

## Signing of Japanese ODA Loan Agreement with Uzbekistan

### Assistance to improve dilapidated infrastructure

On January 27, the Japan International Cooperation Agency (JICA) signed a loan agreement with the Government of the Republic of Uzbekistan to provide Japanese ODA loans of up to a total of 14.872 billion yen for two projects with Parliamentary Vice-Minister for Foreign Affairs Kentaro Sonoura and Ambassador Extraordinary and Plenipotentiary of Japan to the Republic of Uzbekistan Fumihiko Kato in attendance.

With approximately 28 million people, Uzbekistan has the largest population of any country in Central Asia and has played a central role in the region since the Soviet era. Driven by an increase in exports accompanying improved conditions in the international market for raw cotton and mineral resources such as natural gas and gold that are major export products, the economy in Uzbekistan has recorded a rise in the real GDP generally exceeding 8 percent every year since 2007, achieving steady economic growth.

Having the aim to achieve even more stable economic growth, the country faces the issue of dilapidated infrastructure that was created in the Soviet era. Particularly pressing challenges are updating the power infrastructure that underpins all socioeconomic activities and the infrastructure for agriculture, an industry that employs a large number of working people.

The features of the two ODA loan projects are summarized below.

#### (1) Supporting a plan to install new power generation equipment and strengthening operation, maintenance and management capacity

As of the end of 2013, the total installed capacity of all the power plants in the Republic of Uzbekistan was 13,324 megawatts, but due to decrepit power generation equipment installed in the Soviet era, the actual production capacity is merely about 7,800 megawatts. The peak demand for power in the country is about 8,400 megawatts, a level that cannot be met with the power production equipment in the country, and imported power is used to meet the demand.

To address the situation, the national government has set a policy of updating existing power plants and gradually constructing new ones. Thermal power plants account for some 90 percent of the power source composition, and the policy includes an emphasis on combined cycle gas turbines for power generating equipment, a technology that has earned attention in recent years due to the higher power production efficiency compared to conventional power production technology and its environmental friendly nature in terms of the low amount of natural gas used as fuel and the low level of carbon dioxide produced.

The Electric Power Sector Capacity Development Project will work on human development issues such as strengthening the capacity to formulate plans to update such thermal power stations and construct new power plants, and the capacity to maintain and manage power plants, maximizing the effects of power plant modernization projects planned for the entire country, and promoting a long-term, stable supply of power and higher energy efficiency.

This project is one of three projects being funded under the Electric Power Sector Project Loan framework. An Exchange of Notes (E/N) was signed in November 2014 for this framework in the amount of 86.839 billion yen, and a loan agreement (L/A) was signed on the same day for the Turakurgan Thermal Power Station Construction Project, which was the first project under that E/N.

Along with the ODA loan support for the current project, JICA is planning to provide technical cooperation starting in the second quarter of 2015 to improve operation, maintenance and management techniques for combined cycle gas turbine power plant equipment, and to formulate training programs.

#### (2) Supporting improvements to large-scale domestic irrigation equipment

An important industry, agriculture in Uzbekistan employs more than 40 percent of the working population and accounts for approximately 20 percent of the GDP. Although irrigation pumps are used to ensure water for agriculture, those pumps were built in the Soviet era and have greatly deteriorated, hindering the stable supply of water for agriculture. The dilapidated, lower power-efficiency irrigation pumps account for approximately 20 percent of the power consumed in the country, making efficiency improvements a priority. Of particular note, the Amu-Bukhara irrigation system which has the largest water intake in the country uses about 20 percent of the power consumed by irrigation pumps in Uzbekistan.

In the Amu-Bukhara Irrigation System Rehabilitation Project, dilapidated pump stations in the Amu-Bukhara irrigation system will be rehabilitated to provide a stable supply of water for irrigation to farms in the system and to reduce the amount of power consumed. The project will be cofinanced by the Asian Development Bank (ADB), aiming for more efficient and effective development with combined synergistic efforts.

Project title	Amount (million yen)	Annual interest rate (%)		Repayment period (years)	Grace period (years)	Procurement
		Project	Consulting services			
Electric Power Sector Capacity Development Project	3,000	6-month yen LIBOR-133 bp	0.01	40	10	General untied
Amu-Bukhara Irrigation System Rehabilitation Project	11,872	1.40	0.01	30	10	General untied

#### (1) Electric Power Sector Capacity Development Project

##### (a) Background and Necessity

Many of the thermal power stations that account for some 90 percent of the power source composition in the Republic of Uzbekistan are old, having been put into service at least four or five decades ago, and as the power production capacity of the 10 thermal power stations around the country is, on average, no better than 30 percent of the installed capacity, providing stability and reliability in the power supply is a priority. In addition, the dilapidated equipment is not energy efficient, a major factor in the growing consumption of natural gas used as fuel and the increasing amount of carbon dioxide emissions. The carbon dioxide emissions per unit GDP in Uzbekistan is among the highest in the world, reaching the top (1.5 kilograms) in 2009 and the fifth (1.2 kilograms) in 2010 (World Development Indicators, The World Bank).

Given these circumstances, the Government of Uzbekistan has a plan to update the power production equipment and construct new equipment, with a focus on thermal power stations that use natural gas for fuel, a product produced domestically. The policy established in the plan is to mainly install combined cycle gas turbine power production equipment that has a higher power production efficiency and a lower environmental burden than conventional power production methods. To date, only one combined cycle gas turbine power production plant has been installed in Uzbekistan, but some 20 are planned for installation by 2030. To achieve that goal, improving the capacity to formulate specific project plans, as well as the capacity to operate, maintain and manage the equipment after installation are important human development challenges.

##### (b) Objective and Summary

This project will improve the capacity of the executing agency in project planning, and operation, maintenance and management of combined cycle gas turbine thermal power stations that will be installed in Uzbekistan through providing equipment and services, contributing to making the country's power supply stable and increasing energy efficiency.

The loan funds will be allocated to engineering services for a new combined cycle gas turbine power production plant (two turbines, 450 megawatts each) in Uzbekistan, as well as to procuring materials, spare parts for inspection of existing power plants and other equipment for a "Combined Cycle Gas Turbine Operation and Maintenance Training Center" planned to be constructed with JICA technical cooperation.



Signing ceremony

(c) Executing Agency

The State Joint Stock Company "Uzbekenergo"

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(d) Planned Implementation Schedule

(i) Completion of project: March 2018 – with delivery of the procured spare parts and completion of the services

(ii) Issuing of letters of invitation for consulting services (engineering services to modernize the Syrdarya thermal power station): February 2015

(iii) Tender announcement of initial procurement package for international competitive bidding on project construction:

Spare Part Supply for Existing Thermal Power Plants

Release date: February 2015

(2) Amu-Bukhara Irrigation System Rehabilitation Project

(a) Background and Necessity

Many of the pump irrigation facilities in Uzbekistan were constructed in the Soviet era and now exceeds the expected service life of 20 years, though the equipment is still being used without large-scale rehabilitation. Because of this, water leaks and failures occur frequently, and the volume of water pumped is falling, leading to concerns of a serious impact on the volume of agriculture production if no measures are taken. These dilapidated irrigation pump facilities consume about 20 percent of the total power consumption in the country.

Improving the power efficiency by modernizing these facilities is therefore a pressing challenge from the viewpoint of making energy use more efficient. Aiming to avoid the risk of stopping pump facility operations, ensure agricultural productivity and reduce the amount of power consumed, the Government of Uzbekistan has made rehabilitating dilapidated irrigation pump facilities, particularly those constructed in the Soviet era, a priority.

With large-scale irrigation facilities using at least 40 percent of the water intake from the Amu Darya River which is recognized as part of Uzbekistan by an international multilateral agreement, the Amu-Bukhara irrigation system in particular requires urgent measures to rehabilitate dilapidated irrigation pump facilities in the system in order to provide a stable supply of water for agriculture. The pump facilities in that irrigation system also use about 20 percent of the power used by all irrigation facilities in the entire country, and therefore rehabilitation is urgently needed in terms of energy efficiency as well.

(b) Objective and Summary

By replacing two existing pump stations on main irrigation channels in the Amu-Bukhara irrigation system in the central part of the Republic of Uzbekistan, this project will provide a stable supply of water for irrigation to farms in the system and reduce the power consumption of the rehabilitated facilities, thereby improving the agricultural productivity and improving the energy efficiency in the system.

The loan funds will be allocated to replacing the pump facilities (Khamza-II and Kizil Teppa Auxiliary), to consulting services (construction monitoring, bidding assistance) and the like.

(c) Executing Agency

Ministry of Agriculture and Water Resources

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(d) Planned Implementation Schedule

(i) Completion of project: December 2019 – when the facilities are put into service

(ii) Issuing of letters of invitation for consulting services (including detailed design work): February 2015

(iii) Tender announcement of initial procurement package for international competitive bidding on project construction:

Equipment and Civil Works for Khamza-II Package

Equipment and Civil Works for Kizil Teppa Aux Package

Release date: September 2016