

**Data Collection Survey
on Infrastructure Development
in Central Asia and the Caucasus**

**Final Report
Uzbekistan**

MAY 2019

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
NOMURA RESEARCH INSTITUTE, LTD.**

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Table and Figures.....	iv
List of Tables.....	iv
List of Figures.....	vii
Abbreviations	ix
1. Introduction.....	1
1.1. Background	1
1.2. Purpose.....	1
2. Methodology.....	3
2.1. Research framework.....	3
2.1.1. Target sectors.....	3
2.1.2. Research items.....	4
2.1.3. Assumed support tools.....	4
2.1.4. Desktop and literature research	4
2.1.5. Field research	4
2.1.6. Statistical data	7
3. Current situation of development policies / laws / infrastructure improvement and issue analysis	8
3.1. Fields prioritized for development	8
3.2. PPP-related systems.....	9
3.2.1. PPP legal system.....	9
3.2.2. PPP examples.....	13
3.2.3. Future PPP projects	14
3.3. Possibility of financial-sector fundraising.....	16
3.3.1. Possibility of private investment	16
3.3.2. Possibility of long-term fundraising	17
3.3.3. Restrictions on international commercial borrowing.....	18
3.4. Activity situation of donors.....	22
3.4.1. Asian Development Bank (ADB)	22
3.4.2. The World Bank.....	25
3.4.3. United Nations.....	30
3.4.4. European Bank of Reconstruction and Development (the EBRD).....	34
3.4.5. The United States Agency for International Development (USAID)	36

4.	Current situation of target sectors and issues related to future plans and sectors	39
4.1.	Urban development, transportation, and traffic.....	39
4.1.1.	Current situation of infrastructure improvement	40
4.1.2.	Infrastructure improvement agencies and personnel systems	44
4.1.3.	Cross-regional issues	47
4.1.4.	Issues upon promoting infrastructure improvement	52
4.1.5.	Infrastructure improvement projects.....	56
4.1.6.	Activity situation of donors	58
4.2.	Energy	61
4.2.1.	Current situation of infrastructure improvement	61
4.2.2.	Infrastructure improvement agencies and personnel systems	63
4.2.3.	Cross-regional issues	66
4.2.4.	Issues upon promoting infrastructure improvement	68
4.2.5.	Infrastructure improvement projects.....	69
4.2.6.	Activity situation of donors	74
4.3.	Environment	75
4.3.1.	Current situation of infrastructure improvement	75
4.3.2.	Infrastructure improvement agencies and personnel systems	79
4.3.3.	Cross-regional issues	79
4.3.4.	Issues upon promoting infrastructure improvement	80
4.3.5.	Infrastructure improvement projects.....	81
4.3.6.	Activity situation of donors	83
4.4.	Healthcare	85
4.4.1.	Current situation of infrastructure improvement	85
4.4.2.	Infrastructure improvement agencies and personnel systems	87
4.4.3.	Cross-regional issues	88
4.4.4.	Issues upon promoting infrastructure improvement	89
4.4.5.	Infrastructure improvement projects.....	93
4.4.6.	Activity situation of donors	93
5.	Activity situation of Japanese companies in the region	96
5.1.	Urban development, transportation, and traffic.....	96
5.1.1.	Activity situation of Japanese companies	96
5.1.2.	SWOT analysis of Japanese companies and sub-sectors where they have superiority	96
5.2.	Energy	99
5.2.1.	Activity situation of Japanese companies	100
5.2.2.	SWOT analysis of Japanese companies and sub-sectors where they have superiority	100
5.3.	Environment	104

5.3.1.	Activity situation of Japanese companies	104
5.3.2.	SWOT analysis of Japanese companies and sub-sectors where they have superiority	105
5.4.	Healthcare	108
5.4.1.	Activity situation of Japanese companies	108
5.4.2.	SWOT analysis of Japanese companies and sub-sectors where they have superiority	109
6.	Appendies.....	111
6.1.	Objectives of literature and desktop studies	111
6.1.1.	Legal documents.....	111
6.1.2.	Urban development and transportation	111
6.1.3.	Energy.....	111
6.1.4.	Environment.....	113
6.1.5.	Healthcare.....	113
6.2.	List of interviewees.....	115
6.2.1.	Urban development and transport.....	115
6.2.2.	Energy.....	116
6.2.3.	Environment.....	116
6.2.4.	Healthcare.....	117
6.3.	Statistics	119
6.3.1.	Urban development and transport.....	119
6.3.2.	Energy.....	120
6.3.3.	Environment.....	120
6.3.4.	Healthcare.....	121

Table and Figures

List of Tables

Table 1 Main sectors and types of infrastructure that were considered	3
Table 2 Uzbekistan field research schedule.....	5
Table 3 Major interview items (questions) for relevant agencies.....	6
Table 4 Examples of PPPs in Uzbekistan.....	13
Table 5 PPP project pipeline introduced on the PPP Development Agency's website.....	14
Table 6 Ministry of Investment and Foreign Trade subordinate organizations	16
Table 7 Sector-specific allocation based on the ADB's 2019 to 2021 Country Operations Business Plan...	22
Table 8 Major ADB projects.....	23
Table 9 Portfolio of projects being implemented in 2016 to 2017	25
Table 10 Major World Bank Group projects.....	27
Table 11 Major UNDP projects.....	31
Table 12 Programs UNICEF is working on in Uzbekistan	32
Table 13 Programs USAID is working on in Uzbekistan.....	37
Table 14 Railway-related projects being promoted as part of CAREC.....	49
Table 15 Strength of the government's interest in individual urban-development and transportation fields, associated issues, and their size.....	53
Table 16 Assumed projects in the urban-development, transportation, and traffic sectors	56
Table 17 Range of donor activities in Uzbekistan (summary)	59
Table 18 Enactment of measures to accelerate the development and ensure the financial sustainability of the electricity industry	62
Table 19 List of potential projects in the energy fields	69

Table 20 List of power-generation-related projects supported by donors	74
Table 21 Issues upon promoting infrastructure improvement	80
Table 22 Assumed projects in the waste treatment sector	81
Table 23 Assumed projects in the water supply and sewage sector	82
Table 24 Waste treatment projects being implemented in Uzbekistan by international aid agencies.....	83
Table 25 Water and sewage improvement projects being implemented in Uzbekistan by international ODA agencies	84
Table 26 Issues in Healthcare fields	90
Table 27 Projects being implemented by KfW in the Healthcare field as of May of 2018	94
Table 28 Major efforts and considerations by international aid agencies related to Healthcare in Uzbekistan	95
Table 29 Possibility of Japanese companies participating in traffic, transportation, and urban development fields.....	97
Table 30 Possibility of Japanese companies participating in energy fields	102
Table 31 Possibility of Japanese companies participating in environmental fields	106
Table 32 Possibility of Japanese companies participating in Healthcare fields	109
Table 33 List of Interviewees in the urban development and transport sector	115
Table 34 List of Interviewees in the energy sector.....	116
Table 35 List of Interviewees in the environment sector.....	116
Table 36 List of Interviewees in the Healthcare sector.....	117
Table 37 List of statistics and data sources for urban development and transport sector.....	119
Table 38 List of statistics and data sources for Energy sector.....	120
Table 39 List of statistics and data sources for the Environment sector	120

Table 40 List of statistics and data source for the Healthcare sector121

List of Figures

Figure 1 Changes in the EBRD loan amount in Uzbekistan	34
Figure 2 Transportation ratio of each transportation method in Uzbekistan	39
Figure 3 Passenger usage results for roads and railways (millions of passenger-kilometers)	40
Figure 4 Freight transportation ratios of roads and railways (millions of ton-kilometers).....	41
Figure 5 Changes in the number of international air passengers (1,000s of people: based on ICAO).....	42
Figure 6 Changes in the number of tourists (thousands of domestic and international tourists).....	42
Figure 7 Number of foreign tourists who visited Uzbekistan from January to October of 2017 versus January to October of 2018	43
Figure 8 Route map of CAREC corridors.....	48
Figure 9 Map of railway infrastructure projects.....	51
Figure 10 Uzbekistan's energy mix by fuel and the government's plan.....	61
Figure 11 Organizational structure of Uzbekistan's national energy sector since February 1, 2019.....	63
Figure 12 Organizational structure of the Ministry of Energy since February 1, 2019.....	64
Figure 13 Image of the establishment of an organization in charge of promoting energy saving in Uzbekistan	65
Figure 14 Activity model of the Coordinating Dispatch Center Energiya	67
Figure 15 Power transmission network of Central Asia (Uzbekistan, South Kazakhstan, Kyrgyzstan, and Tajikistan).....	67
Figure 16 Map of projects in Uzbekistan	73
Figure 17 Akhangaran Sanitary Landfill expansion plan.....	75
Figure 18 178 registered disposal sites and around 200 unregistered ones.....	76
Figure 19 Percentages of households using each drinking-water source by region (city scale)	77

Figure 20 Population served by each water supply method	78
Figure 21 Situation of sewage-infrastructure availability by local government scale.....	78
Figure 22 Changes in the numbers of hospitals and clinics in Uzbekistan	87
Figure 23 Organizational chart of the Ministry of Health.....	88

Abbreviations

ADB	Asian Development Bank
ADF	Asian Development Fund
AFD	Agence Française de Développement
BOT	Build Operate Transfer
BRT	Bus Rapid Transport
CAREC	Central Asia Regional Economic Corridor
CHP	Combined Heat and Power
CSMP	Comprehensive Service and Maintenance Program
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EMS	Emergency Medical Service
GDP	Gross Domestic Products
GHG	Green House Gas
HPP	Hydro Power plant
ICAO	International Civil Aviation Organization
ICT	Information and Communication Technology
IFI	International Financial Institutions
IPP	Independent Power Producer
JICA	Japan International Cooperation Agency
KWF	Kreditanstalt für Wiederaufbau ("Reconstruction Credit Institute")

MLIT	Ministry of Land, Infrastructure, Transport and Tourism
MW	Megawatt
NEDO	New Energy and Industrial Technology Development Organization
NESC	National Energy Saving Company
NG	Natural Gas
ODA	Official Development Assistance
OMETA	Overseas Medical Equipment Technical Assistants
PPP	Public Private Partnership
RRF	Republican Road Fund
SCADA	Supervisory Control And Data Acquisition
TIKA	Turkish Cooperation and Coordination Agency
TOD	Transit Oriented Development
TPP	Thermal Power Plant
TWh	Terawatt hours
UNDAF	United Nations Development Assistance Framework
UNDP	United Nation Development Programme
UNICEF	United Nations Children's Fund
UTY	Uzbekistan Temir Yollari

1. Introduction

1.1. Background

Various types of infrastructure constructed in Central Asia and the Caucasus region during the era of the former Soviet Union are continuing to deteriorate, and it is widely understood that there is a need for financial-cooperation-based support in order to renew and improve the infrastructure. At the same time, externally disclosed information regarding specific high-priority fields and highly feasible projects for infrastructure improvement is extremely limited, which is an issue for setting up projects.

In addition—due to concerns regarding regime changes and increasing public debt as well as expectations concerning increased foreign investment—rapid reforms are underway, including the formulation of new national development strategies as well as improvements to legal systems affecting government restructuring and public-private partnerships (PPPs), and the stances of the governments of each country regarding infrastructure development are changing as well.

For Japan, developmental cooperation to improve infrastructure is a focus field in terms of each country's official development assistance policy in the region. Based on the above trends, in order for Japan to consider its cooperative course of action as a country as well as specific new projects, it is necessary to collect and organize information on the infrastructure improvement situation of each country, the future approach policy, the activities of other donors, and new trends in recent years.

1.2. Purpose

The purpose of this research is to collect and analyze information on the national development strategy, sector-specific development priority and needs, support trends of other donors, and PPP-related systems, results, etc. of the covered countries (Uzbekistan, Azerbaijan, Armenia, Georgia), think about the possibility of utilizing Japanese technology / know-how and expanding business in countries targeted by Japanese companies, and consider the possibility of cooperation by Japan as well as promising new project candidates.

Based on the above mentioned background, we interviewed government agencies in the countries covered by this research, international financial institutions and other donors currently engaged in cooperation, and Japanese companies interested in overseas expansion, and we also conducted desktop research to consider infrastructure-improvement projects in each country and collect / organize useful information. Note that, although we kept loan assistance (yen loans, foreign loans and investments, etc.) in mind as we considered new project candidates, we

did not exclude the possibility of support through technical cooperation and financial aid.

In addition, due to policy shifts occurring in each country during the period of this research, this research was conducted during a time when the situation was changing with every passing moment. We conducted field research from May to October of 2018 and created this report based on information current as of December of 2018, but there were major situational changes after that as well. We did revise this report based primarily on major situational trends starting in January of 2019, but we would like our readers to double-check the latest information.

2. Methodology

2.1. Research framework

2.1.1. Target sectors

This research covers urban development, transportation / traffic, the environment (waste / sewage), Healthcare (medical care / welfare), and energy fields.

Table 1 Main sectors and types of infrastructure that were considered

Fields		Assumed projects
Urban development, transportation / traffic	Urban development	<ul style="list-style-type: none">• Urban roads, transportation network improvement
	Transportation	<ul style="list-style-type: none">• Port improvement• Airport improvement• Railway improvement
	Traffic	<ul style="list-style-type: none">• Traffic congestion measures
Energy	Power	<ul style="list-style-type: none">• Renewable energy• Combined cycle power generation• Power transmission and distribution network rehabilitation
	Regional heat supply	<ul style="list-style-type: none">• Boiler replacement• Heat supply network rehabilitation
	Other	<ul style="list-style-type: none">• Other
Environment	Sewage	<ul style="list-style-type: none">• Treatment plants, sewer line rehabilitation
	Waste treatment	<ul style="list-style-type: none">• Waste disposal site improvement and restoration• Recycling equipment introduction
Healthcare	Medical care	<ul style="list-style-type: none">• Medical equipment renewal• Advanced medical equipment introduction
Other		Although this is not included in the above, we confirmed needs for the following as well: <ul style="list-style-type: none">• Public safety measures

2.1.2. Research items

The major research items covered by this research are as follows:

- Infrastructure improvement plans, development issues, etc.
- Infrastructure development organizations, human resources, etc.
- PPP-related policy framework and infrastructure / examples
- The support situation of other donors
- Fundraising situation related to infrastructure development
- Project short list
- Project long list

2.1.3. Assumed support tools

We considered the possibility of support utilizing the following JICA schemes:

- ODA Loan
- Private Sector Investment Finance
- Grant Aid
- Technical Cooperation

2.1.4. Desktop and literature research

While conducting this research, we collected existing information by searching the websites of the Uzbek government, donors, etc. and retrieving documents. Details on the literature used for this research are provided in 6.1.

2.1.5. Field research

We conducted our field research based on the overview below. During this research, we visited government agencies, donors, local governments, hospitals, etc. and conducted interviews there.

First, we visited the State Committee for Investment (an aid-receiving agency) to confirm the Uzbek government's

order of priority for its overall support expectations, etc. Next, we interviewed the main agencies in each sector.

For the urban development, transportation, and traffic sectors, we visited organizations that included the State Committee for Roads, the Ministry of Housing and Communal Service, Uzbekistan Airways, and O'zbekiston Temir Yo'llari (Uzbekistan Railways).

For the energy field, we visited organizations that included Uzbekenergo, Uzbekhydroenergo, and the Coordinating Dispatch Center Energiya.

For the environmental field, we visited organizations that included the Meteorological Agency and the Committee on Ecology and Environment Protection.

For the health field, we visited organizations that included the Ministry of Internal Affairs, the Ministry of Health, state and municipal Oncology Centers in Tashkent, and the Republic of Karakalpakstan Ministry of Health.

The specific places we visited are listed in 6.2.

Table 2 Uzbekistan field research schedule

Fields	First time	Second time
Overall	May 21 (Mon.) to May 28, 2018 (Mon.)	
Urban development, transportation, and traffic	June 11 (Mon.) to June 15, 2018 (Fri.)	September 17 (Mon.) to September 21, 2018 (Fri.)
Energy	June 11 (Mon.) to June 15, 2018 (Fri.)	September 17 (Mon.) to September 21, 2018 (Fri.)
Environment	May 21 (Mon.) to May 28, 2018 (Mon.)	
Healthcare	May 17 (Fri.) to May 21, 2018 (Mon.) June 4 (Mon.) to June 8, 2018 (Fri.)	

The major interview items were as follows.

Table 3 Major interview items (questions) for relevant agencies

Research target	Major interview items
Ministries and government offices, business entities (local government, public corporations etc.)	<ul style="list-style-type: none"> • Socio-economic development plans, high-priority sectors • Improvement plans for individual infrastructure sectors, high-priority projects • Areas of responsibility and personnel systems of each agency, project-implementation issues, and the necessity of human-resource development in connection with aid-project implementation • List of projects for which JICA support is expected, overviews of each, and sharing of site information if possible • Segregation of donors, and the support situation with Russian, Islamic, and Chinese aid agencies in particular
Other donors	<ul style="list-style-type: none"> • Regions and sectors on which efforts are currently focused • Projects for which future support is being considered, projects that are not currently being handled but are high-priority in each country, and the possibility of collaboration with JICA • Evaluation of the aid-project implementation ability of partner-country governments, ministries and government offices in charge, awareness of issues in terms of project implementation by responsible organizations, etc. • The possibility of setting up PPP projects, fund liquidity, and the financial access situation • Sector-specific cross-cutting issues in Central Asia and the Caucasus region, the corresponding measures, and the direction of efforts to enhance regional connectivity
Japanese companies	<ul style="list-style-type: none"> • The situation of activities in the area • Candidate projects that could be the target of loan assistance, PPPs, etc. and overviews of them • SWOT analysis of products and services the companies are attempting to sell in the region, and the situation of competitors • Projects regarding which there is strong future interest based on project information about sectors in each country, and opinions on the order of priority in each country based on experience residing abroad

2.1.6. Statistical data

In Uzbekistan, statistics related to each sector were not disclosed before December of 2016, and the country gradually started disclosing these statistics after President Mirziyoyev was inaugurated. Currently, the latest version of the statistics can be obtained from the website of the State Committee of the Republic of Uzbekistan on Statistics. However, compared to the Russian and Uzbek websites, the English version of the website is not updated as frequently. According to the Embassy of Uzbekistan in Tokyo, the Quarterly Report on this website is updated every quarter, and the information there is up to date. Note that the statistics used for our analysis are provided in 6.3.

3. Current situation of development policies / laws / infrastructure improvement and issue analysis

3.1. Fields prioritized for development

Regarding Uzbekistan's socio-economic development, President Mirziyoyev specified a direction with the *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*, part of a presidential decree announced on February 7, 2017, following his inauguration in December of 2016. The specific details are provided below.

- Priority areas for improving the system of state and public construction
 - Increasing democratic reforms and modernization, administrative system reforms, systematic and legal-foundation improvements for public services, strengthening the role of parliament and political parties in e-government system improvements, improving public-service quality and efficiency, and strengthening the role of civil-society agencies and the media
- Priority areas for ensuring the rule of law and further reforming the judicial system
 - Enhancing judicial independence, protecting the rights and freedoms of citizens, improving administrative, criminal, civil, and economic legislation, improving crime-fighting-system effectiveness, comprehensive enforcement of principles of competition in court, and improving legal aid and legal service
- Priority areas of economic development and liberalization
 - Enhancing macro-economic stability, maintaining a high economic growth rate, increasing competitiveness, modernizing and intensively developing agriculture, ongoing institutional reforms to reduce the presence of the state in the economy, developing small and medium-sized enterprises as well as private entrepreneurship, balanced socio-economic development that integrates communities and local government, and active attempts to attract foreign investment in the economy and regions through investment-environment improvements
- Priority areas of development of the social sphere
 - Gradually increasing jobs and the population, improving social security and health systems for citizens, increasing social and political activities by women, implementing a goal-oriented program to build reasonably priced housing, and improvements related to development education as well as

culture, science, literature, art, sports, and other development fields, region-specific youth policies, etc.

- Priority areas in the field of security, inter-ethnic harmony and religious tolerance, and implementation of balanced, mutually beneficial and constructive foreign policy
 - Creating a security platform for the area around Uzbekistan, securing stability and good neighbors, enhancing the country's international image, and ensuring national security, harmony between nations, and religious tolerance

Regarding infrastructure development plans to which this action strategy has been applied, an official announcement was made for the power sector¹ on October 23, 2018, and for the medical sector in December of 2018 by a presidential decree.² As of the end of December of 2018, no individual plans, etc. had been confirmed for the remaining fields, but there is a high possibility of future presidential decrees being announced for these fields similarly to the cases of the power and medical sectors.

3.2. PPP-related systems

3.2.1. PPP legal system

Before March 24, 2019, there was an understanding regarding Uzbekistan that the *Law on Concessions*, which was enacted in 1995, might apply in the case of any involvement in infrastructure improvement led by the private sector.³ The *Law on Concessions* provides guarantees related to the implementation of specific economic activities related to the transfer of the ownership of real estate and land lots used as a basis to conclude concession

¹ Resolution of the President of the Republic of Uzbekistan of October 23, 2018 No. PP-3981, About measures for the accelerated development and ensuring financial stability of electric power industry

² Указ Президента Республики Узбекистан О комплексных мерах по коренному совершенствованию системы здравоохранения Республики Узбекистан №УП-5590 07.12.2018

Decree of the President of the Republic of Uzbekistan On comprehensive measures to fundamentally improve the health system of the Republic of Uzbekistan No. UP-5590 07.12.2018

³ The Law on Concessions is also introduced as an Uzbek PPP-related law at the website <https://pppknowledgelab.org/countries/uzbekistan>, which introduces examples of PPPs related to global infrastructure improvement operated by the World Bank.

agreements to investors, and the law separately defines domestic and foreign investors. The Law on Concessions assumes the leasing of land to develop natural gas and other resources and to produce agricultural products as well as forced crop purchasing by the state, etc. However, the Law on Concessions is not a sufficient legal basis for PPP-based infrastructure investment. For example, the target sectors are not clearly defined, and the methods for selecting the concessions themselves are not regulated in detail. In particular, there are no regulations related to the pre-selection procedure, the disclosure of granted concession rights, the possibility of direct negotiations regarding escape clauses, decisions by the prime minister, or procedural reviews. In addition, the *Law on Concessions* includes project-agreement articles, but—as one example—these articles do not include regulations on the negotiation of high-priority purchase rights by concession holders with the state in connection with products in cases where a concession-right extension is necessary. It has also been pointed out that the *Law on Concessions* does not actually work at the present time.

In Uzbekistan, the PPP Law was approved on February 25, 2019, and it was enforced on March 25, 2019.⁴ The PPP Law regulates procedures for PPP implementation, and it specifies details related to PPP-agreement requirements, PPP-related government support, and government guarantees. The law details are standard and are similar to laws often seen in other countries, and privately initiated project proposals are also possible.

In Uzbekistan, PPPs are a way to get the private sector involved in design, construction, renewal, operational management, and maintenance and repairs related to long-term infrastructure projects, and the regulations ensure risk sharing between public and private parties (Article 5). The period for any given PPP project is less than 3 years and shall not exceed the term of 9 years, but period extensions are possible based on the mutual agreement of the parties (Article 28). Regarding PPP-agreement parties, there are many state-owned companies in Uzbekistan, but the regulations clearly indicate that state-owned companies are considered to be on the government side (Article 13). In addition, the list of state blocks of shares (shares) in the authorized capital of business entities offered for sale to investors, including foreign investors defined in the Attachment #1 to the Resolution of the President of the Republic of Uzbekistan # PP-4300⁵: Waste collection, treatment, incineration, landfilling, and recycling

- Education
- Healthcare
- Road construction, operation, and maintenance

⁴ <https://regulation.gov.uz/ru/document/2527>

⁵ <http://lex.uz/docs/4312750>

- Public transportation
- Railways
- Aviation
- Electric Power Industry
- Renewable energy
- Logistics facilities
- Industrial parks
- Water supply and sewage
- Agriculture
- Information and telecommunications systems
- Chemical industry
- Oil and Gas industry

As of April of 2018, there were no specific administrative agencies in Uzbekistan in charge of PPP promotion, but, at the end of October of 2018, a presidential resolution to establish the PPP Development Agency⁶ under the umbrella of the Ministry of Finance was announced.⁷ In addition, a presidential decree has been announced in relation to not only the infrastructure field but also the fields of culture and art.⁸ The PPP Development Agency is regulated by the PPP Law as well, and the agency is researching possible system improvements and needs related to promoting PPP projects (Article 12).

In Uzbekistan, it is possible to set up PPP projects from both the public and private side (Article 13). In the case of projects initiated by the private sector, the projects must be proposed to the competent authority (Article 14). In actuality, before this proposal is submitted, information must be exchanged with the competent authority, and then, after the proposal is submitted, the competent authority must decide whether to accept or reject the proposal within 30 days (Article 17). If the competent authority is in violation of any laws, the competent authority does not have the necessary authority, or the project is not necessary, the competent authority can reject the proposal (Article 21). In addition, if the competent authority accepts the proposal, the authority must then transfer the proposal to the PPP Development Agency (Article 21). Furthermore, if the project scale is USD 10 million or

⁶ <https://www.pppda.uz/>

⁷ Resolution of the Cabinet of Ministries of the Republic of Uzbekistan About the organization of activities of the Agency on development of public-private partnership under the Ministry of Finance of the Republic of Uzbekistan (December 13, 2018 No. 1009)

⁸ Resolution of the president of the Republic of Uzbekistan about measures for creation of conditions for development of public-private partnership in the field of culture and art (August 1, 2018 No. PP-3892)

more, the consent of the Cabinet of Ministers is required (Article 18). After the PPP Development Agency provides its consent, the competent authority must publish the PPP project proposal on its website and provide an opportunity for third parties to submit expressions of interest. If there are no expressions of interest from third parties within 45 days, the proposal process shifts to the final negotiation with the proposer in accordance with Article 25 (Article 17). If any third parties express their interest, the process shifts to open bidding in accordance with Article 17 as stipulated by Chapter 4 of the law. Private proposer is entitled to receive compensation related to the preparation of PPP project in the amount that does not exceed one per cent of the total project cost at the expense of the bid winner or reserved bid winner (Article 17). No other expenses shouldered by the proposers are a subject of compensation (Article 35).

According to the PPP Law, open bidding is generally required as stipulated in Chapter 5, but—in cases related to national security, cases where compensation for ownership is not possible due to PPP project implementation, including intellectual property, exclusive rights, and the ownership of land or real estate, and cases deemed necessary by the president—optional contracts (directly negotiated) are approved (Article 25).

The PPP Law also regulates financial support provided by the government (Article 38). More specifically, the law specifies regulations related to PPP subsidies, the provision of assets, income guarantees (guaranteed user minimums), other guarantees and incentives, the duty to use a certain amount of public-agency goods, services, etc., the supply of loans and other types of funds, compensation for and the government burden of specific costs and risks, fundraising-related government guarantees, etc. (Article 38), and the law therefore makes extensive financial support possible. In addition, the law specifies regulations related to availability payments to PPP project managers from the government budget, lump-sum payments to the government from PPP project managers, income sharing payments, the payment of concession fees in other forms, and various other forms of payment between public and private parties (Article 39).

3.2.2. PPP examples

The two PPPs below have been implemented in Uzbekistan in the past. Such projects are expected to increase under the PPP Law.

Table 4 Examples of PPPs in Uzbekistan

PPP name	Bidding method	Form	Sector	Starting year	Amount (millions of USD)	Sponsor	Creditor	Gov. support
Udinet (canceled)	Direct negotiation	BOT	ICT	1996	320	Telecom Italia (38%) Siemens AG (8%)	NA	NA
Bukhara & Samarkand water supply project	Competitive bidding	Management agreement	Water supply and sewage	2004	0	Amiantit Group Stockholm Water Company	World Bank	NA

Source) <https://pppknowledgelab.org/countries/uzbekistan>

3.2.3. Future PPP projects

Currently, Uzbekistan is preparing to introduce PPP-related systems with the support of the World Bank Group. According to the PPP Development Agency's website, several PPP projects are being developed (table 5). Of these, the bidding process for the hemodialysis centers and 100-MW solar project in the Navoi region has already started (as of April 2019).

Table 5 PPP project pipeline introduced on the PPP Development Agency's website

Field	Project name	Overview	Project amount	Supporting international aid agencies
Water supply and sewage	Water Supply and Sewage System in 4 Cities	Water Supply and Sewage System in 4 major cities of Uzbekistan: Samarkand, Bukhara, Karshi and Namangan.	NA	the ADB
	Modernization of Water Supply and Sewage system	A project to renew Tashkent's water supply and sewage infrastructure	USD 450 million	NA
Society	Transfer to trust management of 4 secondary schools	New expansion of middle schools in Tashkent	NA	NA
	Hemodialysis centers	Facility construction, equipment procurement, fundraising, and operation in order to develop an outpatient artificial dialysis network covering approximately 2,700 patients throughout Uzbekistan by using a PPP scheme	USD 270 million	NA
Transportation	Construction of bus stations nationally	Construction of four bus stations	USD 1 million	NA
	New Highway Syrdarya Region 27 km	Development of a highway covering a 27-km section from Syrdarya to Baxt	USD 37 million	NA
	Modernization of	A project to modernize airports in	USD 427	NA

Field	Project name	Overview	Project amount	Supporting international aid agencies
	Airports in Uzbekistan	Uzbekistan	million	
Energy	Solar Project 200 MW Samarkand Region	Fundraising for and the design, construction, and operation of a 200-MW solar power plant in Samarkand	NA	NA
	Solar Project 100 MW Navoi Region	Fundraising for and the design, construction, and operation of a 100-MW solar power plant in Navoi. A meeting with investors was held in November of 2018, and prequalification was publicly announced on February 1.	NA	IFC

Source) <https://www.pppda.uz/projects/>

3.3. Possibility of financial-sector fundraising

3.3.1. Possibility of private investment

For Uzbekistan's *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*, developing the money market is assumed as an alternative method for raising capital and saving money in terms of companies, financial institutions, and individuals. This includes future reform goals—such as ensuring the reliable protection of private property rights—and it encompasses the removal of all barriers and limits affecting private entrepreneurship as well as small and medium-sized enterprises, the creation of an advantageous business environment, the suppression of illegal interference in business activities by government agencies, the improvement of the investment environment, the decentralization and democratization of administrative systems, the expansion of public-private partnerships, etc.

Based on this action strategy, on January 30, 2019, the State Committee for Investment was merged with the Ministry of Foreign Trade to establish the Ministry of Investment and Foreign Trade. The three organizations below have been set up under this ministry, and they are in charge of three policy fields: tariffs, investment promotion, and technological development.

Table 6 Ministry of Investment and Foreign Trade subordinate organizations

Subordinate organization	Jurisdiction
The Council on Tariff and Non-Tariff Regulation	Handles regulations related to tariffs and tariff exemptions
The Foreign Investment Promotion Agency	Provides support for foreign investors, including providing information, consulting on laws, issue solving, and preparing necessary documents
The Technology Development Agency	Introduces advanced foreign technology to Uzbekistan, conducts technical research to manufacture high-added-value products, and provides support related to the introduction of technology

Source) Invest in Uzbekistan (<http://invest-in-uzbekistan.org/en/novosti-uzbekistana/sozdaetsya-ministerstvo-investitsij-i-vneshnej-torgovli-respubliki-uzbekistan/>)

In general, foreign investors are welcome in all fields of the Uzbek economy, and it is illegal for the government to discriminate against foreign investors based on their nationality, place of residence, or country of origin. Before, the Uzbek government operated state-owned companies in major industries, which resulted in foreign investors potentially being affected by discrimination, but the country has been promoting the active acceptance of foreign direct investment in recent years and frequently introduces systems related to investment promotion.

For example, regarding investment in the hotel field, the cabinet resolution dated August 14, 2018, specifies conditions related to the acceptance of investments for modern hotel construction.⁹ This cabinet resolution regulates the sale of state-owned hotels to foreign private companies in an effort to modernize hotels. In addition, the cabinet resolution dated January 5, 2019,¹⁰ prescribes conditions (locations, target projects, etc.) for accepting foreign direct investment in Tashkent's infrastructure, including the improvement of industrial and techno parks in particular. Furthermore, cabinet resolution No. 48 (dated January 18, 2019)¹¹ makes decisions related to the smart city development concept.

PPPs were institutionalized starting on March 25, 2019, but infrastructure improvement projects open to the private sector as of 2019 are regulated by separate cabinet resolutions, so it is necessary to confirm the possibility of private investment for individual projects for the time being. Regarding the securing of funds for projects as well, private investment is assumed when utilizing the PPP system, which involves working out the conditions for power purchase guarantees, availability payments, etc. for each project. Even if not utilizing the PPP system (asset sales, privatization, etc.), private investment from abroad is assumed, but the Uzbek government is currently engaged in preliminary talks with the Ministry of Investment and Foreign Trade to work on system improvements to make smooth direct investment from abroad possible, and no major issues are expected assuming these measures are sufficient.

In any case, because Uzbekistan's PPP and investment promotion systems are being suitably improved (as of 2019), it is necessary to confirm the latest information at the websites of the Ministry of Investment and Foreign Trade and PPP Development Agency.

3.3.2. Possibility of long-term fundraising

The financial policies below are indicated by the *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*, and Uzbekistan seems to be pursuing an active investment policy with regard to the implementation of projects aimed at modernization, production technology and technological upgrades, and the

⁹ Resolution Cabinet Ministers, Republic of Uzbekistan 08/14/2018 N 661, about Measures to Attract Additional Investment in the Hotel Sphere

¹⁰ Resolution Cabinet Ministers, Republic of Uzbekistan 01/05/2019 No. 09/19/4/2424, about Additional Measures to Attract Direct Foreign Investment in Infrastructure Development of Tashkent City

¹¹ Resolution Cabinet Ministers, Republic of Uzbekistan 01.18.2019 Number 48 on Approval of the Concept Technology Introduction "SMART CITY" in the Republic of Uzbekistan

industrial, transportation, communications, and social infrastructure fields.

- Further improving the currency policy through the introduction of modern market mechanisms related to currency regulations as well as the use of tools consistent with international best practices
- Securing banking-system stability, expanding financing for feasible investment projects, and enhancing SME and private entrepreneurship
- Introducing new types of services and improving their quality, developing the stock market to create capital raising opportunities, and expanding the range of leasing and other financial services through the distribution of the usable resources of companies, financial institutions, and government agencies
- Expanding cooperation with international financial institutions, continuing with a cautious external borrowing policy, and further developing international economic cooperation, including the effective utilization of foreign investment and financing

In addition, as a strategic-process foundation for economic development, the government has mentioned fundraising for long-term investment projects. Due to the current situation, the role of institutional investors as a major financial resource for long-term fundraising is increasing.

In addition, based on presidential resolution No. 3437 (dated December 18, 1970), the national development plan is being devised and implemented. The national development plan is designed based on a long-term perspective, and it normally covers a period of around 10 to 15 years. This plan is formed based on a sector, region, and target-specific project portfolio approved in accordance with a development concept that includes a comprehensive vision and strategic goals for implementing a high-priority course of action to achieve sector, region, and target-specific socio-economic development. Work related to the development and implementation of the national development plan is coordinated under the leadership of the deputy prime minister of the Republic of Uzbekistan by the Ministry of Economy, Trade and Industry in collaboration with the Ministry of Investment and Foreign Trade.

3.3.3. Restrictions on international commercial borrowing

Currently, foreign borrowing possibilities are regulated by the Foreign Borrowing Act, Foreign Currency Regulatory Act, and other regulatory laws.

In terms of laws related to foreign borrowing, *foreign borrowing* refers to the assets of the Republic of Uzbekistan, foreigners, or non-residents (loans, etc.) in cases where residents have an obligation to provide suitable assets

(including payments for using assets) to a third party as specified by a foreign country. At the same time, foreign borrowing is defined as the introduction of assets from abroad (foreign countries as well as corporations and international organizations in them) in cases where the Republic of Uzbekistan is obligated to repay the assets as the borrower or borrower repayment guarantor (loan).

According to the laws, foreign borrowing consists of the following:

- Borrowing by regions, corporations, or individuals—in cases involving residents of the Republic of Uzbekistan receiving loans or importing products or services
- Non-resident fund deposits by financial institutions in the Republic of Uzbekistan
- Leasing business
- The issuance and safeguarding of bonds, bills, and other securities by ministers or foreign residents of the Republic of Uzbekistan
- The use of other types / forms of borrowing

The president of the Republic of Uzbekistan, its ministers and cabinet members, and other agencies approved by them have the right to conclude agreements related to borrowing foreign currency from other countries on behalf of the Republic of Uzbekistan. The state's foreign-debt limit is determined every year based on the parliament of the Republic of Uzbekistan (which makes decisions related to the country's national budget) and the national-trust-fund budget for the next fiscal year.

The authority of the Republic of Uzbekistan's Ministry of Finance over foreign-borrowing fields is as follows:

- Negotiations related to foreign borrowing from international financial institutions
- Evaluating projects related to government foreign borrowing
- Registering agreements for provincial foreign borrowing and provincial guarantees
- Accounting and monitoring of public foreign debt
- Processing state foreign debt and implementing state guarantees
- Other authority based on laws

The Central Bank of Uzbekistan's authority in foreign-borrowing fields includes the following:

- Negotiations related to foreign borrowing from international financial institutions
- Registering foreign-borrowing agreements that are not guaranteed by the Republic of Uzbekistan
- Accounting and monitoring of foreign-borrowing business
- Accounting of accumulated foreign debt

- Systematizing foreign-public-debt settlement and banking business
- Granting government-agency authority related to the settlement bank service of foreign borrowing guaranteed by the Republic of Uzbekistan to banks
- Creating databases related to foreign loans
- Providing information about the foreign debt of residents to the cabinet and ministers of the Republic of Uzbekistan
- Other authority based on laws

Business involving foreign borrowing must be registered with banks in accordance with Article 9 of the Foreign Borrowing Act. Residents of Uzbekistan who initiate agreements are responsible for registering currency transactions, and—in cases where the agreements, etc. are not registered—commercial banks do not provide currency-transaction services to the account holders (residents). Commercial banks can only transfer funds from the corporate bank accounts of residents to non-residents after the currency transactions are registered with the central bank.

Under the *Regulations on Procedures for Executing Specific Currency Transactions Concerning Capital Movement*, in order to record currency debt, it is necessary for the central bank to register foreign borrowing agreements that are not guaranteed by the Republic of Uzbekistan. It is therefore necessary for commercial banks to notify the central bank during the procedure for these agreements, and the agreements are considered to be registered starting then.

The *Law Concerning Foreign-Currency Regulation* defines currency transactions related to capital movement.

- Investments that include the acquisition and sale of securities
- Providing and receiving financing
- Raising funds and depositing them in accounts
- Financial transactions to pay the currency value after a fixed period or transfer ownership

The *Regulations on Procedures for Executing Specific Currency Transactions Concerning Capital Movement* specify details on creating a list necessary to implement the above currency transactions. Therefore, it is necessary for residents to present the following to a permitted bank:

- Documents of the specified form that indicate the type of currency transaction
- Copies of documents that confirm the execution of the foreign-exchange business (agreements, contracts,

and other documents) as well as any associated changes. The text of the documents must generally be written in either Uzbek or Russian. If the documents are written in a different language, an apostille (authentication or notarization) is necessary to legalize them. In addition, it is necessary to translate the documents into Uzbek or Russian and then notarize them.

After the above, the currency transaction is executed by following the bank's established procedure. If the bank has software that makes doing so possible, electronic documents can also be provided to residents.

3.4. Activity situation of donors

3.4.1. Asian Development Bank (ADB)

3.4.1.1. Focus fields

Under its 2012 to 2016 Country Partnership Strategy, the ADB is providing support to facilitate infrastructure development and access to finance. In addition, under the Country Operations Business Plan, the ADB has extended the Country Partnership Strategy to cover 2018 to 2020 and is working on accommodating the recent initiatives of the Uzbek government. In February of 2017, the Uzbek government announced its *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*. The order of priority for the ADB's Country Operations Business Plan has also been specified in line with this development strategy. In particular, the ADB is focused on transportation, traffic, energy, local government service, Healthcare, and money market access.

3.4.1.2. Major projects

Based on its 2019 to 2021 Country Operations Business Plan,¹² the ADB plans to allocate USD 2.388 billion in financing.

Table 7 Sector-specific allocation based on the ADB's 2019 to 2021 Country Operations Business Plan

Sector	Amount allocation
Energy	USD 750 million
Healthcare	USD 45 million
Transportation	USD 410 million
Water supply and sewage	USD 383 million

¹² <https://www.adb.org/sites/default/files/institutional-document/471361/cobp-uzb-2019-2021.pdf>

The specific projects are as follows.

Table 8 Major ADB projects

Sector	Project name	Implementation (planned) year	Overview
Energy	Power Generation Efficiency Improvement Project	2019	<ul style="list-style-type: none"> ● The plan is to construct two 450-MW gas combined thermal power plants at the Talimarjan thermal power plant in the Kashkadarya region. ● These power plants will reduce the natural gas consumption as well as greenhouse gas emissions and will increase the region's supply of highly reliable power.
	Second Northwest Region Power Transmission Line Project	2020	<ul style="list-style-type: none"> ● The purpose of this project is to improve the power transmission network in the Northwest Region by repairing power transmission lines in Karakalpakstan and Khorezm. ● This project includes the construction of over 360 km of 220-kV power transmission lines as well as an expansion of the capacity of three substations.
Healthcare	Primary Healthcare Improvement Project	2018	<ul style="list-style-type: none"> ● The purpose of this project is to optimize health services by working on improving primary medical services in rural areas in particular. ● The project involves building 793 new clinics and supplying them with the latest diagnostic equipment to expand primary medical care services. ● A pilot project for testing a health management information system in rural

Sector	Project name	Implementation (planned) year	Overview
			areas is included as well.
Transportation	Regional Railway Electrification Project	2021	<ul style="list-style-type: none"> This project involves electrifying 145.1 km of rail to connect the Ferghana Valley to Tashkent.
	The Third Central Asia Regional Economic Corridor (CAREC) Road Investment Program	2020	<ul style="list-style-type: none"> Development of the road between Navoi and Bukhara
	The new Municipal Roads Development Project	2018-2020	<ul style="list-style-type: none"> USD 200 million in support is planned for this project.
Water supply and sewage	Second Tashkent Region Water Supply System Development Project	2018-2020	<ul style="list-style-type: none"> This is the 2nd phase of the Tashkent water supply system improvement project, and it involves repairing the water supply systems in Yangiyul and the Chinaz district (both in Tashkent). These regions use groundwater as a water source, and the operating rate is only about 50%. This project is aimed at improving this situation.
	Western Uzbekistan Water Supply System Development Project	2018	<ul style="list-style-type: none"> The purpose of this project is to resolve issues related to the shortage of tap (piped) water as well as its operation and maintenance in six districts of Karakalpakstan.

3.4.2. The World Bank

3.4.2.1. Focus fields

According to the World Bank's Country Partnership Framework for 2016 to 2020,¹³ (revised in June of 2018¹⁴), the World Bank's goal is to create 500,000 jobs per year to help the Uzbek government achieve its goals. The World Bank therefore plans to tackle issues that include private-sector growth, improved agricultural competitiveness, modernization of the cotton sector, and improved public-service quality. Because the Country Partnership Framework was initially based on program priority in line with the priorities of the previous administration, it has been revised to incorporate the policies of the new administration. The new focus areas are as follows: (1) changing to a sustainable market economy, (2) reviewing national systems and the involvement of citizens, and (3) investing in citizens.

Table 9 Portfolio of projects being implemented in 2016 to 2017¹⁵

CPF	sector	project
Focus field 1 Growth of the private sector and job creation	Agriculture	● Rural Enterprise Support Project - Phase 2
	Transportation	● Sustainable Agriculture & Climate Change Mitigation
	Finance	● Horticulture Development ● Regional Roads Development ● IFC Hamkorbank (equity investment & GTFP) ● IFC Asaka Bank (GTFP)
	Multiple sectors	● IFC Azerbaijan and Central Asia Financial Infrastructure
	Finance	● (Credit Reporting, Secured Transactions, Financial Literacy) ● IFC Europe and Central Asia Sustainable Energy Finance

13 World Bank Group, Report No.105771-UZ, "International bank for reconstruction and development, International development association, International finance corporation, Multilateral investment guarantee agency, Country partnership framework for Uzbekistan for the period FY16-FY20", 19 May 2016

14 World Bank Group, "An overview of World Bank's Group work in Uzbekistan, October 2018. <http://pubdocs.worldbank.org/en/241791539098356509/Uzbekistan-Snapshot-Oct2018.pdf>

15 World Bank Group, Report No.105771-UZ, "International bank for reconstruction and development, International development association, International finance corporation, Multilateral investment guarantee agency, Country partnership framework for Uzbekistan for the period FY16-FY20", 19 May 2016

CPF	sector	project
		<ul style="list-style-type: none"> ● Program (Energy Efficiency financing) ● IFC Europe and Central Asia Resource Efficiency Program
Focus field 2 Improved agricultural competitiveness	Agriculture Finance Irrigation	<ul style="list-style-type: none"> ● Rural Enterprise Support - Phase 2 ● Sustainable Agriculture and Climate Change Mitigation ● Horticulture Development ● IFC Indorama ● Ferghana Valley Water Resources Management ● South Karakalpakstan Water Resource Mgt. Improvement
	Agriculture	<ul style="list-style-type: none"> ● PSIA of Cotton Harvest Mechanization ● IFC Agribusiness Standards Advisory Program in Europe and Central Asia (Food safety and E&S standards) ● IFC Central Asia Agrifinance Project (Agrifinance and Agricultural Supply Chains)
Focus field 3 Improved public services	Education Healthcare Social protection Energy Transportation Water supply and sewage / water resources	<ul style="list-style-type: none"> ● Improving General Secondary & Pre-School Education Project ● Modernizing Higher Education Project ● Health System Improvement Project ● Modernizing Safety Nets in Uzbekistan ● Energy Efficiency for Industrial Enterprises ● Scaling up Energy Efficiency in Buildings ● Talimarjan Transmission ● Advanced Electricity Metering ● Pap-Angren Railway ● Regional Roads Development ● Syrdarya Water Supply ● Bukhara & Samarkand Sewerage ● Alat & Karakul Water Supply ● Planning Study for Power Sector ● Water Resources Assessment
Economic governance	Governance	<ul style="list-style-type: none"> ● Improving Public Procurement Outcomes ● IFC State-owned Enterprise Governance ● IFC Tax Administration Reform

3.4.2.2. Major projects

The specific project pipeline below is assumed.

Table 10 Major World Bank Group projects¹⁶

Sector	Project name	Implementation (planned) year	Overview
Energy	Energy Efficiency Facility for Industrial Enterprises (IEs), Phase 3	2019	<ul style="list-style-type: none"> Improving industrial-enterprise (IE) energy saving by designing a fundraising mechanism for energy-saving investment
	District Heating Energy Efficiency Project	2018	<ul style="list-style-type: none"> Increasing the efficiency of and improving heating and hot-water supply services in selected cities
	Additional Financing Energy Efficiency - Industrial Enterprises	2019	<ul style="list-style-type: none"> Improving industrial-enterprise (IE) energy saving by adjusting a funding mechanism exclusively for energy-saving investment
	Modernization and Upgrade of Transmission Substations	2022	<ul style="list-style-type: none"> Upgrading and expanding existing 220-kV+ substations in Uzbekistan's nationwide power transmission network
Healthcare	Additional Financing to Health System Improvement Project	2019	<ul style="list-style-type: none"> Making improvements to ensure access to high-quality Healthcare at community-level hospitals or selected urban hospitals Enhancing the government's ability to respond to non-communicable diseases (NCDs)
	Emergency Medical Services Project	2018~2024	<ul style="list-style-type: none"> Improving the effectiveness and efficiency of the emergency medical service (EMS) system

¹⁶ World Bank Group, Report No.105771-UZ, "International bank for reconstruction and development, International development association, International finance corporation, Multilateral investment guarantee agency, Country partnership framework for Uzbekistan for the period FY16-FY20", 19 May 2016

Sector	Project name	Implementation (planned) year	Overview
Transportation	Regional Roads Development Project	2021	<ul style="list-style-type: none"> ● Reducing costs paid by users for roads in the project-related region ● Managing regional road assets and developing a sustainable investment program ● Improving approximately 300 km of high-priority roads in Tashkent, Ferghana, Andijan, and Namangan
	Second Phase of the Central Asia Road Links Program	2020	<ul style="list-style-type: none"> ● The purpose of CARs-2 is to improve the transportation connectivity between Sugd (Tajikistan), Batken (Kyrgyzstan), Osh, and Ferghana (Uzbekistan).
	Medium-Size Cities Integrated Urban Development Project	2025	<ul style="list-style-type: none"> ● Improving access to the infrastructure and public spaces of participating cities or to public services ● Improving and adjusting local infrastructure management
	Pap-Angren Railway	2019	<ul style="list-style-type: none"> ● Reducing transportation costs and enhancing the transportation capacity by constructing a railway to connect the Ferghana Valley to Uzbekistan
Water supply and sewage	Ferghana Valley Water Resources Management - Phase II	2018-2024	<ul style="list-style-type: none"> ● Improving the quality of irrigation for farmers in the project region as well as the provided drainage service
	South Karakalpakstan Water Resources Management Improvement Project	2021	<ul style="list-style-type: none"> ● Implementing irrigation recovery and water-resource management in the project region based on a sustainable, economically efficient mode.
	Alat and Karakul Water Supply Project	2020	<ul style="list-style-type: none"> ● Improving the quality and efficiency of the public water supply service in Alat

Sector	Project name	Implementation (planned) year	Overview
			and the Karakul district (both of which are in Bukhara).
	Syrdarya Water Supply Project	2020	<ul style="list-style-type: none"> ● Improving the availability, quality, and sustainability of the public water supply service in the Syrdarya region
	Uzbekistan Bukhara and Samarkand Sewerage Project	2019	<ul style="list-style-type: none"> ● Reducing the environmental impact of drainage management in Bukhara and Samarkand
Other	Modernizing Higher Education Project	2023	<ul style="list-style-type: none"> ● Enhancing the higher-education-system management ability to improve the relevance in terms of the labor market as well as the learning environments of institutions of higher education

Source) World Bank materials

3.4.3. United Nations

3.4.3.1. Focus fields

According to the United Nations Development Assistance Framework (the UNDAF), the UN is pursuing cooperation in the following fields:

- Comprehensive economic development focused on jobs and social protection
- High-quality health and education to fully realize human potential
- Environmental protection to ensure sustainable development
- Effective governance that enhances the provision of public services and protection of rights

The theme-specific areas of the UNDAF are set up to help deal with the issue of socio-economic groups that are said to be disadvantaged in terms of Uzbekistan's national programs and strategy as well as imbalances that continue to remain.

The 2016 to 2020 UNDAF has an estimated budget of USD 144.94 million for providing support. This budget requires the use of USD 86.25 million in financial resources available within the UNDAF itself as well as USD 58.69 million in financial resources resulting from support by other aid agencies, funds from the Uzbek government, funds from the private sector, and other external resources. Note that, in terms of the breakdown by field, 17% (USD 25 million) is for governance-efficiency improvement, 26% (USD 37.28 million) is for daily-life improvement and social protection, 23% (USD 33.4 million) is for education and Healthcare, and 34% (USD 49.26 million) is for sustainable-resource utilization and disaster preparation.

3.4.3.2. Major projects

The United Nations Development Programme (UNDP) is implementing the technical capacity building described in table 11 below in collaboration with Uzbekistan's Ministry of Agriculture and Water Resources.

Table 11 Major UNDP projects

Sector	Project name	Implementation (planned) year	Overview
Water supply and sewage	Sustainable Management of Water Resources in rural areas in Uzbekistan: Technical Capacity Building (Component 2)	2016-2019	<ul style="list-style-type: none"> ● This project is intended to enhance the institutional framework and technical capacity for water-resource management at the basin, water use community, and farmer level. The project is also aimed at improving the awareness of reasonable water use. ● This project is being implemented as part of the EU's <i>Sustainable Management of Water Resources in rural areas in Uzbekistan</i>, and it is aimed at additional collaboration in the water field. ● This program includes the following three components: <ul style="list-style-type: none"> ➤ National Policy Framework for Water Governance and Integrated Water resources Management (IWRM) ➤ Technical capacity building ➤ Awareness raising <p>The overall budget is USD 5,678,755, which includes EUR 5 million contributed by the EU and USD 200,000 contributed by UNDP.</p>

In addition, the United Nations Children's Fund (UNICEF) is working on the following programs and projects.

Table 12 Programs UNICEF is working on in Uzbekistan

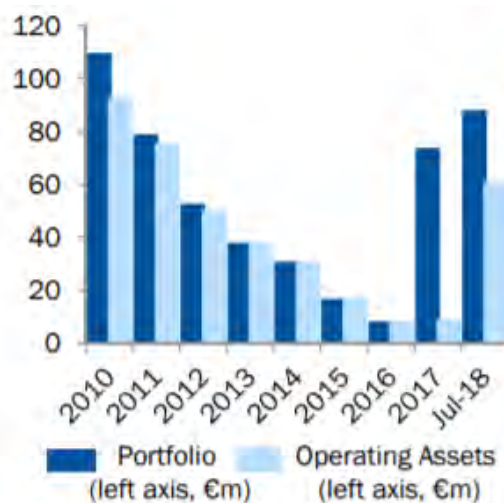
Sector	Project name	Implementation (planned) year	Overview
Mother and child Healthcare	Improvement of mother and child health services in Uzbekistan - phase I	2008-2011	<ul style="list-style-type: none"> ● Expanding mother and child health programs, which target a hard-to-reach population, to a nationwide scale ● Applying a comprehensive package and introducing quality-management systems and tools related to effectively ensuring the survival of children for all the mother and child Healthcare facilities in Uzbekistan, which are run by more than 13,000 Healthcare providers ● Confirming that doctors are trained regarding mother and child health based on international standards, and updating medical-institution curricula in collaboration with families in 12 rural areas for which it is necessary to take health-related action to improve medical-care services ● Maintaining a nationwide vaccination program through better vaccine supply management, safer vaccinations, and improved communication ability for Healthcare providers ● Continuing to support the Ministry of Health in further enhancing the Healthcare system by applying systems for analysis, decision-making, and modern child growth monitoring to

Sector	Project name	Implementation (planned) year	Overview
			<p>prevent issues related to childhood growth and fatigue</p> <ul style="list-style-type: none"> ● Promoting and providing technical guidance related to applying globally recommended infant and toddler nutrition requirements to medical education, and continuing to increase the ability to train doctors and nurses on nutritional counseling subjects ● Developing and implementing a <i>community-centered</i> approach aimed at improving community capabilities related to mother and child nutrition issues ● Eliminating iodine, iron, vitamin A, and other micronutrient deficiencies, pursuing advocacy, revising the regulatory framework, and continuing to provide technical cooperation through specialist capacity building.

3.4.4. European Bank of Reconstruction and Development (the EBRD)

3.4.4.1. Focus fields

From 1992 to 2010, the EBRD provided support equivalent to EUR 894 million (54 projects). In addition, from 2010 to the end of 2017, the EBRD agreed on six new programs (EUR 153 million) with the Uzbek government.



Source) EBRD Uzbekistan Country Strategy for 2018-2023

Figure 1 Changes in the EBRD loan amount in Uzbekistan

Currently, the EBRD is selecting fields in which support is possible in line with an MOU concluded with the Uzbek government in March 2017. There are many programs for transferring technology and know-how, including trade financing programs to support small and medium-sized enterprises as well as importing and exporting, programs to improve the investment environment and competitiveness of the Uzbek economy, and programs to attract more foreign direct investment. An Uzbekistan-specific strategy to which all of these are applied has already been approved at an EBRD management meeting, and the focus fields for the next five years have been set. The Uzbek government's recent export-oriented economy has been applied to this country-specific strategy, and the following three fields have been specified as focus fields:

- ① Improving competitiveness by developing the private sector
- ② Promoting increased resource-utilization efficiency and a green economy
- ③ Promoting and supporting regional and multilateral cooperation and integration

The EBRD also plans to focus on the following fields in the medium and long term:

- a) Modernizing local government infrastructure and improving the efficiency and quality of the supply of local government services. The specific assumed fields are water supply and sewage, regional heat supply, solid waste, public transportation, and street lights.
- b) Developing the power sector, including generating power by using renewable and alternative energy, transmitting power, and improving the energy efficiency of industry
- c) Modernizing and developing the construction and operation of logistics centers, the traffic infrastructure—including airport modernization—and the operation of logistics services and facilities
- d) Developing and financing projects based on private-public partnerships, and modernizing and developing the oil and gas sector as well as the petrochemical and chemical industries
- e) Promoting and supporting export-oriented production for light industry, pharmaceuticals, electrical technology, and the food industry
- f) Other fields agreed on by both parties

3.4.5. The United States Agency for International Development (USAID)

3.4.5.1. Focus fields

USAID is working on improving governance, supporting judicial sector reform, enhancing civil society, developing agriculture, enhancing the competitiveness of the private sector and trade, and preventing the spread of tuberculosis.

In order to diversify the agriculture field to higher value products, USAID supports the government in relation to horticulture, cultivation, agriculture, packaging, and quality certification. In addition, USAID is organizing a forum for promoting trade within both the region and Europe. Since 2015, USAID has obtained expressions of interest in the amount of USD 400 million that are related to business between Uzbek entrepreneurs and foreign buyers, and business agreements amounting to several million dollars have already been concluded.

USAID is providing support to help the Uzbek government further reform the judicial sector and improve civil-society relationships. More specifically, USAID is providing support to help the government improve civil society in terms of human trafficking, labor movement, and judicial reforms. Regarding the capital's civil court, it has become possible to quickly file lawsuits, and the amount of time necessary to announce court decisions has been considerably reduced, both of which were made possible by the electronic court system regarding which USAID provided guidance.

To more effectively control the rate of increase of multidrug-resistant tuberculosis (MDR-TB) and HIV/AIDS, USAID is providing training and equipment to achieve better, timelier laboratory diagnosis and electronic-record retention. In 2015, USAID provided American rapid testing equipment and tuberculosis (TB) case management systems, and—based on the results reported up through 2017—this has increased the number of people tested for tuberculosis by 342% and reduced the number of undiagnosed tuberculosis infections.¹⁷ To enhance the monitoring and evaluation ability of Uzbekistan's National Tuberculosis Program, USAID is collaborating with the Ministry of Health to enable ministries and government offices to use more accurate data when providing advice on health policies and practices. In addition, USAID is working on reducing the number of hospital-based tuberculosis infections.

¹⁷ USAID in Uzbekistan, Our World, Last Updated September 08, 2017. <https://www.usaid.gov/uzbekistan/our-work>

3.4.5.2. Major projects

Project HOPE¹⁸ involves a five-year, 24.2-million-dollar program called the Tuberculosis (TB) Control Program, which was implemented starting in 2014 in an effort to reduce the burden of tuberculosis in Uzbekistan and to ensure more effective, useful tuberculosis diagnosis and treatment. This program is funded by USAID.

Table 13 Programs USAID is working on in Uzbekistan

Sector	Project name	Implementation (planned) year	Overview
Healthcare	HOPE	Implemented starting in 1999	<ul style="list-style-type: none"> ● Enhancing the human and institutional capabilities of the health system, improving inter-agency coordination and collaboration, expanding the use of electronic databases, etc. ● Since 1991, USAID has provided approximately USD 103 million worth of pharmaceuticals and medical supplies. Of this, USD 2.2 million was in the form of the latest humanitarian aid and was delivered to the ministries of Uzbekistan in May of 2016. ● In the Healthcare sector, approximately 7,000 patients in need of aid have benefited from health centers in their regions. ● In 1999, through close collaboration with the Ministry of Health, activities related to the USAID Child Survival Program in Tashkent and USAID tuberculosis initiatives in Central Asia were started. (Efforts are currently ongoing to reduce the spread of HIV and TB (infectious diseases), reduce simultaneous infection by HIV / TB, prevent violence based on gender, improve the management of

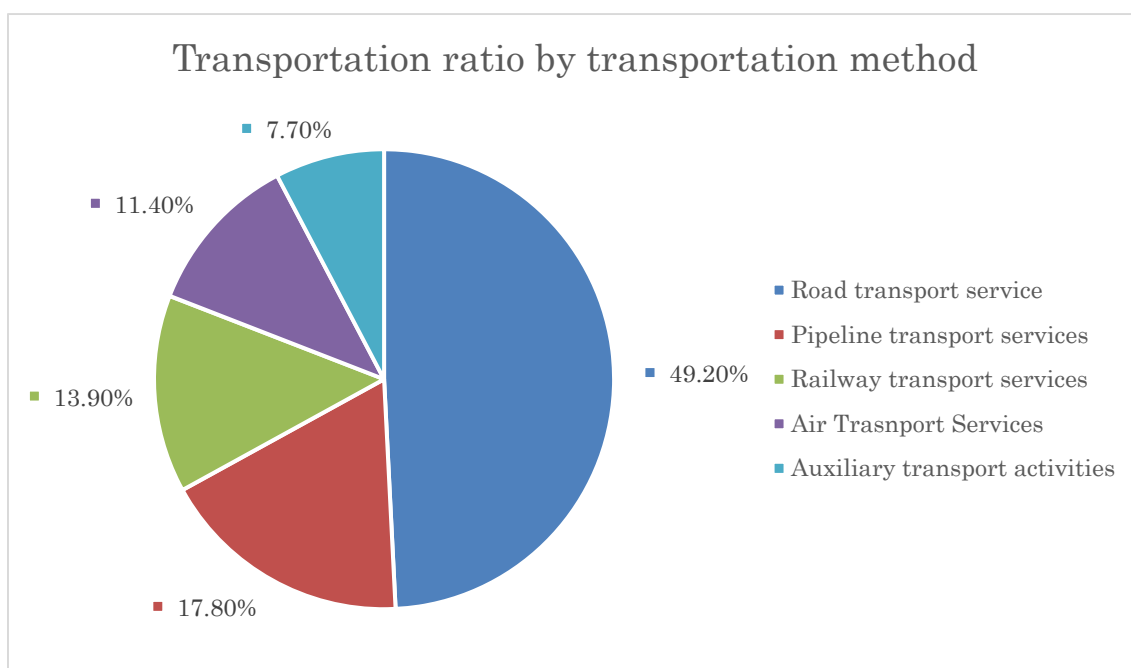
¹⁸ <https://www.projecthope.org/country/uzbekistan/>

			<p>clinical examination services, tuberculosis, and HIV, and improve the health of expectant and nursing mothers, newborn babies, and young children.)</p> <ul style="list-style-type: none"> ● In 2001, as part of a regional approach in Central Asia, USAID implemented an eight-year plan to reduce the burden of tuberculosis and MDR-TB in Uzbekistan. ● Starting in 2010, a five-year plan was implemented under Project HOPE to prevent AIDS, tuberculosis, malaria, etc.
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4. Current situation of target sectors and issues related to future plans and sectors

4.1. Urban development, transportation, and traffic

The figure below shows the transportation ratio of each transportation method in Uzbekistan for the period from January to September of 2018. In Uzbekistan, roads account for a ratio of 49.2%, which is followed by the natural-gas transportation pipeline with 17.8%. In addition, because Uzbekistan is a landlocked country, there is no transportation by ship, and there is a lot of transportation by railway instead.



Source) State Committee of the Republic of Uzbekistan on Statistics (2018) Socio-Economic Situation of the Republic of Uzbekistan for January-September 2018, <https://stat.uz/en/181-ofytsyalnaia-statystyka-en/2806-quarterly-reports>

Figure 2 Transportation ratio of each transportation method in Uzbekistan

4.1.1. Current situation of infrastructure improvement

4.1.1.1. Roads

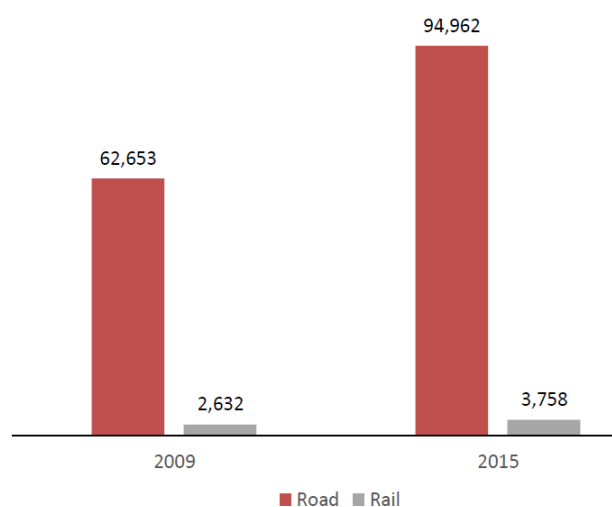
There are no recent statistics on road network extension, but Uzbekistan had approximately 84,400 km of roads as of 2005. In 2015, the road passenger transportation volume reached approximately 95 billion passenger-kilometers, which was about 1.5 times the volume in 2009, approximately 63 billion passenger-kilometers. This is due not only to main-road improvements resulting from the CAREC initiative but also movement within the country due to an increased number of tourists and income level.

4.1.1.2. Railways

In terms of railway-network extension, the network covered approximately 4,340 km as of 2016. Based on the plan for the period from 2017 to 2025, the electrification rate for the overall railway network will be increased to 65% or more. Once the railways are electrified, high-speed passenger trains (250 km or more) will run between Tashkent, Samarkand, Bukhara, and Karshi. In addition, the route from Tashkent to Angren and Pap is being electrified as a new route to the Ferghana Valley.

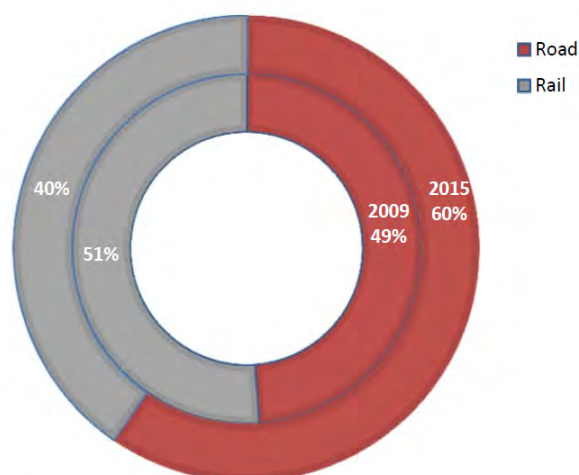
In 2015, the railway passenger transportation volume reached approximately 3.8 billion passenger-kilometers, which was about 1.5 times the volume in 2009, approximately 2.6 billion passenger-kilometers.

The freight transportation volume is 34 billion ton-kilometers for roads and 23 billion ton-kilometers for railways, for a total of 57 billion ton-kilometers, and, although the railway-transportation percentage has decreased compared to its 2009 percentage of 51%, it is still 40%.



Source) Transport Statistics Infocard, UZBEKISTAN

Figure 3 Passenger usage results for roads and railways (millions of passenger-kilometers)



Source: UNECE Transport Statistics Database.

Source) Transport Statistics Infocard, UZBEKISTAN

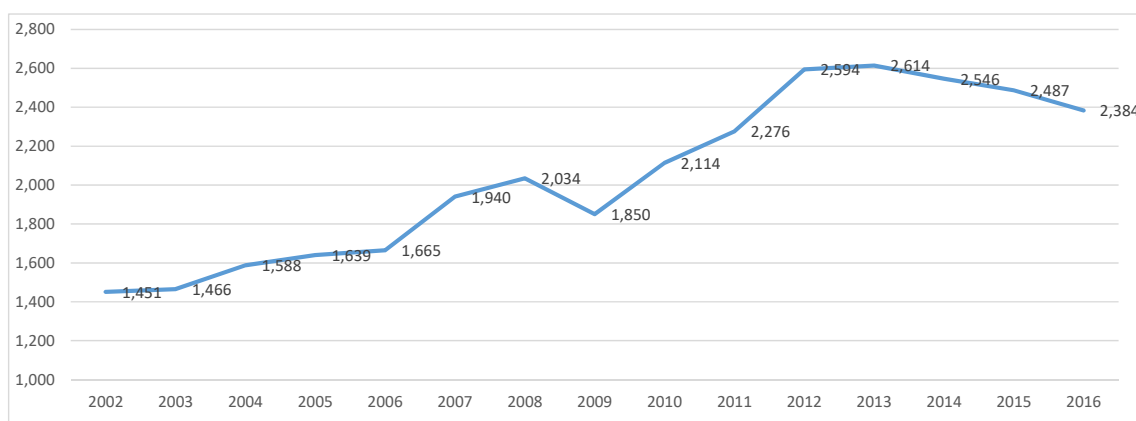
Figure 4 Freight transportation ratios of roads and railways (millions of ton-kilometers)

4.1.1.3. Airports

As of 2012, Uzbekistan had 53 airports, of which 33 have paved runways. Of these, 11 are international airports,¹⁹ and six have runways that are at least 3,000 meters long.

Based on ICAO statistics for 2016 (international-flight passengers), Uzbekistan has approximately 2.4 million air passengers. Many of these passengers are concentrated in Tashkent, and most other airports do not handle flights on international routes. Although the number of air passengers doubled in the 2000s, the number peaked at 2.6 million passengers in 2013 and was on a downward trend as of 2016.

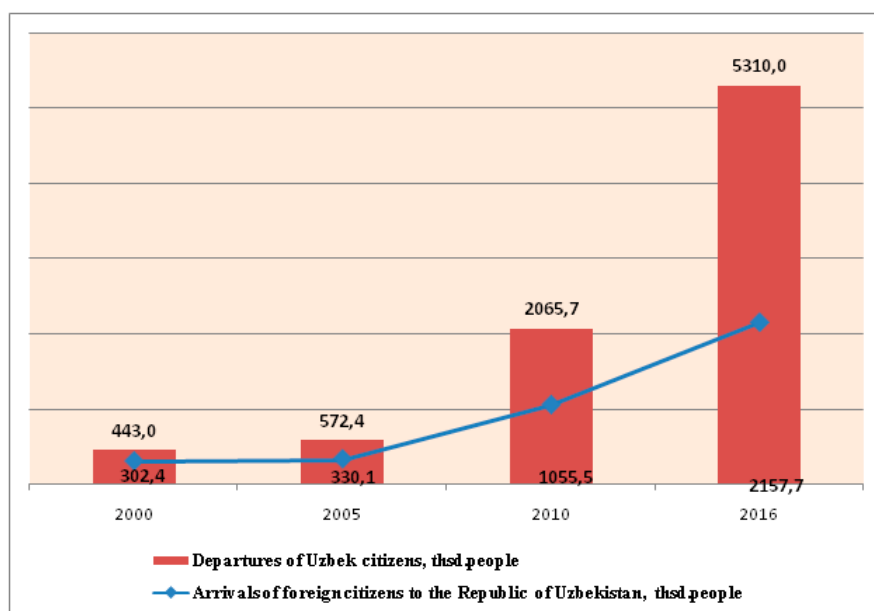
¹⁹ Andizhan (Andijan), Bukhara, Fergana, Karshi (Qarshi), Namangan, Navoi (Navoiy), Nukus, Samarkand (Samarqand), Tashkent, Termez, Urgench (based on the Uzbekistan Airways website)



Source) ICAO

Figure 5 Changes in the number of international air passengers (1,000s of people: based on ICAO)

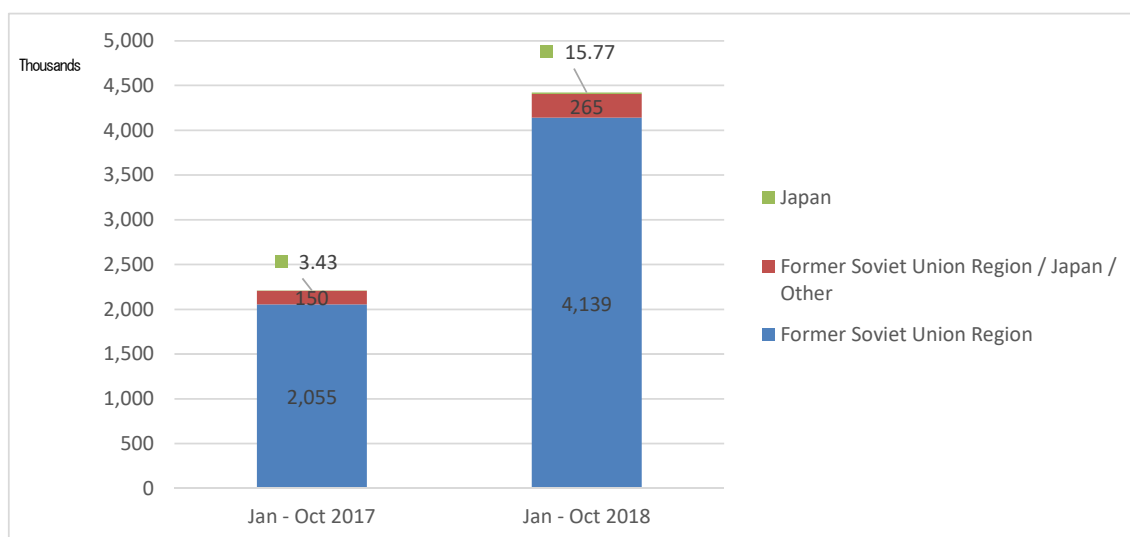
At the same time, the number of tourists doubled from 2010 to 2016. The number of international tourists increased from 1 to 2.15 million people. Based on the fact that the number of air passengers hardly increased during this time, we can infer that the number of tourists using railways and roads to travel by land from neighboring countries has increased. This is likely due to a capacity shortage in the aviation / airport sector, so there seems to be a lot of room for improvement.



Source) Uzbekistan Statistical Service

Figure 6 Changes in the number of tourists (thousands of domestic and international tourists)

The number of international tourists visiting Uzbekistan continued to increase in and after 2017 as well, approximately doubling from January to October of 2017 (2.2 million people) and January to October of 2018 (4.42 million people). The number of tourists from Japan also increased from 3,430 to 15,770 people, a factor of approximately 4.6 times.



Source) Uzbekistan Tourism Registration Office

Figure 7 Number of foreign tourists who visited Uzbekistan from January to October of 2017 versus January to October of 2018

Outflow of Uzbekistan's aviation demand to nearby countries

Based on an analysis of the trends of aviation demand in Uzbekistan and nearby countries over the last 20 years, Uzbekistan has shown a change of -6%, while the demand in every nearby country has at least doubled. In particular, as a result of income-level and economic-activity improvements, the number of passengers in Kazakhstan has tripled.

As an example, residents of Ferghana, Uzbekistan cross the border to use the airport in Osh, Kyrgyzstan, resulting in an outflow of demand to nearby countries. This is because, although the airfare from Osh to Moscow is only USD 80, the airfare from Tashkent to Moscow is more than USD 100, and it is also necessary to pay the fare to get to Tashkent. The reason for this difference in airfare is that a state-owned company has monopolized the supply

in Uzbekistan, so the cost of refueling is higher than in nearby countries.²⁰

Kyrgyzstan has already introduced an open sky policy, so the country's landing fees²¹ are cheap as well. Compared to the landing fees of nearby countries, Uzbekistan's fees are at a high level of approximately double. The harmful effects of Uzbekistan Airways' monopoly have therefore resulted in an outflow of aviation demand to nearby countries, and foreign carriers are providing service to nearby countries.

Meanwhile, the Uzbek government researched the LCC demand in nearby countries two or three years ago, and they learned that more than 40 carriers, including Air Arabia and S7, have an interest in providing service to Uzbekistan. In spite of this, not a single LCC has actually managed to provide such service. The reason for this is that Uzbekistan Airways has monopolized both aviation services and airport operations, and this carrier can therefore block other service carriers (that would otherwise be able to compete) as a regulatory authority might. The current Uzbekistan Airways system is thus a factor preventing domestic demand from being elicited. Therefore, in 2018, the Uzbek government's prime minister and the World Bank spearheaded the start of airport management reforms.

4.1.2. Infrastructure improvement agencies and personnel systems

An overview of the transportation sector as of January 31, 2019, is provided below, including the major organizations.²²

²⁰ Based on an interview with a relevant consultant in 2016. The details have not been disclosed.

²¹ Same as above.

²² This document is based on information up through January 31, but Uzbekistan's transportation sector saw reforms on February 1, 2019, and the Ministry of Transport was established. Before, the State Committee for Roads, O'zbekiston Temir Yo'llari, Uzbekistan Airways, and other working agencies had a policy making function, but this function was transferred as a result of the establishment of the Ministry of Transport (figure 9).

Uzbekistan's State Committee for Roads is still engaged in road improvement in the country as a working agency under the Ministry of Transport's umbrella. The organization chart of the State Committee for Roads is shown in figure 10. Note that PP-4143 and UP-5647 regulate organizations related to land transportation (roads), but they do not include regulations related to organizations in the railway / aviation sector or reviewing authority. In addition, PP-4143 includes regulations related to the establishment of a road improvement fund called the

- The State Committee of Uzbekistan on automobile roads

This agency designs, constructs, reconstructs, repairs, and maintains public roads, handles construction machinery (process equipment and machinery as well as machinery purchasing), and implements regular operation and maintenance agreements related to interstate and national roads.

- The Republican Road Fund (RRF)

The purposes of setting up the RRF include developing and improving the public highway network, activities aimed at achieving suitable technical conditions and processing ability, and providing funds for programs (projects) while ensuring that they are effectively used. The RRF provides the financing for approximately 25% of the entire road network. The RRF is a fund that was established due to economic reforms, and it provides funds for agreements based on competitive bidding.

- The Uzbek agency for road transport

This agency was established in 1998, and its primary mission is to create a system for managing road traffic. The agency also drafts road-traffic policies at the national level, formulates laws related to the policies, implements international collaboration, improves technology policies, trains specialists, etc. In particular, the agency covers public transportation used to carry passengers.

As a result of a presidential decree issued in March of 2018 (35.69., March 5), river management was removed from the agency's mission, the organization name was changed, and a new goal was set.²³ Specifically, the agency's goal is to formulate a road traffic management strategy by 2030 and then promote its implementation in various industries.

- Uzbekistan Railways (UTY: Uzbekistan Temir Yollari)

Transport Development and Logistics Fund, including the necessity to submit a draft providing an overview of the fund within two months of February 1, 2019. (As of April 20, 2019, no submission had been confirmed.)

²³ <http://www.autotrans.uz/en/>

O'zbekiston Temir Yo'llari (UTY) is a state joint stock company that operates the 4,340-km railway network running throughout Uzbekistan. The company runs transportation services for both freight and passengers and is also in charge of infrastructure improvement and maintenance. UTY transports 40 to 50% of the total domestic freight transportation volume, and its transportation share is high compared to foreign railways. In terms of passenger rail, the company has an approximately 4% share of the country's total passenger volume.

- Uzbekistan Airways (Uzbekistan Airways)

Uzbekistan Airways is a state-owned airline company that was set up due to an Uzbek presidential decree in 1992. This state administrative authority develops and adjusts policies for air transportation in the territory of the Republic of Uzbekistan and provides management services. The company also manages airports, and it is in charge of everything from policies to operations. In addition, because there is no Ministry of Transport in the country, Uzbekistan Airways is also in charge of bilateral negotiations to expand flights to other countries, air navigation, etc.

In this way, Uzbekistan Airways has monopolized its entire market, which has not only resulted in a disadvantage to general people but has created conflicts of interest and is a source of corruption and other issues. Therefore, the World Bank proposed dividing Uzbekistan Airways into government and management divisions as well as aviation and airport divisions, and a presidential decree to that effect was announced in November of 2018.²⁴ The plan was to create the above roadmap during the six months after that.

- The Ministry of Construction

This construction-related ministry was established based on a presidential decree (*measures to radically improve the system of public administration in the construction sector*) with a national commission of the Republic of Uzbekistan as a foundation. The policy purposes of the Ministry of Construction include devising unified science and technology policies for city planning and engineering fields, conducting technical research for construction, introducing highly energy-efficient, innovative projects and energy-efficient solutions, improving labor

²⁴ <http://tashkenttimes.uz/economy/3230-uzbekistan-airways-to-be-split-into-two>

(However, this is based only on a newspaper report, and we could not confirm an official government announcement.)

productivity, reducing construction and building costs, and promoting rational resource use.

- The Ministry of Housing and Communal Service (MHCS)

This ministry implements nationally unified policies for the housing and public service fields and coordinates between regions. The ministry also implements national programs related to the construction of reasonably priced housing, water supplies, sanitary equipment, and heating equipment.

The organizational changes made by the new president resulted in a much larger role for this ministry. Before, the ministry only managed housing, but now the ministry provides water and heat supply systems as well. After the country was founded, the Soviet era housing was transferred to the Ministries of Housing in each region, but then issues began to surface, including regional housing management companies going bankrupt and housing not being appropriately developed. The Ministry of Housing and Communal Service collects opinions from each region, analyzes them, organizes information on any issues, and formulates new strategies targeting problematic regions. Replacing old heat supply systems from the Soviet era—which have deteriorated and become unusable—with suitable products is also an issue.

4.1.3. Cross-regional issues

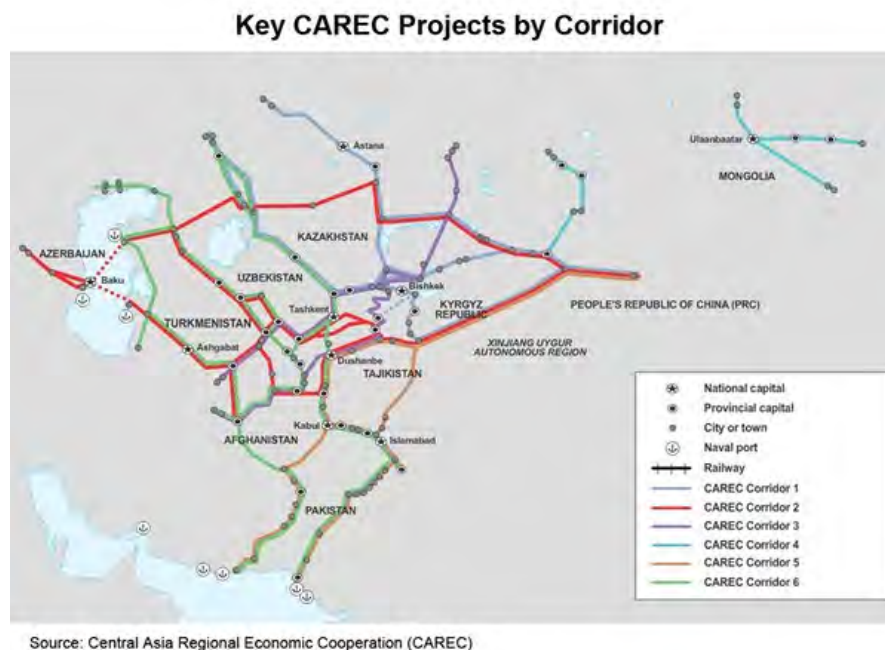
The transportation network between the CIS countries is vulnerable, and strengthening the connections between these countries is being promoted by the CAREC project. Under this initiative, roads and railways are already being improved, and the transportation network connecting all the countries is being strengthened.

For Uzbekistan, as of December of 2017, more than USD 5.65 billion had been invested in 18 projects through CAREC. These projects are improving Uzbekistan's connections with CAREC countries and the global market, and they are expanding the possibilities for this landlocked country by enhancing the road and railway-based flow of people / logistics.

- Road projects

CAREC road projects include CAREC 1, which has improved the network connecting Nur-Sultan (previously Astana) and Tashkent. This has led to CAREC 2, which has improved wide-area routes connecting to the

Caucasus through China to the east and Turkmenistan and the Caspian Sea off the coast of Kazakhstan to the west. In addition, CAREC 3 is being planned to connect Almaty, Bishkek, and Tashkent, and CAREC6 is being planned as a North-South corridor connecting the Bukhara to Samarkand area to Afghanistan and Pakistan (figure 9). Uzbekistan, which lies in the middle of Central Asia, stands to benefit the most from the CAREC concept.



Source) the ADB

Figure 8 Route map of CAREC corridors

● Railway projects

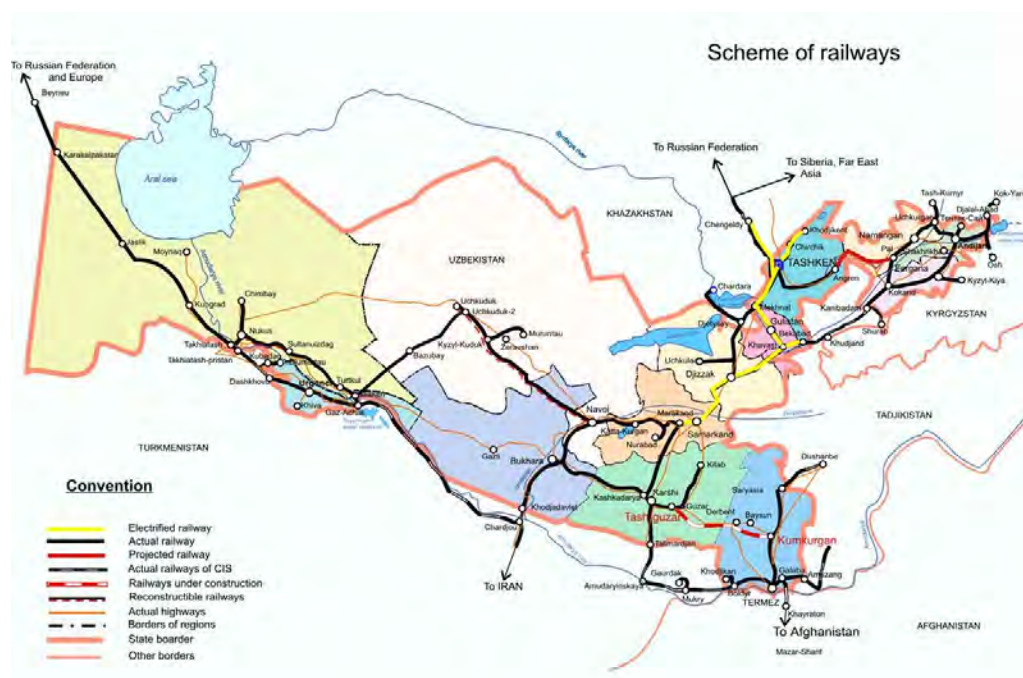
In addition to roads, CAREC comprehensively covers railway and power projects. As a result of the formulation of a comprehensive plan to electrify railways from 2011 to 2012, electrification projects are being promoted in phases starting with major routes. In addition, starting in 2017, projects were launched to increase efficiency, and the policy of increasing the service density is currently being discussed as a set with the management strategy of railway companies (table 14). For the moment at least, there are a lot of expectations surrounding Uzbekistan's railways, which are attractive services not only to the people of Uzbekistan but also to the increasing number of tourists as well.

Table 14 Railway-related projects being promoted as part of CAREC

No.	Project name	Overview	Start date	End date	Current situation
1	Railway Efficiency Improvement Project	The project aims to improve the efficiency of Uzbekistan's railway operations, combining investments to improve operational bottlenecks (electric locomotives, etc.), and strategic support to improve business practices. The technical cooperation will help the Uzbek government to prepare the project, develop the appropriate institutional conditions to allow the sound development of the railway sector in the future, and help develop the ability to implement the ensuing project.	August 2017	March 2020	In progress
2	CAREC Corridor 2 (Pap-Namangan-Andijan) Railway Electrification Project	The project will electrify 145.1 kilometers of track linking major cities in the populous Ferghana Valley with Tashkent. This will facilitate efficient operation of both freight and passenger train services, and promote economic and social development of the Ferghana Valley. The ADB is handling the financing.	April 2017	December 2020	In progress
3	Pap-Angren Railway	The project will reduce transportation costs and improve the transportation capacity and reliability through the construction	February 2015	July 2019	In progress

No.	Project name	Overview	Start date	End date	Current situation
		of a railway for the left section of the Fergana Valley.			
4	CAREC Corridor 6 (Malakand-Karshi) Railway Electrification Project	This project covers the electrification, signaling, telecommunication systems, monitoring control, data collection (SCADA) system, and subsidized construction related to the 140-km section of railway on the left. In addition, the product includes the design, supply, setup, and trial operation of maintenance equipment as well as the implementation of construction supervision, project management support, and capacity development for UTY.	September 2011	May 2018	Complete

Source) <https://www.carecprogram.org/>



Source) Azuision.az (unknown at the time of the research)

Figure 9 Map of railway infrastructure projects

● Aviation sector

The infrastructure of the aviation sector involves neighboring countries competing with each other to form hub airports and attract inbound tourists as opposed to these countries collaborating to implement cross-regional tasks. However, because Uzbekistan has no Ministry of Transport, the country has not been able to consider a strategic policy for the aviation sector. In February of 2018—based on a proposal by the World Bank, etc.—Karshi Airport, which was controlled by Uzbekistan Airways at the time, was made into a national airport, and the Uzbek government announced its intention to pursue an open sky policy for the three airports in Andijan, Nukus, and Navoi, but there have not been any specific movements since then, and Karshi Airport is currently closed. In addition, as one result of Uzbekistan Airways monopolizing sky-related demand, there is an outflow of aviation demand from Uzbekistan to nearby countries, and, based on a big-picture view of the situation, two major airports in Kazakhstan are becoming a hub for the region.

Movements by the World Bank to reform the aviation sector are likely to start taking shape soon, which is expected to help improve the competitive environment of the aviation sector.

4.1.4. Issues upon promoting infrastructure improvement

Major administrative reforms are currently being carried out due to the inauguration of the new president. In addition to government restructuring, these reforms are appearing in the form of new medium and long-term strategies formulated by ministries and government offices as well as implementation agencies (agencies), and the final details are currently being hammered out in preparation for strategic institutional decisions and the announcement of the country's new strategies.

Several infrastructure development needs are assumed based on the direction indicated by the *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*. For example, given that the country has stipulated the need to *increase competitiveness while modernizing and intensively developing agriculture under economic development and deregulation*, enhancing the logistics infrastructure seems to be a high-priority concern of the Uzbek government. In addition, under *enhancement of state independence and sovereignty*, the government has included *securing stability and good neighbors, international harmony*, and similar key words, and—in the time since President Mirziyoyev was inaugurated—the country has in fact considerably improved its relationships with neighboring countries through border demarcation with Kyrgyzstan in September of 2017, Kazakhstan / Turkmenistan in November of 2017, and Tajikistan in March of 2018. As a result, the country has resumed the operation of its transportation network with Tajikistan in order to directly move goods and people between the two countries along air routes (April of 2017), railways (February of 2018), and regular buses (May of 2018).²⁵ In addition, due to the inflow of traffic from foreign countries, the traffic volume of automobiles with foreign numbers has increased on major roads near the border as well in core cities in the region, which is leading to issues that include an increase in traffic accidents and traffic congestion. As a result of the improved relationships with nearby countries, it is assumed that the Uzbek government considers it a high priority to improve the international transportation infrastructure between the two countries as well as the international energy transportation infrastructure.

A great deal is expected of the donors of each agency in terms of collaboration to develop human resources in particular. In Uzbekistan, because the instructions of the former president were considered absolute for many years,

²⁵ Takahashi, Atsushi (2018) Presidents of Two Countries Discuss the Road to Economic Exchange Revival (Uzbekistan / Tajikistan), JETRO Business News (022d1f4bc945e494), <https://www.jetro.go.jp/biznews/2018/08/022d1f4bc945e494.html>

the thought process at the time did not include considering the strategic options within the administrative system in order to comparatively evaluate the best options. Regarding the country's current strategy consideration process, there is a striking shortage of staff members capable of such thinking, so most of the consideration work is being done by a few talented employees who have experience studying abroad. Therefore, multiple agencies have expressed a strong need for a *system enabling executive officers to study abroad*. The *Human Resource Development Scholarship Project (JDS)*, which has been implemented by JICA since 1999, is well-regarded within the Uzbek government due to its long history of results, and a great deal is expected of the project, including increasing the number of acceptance slots for foreign exchange students.

Ever since Uzbekistan's new president was inaugurated, the decision-making speed has increased considerably. Projects are implemented as soon as the government makes the decision to do so, and the goal achievement level is evaluated on an annual basis. Currently, consultants and donors that can keep up with this speed are a great help to the government.

Note that, because past loans have piled up, the Uzbek government is looking for things to which the private-sector-led PPP model can be applied for transportation-field projects. However, few projects involving investment have specifically been conceived.

The table below shows the strength of the government's interest in each field as well as the specific associated issues and their size.

Table 15 Strength of the government's interest in individual urban-development and transportation fields, associated issues, and their size

Field	Strength of interest	Specific issues and themes	Issue size
Ports	-	(Not applicable: no ports in Uzbekistan)	—
Airports	Strong	<ul style="list-style-type: none"> • Before, Uzbekistan had a unique system in which a state-owned airline company improved the airport infrastructure and ran the airports as well. However, conflicts of interest arose, so the World Bank made a proposal to the Uzbek government to pursue a strategy involving the separation of the aviation and airport sectors as well as the private consignment of some airports (for which the government would continue to own the infrastructure). • Uzbekistan Airways had already started to consider privatization behind the scenes, so they have accepted the external proposal for three 	<p>Large</p> <ul style="list-style-type: none"> • In contrast with the strong tourism demand in the country, the airport infrastructure is vulnerable and in some ways obsolete. Privatization is a golden opportunity to propose both measures to promote foreign-flight-based aviation demand and infrastructure

Field	Strength of interest	Specific issues and themes	Issue size
		airports in Karshi, Termez, and Tashkent. ²⁶ They have also accepted proposals related to demand-increasing measures, such as introducing an open sky policy.	improvement.
Railways	Strong	<ul style="list-style-type: none"> • The <i>Uzbekistan Railways Strategy</i> is being formulated and calls for 40 projects by 2030. Of these, 10 are electrification projects, and the projects also include factory construction and railway laying. • The first upcoming high-priority issue is the promotion of electrification, and the second is the purchasing of rolling stock. Railway companies are assuming a short achievement period of three years. The World Bank is attempting to implement the electrification of the Miskin-Nukus line for JPY 20 billion. • The possibility of making station development commercially feasible and thus profitable is also being considered. 	<p>Medium</p> <ul style="list-style-type: none"> • The government is attempting to expand current electrification projects—in which JICA is involved—to cover the entire country. Support is biased toward the World Bank. • At the same time, there are movements toward independent profitability for railway companies, and development around stations, etc. is starting up.
Urban transportation	Strong	<ul style="list-style-type: none"> • <i>On measures to further improve the system of road transport management</i>²⁷ has been officially announced by the president, which includes the following plans: 1) improving bus monitoring centers, 2) sharing the bus operation status, and 3) introducing fee-payment cards. • The State Committee of Uzbekistan on automobile roads is planning the large-scale purchasing of buses as well as the development of 130 bus terminals throughout the country. • The World Bank has proposed improvements to public transportation management in Tashkent and is providing technical cooperation. The centerpiece of this plan is the comprehensive improvement of the core bus system (BRT) for JPY 15 billion. 	<p>Medium</p> <ul style="list-style-type: none"> • Traffic congestion in Tashkent isn't that serious, and promoting the use of public transportation is an issue. • Bus monitoring also seems to be part of the digital government's policy. • Terminal development to promote tourism is actually a bigger issue.

²⁶ According to interview results

²⁷ <https://www.mf.uz/en/novosti-ministerstva-finansov/informatsiya-po-postanovleniyu-prezidenta-respubliki-uzbekistan-o-merakh-po-dalnejshemu-sovershenstvovaniyu-sistemy-transportnogo-obsluzhivaniya-naseleniya-i-passazhirskogo-avtobusnogo-soobshcheniya-v-gorodakh-i-selakh-pp-2724-ot-10-yanvarya-2017-goda.html>

Field	Strength of interest	Specific issues and themes	Issue size
Roads	Medium	<ul style="list-style-type: none"> • There is a lot of interest in providing maintenance-related equipment and developing human resources. Regarding the former, there are needs related to overloaded-truck weight measuring vehicles. Regarding the latter, the government would like to address the shortage of engineers capable of design and construction supervision by implementing human-resource development measures that include opportunities to study abroad. • There is a need for regional road improvements, but the government is considering how to do so through PPPs (private funding). 	<p>Medium</p> <ul style="list-style-type: none"> • The shortage of engineers is a major issue, and a lot is expected of Japan because China's quality is low. • Tashkent and main-road improvements have been completed, so interest is shifting to rural areas.
Logistics	Strong	<ul style="list-style-type: none"> • As part of the government's strategy to establish a distribution hub, improving the cold chain targeting agricultural products is urgent business. The government is reducing taxes and launching other incentives to attract investors. • The ADBL²⁸ (a logistics association) is implementing human-resource development programs that include the training of export-logistics specialists, and the association has the support of the EU and Germany. 	<p>Medium</p> <ul style="list-style-type: none"> • To develop logistics human resources, human-resource development is necessary not only in the government sector but by private companies as well. Uzbekistan has already received support related to this from donors, so there is little need for technical cooperation from Japan. • Regarding the improvement of logistics facilities, demand development comes first.
Urban development	Medium	<ul style="list-style-type: none"> • There are trends toward introducing Safe Cities and other smart city concepts. 	<p>Small</p> <ul style="list-style-type: none"> • Although this is thought to be part of digital government, it is not certain how involved the Uzbek government will get.

²⁸ Business Logistics Development Association, LLC

4.1.5. Infrastructure improvement projects

As the government undergoes reforms and gears up to formulate its strategy, many assumed projects have been proposed by various agencies. Many of these assume technical cooperation or financial aid, which suggests that a lot is expected of Japan in terms of technologies and knowledge. In particular, under Uzbekistan's digital government policy, there is a strong interest in automating the design, maintenance, and operation of roads as well as integrated urban transportation systems, and in using AI and other cutting-edge IT technology to achieve increased administrative office work efficiency. This is expected to involve not only the participation of Japanese companies but also IT and business-reform specialists, etc., who will act as consultants to assist with business diagnostics and technology-introduction design.

Conventional business needs—including construction by trading companies and general contractors by using yen loans as well as operation / investment based on PPPs—seem to be limited to airport privatization and the nationwide redevelopment of bus terminals. Phase two of the railway electrification efforts will start soon, but this is highly likely to involve general competitive bidding based on syndicated loans by the World Bank, etc. Given that Japanese companies are not showing any interest in the cold chain, it is difficult to find any good reasons for them to contribute yen loans.

Table 16 Assumed projects in the urban-development, transportation, and traffic sectors

Category	Project name	Assumed scheme	Infrastructure improvement agencies	Strength of government interest	Issue size	Possibility of Japanese involvement	Comprehensive evaluation
Airports	(1) Aviation and airport sector reforms	Technical cooperation	WB, UZBEKISTAN Airways, Cabinet office	Strong	Large	Possible	◎
	(2) Privatization of three airports (management contract)	Technical cooperation	WB, IFC, UZBEKISTAN Airways, Cabinet office	Strong	Large	Likely	◎
	(3) Expansion of Samarkand International Airport	Yen loans	WB, IFC, UZBEKISTAN Airways, Cabinet office	Strong	Large	Likely	◎
Railways	(1) Railway electrification phase 2	Yen loans	WB, Uzbekistan Railway	Strong	Medium	Possible	○

Category	Project name	Assumed scheme	Infrastructure improvement agencies	Strength of government interest	Issue size	Possibility of Japanese involvement	Comprehensive evaluation
	(Miskin-Nukus line)						
Urban transportation	(1) Bus monitoring and digitization plan	Financial aid	Uzbek Agency for Road transport	Strong	Medium	Possible	○
	(2) Nationwide redevelopment of bus terminals	Investment project	²⁹ Uzbek Agency for Road transport	Strong	Medium	Possible	○
	(3) Tashkent public transportation management and BRT introduction plan	Financial aid	WB, Uzbek Agency for Road transport	Medium	Medium	Likely	○
Roads	(1) Support to introduce maintenance equipment and overloaded equipment	Financial aid	State Committee for Roads	Strong	Large	Likely	◎
	(2) Dispatching of specialized personnel to Japan, technical-standard education program	Technical cooperation	State Committee for Roads	Strong	Medium	Likely	○
	(3) Digitization of road design	Technical cooperation	State Committee for Roads	Strong	Medium	Likely	○

²⁹ The name as of October of 2018. Before, this was called the State Committee for Roads.

Category	Project name	Assumed scheme	Infrastructure improvement agencies	Strength of government interest	Issue size	Possibility of Japanese involvement	Comprehensive evaluation
	and O&M work, automatic ordering, and the introduction of cost management systems						
Logistics	(1) Cold chain system for food distribution	Yen loans	Business Logistics Development Association (the ADBL)	Strong	Medium	Somewhat possible	○
	(2) Export and Logistics Academy	Technical cooperation	Business Logistics Development Association (the ADBL)	Medium	Medium	Likely	△
Urban development, etc.	(1) Safe Cities	Yen loans	WB	Strong	Medium	Possible	○
	(2) Toilet revolution	Technical cooperation	Cabinet office	Strong	Large	Possible	○
	(3) Dispatching of administrative reform specialists	Technical cooperation	WB	—	—	—	△

Source) Compiled by the NRI based on interviews with relevant agencies.

4.1.6. Activity situation of donors

The following table shows the activity situation of other donors in Uzbekistan's transportation field.

Table 17 Range of donor activities in Uzbekistan (summary)

	Roads	Railways	Aviation	Other
World Bank	Rehabilitation projects	Electrification projects	Aviation sector reforms	Introducing public transportation
ADB	CAREC 1, 2, 3, 6	Electrification by CAREC	(None in particular)	Government-staff reforms

Source) NRI

4.1.6.1. World Bank

In terms of current projects, a railway electrification project covering 300 km (20 km of tunnels) between Angren and Pap is currently being implemented for a project cost of USD 100 million. (The World Bank has provided USD 200 million in funds, while the Uzbek government is raising the rest of the funds.) The tunnel is being constructed by a Chinese company, and the Export-Import Bank of China is providing the funds. Commercial banks are providing 70% of the funds for signaling, energy, and equipment (including maintenance), but the source of the other 30% has not been decided.

In terms of road rehabilitation (of roads connecting the rural roads of each city), several thousand kilometers of rural roads are being repaired throughout the country to maintain their surfaces. The World Bank's phase 1 efforts to raise funds have resulted in USD 200 million (400 km of roads). In addition, the plan is for the government to spend USD 200 million on phase 2. (JICA is expected to provide financing.)

Projects currently under consideration include a Miskin-Nukus electrification project for a total cost of USD 200 million. (USD 100 million to purchase machinery / equipment, and USD 100 million for electrification). The World Bank is providing funds for this project, which is under the management of Uzbekistan Railways, and is currently awaiting an official request from the government. It will take at least two years to prepare the project and at least another five years to implement it.

In Tashkent, there are ongoing efforts to reform the public transportation system and implement technical support. Because Tashkent's population is rapidly increasing, there is a need for a comprehensive public transportation management system in Tashkent, including the renewal of rolling stock, buses, BRT, new metro routes, and station reforms. Specific projects will be considered going forward. The financing period is long, but depreciation-period shortening is applied to the purchasing of buses. The BRT construction costs amount to approximately USD 150 million, and the plan is for BRT to occupy one or two lanes of many major city roads.

The World Bank is also involved in reforms to Uzbekistan's aviation sector and has concluded a comprehensive advisory agreement with the State Committee for Investment to support the modernization of the country's aviation sector. The purpose of the agreement is to change the fact that a state-owned airline company currently monopolizes 60% of the market, and the World Bank has recommended the unbundling of airport management and airline companies. Uzbekistan Airways currently owns both, which is creating conflicts of interest within the company and increasing internal costs.

Of the 11 airports in Uzbekistan, only three are showing profits, but the associated companies do not disclose financial statements for their airports. The government considers aviation-sector reforms necessary and has requested proposals from international operators.

IFC has started providing airport-management-reform consultation planned to go on for one year. However, no data has been provided by Uzbekistan Airways, which opposes the plan. This data collection work is being done in-house. (Details are provided below.) As a possibility for cooperation with other donors, the World Bank has a pipeline of projects to be implemented with the government over a period of five years (the partnership framework). In recent years, because the number of projects in Uzbekistan has been increasing rapidly in many sectors, the most common approach in the case of projects that require a lot of funds—such as those in the transportation field—is to take the lead for the projects and find joint funding. When funds are jointly provided in collaboration with multiple donors, the projects are divided according to each amount of provided funds.

4.1.6.2. ADB

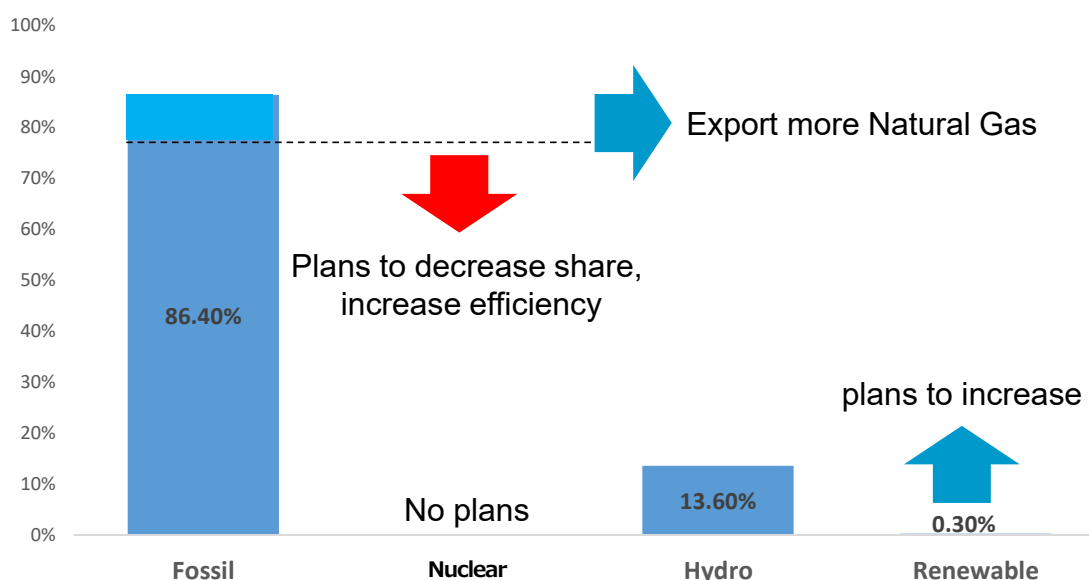
The ADB's basic policy has been to focus on CAREC corridor development. The ADB has therefore focused on the paving, rehabilitation, and modernization of major roads. In addition, the ADB has improved railways that support CAREC corridor development in CAREC member countries. The ADB has also implemented the CAREC corridor 6 (Marakand-Karshi) railway electrification project with co-financing from JICA.

The ADB also supports the training of government specialists and is working on improving the procurement and management ability of the government sector in particular. The government is promoting bold reforms and plans to advance medium and long-term strategies for each sector based on the decision to pursue strategic development in the near future.

4.2. Energy

4.2.1. Current situation of infrastructure improvement

Uzbekistan has one of the world's highest CO₂ emission rates, with a rate that is six times the global average. Therefore, it is necessary for the country to actively promote energy saving measures and the introduction of renewable energy. In spite of the major potential related to this, the supply of renewable energy is equivalent to less than 11% of the demand for it, and most of this energy is in the form of hydroelectric power.³⁰ Of Uzbekistan's total power generating capacity of 12.6 GW, 89% is from deteriorated thermal power plants, many of which were constructed in the 1960s and 1970s and have therefore been in operation for around 50 years. The equipment at these plants was manufactured by Russian or Eastern European manufacturers. Large investments are expected to be necessary to renew or rehabilitate these facilities.



Source) Compiled by the NRI based on Uzbekenergo data.

Figure 10 Uzbekistan's energy mix by fuel and the government's plan

³⁰ International Energy Agency. 2011. *Key World Energy Statistics 2011*. Paris.

Uzbekistan's energy supply from crude oil as a percentage of GDP is 1.97, which is 0.31 higher than the global average. Carbon intensity is an indicator that measures the amount of greenhouse gases (GHGs) emitted as a result of economic activities per GDP unit, but Uzbekistan's is 4.53, which is much higher than the global average of 0.73.

In 2017, the Uzbek government ratified the Paris Agreement. A special government committee has been launched, and the committee is trying to apply the duty to reduce greenhouse gas emissions domestically. The government plans to reduce the carbon concentration as a percentage of the GDP to one half by 2030 and introduce energy-efficient technologies.

In 2005, Uzbekistan's CO₂ emissions increased to 200 million tons. The government is developing a *program to further develop renewable energy, improve energy efficiency, and develop the potential of the country's hydropower resources*, and the goal is to increase the amount of used clean energy by 2.7 times by 2025.

Uzbekistan's energy sector currently accounts for approximately 10% of the gross domestic product (GDP) and approximately 25% of the country's exports. There was insufficient investment in infrastructure after the fall of the Soviet Union, and the deterioration of the power supply infrastructure is currently a serious issue. At the present time, 50% of the power is said to be lost while transmitting and distributing it. Therefore, to satisfy the increasing energy demand, it is necessary to improve the power supply infrastructure. Uzbekistan has extended its power transmission lines more than any other Central Asian country, and most of the loss is along power transmission lines that are 150 kV or less.

Uzbekistan's power sector plan up through 2019 was announced as presidential decree No. PP-2343 (dated May 5, 2015).³¹ In addition, presidential decree No. PP 3981, *On measures to accelerate the development and ensure the financial sustainability of the electricity industry*, was announced on October 23, 2018.³²

Table 18 Enactment of measures to accelerate the development and ensure the financial sustainability of the electricity industry

Item	Details
Overall	Reorganizing semi-state energy companies and improving the efficiency of the energy sector by introducing internationally advanced technologies and experience in line with Uzbekistan's national development strategy for 2017 to 2021

³¹ The Program of actions on reducing power intercity, implementation of energy saving technologies and systems in the branches of economy and social sphere for 2015-2019

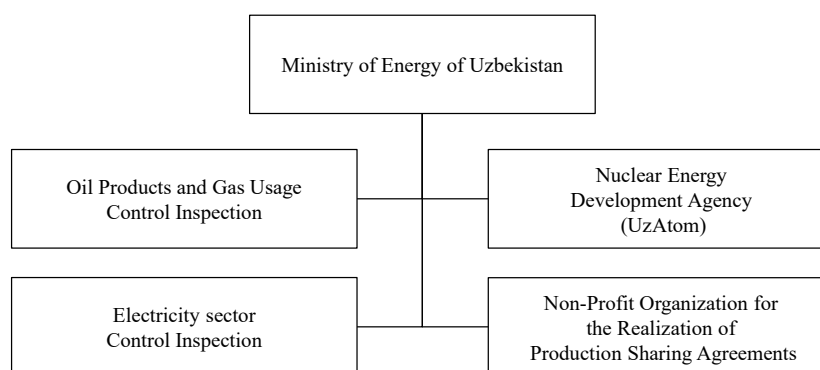
³² Enactment of measures to accelerate the development and ensure the financial sustainability of the electricity industry

Item	Details
Power generation	Implementing investment projects that require a total of USD 2.6 billion in investment and will result in the generation of 1,984 MW
Power transmission and distribution	Renewing 7,000 kilometers of power transmission lines per year and modernizing 2,500 substations
Automatically measuring power consumption	Setting up meters for users to measure the amount of power consumption in order to increase the power supply rate to 100% by 2021
Project finance	Utilizing USD 1.8 million in long-term financing from the World Bank, ADB, EBRD, and other international aid agencies

Source) Enactment of measures to accelerate the development and ensure the financial sustainability of the electricity industry. www.lex.uz. №ПІІІ-3981 23.10.2018

4.2.2. Infrastructure improvement agencies and personnel systems

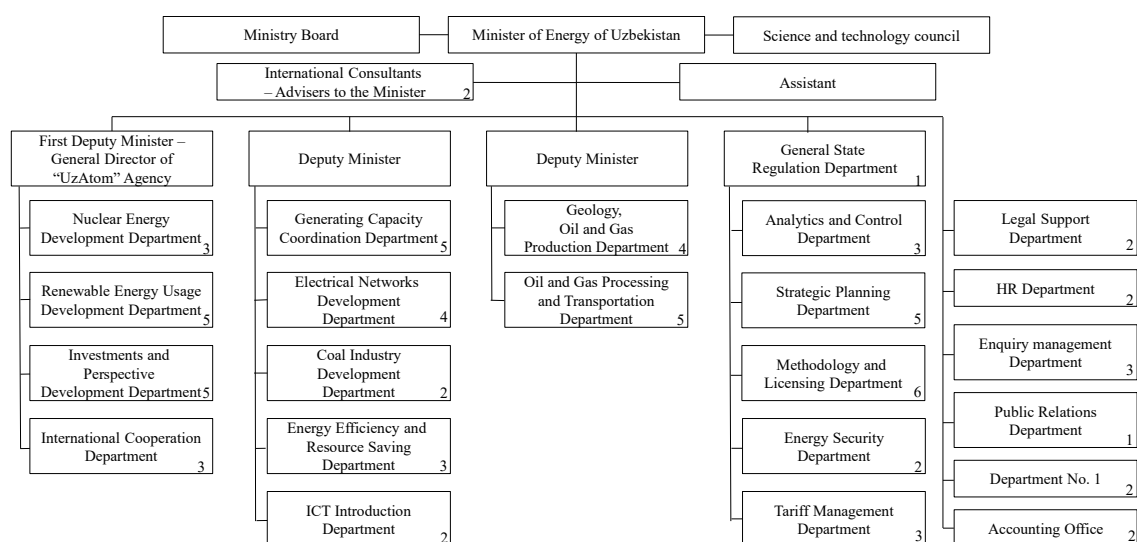
As of January 31, 2019, there were no independent organizations in charge of regulating power, and Uzbekenergo managed the power sector. On February 1, 2019, the energy sector was restructured, the Ministry of Energy was established, and the Oil Products and Gas Usage Control Inspection Committee, Electricity Sector Control Inspection Committee, Nuclear Energy Development Agency, and Non-Profit Organization for the Realization of Production Sharing Agreements were set up under its umbrella (figure 12).



Source) Decree of the President of the Republic of Uzbekistan dated February 1, 2019, No. UP-5646 “On measures to fundamentally improve the management system of the fuel and energy industry of the Republic of Uzbekistan” and Regulation of President of the Republic of Uzbekistan on Measures to Organize the Activities of the Ministry of Energy of the Republic of Uzbekistan (PP-4142 01.02.2019)

Figure 11 Organizational structure of Uzbekistan's national energy sector since February 1, 2019

In addition, the Ministry of Energy's internal organizational structure is shown in figure 13. As shown by this chart, the policy making function that used to be under the jurisdiction of Uzbekenergo and Uzbekneftegaz has been transferred to the Ministry of Energy.



Note) The numbers in the figure indicate the full number of personnel

Source) Decree of the President of the Republic of Uzbekistan dated February 1, 2019, No. UP-5646 “On measures to fundamentally improve the management system of the fuel and energy industry of the Republic of Uzbekistan” and Regulation of President of the Republic of Uzbekistan on Measures to Organize the Activities of the Ministry of Energy of the Republic of Uzbekistan (PP-4142 01.02.2019)

Figure 12 Organizational structure of the Ministry of Energy since February 1, 2019

Energy sector reforms have continued since February 1, 2019, as well, and, on March 15, 2019, a draft of a presidential resolution to separate the power generation, power transmission, power distribution, and retail functions of Uzbekenergo was submitted. In addition, on April 1, 2019, a similar presidential-resolution draft applying to Uzbekneftegaz was submitted.³³ The purpose of both is to achieve the separation of power transmission / distribution and the gas-transportation pipeline network and to establish independent operating

³³ Regulation of President of the Republic of Uzbekistan on Measures to Organize the Activities of the Ministry of Energy of the Republic of Uzbekistan (PP-4142 01.02.2019)

agencies.

Regarding the activities of the State Committee for Investment (at the time) and the important role of donor projects, a presidential-decree draft was created on July 16, 2018, for the purpose of simplifying the donor-project approval procedure. The main change is to start providing a domestic feasibility study for each project. If this law is promulgated, a feasibility study prepared by the donors will be approved by the government, and the State Committee for Investment will function as the project office.

In 2017, management of the hydroelectric power plants of Uzbekenergo and the Ministry of Agriculture and Water Resources was transferred to the newly established Uzbekhydroenergo. At the same time, this can be viewed as an attempt to free several power generation assets from Uzbekenergo's jurisdiction on a trial basis. This could be a first step toward power-asset unbundling, but it is not certain whether power transmission and power distribution assets will follow the same course.

After the change of the president, the National Energy Saving Company (NESC) was established under the umbrella of the Ministry for Utility Services in 2017 as an organization related to the energy sector, and the country is promoting energy saving policies. In addition to drafting and implementing energy saving policies, NESC is in charge of drafting and implementing policies and measures related to renewable energy, the regional heat supply, and energy-mix diversification.

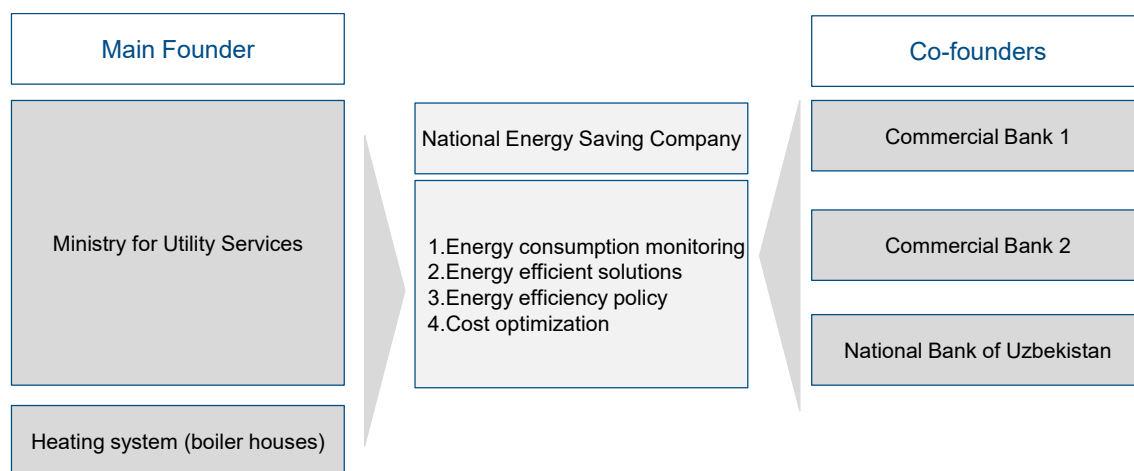


Figure 13 Image of the establishment of an organization in charge of promoting energy saving in Uzbekistan

Setting up these sorts of organizations could be viewed as an attempt to lay the foundation for the deregulation of Uzbekistan's energy market, which is expected in the near future. The National Bank of Uzbekistan is a government authority, and all the other investors—including ministries, government offices, and so-called

commercial banks—are extremely likely to be government organizations. However, as a first step towards deregulating Uzbekistan's energy sector, the decision-making process is being reliably diversified. From February to April of 2019, there was no clear mention of the roles of these organizations in terms of sector reforms.

4.2.3. Cross-regional issues

Historically speaking, the Coordinating Dispatch Center Energiya (CDC), which is located in Uzbekistan, managed the power supply systems in the four countries in the area (Uzbekistan, South Kazakhstan, Kyrgyzstan, and Tajikistan). Regional dispatch centers were established under the umbrella of Uzbekistan's Coordinating Dispatch Center Energiya in each country, and membership fees were collected from all four countries. Although the regional dispatch centers outside of Uzbekistan are introducing SCADA / EMS³⁴ and taking other steps to renew their equipment, Uzbekistan is lagging behind in terms of such equipment renewal.

After the fall of the Soviet Union, each country's power supply network was managed by that country, and Uzbekistan's Coordinating Dispatch Center Energiya, which once had 128 staff members, now has only 101.

As mentioned above, Central Asia's power supply network consists of four mutually connected countries, and the regional dispatch centers in each country are cooperatively operated. The specific activities are as follows:

- Operating and coordinating power supply systems and infrastructure
- Defining and ensuring compatibility between the power supply systems and infrastructure of each country
- Ensuring collaboration between the regional dispatch centers in each country during emergencies
- Holding mutual discussions on technology solutions and design guidelines related to relay protection systems and emergency response systems, the formulation of plans, and the approval of specialists and technologies
- Exchanging information on the cross-flow between power supply systems and capacity regulations on a daily and quarterly basis
- Exchanging information on the cross-system power flow in each country to implement fee payment
- Creating advice to optimize water-resource utilization

³⁴ SCADA/EMS - SCADA Energy Management System (equipment and systems that use computers to monitor systems and control processes)

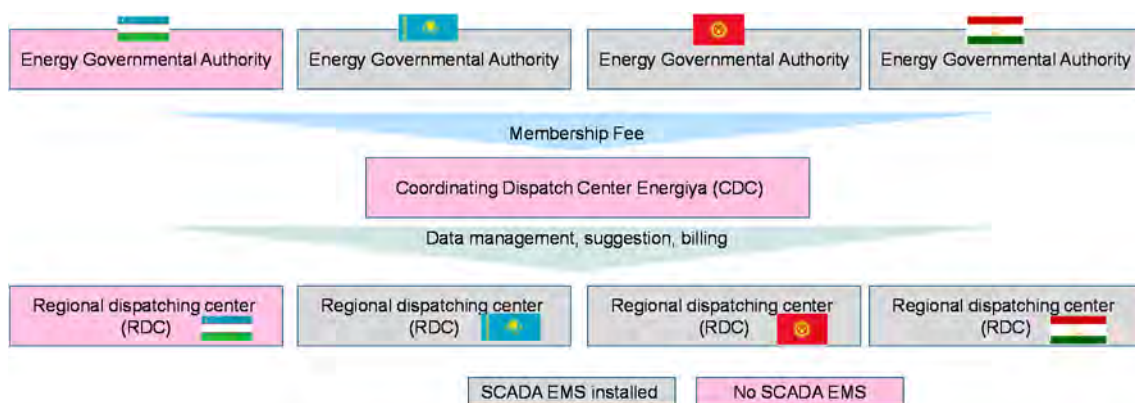


Figure 14 Activity model of the Coordinating Dispatch Center Energiya

In Uzbekistan, because the power rates are low, the country's CDC does not have enough money to pay for the costs of equipment or human-resource education. The other three countries have already introduced SCADA / EMS and are renewing their equipment, but Uzbekistan is continuing to use conventional technologies. Therefore, Uzbekenergo is interested in acquiring the power grid operation technology of Tokyo Electric Power Company and other Japanese power companies.



Source) Uzbekistan Dispatch Center

Figure 15 Power transmission network of Central Asia (Uzbekistan, South Kazakhstan, Kyrgyzstan, and Tajikistan)

4.2.4. Issues upon promoting infrastructure improvement

The main issues that the Uzbek government is currently aware of are as follows:

- ① A shortage of specialists who have knowledge of the latest energy saving technology, energy management technology, ESCO (Energy Service Company) services, etc.
- ② Building capacity for the regional dispatch centers that make up Central Asia's integrated power supply system, automating the power-supply-network monitoring system—including the introduction of SCADA/EMS—and introducing related equipment
- ③ Introducing renewable energy balanced with other economic sectors. As an example, this includes solar power facilities and solar water heaters for agricultural areas.

At the present time, government officials are saying a lot about changes in the sector, but sector reforms are actually in progress, new plans, etc. have not been disclosed, and the situation is uncertain. Power tariffs continue to be kept at low levels, and smart meters have only been introduced at the pilot-project level.

There is still a long way to go in terms of power-market deregulation, but semi-governmental organizations such as Uzbekhydroenergo—which owns the hydroelectric power facilities of the National Energy Saving Company (NESC), the Ministry of Agriculture, and Uzbekenergo—have been established, and the country is apparently preparing for electricity deregulation.

There is a serious shortage of engineers, which is one factor slowing down reforms in the energy sector. During our field research, although no funding issues were clearly pointed out, the shortage of qualified human resources was repeatedly pointed out. NESC's budget covers up to 150 people, but the company has only hired 70 engineers who have knowledge related to energy saving technology.

The development of human resources related to energy saving technology is thought to be a field that Japan can contribute to. Uzbekenergo has made a proposal indicating that—regarding the Japanese technology necessary for the after-sales service the company has already introduced—the transfer of technology from Japan could reduce operation and maintenance costs and lead to the sustainable operation of power plants constructed with JICA's support.

One issue is that, even in cases where donor funds are used to improve the supply of equipment, it is difficult to maintain maintenance service agreements. Therefore, there is hesitation to promote equipment-introducing projects.

4.2.5. Infrastructure improvement projects

The projects below seem to be assumed in Uzbekistan. Although the country has secured enough power generating capacity even when considering the medium and long term, given the increases in energy efficiency and renewable energy, additional gas-fired power plant improvements are assumed.

There is a possibility of further energy deregulation in Uzbekistan as well, and, in the medium and long term, Uzbekenergo might be divided between power generation and power transmission / distribution. In addition, from the perspectives of sustainability as well as controlling natural gas consumption in the energy field, the number of solar, hydropower, and other renewable-energy-power projects is expected to increase.

Table 19 List of potential projects in the energy fields

Project name	Organization in charge	Location	Implementation (planned) year	Overview
Establishment of a research institute related to energy saving technology ①	NESC (National Energy Saving Company)	Tashkent	TBD	<ul style="list-style-type: none"> ● Establishing a research institute related to energy saving technology ● This research institute will be used as a platform to improve the management skills of Uzbekistan's engineers and develop civil servants who have knowledge of energy saving technology.
Development of an information platform for introducing Japanese renewable energy solutions ②	Alternative Energy Club	Tashkent, nationwide	TBD	<ul style="list-style-type: none"> ● It is assumed that the Alternative Energy Club will be utilized as a platform to provide information on Japan's latest renewable-energy technologies.
Psken hydroelectric power plant (400 MW) ③	Uzbekhydroenergo	Tashkent (Psken)	TBD	<ul style="list-style-type: none"> ● Uzbekhydroenergo, which was established in 2017, is an agency specialized in the hydroelectric power field. The Psken hydroelectric power plant, a 400-MWt plant on the Psken River, is being constructed. When

Project name	Organization in charge	Location	Implementation (planned) year	Overview
				Uzbekistan's president visited the USA, the decision was made to introduce GE equipment, but the fundraising conditions have not worked out.
Coordinating Dispatch Center Energiya human-resource development and equipment renewal ④	The Coordinating Dispatch Center Energiya in Uzbekistan, the ADB	Tashkent	TBD	<ul style="list-style-type: none"> ● In Uzbekistan, because the power rates are low, the country does not have enough money to pay for the costs of equipment or human-resource education for the Coordinating Dispatch Center Energiya. The other three countries have already introduced SCADA and are renewing their equipment, but Uzbekistan is continuing to use conventional technologies. Therefore, the Coordinating Dispatch Center Energiya is interested in acquiring the power grid operation technology of Tokyo Electric Power Company and other Japanese power companies.
Uzbekistan regional dispatch center development ⑤	Uzbekenergo (the ADB)	Nationwide	TBD	<ul style="list-style-type: none"> ● Developing the regional dispatch center in the Uzbekistan region (introducing SCADA and improving equipment)
Local production development of spare parts exclusively for turbines made in Japan	Uzbekenergo	TBD	TBD	<ul style="list-style-type: none"> ● Because the service parts for turbines introduced by JICA's project are exceeding the budget, Uzbekenergo is considering local production as a way to reduce costs.

Project name	Organization in charge	Location	Implementation (planned) year	Overview
⑥				
Establishment of a training center and research institute for the International Solar Energy Institute (ISEI)	International Solar Energy Institute	Tashkent	TBD	<ul style="list-style-type: none"> The institute is considering the development of a training facility and human-resource development program to help spread Japan's solar power generation and solar thermal utilization technologies.
⑦				
Improvement of access to water resources by utilizing solar technology	International Solar Energy Institute	Samarkand	TBD	<ul style="list-style-type: none"> Improving access to water resources in Uzbekistan's agricultural areas by using solar-power pumps
⑧				
Supplying heat for schools and preschools by using solar thermal technology	International Solar Energy Institute, Ministry for Utility Services	Regional	TBD	<ul style="list-style-type: none"> Supplying heat for organizations under the Ministry of Education's umbrella by using solar thermal technology
⑨				
Development of Uzbekistan's first SPP (125.7 MWp / 100 MWe solar plant ("SPP"))	Uzbekenergo	Samarkand	TBD	<ul style="list-style-type: none"> Presidential resolution No. PP-3012 (dated May 26, 2017) related to the action program to improve energy efficiency in various economic and social fields as well as Uzbekistan's renewable energy from 2017 to 2021
⑩				
Development of a high-efficiency cogeneration and combined-cycle system through	Ministry for Utility Services	<ul style="list-style-type: none"> •Ferghana •Bukhara, Nukus, Urgench, Kuwasai 	TBD	<ul style="list-style-type: none"> Improving existing boilers through high-efficiency cogeneration and combined-cycle system development

Project name	Organization in charge	Location	Implementation (planned) year	Overview
private-power-dedicated small and medium-sized gas turbines and heat-supply-network modernization ⑪				
Increasing the energy efficiency of Uzbekistan building operations through development in fields for which there are energy saving audits based on international standards ⑫	Committee on Ecology and Environment Protection	Regional	TBD	<ul style="list-style-type: none"> ● Development of energy-efficient usage standards starting with energy saving inspections

Note: * The numbers shown in circles correspond to the locations in figure 17. Map of projects in Uzbekistan.

Source) Compiled by the NRI based on interviews with relevant agencies.



Source) <http://www.nationsonline.org/oneworld/map/uzbekistan-political-map.htm>

Figure 16 Map of projects in Uzbekistan

4.2.6. Activity situation of donors

International aid agencies are actively participating in the development of Uzbekistan's energy sector. The ADB has a portfolio of 1.7-MW energy projects focused on three major goals: energy saving, energy security, and energy-mix diversification. JICA is playing a leading role in power-generation projects in Uzbekistan.

Table 20 List of power-generation-related projects supported by donors

	Project name	Power-generation capacity (MW)	Year	Fuel	Location	Equipment	Manufacturer	Source
1	Syrdarinskaya TPP	3050	1972	Natural gas	Shirin, Syrdarynskaya	10 x 300 MW	Modernization of two generators by using TAGMET, LMZ, Electrosila, and Siemens equipment (\$50 MM)	EBRD, ADB 2002
2	Talimarjanskaya TPP	1700	2004	Natural gas	Nuristan, Kashkadarinskaya	1 x 450 MW 1 x 314 MW	Mitsubishi Heavy Industries	JICA, ADB (\$1.3 billion), 2011
3	Takhtitashskaya TPP	730	1956	Natural gas	Takhtitash, Takhtitash region	3×K-100-90-6 2×K-215-130	LMZ Hyundai Engineering & Construction, Daewoo International Consortium	ADB \$300 MM
4	Angrensk TPP	634	1967	Coal	Tashkent	4×K-100-90-6	LMZ ³⁵	Export-Import Bank of China

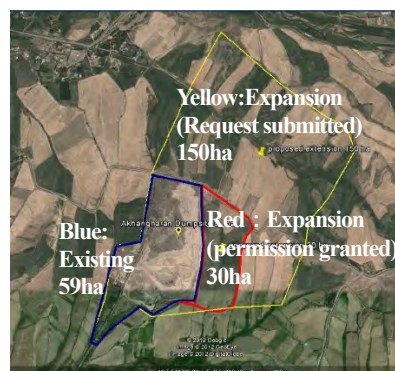
³⁵ LMZ Leningradskiy Metallicheski Zavod is a Russian manufacturer. <http://www.power-m.ru/en/company/>

4.3. Environment

4.3.1. Current situation of infrastructure improvement

4.3.1.1. Waste treatment

Every day, Uzbekistan generates 12,000 tons of municipal solid waste (MSW), which amounts to over 4 million tons per year. This amount is expected to increase to at least 7 million tons per year by 2030, and the total amount of MSW is expected to reach approximately 100 million tons by the same year. Outside of Tashkent, the municipal-waste recycling efficiency is extremely low. In rural areas, the recovery efficiency is estimated to be less than 50%. In addition, the domestic waste disposal sites are not enough to satisfy the current waste-treatment demand. As one example, at the Akhangaran Sanitary Landfill in Tashkent—where the population and thus the waste are concentrated—58 hectares of the 59-hectare site have already been filled. Permission has already been granted to expand the landfill by 30 hectares, and a request has been submitted to expand it by an additional 150 hectares. (See the figure below.)

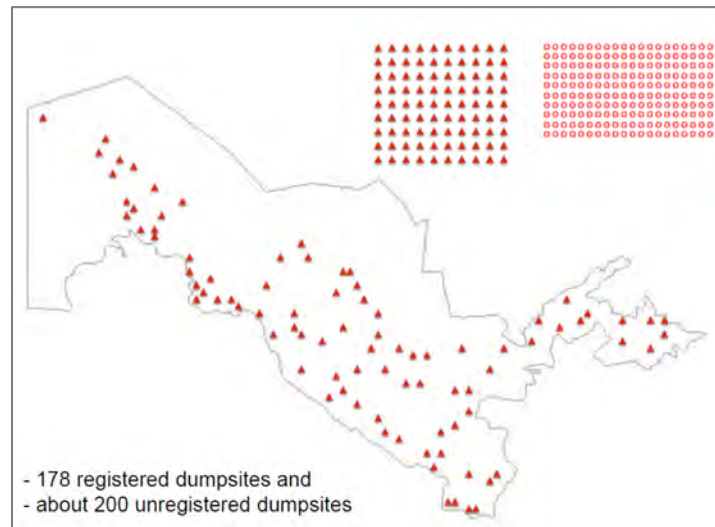


Source) Uzbekistan Solid Waste Management Improvement Project (the ADB) (2013)

<https://k-learn.adb.org/system/files/materials/2013/09/201309-uzbekistan-solid-waste-management-improvement-project.pdf>

Figure 17 Akhangaran Sanitary Landfill expansion plan

According to a report by the ADB, there are currently 178 registered waste disposal sites in Uzbekistan, and there are around 200 unregistered ones.



Source) Uzbekistan Solid Waste Management Improvement Project (the ADB) (2013)

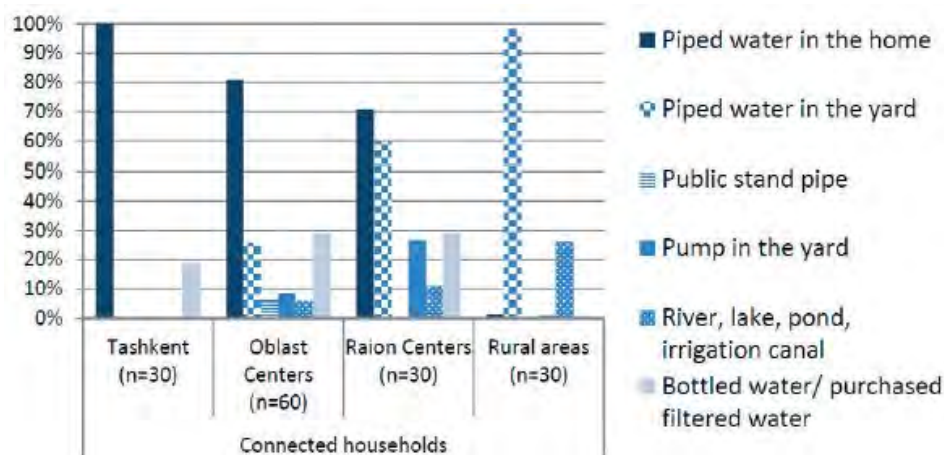
<https://k-learn.adb.org/system/files/materials/2013/09/201309-uzbekistan-solid-waste-management-improvement-project.pdf>

Figure 18 178 registered disposal sites and around 200 unregistered ones

However, there is actually a striking amount of illegal dumping outside of waste disposal sites, including vacant land and rivers. The illegal dumping all over the country is causing major damage to the soil, air, surface water, groundwater resources, and the health of nearby residents.

4.3.1.2. Water supply and sewage

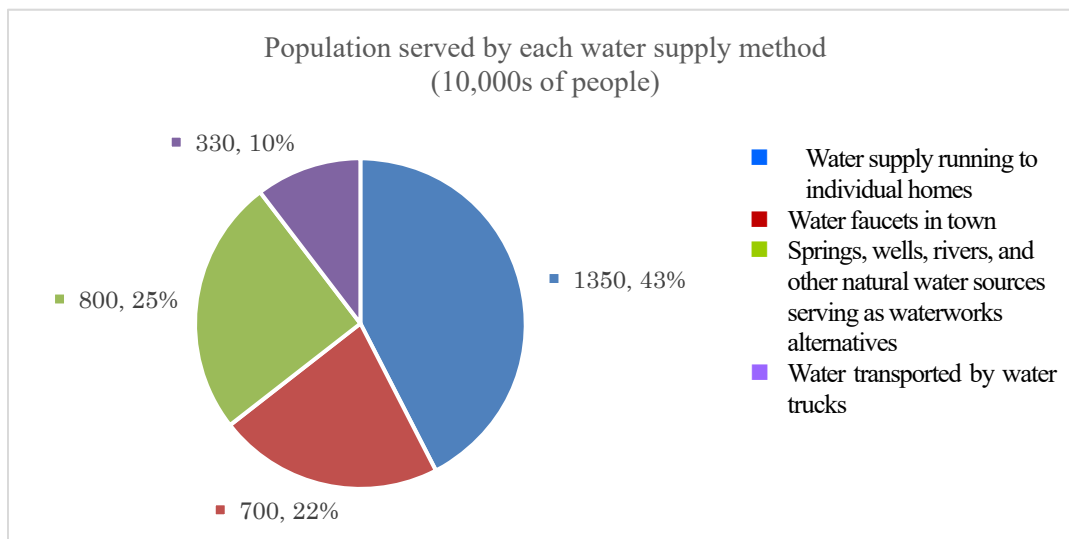
According to a report by the World Bank, based on the percentages of households using each drinking-water source in the case of people living in Uzbekistan, the percentage of households that use installed tap (piped) water as a water source is 100% in major cities such as Tashkent. In contrast, in the suburbs, small / medium-sized cities, and less developed areas, this percentage decreases, while the percentage of households using water sources that include outdoor water pipes, pumps, rivers, lakes / marshes, ponds, irrigation canals, etc. increases.



Source) World Bank (2015) The Case of Uzbekistan: Social Impact Analysis of Water Supply and Sanitation Services in Central Asia

Figure 19 Percentages of households using each drinking-water source by region (city scale)

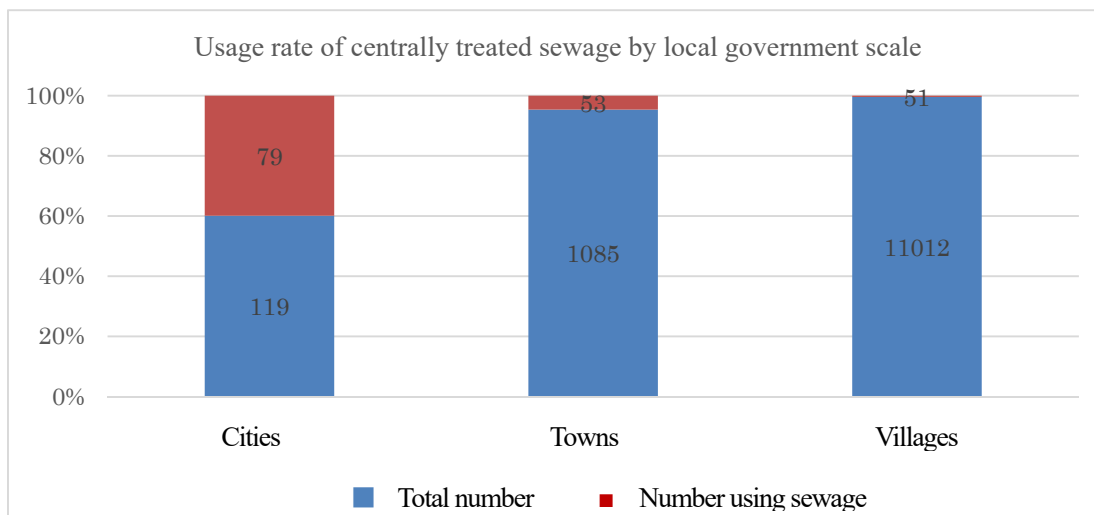
From 2011 to 2017, Uzbekistan promoted improvements that covered 13,000 kilometers of water mains and water distribution networks, and the country simultaneously constructed or reconstructed more than 160,000 wells as well as 1,400 water towers and reservoirs. In spite of this, of Uzbekistan's population of 32 million people, only 27.7 million (64%) are connected to the central water supply (figure 21).



Source) "The Development Concept for the Water Supply and Sanitation Sector of the Republic of Uzbekistan"
(The Ministry of Housing and Communal Service of the Republic of Uzbekistan, 2018)

Figure 20 Population served by each water supply method

Meanwhile, the sewage-infrastructure improvement situation is even worse. Only 79 of Uzbekistan's 119 cities (66.4%), 53 of its 1,085 towns (4.9%), and 51 of its 11,012 villages (0.46%) have centrally treated sewage infrastructure in place.



Source) "The Development Concept for the Water Supply and Sanitation Sector of the Republic of Uzbekistan"
(The Ministry of Housing and Communal Service of the Republic of Uzbekistan, 2018)

Figure 21 Situation of sewage-infrastructure availability by local government scale

4.3.2. Infrastructure improvement agencies and personnel systems

- Committee on Ecology and Environment Protection

The Committee on Ecology and Environment Protection has a cross-organizational role in terms of the activities of ministries and government offices related to ecosystem conservation and environmental protection, and the committee mainly has jurisdiction over waste management and environmental audits. In terms of environmental management, the committee emphasizes water resources and water-quality monitoring in particular.

- Weather Service Center (Uzhydromet)

Uzhydromet develops and improves Uzbekistan's hydrometeorological observation status systems, provides hydrometeorological data in economic fields, conducts scientific research activities, makes improvements to short and long-term weather forecasting, and analyzes the usability of river water as well as climate changes. This organization is similar to the Japan Meteorological Agency, but it also handles the nationwide monitoring of soil pollution, air pollution, and water pollution (including heavy metals, pesticides, nitrogen, phosphorous, sulfur, mercury, benzopyrene, etc.).

- National Water Supply Company (Vodokanal)

The National Water Supply Company (Vodokanal) handles construction improvement and operations related to the water supply and sewage infrastructure on a local-administration (region, city) basis.

4.3.3. Cross-regional issues

4.3.3.1. Waste treatment

There are no cross-regional waste-treatment issues that extend across borders in Uzbekistan.

4.3.3.2. Water supply and sewage

If the countries of Central Asia are divided between countries that are upstream and downstream from the Amu Darya River and Syr Darya River, which flow into the Aral Sea, Tajikistan and Kyrgyzstan turn out to be upstream countries that want to utilize the abundant water sources in their territories for hydroelectric power generation, while Uzbekistan turns out to be a downstream country that requires irrigation water in order to cultivate the export crops cotton and wheat as well as horticultural crops. Historically, there has been friction between these upstream and downstream countries regarding the distribution of water resources.

Uzbekistan is dependent on foreign countries for 80% of its water resources, and, because it is important to maintain the quality of water resources, the *Committee on Ecology and Environment Protection* emphasizes the monitoring of the quality of water resources in particular when it comes to environmental management.

4.3.4. Issues upon promoting infrastructure improvement

It is necessary to focus on *introducing sorted municipal waste collection in urban areas* in terms of waste treatment and on *improving the water supply and sewage infrastructure in regional cities (including the introduction of simple septic tanks in particular)*, *monitoring the quality of water sources from foreign countries*, and *improving toilets to handle increased inbound tourists* in terms of water supply and sewage improvement.

Table 21 Issues upon promoting infrastructure improvement

Field	Strength of interest	Specific issues and themes	Issue size
Waste treatment	Strong	Improving waste landfill sites, introducing collection and recycling facilities, and purchasing garbage trucks	(Medium) Many ODA projects are already being implemented.
	Strong	Introducing sorted municipal waste collection in urban areas	(Large) Sorted collection is included in the presidential draft <i>On measures to further improve and develop the sanitation system</i> .
	Weak	Introducing waste incineration plants	(Small) There are currently few government agencies expressing the need to introduce waste incineration plants.
Water supply and sewage	Strong	Improving the water supply and sewage infrastructure in regional cities	(Large) The tap (piped) water infrastructure for the suburbs and small / medium-sized cities currently uses outdoor water pipes / pumps, rivers, lakes / marshes, ponds, irrigation canals, and similar water sources for a large percentage of the supply. Regarding sewage in rural areas, large-scale pipe-network and treatment-plant improvements cost a lot of money, and it is not practical to operate and maintain them in the long term. As a result, there is a lot of focus on simple septic tanks.
	Strong	Monitoring the quality of water sources from foreign countries	(Large) Uzbekistan is dependent on foreign countries for 80% of its water resources, and maintaining the quality of these resources is important.
Other	Strong	Improving toilets to handle increased inbound tourists	(Large) There is a need to introduce water-saving flush toilets.

4.3.5. Infrastructure improvement projects

4.3.5.1. Waste treatment

In Uzbekistan, there are already many waste-landfill-site-improvement projects that have donor support in progress. Meanwhile, the sorted collection of solid waste is being introduced in accordance with the presidential draft *On measures to further improve and develop the sanitation system*. Regarding this draft, it is assumed that a detailed *roadmap* will be created concerning the implementation of the collection of each type of solid waste in phases from 2018 to 2021 and that a draft of the national strategy for managing solid waste will be created by November 1, 2018. Therefore, there is a need to introduce the know-how, methods, and equipment necessary to promote sorted waste collection.

Table 22 Assumed projects in the waste treatment sector

Project name	Assumed scheme	Agencies considering the project	Strength of government interest	Issue size	Possibility of involvement by Japanese companies	Comprehensive evaluation
Raising awareness of sorted waste collection and the 3Rs (reduce, reuse, recycle)	Technical cooperation	<i>State Committee for Investment, Committee on Ecology and Environment Protection</i>	Strong	Large	Possible	○

Source) Compiled by the NRI based on interviews with related agencies.

4.3.5.2. Water supply and sewage

Uzbekistan is dependent on foreign countries for 80% of its water resources, so maintaining the quality of water resources is important, and there is a need for facilities, technologies, and human resources capable of monitoring the quality of water sources from foreign countries. In addition, regarding sewage in rural areas, large-scale pipe-network and treatment-plant improvements cost a lot of money, and it is not practical to operate and maintain them in the long term. As a result, there is a lot of focus on simple septic tanks. There is also a need to introduce water-saving flush toilets to handle increased inbound tourists.

Table 23 Assumed projects in the water supply and sewage sector

Category	Project name	Assumed scheme	Agencies considering the project	Strength of government interest	Issue size	Possibility of involvement by Japanese companies	Comprehensive evaluation
Water supply and sewage	(1) Water supply and sewage improvement	Yen loans	<i>World Bank, ADB, Islamic Development Bank, etc.</i>	Strong	Large	Possible	△
	(2) Simple septic tank improvement	Yen loans	<i>Committee on Ecology and Environment Protection, Vodokanal (National Water Supply Company)</i>	Strong	Large	Possible	○
Other	Water-saving flush toilets	Yen loans	<i>State Committee for Tourism Development</i>	Strong	Medium	Possible	○

Source) Compiled by the NRI based on interviews with relevant agencies.

4.3.6. Activity situation of donors

4.3.6.1. Waste treatment

Support projects are being implemented by the ADB, UNDP, AFD (Agence Française de Développement) , etc.

Table 24 Waste treatment projects being implemented in Uzbekistan by international aid agencies

Aid agency	Description of activities
ADB	<ul style="list-style-type: none">• The ADB is implementing a solid-waste-management improvement project to support waste-treatment-system improvement in Tashkent through an investment package aimed at minimizing waste and promoting recycling activities. More specifically, this project is aimed at improving and renewing the city's municipal waste collection and transfer systems while making a waste landfill site usable by 2060 at the latest.
UNDP	<ul style="list-style-type: none">• UNDP is supporting the introduction of a public-private partnership approach for waste management in the Yangiyul district of Tashkent.
AFD	<ul style="list-style-type: none">• AFD is supporting the construction of an efficient, sustainable integrated waste management system in Samarkand. For this project, both the construction / reconstruction of 200 collection points and the purchasing of 70 garbage trucks are planned. Important elements of this project include the construction of waste sorting centers and disposal sites by local governments. In addition, plants are being set up that can process emitted biogas so that it can be used for bioreactors.

4.3.6.2. Water supply and sewage

Support projects are being implemented by the World Bank, ADB, Islamic Development Bank, EBRD, etc.

Table 25 Water and sewage improvement projects being implemented in Uzbekistan by international ODA agencies

ODA agency name	Description of activities
World Bank	<ul style="list-style-type: none"> Reconstructing treatment facilities and sewage systems in the cities of Bukhara and Samarkand The capacity is 2.39 million m³ / day Rebuilding the sewage systems in Nukus and Taxiatah (capacity: 746,000 m³ / day) Rebuilding the water supply and sewage system in Kattaqo'rg'on, Samarkand, which has a capacity of 30,000 m³ / day
ADB	<ul style="list-style-type: none"> Developing a sewage system that has a capacity of 30,000 m³ / day in Jizzakh Constructing a sewage system that has a capacity of 3 million m³ / day in Ferghana and Margilan Rebuilding the water supply and sanitation system in the city of Tashkent and its districts and then constructing more (phase 2) (capacity: 200,000 m³ / day)
Islamic Development Bank	<ul style="list-style-type: none"> Rebuilding and expanding the sewage systems in Gulistan, Shirin, and Yangiyer (Syr Darya River), which have a capacity of 37,000 m³ / day Rebuilding and expanding the sewage systems in Urgench, Hiba, Pitnak, and Xorazm (capacity: 81,000 m³ / day)
EBRD	<ul style="list-style-type: none"> Increasing the coverage range of sewage in Tashkent from 90% to 98% and providing USD 25 million in financing to increase water-supply-system efficiency

4.4. Healthcare

4.4.1. Current situation of infrastructure improvement

Within Uzbekistan, the Healthcare field has a high priority, a related presidential decree was officially announced in December of 2018, and further improvements are expected. There are both public and private hospitals in Uzbekistan. Specialized hospitals have been established in the 12 regions as well as each city. In the case of region-run hospitals, half of the operating budget is supplied from the national budget.

In Uzbekistan's case, because the territory is wide from east to west and the population is widely distributed, the region's medical services are operated mainly by the Ministry of Health, the 12 regions, and the Republic of Karakalpakstan. The Ministry of Health is set up in Tashkent (the capital) and has jurisdiction over Tashkent in particular and the 12 regions. The Republic of Karakalpakstan occupies approximately 1/3 of Uzbekistan's territory, and the republic has its own president and government offices. In addition, it has a national flag, national anthem, and other characteristics of an independent state, but—in terms of the republic's medical care and social security related laws and regulations—the republic is run according to the laws specified by Tashkent's Ministry of Health.

In Karakalpakstan, salt damage from the Aral Sea has a major effect, and the disease trends differ from those in other regions within Uzbekistan. Karakalpakstan's current president is focusing on medical care, the budget to repair hospitals has been secured, and many core public hospitals are currently being renovated. In addition, patients come from Kazakhstan and other nearby countries for medical examinations. Because the Republic of Karakalpakstan is a desert region and for other reasons, simple home-visit medical examinations are conducted, and only citizens who require diagnosis or treatment at hospitals are guided to them.

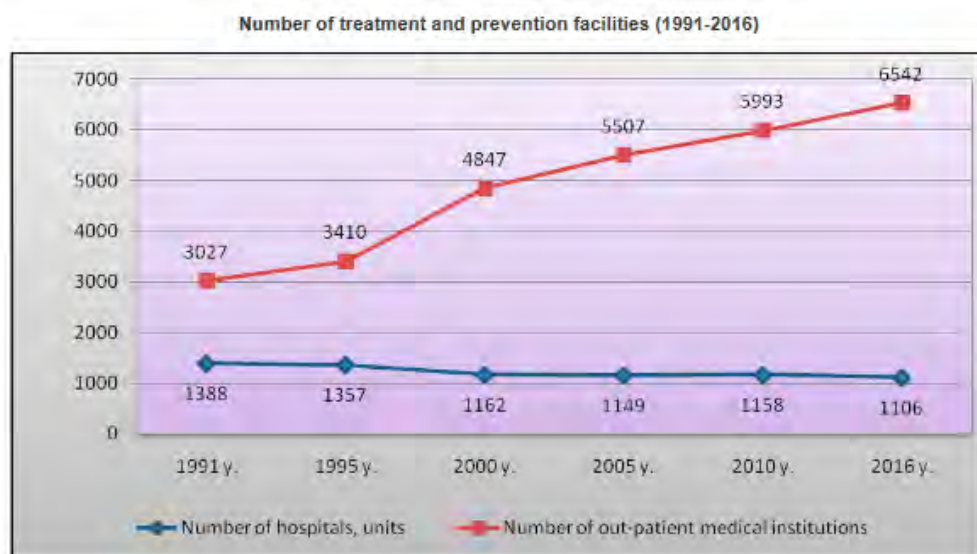
Uzbekistan's Healthcare system includes provisions for free medical examinations depending on the disease and income. The system is based on fee-based medical examinations, which involve costs to the patients and are the norm in the case of private hospitals, except in cases where the government has specified free examinations for specific diseases and conditions. Bribing doctors is prohibited by law.

Because free medical examinations are available in the case of low-income people and certain diseases, the actual situation in Uzbekistan is that the majority of medical examinations are free. In addition, because there is a law stipulating that any medical examination conducted using medical equipment that was procured using financial aid must be free, from the hospital-management improvement perspective, it is necessary to provide free medical examinations even in cases of treatments and patients for which fees should by all rights be charged. As a result, because medical institutions have to provide consumables and prepare medicines for free, they are in a difficult

situation in which they cannot recover the costs of such consumables, medicines, or medicine preparation work. In particular, in the case of region-run hospitals (of which there are 12 in Uzbekistan), because the government only provides enough money to cover half the operating costs, it is necessary to cover the rest of the costs with medical fees, which is only making the economic issues caused by conducting medical examinations by using medical equipment procured with financial aid more serious.

Regarding the situation of medical-institution infrastructure, there are striking issues in terms of building-operating-room deterioration as well as medical-equipment deterioration, shortages, etc. In addition, there is striking deterioration of tap (piped) water, water pipes, and other infrastructure.

As a result of the issue of medical-equipment shortages and deterioration, there are many cases in which general refrigerators are used instead of proper refrigeration equipment for storage as well as cases in which equipment from the era of the former Soviet Union is still being used even after several decades. Many medical institutions are forced to let medical equipment (including high-spec equipment) just sit there because it can no longer be used due to insufficient reagents / consumables or the inability to pay maintenance costs, and it is often impossible to procure electrocardiographs with monitors for ICUs, so some medical institutions have to rely on manpower to operate, such as by having doctors monitor patients via regular visual checks. Due to shortages of consumables, we even found some medical institutions that were washing items for reuse even though they are supposed to be disposable. In addition, even if the aid agencies in each country use financial aid to provide medical equipment, such equipment often does not come with the necessary technical cooperation, so medical personnel don't know how to use it and therefore can't. It is necessary to provide support that also includes technical cooperation related to training on how to use medical equipment, maintenance in line with the medical-institution usage period, etc.



Source) Based on Ministry of Health data: "HEALTHCARE SYSTEM IN THE REPUBLIC OF UZBEKISTAN" (2017)

<https://stat.uz/en/435-analiticheskie-materialy-en1/2076-Healthcare-system-in-the-republic-of-uzbekistan>

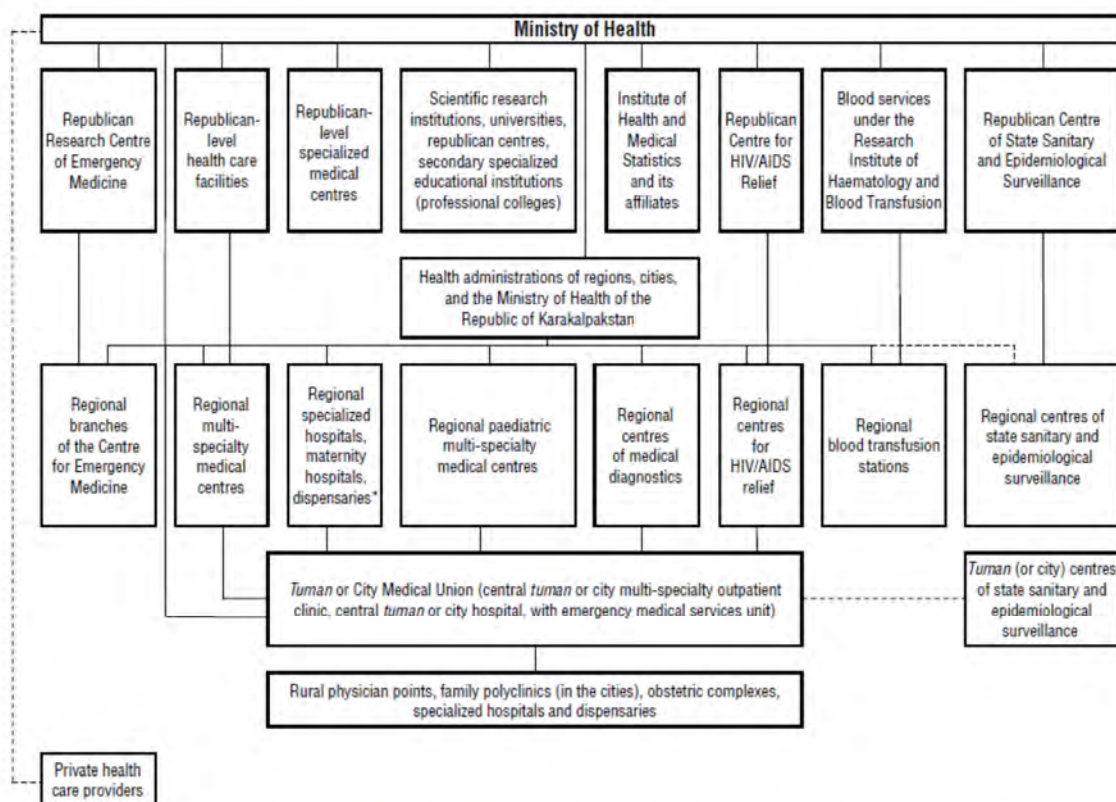
Figure 22 Changes in the numbers of hospitals and clinics in Uzbekistan

Although the number of hospitals that have beds is on a decreasing trend due to reductions in the national budget, there are many privately owned out-patient clinics, and these are on an increasing trend in Tashkent in particular.

Since July of 2018, presidential decrees have been officially announced in the medical field, there has been a stronger interest in promoting medical reforms, and securing a medical budget as well as reforms aimed at privatization, medical institutional reforms, medical education, and similar goals were included in the policies for December of 2018.

4.4.2. Infrastructure improvement agencies and personnel systems

The Ministry of Health has jurisdiction over Healthcare. Note that a separate Ministry of Health is set up in the Republic of Karakalpakstan, but it is under the umbrella of the one in Tashkent. In addition, because the country has military hospitals, a division related to medical care has also been set up within the Ministry of Internal Affairs. Military hospitals are not open to civilians.



Note: *Dispensaries are medical facilities charged with screening for, identifying and managing specific conditions or groups of conditions. They were an integral part of secondary and tertiary health care before the dissolution of the Soviet Union and are still in place in many former Soviet countries.

Source) Health systems in transition: Uzbekistan - WHO/Europe Health System review 2014

Figure 23 Organizational chart of the Ministry of Health

4.4.3. Cross-regional issues

Because medical care and insurance systems differ between countries, there are no examples of cross-border cooperation between Uzbekistan and nearby countries. In addition, the issue of the poor having limited access to medical care is one shared by the country not only with Russia but also with the former Soviet Union.

In Uzbekistan's case, some patients come from Kazakhstan and other neighboring Central Asian countries for treatment. This seems to be due to access considerations, including the fact that Uzbekistan is connected to nearby countries by land routes and acted as a waypoint for people coming and going from various Central Asian countries during the era of the Soviet Union, similarly to how Uzbekistan is a Silk Road waypoint. However, only the wealthy are capable of coming from neighboring countries to Uzbekistan for treatment.

Uzbek patients who cannot be treated within Uzbekistan are transported to medical institutions in Turkey along air routes from Tashkent, Samarkand, etc. However, treatment received in foreign countries is not covered by the medical insurance system, nor are voluntary insurance systems very well developed, so only the wealthy are capable of receiving treatment in foreign countries.

4.4.4. Issues upon promoting infrastructure improvement

Compared to other fields, Uzbekistan's domestic Healthcare field is high priority. As mentioned above, because the Uzbek government requires that medical examinations be provided for free in the case of financial aid, people are positive about loan assistance projects in the medical field.

Regardless of whether they involve loan assistance or financial aid, information on projects is first organized by the State Committee for Investment before they are considered. The State Committee for Investment has the discretionary power to adopt projects, so the Ministry of Health does not necessarily have its way in all cases. The State Committee for Investment comparatively considers projects in many fields, assigns priorities to them, and then decides which projects to request support for. Therefore, every year, because the committee spends a certain amount of time collecting information, comparatively considering it, and deciding on the order of priority, it takes several months or more before a project can be executed. In addition, in the case of Ministry of Health projects that are highly likely to succeed and are a high priority of the government (the president), if there is a shortage in terms of the Ministry of Health's budget, the Ministry of Finance and State Committee for Investment reconsider the budget. In fields for which there are presidential instructions or high Ministry of Health demand, projects often target diseases for which there are many patients for whom free medical examinations are specified, so it is essential to secure money from the national budget for project implementation.

The table below shows the strength of the government's interest in each field as well as the specific associated issues and their size.

Table 26 Issues in Healthcare fields

Field	Strength of interest	Specific issues and themes	Issue size
Enhancement of blood projects (blood centers / banks)	Strong	<ul style="list-style-type: none"> • Many patients have blood diseases, and it is necessary to consider how to enhance domestic production of blood since it has been purchased from Russia in the past. • The Ministry of Health has blood centers under its umbrella and is working on business expansion in Uzbekistan, but there is a need to deal with equipment shortages and increase the available refrigeration and frozen storage equipment. • In October of 2018, Turkish donors started providing support. 	<p>Large</p> <ul style="list-style-type: none"> • The Uzbek government calls blood products "red gold" and considers the enhancement of blood projects a top-priority issue due to the belief that such projects can raise the standard level of all medical care. • Needs on the blood-center side include building expansion / repairs as well as increased medical equipment, but the Ministry of Health is demanding technical guidance as well.
Introduction of medical equipment + technical cooperation	Strong	<ul style="list-style-type: none"> • There is a strong need for medical-equipment training and other technical cooperation. In many cases, the financial aid from donors in various foreign countries does not include technical cooperation. Technical cooperation for doctors, knowledge and instructions on how to use modern medical equipment, and other types of training are required. • There are many diseases that cannot be treated due to a lack of medical equipment, and—based on Experience on grant aid for Navoi multidisciplinary hospital—there is a strong need for more medical equipment from Japan. 	<p>Large</p> <ul style="list-style-type: none"> • There is a strong need for increased medical equipment for public hospitals. • There is an even stronger need for training-related technical cooperation than there is for medical equipment. • There is a need to handle this issue with loan assistance as opposed to financial aid (the issue of free medical examinations). • Local hospitals also have a need for electronic medical records.
Children's Oncology Center	Strong	<ul style="list-style-type: none"> • The pediatric field is covered by free medical examinations, but it is necessary to care for children differently than adults. Because the percentages of adults with each disease are higher, the country has been slow to set up medical 	<p>Large</p> <ul style="list-style-type: none"> • Regarding cancer, it needs medical equipment both screening and treatment. • There are national, state and

Field	Strength of interest	Specific issues and themes	Issue size
		<p>institutions specialized in young children.</p> <ul style="list-style-type: none"> • Regarding cancer in particular, thinking is behind in terms of care specialized in the pediatric field. • In Uzbekistan's case, the number of deformed children and children with cancer is increasing due not only to lifestyle habits (diet, etc.) but also region-specific external factors, including pollution and water quality. As a result, there is a need to develop centers specialized in children with cancer. • Because screening tends to be slow regarding cancer in general, many of the patients who come to hospitals are already at the end stage, so there is a need to enhance not only treatment and pain relief but also screening. 	<p>municipality for public oncology centers. Regarding municipality oncology centers, some cities do not have settings. In general, medical equipments are relatively maintained in the national and municipal oncology centers, and the state one is behind. Also, in general, public oncology centers in rural areas are behind developments than in urban areas one.</p> <ul style="list-style-type: none"> • Because over 70% of the patients at each Oncology Center are adults, there is insufficient care suitable for young children. • There is a strong need to introduce both medical examination equipment to enhance screening and Healthcare systems to enhance preventive medicine.
Kidney center enhancement	Strong	<ul style="list-style-type: none"> • From the perspectives of lifestyle and eating habits as well, there are a lot of patients who have circulatory-system diseases in certain regions. The number of patients with diabetes is rapidly increasing. • Dialysis treatment centers and other medical institutions specialized in kidneys either do not exist in rural areas or are too small-scale to handle all the patients, so many patients go to dialysis centers in Tashkent. • Because there are many patients and a shortage of equipment, the existing equipment would not 	<p>Large</p> <ul style="list-style-type: none"> • Due to the rapid increase in diabetes patients, the capacity to handle them has become insufficient, so there is a strong need to increase it. • It is necessary to replace dialysis machines that have deteriorated, but the national budget is not sufficient to procure them. • Kidney centers (dialysis treatment centers) in rural areas are small-scale, and there is an insufficient capacity and

Field	Strength of interest	Specific issues and themes	Issue size
		<p>be sufficient even if it were operated five times a day, 365 days per year.</p> <ul style="list-style-type: none"> • Kidney transplants are also being considered as effective treatment. In 2017, the president removed the ban on transplants, and transplant legalization is being considered (as of the end of July of 2018). • Because free medical examinations are specified in relation to kidney centers, kidney centers are handled using the national budget, but there is a strong need for increased dialysis equipment or replacements, building repairs, and operating rooms for performing transplants. 	<p>medical-equipment shortage.</p> <ul style="list-style-type: none"> • Even Tashkent's capacity is insufficient. • Based on the presidential decree dated July 12, 2018, Germany started providing support.
Primary field enhancement	Strong	<ul style="list-style-type: none"> • The system of free medical examinations used during the era of the former Soviet Union hampered screening habits and lowered the people's awareness of preventive medicine and health. • Primary field enhancement is necessary, and there is a need to enhance cancer-related screening. • There is a shortage of medical examination equipment, and the country has been slow to respond to this, so there is a strong need for equipment. 	<p>Large</p> <ul style="list-style-type: none"> • Regarding cancer, in addition to screening and treatment, medical equipment is necessary. • In addition to cancer, there is an interest in popularizing preventive medicine, including the prevention of lifestyle diseases, and reducing state medical-care costs.
Medical institutional reforms	Low	<ul style="list-style-type: none"> • Although the government is aware of this issue, few officials are willing to push for reforms due to how unlikely doing so is to lead to executive results. • Because the president is demanding fair transactions and medical reforms, related needs 	<p>Medium</p> <ul style="list-style-type: none"> • The Ministry of Health considers reforms a low priority (as of May of 2018).

Field	Strength of interest	Specific issues and themes	Issue size
		seem likely to surface.	

4.4.5. Infrastructure improvement projects

Given that—in the announced *Strategy of Actions in Five Priority Areas for the Development of Uzbekistan, 2017-2021*—*improving social security and health systems for citizens* is included under *social field development*, infrastructure needs related to improving the level of medical services in the Healthcare field seem to be high priority. Regarding kidney dialysis treatment centers and the blood bank field, which the government is particularly interested in, after the presidential decree was officially announced in July of 2018, the government started considering German donors for its kidney dialysis treatment centers and Turkish donors for its blood bank field.

4.4.6. Activity situation of donors

In terms of donor activities related to the Healthcare field, both financial aid and loan assistance exist. In Uzbekistan, where medical examinations are actually free, because the government is the only contract party for loan assistance projects in the Healthcare sector, each donor signs an agreement with the government (the Ministry of Health).

The Turkish Cooperation and Coordination Agency (TIKA), China, and other nearby countries have approached Uzbekistan with ODA projects. TIKA's proposals generally involve providing financial aid on the condition that all medical equipment be replaced, and these proposals have a bad reputation because the price of consumables is artificially increased every year, and there is no technical cooperation or operation services. As a result of the price of consumables being artificially increased, the number of consumables that can be secured using the government's budget decreases every year, which is making it impossible to achieve suitable medical services. However, because high-speed execution is possible, the Ministry of Health is positioned as a powerful supporter.

In Uzbekistan, KfW only provides support in the medical field. KfW is currently working on multiple projects and is arranging many loan-assistance projects. One characteristic of KfW is that they support the formation of relatively small-scale projects, including projects in the range from tens to hundreds of millions of yen. However, there are projects that end up being unfeasible during the steps from consideration to execution as well as projects for which implementation is started but never finished. In such cases, the Ministry of Health either cancels the projects or requests support from donors to finish them. KfW is currently implementing five projects (as of May

of 2018), which are shown below.

Table 27 Projects being implemented by KfW in the Healthcare field as of May of 2018

Project	Support method	Amount (millions of euros)
Comprehensive children's medical center modernization	Loan + Grant aid	27.0
Modernization of community medical centers outside of the pediatric field	Loan + Grant aid	43.8
Heart disease center modernization	Loan	3.0
Tuberculosis prevention program - 5	Grant aid	2.0
Tuberculosis prevention program - 6	Grant aid	3.0

Source) Compiled based on an interview with Mr. Shakhrukh Imazarov, Head of the KfW Office.

**Table 28 Major efforts and considerations by international aid agencies related to Healthcare in
Uzbekistan**

Aid agency name	Description of activities
ADB	Improving primary care in rural areas, constructing clinics, sharing medical examination equipment, and establishing health management systems
World Bank	Improving medical access mainly in rural areas, establishing emergency-medical-service systems, and increasing their efficiency
UNDP UNICEF	Improving mother and child health programs, improving vaccination programs, managing the supply of vaccines, and providing technical guidance to medical personnel related to mother and child nutrition issues
USAID	Preventing AIDs, tuberculosis, and malaria infections, providing management training, and implementing mother and child health management and guidance in cases where such diseases are contracted

Source) Interviews with each aid agency as well as their websites

5. Activity situation of Japanese companies in the region

5.1. Urban development, transportation, and traffic

5.1.1. Activity situation of Japanese companies

As is the case in Central Asia as a whole, Japanese companies are fairly inactive in the region. Although there have been past cases of Japanese involvement in the region through technical cooperation, financial aid, and yen loans, there are no Japanese companies involved in the traffic, transportation, and urban development fields, for which there are PPP-related and other risks.

However, compared to the rest of Central Asia, there has been a certain amount of expansion by trading companies into Uzbekistan, and it might be possible to increase interest in the country if there is a suitable project. In the tourism field as well as the related aviation and airport fields, there have been past cases of involvement by Japanese companies. In the late 1990s, Marubeni, Mitsubishi, Mitsui, and Shimizu received orders related to the redevelopment of three regional airports in Samarkand, Bukhara, and Urgench through yen loans.

5.1.2. SWOT analysis of Japanese companies and sub-sectors where they have superiority

5.1.2.1. Threats and weaknesses

Projects involving international donors other than JICA are based on internationally competitive bidding. Japanese companies, which have little experience in Uzbekistan, are inferior in terms of local partners and suppliers. On top of that, South Korean and Chinese companies are strong in Uzbekistan, so it is difficult for Japanese companies to find business opportunities related to PPP projects—which involve general price competition—or projects that involve internationally syndicated loans. In addition, the project formation period in the case of projects requiring long-term yen loans from Japan cannot keep up with the reforms in the country, which are based on the short-term decision-making of the Uzbek government, or the decision-making speed of international donors.

5.1.2.2. Opportunities and strengths

At the same time, in the case of projects for which money is invested after establishing technical cooperation and creating a master plan, it is easier to establish relationships with the implementing agencies that are technology-oriented as opposed to being based on price competition. It seems easier for Japan to exploit its superiority in the case of small-scale projects—for which the country can get involved starting with planning at the conceptual stage or technical cooperation—as opposed to large railway and road projects for which it is not possible for one donor to raise the required funds.

5.1.2.3. Projects for which Japanese companies can exploit their strengths

One possibility is airport privatization. As an example, it would be easy for Japanese companies to collaborate with the World Bank in creating an airport privatization framework and act as consultants to improve operations at each airport in order to get involved in the basic design of facilities aimed at increasing service quality. After achieving this, it would be easy to tailor the projects to be run on aid from one source instead of syndicated loans. The case of the main Japanese airports—which have targeted Japanese regional airports and LCCs as the country's airports have been privatized due to increased inbound tourists—could be applied to the airports of Uzbekistan, which needs to target international tourists.

Based on an interview with IFC, which has started providing consulting along with the World Bank, the history of airport privatization in Japan as well as the growth strategies of privatized airport operators could be used as a reference for Uzbekistan. In addition, the deputy prime minister in charge of tourism and the deputy governor of Sarmarkand are active in terms of simultaneously developing tourism demand and expanding airports.

Another possibility is the road maintenance field. Maintenance equipment provided by Japan in the past has been useful in terms of recovering from the collapse of road slopes and other accidents, and the Uzbek government has high regard for the superior technologies of Japan, a country with frequent disasters. Japanese expressway companies, etc. have already achieved the practical implementation of automatic road monitoring systems that utilize sensors and AI technology as well as systems for automatically predicting spots requiring maintenance. Japan is promoting the exporting of road-maintenance infrastructure through public-private cooperation, and this field represents an opportunity for Japan to get involved starting at the technical-cooperation stage and demonstrate the strength of Japanese technology. Japanese companies are highly likely to lose the price competition related to CAREC and other large-scale road infrastructure projects, so such projects are not really an opportunity for Japanese companies.

Table 29 Possibility of Japanese companies participating in traffic, transportation, and urban development fields

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
Airports	• Trading companies, real estate companies, and airport operating companies are showing an interest in airport-	• NAA and trading companies are showing an interest in airport operation.	◎: If Japanese operators can get involved starting with privatization / terminal operation improvements, they

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
	operation projects based on Japan's airport-privatizing experience.		will be able to exploit their strengths. The quality of airport operations is low, so there is a strong possibility of increasing value.
Railways	<ul style="list-style-type: none"> • Rolling stock / signal manufacturers and trading companies are showing an interest in railway construction projects, while subway companies are showing an interest in railway-operation advice and other technical cooperation. 	<ul style="list-style-type: none"> • Signal manufacturers, Kyosan Electric Manufacturing, etc. are showing an interest. 	○: There seem to be companies that want to continue electrification projects.
Urban transportation	<ul style="list-style-type: none"> • IT vendors and signal manufacturers are showing an interest in signal control, ITS, etc. • Parking-lot manufacturers are showing an interest in building parking lots. 	<ul style="list-style-type: none"> • NEC, Itochu Corporation, and other companies are interested. 	○: Bus management systems can be proposed by bus companies and IT vendors. ITS-related companies might also become interested in public transportation management.
Roads	<ul style="list-style-type: none"> • Bridge and steel-beam manufacturers as well as general contractors are showing an interest in suspension bridges and mountain-area roads / tunnels. • NEXCO is showing an interest in road-operation 	<ul style="list-style-type: none"> • There are no current movements. 	◎: Rolling stock manufacturers that have provided equipment in the past might become interested. The Ministry of Land, Infrastructure, Transport and Tourism is launching a road-maintenance workshop.

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
	projects.		
Logistics	<ul style="list-style-type: none"> • Trading companies are showing an interest in building logistics facilities with Japanese companies. 	<ul style="list-style-type: none"> • There are no current movements. 	△: If the cold chain is switched to financial aid, it might be possible to increase the interest of manufacturers.
Urban development	<ul style="list-style-type: none"> • Trading companies and developers are showing an interest in urban development capable of attracting Japanese companies. • IT vendors are showing an interest in smart cities, etc. • The Ministry of Land, Infrastructure, Transport and Tourism, the Urban Renaissance Agency, etc. are showing an interest in TOD³⁶ development. 	<ul style="list-style-type: none"> • NEC and other companies are interested. 	△: There are no companies interested in real estate investment, so only IT vendors are involved.

5.2. Energy

Because most energy equipment is supplied through international-donor fundraising, maintenance service after project completion is not covered by the support. Normally, some spare parts are covered by equipment-supply support, but once these spares are used up after the project period ends, it can be difficult to keep securing them on one's own. Currently, regarding the Japan-made equipment introduced in Uzbekistan, it is necessary to use Japanese replacement parts for maintenance and repairs, and the use of the inexpensive replacement parts made in China and elsewhere is prohibited. Therefore, Uzbekenergo and other operators on the Uzbekistan side face a

³⁶ TOD: Transit Oriented Development

heavy burden of operation and maintenance costs. To reduce the financial burden in the medium and long term, many players on the Uzbekistan side want to start domestically producing these service parts.

5.2.1. Activity situation of Japanese companies

Multiple Japanese companies are involved in activities in Uzbekistan's energy field.

Mitsubishi Hitachi Power Systems (MHPS) is acting as a project-equipment provider for multiple projects supported by JICA, including the Tallimarjon TPP, Navoi TPP, Turakurgan TPP, and Mubarekskaya CHP. In addition, in 2018, the company concluded a memorandum of understanding with the state joint stock company Uzbekenergo as well as Mitsubishi Corporation to collaborate on the operation of thermal power plants as well as a Comprehensive Service and Maintenance Program (CSMP).³⁷

In 2017, Marubeni Utility Services, Ltd. and Kawasaki Heavy Industries, Ltd. started a gas-turbine-cogeneration-system verification project in Ferghana, Uzbekistan with NEDO's support.³⁸ Currently, a plant is being constructed on the land adjacent to the existing cogeneration equipment, and this is scheduled to start operating soon. Itochu Corporation and MHPS are also working on a similar project in Tashkent.

5.2.2. SWOT analysis of Japanese companies and sub-sectors where they have superiority

5.2.2.1. Threats and weaknesses

In recent years, JICA has promoted the introduction of gas-fired facilities in Uzbekistan, which has become a powerful equipment-renewal tool for the country given its struggles with the deterioration of gas-fired power plants and cogenerating plants. At the same time, after the new president was inaugurated in December of 2016, international aid agencies started supporting both Uzbek government procurement reforms and the privatization of state-owned companies. Given these trends, the World Bank Group has advised the country to scrap the deteriorated gas-fired power plant currently owned by Uzbekenergo instead of trying to rehabilitate the plant or renew its equipment and to instead build a new gas-fired power plant and cogeneration equipment on the adjacent land through PPP or IPP. In addition, the World Bank has recommended that the country implement internationally competitive bidding upon pursuing PPP or IPP procurement and has proposed that international

³⁷ <https://www.mhps.com/jp/news/20181105.html>

³⁸ http://www.nedo.go.jp/news/press/AA5_100755.html

aid agencies only provide financial support for projects for which such competitive bidding is implemented.

Although the Uzbek government had not officially introduced any systems based on the above approach as of October of 2018, the energy-procurement reforms being promoted by the World Bank Group are expected to take shape sooner or later. Once they do, there is a high probability of the potential of Japanese companies to receive orders decreasing.

Uzbekistan is a doubly landlocked country, so products that are manufactured and transported from Japan result in high distribution costs, and there is also a risk of damage during transport. In addition, Uzbekistan's electricity price is not necessarily high, and the level is not high enough to enable the country to recover its investment when purchasing Japanese products. In addition, the government is interested in saving energy and is attempting to promote this, but, in cases where the retail electricity price is low, consumers are not exactly proactive about taking energy saving measures. As a result, although there is major potential in terms of opportunities and demand for Japanese energy-related products, it is not clear where Japanese companies can find an opportunity to participate.

In addition, MHPS has concluded a memorandum of understanding concerning thermal-power-plant operation and a Comprehensive Service and Maintenance Program (CSMP) with Uzbekenergo, but Japanese companies do not generally have maintenance bases in Uzbekistan, nor have they managed to establish a sufficient system for after-sales maintenance. One reason for the difficulty concerning after-sales maintenance is that many Japanese companies give up on supplying products. Japanese companies, which are strong in Southeast and East Asia, are economically weak in terms of establishing an after-sales maintenance network in the remote region of Uzbekistan.

5.2.2.2. Opportunities and strengths

There are many deteriorated gas-fired power plants as well as heat and steam supplying facilities in Uzbekistan, and the country has a lot of potential in terms of introducing renewable energy, including solar power plants that can utilize the many sunny days there. In addition, there are assumed to be many project opportunities in the power and energy fields, including the deterioration of power transmission lines, the possibility of introducing smart meters, and the possibility of introducing energy saving equipment.

Japanese companies have products that are applicable to these project opportunities, and several companies are already implementing project development.

5.2.2.3. Projects for which Japanese companies can exploit their strengths

As mentioned above, if the public procurement reforms being promoted by the World Bank Group and Uzbek government are implemented, it will put a spotlight on the high prices and weak after-sales maintenance of Japanese companies, and the competitiveness of the products of such companies will likely decrease even more.

Therefore, it is important to guide the projects already being led by MHPS, Marubeni Utility Services, etc. toward success while considering the possibility of scaling out any successes and emphasizing Japan's track record.

Table 30 Possibility of Japanese companies participating in energy fields

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
Renewable energy	Companies that own solar technology are showing an interest.	Some Japanese companies are interested.	○: If Japanese companies use deregulation as an opportunity to get involved starting with project proposals, they can exploit their strengths. However, it is necessary for the electricity price (FIT) to reach a level that makes it possible to recover investments.
Power generation	Gas-turbine manufacturers and other companies are showing an interest.	MHPS, Kawasaki Heavy Industries, and other companies are showing an interest through NEDO projects, etc.	△: Until an after-sales service system is established, business will amount to nothing but selling off products. In recent years, the Uzbekistan side has started demanding reduced service-part prices as well as maintenance support, and it is necessary to respond to this.
Heating	Companies with cogeneration solutions are showing an interest.	MHPS, Kawasaki Heavy Industries, and other companies are showing an interest through NEDO projects, etc.	△: Smart meters and other fee-collection methods can be developed to increase the feasibility.
Power distribution and transmission	Uzbekistan and neighboring countries started managing their own power supply networks after the fall of the Soviet Union, and power transmission lines have been set up under the	There are no current movements.	△: Uzbekenergo is interested in acquiring the power grid operation technology of Tokyo Electric Power Company and other Japanese power companies. However, until there is government support, project formation will take a while.

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
	management of Uzbekistan's Coordinating Dispatch Center Energiya. Management-software manufacturers might show an interest in this.		

5.3. Environment

5.3.1. Activity situation of Japanese companies

5.3.1.1. Waste treatment

In Uzbekistan, there are no Japanese companies conducting activities related to waste treatment projects. Because Uzbekistan is continuing to use national standards derived from the former Soviet Union (GOST) while customizing them, it seems like there is a possibility for expansion by Japanese companies, which are aiming at technological expansion in Russia and elsewhere. However, the current policy of these companies is to focus on Russia, etc., and none of them have expressed an intention to enter Uzbekistan's market. In addition, based on our interviews with Japanese companies engaged in business targeting Uzbekistan and the rest of the CIS region—for reasons that include the fact that there are either no projects or no funds necessary to implement projects that do exist—the companies are continuing to collect information, but there is currently little interest.

5.3.1.2. Water supply and sewage

In Uzbekistan, there are no Japanese companies conducting activities related to water supply and sewage projects. However, in Voronezh, Russia, there is a Japanese company working on a pilot project based on the framework of the MLIT(JAPANESE MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM)'s Japan-Russia Urban Environment Council to introduce non-excavating pipeline restoration technologies. These technologies make it possible to restore deteriorated water supply and sewage pipes in city centers and elsewhere without digging up the road. The expectation is that these technologies will be introduced in regions where it is difficult to restore pipelines when using methods that involve digging up roads due to the large amount of traffic. However, there is not currently any interest in actually introducing non-excavating pipeline restoration technologies in Uzbekistan.

In addition, in Russia, Kazakhstan, and other countries, there is a Japanese company engaged in business related to the establishment and provision of measurement and control solutions for water supply and sewage networks, including obtaining and distributing water as well as the subsequent drainage treatment. This company conducts business in the Central Asian region, and—although Kyrgyzstan's government is interested—the company has not been able to get a project off the ground there due to a shortage of funds from the government. The company is not actually in the water supply and sewage field, but, in 2013, the company started receiving engineering training related to system modernization (mainly process control), information systems, and the handling of on-site instrumentation from Uzbekneftegaz and six companies under its umbrella (including three refineries in Bukhara, Ferghana, and Alty-Aryk). The company has thus established a channel with Uzbekistan, so there is a good possibility of a water supply and sewage project.

5.3.2. SWOT analysis of Japanese companies and sub-sectors where they have superiority

5.3.2.1. Waste treatment

(Threats and weaknesses)

The government is not active in terms of introducing waste incineration plants, so there do not seem to be any immediate project opportunities for waste-incineration-plant manufacturers. The decision has been made to integrate waste disposal at the region level, but the regions where it is possible to raise the funds to introduce incineration plants are limited, so support from the central government is necessary.

(Opportunities and strengths)

Uzbekistan is working on introducing sorted solid waste collection. This is included in the presidential draft *On measures to further improve and develop the sanitation system*. Therefore, after sorted collection and 3R know-how—both of which are strengths of local Japanese governments—are introduced by JICA's technical cooperation scheme, we can expect the possibility of introducing incinerators to be considered.

5.3.2.2. Water supply and sewage

(Threats and weaknesses)

Regarding water supply and sewage improvement in the urban area, projects are being implemented by using funds from international donors that include the *World Bank*, *ADB*, and *Islamic Development Bank*, and competition is a concern.

(Opportunities and strengths)

Even in Tashkent (the capital), a high percentage of water pipes are made of steel or gray cast iron, at least 25 years old, and over 100 mm in diameter, so pipeline restoration is urgently needed. However, because digging up roads to restore the pipelines causes serious traffic congestion, many local governments are hesitant to get started. Therefore, companies with access to SPR (non-excavating pipeline restoration) construction methods are expected to be highly competitive in this case.

In addition, regarding sewage in regional cities, large-scale pipe-network and treatment-plant improvements cost a lot of money, and trying to operate and maintain them in the long term imposes a heavy economic burden. In Japan as well, the use of simple septic tanks and other forms of distributed treatment is being promoted in regions where the population is decreasing, so Japanese companies would like to focus on projects involving the introduction of simple septic tanks in Uzbekistan as well. Because these tanks are manufactured not only by major Japanese manufacturers but also by SMEs, there is potential to utilize schemes involving cooperation with SMEs.

Meanwhile, removing a ban on visas results in a striking increase in inbound tourism, but infrastructure issues become a central issue when this is done. In particular, Uzbekistan has a serious issue in terms of toilets at tourist spots. Uzbekistan does not have abundant water resources, so it would be best for the country to introduce water-saving toilets.

Based on the above, projects for which Japanese companies could likely exploit their strengths are as follows.

Table 31 Possibility of Japanese companies participating in environmental fields

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
Waste treatment	<ul style="list-style-type: none"> Japanese companies striving to expand their business into Russia, etc. are currently pursuing a policy of focusing on Russia, etc. and have not expressed any interest in entering Uzbekistan's market. 	<ul style="list-style-type: none"> There are no current movements. 	<p>○: Sorted solid waste collection will be introduced in line with a presidential decree, so the know-how of local Japanese governments related to sorted collection and the 3Rs (reduce, reuse, recycle) will be introduced via a JICA technical cooperation scheme, and the possibility of introducing incinerators should be considered after that.</p>
Water supply and sewage	<ul style="list-style-type: none"> Japanese companies striving to expand their business into Russia, etc. are not currently expressing any interest in entering Uzbekistan's market. 	<ul style="list-style-type: none"> There are no current movements. 	<p>△: Regarding water supply and sewage improvement, projects are being implemented by using funds from international donors that include the <i>World Bank</i>, <i>ADB</i>, and <i>Islamic Development Bank</i>, and competition is a concern.</p> <p>Meanwhile, in rural areas, the introduction of large-scale water supply and sewage infrastructure is financially difficult. The possibility of utilizing JICA's <i>SME Overseas Expansion Support</i> scheme and the <i>JICA Partnership Program (Special</i></p>

Field	General trends	Activities in the country	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
			<i>Regional Revitalization Scheme</i>) to introduce simple septic tanks should be considered.
Other	<ul style="list-style-type: none"> • Due to increased inbound tourism from overseas, there is a need to construct hotels and bring the associated toilets up to par. However, Japanese companies are not currently expressing any interest in entering Uzbekistan's market. 	<ul style="list-style-type: none"> • There are no current movements. 	<p>△: The possibility of introducing water-saving flush toilets at tourist-spot hotels in particular should be considered.</p>

5.4. Healthcare

5.4.1. Activity situation of Japanese companies

Regarding the entirety of Central Asia and the Caucasus region, Japanese companies have little interest due to a shortage of information on the local situation as well as small markets, and there is no particular business expansion into the Healthcare field. In terms of ODA projects—due to JICA's past implementation of a financial-aid project for Navoi's provincial hospital—Marubeni (and Marubeni Protechs) as well as OMETA are continuing to show interest in Uzbekistan's Healthcare field.

Regarding Uzbekistan, many medical-equipment manufacturers decide that commercialization in the country would be difficult given that many medical institutions provide medical examinations that are free for all intents and purposes as well as from the solvency perspective. Maintenance and support are also difficult from the perspectives of sales volume and access from Japan, so commercialization is difficult to achieve in the region in general. The equipment made by Japanese medical-equipment manufacturers includes NIPRO's equipment for kidney centers, the endoscopes of FUJIFILM and Olympus for Oncology Centers, and the blood-related medical equipment of TOSHIBA and Sysmex. However, many companies operate out of bases in Europe, Russia, Turkey and other countries instead of handling sales and providing support from bases in Japan.

In addition—because the overseas embassy of Japan sometimes donates medical equipment to Oncology Centers, etc. as a form of grassroots support, and Japanese companies participating in medical-equipment events sometimes donate the medical equipment they exhibit to local hospitals—Japanese medical equipment is occasionally set up in the region, although there is no maintenance, other support, or technical cooperation.

Regarding blood projects, Shimizu Corporation expressed an interest in a project that was mainly for construction costs, implemented METI infrastructure research, and finished trial calculations for a project scale that would include technical cooperation as part of the deal. However, Turkey started more actively approaching the Ministry of Health in October of 2018 and cooperated in terms of the kidney-field-related presidential decree that was officially announced in July of 2018. As a result, the government, which had considered the need for a quick response in this important field, decided on support from Turkey instead.

Note that, unlike Kazakhstan, etc., Uzbekistan is not a member of the Eurasian Economic Union (Евразийский экономический союз³⁹) or the GUAM Organization for Democracy and Economic Development, so there is no

³⁹ The English name is sometimes abbreviated as EAEU, EEU, EAU, etc.

advantage to Uzbekistan for conducting transactions through a third country (Russia or Turkey).

5.4.2. SWOT analysis of Japanese companies and sub-sectors where they have superiority

A list of types of projects for which Japanese companies could exploit their strengths is provided below.

The first is medical equipment + technical cooperation. Japan's past experience providing financial aid in Navoi could be used to exploit Japan's strengths.

The second is specialized enhancement support related to cancer, the brain, etc. There is a need for both screening and treatment—including cancer screening and treatment—and Japan has a track record of introducing its high-quality medical equipment for such applications in various foreign countries. At rural and region-level hospitals in particular, where there have been delays in terms of both the introduction of medical equipment and screening, it is necessary to introduce medical equipment and enhance the Healthcare response.

The third is the renovation of hospitals in rural areas. After projects related to Navoi's general hospital, there is also a strong need for equipment improvements in all regions, mainly in regional core cities. Because access to Tashkent is an issue due to Uzbekistan's wide territory, it is necessary to enhance hospitals in rural areas.

The fourth is the enhancement of kidney centers. In particular, there is a strong need for dialysis treatment centers and transplants. It is difficult to set up consumables business targeting medical institutions that provide free medical examinations, but—because this is specified as a field to enhance in the presidential decree that was officially announced in July of 2018—development outside of the Tashkent region is a possibility.

Table 32 Possibility of Japanese companies participating in Healthcare fields

Field	General trends	SWOT analysis (evaluation of fitness according to the strengths and weaknesses of Japanese companies)
Introduction of medical equipment + technical cooperation	<ul style="list-style-type: none"> • Support for general-hospital projects that utilizes JICA's experience with the Navoi Regional Hospital medical equipment project can be expected. • The range of target companies will increase if primary fields are included and medical examination equipment is also 	©: It would be best to provide medical equipment + technical guidance as a set.

	covered.	
Oncology Center enhancement	<ul style="list-style-type: none"> Regarding the introduction of medical equipment, support utilizing JICA's experience with the Navoi Regional Hospital medical equipment project can be expected. 	<p>◎: It would be best to provide medical equipment + technical guidance as a set.</p> <p>Because there is a strong need for MRI, CT, and ultrasonic diagnostic equipment, there are expanded possibilities for participation by Japanese medical equipment manufacturers.</p>
Regional hospital rehabilitations and enhancement	<ul style="list-style-type: none"> Regarding the introduction of medical equipment, support utilizing experience related to the Navoi Regional Hospital project is possible. 	<p>○: Regarding repairs to hospitals in rural areas, there is a possibility of participation by Japanese general contractors, though this depends on the scale.</p> <p>If coordination with the introduction of medical equipment, etc. is implemented, the range of possible projects will increase, and there is a possibility of setting up loan projects. (In the case of loans, the only possible contract party is the government.)</p>
Kidney center enhancement	<ul style="list-style-type: none"> Dialysis-related medical equipment is useful for supporting the rapidly increasing number of diabetes patients, but—because it is difficult to set up medical equipment projects that use Japan as a base for transportation, maintenance, etc.—it is necessary to come up with a scheme. 	<p>◎: The possibility of providing medical equipment + consumables and setting up simple operating rooms in rural areas should be considered.</p>

6. Appendices

6.1. Objectives of literature and desktop studies

6.1.1. Legal documents

Search site of Presidential decrees and other legislation in CIS countries (https://cis-legislation.com/docs_list.fwx?countryid=011&page=1)

6.1.2. Urban development and transportation

Following literatures are used for the study on the urban development, transportation, and traffic sector.

- European Union and TRACECA “Logistics Processes and Motorways of the Sea II, LOGMOS Master Plan – Annex 9.1, Country Profile, UZBEKISTAN, October 2013”
- ADB “SECTOR ASSESSMENT (SUMMARY): TRANSPORT, and INFORMATION AND COMMUNICATION TECHNOLOGY”
- ADB “SECTOR ASSESSMENT (SUMMARY): RAILWAY TRANSPORT”
- Mr. Abduvaliev, chief of the Uzbek agency for automobile and river Transport “Transport strategy of the Republic UZBEKISTAN and prospects of development of Trans-Asian and Euro-Asian transit carriages”
- JICA consultant “Three Local Airports Modernization Project, Field Survey: November 2003”
- UNDP Uzbekistan “Mid-term and Long-term Perspectives of Transport and Transit in Uzbekistan in the Context of Economic Transformation Problems and Solutions”

6.1.3. Energy

Following literatures are used for the study on the Energy sector.

- Decree of the President of the Republic of Uzbekistan "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan"
- Energy Policies Beyond IEA Countries: Eastern Europe, Caucasus and Central Asia. IEA, Paris (2015).

- The Law of the Republic of Uzbekistan No 110-I “On concessions”, No 312-II “On production and sharing agreements”, No 5-VI “On foreign investments”
- Uzbekistan - Energy and power sector issues note. World Bank Group, 2013.
- Presidential Resolution No. PP-2313 “On transport and communications infrastructure development during 2015–2019”, 2015, Tashkent
- Presidential Decree No. UP-4707 “On restructuring, modernization and diversification of industrial production during 2015–2019”, 2016, Tashkent
- Decree of the President of the Republic of Uzbekistan dated on March 1, 2013 "On measures for further development of alternative energy sources"
- Presidential Decree No.UP-5177 dated 2nd September 2017 “On Priority Measures for the Liberalization of Monetary Policy”
- Presidential Resolution “On Program of further development of hydro energy for 2017-2021”, No,PP-2947 dated May 2, 2017
- Presidential Resolution on measures to accelerate development and ensure financial sustainability of the electricity industry
- UNDP Country Program Document for Uzbekistan (2016-2020), May 20, 2015
- ADB Country Operations Business Plan for Uzbekistan 2018-2020
- Memorandum of understanding between the Republic of Uzbekistan and the European Bank for Reconstruction and Development regarding cooperation in the Republic of Uzbekistan, 16 March 2017
- ADB, Samarkand Solar Power Project (RRP UZB 45120)
- ADB, Power Generation Efficiency Improvement (RRP UZB 49253-003)
- ADB, Northwest Region Power Transmission Line Project (RRP UZB 47296-001)
- ADB, Second Solar Power Project (RRP UZB 48080-002)
- World Bank, Uzbekistan Energy/Power Sector Issues Note, 2013

6.1.4. Environment

Following literatures are used for the study on the Environment sector.

- World Bank(2015) The Case of Uzbekistan : Social Impact Analysis of Water Supply and Sanitation Services in Central Asia. <http://documents.worldbank.org/curated/en/860101467994584583/pdf/97832-REVISED-Box394849B-ENGLISH-report-en-ebook.pdf>
- JICA (2003) Preparatory Survey Report on Water Supply Facilities Improvement Plan Survey in Uzbekistan, http://open_jicareport.jica.go.jp/pdf/11724937_01.pdf
- International Water Management Institute (IWMI) (2017) Overview of Water-related Programs in Uzbekistan, http://centralasia.iwmi.cgiar.org/regional-content/central_asia/pdf/overview-of-water-related-programs-in-uzbekistan.pdf
- JETRO (2015) Water situation in Uzbekistan, https://www.jetro.go.jp/ext_images/theme/bop/precedents/pdf/lifestyle_waterworks_20150112_uz.pdf
- ADB (2013) Uzbekistan Solid Waste Management Improvement Project, <https://k-learn.adb.org/system/files/materials/2013/09/201309-uzbekistan-solid-waste-management-improvement-project.pdf>
- Solid Waste Management Improvement Project (RRP UZB 45366)
- Ruoyu HU (2017) Uzbekistan Loan 3067: Solid Waste Management Improvement Project

6.1.5. Healthcare

Following literatures are used for the study on the Healthcare sector.

- 平成 28 年度質の高いインフラシステム海外展開促進事業（円借款・民活インフラ案件形成等調査）ウズベキスタン共和国：ウズベキスタン血液事業インフラ改善調査報告書平成 29 年 2 月経済産業省委託先：清水建設株式会社 http://www.meti.go.jp/meti_lib/report/H28FY/000037.pdf
- モルドバ共和国医療サービス改善事業詳細設計調査ファイナル・レポート平成 26 年 2 月（2014 年）独立行政法人国際協力機構（JICA）株式会社フジタプランニング http://open_jicareport.jica.go.jp/pdf/12147096_01.pdf

- ウズベキスタン共和国ナボイ州総合医療センター機材整備計画第一次協力準備調査報告書平成 26 年 8 月 (2014 年) 独立行政法人国際協力機構人間開発部
http://open_jicareport.jica.go.jp/pdf/12235834.pdf
- ウズベキスタン共和国ナボイ州総合医療センター機材整備計画準備調査報告書独立行政法人国際協力機構 (JICA)株式会社 国際テクノ・センター
- http://open_jicareport.jica.go.jp/pdf/12234662.pdf
- 国立研究開発法人国立国際医療研究センターAnnualReport
- An innovative model of health management will be introduced in Uzbekistan (The decree was signed by President Shavkat Mirziyoyev on August 2, 2018)
- On measures to prevent noncommunicable diseases, maintaining a healthy lifestyle and improving physical activity of the population (Resolution of the President of the Republic of Uzbekistan)
- Resolution on measures for the prevention of non-infectious disease, supporting healthy lifestyle and improving the physical activity population level (President of the republic of Uzbekistan)
- Resolution about measures to improve the efficiency of the nephrology and hemodialysis care to the population of the Republic of Uzbekistan (the President of the Republic of Uzbekistan)
- Resolution on measures to organize the activities of the Ministry of the Republic of Uzbekistan (President of the Republic of Uzbekistan № №ПП-4055 07.12.2018)
- Regulation on measures to introduce an innovative model of health management in the Republic of Uzbekistan (President of Uzbekistan)
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan of December 29, 2018 No. 1057 "About first-priority measures for strengthening of material and technical resources of the medical organizations of system of the Ministry of Health of the Republic of Uzbekistan"
- Указ Президента Республики Узбекистан О комплексных мерах по коренному совершенствованию системы здравоохранения Республики Узбекистан №УП-5590 07.12.2018 (Decree of the President of the Republic of Uzbekistan On comprehensive measures to fundamentally improve the health system of the Republic of Uzbekistan No. UP-5590 07.12.2018)

6.2. List of interviewees

6.2.1. Urban development and transport

Following is the list of interviewees in the urban and transport sector:

Table 33 List of Interviewees in the urban development and transport sector

Organization	Interviewees
State Committee for Roads	Mr. Nazarov Shukhat Bahtiyarovich, First deputy Chairman of the committee
Uzbekistan Airways	Mr. Abdurahimov Lutfulla, Head of the dep. of international cooperation and foreign economic relations
ADB	Mr. Umid Khusanov, First deputy Director General
Business Logistics Development Association (ADBL)	Mr. Shokhimardon Musaev
Uzbek Agency for Road transport	Mr. Akmar A. Mukhidov General Director
Ministry of Housing and Communal Service	Mr. Anvar N. Urunov Director
Uzbekiston Temir Yollari (Railway)	Unknown names and titles.
The World Bank	Mr. Azimov Dilshod Suratovich, First Dupty Minister, Mr. Mansur Bustoni, Transport and Digital Development Specialist

6.2.2. Energy

Following is the list of interviewees in the energy sector.

Table 34 List of Interviewees in the energy sector

Organization	Interviewees
National Energy Saving Company (NESC)	Mr. Zayriddin Murotov
Alternative energy club	Mr. Mikhail Shamshidov
Uzbekhydroenergo	Mr. Utkir Sheraliev
Coordinating Dispatch Center Energiya (CDC)	Mr. Khamidulla Shamsiev
Uzbekenergo	Mr. Ruslan Mubarakshin
International Solar Energy Institute (ISEI)	Mr. JobirAkhadov (Ph.D)

6.2.3. Environment

Following is the list of interviewees in the Environment sector.

Table 35 List of Interviewees in the environment sector

Organization	Interviewees
Committee on Ecology and Environment Protection	Mr. Aziz Arimov (Chairman) Mr.Feruz Xusanov
State Committee on Investment	Mr.Laziz Sh.
Uzhydromet	Natalya Agaltseva (Head of Dep.of Projects Preparation and Monitoring)
Committee of tourism development	Mr.Aziz Abduhakimov Chairman
Ministry of Economy	Mr.Shukhratz Shukurov 経済研究所 副所長
Ministry of Agriculture	Dr. Abdumalik B. Namozov, Head of Department for Foreign Investments

6.2.4. Healthcare

Following is the list of interviewees in the Healthcare sector. It is noted that most of interviewees didn't have their business cards and the researcher had asked to write their name, title and contact information, but they were sometimes difficult to be read.

Table 36 List of Interviewees in the Healthcare sector

Organization	Interviewees
Kfw Development Bank	(Head of KfW Office) Mr,Shakhrukh Imazarov
National Olympic Committee of Uzbekistan	(Director) Mr.Cadikov Abdushukur Abdyjamilevich Republican Scientific and Practical Center of Sports Medicine (Depty Director of the Center of Reserch ,Head of Pharmacology department,the member of the Academy of Medical and Technical sciences of Russian Federation)Mr.Mavlyanov Iskandar (Cardiovascular Doctor):Mr.Aziz
SHIMIZU Corporation	Tashkent office officer Mr.Takashi Iwata (Project Officer) Ms.Dilobar Yakubova
Republic Center of Blood Transfusion	(Director)Mr.Yuldashev Rustam Doctor : Mr.Izzatulloev Chorshanbe
Samarkand Blood Center	(Director)Mr. Akiev Rofi Xakimovich
Ministry of Healthcare	(Specialist of coordination of investment project)Mr. Sarvar Mirakhmedov (Specialist of Department treatment)Ms.Pulatova Gulbakhor (Specialist of Blood service) Ms.Ashurova LoLa Valiems
State Investment Committee of the Republic of Uzbekisutan	(Leading specialist) Mr.Azamat Abduganiev
NEFROLOGIYA	Director (Doctor) Mr.Boriyhen
Chief Transplant of the Ministry Healthcare	(Head of Transplant department kidney and Hemodialysis,PhD) Mr.Yuldashev Ulugbek Karimovich
Tashkent State Oncology Center	Director Vice Director
National Oncology Center of	Director

Organization	Interviewees
Uzbekistan	(Vice Director) Mr.Yusupbekov Abrobek Akhmedjanovich
Navoi Regional Multidisciplinary Medical Center	(Director, Doctor of Philoaphy Ph.D. Chief) Mr.Murod E. Akhamedov
Ministry of Public Health of Republic of Uzbekistan (Ministry of Health of the Republic of Karakalpaksta)	(The Minister of Health of the Republic of Karakalpakstan) Mr.Hodjiev Daniyar Shamuratovich Deputy Minister Mr.Kudaybergenov Kallibek Jalalovich In charge of Hospiral
Nucus Oncology Center	(Director) Mr. Abdikarimov Khuzshid
Nucus Infection Center	Director
Nucus Blood Center	(Director) Yuldashev Rustam
Nucus Mother and Child Center	(Director) Mr. Abidor Azamat
Nucusu Tuberculosis Center	Director
Nucus Emergency Center(Karakalpak branch of Republican Research Center of Emergency Medicine)	(Director) Mr. Rakhmanov Ruslan Odiljanovich
Nucus Heart Center	(Director)Mr. Avezov Davlat
Nucusu Children Hospital	Director
Ministry of Internal Affair	(Deputy Minister)Chief of the management of medical service Mr.Nishanov Shuxrat Yusupovich
Marubeni Corporation	Tashkent Officer Mr.Yasuaki Fujii (Project Manager) Alexander Azizov

6.3. Statistics

6.3.1. Urban development and transport

Following statistics are used in the urban development and transport sector:

Table 37 List of statistics and data sources for urban development and transport sector

	Source of information	URL
1	Uzbekistan Statistical Service	https://stat.uz
2	Transport Statistics Infocard, UZBEKISTAN	https://www.unece.org/fileadmin/DAM/trans/doc/2018/wp6/Uzbekistan.pdf
		https://www.unece.org/fileadmin/DAM/trans/doc/2017/wp6/infocards-english/Uzbekistan_Trans_Stat.pdf
		https://www.unece.org/fileadmin/DAM/trans/doc/2018/wp6/_Infocards_REV_7Dec2017.pdf
3	SECTOR ASSESSMENT (SUMMARY): RAILWAY TRANSPORT	https://www.adb.org/sites/default/files/linked-documents/48025-003-ssa.pdf
4	Russian Aviation Insider	http://www.rusaviainsider.com/azerbaijan-cat/
5	The world bank Global research map	http://maps.worldbank.org/p2e/mcmap/map.html?code=UZ&level=country&indicatorcode=0553&title=Uzbekistan&org=ibrd

6.3.2. Energy

Following statistics are used in the Energy sector.

Table 38 List of statistics and data sources for Energy sector

	Source of information	URL
1	Uzbekistan Statistical Service	https://stat.uz
2	Uzbekenergo	www.uzbekenergo.uz
3	CIS Statistical Committee	http://www.cisstat.com/
4	CIA World Fact book	https://www.cia.gov/library/publications/the-world-factbook/`

6.3.3. Environment

Following statistics are used in the Environment sector.

Table 39 List of statistics and data sources for the Environment sector

	Source of information	URL
1	State Committee of the Republic of Uzbekistan on Statistics (2018) Socio-Economic Situation on the Republic of Uzbekistan	https://stat.uz/uploads/doklad/2018/yanvar-mart/en/doklad-yan-mart-en.pdf
2	ADB(2013) Uzbekistan Solid Waste Management Improvement Project	https://k-learn.adb.org/system/files/materials/2013/09/201309-uzbekistan-solid-waste-management-improvement-project.pdf

6.3.4. Healthcare

Following statistics are used in the Healthcare sector:

Table 40 List of statistics and data source for the Healthcare sector

	Source of information	URL
1	HEALTHCARE SYSTEM IN THE REPUBLIC OF UZBEKISTAN	https://stat.uz/en/181-ofytsyalnaia-statystyka-en/2806-quarterly-reports