

TERMS OF REFERENCE FOR CONSULTANTS

A. Background

1. The Beijing–Tianjin–Hebei (BTH) region is designated as a priority area by the People’s Republic of China (PRC) as essential for increasing intra-regional cooperation, leveraging productivity, improving resource use efficiency, integrating infrastructure, and controlling air pollution.

2. ADB established a BTH initiative in 2015 to support this Government priority. ADB’s lending support during 2015–2020 in the BTH region revolves around three key pillars (i) policy and regulatory framework in the region; (ii) tailored financing approaches; and (iii) technology leapfrogging in key sectors. ADB’s support complements the government and other development partners’ actions.¹ ADB lending support each year is mutually reinforcing and backed up by analytical, policy advisory and capacity development non-lending work, many of which are already in progress.² Most of this support has addressed measures to improve air quality through transport and energy initiatives. There remains a need to also address municipal solid waste management as it contributes to air and water pollution in the region and exacerbates regional transport, investment and economic inefficiencies.

3. Like in many other parts of the world, PRC urbanization drives socioeconomic development and new consumption patterns which result in increased volume and composition of waste generation. The current waste management infrastructure and operational practices and regulations cannot keep up with this rapidly changing situation. Because of the BTH co-development, the current situation is only expected to exacerbate. Though some areas (such as Pearl and Yangtze river deltas) have witnessed some cross-boundary co-development experiences, no larger regional waste management system has been established yet to overcome the challenges of large urban agglomerations. While Beijing (population of 21.7 million in 2015) and Tianjin (15.5 million residents in 2015) urbanized areas are the main waste producers in BTH, Hebei’s population (74.3 million residents in 2015) generate waste spread across a larger area and among many administrative units.³

4. As the responsibility to manage waste is mostly allocated at the county and district level, disposal and treatment options and implementation of waste management and environmental sanitation plans are mostly restricted to within the administrative borders. In Hebei Province, disposal and treatment are fragmented and almost every county has its own, low capacity facility. By contrast, some of the biggest disposal and treatment plants in the PRC are in the Beijing-Tianjin region, and they are already over capacity. The Ministry of Housing and Urban–Rural Development (MoHURD, the executing agency) is acutely aware of these limiting

¹ ADB is closely coordinating with World Bank and other bilateral development partners.

² ADB. 2014. *Technical Assistance to the People’s Republic of China for the Study on the National Control of the Important Pollutant–Volatile Organic Compounds*. Manila; ADB. 2015. *Technical Assistance to the People’s Republic of China for the Beijing-Tianjin-Hebei Regional Air Pollution Control*. Manila; ADB. 2015. *Technical Assistance to the People’s Republic of China for the Study on the Coordinated Development of Beijing-Tianjin-Hebei*. Manila. ADB. 2016. *Technical Assistance to the People’s Republic of China for the Developing Cost-Effective Policies and Investments to Achieve Climate and Air Quality Goals in the BTH region*. Manila; ADB. 2017. *Technical Assistance to the People’s Republic of China for the Study of Clean Energy Supply for the Rural Areas in the Greater Beijing-Tianjin-Hebei Region*. Manila.

³Government of the PRC. 2016. National Bureau of Statistics of China. *China Statistical Yearbook*. <http://www.stats.gov.cn/tjsj/ndsj/2016/indexeh.htm>

factors in BTH but do not have a strategy to overcome them. Apart from this, siting new facilities in the heavily congested urbanized areas is becoming increasingly difficult due to land scarcity or is challenged by public protest.

5. Although the regulations and guidelines within the administrative borders of Beijing, Tianjin, and Hebei are all based on the same PRC laws (Law on Environmental Protection, Law on the Prevention and Control of Environmental Pollution from Solid Waste, Law on the Promotion of Cleaner Production, Law on Promotion of the Circular Economy), the implementing authorities often have different local by-laws which may hamper establishing a joint regional waste management system across administrative borders.

6. The capacity and experience of environmental protection bureaus across the region to monitor existing facilities and regulate new infrastructure varies greatly. Harmonizing capacities and aligning regulations is essential to achieve a stringent and close surveillance.

7. While there has been from some joint endeavors by Hebei to control waste management systems on a larger scale across administrative boundaries, there has been little real operational practice. Leveraging the economy of scale, optimizing transport routes, enhancing equipment usage, etc., and economizing waste management in general are limited. In addition, the restriction of municipalities to finance a waste management system outside their sphere of responsibility does not foster the development of cross border waste management and, hence, solutions have to be found to address this constraint.

8. The per capita gross domestic product of Hebei, Beijing, and Tianjin differ by a factor of almost three from each other. Yet Beijing and Tianjin administrations will have to search for alternative disposal and treatment sites in Hebei and, thus, will either depend on the goodwill of Hebei counties or prefectures to accommodate waste treatment facilities; or, they will have to compensate the provision of sites either financially or via an eco-compensation.

9. While Beijing and Tianjin strive for integrated circular economy centers that encompass the entire service and treatment chain (from sorting, treatment of bio waste, storage and collection of hazardous and waste electrical and electronic equipment, waste-to-energy facilities and landfills), Hebei has only limited experience. In spite of the circular economy centers that have been established, separating recyclables from co-mingled municipal solid waste (MSW) is still only practiced by the informal sector, while the formal sector's endeavors are still premature. Nowhere across BTH is source segregation yet required to comply with the national recycling ambitions. Instead, recyclable waste materials from commercial and industrial sites are managed by both the informal and semi-informal collectors who function as bulk traders of these materials.

10. Despite the provisions in the Law on the Promotion of the Circular Economy which include the 3R waste hierarchy (reduce, reuse, recycle), a workable extended producer responsibility (EPR) scheme is not implemented yet. An EPR scheme would request producers or retailers to contribute to the collection, sorting, and recycling of materials either financially only or both financially and operationally, by setting up the entire service chain from the marketing to the recycling of valuable materials. Particularly in environments which are characterized by a high consumption of, for example, packaging material and consumer electronics, EPR systems are regarded as a feasible solution to reduce the amount of waste and to achieve higher recycling rates which are yet to be specified.

B. Objective of this Assignment

11. The knowledge and support technical assistance (TA) will appraise and define the key parameters for the successful establishment of cross-boundary regional integrated waste management systems in the BTH region. The TA is included in the country operations business plan for the PRC, 2018–2020. The TA is fully aligned with the country partnership strategy for the PRC, 2016–2020 that features the management of climate change and the environment to support the government's priorities in realizing an ecological civilization. The TA will also support the strategic priorities of Asian Development Bank's (ADB) Strategy 2030 to mitigate climate change and promote environmental sustainability.

1. Impacts and Outcome

12. The TA will be aligned with the following impacts: (i) management of climate change in BTH improved; and (ii) government's priorities in realizing an ecological civilization supported. The TA will have the following outcome: regional MSW management model for BTH established. The regional planning approach to MSW management proposed during the TA will be endorsed by the two municipalities and one province of BTH region. Following the endorsement, BTH will establish a mechanism to promote the approach across the region.

2. Outputs, Methods, and Activities

13. The project will have two outputs: (i) an integrated regional MSW management model for BTH region is developed; and (ii) regional MSW management understanding and capacity in BTH region is enhanced.

14. **Output 1: Integrated regional municipal solid waste management model for Beijing–Tianjin–Hebei region developed.** The TA team will draw lessons from the cross-boundary, integrative nature of the air quality work undertaken in the current ADB BTH initiatives and (i) develop an Integrated Regional MSW Management model for BTH which will lead to coherent planning and coordination guidelines to overcome administrative barriers and improve resource allocation efficiency; (ii) appraise and define the institutional set-up for cross-border, MSW management sub-governmental bodies or committees and suggest an improved regulatory system; and (iii) explore and recommend appropriate cost recovery mechanisms that include structured cross border fund transfers and eco-compensation models.

15. The TA will evaluate current and projected waste composition and quantity data and then undertake a census and review of existing MSW treatment facilities across BTH. This will provide a baseline for defining an integrated waste treatment scheme that provides options for optimizing both technology and regional distribution. Upon due consultation with the stakeholders and in line with the national policies, specific recommendations will be made to improve efficiency and effectiveness of collection, transport and disposal operations in at least four appropriately sized catchment areas.

16. **Output 2: Regional municipal solid waste management understanding and capacity in Beijing–Tianjin–Hebei region enhanced.** The TA will improve regional MSW management understanding and capacity through (i) the provision of four thematic discussion workshops dealing with Output 1 in general and with the approach towards an integrated regional waste management system in particular, (ii) delivery of at least one results dissemination workshops in another urban agglomeration in PRC, and (iii) conduct of an international field study tour to an

international best practice example in regional MSW management and eco-compensation.⁴ In all workshops, specifics of Output 1 will be discussed and key takeaways be highlighted to foster discussions within the group of participants to facilitate the required regionalization of the waste management systems in BTH and elsewhere. An article detailing the study and its results will be prepared for publishing on www.development.asia.

C. Scope of the Assignment

17. ADB will recruit a Firm or consortium of firms (the consultant) which, when combined, will have a comprehensive knowledge of PRC waste management systems, regulations and laws; and, international operational experience that represents best practice in regional municipal solid waste management.

18. The consultant will be hired using output-based terms of reference and fixed budget selection. Shortlisted firm will develop a full technical proposal that demonstrates how they can best deliver the relatively detailed outputs for the expected price and utilize the best combination of inputs. The consultants will be selected by evaluating their proposed approach, methodology and staffing plan to achieve the detailed outputs within the fixed price. Their proposal will include all consulting inputs, local and international travel and per diems, translation, report preparation and online dissemination, and study tour leadership. Provisional sums will be included in the consultant proposal for an international study tour (comprising 6 officials visiting 2 countries over 10 days and linking with knowledge partners); and required workshops, training sessions, flyers and materials. The consultants will submit progress reports, which will be reviewed by ADB and the executing agency. The consultant project team will develop a relevant knowledge product, and ADB will distribute electronic copies, including posting a detailed article on <http://development.asia>.⁵

19. It is expected that the Consultant will work closely with the executing agency to establish a project management office (PMO) that will liaise with relevant MSW stakeholders across BTH including government institutions, public enterprises, private companies, recycling companies and nongovernment organizations, prior to beginning work on the regional waste management approach. Despite the multiple challenges of the current waste management system across in BTH, the assignment shall only deal with MSW (including food waste). In the event the study shows synergies to combine these streams with the treatment of other waste types (such as in a circular economy center), the consultant shall include these in the preliminary concept for the regional waste management cluster.

20. The following are the required outputs for the consultancy:

- (i) **Regional waste management systems.** (expected by May 2019) Conceptualize regional waste management clusters and define the potential implications for the involved stakeholders for selected administrations. All proposed approaches and analyses will be contrasted with available international best practice examples of regional waste management experiences and take account of the PRC national and local administrative and regulatory systems. MoHURD will provide sufficiently detailed data to allow carrying out the tasks.

⁴ Study tour will be in ADB member countries only.

⁵ Relevant knowledge product to be proposed by bidding firms, with details finalized during contract negotiations. It is expected to consist of at a minimum a short 10-page information booklet and one online article.

- (ii) **Improved institutional arrangements.** (expected by December 2019) The regional waste management systems developed need to be sustained, progress monitored, and activities coordinated across institutions. The objective is that the work will provide a basis for an operational model for regional MSW management projects to be adopted across the BTH region.
- (iii) **Improved regulatory system.** (expected by December 2019) The executing agency is aware that the current regulatory environment offers room for improvement and that local by-laws and standards might hamper establishing a cross border regional waste management.
- (iv) **Innovative cost recovery scheme and eco-compensation model.** (expected by July 2019) In any waste management system, the economic power of an area and the available resources will be reflected in the expenses for the treatment and disposal of waste. Given the quite significant gross domestic product disparity between Hebei and both Beijing and Tianjin, future regional and cross-border waste management systems need to take into account the available resources of the waste generators. To avoid that, an innovative cost recovery model that can offset the economic discrepancy is required. Since Hebei Province can offer space for future integrated waste treatment centers while Beijing and Tianjin can count on their economic power, an eco-compensation model can be considered.
- (v) **Workshops and study tours.** (expected by June 2019) The consultant will undertake a series of workshops to secure coordination, gain concurrence of the appraisal work, and disseminate outputs. An international study tour will be led by the consultant to two best practice examples of regional waste management approaches in two separate countries. The consultant shall ensure that feedback from each workshop and study tour is documented to demonstrate improved learning and achievement of project outcomes.
 - (a) prepare relevant thematic workshops to seek information and gain consensus on outputs;
 - (b) undertake a dissemination workshop in BTH elaborating the work completed;
 - (c) undertake a workshop in one other urban agglomeration, inviting key stakeholders from that and at least two other regions in order to disseminate the outcome of the TA and seek feedback on its efficacy for application in other jurisdictions;
 - (d) analyze successful international regional waste management systems and liaise with proponents of best practice examples that also face challenges similar to BTH;
 - (e) in conjunction with the executing agency, select two international best practice examples in two different countries and establish preliminary partnerships between them and the executing agency;
 - (f) organize and lead a 10-day study tour (comprising 6 BTH stakeholders) to the two selected regions; and
 - (g) undertake a seminar for BTH stakeholders that provides lessons learned from the international examples visited and how they may be incorporated into PRC systems.

D. Expected Duration and Location

21. **Expected Duration.** The assignment is expected to take up to one year to complete from mobilization. Completion date is expected before November 2019.

22. **Location.** The assignment will be conducted in close coordination with the executing agency, and principally located within the executing agency offices in Beijing. It is expected that most of the work (>80%) will be conducted by consultants physically located in the BTH area.⁶ While there is a need for regular on the ground coordination and work development with the executing agency and other stakeholders in BTH, it is understood that the approach and methodology chosen may warrant high value technical inputs to be undertaken external to PRC. In that case, these should be well coordinated with all stakeholders, involve video communication and well-documented summaries of activities and outputs.

E. Deliverables, Milestones, and Payment

23. **Payment milestones.** The consultant shall include in their proposal expected payment milestones based on achievement of the following summary deliverables to a quality approved by the executing agency:⁷

- (i) Inception report summarizing the planned activities to achieve the expected outputs and highlight any obstacle the consultant envisages;
- (ii) A comprehensive integrated regional planning model for BTH MSW;
- (iii) Detailed innovative institutional system and policy framework recommendations for coordinating and supervising sub-governmental institutions;
- (iv) A scheme for cost recovery and eco-compensation that is ready for approval by the executing agency;
- (v) Discussion workshops;
- (vi) Preparation for international study tour;
- (vii) Completion of study tour for international best practice in regional MSW management and eco-compensation; and
- (viii) Conduct of a results dissemination workshops in one other PRC urban agglomeration.

24. **Deliverables.** All deliverables shall be submitted in electronic form to both the executing agency and ADB's TA Supervising Unit. Assessment of deliverables will be provided within two weeks after their receipt. Comments made by MoHURD and the ADB shall be considered in the final reports.

25. **Payments.** Payments will be made upon receipt and approval of the deliverables by the ADB's User Unit.

F. Required Expertise

26. Consulting firms preparing proposals shall determine the number and the nature of experts required to deliver the consultancy outputs, milestones, and deliverables as indicated in this terms of reference or as defined in their proposals, respectively. They may cooperate with other non-shortlisted firms to form consortia to provide the best mix of international and national expertise within the fixed budget. Preference will be given to experts who are full-time employees of the firm(s) involved.

⁶ Except for planned study tour and workshops external to BTH.

⁷ The cost estimates shown in the TAR are indicative only.

27. Proposing entities must prepare a full technical proposal that details an approach and methodology that will achieve the terms of reference; and a personnel work plan that will achieve the methodology and outputs required, within the fixed budget set. The proposal will indicate the number of person-months inputs for each of the proposed experts and the minimum time each of the experts shall deliver their inputs to the project in BTH, other parts of PRC, and at home or abroad.

28. A National Team Leader / Solid Waste Management Specialist and an International Institutional Specialist must be included in the team of experts (see paragraphs 29 and 30).

29. The National Team Leader / Solid Waste Management Specialist shall have an engineering degree in a relevant subject related to solid waste management and shall have more than 15 years of either consultancy or operational experience in the solid waste management realm. The candidate shall have relevant knowledge of state-of-the-art waste treatment technologies and can count on experience in institutional appraisal and the organizational set-up of waste management institutions or authorities. International experience shall be regarded as a differentiating asset. The specialist shall be responsible for the terms of reference compliant delivery of the outcomes and to monitor and manage the team's performance.

30. The International Institutional Specialist shall have an engineering or an MBA or similar university degree and preferably have at least 15 years of experience in solid waste related matters, particularly in the management of companies and/or institutions dealing with waste collection, treatment, and disposal. Working experience in other countries than the specialist's home country is considered as added value. The specialist shall act as peer reviewer and shall provide input to the institutional set-up of the sub-governmental body and the lay-out of the yet to be established regional waste management system.

G. Proposal Preparation

31. Proponents must include in their technical proposal an Approach and Methodology section which shall detail how the deliverables and the outcomes will be provided. This section shall set out the criteria which will be considered while elaborating the proposed outputs. Furthermore, it shall describe international best practice examples and shall explain which international study tour is proposed to allow PRC practitioners to become acquainted with regional waste management systems applied in PRC and abroad. The technical proposal, furthermore, must cover a tentative program for the workshops for the PRC Governmental staff from central, provincial, prefectural, and county level.

32. The proposal shall particularly elaborate how the proponents will accommodate the needs of an urbanized area to identify suitably located disposal and treatment sites outside of the urban areas and how to shape the treatment scheme with respect to the different waste streams to be considered. Further focus shall be put to the financial cost recovery and eco-compensation model which shall allow the economically more powerful urban areas to benefit from a regional but integrated waste management system. Since the institutional set-up of the new sub-governmental body or planning committee to coordinate the planning activities is regarded as pivotal to perpetuate the regional waste management aspirations, the consultant shall detail the approach to this new committee.

33. Proposing entities must prepare a detailed description in their Approach and Methodology section of how the consultancy outputs will be delivered including the roles and responsibilities of the Team Leader / Solid Waste Management Specialist and International Institutional Specialist

and other experts to be included. Only one curriculum vitae may be submitted for each expert position proposed by the entity. The curriculum vitae of the Team Leader / Solid Waste Management Specialist will be evaluated and scored based on qualifications and demonstrated experience such as (i) leading multidisciplinary teams in the delivery of consultancy projects towards multi-level governmental institutions; (ii) planning and conceptualizing solid waste treatment systems; and (iii) institutional assessment of waste management authorities and institutions. The International Institutional Specialist's curriculum vitae will be evaluated and scored based on qualifications and demonstrated experience in the (i) management of organizations and institutions/authorities dealing with solid waste, and (ii) consulting waste management organizations and institutions abroad. All other curriculum vitae will not be scored; however, each of the curriculum vitae will be reviewed and either approved or rejected based on an assessment of the relevance of the expert's qualifications and experience against the expert's roles and responsibilities stated in the Approach and Methodology.

34. The financial proposals shall include all costs to achieve the deliverables listed above by the completion dates, and will be assumed to include:

- (i) All experts, including the Team Leader / Solid Waste Management Specialist and International Institutional Specialist, under the contract based on the person-month inputs identified in the Bidder's "Approach and Methodology";
- (ii) Mobilization and demobilization costs of all experts and the consultant's personnel, including travel, accommodation costs, per diems, etc.;
- (iii) All surveys and investigations;
- (iv) All costs for the international and national study tours;
- (v) Expenses for preparing and conducting the workshops including venue rental (up to 100 persons), preparation and printing of flyers, programs, media announcement, and invitation of external speakers;
- (vi) Costs for sub-consultants (where necessary); and
- (vii) Corporate overheads including insurances.

H. Evaluation of Proposals

35. The evaluation of the proposals will be subject to an output-based scoring of the elements as listed below.

36. The following evaluation criteria will apply to the technical proposal including the approach and methodology section. Points for each criteria will be documented in the final request for proposal:

Component	
(i)	National team leader's qualification and experiences
(ii)	International peer reviewer's qualification and experiences
(iii)	Assignment of tasks and overall program
(iv)	Approach towards a regional waste management cluster
(v)	Institutional set-up of the coordinating/planning and regional waste management facilities or authorities and suggestions on improvements of policies and regulations
(vi)	Cost recovery and eco-compensation model
(vii)	Study tours and workshop organization and capacity enhancement

37. Incomplete proposals will not be considered for further evaluation.

I. Contribution of the Executing Agency

38. Apart from assisting the consultant in arranging meetings, facilitating access to sites and to governmental institutions, the executing agency will provide the following inputs to facilitate the study:

- (i) Inventory of existing waste management infrastructure and facilities in BTH including the hereto allocated catchment areas; and
- (ii) Information on constraints the different administration on the prefectural, county, and district level are facing (as far as collected).

39. The consulting firms are requested to enquire any other data deemed necessary to carry out this assignment in their Approach and Methodology section of the technical proposal.