

MATRIX OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MEASURES

I. INTRODUCTION

A. The Program

1. The Government of Mongolia requested financial assistance from the Asian Development Bank (ADB) to support Ulaanbaatar, its capital city, to address the severe air pollution problem that (i) harms citizens' public health, disproportionately affecting children and poor people; and (ii) results in significant health and economic costs, a long-term burden on the already weak national economy.
2. In November 2016, the government renewed the composition of the National Committee for Reduction of Air Pollution and commissioned a National Program for Reducing Air and Environment Pollution 2017–2025 and its Implementation Action Plan (IAP).
3. A two-tranche, stand-alone policy-based loan is proposed to reduce Ulaanbaatar's air pollution and greenhouse gas emissions under the National Program framework by helping the government deliver its IAP commitments, prioritized based on cost-effectiveness. The policy matrix is in Appendix 1.
4. The policy-based loan comprises 20 policy actions, grouped under three reform areas:
 - (i) **Reform Area 1. Improved implementation action plan efficiency and air pollution control regulatory framework.** Policy actions to support the IAP implementation by enhancing the legal and regulatory framework to enable implementation of key actions and developing comprehensive monitoring and analytical systems to measure progress.
 - (ii) **Reform Area 2. Key measures on air pollution reduction and health protection.** Policy actions to guide future expenditures to prioritize cost-effective IAP actions for air pollution reduction and human health protection from air pollution.
 - (iii) **Reform Area 3: Mechanisms for environmentally sound and integrated urban, energy, and transport systems.** Policy actions to integrate the urban development and energy plans 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.

B. Purpose of this Report

5. An evaluation of potential direct or indirect environmental impacts, involuntary resettlement impacts, or impacts on indigenous peoples associated with policy actions to be supported by program loans has been carried out, in line with ADB Safeguard Policy Statement (SPS) requirements for policy-based loan.¹ The evaluation also assessed appropriate mitigation measures to address these identified impacts and integrates the mitigation measures into the program's design. The SPS also requires the preparation of a summary matrix of potential impacts of each policy action, together with appropriate mitigation measures, with a qualitative indication of the likely order of magnitude of each impact, and brief reasons for the judgment.

¹ ADB. 2009. *Safeguard Policy Statement*. Manila.

6. This report documents the evaluation of potential environmental, involuntary resettlement and indigenous peoples impacts for the program. A matrix of potential impacts and necessary mitigation measures for each policy action (covering both positive and potentially adverse impacts) has been prepared (Table 1), with a qualitative indication of the likely order of magnitude of each impact and the rationale for the judgment.

II. ASSESSMENT OF POTENTIAL IMPACTS OF POLICY ACTIONS ON ENVIRONMENT, INVOLUNTARY RESETTLEMENT AND INDIGENOUS PEOPLES

A. Methodology

7. The evaluation of potential environmental, involuntary resettlement, and indigenous peoples impacts, both positive and adverse, has been conducted based on (i) available information on the proposed policy actions and supporting studies and reports; and (ii) background information available in the public domain relevant to the policy areas and actions. Key program stakeholders were consulted by ADB staff and technical assistance consultants during program preparation. Further, a survey was conducted to understand the status, possibilities and solutions for air pollution reduction.

B. Environment

8. **Environmental benefits.** The program will issue new, or amend, existing policies which are clearly targeted at reducing air pollution and realizing environmental benefits. The program greatly contributes to the sustainable development goal (SDG) 11 to make cities inclusive, safe, resilient and sustainable. The program contributes also to advancing SDG 3 (on health), SDG 7 (sustainable energy for all), SDG 11 (sustainable cities and communities), and SDG 13 (climate change).² Based on the initial evaluation of potential impacts conducted using currently available information, implementing the program policies and achieving their targets is anticipated to have clear environmental benefits in terms of reduced air pollutants, which are anticipated to contribute to improvements in average ambient air quality in Ulaanbaatar.

9. For reform area 1 activities, the assessment of the proposed activities indicates that the overall regulatory framework to control the emissions will be improved, awareness raising strengthened, and the overall capacity of the government to monitor the ambient air quality in the city will be improved. An improved monitoring capacity will allow for better understanding of air pollution sources, distribution patterns and population exposure, and will enable tracking of the progress achieved under the proposed technical, economic, and institutional interventions for various sectors.

10. The assessment of the proposed activities suggests that the roadmaps for overall improvement of the ambient air quality are in place. These include (i) an outreach program aimed at schools and public offices to reduce to the overall exposure under poor and severe air pollution episodes for female staff and children; (ii) the promotion of efficient heating systems, use of

² The program supports the sustainable development goal 11: "by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, and municipal and other waste management". <http://www.un.org/sustainabledevelopment/>. Air pollution leads to significant health risks, including pneumonia. In Mongolia, pneumonia is a leading cause of childhood mortality and accounts for 51.0% of all-age respiratory disease hospital admissions. The policy action requiring Pneumococcal Conjugate vaccination will protect 40,000 children from pneumonia.

renewables, and green construction practices; (iii) a roadmap to leap frog to cleaner fuels (Euro 5) in the transport sector; and (v) regulatory framework to enable use of economic incentives, like preferential taxation, to accelerate the use of cleaner transport fuel. A change to Euro 5 or higher fuel standard would result in an immediate drop of up to 50% of the annual emissions from about 0.5 million vehicles in the city. Promotion of energy efficiency building standards and renewables to supplement the heating needs can result in an overall drop of about 0.8 million tons of annual coal demand from the heat only boilers (HOBs). A targeted campaign to reduce the exposure rates will have an immediate impact on morbidity, such as acute respiratory infections, among women and children (due to a compounded effect exposure to high outdoor and indoor air pollution) in the winter months. Premature mortality due to particulate pollution in the city is estimated at 2,000 cases per year.

11. For reform area 2, the assessment of the proposed activities indicates that will result direct reductions in fine particulate matter 2.5 micrometers or less in diameter, particulate matter 10 micrometers or less in diameter (PM₁₀), sulfur dioxide, and nitrogen oxide emissions, and subsequently ozone (a secondary pollutant). *Ger* area residents are exposed the most to higher pollution levels during winter months, due to use of coal and wood to supplement heating needs. While the city's average emission load from cooking and heating stoves is up to 40%, some of the *ger* areas experience up to 70%–80% of the annual emissions from cooking and heating stoves. The targeted replacement in pre-selected zones with 80,000 tons of coal with cleaner coal (such as semi-coke briquettes or equivalent lower emitting fuel), will result in pollution reductions in the *ger* areas, and in the overall city ambient air quality.³

12. The policy action to connect more *ger* areas to the district heating systems, especially to the zones with the highest contributions coming from HOBs, will have an immediate benefit to the *ger* residents. In 2015, HOBs consumed approximately 175,000 tons of coal, 2.7% of all coal combustion in Ulaanbaatar, and emitted approximately 3.0% of total annual PM₁₀ and 8.0% of secondary particulate matter 2.5 micrometers or less in diameter. Replacing 139 heat only boilers would reduce PM₁₀ emissions by an estimated 264 tons/year. However, this also means that the demand for heat generation at the power plants may increase, resulting in subsequent increase in emissions and air pollution. This should be countered with coordinated efforts to upgrade the overall boiler technology, emission control equipment, and reducing the heat transfer losses at the district heating systems.

13. For reform area 3 activities, the proposed improvements to reduce the need for heat in buildings will reduce the heat load on the power plants. In the urban area of the city, applying the guidelines to government buildings alone can reduce emissions by insulating buildings, switching to non-coal heating solutions, and ensuring that electric appliances are energy efficient.

14. The growing number of vehicles on the road with limited road infrastructure results in increasing congestion and idling times. While the total vehicle exhaust emissions are small compared to cooking, heating, and power plants, they still need priority to manage and reduce air pollution on the roads and reduce daily exposure rates. A preferential taxation scheme to import cleaner fuels would help the transport sector—responsible for up to 10% of the total emissions in the city. Introduction of Euro 4 or Euro 5 fuel for the on-road vehicles can result in a significant

³ Semi-coke coal briquettes have approximately 25% greater heat value than conventional coal and relative to an unimproved stove, emit approximately 70% and 91% less PM₁₀ when combusted in unimproved and improved stoves, respectively. Assuming semi-coke coal were targeted at *ger* households with unimproved stoves, replacing 442 tons of coal with semi-coke coal would reduce PM₁₀ emissions from unimproved stoves by 1 ton. Combusting semi-coke in the improved stove would reduce emissions further to 0.22 kilogram per ton of coal-equivalent, a 92.7% reduction.

reduction in the overall emissions in the city.⁴ The remaining policy actions will significantly reduce emissions in the *ger* areas and improve indoor air quality in public buildings.

15. **Potential adverse environmental implications.** The policy reforms supported by the ADB program will not have adverse impacts on the environment that go beyond impacts that are likely to have minimal or no adverse environmental impacts. As such, the program is categorized as C for environment safeguards in line with the SPS.

16. It is noted however that some policy actions, especially the replacement of the HOBs, may potentially trigger a concern on the future dismantling of the older facilities. While the disconnection is requested through the policy actions, the potential subsequent demolition and disposal of the HOBs needs to follow the newly approved Law on Waste Management (2017). This law regulates for the first time the demolition and construction waste, including potential hazardous waste in Mongolia. The government is aware of the risks of dismantling the HOBs and acknowledges that no practical or one-size-fits-all environmentally sound solution for the physical dismantling and disposal of the HOBs exist. The current government approach is to only disconnect the HOBs and leave the disconnected HOBs in place until satisfactory facilities and technological solutions are available in the country. This applies for those HOBs located in government complexes and private companies. The government was requested to ensure that such HOBs are removed in close coordination with the relevant environmental agencies, including the Special Inspection Agency, and following government's regulatory framework.⁵ ADB assistance to be provided in aid of policy fulfillment by implementing agencies will include a dedicated capacity building session on hazardous waste material disposal.

17. **Climate risk to the project.** The impacts of global climate change on regional air quality are considered not significant and are not expected to directly adversely affect the government's efforts to improve air quality. However, climate-induced disasters in the countryside could trigger migration to Ulaanbaatar which outpaces the speed of the program's implementation. Accordingly, the climate risk of the program is rated "high". This risk has been mitigated by including a policy commitment taken 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 rural livelihood's resilience to climate disasters, thereby preventing migration to the capital city.

C. Involuntary Resettlement

18. The policy actions are not expected to involve involuntary resettlement impacts. The policy actions focus on air pollution control regulatory framework, measures on air pollution control and health protection, and environmentally sound urban and energy planning. It is unlikely to include infrastructure construction involving involuntary land acquisition and resettlement impacts. The program has been categorized as C for involuntary resettlement.

⁴ The introduction of Euro 4-compliant transportation fuels would reduce PM₁₀ emissions by 155 tons/year at a cost of MNT16 billion, approximately MNT105 million/ton of PM₁₀ emissions reduced. These costs, however, could be recovered through a 6% increase excise taxes which totaled MNT321 billion in 2016.

⁵ Government of Mongolia. 2017. Ulaanbaatar Waste Management Improvement Strategy and Action Plan 2017–2030. Citation: '*The Ministry of Construction and Urban Development is responsible for the construction and demolition (C&D) waste stream. There is no existing framework or regulations addressing C&D waste but a Special Inspection Agency is drafting rules and regulations for the proper management of C&D waste, encompassing all aspects from collection, transportation, treatment, and recovery to disposal. Moreover, international organizations such as the European Commission, SWITCH-Asia, and the Economic Policy and Competitiveness Research Centre are supporting proper management of C&D waste and the greening of the construction industry in Mongolia.*'

D. Indigenous Peoples

19. The policy actions are not expected to involve impacts on indigenous peoples. The program supports policies to improve air quality that will benefit all residents in Ulaanbaatar City. It will not target or have differential impacts on any specific ethnic minority communities that would trigger ADB's indigenous people's policy requirements under the SPS. The program has been classified as category C for indigenous peoples.

III. IMPACT MATRIX

20. The matrix below sets out an evaluation of potential environmental, involuntary resettlement, and indigenous peoples impacts, both positive and negative, from implementing the policies and/or achieving their targets. Where relevant, measures to mitigate anticipated negative effects, as well as enhance positive effects, have also been outlined (Table 1).

Table 1: Matrix of Potential Safeguard Impacts and Measures

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
Tranche 1 – Reform Area 1. Improved implementation action plan efficiency and air pollution control regulatory framework			
1. The government approved the National Program for Reducing Air and Environment Pollution 2017–2025 (National Program).	No involuntary resettlement and indigenous peoples impacts expected. The National Program aims to reduce air and environment pollution.	No adverse environmental impacts are expected. The National Program is intended to bring environmental benefits.	No mitigation measures required.
2. The government (i) approved the IAP on the National Program; and (ii) submitted to the Parliament a progress report on the IAP.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.
4. MOF submitted to Cabinet a draft amendment to the excise tax law to change the fuel classification system for taxation purposes.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. A preferential taxation scheme to import cleaner fuels will help the transport sector –responsible for up to 10% of the total pollution in the city. Introduction of Euro 5 or higher quality fuel for the on-road vehicles will result in a significant reduction in the overall emissions in the city (year around).	No mitigation measures required.
5. The government established an information center of innovative, low-carbon technologies for space heating and green buildings.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. Green building technologies and improved and efficient, low-carbon technologies can reduce or displace coal consumption and therefore the annual particulate emissions.	No mitigation measures required.

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
Tranche 1- Reform Area 2. Key measures on air pollution reduction and health protection			
6. The government allocated budget to provide financial support for procuring 80,000 tons of semi-coke briquettes or lower-emitting fuel.	No involuntary resettlement and indigenous peoples impacts expected. Use of cleaner fuel will reduce air pollution, which in turn will improve public health.	No adverse environmental impacts are expected.	No mitigation measures required
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.	No involuntary resettlement and indigenous peoples impacts expected.	<p>No adverse environmental impacts are expected.</p> <p>Replacing 68 HOBs would reduce PM₁₀ emissions by 129 tons/year.</p> <p>The government is aware of the risks of dismantling the HOBs and acknowledges that no practical or one-size-fits-all environmentally sound solution for the physical dismantling and disposal of the HOBs exist. The current government approach is to only disconnect the HOBs and leave the disconnected HOBs in place until satisfactory facilities and technological solutions are available in the country. This applies for those HOBs located in government complexes and private companies.</p>	<p>While only the disconnection is requested through the policy actions, the government agreed to ensure that such HOBs are removed in close coordination with the relevant environmental agencies, including the Special Inspection Agency, and following government's regulatory framework, the Law of Waste Management (2017).</p> <p>This law regulates for the first time the demolition and construction waste, including potential hazardous waste in Mongolia.</p> <p>The government has agreed to (i) ensure that the retirement of HOBs shall not involve land acquisition and resettlement impacts; and (ii) facilitate the registration of any labor force made redundant from the retirement of HOBs at the employment center of MUB.</p>
8. The government allocated adequate budget to ensure vaccination with pneumococcal conjugate vaccine for around 40,000 male and female children in Ulaanbaatar.	No involuntary resettlement and indigenous peoples impacts expected. Children will benefit from vaccination.	No adverse environmental impacts are expected.	No mitigation measures required.

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
Tranche 1 – Reform Area 3. Mechanisms for environmentally sound and integrated urban, energy, and transport systems established			
9. The CGFM created new guarantee products to support investment by small- and medium-sized enterprises in air pollution reduction products or services.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.
Tranche 2 – Reform Area 1. Improved implementation action plan efficiency and air pollution control regulatory framework			
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.	No involuntary resettlement and indigenous peoples impacts expected. Increased awareness will motivate people to use more cleaner fuel sources.	No adverse environmental impacts are expected. A targeted campaign for adopting clean energy will help in reducing the overall emissions and personal exposure rates in the city.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. Annual particulate emissions can be reduced through green building technologies and improved and efficient heat pumps.	No mitigation measures required.
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;	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
and (ii) emission standard for lower-emitting fuel. Both standards will take into consideration the affordability for the poor.			
Tranche 2: Reform Area 2. Key measures on air pollution reduction and health protection			
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. <i>Ger</i> areas are the most exposed to the higher pollution levels, more during the winter months, due to use of coal and wood for heating needs.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. Replacing 71 HOBs would reduce PM ₁₀ emissions by an estimated 135 tons/year. The government is aware of the risks of dismantling the HOBs, and acknowledges that no practical or one-size-fits-all environmentally sound solution for the physical dismantling and disposal of the HOBs exist. The current government approach is to only disconnect the HOBs, and leave the disconnected HOBs in place until satisfactory facilities and technological solutions are available in the country. This applies for those HOBs located in government complexes and private companies.	While only the disconnection is requested through the policy actions, the government agreed to ensure that such HOBs are removed in close coordination with the relevant environmental agencies, including the Special Inspection Agency, and following government's regulatory framework, the Law of Waste Management (2017). This law regulates for the first time the demolition and construction waste, including potential hazardous waste in Mongolia. The government has agreed to (i) ensure that the retirement of HOBs shall not involve land acquisition and resettlement impacts; and (ii) facilitate the registration of any labor force made redundant from the retirement of HOBs at the employment center of MUB.
16. The government will allocate adequate budget for insulation and air filtration systems in new and rehabilitated	No involuntary resettlement and indigenous peoples impacts	No adverse environmental impacts are expected.	No mitigation measures required.

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
kindergartens, schools, and hospitals in Ulaanbaatar.	expected. People will benefit from air filtration and insulation.	With the installation of air filtration systems at the schools and hospitals, day time exposure rates can be reduced, followed by public campaigns to further reduce the exposure to pollution at homes and on the roads. Children are affected the most with morbidity effects like asthma and other acute lower respiratory illnesses – both the mortality and morbidity is linked to how much and how long a person is exposed to the high pollution levels.	
Tranche 2 – Reform Area 3. Mechanisms for environmentally sound and integrated urban, energy, and transport systems established			
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).	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected. A leap frog to Euro 5 fuel standard will reduce the on-road emissions by at least 50%; with largest improvements coming from particulate and sulfur dioxide emissions. On-road transport is a fast-growing sector with ~0.5 million vehicles registered in the city, with varying degrees of age and maintenance levels.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.
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.	No involuntary resettlement and indigenous peoples impacts expected. This will apply to only to government owned-buildings.	No adverse environmental impacts are expected. An expansion of the district heating lines to the concentrated <i>ger</i> areas will have a significant reduction in the	No mitigation measures required.

Policy Actions	Social Safeguard Impacts	Environmental Impacts	Mitigation Measures
		ambient pollution and exposure levels during the winter months.	
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.	No involuntary resettlement and indigenous peoples impacts expected.	No adverse environmental impacts are expected.	No mitigation measures required.

CGFM = Credit Guarantee Fund of Mongolia, IAP = implementation action plan, HOB = heat only boiler, MET = Ministry of Environment and Tourism, 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, and NDC = Nationally Determined Contributions.

IV. CONCLUSIONS AND RECOMMENDATIONS

21. The program will generate multiple substantial environmental and social benefits. The program will not involve involuntary resettlement impacts or impacts on indigenous peoples or the environment. The program is classified as category C for environment, involuntary resettlement, and indigenous peoples.

22. Environmental impacts of the program are overwhelmingly positive. Proposed policies are focused on energy structure adjustments and will strengthen the provincial regulatory framework and institutional capacities for air pollution control, contributing to significant annual emissions reductions of PM₁₀: the provision of cleaner coal to targeted districts in *ger* areas can significantly reduce PM₁₀ emissions; replacing HOBs with district heating can reduce PM₁₀ emissions by approximately 130 tons each year. The assessment of the environmental safeguard system in Mongolia confirmed that it is fully aligned with national requirements and can address adverse environmental implications that may result from future and activities that the government may pursue as a response to policies and plans supported by the PBL.

23. The program is not expected to involve involuntary resettlement and indigenous peoples impacts. The policy actions focus on air pollution control and environmentally sound urban and energy planning. The air pollution control policies and measures will improve public health; and children, elderly and vulnerable people will benefit more. The urban and energy master plans will include screening checklist and procedures to avoid involuntary resettlement and indigenous peoples impacts.

24. **Recommendations.** The following actions are recommended to be acted upon by the relevant authorities in the government to strengthen the program and its safeguard systems, or supplement some of the policy actions of the program:

- (i) The government, in its function as executing agency, should commit to ensure that the preparation and implementation of all policy actions supported by the program, as well as activities and investments that the government may pursue to respond to these actions, comply with all applicable laws and regulations relating to environment, health and safety.
- (ii) Activities supported by the program should not trigger any of ADB's safeguards. The government will ensure that the retirement of heat-only boilers and subsequent disposal of potential hazardous waste shall (a) be coordinated with and supervised by the relevant environmental authority; (b) not involve land acquisition and involuntary resettlement; and (c) be conducted in accordance with the prevailing national laws and regulations. The government shall also facilitate the registration of the labor made redundant from the retirement of heat-only boilers at the employment center of the Municipality of Ulaanbaatar. The conduct of a multi-stakeholder's (e.g., government, ADB, and other development partners) review and assessment of the program is recommended to assess the impact and outcome of the program, its adherence to program assurances, and the findings and recommendations of this initial assessment.

Table 2: 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
Reform Area 1. Improved implementation action plan efficiency and air pollution control regulatory framework			
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)
Reform Area 2. Key measures on air pollution reduction and health protection			
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)
Reform Area 3. Mechanisms for environmentally sound and integrated urban, energy, and transport systems			
		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.