

Ex-Ante Evaluation (for Japanese ODA Loan)

Central Asia and the Caucasus Division East and Central Asia and the Caucasus Department Japan International Cooperation Agency

1. Name of the Project

- (1) Country : The Republic of Uzbekistan
- (2) Project: Project for Promotion of Energy Efficiency in Industries
- (3) Project Site / Target Area : All areas of Uzbekistan
- (4) Loan Agreement: June 18, 2026

2. Background and Necessity of the Project

- (1) Current State and Issues of the Energy Sector and the Priority of the Project in Uzbekistan

The real GDP growth rate of the Republic of Uzbekistan (hereinafter referred to as “Uzbekistan”) was 6.3% in 2023, 6.5% in 2024, and projected to be approximately 5.8% between 2025 to 2030. Robust growth is expected against the backdrop of a transition to a market-oriented economy, expanded investment, and robust domestic demand (IMF, 2025). The country’s energy supply relies on fossil fuels for approximately 99% of its total supply, consisting of natural gas (79%), oil (11.4%), coal (8.2%), and hydropower (1.2%) (IEA, 2023). In terms of energy intensity—a metric indicating energy consumption per unit of GDP—the country stands at approximately 120 toe per million dollars, a level significantly higher than the global average of about 80 toe per million dollars (IEA, 2022). While energy demand is expected to rise in line with future economic growth, natural gas production has declined to 98.7% (2019) and 83.1% (2020) compared to 2018 levels, and some projections suggest reserves will be depleted in about 20 years (IEA, 2022). Furthermore, greenhouse gas (GHG) emissions per unit of GDP are 0.46 kg/dollar, which is extremely high compared to the global average of 0.26 kg/dollar (IEA, 2022). Against this backdrop, the Uzbekistan government has set goals in its national development plan (Uzbekistan Strategy 2030) to transition forward a green economy (GX) that includes the efficient use of resources, such as promoting energy conservation, to ensure sustainable economic growth. These goals include achieving a 20% reduction in energy consumption in the industrial sector and reducing GHG emissions per unit of GDP by 30% compared to 2010 levels. Until recent years, electricity rates in the country have been kept low as a matter of policy; however, as of October 1, 2023,

electricity rates for businesses were doubled (Cabinet Order No. 475 of September 2023), serving as an incentive for companies to adopt energy-saving measures. Furthermore, in July 2024, the "Law on Rationalization and Improvement of Energy Efficiency," drafted with the support of a JICA expert, came into effect, establishing guidelines for energy efficiency across various sectors. In May 2025, the National Agency for Energy Efficiency was established, with plans to promote further energy efficiency policies.

The sectoral breakdown of the country's energy consumption is as follows: industrial and commercial 46%, residential 31%, transportation 17%, and others 6%. Consequently, energy efficiency measures in the industry and commerce sectors have become an urgent priority (National Bureau of Statistics, 2024). In particular, in energy-intensive industries such as non-metallic mineral product manufacturing, chemical manufacturing, the textile industry, and the food and beverage industry, improvements in energy efficiency are expected through the replacement of equipment such as boilers, pumps, and motors, as well as the introduction of factory energy management systems (FEMS). In addition, energy savings are expected in commercial facilities such as hotels and shopping centers through the replacement of air conditioning and heating equipment and the introduction of building energy management systems (BEMS) (JICA, 2022). However, due to a lack of knowledge on the part of companies regarding energy-efficiency technologies and their benefits as well as insufficient outreach by financial institutions, it has been confirmed that appropriate energy-saving education and awareness-raising for financial institutions and companies are necessary to promote energy efficiency in the industrial and commercial sectors sector (JICA Survey Team, 2025).

Given this situation, this Project aims to promote the introduction of energy-efficient equipment and facilities in the industrial and commercial sectors through concessional financing via a two-step loan, thereby reducing energy consumption and GHG emissions; this is a high policy priority for the country.

(2) Japan's and JICA's Cooperation Policy and Operations in the Energy Sector

Japan's Country Assistance Policy for the Republic of Uzbekistan (2022) establishes "Promotion of sustainable economic growth and the elimination of disparities" as its basic policy and states that it will provide support to address global challenges such as climate change with the aim of "building a fair and sustainable society. The Tokyo Declaration, adopted at the first summit of the

“Central Asia + Japan” Dialogue (CA+JAD) in December 2025, identifies “Green and Resilience” as a priority area, stating that it aims “to simultaneously achieve economic growth, energy security, and decarbonization, and to implement an energy transition toward net-zero/carbon neutrality through diverse pathways.”

The JICA Country Analysis Paper on the Republic of Uzbekistan (March 2023) identifies “Energy Conservation and Low-Carbon Programs” as one of its priority areas, and this project aligns with these policies and analyses. Furthermore, under JICA’s Global Agenda, Area 3 “Energy and Mining” aims to balance decarbonization and the stable supply of affordable energy. Additionally, Area 16 “Climate Change” seeks to promote the introduction and widespread adoption of low-carbon facilities and equipment to improve energy efficiency across society; this Project aligns with these policies and analyses.

(3) Other Donors’ Activities

The World Bank implemented a two-step loan program titled “Energy Efficiency Facility for Industrial Enterprises (Phases I–III)” targeting the industrial sector (2011–2024, total of approximately \$325 million). This project primarily supported state-owned enterprises in upgrading inefficient thermal and electrical equipment such as boilers, compressors, motors, frequency converters, and in upgrading or introducing technologies such as waste heat power generation. In addition, the European Bank for Reconstruction and Development (EBRD) is implementing the “Green Economy Finance Facility (GEFF) (Phases I and II)” in Uzbekistan as part of its program spanning 30 countries (2018– ongoing, total of \$160 million), providing support for the retrofitting of energy-efficient equipment and facilities in the residential and commercial sectors (primarily office buildings).

3. Project Description

(1) Project Description

① Project Objective

The objective of the Project is to promote energy efficiency in Uzbekistan by providing a Two-Step Loan to promote the installation of energy efficient equipment in the industrial sector, thereby contributing to the transition towards a green economy, strengthening its energy security, and mitigating climate change.

② Project Components

Component 1: Two Step Loan to Participating Financial Institutions (PFIs)

for the Promotion of Energy Efficiency in Uzbekistan's industries

Component 2: Consulting Service for the Promotion of Energy Efficiency in Uzbekistan's industries

③ Project Beneficiaries (Target Group)

Direct beneficiaries: Companies receiving sub-loans from the PFI

(2) Estimated Project Cost

Total Project Cost : 16,845 mill. yen (Japanese ODA loan: 14,969 mill. yen)

(3) Schedule

June 2026 - November 2030 (54 months). The Project will be deemed completed upon completion of the consulting services (November 2030).

(4) Project Implementation Structure

1) Borrower: The Republic of Uzbekistan

2) Executing Agency: National Agency for Energy Efficiency (NAEE)

3) Operation and Maintenance: The sub-borrowers will be responsible for the operation and maintenance of the energy efficiency equipment and other facilities.

(5) Collaboration and Sharing of Roles with Other Donors

1) Japan's Activity

In recent years, JICA has provided support to Uzbekistan through the "Energy Efficiency Promotion Advisor" (FY2021–2023), the Thematic Training Program "Promotion of Energy Efficiency and Conservation" (FY2022–2024), and the Technical Cooperation Project "Project for Strengthening Energy Conservation Capacity through the Establishment of an Energy Manager Scheme and Zero-Energy Building (ZEB) Demonstration Pilot Project" (FY2024-2027).

This Project aims to boost the application of the energy efficiency laws and related systems continuously supported by Japan. Furthermore, in conjunction with the "Project for Promotion of Energy Efficiency in Public Buildings", which targets educational and healthcare facilities, this Project addresses the need to promote energy efficiency in the country.

2) Other Donors' Activity

The Project shall avoid overlap with the activities of other Donors' mentioned in 2.(3).

(6) Environmental and Social Consideration

① Category: FI

② Reason for Categorization: Sub-projects cannot be specified prior to JICA's approval for financing, and they may have environmental impacts under the JICA Guidelines for Environmental and Social Considerations

(January 2022).

- ③ Other/Monitoring: Under the Project, the PFIs/Executing Agency, with support from consultants hired under the Project, will categorize each sub-project in accordance with Uzbekistan's domestic legal framework and the "JICA Guidelines for Environmental and Social Considerations," and required measures for the applicable category shall be taken. No Category A subprojects are included.

(7) Cross-Sectoral Issues

In its "Nationally Determined Contribution (NDC)" under the Paris Agreement, the country has set a target of "reducing GHG emissions by 50% per unit of GDP by 2035 compared to 2010 levels". Since the country has identified the introduction of energy-efficient technologies in various sectors as a climate change mitigation measure to achieve this target, this Project contributes to the NDC.

(8) Gender Category: ■ GI (S) (Gender Integrated Project)

<Details of Activities/Reason for Categorization> Although gender equality policies are being actively promoted under the current administration—including the formulation of the "National Gender Equality Strategy 2030", efforts to promote gender equality within the newly established NAEE are still in their early stages. There are also requests from the PFIs to conduct gender training. In light of these circumstances, this Project will support NAEE in formulating a Gender Inclusion Policy and conduct gender equality training based on it. Additionally, gender equality training will be provided to the PFIs and any sub-borrowers who request it. As an indicator, the target number of participants in gender equality training is set at 50~60, primarily from NAEE .

(9) Other Important Issues: None.

4 . Targeted Outcomes

(1) Quantitative Effects

1) Outcomes (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2026)	Target (2032) [2 years after project completion]
Number of sub-borrowers that have implemented energy- efficiency measures through sub- loans (Number of sub-borrowers (companies))	0	40-50
Accumulated amount of sub-loans disbursed (billion yen)	0	14.8
Rate of energy efficiency improvement (%)	0	10 (note 1)
Reduction in Energy Consumption (Primary Energy Equivalent, GJ/year)	0	2,600,000
Annual greenhouse gas emissions reduction (Tons of CO ₂ Equivalent per year)	0	120,000
NAEE officials, PFI project loan officers, and Sub-borrowers trained on Gender Equality	0	50-60
Beneficiaries among Sub- Borrowers from the Technical Advisory on measurement of energy efficiency improvement	0	60-90
Benefited companies from energy efficiency awareness education	0	140
Beneficiaries among PFIs from the Technical Advisory on measurements of Energy Efficiency improvements	0	12-20

(2) Qualitative Effects

Deepened understanding of energy conservation among relevant organizations (NAEE, PFIs, and sub-borrowers); increased awareness of energy efficiency in the industrial and commercial sectors; heightened awareness of gender equality among relevant organizations; and stabilization of energy supply and demand.

(3) Internal Rate of Return

The IRR has not been calculated because the subprojects cannot be identified in advance.

5 . External Factors and Risk Control

(1) Preconditions: None

(2) External Factors: None

6 . Lessons Learned from Past Projects

The ex-post evaluation of the “Poverty Alleviation Microfinance Project” in the Democratic Socialist Republic of Sri Lanka (evaluation year: 2008) revealed that, in addition to providing loans, thorough capacity development, - including various awareness-raising activities, training, and advisory services – is crucial for achieving results. This Project, as part of the consulting services, plans to provide technical advisory on energy efficiency improvement effects to sub-borrowers, conduct energy efficiency awareness campaigns for general businesses, and support PFIs in measuring energy efficiency improvement effects. We aim to achieve and sustain project results through comprehensive capacity development.

The ex-post evaluation of the past “Industrial Energy Conservation Project” for the Republic of Argentina (evaluation year: 2003) indicated that synergistic effects can be expected from energy conservation projects by simultaneously advancing diverse measures such as the development of legal frameworks, human resource development, and the promotion of energy efficiency investments. In this Project, the results of JICA’s technical cooperation to date (support for the formulation of an energy efficiency law, improvement of the energy audit system, etc.) are expected to continue to yield results through the Executing Agency (NAEE). Together with the “Project for Promotion of Energy Efficiency in Public Buildings” being implemented in parallel, we aim to comprehensively address Uzbekistan’s energy efficiency needs and achieve synergistic effects.

7 . Evaluation Results

This Project aligns with the government's development policies and guidelines, as well as the cooperation policies and analysis of Japan and JICA. It promotes energy efficiency in the industrial and commercial sector and advances climate change countermeasures; therefore, there is a strong need to support the implementation of this project to contribute to SDG Goal 13 (Climate Action).

8 . Plan for Future Evaluation

(1) Indicators to be Used

As indicated in Section 4.

(2) Future Evaluation Schedule

Ex-post evaluation: 2 years after project completion

END

Annex: Map of Project for Promotion of Energy Efficiency in Industries

Map of Project for Promotion of Energy Efficiency in Industries



Source: United Nation (<https://www.un.org/geospatial/content/uzbekistan>)