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R9-18

2 March 2018

## Proposed Policy-Based Loan Ulaanbaatar Air Quality Improvement Program (Mongolia)

1. The Report and Recommendation of the President (RRP: MON 51199-001) on the proposed policy-based loan to Mongolia for the Ulaanbaatar Air Quality Improvement Program is circulated herewith.
2. This Report and Recommendation should be read with (i) *Country Partnership Strategy: Mongolia, 2017–2020—Sustaining Inclusive Growth in a Period of Economic Difficulty*, which was circulated to the Board on 12 April 2017 (DOC.Sec.M9-17); and (ii) *Country Operations Business Plan: Mongolia, 2018–2020*, which was circulated to the Board on 22 January 2018 (DOC.IN.12-18).

For Inquiries: Maria Pia Ancora, East Asia Department  
(Ext. 5991)  
Said Zaidansyah, Office of the General Counsel  
(Ext. 5420)



# Report and Recommendation of the President to the Board of Directors

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Project Number: 51199-001  
February 2018

## Proposed Policy-Based Loan Mongolia: Ulaanbaatar Air Quality Improvement Program

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Asian Development Bank

## **CURRENCY EQUIVALENTS**

(as of 13 February 2018)

Currency unit	–	togrog (MNT)
MNT1.00	=	\$0.000416
\$1.00	=	MNT2,401.00

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
GDP	–	gross domestic product
HOB	–	heat-only boiler
IAP	–	implementation action plan
IMF	–	International Monetary Fund
MOF	–	Ministry of Finance
PBL	–	policy-based loan
PM <sub>2.5</sub>	–	particulate matter of less than 2.5 micrometers in diameter
SDG	–	Sustainable Development Goal
TA	–	technical assistance

## **NOTE**

In this report, "\$" refers to United States dollars.

<b>Vice-President</b>	Stephen Groff, Operations 2
<b>Director General</b>	Indu Bhushan, East Asia Department (EARD)
<b>Director</b>	Qingfeng Zhang, Environment, Natural Resources, and Agriculture Division, EARD
<b>Team leader</b>	Maria Pia Ancora, Climate Change Specialist, EARD
<b>Team members</b>	Tuul Badarch, Senior Project Officer (Infrastructure), Mongolia Resident Mission, EARD
	David Boland, Environmental Economist, EARD
	Giacomo Giannetto, Principal Financial Sector Specialist, EARD
	Arnaud Heckmann, Senior Urban Development Specialist, EARD
	Na Won Kim, Senior Environment Specialist, EARD
	Declan Magee, Senior Country Economist, EARD
	Mary Dianne Rose Molina, Senior Operations Assistant, EARD
	Ongonsar Purev, Senior Environment Officer, Mongolia Resident Mission, EARD
	Frank Radstake, Principal Water Resources Specialist, Sustainable Development and Climate Change Department (SDCC)
	Susann Roth, Senior Social Development Specialist (Social Protection), SDCC
	Nogendra Sapkota, Senior Social Development Specialist, EARD
	Shigeru Yamamura, Senior Energy Specialist, EARD
	Said Zaidansyah, Principal Counsel, Office of the General Counsel
<b>Peer reviewers</b>	Shakil Ferdausi, Environment Specialist, SDCC
	Anupma Jain, Senior Urban Development Specialist, Pacific Department
	Yongping Zhai, Chief of Energy Sector Group, SDCC

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## PROGRAM AT A GLANCE

1. Basic Data		Project Number: 51199-001	
Project Name	Ulaanbaatar Air Quality Improvement Program	Department/Division	EARD/EAER
Country	Mongolia	Executing Agency	Ministry of Finance
Borrower	Government of Mongolia		
2. Sector		ADB Financing (\$ million)	
Public sector management	Public administration		20.00
Energy	Energy sector development and institutional reform		60.00
Health	Health sector development and reform		10.00
Transport	Transport policies and institutional development		10.00
Water and other urban infrastructure and services	Urban policy, institutional and capacity development		30.00
Total			130.00
3. Strategic Agenda		Climate Change Information	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded	Adaptation (\$ million)	3.00
		Mitigation (\$ million)	35.00
		CO <sub>2</sub> reduction (tons per annum)	133,800
Environmentally sustainable growth (ESG)	Environmental policy and legislation	Climate Change impact on the Project	High
	Global and regional transboundary environmental concerns		
	Urban environmental improvement		
4. Drivers of Change		Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Civil society participation	Some gender elements (SGE)	
	Institutional development		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Urban	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG3, SDG7, SDG11, SDG13		
6. Risk Categorization:		Complex	
7. Safeguard Categorization		Environment: C Involuntary Resettlement: C Indigenous Peoples: C	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		130.00	
Sovereign Stand-Alone Policy-Based Lending (Regular Loan): Ordinary capital resources		130.00	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		130.00	

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed policy-based loan (PBL) to Mongolia for the Ulaanbaatar Air Quality Improvement Program.<sup>1</sup>

2. The Government of Mongolia has requested financial assistance from the Asian Development Bank (ADB) in the form of a PBL to address Ulaanbaatar's severe air pollution problem which (i) harms citizens' health, disproportionately affecting children and poor people; and (ii) results in significant health and economic costs, which are a long-term burden on the already weak national economy. The proposed program is grounded in the 2017–2025 National Program for Reducing Air and Environmental Pollution. The commitment to the PBL's implementation was conveyed by the Ministry of Finance (MOF) in the development policy letter (Appendix 3).

## II. PROGRAM AND RATIONALE

### A. Background and Development Constraints

3. Ulaanbaatar is the world's coldest capital, with temperatures regularly dropping below –20° Celsius in winter (October–March). It is also one of the most polluted cities in the world. During January 2018, levels of harmful fine particulate matter in the ambient air were nearly forty times the daily limits recommended by the World Health Organization.<sup>2</sup> These dangerous high levels of pollution are a seasonal fact of life for Ulaanbaatar's residents with severe health impacts. Medical costs, lost productivity, chronic illnesses, and shorter life expectancy affect the economy and quality of life of people in Ulaanbaatar, especially poor families who cannot afford proper nutrition and medical care. Children are particularly vulnerable to pollution.<sup>3</sup>

4. The air pollution problem in Ulaanbaatar stems from unplanned and inadequate urban development. In the past 20 years, Ulaanbaatar has witnessed rapid urban development due to the inflow of people who have looked for better lives in the capital city or have sought refuge after losing their livelihoods to more frequent and severe climate induced disasters in the countryside. The city core has expanded only marginally to accommodate the new migrants and a vast peri-urban area (named *ger* areas) has developed with no adequate public services such as water, sanitation, heat supply, and public transport.<sup>4</sup>

5. In *ger* areas, most households rely on the combustion of raw coal (or solid waste, for the poorest) for heating and cooking. Government and private buildings mostly rely on highly polluting and inefficient coal-fired heat-only boilers (HOBs).<sup>5</sup> These highly polluting energy systems are the

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<sup>1</sup> ADB. 2018. *Country Operations Business Plan: Mongolia, 2018–2020*. Manila.

<sup>2</sup> In January 2018, several peaks of particulate matter of less than 2.5 micrometers in diameter (PM<sub>2.5</sub>) higher than 1,000 micrograms per cubic meter (µg/m<sup>3</sup>) were recorded in the *ger* areas. In 2017 in Ulaanbaatar, the annual average of ambient PM<sub>2.5</sub> concentration was 75 µg/m<sup>3</sup>, i.e., nearly eight times the World Health Organization's recommended annual standard of 10 µg/m<sup>3</sup>.

<sup>3</sup> Pneumonia is a leading cause of childhood mortality and accounts for 51% of all-age respiratory disease hospital admissions. It is aggravated by exposure to air pollution. Other health impacts of air pollution on children include reduced fetal growth, preterm birth, impaired brain development, and reduced lung function leading to acute and chronic respiratory diseases. United Nations Children's Fund. 2016. *Understanding and Addressing the Impact of Air Pollution on Children's Health in Mongolia*. Ulaanbaatar.

<sup>4</sup> A *ger* is a traditional portable round tent covered with skins or felt and used as a dwelling by nomads in the steppes of East Asia (also known as *yurt*). *Ger* areas comprise traditional *gers* and houses often constructed with poor insulating materials. In 2000, there were 350,000 residents in the *ger* areas; in 2017 there were 800,000, or 219,000 households, representing about 60% of Ulaanbaatar residents.

<sup>5</sup> Because *gers* and *ger* area houses generally have short chimneys, the emissions have a significant impact on the local air quality in *ger* areas.

largest sources of air pollution, affecting the whole city; they contribute to an estimated 80% of ambient concentrations of inhalable particulate matter of less than 2.5 micrometers in diameter (PM<sub>2.5</sub>). Ulaanbaatar's central core, where jobs and services are concentrated, has seen an increasing number of private vehicles and highly polluting public transport buses. These sources are thought to be responsible for 10% of ambient PM<sub>2.5</sub>. Coal burning in the combined heat and power plants generating electricity and heat for the city contributes to 5%–6% of ambient PM<sub>2.5</sub>, and resuspension of unpaved *ger* road dust and combined heat and power plant fly ash add 4%–5%.<sup>6</sup> Moreover, the city's topography and climate are conducive to poor air quality. Ulaanbaatar is surrounded by mountains which, in combination with cold, dry air in the autumn and winter months, traps the air near the surface in and around the city, preventing dispersion of the pollution.

6. Inadequate urban and energy planning and insufficient investment in infrastructure often result in haphazard urban development, which leads to air pollution and unlivable cities. In Ulaanbaatar, these conditions are exacerbated by declining economic growth and fiscal budget constraints that leave very few resources for the government to tackle the problem.

7. Mongolia's economy is recovering from its latest budgetary crisis, triggered in 2014 by declining foreign direct investment, falling commodity prices, and growth moderation in the People's Republic of China (Mongolia's biggest trading partner), which prompted a deceleration in gross domestic product (GDP) growth from 17.3% in 2011 to 1.2% in 2016. The implementation of an International Monetary Fund (IMF) program, which aims to restore debt sustainability and improve fiscal and monetary management, has had a positive impact on the economy, which has seen growth recover solidly to 5.1% in 2017.<sup>7</sup>

## **B. Policy Reform and ADB's Value Addition**

8. Amid efforts to stabilize the economy, it is a social and political imperative to implement measures to curb air emissions from key sectors. Such measures can prevent another winter with high levels of air pollution and the resulting negative health impacts and ensure protection for the most vulnerable groups despite fiscal consolidation efforts under the IMF program.

9. **Government plans and ADB's policy dialogue.** In November 2016, the government renewed the composition of the National Committee for Reduction of Air Pollution, led by the prime minister and co-led by the minister for environment and tourism, and comprising vice-ministers and directors of relevant ministries and agencies. The national committee commissioned the preparation of the National Program for Reducing Air and Environmental Pollution 2017–2025, and the national program's implementation action plan (IAP). ADB's engagement in policy dialogue started in March 2017, when the national program was approved. Extensive consultations were held with key implementing agencies and development partners to reach understanding and agreement on needed reforms.

10. The national program's overall aim is to update and develop urban plans and increase the quality of urban infrastructure.<sup>8</sup> The IAP, intended as the implementation instrument of the national program, specifies responsible institutions and officials, time frames, and the budget of

<sup>6</sup> Government of Mongolia. 2017. *Mongolia National Program for Reducing Air and Environment Pollution*. Ulaanbaatar.

<sup>7</sup> In May 2017, the IMF approved a 3-year Extended Fund Facility for Mongolia of \$434.3 million to support the country's economic reform program. ADB and other financing partners have committed to provide further budgetary support linked to policy actions and project support for a total financing package totaling approximately \$5.5 billion. ADB is coordinating closely with the IMF and other development partners on the Extended Fund Facility.

<sup>8</sup> The national program was approved on 20 March 2017.



the program. The IAP includes actions such as (i) implementing a free night-time tariff electricity policy to encourage *ger* area households to use electric stoves for heating, (ii) distributing cleaner heating fuels for household stoves to reduce air pollutant emissions, and (iii) expanding district heating networks while retiring small and inefficient coal-fired HOBs. Many of these measures had been planned in the past but were not prioritized, i.e., not funded and implemented, delayed by other political and economic priorities. Furthermore, these measures need to be supported by a robust and comprehensive policy framework: Mongolia's ambitious environmental regulations lack details for their implementation and are not supported by public awareness and participation.

11. **ADB's value addition.** Strengthening environmental sustainability is a pillar of ADB's country partnership strategy for Mongolia.<sup>9</sup> ADB will support efforts to reduce Ulaanbaatar's air pollution and greenhouse gas emissions under the national program by helping the government prioritize and deliver its IAP commitments based on cost-effective policy actions.

12. With the national program, the government has signaled the need and intent to address the serious air pollution problem. ADB's program will enhance the national program IAP's effectiveness and efficiency through policy dialogue and technical assistance (TA).<sup>10</sup> The \$1.1 million TA for the PBL will (i) guide and assist the government in delivering on its policy commitments and ensuring the quality of resulting reforms, and (ii) monitor their progress and impact.

13. By developing the capacity of relevant agencies and strengthening their coordination, the program will (i) promote complementary measures, (ii) encourage consistent policy objectives through measures that are financially and economically viable and sustainable, and (iii) minimize contradictory actions. The program will also ensure timely and adequate allocation of resources for the national program IAP. The program will achieve this by prioritizing and expanding public resources for air pollution reduction efforts, focusing on cost-effective actions, and catalyzing private sector finance.

14. **Alignment with ADB strategy.** The ADB program rests upon the national program and its IAP and is aligned with ADB's country partnership strategy for Mongolia, 2017–2020 (footnote 9), under which ADB is committing \$1.2 billion over the program period with a focus on three strategic pillars: (i) promoting economic and social stability, (ii) developing infrastructure for economic diversification, and (iii) strengthening environmental sustainability. It aligns with, complements, and strengthens ADB's ongoing urban development, environment, and health programs, e.g., ADB's (i) large urban sector investment for sustainable, livable, and greener *ger* areas, including extension of basic urban services and tailored urban planning and housing solutions; (ii) proposed assistance on urban waste management for the disposal or possible recycling of coal ash; and (iii) provisions for indoor air quality filtration systems in upcoming ADB-financed health and education infrastructure facilities.<sup>11</sup>

<sup>9</sup> ADB. 2017. *Country Partnership Strategy: Mongolia, 2017–2020—Sustaining Inclusive Growth in a Period of Economic Difficulty*. Manila.

<sup>10</sup> ADB approved transaction TA totaling \$250,000 for the program preparation and implementation of prior actions (TA 9383-MON: Ulaanbaatar Air Quality Improvement Program), with an additional fund of \$150,000 being processed. TA Special Fund resources are complemented by additional resources to engage experts for design and implementation as follows: Cities Development Initiative for Asia through ADB. 2013. *Technical Assistance for Supporting the Cities Development Initiative for Asia*. Manila (TA 8556-REG, \$250,000); ADB. 2015. *Technical Assistance for Promoting Sustainable Energy for All in Asia and the Pacific*. Manila (TA 8946-REG, \$360,100); and Urban Environmental Infrastructure Fund under the Urban Financing Partnership Facility (\$61,000).

<sup>11</sup> ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Mongolia for the Fifth Health Sector Development Project*. Manila; ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to Mongolia for the Ulaanbaatar Urban Services and*

15. The program will also leverage ongoing finance sector programs to support small and medium-sized enterprises undertaking green and energy efficient projects. The government will allocate new capital in the Credit Guarantee Fund of Mongolia to support the creation of new credit guarantee products designed to maximize potential air quality improvements and, in particular, aid businesses located in *ger* areas.<sup>12</sup> The program is also consistent with ADB's environment, urban, energy, and health operational directions and contributes to advancing Sustainable Development Goal (SDG) 3 (on health), SDG 7 (sustainable energy for all), SDG 11 (sustainable cities and communities), and SDG 13 (climate change).<sup>13</sup>

16. **Lessons learned.** The program builds on lessons learned from recent policy-based lending programs for Mongolia, which were smoothly implemented and improved the capacity of the government to successfully use this financing instrument. The program also draws from other development partners' experience in the sector in Ulaanbaatar, such as the importance of well-designed incentives for switching to cleaner heating technologies and mechanisms for their distribution. The proposed program design foresees the provision of financial incentives for cleaner energy sources, and mechanisms for their distribution, which are mindful of technical, social, cultural, and economic barriers. In addition, targeting use of cleaner fuel prior to investment in cleaner vehicles improves the cost-effectiveness of investments. Prior experience of providing cleaner vehicles to abate transport-related emissions without improving fuel quality, resulted in poor performance of these vehicles. This was the basis for a policy requirement under the current program on transitioning to cleaner fuels ahead of any technology abatement measures. The program's design also draws lessons from a recent ADB PBL on air pollution reduction in the People's Republic of China, by building a comprehensive policy framework with well-coordinated actions that are complemented by capacity building.

17. **Development partner coordination.** Other partners involved in the sector are the World Bank, the Government of Japan through the Japan International Cooperation Agency, the Swiss Development Cooperation, German development cooperation through the Deutsche Gesellschaft für Internationale Zusammenarbeit, the Millennium Challenge Corporation, and United Nations agencies.<sup>14</sup> The proposed program, with focus on air quality improvement, will reinforce ADB's leading role among development partners by enabling, implementing, or scaling up initiatives carried out by consulted donors, such as the Japan International Cooperation Agency's long-term engagement in raising air quality monitoring capacity of the Ulaanbaatar Municipality, the United Nations Children's Fund's program to promote pneumonia vaccination for children, and German development cooperation's extensive support to the Ministry of Energy on energy planning and energy efficiency standards for the building industry.

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*Ger Areas Development Investment Program.* Manila; ADB. 2015. *Technical Assistance to Mongolia for Preparing the Improving Access to Health Services for Disadvantaged Groups Project.* Manila; ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Mongolia for the Sustaining Access to and Quality of Education During Economic Difficulties Project.* Manila; *Proposed Loan to Mongolia for Improving Access to Health Services for Disadvantaged Groups Project; and Proposed Grant Assistance for the Solid Waste and Management Recycling* (included in the Country Operations Business Plan for Mongolia, 2018–2020).

<sup>12</sup> ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Loan and Technical Assistance Grant to Mongolia for the Supporting the Credit Guarantee System for Economic Diversification and Employment Project.* Manila.

<sup>13</sup> ADB. 2013. *Environment Operational Directions, 2013–2020.* Manila; ADB. 2009. *Energy Policy.* Manila; ADB. 2012. *Urban Operational Plan, 2012–2020.* Manila; ADB. 2017. *Climate Change Operational Framework 2017–2030: Enhanced Actions for Low Greenhouse Gas Emissions and Climate-Resilient Development.* Manila; and ADB. 2015. *Operational Plan for Health, 2015–2020.* Manila.

<sup>14</sup> Development Coordination (accessible from the list of linked documents in Appendix 2).

## C. Impacts of the Reform

18. The overarching development objective will be to improve public health and living standards by improving air quality in Ulaanbaatar. Three multisector key reform areas will be promoted through twenty policy actions: (i) improved IAP efficiency and air pollution control regulatory framework; (ii) key measures on air pollution reduction and health protection; and (iii) mechanisms for environmentally sound and integrated urban, energy, and transport systems. These reforms tackle the air pollution problem from multiple perspectives, i.e. governance, technology, finance, to promote changes, which are needed in the short-, medium- and long-term horizon.

19. **Reform area 1: Improved implementation action plan efficiency and air pollution control regulatory framework.** These policy actions are intended to support the implementation of the national program IAP. Several of these policy actions are intended to establish a stronger regulatory framework or enhance the current framework, including (i) approving the national program IAP to authorize policy actions to reduce air pollution; (ii) amending the national Law on Government Special Funds, Law on Air, and Law on Air Pollution Fees to enable the allocation of pollution fees for financing air quality improvement; (iii) modifying the excise tax law to enable preferential taxation for cleaner transportation fuels, which reduce air pollution and make it possible to operate advanced vehicle pollution controls (in Ulaanbaatar and nationwide); (iv) approving national standards for safety and efficiency of electric stoves and heaters; and (v) issuing technical standards for cleaner fuels. Other policy actions aim to enhance the public's awareness of (i) the links between fuel use, air pollution, and health impacts through education programs; and (ii) innovative heating and green building technologies at *ger* area information centers. The remaining policy actions focus on (i) studying the economic, technical, and social barriers to deploying efficient heating and green building technologies; and (ii) developing a strategy to upgrade emission and air quality monitoring networks to create comprehensive monitoring and analytical systems to measure progress.

20. **Reform area 2: Key measures on air pollution reduction and health protection.** The policy actions in this reform area guide future expenditures to prioritize cost-effective IAP actions for air pollution reduction and human health protection. The actions focused on air pollution reduction include (i) creating a mechanism to stimulate production and use of lower-emitting heating fuel by replacing approximately 80,000 tons of raw coal used for heating and cooking in the most polluted *ger* areas with more-efficient and cleaner-burning processed coal (such as semi-coke briquettes or equivalent lower-emitting fuel); and (ii) replacing inefficient, highly polluting coal-fired HOBs with distributed heating systems.<sup>15</sup> Even with these emission reduction measures, there is still an urgent need to reduce the health impacts of air pollution in Ulaanbaatar. The remaining policy actions aim to do that by providing for (i) the vaccination of children under the age of 5 years in Ulaanbaatar with pneumococcal conjugate vaccine; and (ii) the installation of insulation and air filtration in new and rehabilitated kindergartens, schools, and hospitals to reduce exposure to indoor air pollution (and enhance building energy efficiency) in Ulaanbaatar.<sup>16</sup>

<sup>15</sup> The Ulaanbaatar Air Pollution Reduction Department of the Municipality of Ulaanbaatar has divided the city into four zones, corresponding to air pollution (PM<sub>2.5</sub> and sulfur dioxide) levels (zone 1 being the most polluted, zone 4 the least).

<sup>16</sup> Indoor air pollution also poses significant health risks, especially for women and children. Two effective interventions to improve indoor air quality are insulation and air filtration systems (e.g., high efficiency particulate air filters). These actions reduce not only the heating needs for buildings, potentially reducing fuel use and the associated air pollution, but also the intrusion of polluted outside air. Installing insulation and air filters on new and rehabilitated schools, hospitals, and kindergartens will enhance indoor air quality in buildings where children and elderly adults spend a significant portion of their day.

21. **Reform area 3: Mechanisms for environmentally sound and integrated urban, energy, and transport systems.** These policy actions create a framework for better planning and provide incentives for cleaner fuels and greener development. Specifically, several policy actions lay the foundation for greener redevelopment of the city, especially in *ger* areas, including (i) developing a roadmap to transition to low-sulfur transportation fuel that will reduce emissions and improve the effectiveness of advanced pollution controls; (ii) requiring the application of energy efficiency standards and prohibiting on-site coal combustion at government-owned and/or operated buildings; and (iii) integrating urban and energy master plans with coherent land-use policies that consider anticipated climate impacts. The remaining policy actions provide incentives, through sustainable financing mechanisms, for a shift towards a more efficient, safer, and greener building industry by creating and funding credit guarantee products for small and medium-sized enterprises that support air pollution reductions.

22. The PBL will enable the government to implement government policy actions in a constrained fiscal environment that exists because of the implementation of the IMF program. The priority actions include urgent measures to curb air pollution in Ulaanbaatar, where residents are exposed to health risks resulting in economic impact of 18%–28% of Ulaanbaatar's GDP and 8%–13% of Mongolia's GDP.<sup>17</sup>

23. A quantitative estimation of economic benefits from the program is difficult because of several complex assumptions involved with the analysis, including (i) emission reductions due to the program and translation of the reduced pollutions to outdoor air quality, and (ii) identifying the number and geographical distribution of affected people and extent of their exposure to the improved air quality. However, it is expected that economic benefits of air pollution reduction will accrue to all Ulaanbaatar residents through improved air quality and reduced public health costs because of avoided mortality and morbidity, improved economic growth due to investments in technologies and insulation, increased employment opportunities to install and maintain greener technologies, and increased labor productivity.<sup>18</sup>

#### **D. Development Financing Needs and Budget Support**

24. The government has requested a regular loan of \$130 million from ADB's ordinary capital resources to help finance the program. The loan will be disbursed in two tranches. The first tranche of \$100 million will be withdrawn upon loan effectiveness. The second tranche of \$30 million will be withdrawn upon achievement of the second tranche policy actions.<sup>19</sup>

25. The loan will have a 15-year term, including a grace period of 3 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan agreement. The average maturity is 12.1 years and no maturity premium is payable to ADB. The government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility based on these terms and conditions, and (ii) an undertaking

<sup>17</sup> National Secretariat for the Second Compact Agreement between the Government of Mongolia and the Millennium Challenge Corporation of the United States. 2016. *Mongolia Constraints Analysis*. Ulaanbaatar.

<sup>18</sup> Replacing HOBs with district heating can reduce particulate matter 10 micrometers or less in diameter emissions by approximately 130 tons each year. The replacement of HOBs with district heating (fueled by more efficient and cleaner coal burning in the combined heat and power plants) also contributes to the reduction of 133,800 tons of carbon dioxide emissions equivalent.

<sup>19</sup> ADB and the Economic Development Cooperation Fund of Korea are discussing possible co-financing for follow-up investment projects related, but not limited to, selected actions of the policy matrix in Appendix 4.

that these choices were its own independent decision and not made in reliance on any advice from ADB. The proceeds of the loan will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

26. The program will support efforts to improve Ulaanbaatar's air quality and related health outcomes. In determining the loan size, consideration was given to the importance of (i) supporting the government's macroeconomic and fiscal stabilization program, while also considering the economic and social cost of not undertaking effective measures to address air pollution in Ulaanbaatar; and (ii) the fiscal savings realized through prioritization of necessary urgent measures.

27. **Proposed financing modality.** The stand-alone PBL will be provided in two tranches with the funds front loaded to ensure that essential near-term policy actions are implemented quickly despite tighter fiscal policy. The financing modality is justified to address the urgent need of protecting the health of citizens, especially the children and poor in Ulaanbaatar, and reduce budget expenditures related to medical costs associated with health impacts. The first tranche of \$100 million is linked to 10 cost-effective measures to address air pollution in Ulaanbaatar, protecting families most affected by air pollution and avoiding significant economic and social costs. These measures entail higher costs and are also the most politically sensitive, showing the government's commitment to the proposed reforms. The second tranche of \$30 million will be linked to 10 policy actions that lay the foundation for a longer-term policy framework while implementing actions for the subsequent winter.

## E. Implementation Arrangements

28. The MOF will be the program's executing agency, heading an ad hoc working group overseeing and coordinating the timely implementation of the policy actions by the implementing agencies: the Ministry of Environment and Tourism, the Ministry of Construction and Urban Development, the Municipality of Ulaanbaatar, the Ministry of Energy, the Ministry of Road and Transport Development, the Ministry of Mining and Heavy Industry, and the Ministry of Health.<sup>20</sup>

29. Implementation is from 1 March 2017 to 30 November 2018. ADB will assess program implementation through periodic progress reports submitted by the MOF and will field missions to confirm the fulfillment of policy actions for tranche releases. ADB and development partners will closely coordinate to ensure that there is no overlap or duplication of activities during program implementation.

## III. DUE DILIGENCE

### A. Governance

30. **Public financial management.** Procyclical fiscal management, optimistic revenue forecasts, and the misalignment of public expenditure and strategic priorities are major public financial management challenges in Mongolia. Poor windfall revenue management and frequent budget amendments have undermined efforts to strengthen strategic guidance for the annual budget process and reduce vulnerability to the boom–bust economic cycle. In addition to greater countercyclical fiscal discipline, budget preparation and public expenditure need to be better aligned with policy priorities.

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<sup>20</sup> The working group shall be led by the MOF's vice-minister.

31. This PBL is part of strong collaborative efforts between ADB and other development partners under the framework of the IMF's Extended Fund Facility. Specifically, the Extended Fund Facility program will help improve public financial management by (i) working with the government to significantly curtail off-budget expenditures; (ii) creating a fiscal council to provide independent budget forecasts and costings of new policy proposals; (iii) allowing the government sole authority to determine the total amount of spending in the budget; and (iv) granting the MOF the authority to approve proposals to the Cabinet that have a budgetary cost. For this project, the MOF is responsible for ensuring that financial commitments are included as budget line items in the state budget and will ensure that the policy actions are implemented by the implementing agencies. Therefore, although this PBL does not target public financial management directly, it is closely coordinated with efforts to strengthen public financial management under the IMF program.

32. **Corruption.** Major corruption risks include weak institutions and enforcement, lack of capacity of integrity institutions, political interference, lack of transparency and accountability, and the prevalence of conflicts of interest. The policy actions under the IMF-led program and monitoring indicators would ensure strict compliance with the program objectives and thereby minimize risks. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government.

33. **Environmental management and governance.** Mongolia generally has adequate environmental protection laws and standards, but their implementation and enforcement has been challenging, partly because of limited capacity and coordination of implementing agencies. The program addresses this challenge in two ways: (i) establishing economic incentives to encourage and/or facilitate private action (e.g., credit guarantee funds to support air pollution reductions, and changes to the excise tax law to provide incentives for cleaner transportation fuels), and (ii) providing fiscal resources to facilitate environmental policy enforcement (e.g., strategy to upgrade Ulaanbaatar air quality and the emission compliance monitoring network). In addition, the program includes TA to build capacity for environmental management and governance.

## **B. Poverty and Social**

34. The poverty rate in Ulaanbaatar declined from 25.8% in 2011 to 16.4% in 2014. However, years of progress were erased as the poverty rate jumped to 24.8% in 2016,<sup>21</sup> due in part to plummeting GDP growth and increasing unemployment. The negative impacts caused by indoor and outdoor air pollution may aggravate these poverty rates through poor health and living standards, high medical costs, lost productivity, chronic illnesses, and shorter life expectancy. The poor people living in *ger* areas and other parts of the city are more vulnerable to air pollution, as they normally have (i) limited access to public information on air quality, (ii) living and working places prone to or lacking any protection against air pollution, and (iii) little choice of working hours and places. Often, they cannot afford good medical prevention or treatment for pollution-related health problems. The program will result in improved air quality, which in turn will have significant positive impacts on public health and well-being. It will particularly benefit children and the elderly, who are most vulnerable to cardiovascular and respiratory diseases. Income loss from restricted economic activities because of poor air quality will be reduced, thereby increasing work productivity in Ulaanbaatar.

35. **Gender.** Women face greater risks of poor health because of air pollution. Because of their traditional roles as the primary users of household energy sources, women suffer more from inefficient and polluted household energy. Women are expected to benefit from cleaner sources

<sup>21</sup> Mongolian National Statistics Office. 2017. [www.nso.mn](http://www.nso.mn) (accessed 26 October 2017).

of energy for heating homes and from having healthier children and elderly family members, which will reduce their caretaking time. The program has been categorized by ADB as having some gender elements, and the policy matrix includes the following gender measures: (i) 50% women participation in public awareness; (ii) targeting the poor, including households headed by women, in distribution of semi-coke briquettes or lower-emitting fuel; and (iii) including gender analysis in the study on innovative heating technologies.

### C. Safeguards

36. Program activities are confined to policy reforms, and their benefits will accrue to all Ulaanbaatar residents. None of the policy actions will result in or lead to involuntary resettlement or adversely affect indigenous peoples.<sup>22</sup> No adverse environmental impacts have been identified and, as such, the program is categorized C for the environment, involuntary resettlement, and indigenous peoples.

37. The PBL adopts a systematic, multisector approach to address the air pollution problem from short-, medium-, and long-term perspectives. The provision of 80,000 tons of cleaner coal is a key short-term policy, which can significantly reduce air pollution; the longer-term development of the *ger* areas will reduce the urgency of this measure. The ADB TA will aid in the design and monitoring of effective, transparent, and accountable distribution of high-quality lower-emitting coal, significantly reducing pollution locally and creating both demand and supply for cleaner coal, thereby ensuring sustainability of the policy (footnote 10). In addition, expanding the heating network will create opportunities to connect *ger* households and other buildings to district heating, further reducing traditional air pollutants and greenhouse gas emissions through the retirement of HOBs (footnote 18). Positive environmental impacts also include co-beneficial climate mitigation through short-lived climate pollutants (i.e., black carbon) emission reductions.<sup>23</sup>

38. Other policy actions, such as on upgrading air quality monitoring systems, may further reduce emissions by improving regulatory enforcement and environmental supervision, but their actual contribution is difficult to quantify. Hence, the team adopted the proportionality approach to estimate the climate finance for the program, considering two policy actions in tranche 1 and four policy actions in tranche 2 contributing towards climate mitigation.<sup>24</sup>

39. Climate change risks—direct and indirect—have been mitigated by including policy commitment that urban and energy planning agencies take into consideration anticipated climate impacts in the rural areas on future migration patterns (i.e., increased frequency of climate-induced natural disasters) and, in the urban context, on the infrastructure (i.e., heat waves increasing peak electricity demands, or freezing temperatures compromising renewable energy supply systems).<sup>25</sup>

<sup>22</sup> Matrix of Potential Environmental and Social Impacts and Measures (accessible from the list of linked documents in Appendix 2).

<sup>23</sup> The reduction of black carbon due to the replacement of raw coal with semi-coke briquettes could save 117,000 tons of carbon dioxide emissions equivalent. These reductions cannot be accounted in the program's climate estimates, in compliance with current climate finance accounting guidance.

<sup>24</sup> Policy actions 5, 10, 12, 13, 16, and 19 (Appendix 4). Policy action 20 is attributed to climate adaptation.

<sup>25</sup> Climate change is likely to intensify extreme weather events in Mongolia, including *dzudz*. a summer drought followed by a heavy winter snow. Recurring *dzuds* and droughts over the past decade, coupled with poor pasture management, have affected much of the rural population which migrated to Ulaanbaatar to seek refuge. The 2009–2010 *dzud* resulted in the loss of 25% of Mongolia's livestock population; in the 2015–2016 *dzud* 41% of Mongolia's herder population was affected and 1.1 million livestock perished. ADB. 2016. *Grant Assistance Report: Proposed Administration of Grant to Mongolia for the Strengthening Community Resilience to Dzud and Forest and Steppe Fires Project*. Manila.

## D. Risks and Mitigating Measures

40. The integrated benefits and impacts of the program are expected to outweigh the costs. Major risks and mitigating measures are summarized in the table and described in detail in the risk assessment and risk management plan.<sup>26</sup>

**Summary of Risks and Mitigating Measures**

<b>Risks</b>	<b>Mitigating Measures</b>
Climate-change-induced disasters in the countryside trigger migration to Ulaanbaatar which outpaces the speed of the program's implementation.	Risk has been mitigated by including a policy commitment, taking into consideration anticipated direct and indirect climate impacts in urban and energy planning. Ongoing related technical and financial assistance by ADB, the World Bank, and the Government of Japan will strengthen the resilience of rural livelihood to climate disasters.
Continuing economic weakness prevents the Government of Mongolia from prioritizing the air pollution reduction agenda in Ulaanbaatar.	Unexpected deterioration of the external environment would require additional monitoring to ensure that resources are not reallocated to priorities other than air pollution reduction. However, the IMF's Extended Fund Facility and associated multilateral external financing are expected to stabilize the economy and sustain long-term growth.
Changes in political priorities impair the reform program.	There will be continued engagement with the government, including ADB's Management intervention, and close coordination with development partners, to support political commitment on the program.
Corruption	The policy actions under the IMF-led program and monitoring indicators will ensure strict compliance with the program objectives and thereby minimize risks.

ADB = Asian Development Bank, IMF = International Monetary Fund.

Source: Asian Development Bank.

## IV. ASSURANCES AND CONDITIONS

41. The government has assured ADB that implementation of the program shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement, as described in detail in the loan agreement. The government has agreed with ADB on certain covenants for the program, which are set forth in the draft loan agreement. No disbursement shall be made unless ADB is satisfied that the government has completed the policy actions specified in the policy matrix relating to the program.

## V. RECOMMENDATION

42. I am satisfied that the proposed policy-based loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and, acting in the absence of the President, under the provisions of Article 35.1 of the Articles of Agreement of ADB, I recommend that the Board approve the loan of \$130,000,000 to Mongolia for the Ulaanbaatar Air Quality Improvement Program, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, for a term of 15 years, including a grace period of 3 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board.

Stephen Groff  
Vice-President

28 February 2018

<sup>26</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).



## DESIGN AND MONITORING FRAMEWORK

<b>Country's Overarching Development Objectives</b> Public health and living standards in Ulaanbaatar improved (National Program for Reducing Air and Environment Pollution, 2017–2025) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks</b>
<b>Effect of the Reform</b> Air quality in Ulaanbaatar improved	By 2019: Air quality in Ulaanbaatar improved, with annual ambient PM <sub>2.5</sub> concentrations lowered by 30% (2016 baseline: 90 micrograms per cubic meter)  The national total annual spending for air pollution reduction measures in Ulaanbaatar increased by at least 200% (2016 baseline: \$5 million)	Annual government reports	Climate-change-induced disasters in the countryside trigger migration to the city which outpaces the speed of the program's implementation.
<b>Reform Areas</b>  1. Improved implementation action plan efficiency and air pollution control regulatory framework	<b>Key Policy Actions</b> By January 2018: 1.1 The government approved the National Program for Reducing Air and Environment Pollution 2017–2025 and its implementation action plan. (2016 baseline: Not applicable)  1.2 Parliament approved amendments to (i) Law on Air, (ii) Law on Air Pollution Fees, and (iii) Law on Government Special Funds to enable the collection and use of fees for air quality improvement. (2016 baseline: Not applicable)  By November 2018: 1.3 The MOF submitted to the Cabinet a draft amendment to the Excise Tax Law to change the fuel classification system for taxation purposes. (2016 baseline: Not applicable)  1.4 At least 1,000 people (50% or more female) have improved understanding of air pollution measures and their health impact. (2016 baseline: Not applicable)  1.5 Strategy to upgrade Ulaanbaatar air quality and emission compliance monitoring prepared in collaboration with MUB and MRTD and approved by MET. (2016 baseline: Not applicable)  1.6 MOE and MUB prepared and submitted for approval to the relevant authority the final draft of the (i) energy efficiency standard for electric stoves and heaters; and (ii) emission standard for lower-emitting fuel. Both standards will	1.1 Government resolution   1.2 Approved amendments   1.3 Draft amendment and submission letter   1.4 (i) Program report(s), and (ii) Strategy document and Ministerial order   1.5 Strategy document and MET approval document   1.6 (i) New energy efficiency standard, and (ii) new emission standard for low-emitting fuel	Weak economic performance shifts government priorities away from the air pollution reduction emergency.  Reforms are discontinued because of changes in political priorities.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	take into consideration the affordability for the poor. (2016 baseline: Not applicable)		
2. Key measures on air pollution reduction and health protection	<p><b>Key Policy Actions</b> By January 2018:</p> <p>2.1 The government allocated budget to provide financial support for procuring 80,000 tons of semi-coke briquettes or lower-emitting fuel. (2016 baseline: 0)</p> <p>2.2 The government issued a resolution to replace inefficient and highly polluting coal-fired heat only boilers with district heating, electricity, or non-coal heating alternatives. (2016 baseline: Not applicable)</p> <p>2.3 MOF allocated the budget for extension of the district heating infrastructure enabling the retirement of 68 boilers. (2016 baseline: Not applicable)</p> <p>2.4 The government allocated budget to ensure vaccination with pneumococcal conjugate vaccine for about 40,000 children in Ulaanbaatar. (2016 baseline: 10,500)</p> <p>By November 2018:</p> <p>2.5 At least 80,000 tons of semi-coke briquettes, or lower-emitting fuel, distributed to households in Ulaanbaatar's <i>ger</i> areas, targeting the poor including female headed households. (2016 baseline: 0)</p> <p>2.6 The government allocated adequate budget for insulation and air filtration systems in new and rehabilitated kindergartens, schools, and hospitals in Ulaanbaatar. (2016 baseline: 0)</p>	<p>2.1 State budget line</p> <p>2.2 Government resolution</p> <p>2.3 State budget line</p> <p>2.4 State budget line and national health statistics</p> <p>2.5 (i) Procurement agreement, and (ii) Distribution plan</p> <p>2.6 (i) State budget line; and (ii) Donor funded project documents</p>	
3. Mechanisms for environmentally sound and integrated urban, energy, and transport systems	<p>By January 2018:</p> <p>3.1 The CGFM created new guarantee products to support investment by small and medium-sized enterprises in air pollution reduction products or services. (2016 baseline: 0)</p> <p>3.2 MOE and MUB jointly issued the action plan for coordinated energy and urban planning which accounts for climate impacts and for greenhouse gas emission reduction potential based on Ulaanbaatar's contribution for the achievement of Mongolia's NDCs.</p>	<p>3.1 Resolution by the board of the CGFM approving new guarantee product offerings</p> <p>3.2 Jointly approved action plan</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	<p>(2016 baseline: Not applicable)</p> <p>By November 2018:</p> <p>3.3 The MMHI, in collaboration with the MRTD and in consultation with relevant stakeholders, developed a roadmap for transitioning to low sulfur transportation fuel (i.e. Euro 5-equivalent fuel). (2016 baseline: Not applicable)</p> <p>3.4 The MCUD required all newly built government-owned and/or operated buildings in Ulaanbaatar to apply energy efficiency standards and prohibit use of on-site coal-fired boilers. (2016 baseline: Not applicable)</p> <p>3.5 MOE and MUB finalized a study on climate change adaptation to increase climate resilience of the action plan for coordinated energy and urban planning. (2016 baseline: Not applicable)</p>	<p>3.3 Draft roadmap</p> <p>3.4 Ministerial order</p> <p>3.5 Report</p>	
<b>Budget Support</b>  Asian Development Bank: \$130,000,000 (ordinary capital resources)			

CGFM = Credit Guarantee Fund of Mongolia, IAP = implementation action plan, MCUD = Ministry of Construction and Urban Development, MMHI = Ministry of Mining and Heavy Industry, MOE = Ministry of Energy, MOF = Ministry of Finance, MRTD = Ministry of Road and Transport Development, MUB = Municipality of Ulaanbaatar, NDC = Nationally Determined Contribution, and PM<sub>2.5</sub> = particulate matter of less than 2.5 micrometers in diameter.

<sup>a</sup> Government of Mongolia. 2017. *Mongolia National Program for Reducing Air and Environment Pollution*. Ulaanbaatar. Source: Asian Development Bank.

### **LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=51199-001-3>

1. Loan Agreement
2. Sector Assessment (Summary): Multisector
3. Contribution to the ADB Results Framework
4. Development Coordination
5. Country Economic Indicators
6. International Monetary Fund Assessment Letter<sup>1</sup>
7. Summary Poverty Reduction and Social Strategy
8. Risk Assessment and Risk Management Plan
9. List of Ineligible Items

### **Supplementary Documents**

10. Sector Assessment: Energy
11. Matrix of Potential Environmental and Social Impacts and Measures
12. Public Financial Management Performance

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<sup>1</sup> The International Monetary Fund (IMF) confirmed on 13 November 2017 that the IMF Country Report No. 17/396 may serve as the IMF assessment letter.

## DEVELOPMENT POLICY LETTER



## MINISTER OF FINANCE OF MONGOLIA

15160 S.Danzangiin gudamj 5/1,  
Zasgiin gazrin II байр, Чингэлтэй дүүрэг,  
Улаанбаатар, MONGOLIA  
Tel/Fax: (976-51) 26-02-47, <http://www.mof.gov.mn>

Mr. Takehiko Nakao  
President  
Asian Development Bank

Date 23.02.2018

Ref. 10-1/909

Dear President Nakao,

**Mongolia: Ulaanbaatar Air Quality Improvement Program  
Development Policy Letter**

The Government of Mongolia is engaged in continued dialogue with international financial organizations to seek their support to overcome the short-term difficulties challenging the Mongolian economy. The Government of Mongolia considers the support of the Asian Development Bank, our key development partner, essential to address the severe air pollution problem which afflicts Ulaanbaatar and (i) harms its citizens' public health, disproportionately children and poor people; and (ii) results in significant health and economic costs, which erode scarce resources. In this context, we request the assistance of the Asian Development Bank in the form of a policy-based loan in the amount of \$130 million to support efforts to improve Ulaanbaatar's air quality and air-pollution-related health outcomes.

By implementing cost-effective measures to address air pollution in Ulaanbaatar, protecting families most affected by air pollution and avoiding significant economic and social costs from the absence of the measures, the program will also lay the foundation for longer-term transition to cleaner energy systems and low-carbon urban development.

**Development Challenge**

Mongolia's economy is recovering from its latest financial crisis triggered in 2013 by plummeting foreign direct investment, falling commodity prices, and growth moderation in the People's Republic of China, Mongolia's biggest trading partner, which prompted a deceleration in gross domestic product (GDP) growth from 17.3% in 2011 to 1.2% in 2016 and 5.1% in 2017. Higher commodity prices and the return of foreign direct investment inflows are expected to improve the GDP in 2018. The implementation of an International Monetary Fund program, which aims at restoring debt sustainability and improving fiscal and monetary management, will boost growth in the medium-term.

Limited financial resources were devoted to stabilizing the economy and there has been insufficient investment in urban infrastructure. Due to the inadequate long-term urban and energy planning and land-use policies, part of Ulaanbaatar residents in the *ger* areas live in difficult environment, fueled by highly-polluting energy systems. In fact, households in *ger* areas rely on raw coal (or waste, by the poorest) combustion for heating and cooking, and some government buildings still rely on highly-polluting and inefficient coal-fired heat-only boilers (HOB).

During January 2018, levels of harmful fine particulate matter in the ambient air were about forty times the daily limits recommended by the World Health Organization, triggering an unprecedented response from the civil society. The high particulate concentrations have a significant impact on human health and the environment in Ulaanbaatar—approximately 10% of deaths in the city in 2009 were attributed to air pollution. Their health impacts—including medical costs, lost productivity, chronic illnesses, and shorter life expectancy—greatly contribute to poor health and living standards, especially for low-income families who cannot afford proper nutrition (and hence are less immune to diseases) and medical care. Children are particularly vulnerable to pollution impacts such as reduced fetal growth, preterm birth, pneumonia, impaired brain development, and reduced lung function leading to acute and chronic respiratory diseases.

Against this background, and on behalf of the Government of Mongolia, I would like to share the comprehensive policy actions already adopted to curb the air pollution emergency which afflicts our capital city, and plans to forcefully control emissions from highly polluting energy systems.

### **Key Air Pollution and Health Protection Measures**

Addressing these issues is a priority of the Government of Mongolia. Amidst efforts to stabilize the economy, it is a social and political imperative to implement measures to curb air emissions from key sectors. Such measures can prevent another winter with high levels of air pollution and the resulting health impacts, and ensure protection for the most vulnerable groups despite the overall fiscal consolidation. To support the implementation of the Government's stabilization plan it is vital to protect the vulnerable throughout the adjustment process, to promote fiscal savings realized through prioritization of necessary urgent measures, and to avoid economic and social cost of not undertaking effective measures to address air pollution in Ulaanbaatar, which is a long-term social and economic burden.

In order to address the emerging air pollution issue in the country, the Government of Mongolia established Clean Air Fund in 2011 with revenues from four types of fees for air quality improvement. Unfortunately, due to mismanagement, the Fund was effectively cancelled in 2015. This posed difficulties for the Government to then address the issue of air pollution as there was a lack of dedicated financial and organizational resources.

The new Government is putting great emphasis on addressing the issue of air pollution in Ulaanbaatar. As part of this effort, the Government approved for the first time the National Program for Reducing Air and Environmental Pollution 2017–2025 (the National Program) on 20 March 2017 followed by approval of the National Program's Implementation Action Plan (IAP), on 27 April 2017. Under the National Program, the Government is taking actions to establish the Air Pollution Reduction Fund to enable the collection and use of fees for air quality improvement, and prohibit the entrance of raw coal to Ulaanbaatar by April 2019 to promote and ensure the use of electric heating and clean solutions.

The National Program's overall aim is to update and develop urban plans and increase the quality of urban infrastructure. The National Program, approved by the Cabinet on 20 March 2017, will also (i) raise public awareness about pollution levels, (ii) support the



participation of citizens and business in combating pollution, and (iii) work to effectively implement laws that are already in place. The IAP is intended as the implementation instrument of the National Program by clearly specifying responsible institutions and officials, timeframes, and cost estimates. The IAP includes actions such as (i) implementing the zero-night time tariff electricity policy to encourage *ger* district households to use electric heating stoves, (ii) promoting cleaner fuel use such as semi-coke briquettes or lower-emitting coal for household stoves to significantly reduce air pollutant emissions, and (iii) expanding district heating networks while retiring small and inefficient coal-fired HOBs. It is estimated that the total cost of implementing the National Program would be over \$1.8 billion. The Government already increased the allocation for the above air pollution reduction measures in the 2018 state budget by over three times compared to 2016.

Given the limited fiscal space, policy actions to improve air pollution must focus on enhancing the IAP's effectiveness, by (i) requiring coordination among relevant agencies to (a) promote complementary measures, (b) encourage consistent policy objectives, and (c) minimize contradictory actions; (ii) ensuring adequate budget allocation for implementing the most urgent and high-impact policies; and (iii) encouraging investments by the private sector and international organizations.

The Government is committed to continued reform to enhance the effectiveness of the air quality management system in Ulaanbaatar. Steps will be taken to ensure long-term sustainable and integrated urban and energy planning that will lay the foundation for greener redevelopment of the city, especially its *ger* areas, and for incentivizing through sustainable financing mechanisms the shift towards a more efficient, safer, and greener building sector.

The Government acknowledges the value added of (i) developing a roadmap to transition to low-sulfur transportation fuel that will reduce emissions and improve the effectiveness of advanced pollution controls; (ii) requiring the application of energy efficiency standards and prohibition of on-site coal combustion at government-owned and/or operated buildings; (iii) creating and funding credit guarantee products for small- to medium-sized enterprises that support air pollution reductions; and (iv) integrating urban and energy master plans with coherent land-use policies to improve utility access, including district heating, and with due consideration to anticipated climate impacts.

Going forward, the improved socioeconomic structure should give great emphasis on air pollution prevention and control and the Government will take the leading role and engage with industries, markets, and civil society.

Mr. President, I would like to thank the Asian Development Bank for working closely with the Government of Mongolia in developing this Program. I wish to reiterate our full commitment and support to it.

Sincerely,



Ch. Khurelbaatar

## POLICY MATRIX

TRANCHE 1 1 March 2017 – 28 February 2018		TRANCHE 2 1 March – 30 November 2018	
Policy Actions	Implementation Status	Policy Actions	Implementation Status
<b>Reform Area 1. Improved implementation action plan efficiency and air pollution control regulatory framework</b>			
1. The government approved the National Program for Reducing Air and Environment Pollution 2017–2025 (National Program).	(Government resolution)		
2. The government (i) approved the IAP on the National Program; and (ii) submitted to the Parliament a progress report on the IAP.	(Ministerial order) (Progress report on the IAP) (Press Release)		
3. Parliament approved amendments to the (i) Law on Air, (ii) Law on Air Pollution Fees, and (iii) Law on Government Special Funds to enable the collection and use of fees for air quality improvement.	(Approved amendments)		
4. MOF submitted to the Cabinet a draft amendment to the Excise Tax Law to change the fuel classification system for taxation purposes.	(Draft amendment and submission letter)		
5. The government established an information center of innovative, low-carbon technologies for space heating and green buildings.	(Press release related to the operation of the information center)	11. The MET will (i) develop and implement an education and outreach program, targeting at least 50% female participation including female headed households, to increase awareness on air pollution, including the impact and reduction measures; and (ii) approve a strategy to upgrade Ulaanbaatar air quality and emission compliance monitoring networks, including cost requirements.	(Program report(s))  Strategy document and Ministerial Order



		12. The MCUD and MOE will (i) complete a study on barriers and opportunities to deploy innovative heating and green building technologies, such as heat pumps; and (ii) identify technologies for renewable energy pilot projects. The study will include a gender analysis, with the collection of sex-disaggregated data as well as gender-specific barriers to use new energy sources.	(Final report)
		13. MOE and MUB will prepare and submit for approval to the relevant authority the final draft of the (i) energy efficiency standard for electric stoves and heaters; and (ii) emission standard for lower-emitting fuel. Both standards will take into consideration the affordability for the poor.	(New energy efficiency standard)  (New emission standard for lower-emitting fuel)
<b>Reform Area 2. Key measures on air pollution reduction and health protection</b>			
6. The government allocated budget to provide financial support for procuring 80,000 tons of semi-coke briquettes or lower-emitting fuel.	(State budget line)	14. MOE will procure 80,000 tons of semi-coke briquettes, or lower-emitting fuel, for distribution to households in Ulaanbaatar <i>ger</i> areas, targeting the poor and female headed households.	(Procurement agreement)  (Distribution Plan)
7. The government issued a resolution to replace inefficient and highly polluting coal-fired heat only boilers with district heating, electricity, or non-coal heating alternatives; and MOF allocated the budget for extension of the district heating infrastructure enabling the retirement of 68 boilers.	(Government resolution.)  (State budget line)	15. The government will allocate the budget for the extension of the district heating infrastructure to enable the retirement of additional 71 heat-only boilers.	(State budget line and the Medium-term Budget Framework)
8. The government allocated adequate budget to ensure vaccination with pneumococcal conjugate vaccine for around 40,000 male and female children in Ulaanbaatar.	(State budget line)		

		16. The government will allocate adequate budget for insulation and air filtration systems in new and rehabilitated kindergartens, schools, and hospitals in Ulaanbaatar.	(State budget line) (Donor funded project documents)
<b>Reform Area 3. Mechanisms for environmentally sound and integrated urban, energy, and transport systems</b>			
		17. The MMHI, in collaboration with the MRTD and consultation with relevant stakeholders, will develop a roadmap for transitioning to low sulfur transportation fuel (i.e. Euro 5-equivalent fuel).	(Draft roadmap)
9. CGFM created new guarantee products to support investment by SMEs in air pollution reduction products or services.	(Resolution by the Board of the CGFM approving new guarantee product offerings)	18. MOF will inject sufficient capital to enable CGFM to (i) issue at least 10 such guarantees; or (ii) provide such guarantees for loans with minimum total value of no less than the equivalent of \$1,000,000.	(The Minister of Finance Decree and the relevant guarantee documents)
		19. The MCUD will require all newly built government-owned and/or operated buildings in Ulaanbaatar to apply energy efficiency standards and prohibit use of on-site coal-fired boilers.	(Ministerial Order)
10. MOE and MUB jointly issued the action plan for coordinated energy and urban planning which accounts for climate impacts and for greenhouse gas emission reduction potential based on Ulaanbaatar's contribution for the achievement of Mongolia's NDCs.	(Jointly Approved Action Plan)	20. MOE and MUB will finalize a study on climate change adaptation to increase the climate resilience of the action plan for coordinated energy and urban planning.	(Report)

CGFM = Credit Guarantee Fund of Mongolia, IAP = Implementation Action Plan; MCUD = Ministry of Construction and Urban Development, MET = Ministry of Environment, MMHI = Ministry of Mining and Heavy Industry, MOE = Ministry of Energy; MOF = Ministry of Finance; MRTD = Ministry of Road and Transport Development, MUB = Municipality of Ulaanbaatar, and NDC = Nationally Determined Contribution.