

August 2018

# Commercialising the utilities sector in Kazakhstan

Policy paper on infrastructure



**European Bank**  
for Reconstruction and Development



ИНСТИТУТ  
ЭКОНОМИКИ  
ГОРОДА

This publication was written by staff of the Institute for Urban Economics with the assistance of the EBRD. The contents of this publication are the sole responsibility of the authors and do not necessarily reflect the views of the EBRD.

# Contents

	<b>Summary</b>	<b>2</b>
	<b>Introduction</b>	<b>3</b>
<b>1.</b>	<b>Challenges facing the public utilities sector in Kazakhstan</b>	<b>4</b>
<b>2.</b>	<b>Institutional and regulatory environment</b>	<b>8</b>
<b>3.</b>	<b>Lessons from international experience: addressing affordability and institutional restrictions</b>	<b>10</b>
<b>4.</b>	<b>Tariff reform as a tool for commercialising the sector</b>	<b>15</b>
<b>5.</b>	<b>Contractual incentives and the role of the private sector</b>	<b>21</b>
<b>6.</b>	<b>Modernising the housing support system</b>	<b>26</b>
<b>7.</b>	<b>Working with the EBRD on a sub-sovereign basis</b>	<b>27</b>

# Summary

In the utilities sector, the current Enhanced Framework Partnership Agreement between the government of Kazakhstan and the European Bank for Reconstruction and Development (EBRD) aims to help state authorities introduce reforms. The reforms include establishing an efficient, transparent system for regulating the tariffs of natural monopolies, strengthening institutional capacity and making service providers more efficient, while also giving the population social security. The ultimate goal is to develop mechanisms that make it possible to commercialise public utilities and improve the condition of the sector's infrastructure.

In line with agreements reached with the EBRD, the government supports the regions' interest in attracting funding from international financial institutions (IFIs) to modernise infrastructure and reform the sector, improving corporate governance, reforming tariffs and commercialising activities.

In order to ease the transition from full state financing or subsidies to commercial financing, the government provides grants for capital investment or subsidies to municipal utilities that attract EBRD loans. The grants are spent on priority investment programmes, developed solely in conjunction with EBRD loans and by independent professional consultants.

In parallel to the commercialisation of individual utilities, the government and the EBRD are working on the institutional development of the sector and involving the private sector through:

- reforming tariffs
- elaborating new principles for the social security programme that helps people on low incomes to pay for utility services
- developing contracts based on performance indicators.

Successful reform of the sector would achieve the following outcomes.

- Tariffs for utility services would no longer serve as a measure of social security. Prices for water and thermal energy would reflect true costs.
- Cross-subsidisation between various groups of utility customers would be discontinued.
- The state would drastically reduce its investment in the public utilities sector, and divert the funds saved in this process to new social security measures.

The commercialisation of utilities, institutional development of the sector and involvement of the private sector in managing communal infrastructure would improve the condition of utility systems, raise the quality of services, improve customer service and increase user satisfaction.

# Introduction

This report forms part of an EBRD series of policy papers on infrastructure, which are available at [www.ebrd.com](http://www.ebrd.com).

It was initiated by the Bank and is based on the lessons learned during a January 2018 seminar, held in Kazakhstan, on topics such as commercialising the utilities sector. The seminar subjects included, among others, drawing private investment into the provision of heat, water and wastewater disposal.

This document and its recommendations draw on the professional expertise of consultants who participated in the seminar. They also draw on government statistics, Kazakhstan's infrastructure development programmes and surveys conducted by stakeholders in the commercialisation of the country's public utilities.

# 1. Challenges facing the public utilities sector in Kazakhstan

In general, Kazakhstan's heating supply, water supply and wastewater disposal systems are in a satisfactory state. Yet, in many cases, they have exhausted their technical and technological potential. Assets are mostly maintained at their current level and any improvements tend to be implemented quite slowly, while levels of technological obsolescence remain unchanged. Hence, there is a critical need for additional investment to replenish communal infrastructure funds.

This paper reviews the current situation, describing key challenges in subsectors such as district heating, water and wastewater.

The examples provided in the next section illustrate the specific features and challenges that these subsectors face in terms of technical condition, reliability and energy efficiency, both in general and for individual cities where the modernisation of systems is currently under way with the EBRD's support.

## Water supply and wastewater disposal

- **Deterioration of assets:** On average, 60 per cent of the country's water supply and 70 per cent of its wastewater disposal systems are ageing and need replacement.<sup>1</sup>

In some cities the level of deterioration is significantly higher. For instance, in Petropavlovsk, 80 per cent of the water supply system shows wear and in the wastewater disposal system the figure is 97 per cent. Meanwhile, in Taraz, 80 per cent of the water supply network is in a deteriorated condition. In Kostanay, wear in the water supply and wastewater disposal infrastructure averages 82 per cent, while in Semey, the figures are

73 per cent for water supply and 80 per cent for wastewater disposal.

Recently, several state programmes have been implemented to address the deterioration in vital communal infrastructure and to make public services more affordable. According to a report on the implementation of Kazakhstan's 2020 regional development programme,<sup>2</sup> 349.3 km of the water supply network was due to be modernised in 2016. But when the report was published in 2017 only 332.9 km had in fact been modernised.

The rehabilitation and construction of water and wastewater systems is also being pursued by the 2015-19 Nurdy Zholy state programme for infrastructure development,<sup>3</sup> which aims to modernise the 6,000 km of the water and wastewater network that suffer the highest losses and faults. As a result, by 2020 deterioration in the network should have fallen from 60 per cent in 2015 to 53 per cent.

- **Network water losses:** On average, Kazakhstan's water supply network suffers losses of 16 per cent.<sup>4</sup> In some cities, the rate is significantly higher (Taraz 30.0 per cent, Ust-Kamenogorsk 29.0 per cent, Semey 28.0 per cent, Kyzylorda 26.8 per cent and Aktobe 20.9 per cent).
- **High levels of power consumption:** The rates of power consumption in water supply and wastewater treatment are extremely high. In some cases, specific power consumption rates exceed international standards by four to five times, due to high technical losses, outdated pumping stations and frequent malfunctions. As power tariffs continue to rise, there is plenty of potential to improve energy efficiency in the sector.

<sup>1</sup> "National report for the United Nations conference on housing and sustainable urban development – HABITAT III", Committee for Construction and Housing and Communal Services of the Ministry of national economy of Kazakhstan, Astana (2016), p. 46.

<sup>2</sup> "Report on the 2020 Regional Development Programme" (2016), <http://economy.gov.kz/ru/pages/otchet-po-realizacii-programmy-razvitiya-regionov-do-2020-goda>, p. 111, (last accessed on 21 May 2018).

<sup>3</sup> Approved by Decree No. 1030 of the President of Kazakhstan dated 6 April 6 2015, <http://adilet.zan.kz/rus/docs/U1500001030> (last accessed on 16 May 2018).

<sup>4</sup> Statistical compendium "Housing and Utilities", Committee on Statistics of the Ministry of National Economy of Kazakhstan, Astana (2017), p. 75. [http://stat.gov.kz/faces/wcnav\\_externalId/publicationsCompilations?\\_afLoop=3673338400502585#%40%3F\\_afLoop%3D3673338400502585%26\\_adf.ctrl-state%3D1a71sq00ka\\_79](http://stat.gov.kz/faces/wcnav_externalId/publicationsCompilations?_afLoop=3673338400502585#%40%3F_afLoop%3D3673338400502585%26_adf.ctrl-state%3D1a71sq00ka_79) (last accessed on 15 May 2018).

- **Occurrence of faults:** From 2012-16 the average yearly fault rate in Kazakhstan's water supply system fell from 25,600 to 2,729, reaching an average of 3.9 faults per 100 km by the end of 2016.<sup>5</sup> But in some cities, the fault rate was significantly higher. For example, Kyzylorda saw 13.1 faults per 100 km of its water network. A fault in the drinking water network is defined as a complete or partial suspension of the water supply to an area within a settlement or apartment building, lasting more than eight hours.<sup>6</sup>
- **Availability of high-quality potable water:** The largest water sources in Kazakhstan – the Irtysh, Ili, Syr-Darya and Ural rivers – are subject to chemical and bacterial pollution. Twenty per cent of the country's population consumes poor-quality fresh water. By 2019, the 2020 regional development programme<sup>7</sup> aims to ensure access to district water supply systems for 97 per cent of city dwellers and 62 per cent of the rural population, and to district wastewater disposal systems for 97 per cent of city dwellers and 13 per cent of the rural population.
- **Cold water metering:** Analysis suggests that only 60 per cent of the water supplied to consumers is metered. In order to further reduce water losses and make customers take financial responsibility for losses of this kind, the installation of meters should continue, not only inside buildings but also in supply pipelines, depending on the location.
- **Wastewater treatment:** Only 84 per cent of wastewater undergoes full-scale biological treatment and 81 per cent is treated in accordance with the country's standards.<sup>8</sup> The Nurdy Zhol programme aims to increase the latter figure to 100 per cent, for wastewater that is discharged into bodies of water.

## District heating systems

- **Deterioration of assets:** Nationwide, the average level of wear in the heating network is 63 per cent.<sup>9</sup> Around 40 per cent of the heating network (9,600 km) is fully deteriorated and requires replacement. In some cities, the rate of deterioration is significantly higher than the national average. In Petropavlovsk, it averages 72 per cent, and 140 km (60 per cent of the city's heating network) is 100 per cent deteriorated. Meanwhile, in Pavlodar, wear in the heating network stands at 77 per cent, and in Kostanay, at 80 per cent. By 2020, the State Housing and Utility Services Programme for 2011-2020<sup>10</sup> plans to reduce to 40 per cent the percentage of the national heating network that requires replacement.
- **Thermal energy losses:** Although average thermal energy losses are being continuously reduced, they remain substantial due to the network's deterioration. In 2012, heat loss from boiler houses

<sup>5</sup> National report for the United Nations Conference on Housing and Sustainable Urban Development – HABITAT III, Committee for Construction and Housing and Communal Services of the Ministry of National Economy of Kazakhstan, Astana (2016), p. 46.

<sup>6</sup> Methodological explanations to the annual bulletin "On the operation of water supply and water disposal facilities in the Republic of Kazakhstan" of the Committee on Statistics of the Ministry of National Economy of Kazakhstan.

<sup>7</sup> Approved by the government of Kazakhstan and dated 28 June 2014, No. 728, <http://adilet.zan.kz/rus/docs/P1400000728> (last accessed on 16 May 2018).

<sup>8</sup> Statistical compendium "Housing and Utilities", Committee on Statistics of the Ministry of National Economy of Kazakhstan, Astana (2017), p. 75, [http://stat.gov.kz/faces/wcnav\\_externalId/publicationsCompilations?\\_afLoop=3673338400502585%40%3F\\_afrLoop%3D3673338400502585%26\\_adf.ctrl-state%3D1a7lsq00ka\\_79](http://stat.gov.kz/faces/wcnav_externalId/publicationsCompilations?_afLoop=3673338400502585%40%3F_afrLoop%3D3673338400502585%26_adf.ctrl-state%3D1a7lsq00ka_79) (last accessed on 15 May 2018).

<sup>9</sup> The Nurdy Zhol state programme for infrastructure development for 2015-19, approved by Decree No. 1030 of the President of Kazakhstan, dated 6 April 6 2015, <http://adilet.zan.kz/rus/docs/U1500001030> (last accessed on 16 May 2018).

<sup>10</sup> Approved by Decree No. 473 of the government of Kazakhstan, dated 30 April 2011; ceased to be in force due to Decree No. 728 of the government of Kazakhstan, dated 28 June 28 2014, <http://adilet.zan.kz/rus/docs/P1100000473> (last accessed on 16 May 2018).

was a cumulative 10.8 million Gcal, or 11.2 per cent of the total thermal energy generated that year. Meanwhile, in 2016, losses amounted to 8.1 million Gcal or 11.2 per cent of the thermal energy<sup>11</sup> released. In some cities, this rate was significantly higher. For instance, in Ekibastuz losses stood at 40.0 per cent, in Pavlodar 28.0 per cent, in Kyzylorda 27.3 per cent and in Aktobe 26.0 per cent. In comparison, thermal energy losses in Denmark and Finland averaged 9-10 per cent over the same period.

- **Occurrence of faults:** Kazakhstan’s heating network suffers a high rate of faults (on average, 200 “technological disturbances” per 100 km).<sup>12</sup> In some cities, this rate is significantly higher. In Pavlodar the fault rate is 382 cases per 100 km of network, and in Petropavlovsk, 245.
- **Poor energy efficiency:** The district heating system is inefficient both in terms of generation and distribution, due to its specific reference fuel consumption and heavy power consumption. For instance, both in Kostanay and Kyzylorda, the specific reference fuel consumption per unit of thermal energy generated is, respectively, 180 kg and 160 kg of reference fuel per Gcal. By comparison, in Denmark, this figure is about 143 kg of fuel equivalent per Gcal. This suggests that fuel consumption in Kazakhstan’s heating network could be cut by 10-15 per cent.
- **Thermal energy metering:** Meters for consumer use are not widely available in the heat supply network and currently there are no methods of controlling consumption. Just 30 per cent of the thermal energy supplied is metered.

- **Environmental sustainability:** About 34 per cent of thermal energy is generated by coal boiler facilities.<sup>13</sup> Heat sources of this kind have a relatively low energy conversion efficiency (about 60 per cent) and high specific fuel consumption, leading not only to overconsumption, but also to increased emission of air pollutants, due among other causes to insufficient treatment of exhaust gases before discharge.

Growing demand for communal infrastructure is a common challenge for the utilities sector in Kazakhstan, due to expansion of the housing stock under the state housing construction programme. Over the five years from 2017-21, 52.79 million m<sup>2</sup> of residential space (including 25.92 million m<sup>2</sup> of multi-apartment buildings and 26.87 million m<sup>2</sup> of individual housing) are to be commissioned under the Nurly Zhol residential construction programme.<sup>14</sup>

As a result, the housing stock will increase by more than 15 per cent compared with early 2016. The launch of a new mortgage programme, titled “7 – 20 – 25” and announced in March 2018, will further boost the volume of housing construction and hence the need for utilities infrastructure. According to this programme, every working citizen of Kazakhstan will have the opportunity to obtain a mortgage in Kazakh tenge (KZT) under the following conditions: a loan interest rate not exceeding 7 per cent a year, a down payment of no more than 20 per cent, and a loan term of up to 25 years. These conditions will greatly increase the affordability of mortgages.

<sup>11</sup> Statistical compendium “Housing and Utilities”, Committee on Statistics of the Ministry of National Economy of Kazakhstan, Astana (2017), p. 75, [http://stat.gov.kz/faces/wcnav\\_externalId/publicationsCompilations?\\_afzLoop=3673338400502585#%40%3F\\_afzLoop%3D3673338400502585%26\\_adf.ctrl-state%3D1a7lsq00ka\\_79](http://stat.gov.kz/faces/wcnav_externalId/publicationsCompilations?_afzLoop=3673338400502585#%40%3F_afzLoop%3D3673338400502585%26_adf.ctrl-state%3D1a7lsq00ka_79) (last accessed on 15 May 2018).

<sup>12</sup> The Nurly Zhol state programme for infrastructure development for 2015-19, approved by Decree No. 1030 of the President of Kazakhstan, dated 6 April 6 2015, <http://adilet.zan.kz/rus/docs/U1500001030> (last accessed on 16 May 2018).

<sup>13</sup> Statistical bulletin on the operation of thermal power stations and boiler facilities in Kazakhstan (2016), [http://stat.gov.kz/faces/wcnav\\_externalId/publBullS7-2017?\\_afzLoop=3684556127128411#%40%3F\\_afzLoop%3D3684556127128411%26\\_adf.ctrl-state%3D13jqzqfnzo\\_535](http://stat.gov.kz/faces/wcnav_externalId/publBullS7-2017?_afzLoop=3684556127128411#%40%3F_afzLoop%3D3684556127128411%26_adf.ctrl-state%3D13jqzqfnzo_535) (last accessed on 16 May 2018).

<sup>14</sup> Approved by Decree No. 922 of the Government of the Republic of Kazakhstan dated 31 December 2016, <http://adilet.zan.kz/rus/docs/P1600000922> (last accessed on 16 May 2018).



The institutional and regulatory challenges facing the public utilities sector are as follows.

- **A lack of corporate development strategies:** Most public utility companies do not have clear long-term development strategies based on current financial and institutional capacity (in other words, based on current city master plans). As a result, enterprise management does not take into consideration the outlook for long-term consumer demand.
- **Need for corporate restructuring:** Over 60 per cent of water supply and wastewater disposal utilities and 50 per cent of heat-supply utilities are state-owned. Although, overall, their corporate performance is improving, the majority of firms have no motivation to improve it. Furthermore, the sector is characterised by high numbers of employees per unit of utility resource generated and in terms of network length, compared with the figures seen for European companies. State companies have not introduced key performance indicators into their business practices, which hinders the monitoring and benchmarking of their business and investment activities. It is vital to optimise these firms and their structures, and improve the efficiency of their activities.
- **Low tariffs do not guarantee modernisation of systems:** Despite the high costs of generating thermal energy, supplying water and disposing of wastewater, tariffs remain quite low and do not cover all of the operational and investment costs borne by utility firms. Tariffs still vary according to specific groups of consumers: for example, residential tariffs are lower than those applied to other customers. In addition, metering of water and heat supply is available to less than 50 per cent of residential consumers. So far, only some of the measures necessary to improve collection rates have been implemented. For the most part, these measures are used to ensure that customers repay any debts they may owe to the company, but they are not used not to prevent customers from accumulating debts in the first place. It is worth noting that the quality of the service provided affects collection rates. Monitoring consumers' opinions about service quality, and holding campaigns to raise their awareness of service quality, can prevent the accumulation of debt and eliminate the emergence of debt repayment problems. In order to work more effectively with consumers, utilities should have action plans to ensure high collection rates. These plans must define key performance indicators (KPIs) with clear deadlines, and list employees who are responsible for realising the KPIs. Despite the action that utility firms have taken against debtors, their collection rates could still be better.
- **Poor financial performance:** The current system of tariff regulation in Kazakhstan does not motivate utility companies to improve their performance and minimise operating costs. Most of these firms are therefore unprofitable. The first steps have been taken to change long-term tariff regulation to stimulate the economic involvement of utility firms in reducing their operating costs. However, positive changes are yet to be seen. The transition to long-term regulation can be carried out once the necessary amendments have been made to Kazakhstan's Law "On Natural Monopolies" (No. 272, 9 July 1998), and the necessary by-laws have been approved to establish incentivising tariffs that are based on the return-on-invested-capital method.
- **Lack of commercial funding:** Utility firms are usually financially unstable and commercial banks recognise that many are insolvent. Consequently, these firms do not have access to commercial funding, especially to long-term loans.
- **Lack of interaction with key stakeholders:** Utility firms do not consider the opinions of consumers in their decision-making, and lack programmes to address their relations with them or with other stakeholders. Information about the business activities of these firms is not publicly available, and most of them lack official websites.

## 2. Institutional and regulatory environment

The majority of utility firms are state-owned. Relations between firms and their owners (akimats) are administrative in nature. A system of this kind allows authorities to directly influence the business activities of these firms and issue mandatory instructions, including some that are unrelated to the companies' main activities in water supply, wastewater disposal or heat supply. This intervention negatively affects the firms' performance and creates additional investment risk. The possibility of administrative intervention in the business activities of a state firm is a major drawback for the firms themselves and for potential investors. Meanwhile, the activities of these firms are characterised by highly inefficient use of labour and by administrative expenses.

Water, wastewater and heating companies are recognised as natural monopolies. Their activity is subject to regulation by the relevant state authorities in Kazakhstan:<sup>15</sup> the Committee on Regulation of Natural Monopolies, Protection of Competition and Consumer Rights (CRNM and CP), which approves utility tariffs,<sup>16</sup> and the Committee for Construction, Housing and Utility Services, which approves the investment programmes of utility firms.<sup>17</sup>

These bodies regulate municipal enterprises in accordance with the Law "On Natural Monopolies" and the by-laws adopted pursuant to this Law, of which the most important are:

- a method of calculating tariffs that takes into account the need to stimulate private sector involvement<sup>18</sup>
- a special procedure for regulating the activities of natural monopolies that attract loans from IFIs and that are included on the list of such monopolies<sup>19</sup>
- rules for natural monopolies on tariff approval (prices, fee rates) and tariff estimates for regulated services (goods, works)<sup>20</sup>
- rules for approving and adjusting the investment programmes (projects) of natural monopolies, and for analysing information on project implementation.<sup>21</sup>

The scope for the regulation of utility companies is split between several national and local state authorities and requires effective collaboration.

<sup>15</sup> Kazakhstan's Law "On Natural Monopolies and Regulated Markets", dated 9 July 1998 No. 272. <http://adilet.zan.kz/rus/docs/Z980000272> (last accessed on 21 April 2018).

<sup>16</sup> According to the Provision of the Committee on Regulation of Natural Monopolies and Protection of Competition and Consumer Rights, approved by Order of the Minister of National Economy (No. 153, 12 April 2017), <http://adilet.zan.kz/rus/docs/G17NT000153> (last accessed on 21 April 2018).

<sup>17</sup> According to the Provision on the Construction, Housing and Utilities Services Committee approved by Order No. 128 of the Minister of Investment and Development of Kazakhstan, dated 2 March 2017, <http://adilet.zan.kz/rus/docs/G17IL000128> (last accessed on 21 April 2018).

<sup>18</sup> Approved by the order of the Minister of National Economy of Kazakhstan dated 28 December 2017 No. 436, <http://adilet.zan.kz/rus/docs/V1700016212> (last accessed on 21 April 2018).

<sup>19</sup> Approved by the order of the Acting Minister of National Economy of Kazakhstan, dated 24 November 2015, No. 710, <http://adilet.zan.kz/rus/docs/V1500012506> (last accessed on 21 April 2018).

<sup>20</sup> Approved by the order of the Chairman of the Agency of the Republic of Kazakhstan on regulation of natural monopolies, dated 19 July 2013, No. 215-OD, <http://adilet.zan.kz/rus/docs/V1300008642#z1> (last accessed on 21 April 2018).

<sup>21</sup> Approved by the order of the Minister of National Economy of the Republic of Kazakhstan dated 30 December 2014, No. 194, <http://adilet.zan.kz/rus/docs/V1400010459> (last accessed on 21 April 2018).

In general, the institutional and regulatory environment in the public utilities sector can be described as follows.

- The current system of tariff regulation imposes an excessive administrative burden on regulated enterprises with regard to the process of tariff approval and to monitoring investment programmes. It does not allow utilities to reflect all of their operating and investment costs in their tariffs.
- Utility companies are subject to the possibility of seeing their gross revenues fall due to required changes in tariffs, resulting in an overall decline in their financial state. This carries a risk that they could fail to perform their obligations and to maintain the quality of their services.
- The low tariffs in place do not facilitate the upgrading of communal infrastructure. Instead, they make utility firms less attractive to investors and thus reduce their access to the market financing that could help modernise infrastructure.

The costing procedure used to approve tariffs for regulated services limits the costs of utility firms to the technical and technological norms for the consumption of raw materials, fuel and power, and to standard technical losses. These norms differ significantly from the actual costs that utility firms face. For instance, calculations of thermal energy tariffs consider only the standard – but not the actual – costs of energy resources (such as gas) for heat generation or the heat losses that take place during distribution of thermal energy. Given that, as a rule, standard costs are significantly lower than the actual costs of producing and distributing thermal energy and water, the actual costs cannot be fully covered by tariff revenues. Therefore, the requirement to comply with standard costs causes shortfalls in planned income.

It is important to acknowledge that, despite work on economic management mechanisms in the energy and water sectors, certain requirements of Kazakhstan's current legislation on tariff regulation hamper improvements to the investment climate, and thus determine the current condition of most utility firms.

In addition, legislation on tariff regulation does not guarantee the social acceptability of utility service tariffs.

#### **Box 2.1. Shymkent water and wastewater treatment: a step in the right direction**

Most companies in Kazakhstan face common challenges in the utilities sector. But one firm is bucking the trend: Shymkent's Vodnye Resourcy Marketing (Water Resources Marketing), a water supply and wastewater disposal firm.

From the late 1990s onwards the company invested heavily in infrastructure to improve the quality of its water supply and wastewater disposal services. It was the first such firm in Kazakhstan to receive an EBRD loan, raise tariffs to a commercially viable level and introduce fully commercial water metering.

In 2010, the company and the akimat of Shymkent entered into a performance-based contract – drafted with the assistance of international consultants – to provide water and wastewater services. The contract established key performance indicators and bonus payments, and allowed the firm to align its investment programmes and funding sources with the akimat's requirements, setting an example of commercialisation in the water sector that could be adopted nationwide.

So far, the EBRD and Vodnye Resourcy Marketing have completed four investment projects and a fifth is currently under way.

# 3. Lessons from international experience: addressing affordability and institutional restrictions

International best practice shows that it is possible to address service affordability and institutional restrictions, significantly enhance the service quality of water and heat supply and wastewater disposal and improve planned performance, through commercialisation of the utilities sector and by observing the following key priorities:

1. invest in utility infrastructure
2. restructure utility firms
3. refine tariff regulations
4. introduce incentive-based contracting using key performance indicators
5. improve collaboration between utility firms and consumers, as well as other stakeholders.

## Need for investment

In recent years, the size of fixed assets, their deterioration, and the absence of basic modernisation point to a clear need for investment in communal infrastructure. Under the Ak-Bulak state programme for the period 2011-20, utility networks have been examined and the need to invest in their reconstruction has been justified.

An estimated KZT 515.6 billion is required for the reconstruction of water supply and sanitation networks in 86 cities (26 large and 60 small). This figure excludes the cost of facilities for water and sewage treatment. The total investment need stands at over KZT 1.27 trillion, an immense burden for the state budget and for utility firms.

The country's budget allocates approximately KZT 300 billion<sup>22</sup> to regional budgets each year for developing utility infrastructure. Through state budget loans, the National Fund of the Republic of Kazakhstan also finances projects to modernise and develop infrastructure, allocating approximately KZT 100 billion annually in 2018 and 2019.

State subsidies are available annually to natural monopolies in the utility sectors for construction and reconstruction projects, in cases where these enterprises attract loans from either local or international financial institutions to support these projects. In 2016, the sector attracted KZT 14.5 billion in loans from IFIs. The size of loan that the state grants to each natural monopoly implementing such projects is determined individually.

In addition, the partnership between Kazakhstan and the EBRD ensures that other funding is also available to implement development projects in the country's utilities sector.

Given the current weak financial prospects of water, wastewater and heating firms, the lack of increases in residential tariffs and the limited availability of services, Kazakhstan has developed new priority investment programmes (PIPs) for the sector, in association with the EBRD. These programmes operate in cities where the EBRD has investment projects – Aktobe, Kostanay, Kyzylorda, Petropavlovsk, Semey, Shymkent, Taraz and Ust-Kamenogorsk. The PIPs were drafted based on principles of cost optimisation and in order to achieve maximum financial, economic and technical effect.

In 2015-17, EBRD investment in the communal infrastructure sector comprised KZT 32.9 billion in heat supply (six projects) and KZT 27.8 billion in the water and wastewater sector (eight projects).

<sup>22</sup> The 2020 Regional Development Programme, approved by the government of Kazakhstan, dated 28 June 2014, No. 728, <http://adilet.zan.kz/rus/docs/P1400000728> (last accessed on 16 May 2018).

Investment projects in Kazakh cities where the EBRD works with akimats and utility companies can be characterised as follows.

- For the average city, long-term investment amounts to more than US\$ 100 million (KZT 32.6 billion equivalent)<sup>23</sup> over 10-13 years.
- The implementation of a PIP typically costs about US\$ 10 million over three to four years.
- Initial project stages usually involve: replacement of prioritised pipeline sections, modernisation of pumping equipment and facilities, complete metering of water and thermal energy, modernisation of thermal energy sources (combined heat and power plants and boiler houses), introduction of new control technologies (hydraulic modelling, plant supervisory control and data collection systems (SCADA – Supervisory Control and Data Acquisition)), automatic valves, and so on.
- During investment projects a nominal tariff increase of up to 30-50 per cent has been introduced. However, actual payments have been significantly lower due to customers cutting their consumption of resources. In all cases, tariffs have been kept within affordability limits. Water rates – including wastewater – have comprised less than 4 per cent of household income, a figure that lies below the internationally recognised threshold of affordability for water and wastewater services.
- Once tariffs have been raised, utility companies have been able to seek reimbursement of all their expenses, including their obligations to service loans and repayments during implementation of the PIP.

## Effects of implementing PIPs

Implementation has confirmed the economic efficiency and social significance of these PIPs, as the following results illustrate.

- Water losses have decreased from 35 per cent to 20 per cent as a result of the second EBRD project in Shymkent.
- The installation of meters for water and thermal energy has created new opportunities to determine actual consumption rates and can be used both for settlement purposes between consumers and utility companies and in order to save resources. Metering has demonstrated that consumption norms exceed metered figures by 30-40 per cent, due – among other reasons – to the fact that customers tend to use fewer metered resources. However, in some cases, actual consumption has been higher than the norm, for various reasons.
- develop cost-controlling measures (as well as measures to improve collection rates)
- draw up corporate development programmes (including medium-term business plans)
- improve corporate management (such as through a management information system system, procurement changes, environmental and safety standards, use of ISO standards, and so on)
- improve financial management (for example, through International Financial Reporting Standards, accounting systems, and so on)

## Corporate development and restructuring

Corporate development of utility firms is one of the most vital aspects of reform in the sector. Globally, utility companies take various forms: private, municipal, state and joint-stock, for example. Of these forms, the establishment of a joint-stock company is particularly conducive to improvements in operational performance and overall transparency. The desired system for managing institutional utility assets can be created through corporate restructuring. The EBRD usually encourages its clients to:

<sup>23</sup> According to the National Bank of Kazakhstan's rate on 26 April 2013, US\$ 1 = KZT 326.28.

- improve standards of corporate governance and disclosure
- apply meter-based billing for water and thermal energy supply.

Through key performance indicators, the Bank aims to incentivise the reduction of water losses and consumption, as well as more efficient use of labour.

## Public service contracts

When the government increases the supply of water and heating, the key concern is whether the quality of service will improve in tandem. In order to control service quality, the state concludes public service contracts (PSCs). Contracts of this kind are often an effective instrument and have proven to be successful across all economies where the EBRD invests.

In the development of a good PSC, the municipality acts both as a regulator and as a representative of end-users. Ahead of PSC negotiations, public consultations are held to ensure that the investment project reflects the interests of consumers. The PSC defines: (i) the company's rights and obligations and (ii) the municipality's rights and obligations. The company is obliged to achieve the key performance indicators set out in the contract. The municipality's obligations may, for example, include funding the investment programme. Key terms and conditions of the contract are flexible. They may be adjusted to suit specific conditions, which vary between municipalities, but the most important terms and conditions of the contract should:

- formalise the legal relationship between public entities
- increase transparency by setting performance targets during the implementation or monitoring periods of the project
- give companies incentives to achieve higher performance and improve productivity
- require the firms to hold public consultations and negotiations.

Moreover, the municipality should be able to control the quality of services that have been tied to past tariff increases (or control future increases linked to quality improvements that have already been made). Current state utility firms and Kazakh legislation do not allow for public contracts containing key performance indicators between these firms and akimats. The absence of such contracts impedes the setting of goals and the assessment of companies' performance, hence there is a lack of incentives for firms to do better.

## Sector regulation

In order to ensure effective oversight of the utilities sector, two sets of regulations are vital: technical regulation (defining and achieving KPIs) and economic regulation (regulation of tariffs for heat supply, water supply and wastewater disposal).

On the technical side, the PSC counterpart must have the technical skills to verify the reported performance indicators and to take appropriate action if the technical standards or promised standards of performance have not been met.

Regarding tariff regulation, Kazakhstan's current regulatory framework is complex and unwieldy.

The key challenges are:

- to further develop the tariff methodology to include an asset-based approach, and move towards predictable or long-term tariffs (in other words, tariffs that are more commercially oriented and attractive to the private sector in the long run)
- to improve governance and accelerate this process
- to reduce or eliminate social and political influence, and ensure that vulnerable low-income households are supported by the welfare system (namely, through targeted social security transfers), not through cross-subsidisation and tariff controls.

In this response to these challenges, the EBRD continues to cooperate with the government to improve tariff regulation through a technical assistance programme.

## Opportunities to regionalise firms

From an economic perspective, water supply in rural areas is more challenging because population density is lower than in urban areas and the per-capita cost of providing good-quality water is higher. In many areas, clean water is not readily available (for example, in Aktau), and thus firms may incur additional costs due to the difficulties they encounter in producing or transporting it.

In general, average income and willingness to pay are lower in rural areas, leading to potential problems with affordability. Furthermore, the size of the utility companies, which usually operate within administrative borders, may not be economically optimal. Therefore, the “regionalisation” of small rural companies is one way to mitigate some of these problems, although it is not a panacea, as there are substantial costs associated with regionalisation, including the cost of coordination and the excessive centralisation of decision-making powers.

The main benefits of regionalising firms of this kind are:

- achieving lower unit costs and higher productivity by sharing resources such as maintenance equipment and qualified engineers
- planning and developing common resources in the same economic area (for example, the same river basin across different cities) or common water resource (such as the same river)
- (often) better governance, with higher transparency in the management of regional boards and wider engagement with stakeholders.

Among the economies where the EBRD invests, regionalisation has been successfully implemented in Romania, where performance indicators have improved significantly as a result. In Kazakhstan, a country with a low population density averaging 6.6 people per km<sup>2</sup>, the opportunities and benefits of regionalisation should be evaluated seriously, except in large cities where utility firms have achieved or are achieving financial and operational sustainability.

## Opportunities for public-private partnerships

There are many types of public-private partnership (PPP), with different benefits and costs. For private investors, PPPs require close involvement and risk-taking – and often, risk capital and financing – so the business should be sufficiently attractive to the private sector. In other words, investment profitability should be in line with market expectations.

It is feasible to achieve private sector involvement at city or regional levels and using various contractual structures. These structures include management contracts, lease and full concession (build-operate-transfer) arrangements. Full concessions are only viable in large or wealthy cities.

The PPP structure may put pressure on consumers, and requires a careful assessment of project affordability and of their willingness to pay.

A PPP should not be an objective in itself, but should be a means of achieving key objectives (for example, increased productivity and technical renewal).

Private sector involvement seems financially and operationally viable in large cities in Kazakhstan if tariffs increase sufficiently and begin to be approved on terms that are of sufficient duration to generate the required tariff revenues.

The Shymkent water company is a good example of this approach, and has seen significant operational improvements. For smaller cities, the PPP approach should be carefully assessed, and there a gradual approach is recommended, as seen in Armenia. The gradual approach used there can make it possible to start with low-risk PPPs (which often require government support) and move towards high-risk PPPs if earlier efforts have been successful.

## Subsidising utility bills for low-income families

The authors' comparative analysis of Kazakhstan's experience shows that in many ways the system of housing support in the country is comparable to best international practice. Nevertheless, aspects of the system need to be improved to make it more targeted, strengthen payment discipline and reduce administrative costs. The current system has significant potential for further development.

For example, in Russia, the programme of subsidies for housing and utilities ("housing allowances") operates according to rules and methodologies that are common to the whole country. Regions have sufficient flexibility to establish standards that take local conditions into account, and these are used to calculate the size of allowances for different types of household. However, before reaching its present stable condition, the Russian programme of targeted housing allowances underwent several rounds of reform over a period of more than 15 years, supported by government pilot projects.

## International best practice

Almost all countries face the challenge of how to promote effective management of public municipal property.

The experience of different countries in tackling service unaffordability and institutional restrictions has yielded examples of good practice, in reforming tariff regulation and social security for residential utility users and in commercialising public utility firms. This good practice includes:

- strengthening the management teams of public utility firms, including through the preparation and implementation of corporate development programmes
- implementing tariff reforms and applying economically sustainable tariffs, provided that utility services remain affordable or become more affordable
- introducing management contracts based on key indicators of quality, reliability and energy efficiency, and also KPIs for the public utility firms.



# 4. Tariff reform as a tool for commercialising the sector

The state of utility infrastructure depends directly on the government's tariff policy. The financial position of public utility firms is largely determined by their tariff revenues. For investors, the attractiveness of the sector depends on the tariffs' predictability, the timeliness of measures such as repairs and rehabilitation, and the construction of utility systems. Kazakhstan's inadequate tariff policy has given rise to a series of problems; the most important of these is the critical level of wear and obsolescence of fixed infrastructure assets. To improve this situation, the government plans to introduce an incentive-based method of tariff regulation.

## Incentive-based method of tariff regulation

The incentive-based method of tariff regulation (the return-on-investment method) is a system of long-term formation of tariffs. The main purpose of this method is to create opportunities for attracting investment to modernise utility infrastructure and reduce operating costs. The method aims to fulfil the following goals:

- provide incentives to reduce the controllable costs of natural monopolies
- attract long-term investment in the modernisation of utility infrastructure
- improve the reliability and quality of services provided.

The incentive-based method of tariff regulation provides the required calculation of gross revenues, taking into account the return on investment within an established time limit, and the return on capital invested.

The regulatory asset base (RAB), a system of tariff design, lies at the core of the incentive-based tariff methodology. The RAB ensures gradual repayment of the capital invested, including an estimated return on invested capital. Due to a long repayment period

tariff growth remains contained. The system is attractive to investors, who are guaranteed to receive full payment and a specific return on investment (ROI). The size of the ROI should be fair – in other words, companies should get a return on their capital equivalent to the ROI of other companies that face the same level of risk. Based on a soon-to-be-introduced tariff methodology, a public utility company's tariff is calculated as the ratio of required revenue (RR) to the volume of services provided, where:

$$RR = \text{Return on invested capital} + \text{Payback of invested capital} + \text{Costs} \pm \text{Annual tariff adjustment}$$

The soon-to-be-introduced tariff methodology provides a mechanism to incentivise the provision of reliable, good-quality services.

If a regulated entity fails to reach these estimated values for the performance indicators it has to pay a penalty from its revenue:

$$\text{Penalty for failure to achieve quality and reliability indicators} = 50\% \text{ of the revenue on invested capital} * (1-Q),$$

where Q ranges from 0 to 1, and 0 corresponds to the maximum penalty for failure to reach the estimated values of reliability and quality indicators. Q is calculated as the sum of factors indicating the fulfilment of reliability and quality indicators in accordance with their specific weights.

Successful introduction of the incentive-based mechanism will require ongoing monitoring of reliability and quality indicators. The monitoring procedures may involve:

- regular verification of a utility provider's financial statements
- communication with utility service users
- spot checks by a regulator
- penalties for providing misleading information.

The road map for introducing incentive-based tariffs in Kazakhstan includes the following stages:

1. amendment of Kazakhstan's Law "On Natural Monopolies" (No. 272-I, 9 July 1998), and of the special procedure for the regulation of natural monopolies attracting foreign loans, which was approved by order of the Acting Minister of National Economy (No.710, 24 November 2015) (both amendments are due to take place in 2018)
2. development of by-laws to formalise the procedure for establishing incentive tariffs through the return-on-invested-capital method (taking place in 2018)
3. launch in 2018 of new tariffs in pilot companies in Ust-Kamenogorsk (in the water and wastewater sectors, public utility company (PUC) Øskemen Vodokanal; in the heat-supply sector, Ust-Kamenogorsk Heating Networks)
4. launch of new tariffs for additional pilot companies if the first pilot projects are successfully implemented (2019-20).

## Adopting incentive-based tariffs

Incentive-based tariffs for water and wastewater firms contain parameters that do not have to be reconsidered during a long-term regulatory period, and parameters that undergo an annual process of reconsideration. Parameters that do not have to be reconsidered over a long-term regulatory period are:

- the baseline level of controllable costs
- the minimum net working capital required
- the minimum return required on invested capital
- the payback period for invested capital

- the original amount of capital invested
- the indicators of reliability, quality and energy efficiency
- the level of water loss
- the specific energy consumption.

Tariff regulation parameters that are subject to annual reconsideration are:

- the consumer price index
- the cost of one unit of energy resource
- the index of change in the quantity of assets
- the amount of uncontrolled cost
- the cost and start time of construction or rehabilitation and commissioning of facilities envisaged by a firm's approved programme of investment, and the sources of financing for this programme.

The tariff design process involves calculating a company's required gross proceeds, which include elements such as current costs, subdivided in turn into controllable costs (which remain unchanged during the tariff regulation period) and uncontrollable costs (changes that are accounted for annually).

**Controllable costs** are those that relate to regulated activities. The figure for controllable costs depends on the activities of the regulated firm, which must take measures to reduce these costs. At the same time, the firm must also ensure that it achieves the estimated values required in terms of reliability, quality and energy efficiency of heat supply facilities, water and/or wastewater facilities during a given regulation period. Controllable costs include production, marketing and administrative costs.

**Production costs** are those directly related to the maintenance and operation of water supply and sanitation systems and heat supply facilities. They include, for example: the costs of acquiring and storing resources and materials; the costs of work and/or services carried out by third-party organisations that operate water and/or wastewater systems or facilities, and the heat supply facilities that are part of these systems; labour costs and social charges for operational staff; and other expenses.

**Administrative costs** include: the payment for works and/or services performed under contract by third parties, with the exception of expenses attributed to production costs; labour costs and social expenditures on administrative staff, including taxes and fees from the salary budget, expenses on business trips and staff training; and other expenses.

**Merchandising costs** are those costs relating to the sale of services, including billing services.

**Uncontrollable costs** are those that a regulated firm incurs during the production and sale of goods (for example works or services) linked to the regulated activities. The figure for uncontrollable costs depends on factors that lie beyond the activities that the firm carries out, and it is not required to take measures to reduce these costs. Uncontrollable costs include: the cost of energy resources purchased; taxes, fees and other obligatory payments, excluding taxes and fees calculated on wages and salaries and related to controllable costs; rent, concession fees and lease payments; costs of maintaining ownerless systems; costs of interest payments on soft (in other words, subsidised) loans, and so on.

## Tariff reform: impact on economic development

There is a risk that tariff reform could have a negative impact on economic development. Authorities should therefore take into account social and macroeconomic consequences, in which the main concerns are:

- affordability
- the impact on inflation
- a lack of improvement in service levels despite tariff increases
- a potential rise in social unrest (for example, protests).

In order to help address any negative consequences, the next section of this paper provides specific guidance on:

- the rationalisation of costs
- the indicative level of economically sustainable, long-term tariffs
- the indicative impact on inflation
- affordability and social impact
- interaction with stakeholders.

## Rationalisation of costs

Utility firms should be able to provide good-quality water at minimum cost. Yet the capital intensity of existing public utility facilities is very high. For these firms, electricity is an important cost, and can account for roughly a quarter of their total costs. In order to limit costs, regulatory bodies can specify the rationalisation of costs for a particular company based on an analysis of benchmarking undertaken by peer companies. At the regional level, it is possible to reduce costs through regionalisation, where appropriate, as well as through more stringent tariff regulation.

## Tariff levels

In Kazakhstan, tariffs are differentiated for various consumer groups and tariffs that the general population pays for utility services are kept low to ensure affordability. However, utility costs vary significantly from region to region.

On 1 January 2016, the cost of a cubic metre of water in regional centres and in major cities (Almaty, Astana) varied from KZT 22/m<sup>3</sup> in Pavlodar to KZT 110/m<sup>3</sup> in Karaganda. Meanwhile, the cost of wastewater services varied from KZT 21/m<sup>3</sup> in Shymkent to KZT 96.4/m<sup>3</sup> in Karaganda. In some cities, tariffs differed significantly from those specified by regulators. In Aktau, for example, the cost of water supply was KZT 234/m<sup>3</sup>, due to the use of expensive seawater desalination, while in Taraz, wastewater services cost only KZT 8/m<sup>3</sup> owing to a lack of sewage treatment facilities. The range of costs for heat supply was significantly narrower than those seen for water and wastewater – from KZT 2,112/Gcal in Pavlodar to KZT 5,785/Gcal in Almaty.<sup>24</sup>

Current tariffs for utility services only take account of the operating activities of public utility companies. State financing for the investment programmes of these firms has improved the condition of water supply and sanitation systems, which have received the bulk of budget subsidies. But the condition of heat supply systems continues to deteriorate, along with the financial performance of enterprises in this sector, which is reflected in their unprofitability, which shows significant regional variation. This testifies to the instability of the sector's current financial and economic model.

Over the period 2011-16, utility tariffs in Kazakhstan grew at 47 per cent, slightly outpacing inflation, which was a cumulative 36 per cent over the same period. Meanwhile, firms' expenses increased by just 12 per cent, due perhaps to more rational patterns of consumption and to the installation of meters. Central heating accounted for the largest share of housing and utility service (HUS) bills, at 34 per cent. Charges for water and sanitation typically accounted for just 1 per cent.

The tariff increases needed to finance the modernisation of utility infrastructure and the repayment of loans taken out for this purpose may in fact lead to smaller increases in HUS bills for consumers. Although rising tariffs may outstrip inflation growth, households can largely compensate for this by moderating their consumption of resources.

Many cities of Kazakhstan have already raised tariffs, and those that have made significant increases will require smaller tariff hikes in future. According to CRNM and CP estimates, in cities where utilities attract EBRD loans, tariffs for water, sanitation and heat supply increase by an average of 20 per cent.

<sup>24</sup> Statistical compendium "Housing and Utilities", Committee on Statistics of the Ministry of National Economy of Kazakhstan, Astana (2017), p. 75, [http://stat.gov.kz/faces/wcnav\\_externalId/publicationsCompilations?\\_afLoop=3673338400502585#%40%3F\\_afLoop%3D3673338400502585%26\\_adf.ctrl-state%3D1a7lsq00ka\\_79](http://stat.gov.kz/faces/wcnav_externalId/publicationsCompilations?_afLoop=3673338400502585#%40%3F_afLoop%3D3673338400502585%26_adf.ctrl-state%3D1a7lsq00ka_79) (last accessed on 15 May 2018).

## Impact on inflation

According to assessment by the Institute for Urban Economics, in the most radical scenario of tariff increases, in which tariffs for water, wastewater and thermal energy increase very rapidly and nationwide to an economically justified level, the direct and one-time impact on the consumer price index (inflation) would be approximately 2.1 per cent. In this scenario, the effect on the prices of consumer goods and services due to increased production costs would be relatively insignificant because the costs of water and thermal energy tend to constitute only a small part of overall production costs – typically, less than 2 per cent. According to the CRNM and CP, after the latest tariff increase, which is spread over several years, the effect on inflation amounted to 0.261 per cent a year.

The Economic Policy Council of Kazakhstan establishes the maximum permissible increase in inflation linked to nationwide increases in utility tariffs. Currently, this is set at 1.2 per cent a year (the full impact of tariff increases on inflation can be spread over several years). Once cost-recovery tariffs have been achieved, subsequent increases will be in line with inflation.

## Affordability

The internationally recognised threshold of affordability (household expenditure on water and wastewater services as a percentage of total average disposable income) is 5 per cent of household income.

Currently, the EBRD is implementing water supply and sanitation projects in the cities of Aktobe, Kostanay, Kyzylorda, Petropavlovsk, Semey, Shymkent, Taraz and Ust-Kamenogorsk. In-depth analyses of the affordability of water and wastewater services was carried out for these cities, based on current practice and the total disposable income of an average household in the region. The affordability ratio was also calculated for the poorest 10 per cent of households.

According to analysis conducted using 2017 data and posted on the website of Kazakhstan's Committee on Statistics of the Ministry of National Economy, water supply and sanitation services accounted for the following percentages of household expenditure: 1.7 per cent in Skymkent, 1.4 per cent in Petropavlovsk, 1.3 per cent in Aktobe and Kostanay, 1.2 per cent in Kyzylorda, 1.1 per cent in Ust-Kamenogorsk and in Taraz 1.0 per cent.

For the lowest-income households, expenditure on water and sanitation services in the fourth quarter of 2017 was slightly below 4.5 per cent of their income in Aktobe, Kostanay and Petropavlovsk, 3.8 per cent in Ust-Kamenogorsk, 3.5 per cent in Kyzylorda and Shymkent, and 2.5 per cent in Taraz.

These figures were determined on the basis of the highest established rates of water and sanitation usage for people living in well-maintained buildings that have a centralised water supply, sanitation, and are equipped with baths that use a centralised supply of hot water. Given that where meters have been installed, consumption is typically lower than the norm, the actual availability of water supply and sanitation services is higher for most of the population.

Tariff increases in the context of the implementation of PIPs do not cause serious problems. But it is still necessary to assess how they may affect the ability of low-income households to pay for water and sanitation. In Kazakh cities that are implementing projects using EBRD loans, it is possible to increase tariffs moderately without creating severe affordability problems for low-income households.

In recent years, HUS bills have remained generally stable across the country. Housing and utility expenditure in 2015 totalled 3.7 per cent of nominal cash income and 7 per cent of the population's consumer expenditure.

In 2015, 93,900 households (about 2 per cent of Kazakhstan's population) received housing support – subsidies for housing maintenance and utility payments. During the period 2011-15, as housing and utility expenditure stabilised as a percentage of consumer expenditure, the number of housing support recipients fell by 35 per cent, and more than halved from 2008-15.

Nowadays, budget subsidies and loans to utility firms, which account for 45 per cent of state investment in utilities, are the main source of funding to modernise the sector. Cross-subsidisation absorbs about 20 per cent of this expenditure, including on loans, and has grown markedly over the past few years. Meanwhile, targeted social benefits that support HUS payments account for less than 1 per cent of budget expenditure. Tariff growth will result in an increase in social benefits, which can be financed by reallocating the budget funds currently spent on subsidies and loans to utility firms.

## Interaction with stakeholders

Transparency in the activities of utility firms, and building a positive image in the public eye, are key factors for gaining the confidence of authorities, investors and consumers. Better interaction with consumers and other stakeholders is critical to improving the performance of these firms and ensuring maximum collection rates.

The EBRD typically demands implementation of stakeholder involvement programmes (public consultations before a project starts). For utility firms, members of the public are both their main consumers of water, wastewater services and thermal energy and their main source of income – in which they face the challenge of improving collection rates – so it is useful to create public relations tools to explain PIPs and their potential consequences (including tariff growth and improved levels of service) before implementing projects.

Practice shows that collection rates do not decline after PIPs have been implemented. In many cases, they increase – even where tariff growth exceeds 100 per cent, provided that a project has been explained and has gained consumer support.

Recommended tools for consumer interaction include the creation or upgrading of websites for utility firms, publication of annual reports and investment plans, media relations, meetings between top management and consumers, creation of procedures for consumers to file claims and monitor their progress, and consumer surveys. In order to systematise interaction, public utility firms should devise plans for communicating with the public, consumer group representatives and other stakeholders.

# 5. Contractual incentives and the role of the private sector

Modernisation, remodelling and construction in heat supply, water supply and wastewater disposal<sup>25</sup> requires considerable investment, which cannot be provided solely through public financing. Private sector involvement may be a means to ensure the long-term sustainability of the sector. However, the sale of heat supply, water supply and wastewater disposal assets to the private sector cannot be considered in Kazakhstan at this time. The United Kingdom is the only country where water and wastewater infrastructure has been privatised, and the authors' view is that the UK's experience has not been successful.

Currently, drawing private investors into PPP projects is a focal point in the development of the utilities sector. There are many types of PPP, each with various costs and benefits. PPPs require private investors who are prepared to accept a risk, and therefore the sector should be sufficiently attractive to private businesses (in other words, their potential return on investment should be in line with capital market expectations).

The private sector may become involved at various levels and under various types of contract. In the management of the water sector, lease and PPP contracts are used. Until now, PPP contracts have proven to be viable only in big cities. The PPP structure may impose pressure on consumers, hence affordability ratios and the readiness of consumers to pay require thorough assessment. A PPP should not be a goal in itself, but a means of achieving key objectives such as financial sustainability and increasing productivity.

In general, the EBRD sees frequent investment in the large and successfully developing cities of Kazakhstan as both commercially and operationally viable, but only if tariffs converge to commercially

viable levels and are approved for a sufficiently long term to generate a cash flow that covers the utility firm's operating costs and achieves the expected rate of return. In this regard, Shymkent is a leading model for utility investment in Kazakhstan. Gradual changes are often advisable, however, from low-risk PPPs (ones that require frequent government support) to higher-risk PPPs, unless other efforts such as rapid tariff changes are successful.

The best approach is to introduce a preparatory stage in the form of enterprise management contracts to improve firms' management of infrastructure. This is the first step towards greater economic independence for the companies and can lead to the development of PPPs and attract private investors. International best practice can be used to evaluate the efficiency of management contracts in communal infrastructure facilities.

There are various types of management contracts, but given the specific characteristics of the utilities sector in Kazakhstan, KPI-based contracts – known as performance-based management contracts (PBMCs) – are of primary interest. With regard to public assets, a contract of this type can be concluded with a private company following the results of an open competition to select a managing firm. Among the requirements for tender participants is the achievement of KPIs specified in the tender documentation for the management of other state assets. The fulfilment of these KPIs indicates the efficiency of the managing firm's activities and the condition of assets that have been under their management. KPI results can typically be achieved within a period of three to five years.

PBMC contracts to manage utilities and/or provide utility services would allow the public sector to establish good PBMC practice in Kazakhstan.

<sup>25</sup> Within the framework of the Nurdy Zhol state programme on infrastructural development for 2015-19, <http://adilet.zan.kz/rus/docs/U1500001030> (last accessed on 16 April 2018).

The use of these contracts in communal infrastructure has yielded positive examples in countries such as Armenia and Tajikistan, as boxes 5.1-5.4 illustrate. There, utility sectors face the same issues as their counterparts in Kazakhstan due to similarities in the institutional and legal setting, as well in as the state of their infrastructure.

#### **Box 5.1. Armvodokanal management contract, Armenia**

Under this management contract, the private operator, SAUR, received a fixed monthly payment (a subsidy) paid by the Armenian government.

The contract established a set of performance indicators that the private operator, Armvodokanal, had to achieve. No penalties were specified in the contract despite the unsatisfactory state of the water and wastewater infrastructure at the time when the contract was drawn up. However, the KPIs influenced the bonuses that the operating firm could receive, which depended on specific KPI values being achieved.

With regard to services, the private operator held complete responsibility for the management, utilisation and operation of the water and wastewater systems. Tariffs and government subsidies financed the private operator's expenses.

In general, the implementation of the PBMC had a positive effect. Some of the main water and wastewater parameters, which were subject to constant monitoring, improved significantly relative to the pre-contractual period. For instance, power consumption fell, daily water supply became more reliable and collection rates increased.



### Box 5.2. Lease agreement with Véolia Water for Yerevan-Vodokanal, Armenia

After the expiry of an initial five-year management agreement, similar to the Armvodokanal agreement (see Box 5.1), the Armenian government held an international tender for the Yerevan Vodokanal lease agreement.

Under the agreement, the private operator, Véolia Water, was responsible for providing public water and wastewater services. The tariff value accounted for all operational and maintenance costs, but excluded capital expenditure and depreciation.

The lease agreement established a set of KPIs and the penalties to be applied if the operator failed to achieve these. In turn, the government was responsible for capital financing of the municipal water supply and wastewater treatment enterprise by drawing on external funds from an international financial organisation.

The private operator was completely responsible for any maintenance and repair work and paid rent every six months. The lease agreement led to an improvement in water supply and wastewater disposal services.

### Box 5.3. Heat supply service agreement between the Aktobe akimat and a PUC

This agreement, signed in 2017, was a quasicontractual document. Its main objective was to institutionalise relations between the Aktobe akimat and the PUC in order to improve heat supply services.

The operations contract between the akimat and the PUC contained a condition that would deprive the PUC's CEO of their bonus, and terminate their employment contract, should the firm fail to achieve the KPIs. In turn, bonuses could be awarded to the PUC's CEO as an incentive to fulfil the KPIs.

### Box 5.4. Employment contract for the CEO of a service provider, Germany

Historically, a system of utility service providers (Stadtwerke) in Germany has provided various services in all three areas of water supply, wastewater disposal and heat supply. This enterprise of providers is a joint-stock company that owns communal infrastructure fixed assets. The company's stock (or, at least, a controlling interest) is owned by local authorities.

In accordance with German law, a shareholder representing the interests of local authorities concludes a labour contract with the chief executive of the relevant operating firm.

A diversity of management expertise, and the direct involvement of management in improving performance, facilitates the ongoing enhancement of all business processes, the classification of assets by service types and leads to a gradual rejection of cross-subsidisation.

Together, these factors ensure the profitability of municipal assets and create the right conditions for their corporatisation and a partial sale of shares on European exchange markets. Profit from the sale of shares like these is most commonly used to further modernise assets and improve service quality. This is particularly relevant in the area of heat supply, where competition remains high.

Kazakhstan would benefit from gaining experience in the following three forms of KPI-based management contract.

## **PBMC in the form of trust management of communal infrastructure facilities**

For this type of PBMC, parties to the contract are the initiator (the akimat) and the asset holder (the PUC), as well as the manager (the private firm that will operate the facility). KPIs should be established for the private operator's performance with regard to:

- drinking water quality
- the collection rate
- the cost recovery ratio (the ratio of PUC costs to revenues)
- outages in water supply, wastewater disposal and heat supply services
- the network fault rate
- the fuel efficiency of heat generation.

Subject of the contract: transfer to the private managing firm, into management facilities that are under the operational control of the PUC and are documented in the PUC's balance sheet. Contract term: up to five years. Payment terms for the managing firm: fixed part; incremental bonus based on achievement of KPIs or failure to achieve them; phased reduction of fixed payments. Funding options for paying the managing firm include:

- revenue component of the tariff (at the current tariff rate) or return on capital investment (where incentivising tariff rates apply)
- savings from the expenses component of the tariff
- local budget funds
- a fixed payment component introduced into the tariff (with a possible limitation).

## PBC as a contract to operate communal infrastructure facilities

Parties to the contract: the owner of the facilities (the akimat) and the facility management operator (the PUC).

KPIs for the performance of the PUC manager are established, for instance with regard to:

- drinking water quality
- the collection rate
- the cost recovery ratio (the ratio of PUC costs to revenues)
- outages in water supply, wastewater disposal and heat supply services
- the network fault rate
- the fuel efficiency of heat generation.

Subject of the contract: the joint activities of the parties, in compliance with the law in Kazakhstan, in order to provide high quality, reliable services at reasonable cost. Contract term: either up to five years, or more than five years (if concluding a credit agreement, the term of the contract can match the term for the provision of external funds). No separate fees are provided to the PUC, however, the size of incentives (bonuses and other payments) awarded to the management of the PUC should be tied to the achievement of KPIs.

## PBC as an employment contract with the management of the PUC

Parties to the contract: the employer (akimat) as settler of the relevant PUC and an employee (the PUC manager or CEO). Subject of the contract: the manager or CEO's fulfilment of responsibilities and compliance with the code of conduct; compliance with labour conditions; and timely payment of fixed salary and incremental bonuses, the size of which should depend on the achievement of or failure to achieve KPIs. Term of the contract: in accordance with Kazakhstan's labour code. Payment terms: fixed salary and annual bonuses tied to fulfilment of the KPIs established for the PUC manager. These KPIs would cover, for instance:

- drinking water quality
- the collection rate
- the cost recovery ratio (ratio of PUC costs to revenues)
- outages in water supply, wastewater disposal and heat supply services
- the network fault rate
- the fuel efficiency of heat generation.

# 6. Modernising the housing support system

Within the framework of the EBRD's cooperation with the government of Kazakhstan, a project is being implemented to reform the system of social support in the housing and utilities sectors.

The EBRD's consultants have proposed the following plan to modernise the system of local subsidy provision to low-income households:

- Define regional (local) standards for housing support entitlement and calculate the amounts to be paid.
- Provide all residents with the opportunity to obtain housing support, regardless of whether they have grounds to acquire property rights or to possess premises.
- Expand the list of types of housing and utility service payments taken into account when determining an individual's entitlement to receive housing support, for all categories of housing support recipients.
- Provide housing support based on the recipients' timely and complete payment of utility bills.
- Establish a longer term for the provision of housing support (up to one year).
- Change the procedure for determining how much housing support can be given during the provision period and the amount of monthly payments, taking into account variations in utility bills during the year.
- Improve the interdepartmental system of information exchange that is necessary for making decisions to provide housing support, so that it can receive information directly from automated state or non-state information systems.
- Combine and simplify the list of income types that are taken into account when calculating an individual's eligibility for housing support and other social benefits.

# 7. Working with the EBRD on a sub-sovereign basis

As utility firms in Kazakhstan need additional funding to modernise public infrastructure and reform tariff regulation, the EBRD and the government of Kazakhstan extended their framework cooperation agreement by three years from December 2017.

Currently, with EBRD support, Kazakhstan is implementing investment projects to modernise the centralised supply of water, heat and sanitation facilities in nine cities. The Bank is also considering expanding its loans for these projects. The implementation of these projects ensures that management and procurement are effective, with procurement procedures carried out according to EBRD rules, on a transparent and competitive basis. The EBRD is supporting:

- reform of tariff regulations in the utilities sector
- development of medium-term investment programmes
- implementation of corporate development programmes for utility firms
- optimisation of utility firms' performance
- reform of the system of targeted support for low-income households' utility bills.

In order to ensure the successful implementation of the initiatives the EBRD has proposed, the government provides the following support.

- The Ministry of National Economy and Ministry of Investment and Development, in cooperation with the EBRD, coordinate the implementation of the Enhanced Framework Partnership Agreement in the water, heat supply and sanitation sectors.
- Regional and city akimats are coordinating efforts for the ongoing implementation of EBRD projects.
- The state is promoting the reform of tariff regulations and development of the social welfare system.

Participating regional and city akimats and utility firms support the following activities:

- the preparation of feasibility studies for investment projects
- development and coordination of priority investment programmes on the basis of feasibility studies
- discussion or agreement of key corporate development goals
- development of IFRS-compliant accounting reports
- raising of tariffs to economically sound levels
- development of contracts based on key performance indicators.

So far, work with the EBRD on the commercialisation of Kazakhstan's utilities sector has produced the following results.

- Twelve agreements have been signed with state enterprises and three with private companies on financing from the EBRD, the government and akimats to implement PIPs.
- Economically sound long-term tariffs for borrowers have been approved. This change includes debt servicing: in seven projects, tariffs have been raised to the level specified in loan agreements. For a number of projects, preparation is under way to revise the previously approved five-year tariffs to ensure that debt servicing is included in the firms' NGPs.
- For all EBRD projects, akimats and enterprises have implemented contracts with key performance indicators.
- Three water supply projects have achieved a metering level of 95 per cent.
- All EBRD projects under implementation have achieved collection rates exceeding 90 per cent.
- In 10 projects, corporate development plans and programmes are under implementation to increase financial and operational efficiency. In addition, programmes of this kind are being prepared for two further projects.
- Eight projects have seen the introduction of information management systems, and similar systems are under preparation in four other projects.
- In five projects, the employees of utility firms have been trained, and training is under way or in preparation in seven more projects.

As a result of this integrated approach, EBRD-funded projects are creating financially sustainable utility firms that provide high-quality, affordable services to the population of Kazakhstan.



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