Republic of Uzbekistan

FY2023 Ex-Post Evaluation Report of Japanese ODA Loan Project

"Development Policy Support Program"

External Evaluator: Keisuke Nishikawa, QUNIE CORPORATION

0. Summary

This project was implemented to enhance governance and energy efficiency of the electric power sector and strengthen financial management, operation and maintenance capabilities in the power generation field in Uzbekistan by providing financial support, thereby contributing to Uzbekistan's economic stability and development efforts. The project was consistent with Uzbekistan's national development plan and development needs, and the project plan and approach were judged to be appropriate, except for a gap in causal chain in the impact setting. Although no particular external coherence was recognized, it was in line with Japan's development cooperation policy, and sufficient internal coherence was also confirmed. Based on these, relevance and coherence are high. Regarding the effectiveness, it was confirmed that all the indicators for policy actions set in this project were achieved by the target deadline, and that ongoing activities and capacity building efforts were being conducted even at the time of ex-post evaluation. It was also observed that the funds provided by the project contributed to the stabilization of Uzbekistan's public finance and energy consumption. As for the qualitative effects, capacities for collection and analysis of energy data, financial management of the power generation sector and operation and maintenance, which had been identified as priority issues, were strengthened through related technical cooperation projects, contributing to the enhancement of governance in the power sector as a whole. Regarding the impacts, it was confirmed that the project has indirectly contributed to economic and social stability and stable economic growth through a more stable supply of electricity. No negative environmental and social impacts were identified. Therefore, the effectiveness and impacts of this project are high. Although some items were not analyzed for sustainability due to the nature of this project as a program loan, no serious concerns have been observed in policy and system, institutional/organizational aspect, technical aspect, financial aspect, and the status of operation and maintenance to sustain the effects of the project.

1. Project Description

Project Location (Entire Uzbekistan)
(Source: Prepared by the External Evaluator)

Training at the Navoi Combined Cycle Generation Training Center (Source: Photo Taken by the External Evaluator)

1.1 Background

In Uzbekistan, in response to an increase in electricity demand associated with economic growth, the country has been pursuing reforms such as the dismantling of the state-owned electric utility corporation and privatization of some power plants with support from donor agencies under the banner of improving access to electricity through modernization of existing power plants and construction of new power plants. The Ministry of Energy, established in 2019, was responsible for leading project supervision and inter-donor coordination as well as setting electricity prices and other policy issues. In practice, however, each electricity-related public corporation directly coordinated with donors and other parties, and there was a need to strengthen the governance of the Ministry in order to take unified measures in the sector. The Ministry was also responsible for improving the power generation efficiency of natural gas-fired thermal power plants and promoting energy conservation and renewable energy policies. However, the Ministry lacked accurate and relevant statistical data, and there was a need to improve the statistical data collection system that formed the basis for planning and promoting those policies.

The power generation sector, which was spun off from Uzbekenergo in 2019, was required to prepare financial statements based on international accounting standards in order to attract investment through public-private partnerships and to monitor the assets and cash flows of each power plant when setting electricity prices. However, the majority of power plants had not been fully prepared for this requirement, and it was a challenge to strengthen the system by allocating personnel in charge of financial accounting management and developing their capabilities. In addition, with regard to the operation and maintenance of thermal power plants, with technical cooperation of JICA, the Navoi Combined Cycle Generation Training Center (hereinafter referred to as “CCGT”) was developing training materials and training instructors, as well as actively

providing training opportunities to other power plants, and was expected to strengthen its management structure.

In Uzbekistan, the spread of the novel coronavirus (hereinafter referred to as 'COVID-19') from the end of 2019 caused the domestic economy to stagnate and foreign trade to decline significantly, and the budget deficit was expected to increase significantly in 2020 due to lower tax revenues and increased spending on COVID-19 measures, etc. The government of Uzbekistan took various economic measures, which were expected to result in a financing gap of US$2,200 million in 2021, and in addition to the US$1,200 million in government financing, the government was planning to borrow the remaining US$1,000 million from external sources.

Under these circumstances, this project, through financial assistance to Uzbekistan, was intended to promote various reforms in the electrical power sector by implementing policy actions to respond to the above-mentioned issues. The project also sought to promote social and economic recovery and stability, and development efforts in Uzbekistan, which had been greatly affected by the negative impacts of COVID-19.

1.2 Project Outline

The objective of this project was to enhance governance and energy efficiency of the electric power sector and strengthen financial management and operation and maintenance in the power generation field in Uzbekistan by providing financial support, thereby contributing to Uzbekistan's economic stability and development efforts.

Loan Approved Amount / Disbursed Amount	195 million yen / 195 million yen	
Exchange of Notes Date / Loan Agreement Signing Date	April 2021 / April 2021	
Terms and Conditions	Interest Rate	LIBOR+110bp
	Repayment Period	25 years
	(Grace Period	7 years)
	Conditions for Procurement	General Untied
Borrower / Executing Agency	The Government of the Republic of Uzbekistan / Debt Management Office, Ministry of Finance	
Project Completion[1]	June 2021	
Target Area	All of Uzbekistan	

[1] The completion of disbursement is considered as the completion of the project.

Main Contractor(s) (Over 1 billion yen)	None
Main Consultant(s) (Over 100 million yen)	None
Related Studies (Feasibility Studies, etc.)	None
Related Projects	[Technical Cooperation] Project for Establishment of the Combined Cycle Gas Turbine (CCGT) Operation and Maintenance Training Center (2015-2019) Power Sector Reform Advisor (2021-2023) The Project for Strengthening Financial Management Capacity of Power Generation Sector in Uzbekistan (2021-2024) Advisor for Energy Efficiency and Conservation (2021-2024) [ODA Loan] Talimarjan Thermal Power Station Extension Project (2010) Navoi Thermal Power Station Modernization Project (2013) Electric Power Sector Capacity Development Project (2014) Turakurgan Thermal Power Station Construction Project (2014) Tashkent Thermal Power Cogeneration Plant Construction Project (2015) Navoi Thermal Power Plant Modernization Project (Phase 2) (2019) Electric Power Sector Capacity Development Project (Phase 2) (2019) [International Organizations, etc.] - Asian Development Bank (ADB) ➢ Power Generation Efficiency Improvement Project (2017) ➢ Economic Management Improvement Facility

	(2018) ➢ Power Sector Reform Program (2018) - World Bank ➢ Modernization and Upgrade of Transmission Substations Project (2016) ➢ Development Policy Operation Loan (DPO I) (2018) ➢ Development Policy Operation Loan (DPO II) (2019) ➢ Development Policy Operation Loan (DPO III) (2020)

2. Outline of the Evaluation Study

2.1 External Evaluator

Keisuke Nishikawa, QUNIE CORPORATION

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October, 2023 – January, 2025

Duration of the Field Study: January 19 – February 2, 2024 and June 15 – June 21, 2024

2.3 Constraints During the Evaluation Study

Since this project is a programmatic ODA loan project and quantitative comparison of inputs and outputs is difficult, an evaluation of efficiency is not conducted. In addition, for sustainability, only a partial analysis of sustainability was conducted as it was not possible to collect all the information necessary to give a sub-rating due to the nature of the project. Therefore, sub-rating was given only for "relevance and coherence" and "effectiveness and impacts," and no judgment was made on the overall rating.

3. Results of the Evaluation (Overall Rating: N/A)

3.1 Relevance/Coherence (Rating: ③[2])

3.1.1. Relevance (Rating: ③)

3.1.1.1 Consistency with the Development Plan of Uzbekistan

In the *Uzbekistan Development Strategy (2017-2021)*, the national development plan at the time of appraisal of this project, "improving access to electricity through modernization of

[2] ④: Very High, ③: High, ②: Moderately Low, ①: Low

existing power plants and construction of new power plants" was identified as a priority for the power sector.

The *New Uzbekistan Development Strategy* (2022-2026), the national development plan at the time of this ex-post evaluation, includes improvement of energy efficiency in one of its seven priority areas, "Accelerating economic development and achieving high economic growth rate". In December 2022, Presidential Decree No. 436 was issued with the goal of transforming Uzbekistan's economy into a green economy (an economy that achieves sustainable development and growth) by 2030, in which the strengthening of the energy conservation policy was announced.

This project aims to promote energy conservation in addition to strengthening the management capacity of the power sector, and is consistent with Uzbekistan's development policy both at the times of appraisal and ex-post evaluation.

3.1.1.2 Consistency with the Development Needs of Uzbekistan

At the time of appraisal of this project, the power sector in Uzbekistan was facing challenges in strengthening the governance of the Ministry of Energy, developing accurate statistical data on energy consumption, and assigning human resources and developing capacity for financial management and preparation of financial statements based on international accounting standards. In response to this situation, JICA provided assistance to strengthen the capacity to collect and analyze energy statistics through the "Energy Conservation Promotion Advisor" (2021-2024), and to improve organizational and technical capacities for monitoring power sector projects through the "Power Sector Reform Advisor" (2021-2023). In addition, the International Financial Reporting Standards (hereinafter referred to as 'IFRS') Department was established within the Joint Stock Company Thermal Power Plants (hereinafter referred to as 'JSC TPP'), and JICA supported the capacity building of JSC TPP, which was responsible for financial management and preparation of financial statements based on IFRS, through "The Project for Strengthening Financial Management Capacity of Power Generation Sector" (2021-2024).

Efforts were made to promote the implementation of policy actions[3] and a certain level of capacity building was achieved through separate technical cooperation in the areas of power sector reform, financial management in the power generation sector, and energy efficiency and conservation, in order to resolve the issues identified during the appraisal. On the other hand,

[3] In order to support the resolution of issues in the power sector at the time of appraisal, this project supported capacity building of relevant parties in the issue areas, as well as the provision of ODA loans. Details are described in "3.3.1 Effectiveness," and reforms in the following areas were supported.
[Component 1] Enhance Governance and Energy Efficiency of Electric Power Sector
[Component 2] Strengthen Financial Management and Operation and Maintenance System in the Power Generation Field
In this project, specific support for each component was set as policy actions, and then operation and effect indicators and their target values were set, and efforts were made toward their achievements.

interviews conducted with the Ministry of Energy and JSC TPP during the ex-post evaluation revealed that they were recognizing the need to further improve the capacities of many of those concerned.

Based on the above, the needs for capacity building of the Ministry of Energy and JSC TPP were high at the time of appraisal and ex-post evaluation, and the implementation of this project was in line with such needs.

3.1.1.3 Appropriateness of the Project Plan and Approach

As a result of the power sector reforms implemented in Uzbekistan prior to the implementation of this project, enhancement of the Ministry of Energy's ability to formulate power sector policies and supervise projects, the need to improve the management of each public corporation following the spin-off of the electricity generation, transmission and distribution businesses, and the promotion of energy conservation projects were key issue areas. In addition, it had been decided by the government that JSC TPP's financial management should be in line with IFRS in order to improve its management. Therefore, it is judged that the items listed in the policy matrix of this project were important development issues in the power sector reform, and appropriate support was planned through the dispatch of experts in JICA's technical cooperation projects. Additionally, it was confirmed that this project also utilized the lessons learned[4] from past JICA projects through the utilization of the technical cooperation scheme to generate the outcomes by working on the items listed in the policy matrix.

On the other hand, as to whether "economic stabilization and promotion of development efforts," which was set as the impacts of this project, can be realized by improving the capacity of those involved in the power sector through this project, it can be assumed that these impacts are related indirectly and over the long term, but it can be said that these impacts will not necessarily be created by supporting improvements in the power sector alone. In this project, there was no clear logic drawn from the outcome of "strengthening governance and promoting energy conservation in the power sector and strengthening the financial management and operation and maintenance aspects of the power generation sector" leading to these impacts; therefore, the logical path in the project objectives was somewhat ambiguous.

3.1.2 Coherence (Rating: ③)

3.1.2.1 Consistency with Japan's ODA Policy

At the time of appraisal of this project, "Renewal and development of economic

[4] In the ex-post evaluation of similar projects in the past, the lessons learned were that JICA was able to effectively improve and reform policies by providing technical cooperation in parallel with the provision of development policy loans.

infrastructure (transport and energy)" was identified as one of the priority areas in the Country Development Cooperation Policy for the Republic of Uzbekistan (March 2017), and "Development of economic infrastructure (especially transportation and power infrastructure)" was analyzed as one of the priority areas in the JICA Country Analysis Paper for the Republic of Uzbekistan (updated in December 2014). This project was implemented with the aim of contributing to the economic stabilization and promotion of development efforts in Uzbekistan through financial assistance to the power sector, one of the key economic infrastructures, and it can be said that this project was in line with Japan's development cooperation policy at the time of appraisal.

3.1.2.2 Internal Coherence

In connection with the implementation of this project, JICA experts were dispatched to the power sector to promote power sector reform and energy conservation as follows.

- Power Sector Reform Advisor (2021-2023)
- Energy Conservation Promotion Advisor (2021-2024)

In addition, JICA's technical cooperation project "The Project for Strengthening Financial Management Capacity of Power Generation Sector" was implemented from 2021 to 2024 to strengthen the financial management capacity of JSC TPP. (including support for the introduction of IFRS).

These three projects are directly related to the promotion of the policy actions of this project, and it was assumed from the time of appraisal that they would work together. In fact, these collaborations directly contributed to the achievement of the indicators in the policy action matrix, and it can be said that sufficient internal coherence was confirmed.

3.1.2.3 External Coherence

The Asian Development Bank and the World Bank are the major donors to the power sector in Uzbekistan. The Asian Development Bank was implementing reforms of state-owned enterprises, including the expansion of power plant facilities and improvement of financial conditions, such as the revision of electricity rates, while the World Bank was supporting the development of power transmission lines and reforms of state-owned enterprises, including the power sector, through development policy loans.

As described in the policy action matrix of this project (see below), it was confirmed through this ex-post evaluation that information was shared among donors on a regular basis, and that coordination to avoid duplication was made by the Government of Uzbekistan when each project was planned. However, since these efforts did not produce any direct outcomes with this project, it is judged that no particular external coherence was confirmed as a whole.

The project was consistent with Uzbekistan's national development plan and development needs, and the project content and approach were judged to be appropriate, with the exception of a leap in the logical path in the impact setting. Although no particular external coherence was observed, this project was consistent with Japan's development cooperation policy, and sufficient internal coherence was also confirmed.

Therefore, its relevance and coherence are high.

3.2 Efficiency (Rating: N/A)

As stated in "2.3 Constraints During the Evaluation Study," this project is a programmatic ODA loan project, and quantitative comparison of inputs and outputs is difficult. Therefore, an evaluation of efficiency is not conducted.

3.3 Effectiveness and Impacts[5] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

This project supported policy and system improvement through the achievement of policy actions to solve issues in the power sector, which consisted of the following two components. To support this achievement, technical cooperation was implemented to support capacity building.

(i) Strengthening the governance of the power sector and promoting energy efficiency and conservation (strengthening project supervision and donor coordination system for the power sector in the Ministry of Energy, and establishing a system for collecting statistical data on energy conservation)

(ii) Strengthening financial management and operation and maintenance of the power generation sector (strengthening the management system for financial accounting in the power generation sector, and strengthening CCGT's structure)

In the policy action matrix created for this project, policy actions were defined for reform items, and the operation and effect indicators and their targets were set to measure the degree of achievement. In this project, loans were disbursed in June 2021 after confirming that the policy actions had been implemented. In order to promote further progress of the policy actions, this project also created operation and effect indicators and set the target deadline for achieving the indicators as December 2022. Therefore, the ex-post evaluation was conducted to confirm the actual achievement as of December 2022, as well as the status of achievement and progress at the time of ex-post evaluation (January 2024).

[5] When providing the sub-rating, Effectiveness and Impacts are to be considered together.

Table 1: Achievement Status of Policy Action Matrix

Reform Item	Policy Action	Operation and Effect Indicator	Baseline January 2021	Target Value December 2022	Actual December 2022	Status at the Time of Ex-Post Evaluation January 2024
[Component 1] Enhance Governance and Energy Efficiency of Electric Power Sector						
1. To strengthen project monitoring structure and donor coordination mechanisms for the electric power sector within the Ministry of Energy	Issuance of a ministerial decree requiring the establishment of a monitoring team headed by the deputy minister (supervising sovereign and non-sovereign projects)	Donor meetings (multilateral and bilateral donors including JICA) are hosted by the Ministry of Energy	Not held	Quarterly donor meetings are held	Weekly/monthly/ quarterly meetings are held	Meetings are held individually rather than as a group of donors. Meetings are held weekly with the World Bank, monthly with JICA and the Asian Development Bank, and quarterly with other donors.
		Results of donor meetings are published on the website.	Not published	Results of all donor meetings held are published on the website	Published on the Ministry of Energy website	Results of meetings with donors are regularly posted on the Ministry of Energy website
2. To establish statistical data collection structure on energy conservation	Issuance of a ministerial order regarding the establishment of a special team to create a roadmap to establish a statistical data collection system. Issuance of a request for the dispatch of an energy conservation advisor	Approval of a roadmap for statistical data collection structure for energy conservation	No structure is established.	Approval of the roadmap for the establishment of the structure	Approved by the Minister in February 2021	Approved by the Minister in February 2021. Implementation of initiatives to improve the capacity to collect and analyze statistical data related to energy consumption
		A draft Master Plan (MP) for energy conservation promotion is prepared.	No draft MP is prepared.	A draft MP is prepared and approved.	The draft was submitted in August 2022 and approved in December of the same year.	In December 2022, a presidential decree on energy conservation promotion was issued, and the Ministry of Energy has been implementing various measures for energy conservation in line with the presidential decree.
[Component 2] Strengthen Financial Management and Operation and Maintenance System in the Power Generation Field						
3. To strengthen financial management structure on power generation field through the application of IFRS-based accounting report	Navoi Thermal Power Plant: Decision of the Supervision Board of JSC TPP on the preparation of a roadmap for the completion of financial statements in accordance with IFRS.	IFRS-based financial statements are prepared at the Navoi Thermal Power Plant.	No IFRS-based financial statements are prepared.	Navoi Thermal Power Plant: financial statements will be prepared in accordance with IFRS for FY 2019, FY 2020 and FY 2021.	Financial reports were prepared in accordance with IFRS for each of the years 2019-2021.	The financial reports for 2022 and 2023 continued to be prepared in accordance with IFRS.
		Approval of the implementation structure, including workflow and necessary staffing for the preparation of the financial statements.	No structure is established.	Approval of the implementation structure, including workflow and staff assignment	Staff assignment and training on work process for IFRS preparation were conducted.	Training on IFRS was conducted on an ongoing basis.
		Approval of a roadmap for capacity building of staff responsible for the preparation	No roadmap is prepared.	Approval of the roadmap	Approved in April 2022	Items listed in the roadmap are being implemented.

Reform Item	Policy Action	Operation and Effect Indicator	Baseline January 2021	Target Value December 2022	Actual December 2022	Status at the Time of Ex-Post Evaluation January 2024
		of the financial statements				
4. Strengthening the capacity of Navoi CCGT Training Center	Decision of the Supervision Board of JSC TPP on the preparation of a roadmap to improve the operating conditions of the Navoi CCGT Training Center	Approval of a roadmap for strengthening the implementation structure	No roadmap is approved.	Approval of the roadmap	Approved in November 2022	Items listed in the roadmap are being implemented.
		Number of training programs to be conducted at the Navoi CCGT Training Center	11 times/year	15 times/year	24 training programs were conducted in 2022	In 2024, 23 types of training (each with 3-8 participants, multiple sessions per type) are planned, and 345 engineers, etc. are expected to participate.

Source: Materials provided by JICA, Information provided by the executing agency

Policy actions for each reform item had already been implemented prior to the commencement of this project, and this project provided support through three related technical cooperation projects to achieve the target values of the operation and effect indicators. As a result, all the indicators were achieved by December 2022, which was the target date for achieving the operation and effect indicators. It was confirmed at the time of ex-post evaluation that continuous activities and capacity building efforts have been made for all the operation and effect indicators since then.

Therefore, with regard to quantitative effects, all the operation and effect indicators related to policy actions were achieved at the completion of this project, and further progress was made at the time of ex-post evaluation, It can be said as a whole that the quantitative effects have been fully achieved.

3.3.1.2 Qualitative Effects (Other Effects)

The following three qualitative effects were set at the time of appraisal of this project.

1) Economic and social stability

2) Stable economic growth

3) Promotion of economic reforms through improved governance

Of the above three points, ‘1) Economic and social stability’ and ‘2) Stable economic growth’ could be categorized as ‘impacts,’ and therefore were considered and analyzed as ‘impacts’ rather than ‘effectiveness’ (see ‘3.3.2 Impacts’).

Since the definition of 3) “Promotion of economic reforms through improved governance,” was not clear, this evaluation study checked the effects of improved governance by capturing what changes were observed as a result of the two technical cooperation projects (promotion of power sector reform and promotion of energy conservation) implemented with the Ministry of

Energy as the counterpart.

As the demand for electricity in Uzbekistan increased with economic growth, the Ministry of Energy, which was established in 2019, needed to take unified measures concerning project supervision, inter-donor coordination, and setting electricity prices in the power sector, as mentioned above. The Ministry was also required to develop energy-related data for the promotion of energy policy. JICA's technical cooperation related to this project included the provision of advice on technical issues in the liberalization of the electricity market and the mass introduction of renewable energy, assistance in revising the energy conservation bill, preparation of an energy conservation manual, and collection and analysis of energy data. According to the Ministry of Energy, as a result of these cooperation efforts, the Ministry has seen increases in the understanding of optimal technology introduction and institutional frameworks in the energy sector as well as the capacity and experience of those involved in renewable energy introduction.

In this way, it can be said that through the related technical cooperation, the knowledge of those concerned regarding the system and technology has been deepened and the reform of the power sector, has been promoted including the increase in the ratio of renewable energy; and the qualitative effects of this project are generally considered to have been achieved.

3.3.1.3 Flow of Funds Effects of the Project

This project provided financial support to the Government of Uzbekistan, which was projected to have a US$2,200 million financing gap (US$1,000 million of which would be borrowed externally) in 2021 due to the financial impact of COVID-19.

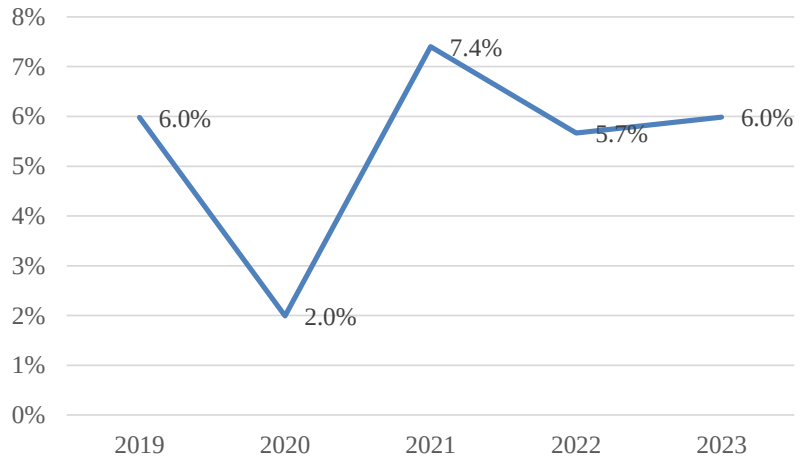
The US$195 million loan under this project can be said to have corresponded to 8.9% of the US$2,200 million financing gap at face value, but it was incorporated into the general fund and not directed to the power sector. However, according to a policy review document by the International Energy Agency (IEA), electricity prices had been maintained at low levels as a result of significant subsidies, with subsidies amounting to 6.6% of GDP and a 44% subsidy rate on electricity prices in 2020. Therefore, stabilization of the government's financial situation was of great significance for energy consumption in Uzbekistan, and it can be said that this project indirectly contributed to it.

3.3.2 Impacts

3.3.2.1 Intended Impacts

The impact of this project based on the project objective is considered to be “economic and social stability” and “stable economic growth.” Therefore, although it is not possible to say that these impacts can be attributed solely to the improvement of the power sector, the ex-post evaluation checked the GDP growth rate and foreign direct investment, since a stable power supply supports smooth economic activities. In addition, since nearly 90% of Uzbekistan's

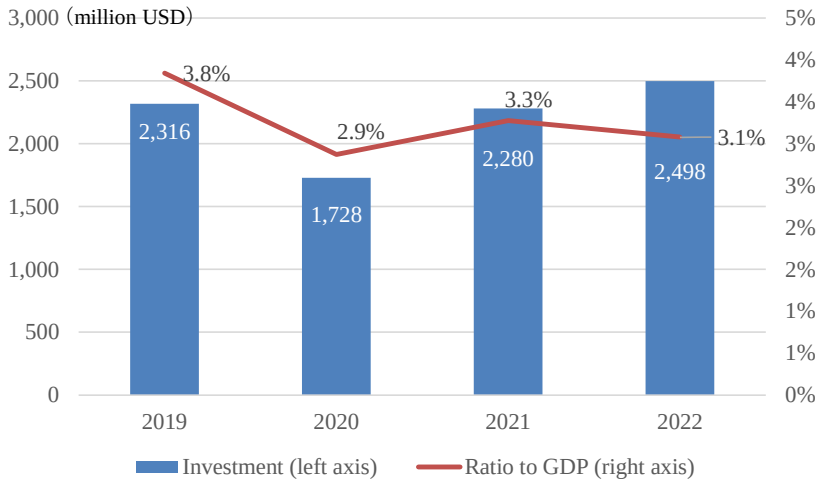
electricity is supplied by thermal power generation, changes in the amount of electricity generated by thermal power plants and the number of outages at thermal power plants were also examined, as well as the status of the ratio of renewable energy sources.



Source: Source: Prepared from World Development Indicators (World Bank database)

Figure 1: GDP Growth Rate

Uzbekistan, which had been experiencing robust economic growth in the late 2010s, recorded a significant decline in GDP growth to 2.0% in 2020 due to COVID-19. However, it recovered rapidly to 7.4% in 2021. Then, the country recorded a growth rate of 5.7% in 2022 and 6.0% in 2023. Therefore, the stable supply of electricity played a role in supporting this growth.



Source: Prepared from World Development Indicators (World Bank database)

Figure 2: Amount of Foreign Direct Investment and the Ratio to GDP

As for the amount of foreign direct investment, as in the case of GDP growth, both the amount of foreign direct investment and its ratio to GDP declined in 2020 due to COVID-19, but recovered in 2021. Stable economic infrastructure, including electricity, is an important factor in attracting foreign capital investment, and the capacity building of those concerned in the electricity sector through this project is considered to have indirectly contributed to economic stabilization and growth.

In addition to these economy-wide impacts, the amount of electricity generated by thermal power plants, the number of outages at thermal power plants, and the renewable energy ratio were captured as the examples of improvements in the power sector itself related to this project, as shown below.

Table 2: Power Generation and Number of Outages of Thermal Power Plants, and Renewable Energy Ratio

	2020	2021	2022	2023
Electricity generated by thermal power plants (million kWh)	54,422	65,659	61,105	59,382
Number of outages at thermal power plants (times)	311	259	165	98
Ratio of renewable energy (%)	14.6	16.2	16.3	20.5

Source: Information provided by JSC TPP and the Ministry of Energy

The total amount of thermal power generation by all the power plants in Uzbekistan increased significantly from 2020 to 2021 and has been gradually declining since then, while the share of renewable energy is gradually increasing. In addition, the number of power outages at thermal power plants has been decreasing significantly, and in 2023 it was less than one-third of the 2020 level.

As mentioned above, the project also provided capacity building support to JSC TPP for strengthening the power generation sector's financial accounting management system, including the preparation of financial statements based on IFRS. This has made it possible to publish transparent financial situations internationally and to attract private investment from foreign countries. According to JSC TPP, since the start of the publication of financial statements based on IFRS, cases such as the purchase of gas turbines financed by a German bank and the start of a financing transaction with China's Export Credit Insurance have emerged.

From the above, it can be concluded that this project alone, which provided general financial support and capacity building support for some of the power sector-related personnel, did not solve all of the various problems in the power sector, but it was sufficiently confirmed that this project had an aspect that contributed to economic and social stability and stable economic growth.

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Environment

The guideline for environmental and social considerations applied to this project was the "JICA Guidelines for Environmental and Social Considerations" (April 2010), and this project was classified in the Environmental Category C, as it was assumed that there would be minimal adverse impacts on the environment.

According to the Ministry of Energy and JSC TPP, there was no adverse impact on the environment due to this project, and no negative impact on the environment is considered to have occurred due to the nature of this project, which provided financing and technical capacity building support.

2) Resettlement and Land Acquisition

There was no resettlement or land acquisition cases observed as a result of the implementation of this project, and no specific concerns were identified.

3) Gender Equality, Marginalized People, Social Systems and Norms, People's Well-being and Human Rights

No specific negative impacts on gender, marginalized people, social systems and norms, people's well-being and human rights were identified as a result of the implementation of this project.

With regard to the quantitative effects to measure effectiveness, all operation and effect indicators related to the policy actions were achieved at the completion of the project, and further progress was being made at the time of ex-post evaluation. As for qualitative effects, the capacities for energy data collection and analysis, financial management of the power generation sector and operation and maintenance, which had been identified as a priority issue, were strengthened through the related technical cooperation.

Regarding the impacts, it was confirmed that this project has indirectly contributed to economic and social stability and stable economic growth through more stable electricity supply. No negative environmental and social impacts were identified.

Based on the above, this project has achieved its objectives. Therefore, effectiveness and impacts of the project are high.

3.4 Sustainability (Rating: N/A)

3.4.1 Policy and System

As described in "3.1.1.1 Consistency with the Development Plan of Uzbekistan," higher energy efficiency is a priority goal in the *New Uzbekistan Development Strategy* (2022-2026),

the national development plan at the time of ex-post evaluation of this project. In addition, Presidential Decree No. 436 issued in 2022 (target year: 2030) also calls for the enhancement of energy conservation, and the sustainability of this project's support in terms of policy and system is high.

3.4.2 Institutional/Organizational Aspect

The executing agency for this project was the Debt Management Office of the Ministry of Finance, which was responsible for consolidating information from relevant ministries and agencies, reporting on the progress of policy actions set in the policy action matrix, and conducting overall coordination and management of this project. The role of the executing agency remained in this part of the project. The Ministry of Energy and the JSC TPP were the agencies targeted in the policy action matrix to further improve their capacity through the provision of technical assistance under this project.

In this ex-post evaluation, it was confirmed that the structure for promoting energy policy, development of energy statistics, and IFRS-based financial reporting is sufficiently in place. In addition, the Navoi CCGT Training Center offers a wider variety of training courses for engineers than expected by instructors with sufficient teaching experience, as shown in "3.4.5 Status of Operation and Maintenance." It is judged that the necessary organizational structure for capacity building is in place.

3.4.3 Technical Aspect

As confirmed in "3.3.1.1 Quantitative Effects," each item in the policy action matrix achieved its target value, and further progress of efforts has been made at the time of ex-post evaluation. In this ex-post evaluation, there are no particular concerns regarding the promotion of energy conservation, statistical data collection and analysis, and preparation of IFRS-based financial statements in the Ministry of Energy and JSC TPP, and the sustainability of the technical aspect is considered high.

3.4.4 Financial Aspect

The financial support provided to the Government of Uzbekistan through this project partially covered the funding gap caused by increased expenditures for COVID-19 measures, which was an issue at the time of appraisal. In the ex-post evaluation, the Ministry of Energy and JSC TPP confirmed that there were no budgetary challenges for donor coordination, promotion of energy conservation, preparation of statistical data, preparation of IFRS financial reports, and operation of and training at the Navoi CCGT training center. Regarding the IFRS-based financial statements, in addition to the Navoi Power Plant's own statements, JSC TPP prepares the ones for the entire organization annually, which, as mentioned above, led to the acquisition of foreign

loans.

Therefore, there are no particular budgetary concerns to sustain the outcomes of this project, and the financial sustainability is high.

3.4.5 Status of Operation and Maintenance

In order to ensure proper operation and maintenance of thermal power plants nationwide, JSC TPP has developed a training program for engineers and others, with 23 courses scheduled to be implemented in 2024 (each course averaging 86 hours). The number of participants in the training program is expected to further increase from 132 in 2021, 215 in 2022, and 284 in 2023. In 2024, the number is expected to increase to 345. It was confirmed through this ex-post evaluation that the CCGT Training Center is actively developing human resources by utilizing the equipment and materials provided through past JICA cooperation projects in order to ensure proper operation and maintenance of thermal power plants in the country. JSC TPP's capacity to operate and maintain thermal power plants in Uzbekistan is expected to continue to improve.

Based on the above, there are no major concerns regarding the policy/system, institutional/ organizational, technical and financial aspects including the current status of operation and maintenance to sustain the effects of the project. Therefore, the sustainability of the project is generally considered to be secured.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to enhance governance and energy efficiency of the electric power sector and strengthen financial management, operation and maintenance capabilities in the power generation field in Uzbekistan by providing financial support, thereby contributing to Uzbekistan's economic stability and development efforts. The project was consistent with Uzbekistan's national development plan and development needs, and the project plan and approach were judged to be appropriate, except for a gap in causal chain in the impact setting. Although no particular external coherence was recognized, it was in line with Japan's development cooperation policy, and sufficient internal coherence was also confirmed. Based on these, relevance and coherence are high. Regarding the effectiveness, it was confirmed that all the indicators for policy actions set in this project were achieved by the target deadline, and that ongoing activities and capacity building efforts were being conducted even at the time of ex-post evaluation. It was also observed that the funds provided by the project contributed to the stabilization of Uzbekistan's public finance and energy consumption. As for the qualitative effects, capacities for collection and analysis of energy data, financial management of the power generation sector and operation and maintenance, which had been identified as priority issues,

were strengthened through related technical cooperation projects, contributing to the enhancement of governance in the power sector as a whole. Regarding the impacts, it was confirmed that the project has indirectly contributed to economic and social stability and stable economic growth through a more stable supply of electricity. No negative environmental and social impacts were identified. Therefore, the effectiveness and impacts of this project are high. Although some items were not analyzed for sustainability due to the nature of this project as a program loan, no serious concerns have been observed in policy and system, institutional/organizational aspect, technical aspect, financial aspect, and the status of operation and maintenance to sustain the effects of the project.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

None.

4.2.2 Recommendations to JICA

Through this project, the capacities of those involved in high-priority areas in the power sector were improved, but not all development issues in the power sector have been solved only by improving the capacities in these areas. In particular, Uzbekistan, which is highly dependent on power generation based on abundant natural gas, will need to further promote energy conservation and the introduction of renewable energy based on future policies. Therefore, it is desirable for the realization of stable power supply in Uzbekistan that JICA continues to cooperate in a manner that makes use of the knowledge gained through its past assistance.

4.3 Lessons Learned

Need to clearly set the project impacts and measurement indicators

Although “economic stabilization” and “promotion of development efforts” were mentioned as the impacts of this project at the time of appraisal, there was a somewhat large leap observed in the causal chain in which only the ODA loan project supporting the policy and system improvements focusing on capacity building of stakeholders in the power sector, especially power generation, would lead to these major impacts. Therefore, it is necessary to establish criteria for determining factors contributing to the achievement of these impacts and what indicators should be set and measured. It is important to set the indicators that can directly confirm the medium- and long-term effects (impact) arising from the policy and system improvements (outcome) that can be achieved through development policy loans in future projects, because this process will enable quantitative and explicit demonstration of not only the direct effects of the project, but also

the indirect effects[6].

5. Non-Score Criteria

5.1 Performance

5.1.1 Objective Perspective

This project was a development policy loan (program loan) to support the improvement of policy and system in the power sector in Uzbekistan, and it was seen that through past assistance to the electric power sector, the need for capacity building in the sector was accurately identified, high priority areas were defined together with the Government of Uzbekistan, and assistance was provided to these areas through a technical cooperation scheme. This combination of support has resulted in the smooth implementation of the project's policy action matrix, and it also helped JICA itself to monitor the progress of the capacity building component and facilitate timely implementation of activities by implementing related projects and maintaining close contact with the executing agency through regular meetings.

5.2 Additionality

None.

(End)

[6] For example, in this project, the outcomes set in the policy action matrix were to strengthen governance and promote energy conservation in the power sector, and to strengthen the financial management and operation and maintenance aspects of the power generation sector. Therefore, it would be realistic to expect that, as partially used in this ex-post evaluation, specific changes in sector operations due to improved policy implementation capacity, an increase in the ratio of renewable energy, changes in financing due to the introduction of IFRS, and a reduction in the number of power outages at thermal power plants would be included as the indicators for impacts. As a result, it would be possible to derive a logic that these changes have contributed to more effective and efficient operational capacity (promotion of development efforts) and economic stabilization (reduction of negative impacts on economic activities).