

# CLEAN AIR ACTION PLANNING

## DEVELOPING A CLEAN AIR ACTION PLAN FOR JAKARTA

### CLEAN AIR ACTION PLAN DEVELOPMENT

A clean air action plan is a collection of regulations, policies and programs that intends to improve air quality and public health by identifying cost-effective measures to reduce emissions from various sectors. The action plan approaches vary depending on the context of cities and countries, as well as their needs and capacities to develop and implement the measures. In general, the main process of developing a clean air action plan can be summarized into four simple steps with stakeholder participation and communication being part of the whole process (Clean Air Asia, 2016):

<b>1. Assessment</b>	<i>This includes review and analysis of the status and trends of air quality, impacts on public health and the environment, information on key pollutants and sources of emissions, indicators of growth and their projections in future years, baseline emissions inventory for targeted pollutants, and projected levels of emissions</i>
<b>2. Action plan development</b>	<i>This step encompasses identification of different types of control measures on pollutant emission reduction, cost-effectiveness of the control measures, and co-benefits. This is a way to address the existing situation as well as future scenarios, with due consideration of projected population growth, demand and management of services, sector specific plans from municipal corporation and urban and industrial development agencies, and expected technological advancements.</i>
<b>3. Implementation and enforcement</b>	<i>This is a key step that requires clear institutional framework and responsibilities, stakeholder coordination and communication, political support, allocation of financial resources, technical capabilities, and review and improvement.</i>
<b>4. Review and improvement</b>	<i>Refers to the tracking and reporting on the implementation of measures and overall changes in emissions. It is important to identify monitoring mechanisms to enable review of the effectiveness of available control measures, and to determine if changes are needed to achieve greater reductions, address excessive costs or amend measures, as appropriate.</i>

### GOOD PRACTICES FOR DEVELOPING AN EFFECTIVE CLEAN AIR ACTION PLAN

- ✓ Drawing inputs from the assessment of air pollution sources and emission, ambient air pollution levels (adequately representing temporal and spatial variations), air quality goals (standards or target values), information on source apportionment and exposure assessment (through dispersion modeling), and international experiences;
- ✓ Evaluating source mitigation and control options, technical feasibility, and ease of implementation;
- ✓ Setting targets and timelines for actions;
- ✓ Discussing with stakeholders with the identification of their roles and responsibilities
- ✓ Addressing implementation issues such as institutional arrangements, infrastructure, financial resources (Clean Air Asia, 2016)

### What DKI Jakarta can do...

1. Use the results of the emissions inventory, dispersion modeling, and exposure assessment developed under the Breathe Easy Jakarta project, as well as the existing air quality monitoring data, as baseline information for a clean air action plan.
2. Create a road map for the development of the clean air action plan. This will be used in identifying priority areas in air quality improvement or maintenance and will be the next step for the local government and its partners. A road map will be useful for identifying parties and their responsibilities in the clean air action planning and implementation process.
3. Provide air quality information to ensure public awareness of any air quality issue and to build up public participation in the planning and implementation process.

## CASE STUDIES ON CLEAN AIR PLANNING DEVELOPMENT AND IMPLEMENTATION

### PERFORMING SHORT-TERM MONITORING TO SUPPLEMENT AVAILABLE AIR QUALITY DATA (ILOILO CITY, PHILIPPINES)

The Air Quality Division of the national Environmental Management Bureau operates two air quality monitoring stations in Iloilo City, Philippines. One of the stations measures total suspended particulate while the other measures PM<sub>10</sub>. The two monitoring stations are considered roadside monitoring stations due to their proximity to main roads. However, data from these stations is insufficient to assess air quality in the city at large.

With support from a regional project, a clean air plan team conducted short-term air quality monitoring to determine the ambient air quality at five sites across the city. The monitoring involved measurement of PM<sub>10</sub>, nitrogen dioxide, carbon monoxide, and ozone using portable sensors and monitors. A location within the local university campus served as the background monitoring station during this activity to help contextualize the results. The team found there were exceedances of national 8-hour ozone standards at three sites. However, due to the very limited number of sampling days, it was recognized that these results may not be representative. The other measured pollutants did not exceed their respective national standards.

In assessing what challenges a clean air action plan would need to address in Iloilo City, the short-term air quality monitoring results were considered in the context of socio-economic conditions and trends. Monitoring results that pointed to a potential ozone problem seemed to fit with increasing urbanization, a booming economy, a growing number of vehicles on the road and intensifying energy consumption. These factors, together with an emissions inventory that estimated high levels of ozone-producing nitrogen oxides and hydrocarbons coming from motor vehicles, pointed to the need for a clean air action plan as Iloilo City continues to develop. The information also helped the partners prioritize transport-related strategies (ASEAN-GIZ, 2016).

## CLEAN AIR PLAN DEVELOPMENT (PALEMBANG CITY, INDONESIA)

The City of Palembang completed its first clean air action plan in 2013 through the ASEAN-GIZ project *Clean Air for Smaller Cities in the ASEAN Region*. The process involves:

- **Roadmap development** which documents some key issues and challenges facing Palembang’s air quality at present and in the future, and describes the data and analytical requirements, time frame, as well as resources needed to establish a technically sound and practical clean air action plan for the city;
- **Vision and goal setting** through a participatory process;
- **Creation of an institutional framework for clean air action plan**, which consists of the establishment of a Technical Team and a Guidance Board to guide the process of developing and implementing the plan.
- **Air quality monitoring improvement** to provide information on the status of the air quality in the city;
- **Emissions inventory** which identified the industrial and transport sector as the main contributors; and
- **Clean air action plan development** with a list of measures also submitted for integration in the mid-term development planning for 2013-2018 and GHG mitigation plan on the provincial level. The control measures proposed in CAAP Palembang included six transportation control measures and one stationary control measure (Clean Air Asia, 2016).

### Lessons learned in the clean air action plan development process for Palembang City

- ❖ There was limited data for detailed assessment (e.g., emissions reduction cost-effectiveness);
- ❖ The recent election and major shift in bureaucracy necessitate reiteration of political commitment by the city government;
- ❖ There was limited participation from civil society due to lack of interest;
- ❖ There was a need for a formal process for CAAP adoption in order to buy-in commitment of various stakeholders;
- ❖ The CAAP should fit the government development planning cycle for integration in the development plans; and
- ❖ The CAAP matrix (overview of control measures) should serve as a quick reference for integration in the development plans by policy-makers.

## INTEGRATION OF CLEAN AIR MEASURES TO DEVELOPMENT PLANS (CHIANG MAI, THAILAND)

In order to boost the impact of Chiang Mai’s clean air action plan as it moved into its implementation stage, a number of the plan’s measures were integrated into the city’s other key plans, which guide Chiang Mai’s investments and policies. For example, roadside vehicle emission testing and delivery of T4CA courses have been included in the city’s annual action plan. Construction of bicycle lanes and establishment of a bicycle sharing system have also been integrated into the 2015-2017 development plan.



All stakeholders participated in the visioning of the clean air action plan

Photo: ASEAN-GIZ, <http://www.citiesforcleanair.org/>

## REDUCING EMISSIONS FROM DIESEL VEHICLES (JAPAN)



Automobile pollution inspection officers checking vehicles for compliance with emission standards  
 Photo: JapanGov, the Official Website of the Government of Japan

One of the more interesting diesel control programs was initiated not by a national government but by local governments. In 1999, before the national government introduced stricter diesel vehicle regulations, the Tokyo Metropolitan Government established a “NO Diesel vehicle campaign”. This was followed a year later by enactment of the Tokyo Metropolitan Environmental Security Ordinance that had as its centerpiece diesel vehicle regulations. The regulations require in-use diesel vehicles that do not satisfy particulate matter (PM) emissions standards to be retrofitted with emission control

systems; otherwise the vehicles cannot be driven in Tokyo. This was accompanied by a suite of other measures designed to stop idling; prohibit use of fuel oils that

discharge a greater amount of PM; and deploy vehicle pollution regulators to identify violating vehicles. Importantly, similar regulations were enforced by major prefectures and cities in the Greater Tokyo Area, and other prefectural governments (e.g., Osaka Prefecture and Hyogo Prefecture) also adopted comparable measures, leading to complementary national diesel reforms (Clean Air Asia, 2016).

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### BREATHE EASY JAKARTA

Supported by: **United States Environmental Protection Agency**



Implementing partners:




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