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INTEGRATED VEHICLE EMISSION REDUCTION STRATEGY FOR GREATER JAKARTA

MEB
Clean Emission Partnership
Introduction

- Indonesia deteriorating air quality issue
  Studies: URBAIR (World Bank, 1992)
  IAQM (JICA, 1997)
- Indonesia development changes:
  regional autonomy, good environmental governance
- Multi-stakeholder Forum (MEB):
  needs, membership, concerned parties
- Necessity for detailed program
Jakarta Ambient Monitoring Results (1998)

Manual: 12
Cont: 6
IAQMS: 33

Annual

Ratio to AAQS

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24-Hour

% exceeding AAQS

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1-Hour

% exceeding AAQS

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Vehicle Population and Emission Load

Vehicle Population (in million)

Year

Emission Load Shares (%)

NOx 71% 71% 71%
SO2 21%
PM 25%

Industry  Domestic  Vehicle

Pass Car  Truck  Bus  MC
Air Quality Assessment Methodology

SECONDARY DATA

- Ambient Air Quality
- Meteorology
- Emission Inventory
- Emission Reduction Strategy

Isopleth of 1998

Meteorology Model

Emission Model

Dispersion Model

Validation

Isopleth of Model

Scenario Development

Ambient Air Quality Estimation

Impact Analysis
Health Impact & Economic Value of Air Quality Methodology

Based On OSTRO Approach

Dose-Response Parameter → Ambient Air Quality → Calculate Number of Cases → Economical Impact

Derived From Air Quality Simulation
Problem Identification

- Unleaded gasoline
- Sulfur content reduction
- Fuel standard setting
- Alternative fuel
- Pricing mechanism
Problem Identification

  Conflicting mandate:
  - car-worthiness vs environment compliance
- **In use vehicle: local initiatives to conduct I/M**
- **Emission standard vs fuel specification**
- **Harmonization of standard within Asian region**
- **Introducing catalytic converter and diesel traps**
Problem Identification

Private vehicle I/M initiated in 4 cities:
- Centralized vs decentralized
- Authority delegation

Availability of existing automotive workshops

Lack of advanced technology to measure effectiveness

Ineffective existing I/M for heavy duty & public transport
Problem Identification

- Weak TDM
- Public transport
- Increased private vehicle use
- Under-funding of transport sector
- Non-motorize transport
- Lack of integrated transport & land use planning
Problem Identification

- **Fuel**
- **Vehicle Standard & Technology**
  - Legislation (Env., Traffic, Local Govt.)
  - Regulation (Air Pollution, Vehicle & Motorist, Regional Autonomy)
  - Monitoring (modeling, human resources)
  - Public awareness (weak commitment, funding limitation)
  - Enforcement (weak implementation, abuse of power)
- **IM Program**
- **Transport Planning**
- **AQM Governance**
### Proposed Action Plan (Interventions)

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<tr>
<th>Category</th>
<th>Proposed Actions</th>
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<tr>
<td><strong>FUEL</strong></td>
<td>1. Support implementation of lead phase-out program</td>
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<td><strong>Vehicle Standard &amp; Technology</strong></td>
<td>2. Reduce sulphur in fuel</td>
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<td><strong>Inspection &amp; Maintenance</strong></td>
<td>3. Promote CNG &amp; LPG</td>
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<td><strong>Transport Planning</strong></td>
<td>4. Introduce bio-diesel as alternative fuel</td>
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<td><strong>AQM Management</strong></td>
<td>5. Establish sound fuel pricing method &amp; subsidy</td>
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<td>6. Explore options for reformulated gasoline (RFG)</td>
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Proposed Action Plan (Interventions)

FUEL

1. Issue type approval emission standards

Vehicle Standard & Technology

2. Revice in-use emission standards

Inspection & Maintenance

3. Conduct public awareness
4. Develop infrastructure
5. Introduce catalytic converter

Transport Planning

AQM Management
Proposed Action Plan (Interventions)

**FUEL**

**Vehicle Standard & Technology**
1. Develop new government regulation on air pollution control
2. Develop I/M program for private vehicles at national level
3. Strengthen I/M implementation in Jakarta
4. Enhance existing I/M test for public vehicle
5. Develop new inspection technology

**AQM Management**

**Transport Planning**
Proposed Action Plan (Interventions)

FUEL

Vehicle Standard & Technology
1. Review and refine transport master plan
2. Conduct development of public transport
3. Establish good governance in transportation
4. Encourage use of non-motorized transport (NMT)

Transport Planning

AQM Management
Proposed Action Plan (Interventions)

**FUEL**

**Vehicle Standard & Technology**
1. Develop legislation on mobile source air pollution control
2. Develop regulation on mobile source air pollution control
3. Strengthen air quality monitoring

**Inspection & Maintenance**
4. Enforcement
5. Conduct awareness raising program

**Transport Planning**

**AQM Management**
6. Develop institutional capacity
Scenario of Policy Simulation

Base case (without any counter measures)
1. Establish new-type vehicle emission standard (SE)
2. Introduce catalytic converter to Jakarta's Taxis (CC)
3. Implement I/M program for passenger car using idle test (IM)
4. Develop public transport (PT)
Comparison of Emission Impact

SE: Standard (Emission)  IM: Inspection & Maintenance
CC: Catalytic Converter  PT: Public Transport

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Estimated Health Impact (2015)
Implementation Arrangements and Follow Up

A. Strengthen MEB
   1. Setting up a formal work mechanism for MEB
   2. Providing funds for the continuation of MEB
   3. Set up coordination work among sectors and agencies
   4. Develop MEB linkages with similar activities

B. Determine the Sequence and Timing of Implementation

C. Activities Preparation