



# Capacity Development Project for Air Pollution Control in Ulaanbaatar City, Phase 3 in Mongolia

News Letter Vol. 1: Project Outline (February, 2019)



Top Left: Air pollution from aerial in December 2014

Top Right: Air pollution: of one winter morning in December 2018.

Bottom Left: Air pollutant emission monitoring in dusty environment in February 2016

Bottom Right: Mobile emission monitoring utilizing remote sensing device in April 2017

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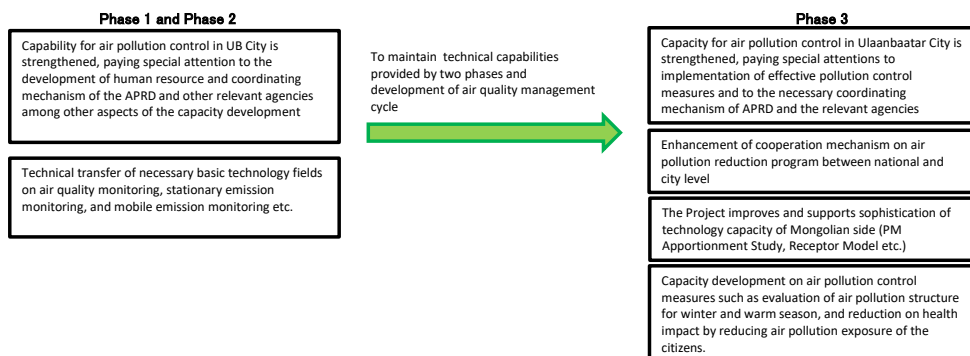
<http://www.aprd.ub.gov.mn/>

## Background of the Project

The air pollution in Ulaanbaatar (hereinafter UB) city is mainly caused by emissions from combustion of low quality coal. The major emission sources causing the severe air pollution in winter seasons in UB city due to the heating demand are 1) the 3 old coal fired power plants (Power Plant No.4, No.3 and No.2) for power and heat generation, 2) about 200 Heat Only Boilers (hereinafter HOBs), 3) Coal Fired Water Heaters, and 4) Ger stoves utilized at more than 130,000 households in Ger areas. In addition to the coal combustion, increasing vehicle emissions, wind-blown dust from ash ponds of the power plants, and other fugitive sources are also contributing to the severe air pollution.

Under the circumstances, the Government of Mongolia requested the Government of Japan to provide technical assistance through projects of JICA, ‘Capacity Development Project for Air Pollution Control in UB City’ from March 2010 to March 2013 and ‘Capacity Development Project for Air Pollution Control in UB City Phase 2’ from December 2013 to June 2017.

Centering around the capacity development of APRD and other relevant organizations, major activities of the two phases included enhancements of capabilities of, air quality monitoring, stationary and mobile emission monitoring, PM speciation analysis and PM apportionment study, elaboration of emission control measures, and preparation of emission standard for pollutants. However, the capabilities for effective air pollution control measures elaboration and implementation still remain to be developed.



**Table 1: Flow of Technical Transfer from Phase 1 and Phase 2 through Phase 3**

Given these backgrounds, the Government of Mongolia requested ‘Capacity Development Project for Air Pollution Control in UB City Phase 3 (hereinafter the Project)’, and the Government of Japan approved the implementation of the Project from 2018. The Project will be implemented for four and a half years from November 2018.

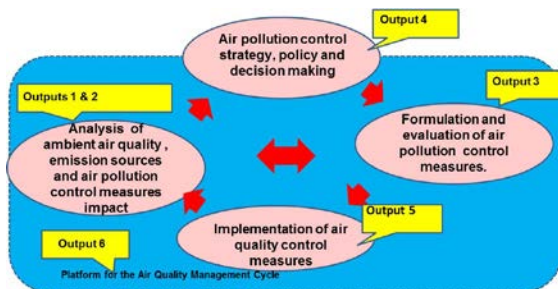
## Overall Goal, Purpose, and Expected Outputs

The content of the Project agreed with Ulaanbaatar city and JICA is shown in Table 1. In order to reach the overall goal by own effort of Mongolian side, such as Air Pollution Reducing Department (hereinafter APRD) of UB, Ministry of Environment and Tourism (hereinafter MET) and relevant agencies, in the near future after the Project completion, the Mongolian counterpart and JICA will jointly conduct the project activities to achieve these six outputs and the project purpose.

**Table 1: Overall Goal, Purpose, and Expected Outputs**

Overall Goal	Emission reduction at major emission sources is enhanced towards air quality improvement in Ulaanbaatar City.
Purpose of the Project	Capacity for air pollution control in Ulaanbaatar City is strengthened, paying special attentions to implementation of effective pollution control measures and to the necessary coordinating mechanism of APRD and the relevant agencies.
Output 1	Capabilities of emission monitoring for the major pollution sources and of air quality monitoring are strengthened.
Output 2	Capabilities to analyze and evaluate pollution structure of PM, SO <sub>2</sub> , and NO <sub>x</sub> throughout the year are strengthened.
Output 3	Capabilities of technical evaluation and preparation of air pollution control measures for implementation are strengthened.
Output 4	Decision making process for air pollution control is improved by utilizing the Professional agencies including APRD, NAMEM, and the relevant agencies.
Output 5	Air pollution control measures are enhanced for PM, SO <sub>2</sub> and NO <sub>x</sub> emission reduction at major sources.
Output 6	Legal framework, resource allocation and coordinating mechanism as a Platform for the Air Quality Management Cycle are strengthened for the Outputs 1 to 5.

In the course of achieving the purpose of the Project, the Project contributes to establish air quality management cycle reflecting the realities of the Mongolian side, consisting of the four steps (i) Analysis of air quality and emission source and evaluation of air pollution control measures, (ii) Air pollution control strategy, policy and decision making, (iii) Evaluation of air pollution control measures, and (iv) Implementation of air pollution control measures. The relating agencies will be able to work more effectively along with this cycle for air pollution control measures in Ulaanbaatar. Therefore, the Project intends to sustain technical capabilities developed by the previous two phases and to enhance coordinating mechanisms with relating agencies to implement the effective air pollution control measures by Mongolian side.



**Figure 2: Air Quality Management Cycle**

A distinction from the previous two phases is that the Project focuses on implementing pilot projects: (i) Improved fuel of coal in Ger area, and (ii) Air pollution control measures for automobile emissions.

In the pilot projects, the effectiveness of improved fuel on air pollution reduction will be evaluated. Improved fuel will be distributed in the selected target Ger areas in January 2020 and January 2021, and the effect of the improved fuel and current fuel will be compared.

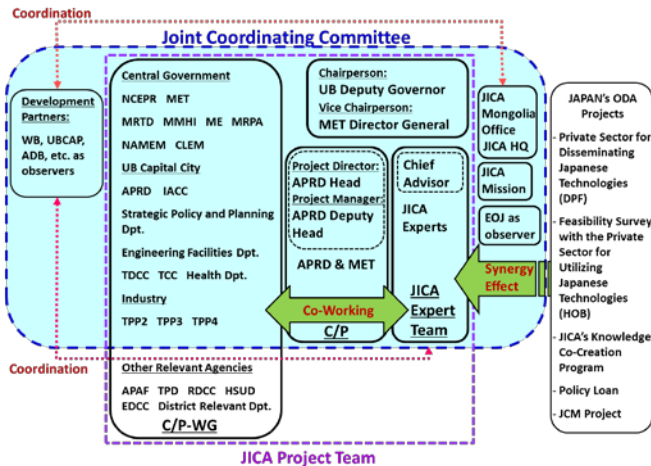
For vehicles, the pilot projects will include; (i) alleviating traffic jam by traffic signal control for emission reduction, (ii) education, establishment, and dissemination of Eco-Drive (driving technique by focusing on reduction of emissions), (iii) examination of PM emission reduction from diesel vehicles for disseminating DPF installation, and (iv) evaluation of low sulfur fuel for vehicles.

## Implementation Structure of the Project

Relevant agencies shown in Figure 3 and JICA Experts team will implement the Project. Counterpart (C/P) is APRD and MET, which are responsible agencies of the Project.

Counterpart Working Group (C/P-WG) consists of the related organizations in order to implement project activities. Director of APRD is the Project director, responsible for overall administration and implementation of the Project. JICA Experts will give necessary technical guidance, advice, and recommendations to the C/P and C/P-WG for the implementation of the Project. The Joint Coordinating Committee (JCC) is established in order to facilitate inter-organizational coordination, and the JCC chairman is Ulaanbaatar City vice Mayor. The JCC holds important meetings, where representatives from the relevant national agencies, Ulaanbaatar city level agencies, and JICA attend, and discuss and approve necessary issues on implementation of the Project, such as progress and issues of the Project activities.

The Project will closely be coordinated with the relevant donors' activities such as the Ulaan Baatar Clean Air Project (UBCAP) supported by the World Bank, Asia Development Bank (ADB), and other development partners. Also, the Project will coordinate with other JICA's relevant projects and programs to create synergy effects.



**Figure 3: Implementation Structure of the Project**

**Table 2: Members of JCC (Joint Coordinating Committee)**

Chairman: Vice Mayor		
Vice Chairman: Director General of Environment and Natural Resource Management Department, MET		
Secretary General: APRD Director		
	Mongolian Side	Japanese Side
1	National Committee for Environment Pollution Reduction Office	JICA Mongolia Office
2	Ministry of Mining and Heavy Industry, Fuel Policy Department	JICA Headquarter (Tokyo Office)
3	Ministry of Finance, Development Financial Department	JICA Experts
4	Ministry of Road and Transport Development, Policy and Planning Department, Standard and Normative Division	Relevant personnel appointed by JICA
5	Ministry of Urban Development, Policy and Planning Department	
6	Ministry of Energy, Fuel Policy Implementation Coordination Department	
7	National Agency for Meteorology and Environment Monitoring	
8	Mayor's Office, Strategic Policy and Planning Department	
9	Transportation Department of Capital City	
10	Inspection Agency of Capital City, Division of Air Quality Control	
11	Health Department of Capital City, Division of Social Health	
12	Mayor's Office, Engineering Facility Division	
13	Central Laboratory of Environment and Metrology	
14	Thermal Power Plant 3, Technical Policy division	
15	Thermal Power Plant 4, Technical Policy division	