 was by issued in August 2000.
2. Gubernatorial decision on setting-up of the I/M task force
This gubernatorial decision will be a base for setting up of task force, which will conduct the day-today- supervision of the I/M implementation, including:
 - registration and supervision of the I/M implementing workshops and I/M technicians
 - assigning required consultants for workshop certification, technician training, software development
 - develop I/M implementation rules and regulations
 - supervision of day to day operation of I/M system
 - evaluation of the performance of the implementing workshop, consultantsThis task force will be placed under the governor and will comprise agencies within Jakarta government, including:
 - Bapedalda as coordinator
 - DLLAJ
 - Industrial and trade office
 - Law office
 - Planing and development agency
 - others
3. Gubernatorial decision on setting-up of the Supervisory Committee
This gubernatorial decision will be a base for setting up of Supervisory Committee. Supervisory committee has the task to oversee the implementation of the I/M system, including:
 - Supervision and evaluation of implementation of the whole I/M system
 - Facilitate the
 - Reporting to the governor and provide
4. Gubernatorial decision on implementation rules and regulation
Based on the gubernatorial decision No. 95/2000 to be able to implement the I/M system, such implementation rules and regulations will be required. This IRR will regulate the following:
 - The procedure of I/M system
 - Emission test procedure
 - Workshop licensing procedure
 - Technicians registration procedure
 - Equipment calibration procedure
5. Local Regulation on the mandatory I/M system
According to the decentralization law No. 22/1999 that every regulation, which will affect the public, has to be approved by local parliament. Therefore, since the I/M system will be

compulsory for car owners the status of the gubernatorial decision has to be lifted to a local regulation (Perda).

This local regulation will describe the following:

- ❑ Implementation of the compulsory I/M system (Gubernatorial decision No. 95/2000 as a base)
- ❑ Tariff for emission inspection, including for sticker and certificate
- ❑ Sanction for not having emission certificate and for not passing the emission test on the road
- ❑ Etc.

IX. Responsibilities of the Government

The responsible governmental institution has to specify the tasks of the subcontractors and to develop a working schedule with them. The tendering of these assignments has to follow governmental guidelines and shall be supervised by a Supervisory Commission including all stakeholders.

The Government in cooperation with the Supervisory Commission shall specify all financial matters. The responsible institution shall take care that the workshops pre-finance the stickers and recommendation letters, so that the car owners can pay for services directly at the workshop. The registration of workshops and operators shall be pre-paid to the Government and will be reimbursed to the subcontractor selected for this task.

The task force shall analyze the data from the workshops and distribute them to relevant institutions. The data shall be accessible to the public to guarantee transparency.

The analyzed data shall serve as a basis to develop proposals for new regional emission standards for in-use cars.

X. Involvement of the private Sector

There are several tasks that shall be subcontracted (tendered) to the private sector:

1. Registration and supervision of implementing workshops

The Government shall define the criteria and procedures for the registration of workshops entitled to conduct the I/M. Following the governmental tender procedures two or three³ institutions should be appointed for this assignment. The institutions appointed will supervise the correctness of the I/M procedures in the workshops and regularly report to the Government.

2. Training and registration of I/M operators

The Government should define test procedures for I/M operators. Tender for the testing and registration of the operators shall select two or three institutions.

The Government shall not regulate the training for the operators, the market shall create training courses if there is a demand. To avoid conflicts of interest, the institutions selected for the registration shall not be allowed to deliver training.

3. Implementation of I/M by private workshops

The implementation of I/M will be carried out by registered, private workshops. The issuance of recommendation letter shall be done by licensed operators employed by the workshop. This process will be supervised by institutions mentioned in point 2.

4. Development of required software and data transfer

the development and maintenance of software required to operate and supervise the I/M system shall be tendered together with the task of the data transfer. The recommendation letter to extend the car license should be hand carried by the car owner.

³ the workshops should have the choice and the Government should not create a monopoly

Only qualified experienced institutions that can guarantee maintenance services should be accepted.

5. Test equipment and maintenance

only equipment complying with international standards such as ISO and OIML shall be qualified. The distributor of such equipment is responsible to develop the software driver to connect the instrument with the I/M software and has to offer service contracts and has to guarantee regular maintenance and calibration of the equipment.

XI. Enforcement

To pay the yearly vehicle tax the car owner shall present the recommendation letter from the workshop to the officer at tax office (SAMSAT). If he cannot deliver this letter, he will not be allowed to pay vehicle tax; this means that his car will not be banned from the road.

Additionally on-road test will be regularly conducted to license shall not be extended. The sticker shall make his car easily recognized as complying, so that he has a bigger chance to pass police roadside checks. If emissions measured at roadside tests are above standards, he has to renew his recommendation letter. Additional on-road checks should help to identify misuse.

XII. Implication for Car Owners

The car owner shall be treated by the system as a client; i.e. he shall receive valuable, quality service, therefore surveillance institution shall supervise the correctness of the procedures and the quality of services at the workshops. He shall have the choice of the workshop executing the I/M on his car. The I/M shall be organized as a one-roof service. The market shall regulate the price of these services with exemption of minimal fee for stickers and recommendation letter.

The car owner will be responsible that his car follows the I/M regulation each year and bears all consequences if he refuses to comply with the system.

XIII. Air Quality Improvement Potential

A pilot project in 1998 involving more than 4'500 cars has proven that with the recent service standards a significant reduction of pollutants can be achieved.

For private cars with gasoline engines a projection estimated a 35% hydrocarbon (HC) and a 50% carbon monoxide (CO) emission reduction. A 5% fuel consumption reduction was achieved. A success rate of 70% of the I/M system would lead to a yearly reduction of 70'000 tons CO, 6'400 tons HC and 100'000 tons carbon dioxide in the Jakarta air.

For private cars powered by diesel engines a reduction of 45% particulate matter was achieved. This could lead (70% success) to a reduction of 650 tons of particular matter in the Jakarta air per year.

The system will help to identify the worst polluters and either to improve their vehicles or they can not be registered again.

XIV. Economic Aspects

For the development and preparation of the I/M system the Government is responsible to make funds available. The operation of the I/M system shall be conceived as self-financing so that the Government of DKI Jakarta will not have any additional running costs. The Government and the public will benefit in having lower medical bills and better living qualities.

By not combining the I/M with the roadworthiness testing only moderate investments for the private sector will occur, some of the required investments private workshops have already made.

The involved workshops shall not bear any losses by executing I/M, but the benefits shall primarily evolve from the increased business (service and repair) because of the higher number of cars frequenting the workshop.

The car owners will have to pay for the services delivered by the workshop, but in return will get better fuel efficiency and better reliability of their cars. The average fuel consumption reduction achieved in the pilot program 1998 would equal 60 l of fuel per annum per car.

The automotive sector, very hard hit by the economic crisis in Indonesia, could create approximately 500 new jobs with the introduction of an I/M system. In addition jobs for testing, registration and supervision will be created.