A. Condition of public utility services

The Uzbekistan public infrastructure and utilities services system was created during the Soviet period; since independence in 1991, the availability of public utilities has increased. During the period 1990-2012, for example, total water supply to flats (housing) increased from 64 to 82.7 per cent; delivery of natural gas from 44.6 to 83.5 per cent; provision of central heating from 29 to 44.9 per cent; and sewerage network provision from 25 to 77 per cent (see Table 9). However, figures vary between regions, and a significant gap still exists between urban and rural areas (see Table 10).

Meanwhile, during 1995-2012, investments in public services as a whole decreased from 2.1 per cent to 0.5 per cent of GDP.\(^60\) Construction and reconstruction of public utilities are funded primarily from the national and local State budgets, through targeted programmes.

Despite ongoing reforms in public services, some key issues remain. Over the past 10 years, the heating supply to cities and towns has decreased by 16 per cent, with the number of faulty heating networks increasing by a third. The loss of heat and electricity networks exceeded 60 per cent and 35 per cent respectively, while losses in water supply increased by 40 per cent.\(^61\) Deterioration of infrastructure networks represents the primary cause, affecting reliability and continuity.

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\(^61\) ESCAP, UNDP, CER, “Improving the management of urban infrastructure in Uzbekistan: problems and search for new mechanisms and instruments,” 2011. Available from...
For new urban construction, no serious obstacles are found when connecting to public services. However, with further such construction the infrastructure capacity may be exceeded, leading to connection delays – and making it impossible to issue a building permit. This increase in construction results from population growth, rapid business development, increased urbanization and the massive creation of new enterprises by industrial modernization programmes. The level of public infrastructure services will not, therefore, fully meet the needs of the country’s development status.

Table 10
Provision of housing stock with utility infrastructure in Uzbekistan, by region, as at 1 January 2013
(Percentage)

<table>
<thead>
<tr>
<th>Locality</th>
<th>Provision of flats (houses) with water supply</th>
<th>Provision of flats (houses) with heating</th>
<th>Provision of flats (houses) with sewerage</th>
<th>Provision of centralized collection of solid waste</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Countryside</td>
<td>Urban</td>
<td>Urban</td>
</tr>
<tr>
<td>Republic of Karakalpakstan</td>
<td>69.2</td>
<td>64.4</td>
<td>37.0</td>
<td>19.7</td>
</tr>
<tr>
<td>Andijan</td>
<td>92.9</td>
<td>88.3</td>
<td>32.2</td>
<td>41.8</td>
</tr>
<tr>
<td>Bukhara</td>
<td>61.4</td>
<td>49.6</td>
<td>56.1</td>
<td>66.8</td>
</tr>
<tr>
<td>Djizzakh</td>
<td>72.3</td>
<td>72.0</td>
<td>30.5</td>
<td>29.9</td>
</tr>
<tr>
<td>Kashkadarya</td>
<td>84.3</td>
<td>77.1</td>
<td>36.0</td>
<td>39.3</td>
</tr>
<tr>
<td>Navoi</td>
<td>78.1</td>
<td>68.0</td>
<td>55.5</td>
<td>61.7</td>
</tr>
<tr>
<td>Namangan</td>
<td>77.7</td>
<td>68.9</td>
<td>59.3</td>
<td>65.0</td>
</tr>
<tr>
<td>Samarkand</td>
<td>85.3</td>
<td>80.0</td>
<td>49.7</td>
<td>45.1</td>
</tr>
<tr>
<td>Surkhandarya</td>
<td>79.4</td>
<td>76.1</td>
<td>39.1</td>
<td>34.1</td>
</tr>
<tr>
<td>Syrdarya</td>
<td>79.0</td>
<td>78.9</td>
<td>91.9</td>
<td>69.5</td>
</tr>
<tr>
<td>Tashkent</td>
<td>81.9</td>
<td>71.2</td>
<td>73.0</td>
<td>58.8</td>
</tr>
<tr>
<td>Fergana</td>
<td>89.4</td>
<td>80.5</td>
<td>43.5</td>
<td>41.8</td>
</tr>
<tr>
<td>Khorezm</td>
<td>63.4</td>
<td>52.2</td>
<td>97.3</td>
<td>31.1</td>
</tr>
<tr>
<td>Tashkent city</td>
<td>99.3</td>
<td>-</td>
<td>99.1</td>
<td>99.3</td>
</tr>
<tr>
<td>Total for the country</td>
<td>82.7</td>
<td>72.6</td>
<td>61.6</td>
<td>58.1</td>
</tr>
</tbody>
</table>

Source: State Committee on Statistics.

Key participants in the provision of public services include local authorities; the Council of Ministers of the Republic of Karakalpakstan; and khokimiyats for Tashkent city and local regions. Their functions include:

• Implementing reforms in their respective regions
• Implementing State Programmes
• Developing the tariff policy for housing and communal services, jointly with the Ministry of Finance
• Coordinating the introduction of metering and regulating the consumption of water, gas, heat and other energy sources

**Water supply**

About 4.5 to 5 billion m$^3$ of drinking water are extracted from underground water sources every year, accounting for 6-8 per cent of total water resources. The other main sources are the open basins of the Amu Darya and Syr Darya, Zarafshan and Kashkadarya rivers. It is important to note that only 10-15 per cent of all water used in Uzbekistan falls within its territory, and more than 40 per cent is taken from groundwater sources.

Water is extracted via:

- Centralized systems (including gas geysers), 60.5 per cent
- Wells (including household wells), 4.4 per cent
- Domestic pumping jack, 14.8 per cent
- Springs, wells, 7.7 per cent
- Rivers, canals, ditches, and others, 7.3 per cent
- Imported water, 5.3 per cent

The State public utilities agency Uzkommunkhizmat manages four inter-regional water pipes, namely, Tuyamuyun-Nukus, Urgench-Tuyamuyun, Damhodzha and Dekhkanabad. It also manages the Hodzhaypak inter-district water pipe and the water main of the Chimgan-Charvak recreational zone. Public water is provided to 82.7 per cent of the population, including 72.6 per cent in rural areas. The water supply covers all cities, 93.5 per cent of urban settlements and 80.2 per cent of rural settlements.

Currently there exist 60,200 km of water lines and supply networks in the drinking water supply system; the capacity of water pipes is 11,360.6 thousand m$^3$/day.

The infrastructure includes the massive water supply conduit in Karakalpakstan, with a diameter of 1,400 mm and length of 380 km, built in 1990. This represents a strategic backup facility, which provides an additional water supply in dry years.

About 12,600 km of water supply systems (27.1 per cent of the total) are in urgent need of replacement, with more than 31,000 km of networks (50 per cent) requiring major repairs. According to Uzkommunkhizmat, in 2010 22,617 accidents concerning the water supply chain were reported.

Water supply equipment also has deteriorated. A total of 2,495 out of 3,442 power unit equipment units (72.5 per cent) were purchased in the 1950s-1990s, while 2,119 of 4,709 pumping equipment units (46.7 per cent) were purchased before the 2000s. On average, specific energy consumption to

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63 State Committee on Statistics.
64 Head design institute of urban development SUE Uzshaharsozlik LITI.
raise 1 m³ of water is 0.52 kWh, which is 2-3 times higher than if modern pumping equipment were used.\textsuperscript{65}

Water metering fully covers legal entities. However, for housing and apartments with centralized water supply, water meter coverage is less than 50 per cent.

Figure XXIV

Technical conditions of drinking water supply infrastructure in Uzbekistan

![Graph showing technical conditions of drinking water supply infrastructure in Uzbekistan](image)

\textit{Source:} Agency “Uz Kommunkhizmat”.

Water security has received increasing attention. In 2013 national consultations on water\textsuperscript{66} were held in Tashkent as part of the post-2015 development agenda. The following factors were identified as threats to water security:

- Institutional weaknesses of water management and lack of long-term planning
- Absence of an effective legal framework for the regulation of water use at international (cross-border) and national levels
- Non-rational and inefficient use of water
- Detrimental interference in the water resource management of local government, agricultural cooperatives (\textit{shirkats}) and other bodies
- Commercialization of water


\textsuperscript{66} Ibid.
Table 11
Water supply system in Uzbekistan

<table>
<thead>
<tr>
<th>Average actual water consumption, litre/day per capita</th>
<th>Average duration of water supply interruptions, hours/day</th>
<th>Tariff rate, USD/m³</th>
<th>Collection rate, percentage</th>
<th>Extent of coverage with water meters, percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban areas</td>
<td>Rural areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-700</td>
<td>1</td>
<td>8</td>
<td>0.15</td>
<td>80</td>
</tr>
</tbody>
</table>


Wastewater infrastructure

Local sewerage systems are only accessible to 38 per cent of the urban population and less than 5 per cent of the rural population. Of Uzbekistan’s 119 cities, only 79 have communal sewerage services (66.4 per cent). The length of sewer networks and collectors stands at 6,700 km. Total capacity of sewage treatment plants is 4,133,600 m³/day.67

In Tashkent, an unfinished separate system of water supply and sewerage treatment facilities exists, including three facilities with a capacity of 1.9 million m³/day. In rural areas, only about 10 per cent of houses have sewerage. One reason for low sewerage provision is the lack of water, resulting from its value to agriculture. Water consumption in households increases significantly when equipped with sewerage.68 Therefore, creating a conventional gravity sewer is problematic because of no water resources in many areas, meaning that such sewers require significant investment for construction.

Meanwhile, most current treatment facilities require reconstruction.69 It must be noted that the disparity between consumption of water (1.6 billion m³) and sewerage disposal (0.9 billion m³) has led to flooding of human settlements in some areas, as well as to poor health and environmental deterioration.70

Centralized heating and hot water supply

Because of Uzbekistan’s cold winters and hot summers, residential premises need to be heated and cooled to ensure favourable living conditions in different seasons. However, only 43.0 per cent of flats are provided with heating. Among apartment buildings, 44.9 per cent have heating.71

The main providers of heating and hot water in urban multi-storey housing are the State regional heating companies “Issiklikmanbai” that re-sell the heat purchased from JSC “Uzbekenergo”

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67 SUE Uzshaharsozlik LITI.
68 Main design and research institute Qishloq Qurilish Loyiha Ltd.
69 Agency “Uzkomunmuhizmat.”
71 State Committee on Statistics.
Local authorities currently are responsible for heating and hot water utilities. Uzbekistan has 22 district heat-supplying companies and more than 1,200 boilers that provide heating to multi-family housing, operating as part of district heating companies. In addition, local district heating boilers serve one or several residential houses. Individual houses usually have their own boilers.

Natural gas is the main energy source for heat production. In winters, because of peak loads and a lack of pressure in the natural gas pipeline, some boilers are fuelled by coal and fuel oil.

The vast majority of district heating systems in Uzbekistan were created during the Soviet period. Thus, their operational lifespan has been exceeded, which causes difficulties in ensuring stable central heating and hot water supply. The poor condition of these heating systems is caused by a number of factors, including the high cost of production, transmission and sale of heat. Financial problems also are found, compounded by low productivity of heating enterprises, outdated boilers, and losses in the main heating and in-house pipeline networks due to deteriorated pipes. In 2011, losses amounted to 1.8 million Gcal, or 10.2 per cent of the 17.5 million Gcal of heat produced. Fuel consumption was 155.3 kg/Gcal, significantly higher than the norm of 116.7 kg. Heat losses occur primarily during transportation by heat carrier. The total length of main heating networks in two-pipe calculation is 4,536.7 km.72

**Electricity and natural gas supply**

JSC Uzbekenergo is also the electricity supplier; almost the entire territory of Uzbekistan has access to electricity. However, while the city of Tashkent has an uninterrupted power supply, this is not the case for all the regions in the country.

Because of deteriorated cable and overhead electrical wire networks (see Figure XXV), electrical energy losses have increased. To date the loss of electric power stands at 18 per cent compared to a recognized standard of 13 per cent.

An overall reduction in deteriorated electrical networks has resulted from the rerouting of 6-10 kV cable lines, financed by Uzbekenergo. However, the degree of deterioration of electrical networks, as well as the number of accidents and injuries, continues to increase as a result of the shortage of funds for regular relaying of cable lines.

In 2011, the electricity tariff was set at UZS 83.6/kWh (USD 0.036/kWh), a tariff more than 12 times higher than in 2001.

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Box III
Water supply and water removal: an example in Tashkent

Tashkent has 100 per cent coverage with water supply and removal.

Technical characteristics of SUE Suvsoz (Tashkent Water Canal):

- Installed capacity of water pipes: 2,326 m³/day
- Length of the water supply and sewerage networks: 3,600 km
- Water lines: 636.3 km
- Distribution networks: 2,994.7 km. Number of pumping stations: 297
- Number of pumping units: 604
- Overall efficiency of treatment facilities: 1,945 m³/day
- Length of sewerage networks: 2,618.1 km
- Including collecting canals: 203.7 km
- Sewerage networks: 2,414.4 km

SUE Suvsoz replaces about 10-15 km of pipeline per year, which is about 10-20 per cent of what is required. Water leaks continue to affect about 15-45 per cent of pipelines.

A difference of about 30 per cent exists between the amount of supplied and removed water, according to reports of SUE Suvsoz. Thus, the imbalance between water consumption and sewerage disposal is not as great in Tashkent as in Uzbekistan generally; however, it still requires an analysis of causes, which may include leakage from arterial canals. Overall, leaks degrade the environment and can affect the integrity of the foundations of buildings and infrastructure.

Source: SUE Suvsoz. The data on the operating parameters of SUE Suvsoz, water supply and sewerage systems in Tashkent.

Photo VI
An example of urban stormwater canalization in Tashkent

Source: A. Fidanza, June 2014.
Box IV
Heat supply: an example in Tashkent

The major producer of heat in Tashkent (more than 80 per cent) is JSC Tashteplotsentral, with a majority stake owned by the municipality. Delivery of heat to consumers is provided through the urban heating network owned by the unitary enterprise Tashteploenergo, a wholesale buyer and a reseller of heat.

The length of heating supply networks in Tashkent is 3,500 km; length of the network in operation during the standard term is 50-90 per cent. In 2013 35 km. of heating systems were replaced, which was funded by UZS7 billion in subsidies and revenues made from collecting service fees.

Source: Unitary enterprise “Toshissikkuvvati”.

Figure XXV
Dynamics of change in the characteristics of cable and overhead electrical wire networks

Source: JSC “Uzbekenergo”.

Natural gas is provided by territorial subdivisions of the State company Uztransgaz. By the end of 2012, the natural gas supply amounted to 17.9 billion m³. This breaks down into the following: Supply to the general population, 12.2 billion m³ (67.9 per cent); supply to utilities, 2.8 billion m³ (15.6 per cent); and supply to other consumers, 2.9 billion m³ (16.5 per cent). The length of the street gas network totalled 105,300 km, 47,000 km of which is in urban areas. Overall, the gas supply reaches 4.5 million houses and flats (80 per cent). During 1990-2012, access to natural gas increased from 44.6 per cent to 83.5 per cent. However, gas supply remains unstable, and gas shortages often occur in winter, especially in rural areas.

More than 80 per cent of householder gas consumption is used for heating individual houses (equipped with gas boilers), with around 20 per cent for cooking. In remote areas, where there is no
possibility of supplying natural gas by pipelines, liquefied natural gas is supplied. A total of 473,200 (8.4 per cent) houses and apartments are provided with liquefied gas.\textsuperscript{73}

**Box V**

**Power supply: an example in Tashkent**

<table>
<thead>
<tr>
<th>Technical characteristics of the enterprise “Toshkentshaharelekttrtarmoklari”, which provides 100 per cent coverage of electricity supply in the capital, include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 76 power substations PS35-110 kV</td>
</tr>
<tr>
<td>• Installed capacity PS35 -110 kV of 3,416.8 MW (8.54 per cent of the capacity of the power grid of Uzbekistan)</td>
</tr>
<tr>
<td>• 5,117 transformer substations 6-10 kV</td>
</tr>
<tr>
<td>• Installed capacity of transformer substations of 3,075.4 mV</td>
</tr>
<tr>
<td>• Length of cable lines with voltage 0.4-6-10-35-110 kV: 7,207.7 km</td>
</tr>
<tr>
<td>• Length of overhead lines of 0.4-6-10-35-110 kV: 2,569.9 km</td>
</tr>
<tr>
<td>• Annual consumption of electric energy: 5,114 million KW/ h</td>
</tr>
</tbody>
</table>

**Distribution of electric energy**

- Legal entities - 1892.2 mln. kWh
- Population - 2096.7 mln. kWh
- Losses - 920.5 mln. kWh

*Source: JSC “Uzbekenergo”.*

**Collection and disposal of household waste**

International experience shows that high rates of economic growth, accompanied by rising real incomes, lead to an increase in the amount of garbage per person. In the United States, for instance, it was 650-700 kg/person per year in 2000, whereas now it is 850-900 kg/person per year; the trend of increased amount of waste per person per year is also present globally. Conversely, for Tashkent the rate of accumulation of solid waste, including public buildings, stands at 300kg/person per year. In 2011 the figure was 175 kg, while in 2000 it was 350 kg;\textsuperscript{74} this may suggest that the amount of illegal waste disposal is increasing.

With 300 kg of waste/person per year and an overall urban population of 15.6 million people, the potential annual volume of waste in Uzbekistan should be around 4.3 million tonnes, or 17 million m\(^3\). However, during 2000-2012 the volume of transported solid waste has decreased from 6.2 to 5.4

\textsuperscript{73} State Committee on Statistics.

million m³ per year (equivalent to 80-90 kg/person per year). Again, this discrepancy may be explained by an increased volume of illegal waste disposal.

Solid waste is mostly comprised of the following: 750-760 thousand tonnes of waste paper, 130-140 thousand tonnes of metal, and 140-150 thousand tonnes of textiles. At the same time, JSC “Uzbek Paper Mill” (with a paper recycling capacity of 24 thousand tonnes per year) and Angren, a cardboard factory (with a paper recycling capacity of 100 thousand tonnes per year), each collected only 10 thousand tonnes of paper waste per year.

At the end of 2012, the specialized car fleet for clean-up and removal of domestic waste comprised 2,103 units, including 258 watering machines, 18 snowploughs, 1,142 garbage trucks, 156 cesspool vehicles, and 310 lorries and trucks. However, 60 to 70 per cent of these specialized vehicles are outdated.

The quality of solid waste removal services has been criticized by both residents and officials responsible for street cleaning; no precise account of the volumes of removed solid waste exists. It is difficult to control how much solid waste each vehicle carries, how many laps it completes, and how much time it spends on each site. The density of transported waste varies greatly – it can range from 60-450 kg/m³ – so waste weight, rather than volume, should be measured. Weighing of waste, as well as its traffic management, would benefit greatly from computerization. For example, several cities in Russia used the experience of EU countries and implemented an integrated system of transporting, receiving and placing of municipal waste, which radically improved the service. In the Russian example, it became possible to assess the volume of incoming waste and determine the actual costs of recycling and disposal.

Landfills receive solid waste, industrial and construction waste, and service sector waste, among others. A significant proportion of landfills do not meet sanitary norms and operational standards. The estimated provision of landfills with water supply is under 20 per cent, and with electricity, 25 per cent. No more than half have driveway access, and only 1 in 6 has administrative rooms. In the absence of special sites, toxic, medical, and biological wastes are illegally disposed of in general landfills, with attendant epidemiological and environmental risks. However, in the absence of a systematic assessment of the impact of landfills on the environment, it is difficult to evaluate compliance with burial and disposal requirements.

B. Financial sustainability of the public utility sector

Public utility tariffs

According to the Rules for Provision of Utility Services:

- Tariffs for the services of gas companies belonging to the structure of the JSC “Uztransgaz” are approved by the Ministry of Finance
- Tariffs for electricity and heat production, transportation and distribution carried out by enterprises belonging to Uzbekenergo are approved by the Ministry of Finance

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75 Ibid.
76 Ibid.
77 State Committee on Statistics.
- Tariffs for services of water utilities (sewerage) companies under Government control belonging to the agency Uzkomkommkhizmat, such as the department for operation of inter-regional water pipelines Tuyamuyun-Nukus, Tuyamuyun-Urgench and Damhodzha, are approved by the Ministry of Finance
- Tariffs for centralized heating, hot water, cold water and sewerage services provided by local enterprises are approved by territorial financial authorities, the Ministry of Finance of the Republic of Karakalpakstan, financial departments of viloyats and Tashkent khokimiyats, in coordination with the Ministry of Finance
- Tariffs for solid waste removal and sanitation enterprises are approved by financial authorities in coordination with viloyat khokimiyats.

Utility rates appear to have increased at a faster rate than other prices, especially in Tashkent city, but are perceived to remain generally affordable to most people. The share of utility costs in 2010 was 16.7 per cent of total spending on paid services (see Table 12). Utility bills accounted for 6.7 per cent of total expenditures and 8.3 per cent of consumer spending on household expenditures in 2012.79

Table 12
Share of housing and public utility services in the total volume of paid services provided to the population

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid services, total (percentage)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>- Including public utilities</td>
<td>16.6</td>
<td>14.6</td>
<td>16.8</td>
<td>16.7</td>
</tr>
<tr>
<td>- Housing</td>
<td>2.2</td>
<td>1.9</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td>- Utilities</td>
<td>14.4</td>
<td>12.7</td>
<td>14.7</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Source: State Committee on Statistics.

A comparison of household expenditures on housing and public utilities services in various countries shows Uzbekistan has the capacity for tariff increases to ensure the financial sustainability of utilities (Figure XXVI).

Despite the affordability of household utility tariffs, utility service enterprises have incurred significant debts as a result of unpaid bills. This, along with the limited funds of many consumers, does not allow for timely and full payment for services, requiring Government subsidies to improve the district heating situation.

The Government, through the Cabinet of Ministers Resolution No. 300 of 6 November 2013 on Measures for Financial Recovery of Heat Supply and Water Supply, approved a package of measures to improve the efficiency and cost recovery of heat suppliers, including:

- Improvement and updating of legal acts and methodological documents in the field of communal services, to be developed during 2014-2015

79 State Committee on Statistics, Annual Household Survey.
- Development and modernization of the heating system in 28 major cities during 2014-2020
- Development of a programme for installation of building-level heat metres in apartment houses

Another decision of the Government to improve the performance of heat suppliers is the Cabinet of Ministers Resolution No. 197 of 17 July 2014 on Measures to Implement Road Map Programmes for Financial Rehabilitation of Unprofitable Heat-Supplying Organizations. According to this document, local authorities have started to develop schemes for modernization and capital reconstruction of heat supply facilities in 28 major cities. The concept of improvement of heating systems in big cities, as well as preliminary feasibility studies of projects, is being further developed. In turn, this will take into account regional characteristics, as well as the requirements of master plans for urban development.

Figure XXVI
Share of utility services in the expenditures of the population in various countries, 2012 (Percentage)


Assessment of investment priorities

Presidential Resolution No. PP-1446 on Acceleration of Infrastructure Development, Transport and Communications Construction in 2011-2015 was approved on 21 December 2010. It seeks to provide the population with good-quality water and sewerage services, envisaging the implementation of 39 investment projects for a total of USD 1,596.2 million (see Table 13).

The water supply and sewerage sector requires about UZS 3 trillion to bring the worn-out assets in line with regulatory requirements – the equivalent of 4 per cent of GDP (2011). The priority investments projects are the construction of new (and reconstruction of existing) water intake structures, and laying additional branches from pumping stations. Construction of large inter-regional water pipelines is planned, including Tupalang-Huzhaipok, Tuyabuguz-Bekabad, and Kungrad-Muinak, as well as a radical modernization of the Damhodzha interregional water duct. Another

priority that needs to be addressed is the reconstruction and development of sewerage in such cities as Bukhara, Samarkand, Urgench, Ferghana, Chirchik, and Termez. Other important projects are the improvement of the drinking water supply for settlements in the Republic of Karakalpakstan, Khorezm, Kashkadarya, Navoi, Surkhandarya, Namangan, Syrdarya, Samarkand, Jizzakh, and Bukhara viloyat, and in such cities as Ferghana, Kokand, Margilan, Nukus, Namangan.

In 2012, the Government adopted additional measures to improve the provision of good-quality drinking water and sewerage services. It also approved the programme of water supply and sewerage development for 2013-2015, which included specific investments in several locations.

A comprehensive programme exists for the development and modernization of drinking water supply and sewerage until 2020. This includes:

- Inspection of water resources
- Research and selection of existing sources of drinking water
- Modernization and reconstruction of water supply systems for the largest number of customers, especially those in rural areas
- Equipping consumers with tap-water metering devices
- Reconstruction and modernization measures for sewerage facilities, especially in cities where the drinking water supply has already been modernized and reconstruction of sewerage systems is required

To improve the system of communal services and the management of facilities and networks, the Tashkent khokimiyat, jointly with the Islamic Development Bank (IDB), has started investment projects to improve outdoor lighting, sewerage systems and sanitary purification (the latter jointly with ADB).

Table 13
Priority major investment projects of settlement water supply and sewerage development, 2011-2015

<table>
<thead>
<tr>
<th>Project name</th>
<th>Indicator</th>
<th>Total cost of the project (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the drinking water supply system in the Republic of Karakalpakstan and Khorezm region</td>
<td>713 m³/day, 568 km</td>
<td>38</td>
</tr>
<tr>
<td>Radical improvement of the water supply of cities of Ferghana, Margilan and settlements adjacent to the conduit</td>
<td>104 m³/day, 120 km</td>
<td>45</td>
</tr>
<tr>
<td>Water supply and sewerage service in rural settlements of Kashkadarya and Navoi regions</td>
<td>12.9 cu.m./day, 1,073 km</td>
<td>36</td>
</tr>
</tbody>
</table>

81 Public utility services agency Uzkmunnkhizmat.
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Volume/Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and sanitation in the Surkhandarya region</td>
<td>108.8 thousand m³/day, 391.3 km</td>
</tr>
<tr>
<td>Reconstruction of the sewerage treatment plants and sewerage systems in the cities of Bukhara and Samarkand</td>
<td>242.9 thousand m³/day, 67.05 km</td>
</tr>
<tr>
<td>Modernization of the Damhodzha inter-regional water pipeline and connection of the district centres and rural settlements of Navoi and Bukhara viloyats. Reconstruction of the sewerage system of the city of Termez</td>
<td>215 m³/day (water), 25.0 m³/day (sewerage), 299 km (water), 24 km (sewerage)</td>
</tr>
<tr>
<td>Reconstruction of the water and sewerage systems of Kokand and Andijan and the water systems of Ferghana, Margilan and the district centre Rishton</td>
<td>466 m³/day (water), 172 m³/day (sewerage), 311.3 km (water), 72.5 km (sewerage)</td>
</tr>
<tr>
<td>Water supply to the Jizzakh viloyat from the Zarafshan River</td>
<td>184 km</td>
</tr>
<tr>
<td>Improvement of the drinking water supply of Zarkent, Khodjikent, Iskovot, Bulokboshi, Buston and Yoshlik in Namangan viloyat, the city of Baysun and rural settlements from the Hadzhimaykhona spring of Surkhandarya viloyat, and the Kushrabat district of Samarkand viloyat</td>
<td>516.4 km</td>
</tr>
<tr>
<td>Construction of the inter-regional water main Tupalang-Huzhaipok with wastewater treatment plants in Surkhandarya</td>
<td>75 km</td>
</tr>
<tr>
<td>Improvement of water supply of the district centres and rural settlements of the Bayavut, Khavast, Mirzaabad, Sardoba and Akaltyn districts of Syrdarya viloyat</td>
<td>508 km</td>
</tr>
<tr>
<td>Construction of the inter-regional water supply system Tuyabuguz-Bekabad</td>
<td>105 km</td>
</tr>
<tr>
<td>Project Description</td>
<td>Distance</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Reconstruction and development of the sewerage systems of cities Nukus and Takhiatash</td>
<td>31.4 km</td>
</tr>
<tr>
<td>Reconstruction of the water intake structure Kuytash and the networks in district centres and rural areas of Zafarabad and Arnasaisk areas of Jizzakh viloyat</td>
<td></td>
</tr>
<tr>
<td>Reconstruction of the sewerage system of the city of Karshi</td>
<td></td>
</tr>
<tr>
<td>Reconstruction of the water supply system of district centres Kasan and Mubarak and villages adjacent to the conduit of the Kitab-Shahrisabz groundwater deposit</td>
<td>133 km</td>
</tr>
<tr>
<td>Reconstruction of water intake structures for rural water supply in Chinaz and Zangiata districts, as well as part of Yangiyul district of Tashkent viloyat</td>
<td></td>
</tr>
<tr>
<td>Reconstruction of the sewerage treatment facilities of the city of Chirchik, in view of water supply development of Chimgan-Charvak recreation areas</td>
<td>100 thousand m³/day</td>
</tr>
<tr>
<td>Reconstruction of sewerage systems in Ferghana and Margilan</td>
<td>260 thousand m³/day</td>
</tr>
<tr>
<td>Reconstruction and expansion of the sewerage systems in Urgench, Khiva and Pitnak</td>
<td>81 thousand m³/day</td>
</tr>
<tr>
<td>Improvement of the sewerage system of the city of Tashkent</td>
<td></td>
</tr>
</tbody>
</table>