Report and Recommendation of the President to the Board of Directors

Project Number: 47904
August 2013

Proposed Loan and Technical Assistance Beijing Enterprises Water Group Limited and BEWG Environmental Group Company Limited Wastewater Treatment and Reuse Project (People's Republic of China)

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 19 August 2013)

Currency unit	–	yuan (CNY)
CNY1.00	=	$0.1635
$1.00	=	CNY6.1150

Currency unit	–	Hong Kong dollar (HK$)
HK$1.00	=	$0.1290
$1.00	=	HK$7.7541

ABBREVIATIONS

ADB	–	Asian Development Bank
BEWG	–	Beijing Enterprises Water Group Limited
BEGC	–	BEWG Environmental Group Company Limited
ESMS	–	environmental and social management system
PRC	–	People's Republic of China
SPS	–	Safeguard Policy Statement
TA	–	technical assistance

NOTES

(i) The fiscal year (FY) of Beijing Enterprises Water Group Limited and BEWG Environmental Group Company Limited ends on 31 December.

(ii) In this report, "$" refers to US dollars unless otherwise stated.

Vice-President	L. Venkatachalam, Private Sector and Cofinancing Operations
Director General	J. Yamagata, Officer-in-Charge, Private Sector Operations Department (PSOD)
Director	C. Thieme, Infrastructure Finance Division 2, PSOD
Team leader	H. Kimura, Principal Investment Specialist, PSOD
Team members	J. F. Gomez, Safeguards Officer (Environment), PSOD A. Hirose, Assistant General Counsel, Office of the General Counsel M. A. C. Manabat, Senior Investment Officer, PSOD M. C. Pascua, Senior Safeguards Officer, PSOD A. Porras, Safeguards Officer, PSOD M. Principe, Senior Social Development Officer, PSOD J. Qi, Investment Officer, PSOD V. Ramasubramanian, Safeguards Specialist, PSOD D. C. Song, Senior Guarantees and Syndications Specialist, PSOD R. R. Tabanao, Project Analyst, PSOD Y. Wang, Investment Officer, PRC Resident Mission

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PROJECT AT A GLANCE

1. Project Name: Wastewater Treatment and Reuse Project **2. Project Number:** 47904

3. Country: People's Republic of China **4. Department/Division:** Private Sector Operations Department
Infrastructure Finance Division 2

5. Sector Classification:

Sectors	Primary	Subsectors
Water supply and other municipal infrastructure and services	√	Waste management, water supply and sanitation

6.Thematic Classification:

Themes	Primary	Subthemes
Economic growth		Widening access to markets and economic opportunities
Environmental sustainability	√	Urban environmental improvement

6a. Climate Change Impact:

Adaptation	√
Mitigation	√
Not applicable	

6b. Gender Mainstreaming:

Gender equity theme	
Effective gender mainstreaming	
Some gender benefits	
No gender benefits	√

7. Targeting Classification:

	Targeted Intervention		
General Intervention	Geographic dimensions of inclusive growth	Millennium development goals	Income poverty at household level
√			

8. Location Impact:

Rural	
Urban	High
National	
Regional	

9. Nonsovereign Operation Risk Rating : NSO 6

10. Safeguard Categorization:

Environment	**B**
Involuntary resettlement	**B**
Indigenous peoples	**C**

11. ADB Financing:

Sovereign/Nonsovereign	**Modality**	**Source**	**Amount** ($ million)
Nonsovereign	**A loan**	**OCR**	**Up to $120 million equivalent in dollars and yuan**
Nonsovereign	**Complementary loan**	**Commercial lenders**	**Up to $120 million equivalent in dollars and yuan**
Nonsovereign	**Grant**	**CCF and WFPF**	**$500,000**

12. Cofinancing:

Financier	**Category**	**Amount** ($ million)
Local commercial banks	Commercial loan	Up to $168 million equivalent in local currency
Total		

13. Counterpart Financing: Not Applicable

14. Aid Effectiveness: Not Applicable

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan facility of up to $240 million equivalent without government guarantee to Beijing Enterprises Water Group Limited (BEWG) and BEWG Environmental Group Company Limited. (BEGC), comprising (i) an A-loan of up to $120 million equivalent in dollars and yuan, and (ii) a complementary loan of up to $120 million equivalent in dollars and yuan for the Wastewater Treatment and Reuse Project in the People's Republic of China (PRC). This report also describes proposed technical assistance (TA) to be provided by the Climate Change Fund[1], and the Multi-Donor Trust Fund[2] under the Water Financing Partnership Facility, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, will approve the TA.

II. THE PROJECT

A. Project Identification and Description

1. Project Identification

2. With rapid urbanization, the PRC has been encountering water challenges. More than 400 cities report water shortages, with an average daily shortfall of 16 million cubic meters. Per capita freshwater resources in the PRC are scarce at about 2,200 cubic meters versus the global average of 9,200 cubic meters. Annual per capita water endowments have been declining at an alarming rate, and are expected to decline by an additional 10% by 2025. Extensive water pollution further reduces availability of freshwater. In 2012, 31% of 10 major river systems and 39% of 62 primary lakes could not fulfill the water quality requirement for drinking water. The quality of as much as 57% of the total national groundwater is classified "bad" or "very bad."[3] Public health consequences are significantly affecting lives, livelihoods, and productivity.

3. In response, integrated water management has been a focus area of business development efforts of the Asian Development Bank (ADB). The successful implementation of the ADB TA by ADB's East Asia Department highlighted strategic wastewater management and reuse.[4] Wastewater, if properly treated, can effectively reduce pollution and become a new reliable source to address water scarcity. With adequate technologies, wastewater can be treated to meet specific needs and purposes, such as industry use, including machine cooling, cleansing, and boiler operation. More freshwater can be allocated for uses that require higher quality, such as for drinking, thereby contributing to more sustainable resource allocation. It is also a more efficient option to address water needs in areas with growing water consumption, both on a per capita and total basis, without adding new infrastructure for a freshwater treatment facility.

4. Through the continuous wastewater reuse project screening and discussion with stakeholders, the project team identified that BEWG, an integrated water infrastructure operator,

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1 Established by ADB.
2 Contributors: the governments of Australia, Austria, Norway, Spain, and Switzerland.
3 Ministry of Environmental Protection, People's Republic of China. 2013. *Report on the State of Environment in China 2012*. Beijing.
4 ADB. 2008. *Technical Assistance to the People's Republic of China for the Urban Wastewater Reuse and Sludge Utilization Policy Study.* Manila (TA7083-PRC).

as having an innovative business model that could embody this new direction. BEWG acknowledged ADB's recent international syndication for the PRC Municipal Water Distribution Infrastructure Development Project,[5] and requested ADB to take the lead in arranging a dual-currency financing package, relying on ADB structuring skills.

2. Project Design

5. The project is designed as the least-cost solution to facilitate reuse of treated wastewater by upgrading multiple wastewater treatment plants to meet grade 1A standard. The treated wastewater can then be reused for industry cooling and urban environment purposes. The project involves the acquisition, upgrade and/or expansion, and operation of wastewater treatment plants with technology options for meeting reuse water quality for up to 1.8 million tons per day during 2014–2016. In municipalities that do not yet have appropriate associated infrastructure for wastewater reuse, BEWG will first upgrade wastewater treatment facilities to meet the water quality standards for reuse before any actual sales of the treated wastewater.

3. The Borrowers and Sponsor

6. The project will have two borrowers: BEWG for the dollars and off-shore yuan tranche and BEGC, a PRC holding company wholly owned by BEWG, for the on-shore yuan tranche.

7. BEWG, the sponsor and the primary borrower, is a holding company incorporated in Bermuda and listed on the Hong Kong Stock Exchange. At the end 2012, 44.1% of BEWG shares were held by Beijing Enterprises Holdings Limited, which is in turn majority owned by Beijing Enterprises Group Company Limited. BEWG differentiates itself from its peers through its strong focus on comprehensive solutions to integrated water management with advanced technology, wastewater treatment in particular. As of 2012, BEWG owned concessions in about 90 cities and counties in 19 provinces. It operated 83 wastewater treatment plants, 21 water supply plants, and one seawater desalination plant with total design capacity of 7.3 million tons per day. ADB's review of BEWG does not give ADB cause to believe that this entity has been established, or is being used for cross-border tax evasion, money laundering, or terrorism financing in the jurisdictions involved in the project.[6]

8. BEGC, the second borrower, is incorporated in the PRC as an on-shore investment platform to own the wastewater treatment and reuse project companies.

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9. Wastewater treatment, BEWG's core business, contributed approximately 52% of BEWG profit in 2012. BEWG is a pioneer in reuse of treated wastewater and has implemented four projects with 499,500 tons per day in total in cities with low natural water resources and high water utilization.[7] Since its incorporation in 2008, BEWG's operating and financial performance has improved steadily. As of 2012, BEWG reported pre-tax profits of HK$1,092

[5] ADB and 18 banks signed a $100 million B-loan on 1 February 2013 to China Water Affairs Group.

[6] Bermuda is on the "white list" of OECD jurisdictions which have substantially implemented the internationally agreed tax standard. The Global Forum is conducting a peer review process that examines the legal and regulatory framework of member jurisdictions (Phase 1 reviews). Bermuda has passed its Phase 1 review, and therefore has qualified to pass on to its Phase 2 review (which is of the actual implementation of the internationally agreed tax standard).

[7] Beijing, Henan, Liaoning, and Shandong provinces.

million ($141million), total assets of HK$31.3 billion ($4.0 billion), and total net assets of HK$10.7 billion ($1.4 billion).

10. BEWG's strategy is to focus on acquiring small- to medium-sized plants and improve their operating performance to meet the best water quality standard. Technologies employed are the anaerobic–oxic activated sludge process or anaerobic–anoxic–oxic activated sludge process, with advanced treatment for reuse.[8] BEWG is responsible for identifying, evaluating, selecting, negotiating, implementing, and administering the project companies.

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B. Development Impact, Outcome, and Outputs

1. Impact

11. The anticipated project impact includes (i) enhanced urban environment and reduced pollution, (ii) sustainable source of water for industry and urban environment use, and (iii) increased private sector investment in wastewater management.

2. Outcome

12. The project is expected to improve the quality of treated wastewater in the PRC. It will increase the capacity to treat effluents, and the water will be enhanced to a higher standard.

3. Outputs

13. The project output is the installation and operation of wastewater treatment and reuse plants with total capacity of up to 1.8 million tons per day. Other socioeconomic benefits, captured in the design and monitoring framework, include job creation in local communities.[9]

C. Alignment with ADB Strategy and Operations

1. Consistency with Strategy 2020 and Country Strategy

14. The project is fully consistent with Strategy 2020, which identifies infrastructure and environment as two of the five core focus areas for ADB operations.[10] For infrastructure, the project is in line with the strategy's urban infrastructure focus on water supply, sanitation, and waste, as well as its emphasis on public–private partnership and livable cities. For the environment, the project mitigates water pollution and health threats, and promotes the conservation of natural resources.

15. By supporting inclusive growth and environmental sustainability, the project directly addresses two of the three development goals of the PRC country partnership strategy and aligns with the strategy's affirmation of natural resources and urban development as priority

[8] The advanced treatment processes include biological aeration filter, baffled reactor, inclined tube setting, and uniform media filter tank.
[9] The design and monitoring framework is in Appendix 1.
[10] ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank*, *2008–2020*. Manila.

sectors.[11] It strongly complements current ADB initiatives in wastewater treatment and water pollution control in the PRC.

2. Consistency with Sector Strategy

16. The project aligns with ADB's Water Policy, which emphasizes integrated water management, water conservation, and system efficiencies.[12] ADB's Water Operational Plan, 2011–2020 identifies wastewater management and private sector participation as two of three priority areas.[13] The project is an example of the type of intervention envisaged by the plan, which promotes water as a core investment area and sustains ADB's water investments to a total of $20 billion–$25 billion during the period 2011–2020.

D. Project Cost and Financing Plan

17. BEWG's investment plan indicates a total investment of $480 million equivalent, including civil works, equipment and materials, other local procurement, and working capital during 2014–2016.

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E. Implementation Arrangements

18. Table 2 summarizes the implementation arrangements.[14]

Table 2: Summary of Implementation Arrangements

Aspects	Arrangements
Regulatory framework	Each project company will be awarded a concession of 25–30 years with tariffs for wastewater treatment and reuse governed by the national cost–plus regulations and the minimum volume guarantee. Each project will be implemented in accordance with granted approvals, and during construction and operation will be subject to government inspections of various aspects, including environment, land acquisition, involuntary resettlement, ethnic minorities, labor, safety, quality, and sanitation. Inflow and outflow volumes and water quality will be monitored in all the subprojects.
Management	BEWG will centrally control all project development, procurement, and financing arrangements across its operations.
Implementation period	January 2014–December 2016
Construction arrangements	Goods and services for each subproject will be procured from ADB member countries in a transparent manner through competitive bidding procedures. Each project company will enter into engineering, procurement, and construction contracts with subcontractors.
Operation arrangements	
Revenue structure	Each plant will be paid a wastewater treatment fee by the end-users through the municipal government based on the volume of wastewater treated. The wastewater treatment fee is periodically reviewed and adjusted to reflect the cost and inflation. The plant will also be paid a water purchase fee by the industries and municipal government for reclaimed water.
Major cost structure	The major costs comprise electricity, chemicals, administrative expense, and maintenance expense.
Operation and maintenance	Operation and maintenance will generally be handled by each project company's

[11] ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015.* Manila.
[12] ADB. 2003. *Water for All.* Manila.
[13] ADB. 2011. *Water Operational Plan 2011–2020.* Manila.
[14] Details of Implementation Arrangements (accessible from the list of linked documents in Appendix 2).

Aspects	Arrangements
	staff who will be transferred from BEWG and/or recruited externally.
Performance monitoring	Key performance indicators, including output and outcome indicators, and compliance with ADB's safeguard requirements, will be reported by BEWG.

ADB = Asian Development Bank, BEWG = Beijing Enterprises Water Group Limited.
Source: Asian Development Bank.

F. Projected Financial and Economic Performance

19. The project is financially viable as BEWG's expected financial internal rate of return is higher than the weighted average cost of capital. It is economically viable as the economic internal rate of return is higher than the social discount rate of 12%.

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III. THE PROPOSED ADB ASSISTANCE

A. The Loan

20. ADB will provide a loan of up to $240 million equivalent to BEWG and BEGC, comprising an A-loan of up to $120 million equivalent in dollars and yuan, and a complementary loan of up to $120 million equivalent in dollars and yuan. The ADB loan to BEGC will be unconditionally and irrevocably guaranteed by BEWG. ADB will fund the A-loan from its ordinary capital resources and the complementary loan will be funded by commercial banks. The proposed A-loan will have a maturity of up to 10 years, including a 3-year grace period on principal repayments. The complementary loan will have a maturity equal to or shorter than that of the A-loan.

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B. Technical Assistance

1. Impact, Key Activities, and Output

21. While energy is a major user of water, it also constitutes a major cost for municipal water service.[15] Electricity accounts for 50% of the direct costs in wastewater treatment. To meet the national reuse water standards, wastewater treatment processes need 25%–35% more electricity. For the reuse project to succeed and for municipalities to cope with the rapid growth of water and energy demand, efficient energy conservation is a prerequisite. Reuse of wastewater offers a stable option that brings substantial benefits to end-users. However, freshwater—ground and surface water in particular—is still widely subsidized, and is thus still a popular option among a wide range of water users, including industry. Reuse of wastewater can be more competitive if appropriate energy efficiency measures are properly introduced. The primary objective of the TA is to enhance the affordability of reuse and thereby encourage replacement of freshwater in cities across the country.

22. The TA will have four components: (i) energy audit of selected pilot wastewater treatment and reuse plants, (ii) enhancement of the energy management system of the pilot plants, (iii) knowledge sharing with a wider range of municipal governments on introducing

[15] Thermal power cooling uses about 90% of water withdrawal of ground- and surface-water source in the PRC.

wastewater reuse with an energy efficiency option, and (iv) policy recommendations. The energy-saving solutions will include feasibility studies for energy efficiency improvements, integrated energy efficiency planning and implementation, and effective energy policies for wastewater treatment and reuse. A capacity development program and training materials will be prepared for the training of senior management and key municipal government officers on energy efficiency, including best practices of energy efficiency in the wastewater treatment and reuse operation; energy efficiency project cycle covering energy audit, list of solutions, expected saving, implementation, monitoring, and reporting; and institutionalizing energy efficiency planning, implementation, and monitoring. Through a workshop for a wide range of municipal governments, the TA will contribute to setting a viable business model which is expected to encourage reuse of wastewater with an energy efficiency option as a new source of water.

23. The TA is classified as capacity development technical assistance category B. The TA is estimated to cost $500,000. It will be financed on a grant basis by the Climate Change Fund (footnote 1) and Multi-Donor Trust Fund under the Water Financing Partnership Facility (footnote 2), and administered by ADB.

2. Implementation Arrangements

24. ADB will act as the executing agency of the TA and will ensure that the TA will effectively contribute to ADB's follow-on policy dialogue. The TA will be implemented over 24 months. ADB and BEWG will form a TA task force comprising appropriate ADB and BEWG representatives, as well as the TA consultants. The task force will communicate regularly to assess needs, monitor progress, and discuss issues. A consulting firm will be selected using the quality- and cost-based selection method with simplified technical proposals. Recruitment of the firm will be in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Disbursements under the TA will be made in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

C. Value Added by ADB Assistance

25. Justification for ADB involvement in the project is based on the following:

(i) The project will have a significant demonstration impact as the first ADB private sector intervention to support wastewater reuse to improve the efficiency of an integrated water chain, which is still being developed in the PRC. ADB assistance will build confidence in future private sector participation in this emerging subsector.

(ii) The project will build on ADB's recent complementary public sector interventions in the area and will reflect a continuation of ADB efforts to set high management and environmental standards. ADB's experience with the project can meaningfully contribute to the dialogue on regulations in the PRC and the region, and continue to help establish effective and efficient solutions for integrated water management.

(iii) ADB requirements will ensure that BEWG adheres to high-efficiency wastewater treatments, serving as a model for the industry. The TA will address the water and energy nexus by enhancing energy efficiency of wastewater treatment and reuse.

D. Risks

26. **Revenue risk.** Revenue risk may arise from low wastewater supply and inadequate wastewater treatment fees. There is concern that some municipalities do not apply the minimum tariff stipulated by the central government. BEWG's subprojects are under standardized concession arrangements that guarantee minimum offtake and regulated cost–plus tariffs. Further mitigating this risk are (i) strong policy pressure for tariff reform to achieve full cost recovery; (ii) large latent demand for wastewater treatment and BEWG's practice of selecting subprojects in part based on demand potential; (iii) BEWG's adoption of higher treatment standard that commands better tariff; (iv) phased construction approach to improve the plants' utilization rate; and (v) the portfolio nature of ADB assistance, which diversifies the risk across a number of subprojects.

27. **Offtake counterparty risk.** Wastewater treatment fees are publicly announced and reliably collected from end-users through bundling with water distribution fees and backstopped by municipal governments under concession agreement obligations. As for wastewater reuse subprojects, the offtaker can vary depending on the purpose of reuse. BEWG carefully evaluates offtaker credibility and subproject economics up front and will mitigate offtake risk by including a guaranteed minimum sales volume from end-users in well-defined sales agreements. The project further benefits from its portfolio arrangements to diversify offtake risk among subprojects.

28. **Regulatory risk.** Due to the water scarcity and environmental pollution in the PRC, the central government has set clear targets regarding water supply, pollution control, and pricing to improve wastewater treatment rate and standards. No significant changes to industry regulation are expected.

29. **Completion and operation risk.** In the PRC, turn-key engineering, procurement, and construction (EPC) is not commonly available and operation is typically managed in-house. BEWG has a proven technical and management track record in construction, operation, and maintenance of wastewater treatment plants. The risk is also mitigated by the homogeneous nature of the subprojects and the mature nature of technology for wastewater treatment and reuse, as well as the low number of staff required for plant operation.

30. **Associated infrastructure risk.** The success of a wastewater treatment or reuse subproject relies not only on the construction and operation of the plant, but also the readiness and reliability of the associated infrastructure, especially the pipelines and pump stations. Municipal governments usually construct and own this infrastructure. This risk is mitigated by BEWG's subproject screen criteria to select municipalities with comprehensive planning and financial leeway, and inclusion of the availability of the associated infrastructure as the municipality's obligation under the concession agreement.

31. **Aggressive expansion plan.** BEWG's plan to develop about 10 plants with a total daily capacity of up to 1.8 million tons per day within 3 years requires significant management resources and substantial capital funding. This aggressive expansion plan involves execution and funding risks, which are partially mitigated by (i) BEWG's technical competence, including use of standardized management systems across its subprojects; use of industry experts; shared technical resources at several hubs for operations; and the homogeneous nature of the subprojects; and (ii) adoption of eligibility criteria for the selection of subprojects and monitoring of compliance with financial covenants to ensure project viability.

32. **Structural subordination.** The ADB loan will be structurally subordinated to direct loans raised by the project companies from local banks. This risk is partially mitigated by various measures employed by other ADB projects with similar project structure.

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IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

33. **Safeguards.** The project is being processed as corporate finance, with ADB funds expected to be allocated for implementing specific subprojects. In line with ADB's Safeguard Policy Statement (SPS, 2009) requirements for corporate finance, the safeguard requirements 1–3 will apply. In addition BEWG is to establish and maintain an environmental and social management system (ESMS) to screen, assess, and address environmental and social impacts and risks. The project is classified category B for impacts on the environment and involuntary resettlement, and C for indigenous peoples. The location of the wastewater treatment and reuse facilities are selected in coordination with the municipal governments and are generally sited according to the appropriate land uses. These facilities are required to undergo an environmental assessment process in the PRC. Involuntary resettlement impacts are expected to not be significant, as the plants are proposed in lands reserved for industrial uses, within or in the vicinity of urban areas. Municipal governments normally complete land acquisition, resettlement, and rehabilitation (if needed) prior to handing the area over to BEWG. Impacts on indigenous peoples are not anticipated as the plants are typically located in the vicinity of urban areas where the population is primarily Han. The potential environmental and social impacts of the project have thus been identified and effective measures to avoid, minimize, mitigate, and compensate for the adverse impacts will be incorporated in the safeguard reports and plans. BEWG has committed to enhance its institutional capacity to adequately manage the project's social and environmental impacts.

34. A corporate audit was conducted on BEWG's quality, environment, health, and safety policy; and its past and current performance against the objectives, principles, and requirements of the SPS. The audit confirms there are no existing or legacy issues relating to the two audited existing plants. Gaps were identified and addressed in a corrective action plan. BEWG commits to adopting an ESMS, incorporating the corrective action plan, which is satisfactory to ADB before the first ADB disbursement. Key findings of the due diligence show that the company has an environmental management system in place. It also has screening and review procedures to identify and finance subprojects. It has staff in charge of environmental and labor aspects at corporate headquarters and plants, and has an internal environmental monitoring and reporting procedure. BEWG and its subprojects are ISO-certified (9000, 14000, and 18000) and have complied with applicable national laws and regulations. The quality, environment, health, and safety policy currently does not include policies and procedures to screen, assess, and address involuntary resettlement and impacts on indigenous peoples. Key corrective actions outlined in the ESMS arrangement and agreed with the company are to (i) enhance the environmental and social policy objectives of the quality, environment, health, and safety manual to incorporate provisions to comply with the ADB SPS and social protection requirements; (ii) adopt an environment and social safeguard screening procedure to consider the significance of environmental and social impacts; (iii) appoint and train staff responsible for safeguard compliance; (iv) comply with ADB information disclosure and consultation requirements; and (v) enhance safeguard monitoring and reporting procedures. The company will apply ADB's prohibited investment activities list, ensure that investments using ADB funds abide by

applicable national laws and regulations, and comply with the ADB SPS. To ensure compliance of future subprojects with the SPS, BEWG will carry out due diligence based on the ESMS screening mechanism. If category B or A impacts are confirmed, BEWG will prepare the necessary safeguard planning documents in accordance with safeguard requirements 1–3 of the SPS for each subproject, and submit them to ADB for review and approval. BEWG will submit monitoring reports on implementation of ESMS and the subprojects.[16]

35. **Other social dimensions.** The company has committed to ensure that local residents will comprise 90% of those engaged for jobs to be created for facility operations, and to retain employees in facilities acquired through transfer of ownership. BEWG commits to maintain the current ratio of female staff (30%) and ensure that the rights and interests of women are protected. The company agreed to prioritize hiring of local women for supervisory and administrative jobs created, and to engage local laborers for construction, including women. The project is classified as having no gender elements. BEWG and its contractors will comply with ADB's Social Protection Strategy,[17] report regularly to ADB on compliance with national labor standards, and take measures to adhere to relevant core labor standards consistent with national laws.

B. Anticorruption Policy

36. BEWG was advised of ADB's policy of implementing best international practice relating to combating corruption, money laundering, and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate provisions prohibiting corruption, money laundering, and the financing of terrorism, and remedies for ADB in the event of noncompliance.

C. Investment Limitations

37. The proposed direct loan is within the medium-term, country, industry, group, and single-project exposure limits for nonsovereign investments.

D. Assurances

38. Consistent with the Agreement Establishing the Asian Development Bank,[18] the Government of the PRC will be requested to confirm that it has no objection to the proposed assistance to BEWG. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by the Board of Directors.

V. RECOMMENDATION

39. I am satisfied that the proposed loan facility would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan facility of up to $240,000,000 equivalent to Beijing Enterprises Water Group Limited and BEWG Environmental Group Company Limited for the Wastewater Treatment and Reuse Project in the People's Republic of China, comprising

[16] Summary Poverty Reduction and Social Strategy, Safeguards, and Social Dimensions Summary; and Findings of the Corporate Safeguards Audit: Environmental and Social Management System Arrangement (accessible from the list of linked documents in Appendix 2.)
[17] ADB. 2003. *Social Protection.* Manila (adopted in 2011).
[18] ADB. 1966. *Agreement Establishing the Asian Development Bank.* Manila.

(i) an A-loan of up to $120,000,000 equivalent in dollars and yuan from ADB's ordinary capital resources; and
(ii) a complementary loan of up to $120,000,000 equivalent in dollars and yuan to be funded by commercial banks;

with such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Takehiko Nakao
President

August 2013

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators with Baselines	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
Impacts			**Assumption**
Enhanced urban environment and reduced pollution	90% of wastewater treated in PRC cities by 2023, from 77.5% in 2010[a]	Central and municipal government reports and statistics	The government remains committed to wastewater management and water resource conservation.
	50% of treated wastewater meets grade 1A standard by 2023, from 15% in 2010[b]	Central and municipal government reports and statistics	**Risk**
Sustainable source of water for industry and urban environment use	20% of the treated wastewater is reused in the PRC by 2023 from less than 10% in 2010[a]	Central and municipal government reports and statistics	Urbanization exceeds forecasts and outpaces the development of wastewater treatment and reuse infrastructure.
Increased private sector investment in wastewater management	Share of private investment in wastewater projects in the PRC second- and third-tier cities improves from 40% in 2010[b] to 55% in 2023	Ministry of Housing and Urban–Rural Development statistics	
Outcome			**Assumption**
Improved quality of treated wastewater	600 million tons of wastewater treated annually to grade 1A standard by 2019	Project monitoring and development effectiveness monitoring reports	Municipal governments honor the concession agreements.
	11 million tons of treated wastewater reused annually by 2019	Project monitoring and development effectiveness monitoring reports	**Risk**
	Average financial internal rates of return of subprojects exceed WACC by 2019	Project monitoring and development effectiveness monitoring reports	Unforeseeable delays in associated infrastructures.
	Additional 600 local workers employed during operation	Project monitoring and development effectiveness monitoring reports	
	Average of CNY28 million ($4.6 million) per annum of local goods and services procured during operations during 2017–2019	Project monitoring and development effectiveness monitoring reports	
	Average of CNY24 million	Project monitoring and	

Design Summary	Performance Targets and/or Indicators with Baselines	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
	($3.9 million) per annum paid in taxes to municipal governments during 2017–2019	development effectiveness monitoring reports	
	Improved energy efficiency by at least 10% and reduced carbon emissions of 76,000 tons per year in wastewater treatment and reuse plants by 2019[c]	Project monitoring reports	
Policy dialogue based on TA recommendations	Additional 20 municipalities implement reuse policies by 2019	Ministry of Housing and Urban-Rural Development statistics	
Outputs			**Assumption**
Installation and operation of wastewater treatment and reuse plants	10 subprojects of 1.8 million tons/day capacity in total constructed and installed by 2016	Project monitoring and development effectiveness monitoring reports	Project sponsor maintains technical and operating capacity to complete projects and implement services.
	Additional 800 local workers employed during construction	Project monitoring and development effectiveness monitoring reports	**Risk**
Improved capacity for energy efficiency in the wastewater treatment and reuse	Energy audit, energy management enhancement, workshop and policy recommendations under the TA completed by 2015	TA report	Delay by municipalities in granting concession rights to private sector due to unforeseen regulation changes.
	Senior management and municipal government officers trained in best practices for energy efficiency in waste water treatment by 2015	Workshops and TA report	

Activities with Milestones	Inputs
1.1 Signing of loan agreements by Q4 2013 1.2 Financial closure by Q4 2013 1.3 Clearance of all loan drawdown conditions by Q4 2013 1.4 Start of TA activities by Q4 2013 1.4.1 Energy audit of selected pilot wastewater treatment and reuse plants; 1.4.2 Enhancement of energy management system of the pilot plants; 1.4.3 Knowledge sharing with municipal governments on introduction of wastewater reuse with energy efficiency option; 1.4.4 Policy recommendations made based on experiences with pilot projects 1.5 Completion of TA by Q4 2015 2.1 Construction work in progress, as scheduled 2.2 Full commissioning of subprojects plants by 2016	ADB: Up to $120 million equivalent A-loan in dual currency; Up to $120 million equivalent complementary loan in dual currency; $500,000 of TA grant from the Climate Change Fund and Multi-Donor Trust Fund under the Water Financing Partnership Facility BEWG: Equity to meet debt/equity ratio Local banks: Local currency loans to project companies

ADB = Asian Development Bank, CNY = yuan, PRC = People's Republic of China, Q = quarter, TA = technical assistance, WACC = weighted average cost of capital.

[a] State Council, People's Republic of China. 2012. *The 12th Five-Year Plan on National Urban Wastewater Treatment and Reuse Infrastructure Construction*. Beijing.

[b] Ministry of Housing and Urban-Rural Development, Government of the People's Republic of China. 2012. *China Urban Wastewater Treatment Situation Report, 2006–2010.* Beijing.

[c] Baseline and targets for energy savings will be established after completion of energy audit undertaken by the TA.

Source: Asian Development Bank.