

## TERMS OF REFERENCE OF CONSULTANTS

### Introduction

1. The Asian Development Bank (ADB) is setting up a knowledge and support technical assistance (TA), which will support project preparation, policy development, legislation, and capacity building of the Ministry of Energy and its stakeholders in Kazakhstan. The project focuses on (i) identifying the heat supply model, which promotes energy-efficient heating technologies and/or district heating inclusive of renewables; (ii) drafting the set of legislative acts on heat supply (including the Law on Heat Supply, technical standards, tariff methodology, other bylaws, and regulations related to or derived from the new draft law); and (iii) strengthening capacity in the sector by (a) working daily with main stakeholders during the TA implementation, (b) conducting the training on renewable heat technologies and the applicable policy mechanisms for the MoE of Kazakhstan and the local governance – Akimats, who are in charge of managing district heating network and some of heat companies in the country, and (c) conducting at least two knowledge-sharing workshops.

2. The heat supply sector of Kazakhstan was created in the late 1970s during the Soviet Union era. The heat supply network consists of 12,300 kilometers of pipes and 2,427 heat producers, among which, 45% is combined heat and power plants, 35% large boilers, and 20% small boilers. Approximately 44% of heat pipes are placed over the ground and have inadequate insulation. The district heating plants run mostly on coal, while some use natural gas or black oil (mazut). The outdated and poorly maintained assets cause disruptions in supply to end users. The heat system loss is considered to be 30% (exact data is not available due to the absence of metering). Heat consumption is billed per square meter of the space and do not reflect the actual usage.

3. The institutional setup of the district heating sector is complex, involving many different stakeholders from the public and private sector. Roles and responsibilities of public agencies in the sector are unclear and often overlapping. Norms regulating the sector are scattered in various legal acts, increasing ambiguity of the sector setup. There is no specific law on heat supply or district heating.

4. In March 2019, the Ministry of Energy of Kazakhstan requested ADB for support with developing the legislation for the heat supply sector. The new legislation should focus on creating a balanced and clear regulatory framework as well as on increasing the share of renewable sources and improving energy efficiency standards in the heat supply sector.

5. The primary role of consultants is to assess the current state of play, suggest the heat supply sector model, and draft the new legislative package on heat supply based on international practice replicable in Kazakhstan. The consultants are expected to assist the Ministry of Energy to pass the draft law through the government agencies and finally through the Parliament of Kazakhstan. As a result of daily interaction with the relevant state agencies and the main stakeholders, it is expected that the human capacity and knowledge of modern heating systems and technologies will be improved.

6. **Output 1: Gap analyses of heat supply sector conducted.** A technical, institutional and legal due diligence of the heat supply sector will be conducted to assess the current circumstances and possible gaps with international best practices. Gap analyses report will include sector gender assessment.

7. **Output 2: Renewable technology-inclusive heat supply legislation drafted.** Based on the gap analyses, a draft Law on Heat Supply and other normative acts (technical standards, tariff methodology, heating development planning) including amendments of laws and various normative acts influencing the district heating sector will be developed. The new legislation will establish a regulatory framework and incentive scheme for renewable sources utilization by the heat supply sector and improvement of energy efficiency standards.<sup>1</sup> Special focus will be provided to incentive schemes to increase private sector participation in the heat supply. The Ministry of Energy will be supported at all stages of the government review process, including the parliamentary hearings.

8. **Output 3: Public-Private Partnership framework in heat supply sector established.** Consultant will draft policy recommendation to establish sound framework of Public-Private Partnership in heat supply sector offering opportunities for increased participation of the private sector.

9. **Output 4: International practice for heat supply systems disseminated (capacity building component).** Extensive capacity building activities on renewable heat technologies and the applicable policy mechanisms will be provided to the Ministry of Energy and Akimats. At least two workshops will be conducted for the main stakeholders, including members of Parliament to (i) share best practice from other countries and discuss the draft concept law on Heat Supply, and (ii) present the draft Law on Heat Supply before submitting to the government and the Parliament. These workshops will, at the same time, carry out knowledge-sharing and public consultation activities. This approach will substantially increase the effectiveness of the TA.

## A. Proposed Consultants

10. A firm of consisting international technical and legal specialists having expertise in heat supply systems will provide a team of international and national consultants to deliver the scope of work outlined below. The international consultants must have in-depth experience in heat-power engineering, energy efficiency and renewable energy systems, energy management, district heating network design, and operations inclusive of energy efficiency and renewable energy technologies, municipal development and governance, public policy advice, and legislation drafting. A specific expertise that of an energy economist, with focus on heat supply tariff peculiarities, is required. In addition, environmental and social specialists need to be part of the team to ensure the analyses of the socioeconomic impact of the legislation is conducted and reflected duly. The local experts must have substantial experience in the power sector of Kazakhstan, with focus on heat-power and hot water supply sectors, including technical, commercial, legal, and regulatory issues influencing the sector. An estimated total of 28 person-months of international consulting and 57 person-months of national consulting inputs are envisaged during the projected 22-month duration of the TA project. For the TA project to be effective, the consultants will be based in Kazakhstan's Ministry of Energy in Nur-Sultan, during the establishment and commencement of TA activities.

---

<sup>1</sup> Appropriate renewable technologies such as deep/shallow ground geothermal, solar hot water, waste heat recovery from industries and municipal sewage plant, curtailed wind-based electric boiler etc. needs to be identified and suggested through the new legislation package by Consultant during the TA implementation.

11. The Ministry of Energy will provide the office space for consultants within its premises and appoint liaison(s) to assist in communication and day-to-day coordination of the work with state agencies. The Ministry of Energy will also provide a venue for the workshops envisaged under the activities of this TA.

12. **Team Leader and District Heating Specialist (international, 10 person-months, intermittent).** The district heating specialist will be the team leader in charge of TA implementation, coordinating the work of the team of experts (both technical and legal), and reporting to the ADB project officer as well as the respective focal person(s) appointed by the Ministry of Energy of Kazakhstan. The team leader should bring personal expertise in heat power engineering and district heating network design and operations. The specialist is expected to model and/or select the efficient heat supply system replicable in Kazakhstan and propose it through the new draft law. The specialist should hold a postgraduate degree (master's degree or its equivalent) in heat-power engineering, energy sector development, energy management, municipal development and governance, or an equivalent degree in related fields, with at least 15 years of professional experience in these fields and at least 8 years experience of participation in projects on municipal heating system development and/or modernization (experience in countries with similarities with Kazakhstan will be an advantage). Previous experience in policy advisory is also an advantage.

13. **National District Heating Specialist, Deputy Team Leader (National expert, 18-person months)** The national district heating specialist will be the deputy team leader supporting the team leader and other technical and legal consultants during the entire period of TA implementation. Jointly with the team leader he/she will be reporting to the ADB project officer as well as the respective focal person(s) appointed by the Ministry of Energy of Kazakhstan. The specialist should hold a degree in heat-power engineering, energy sector development, energy management, municipal development and governance, or an equivalent degree in related fields, with at least 15 years of professional experience in these fields and at least 8 years' experience of participation in projects on municipal heating system development and/or modernization. Previous experience in policy advisory and experiences from similar work for district heating markets in transition shall be an advantage for selection.

14. **Energy Economist and/or Policy and Regulatory Expert (international, 4 person-months, intermittent).** The expert should have a postgraduate degree in energy economics or related field, at least 15 years of experience in energy regulation, energy planning and policy, and fundamental understanding of heat supply sector, energy efficiency, and renewable energy source peculiarities. The expert will be responsible for reviewing and analyzing the existing tariff system and developing the new tariff methodology for Kazakhstan's heat supply sector. The specialist will conduct the regulatory assessment, provide analyses on current subsidy schemes and propose the mechanisms supporting economic and financial development of the sector. The specialist is also expected to identify opportunities for Climate Change Mitigation Finances and provide analyses for the potential impact on selection of the clean energy technologies as well as the project financing for the future investment projects in the sector. The previous experiences from similar work for district heating markets in transition shall be an advantage for selection.

15. **District Heating Engineer (energy efficiency and renewable energy) (international, 4 person-months, intermittent).** The specialist is expected to contribute to the assessment of possibility for low-carbon development in the heat supply sector by implementing energy efficiency measures and integrating renewable energy sources in the heat supply system of Kazakhstan. The specialist is expected to identify and suggest the appropriate clean energy solutions based on local resource availability. The specialist should have a postgraduate degree

in energy, with at least 10 years of experience in clean energy technologies. The previous experiences from similar work for district heating markets in transition shall be an advantage for selection.

**16. Environmental Safeguards Specialist (national, 2 person-months, intermittent).** The environmental and social expert will assess current environmental and social impact of the existing heat supply system and provide recommendations for improvement. The expert will develop the socioeconomic analyses of proposed tariff structure and assess the environmental benefits of the selected model of heat supply system. The expert will also assist the team in ensuring stakeholders' engagement and in conducting public consultations. The specialist should have at least a bachelor's degree in environmental science, environmental economics, sociology, anthropology, or related discipline, with at least 8 years of project experience as an environmental specialist (including substantial experience in monitoring and evaluation of development-financed projects) and at least 5 years of experience in social safeguards issues in development-financed projects (including stakeholder's engagement, community development, and socioeconomic surveys). Familiarity with the environmental and social aspects of energy sector operations is required. Likewise, familiarity with ADB's Safeguard Policy Statement (2009) is an advantage.

**17. Social Safeguards Specialist (national, 2 person-months, intermittent).** The social expert will assess current social impact of the existing heat supply system and provide recommendations for improvement. The expert will develop the socioeconomic analyses of proposed tariff structure of the selected model of heat supply system. The expert will also assist the team in ensuring stakeholders' engagement and in conducting public consultations. The specialist should have at least a bachelor's degree sociology, anthropology, or related discipline, with at least 5 years of experience in social safeguards issues in development-financed projects (including stakeholder's engagement, community development, and socioeconomic surveys). Familiarity with the environmental and social aspects of energy sector operations is required. Likewise, familiarity with ADB's Safeguard Policy Statement (2009) is an advantage.

**18. Gender Specialist (national, 1 person-months, intermittent).** The national gender specialist will conduct a gender segregated assessment of the impact of current heat supply system on the quality of life of households. The specialist is also expected to identify potential gender action plan for the heat supply sector in Kazakhstan and suggest certain policy level actions that can be effectively initiated through the new Law on Heat Supply System and/or the respective legislation package under preparation by this TA. The specialist is expected to have a university degree in social sciences or social science related areas with considerable knowledge of gender equity issues with 10 years of total professional experience. Experience working for similar projects with international financial institutions or other donor organizations is required. A profound knowledge of the country specific needs of men and women would be of great advantage.

**19. Legal Expert (international, 10 person-months, intermittent).** The international legal expert will be responsible for bringing knowledge of international practice in legislative drafting of legislation related to the heat supply system. The expert will be responsible in ensuring that the model selected by technical experts is duly reflected in the new draft law and the effective mechanisms for its implementation are in place. The international legal expert will oversee and guide the full process of legal due diligence conducted by the national legal consultant(s) and will be responsible for conducting the gap analyses and ensuring the quality of the draft concept law and draft Law on Heat Supply, including the respective normative acts. The specialist is expected to have a master's degree or its equivalent in law, with a minimum of 15 years of experience (of which, international experience covers at least 10 years) in the energy sector focusing on heat

power and/or energy efficiency and The previous experiences from similar work for district heating markets in transition would prove an advantage.

20. **Legal Expert (national, 6 person-months, intermittent) (3 positions).** The national legal expert(s) will provide local legal experience and knowledge of national legislative and regulatory framework. The specialist is expected to have knowledge of national laws, law-making procedures, and legislative drafting and ability to draft both in English and Russian languages. The expert should also have qualification in law granted by an accredited university or college, with a minimum of 10 years of experience (at least 8 years of which are in the energy sector) and support the work of the international legal expert and the team.

21. Team of legal experts (both national and international) will be responsible for drafting the legislation under Output 2 (paragraph 7 above) in English and Russian languages.

22. **Resource Persons (up to 10 persons, up to 10 days each, international and national, intermittent).** The resource persons will have a bachelor's degree and/or master's degree in economics, law, management, public policy, international development, engineering, or a closely related field, as well as at least 15 years of experience in helping government agencies prepare and implement or formulate related legislation documents. The resource persons will report to the team leader and will participate in consultations, workshops, and meetings to provide specific expertise and experience relevant to the issues addressed by the event.

23. **Coordinator/Administrative Assistant (national, 16 person-months, intermittent).** The consultant must have a graduate degree in social sciences, office management, public administration, or related field, as well as at least 5 years of experience in a business or government environment. Proficiency in both written and spoken English and Russian is required. The consultant will assist the project team with coordination of resources, organizing and preparing for meetings/presentations/workshops, documenting and following up on important actions and decisions from meetings; undertaking project asks as required; and providing administrative support as needed.

## Reporting Requirements and Expected Outputs

24. The consultants will report to the ADB Project Officer. The following reports shall be prepared and provided by the consultants:

- (i) **Technical due diligence report** will describe and assess the current state of the heat supply sector; technical and institutional set up of the sector; condition of heat generation, transmission, and distribution assets; and metering and communication systems availability and conditions. The report will identify issues for the efficient functioning of the sector and provide recommendations for improvement including the practical advice on implementation of proposed reforms such as heat metering, etc. The report shall include environmental, and social and gender due diligence and gender equity related issues. The socioeconomic assessment of the current tariff structure for heat and hot water supply in the different regions of Kazakhstan will be an important part of the report.
- (ii) **Legal due diligence report** will review the existing national standards, technical–normative documents, and legislation related to heat supply in Kazakhstan; identify the gaps and needs for change; and identify potential barriers to the successful introduction of best international practices in the heat supply sector of Kazakhstan.

The report shall describe legislative drafting process in Kazakhstan to help set up the work plan for drafting the concept law and draft law on heat supply system.

- (iii) **Stakeholder engagement plan.** After a thorough identification of stakeholders, consultants will propose the stakeholder engagement plan, covering but not limited to the establishment of the Consultation Group with participation of all relevant ministries and state agencies, and the standard operating procedures for coordination activities to keep stakeholders involved throughout the process of TA implementation. At least two workshops will be conducted by the consultants to encourage active participation and ensure proper public consultations.
- (iv) **Gender Action Plan and gender policy recommendations** will be drafted for the Ministry of Energy and the local governance bodies (Akimats) to assist them in their efforts on improving the gender equity in the heat supply sector.
- (v) **Proposal on heat supply system model** will review and analyze the international practice and different scenarios of heat supply sector development, inclusive of renewable energy sources and clean technologies; provide comparative analyses of legal and regulatory framework of the country(ies) with successful experience of modernization of heat supply system replicable in Kazakhstan; and illustrate cost–benefit analysis (CBA). The report will recommend the model that is most likely to be successfully implemented and make the heat supply system efficient in Kazakhstan. The report will propose tariff methodology as a separate annex to be further submitted to the Agency for Regulation of Natural Monopolies for review and adoption.
- (vi) **Draft Concept Law on Heat Supply in Kazakhstan** will be a brief version of the draft Law on Heat Supply itself, setting forward the main principles and the framework of the proposed heat supply system model. The draft concept law shall be passed through the Government of Kazakhstan and acquire the approval for the main directions on continuing the legislative drafting of the TA subject draft Laws.
- (vii) **Draft Law on Heat Supply in Kazakhstan** will provide a ready document to be submitted to the Parliament of the Republic of Kazakhstan for adoption. The draft law will be presented in English and Russian languages, along with the enclosed legislative package of bylaws and other normative acts derived from or prepared in connection to the subject draft.
- (viii) **Package of draft legal and other normative acts** (bylaws, regulations) derived from or in connection with the draft Law on Heat Supply in Kazakhstan will be drafted in English and Russian languages.
- (ix) **Tariff Methodology** will be developed based on the selected heat supply system model and will be proposed to the Agency for Regulation of Natural Monopolies for review and further adoption.
- (x) **Report on Renewable Energy Source Integration into Heat Supply Sector** will be developed aiming at identifying the proper technologies such as deep/shallow ground geothermal, solar hot water, waste heat recovery from industries and municipal sewage plant, curtailed wind-based electric boiler etc. to be further suggested through the new legislation package.

- (xi) **Energy Efficiency Roadmap** will be developed for the heat supply sector, setting forth the recommendations on actions to be taken for helping utilizing energy efficiency potential.
- (xii) **Public Private Partnership strategy** will be prepared in a form of a policy recommendation focusing on increasing the opportunities and attractiveness of the heating sector for increased participation of the non sovereign players.
- (xiii) **Summary reports**

25. The consultants are required to prepare summary reports at each milestone of the TA period, namely:

- (i) inception report
- (ii) interim report
- (iii) draft final report, and
- (iv) final report.