

Ex-Ante Evaluation (for Japanese ODA Loan)
Middle East Division 2, Middle East and Europe Department, JICA

1. Name of the Program

- (1) Country: The Hashemite Kingdom of Jordan (Jordan)
- (2) Program Site/Target Area
- (3) Program: Electricity Sector Reform and Resilience Enhancement Program Loan
Loan Agreement: December 8, 2022

2. Background and Necessity of the Program

(1) Current State and Issues of Development in the Electricity Sector and Priority of the Program in Jordan

In the 2000's, the country had enjoyed high real GDP growth rates that average an annual growth rate of about 6.5%, but since the Lehman Shock in 2008, it has continuously seen low GDP growth rates of around 2.0% due to the sluggish economic activities (IMF, 2022). Jordan accepts a number of refugees from Palestine, Syria, and other countries, and especially since Syrian crisis in March 2011, the continuous influx of a number of Syrian refugees into the country has placed economic and financial pressures on it. As of 2022, approx. 6.5% or 670,000 people of the country's total population of 10.30 million people (IMF, 2022) are registered as refugees from Syria (UNHCR, 2022), and the financial pressure shouldered by the Jordanian government to accept refugees from Syria for the 3 years from 2020 to 2022 is estimated at approx. 2,800 million USD (Jordan Response Plan 2020-2022).

In addition to the pressures of accepting refugees, the spread of the novel coronavirus (COVID-19) in 2020 had major impacts on the country's economy. Especially in 2020, the suspension of economic activities due to lockdowns and other conditions, the reduction in revenue from tourism, a major industry of the country, and other factors resulted in a negative GDP growth rate of -1.6%, and an unemployment rate increase to 22.7% from 19.1% in the previous year. The country's GDP is expected to return to positive growth rates over the 2.0% level in and after 2021 (IMF, 2022).

In order to promote the economic stability and development of the country suffering the pressures of accepting refugees, a conference named "Jordan: Growth and Opportunity, the London Initiative 2019" and co-hosted by Jordan and the UK was held in London in February 2019. In this conference, the Jordanian government announced the Five Year Growth and Reform Matrix, and it was confirmed that the international community would cooperate in supporting the country's reform. Japan also announced that it would provide a concessionary loan worth 300 million USD by 2023. In addition to such support from the international community, the IMF approved the Extended Fund Facility (EFF) in March 2020, and is providing support totaling 1,300 million USD in 4 years. Under the EFF, the Jordanian government has been making continuous reform efforts to realize self-sustaining economic growth. Especially, the electricity sector, which is a major cause of the deterioration of the country's balance of payments and fiscal balance, requires further

reform in order to achieve the EFF's goal of realizing self-sustaining economic growth.

One of the biggest issues in the electricity sector is that National Electric Power Company (NEPCO) has structural deficits and accumulated debts, and the financial authorities' partial transfer to cover the debt also contributes to the deterioration of the country's fiscal balance. The country had relied mainly on natural gas imported from neighboring Egypt for primary energy until 2011, after which, however, gas supply from Egypt stopped intermittently, and it was forced to purchase expensive fossil fuel to cover the reduction in gas supply. As a result, NEPCO's financial balance seriously deteriorated, and their deficits totaled approx. 7,250 million USD at the end of 2014 (IMF, 2015). Due to their efforts to promote development of renewable energy with the aim of reducing the country's dependence on imported fuel, diversify their fuel sources, and introduce a fuel cost adjustment system, NEPCO's fiscal balance went into the black in 2016. However, in 2020, the sluggish demand for electricity due to COVID-19 left them back in the deficit, and they had approx. 8,700 million USD (approx. 20% of the GDP) in debt at the end of 2021 (IMF, 2022). In addition, in and after 2023, they will be obliged to purchase electricity based on long-term electricity sale contracts since independent power producers will put their facilities for oil-shale power generation into commercial operation, and their deficit in the financial balance for FY2023 is expected to grow to approx. 370 million USD because their revenue from electricity tariff will not be sufficient enough to cover the power purchase agreement. They are also expected to have an annual deficit of approx. 200 million to 300 million USD in and after the following year (IMF, 2022).

Under these circumstances, the Jordanian government formulated the basic policies of the "Government Program for Reliability, Improved Governance, and Foundations of Financial Viability: Jordan Electricity Sector 2022-2030," an electricity sector reform program for improving NEPCO's financial health and reforming the entire electricity sector. The electricity sector reform program mainly intends to develop facilities according to a plan in order to ensure stable supply of electricity, present an action plan including review of the tariff structure for improving NEPCO's financial structure, as well as strengthen the promotion system in the government to call the international community to support the program.

The Program intends to provide financial support for Jordan struggling to reform the electricity sector, a major cause of the deterioration of the country's balance of payments and fiscal balance.

(2) Japan and JICA's Cooperation Policy and Operations in Relation to the Electricity Sector

Japan's Country Development Cooperation Policy for the Hashemite Kingdom of Jordan (2017) sets maintaining stability and developing an industrial foundation as its major goal, and states that Japan would support Jordan so that it, as a moderate nation in the Middle East, could maintain its stability and build an industrial foundation for self-sustaining economic development. The JICA Country Analysis Paper for the Hashemite Kingdom of Jordan (2015) also identifies developing the basis for economic growth and

using and managing countermeasures against climate change and resources in a sustainable manner as important issues. The Program is consistent with these policies and analyses. The financial support of the Program also contributes to sustainable and stable supply of electricity and to the improvement of the country's balance of payments and fiscal balance as well as is considered to contribute to three goals of the SDGs: Goal 7 (Affordable and Clean Energy), Goal 8 (Decent Work and Economic Growth), and Goal 13 (Climate Action), and all these aspects suggest that it is highly relevant to support the implementation of the Program.

(3) Other Donors' Activity

The World Bank is planning a Program for Results Financing (PforR), a result based financing, to promote the implementation of the electricity sector reform program.

The IMF approved the EFF in March 2020. In the EFF, the IMF is working to help the Jordanian government to reform the electricity sector (review the power purchase agreements, review the electric tariff structure, rationalize fuel purchase, etc.). They conducted the fourth review of the EFF in May 2022, and the completion of the fourth review was approved by the IMF board on June 29, 2022.

The European Bank for Reconstruction and Development (EBRD) provided a loan to refinance the short-term debt for NEPCO (2020, 100 million USD). The U.S. Agency for International Development (USAID) began activities to support the electricity sector (2022, 40 million USD, technical assistance).

3. Program Description

(1) Program Description

① Program Objective(s)

The objective of the Program is to promote renewable energy and enhance energy resilience toward green transformation (GX), by supporting the Hashemite Kingdom of Jordan in implementing reforms of its electricity sector, which has in part led to the deterioration of the balance of payments and fiscal balance of Jordan, through providing budget support, thereby contributing to sustainable and stable supply of electricity and improving the balance of payments and fiscal balance of the country.

② Program Component(s)

The Program advances sectoral reforms based on the attached policy matrix listing reform items in the policy areas below, in consideration of the energy policy dialogue between the Government of Jordan and the World Bank.

Pillar I: Enhancing electricity supply, adequacy and reliability

Pillar II: Improvement of electricity sector financial standing

Pillar III: Improvement of electricity sector governance

③ Beneficiaries of the Program (Target Group): All citizens of Jordan

(2) Estimated Program Cost

15,000 million yen

(3) Program Implementation Schedule

The budget support by the Program begins in January 2022 (applied retroactively; since this loan is included in Jordan's FY2022 budget, the start of financial assistance is set for January 2022). The achievement of Prior Actions was confirmed in November 2022. The completion of disbursement (scheduled for December 2022) is considered the completion of the Program.

(4) Program Implementation Structure

1) Borrower: The Government of Jordan

2) Executing Agency: Ministry of Planning and International Cooperation (hereinafter referred to as "MOPIC")

(5) Cooperation and Sharing of Roles with Other Donors

1) Japan's assistance activities:

The relationship between the Program and other JICA programs is described in the attached policy matrix. Efforts by the Executing Agency to achieve each Prior Action and Target of the Program are expected to contribute to proper supervision and promotion of the implementation of other JICA programs referred to in the policy matrix.

2) Other donors' assistance activities:

Although it is not a co-financing project, the Program and PforR for advancing the electricity sector reform program, which is being formed by the World Bank, are assumed to complement each other. The Program also works closely with the World Bank in monitoring the outcomes.

(6) Environmental and Social Consideration / Cross-Cutting Issues / Category of Gender

1) Environmental and Social Consideration

① Category: C

② Reason for Categorization: The Program involves a loan aimed at financial assistance and is likely to have minimal adverse impact on the environment under the JICA Guidelines for Environmental and Social Considerations, released in April 2010.

2) Cross-Cutting Issues

① Climate Change Measures: The Program can contribute to climate change mitigation for a secondary purpose, by steadily promoting the introduction of renewable energy and contributing to the realization of sustainable and stable supply of electricity.

② Poverty reduction and considerations: None in particular

③ Consideration of the Disabled: None in particular

3) Category of Gender [N/A]: GI (Gender Mainstreaming Needs Assessment and Analysis Project)

<Description of activities and reason for classification>

Although gender mainstreaming needs were confirmed in the appraisal process, the Program stopped short of including activities with specific indicators that would contribute to gender mainstreaming.

(7) Other Important Issues: None in particular

4. Targeted Outcomes

(1) Quantitative Effects

Outcomes (Operation and Effect Indicators): The indicators, baselines (July 2022), and targets (end of December 2026) to measure effects in each policy area are as shown in the annex.

(2) Qualitative Effects

The Program will lead to the implementation of various reforms of the electricity sector advanced by the Government of Jordan, ensuring the enhancement of fiscal robustness of the government and vitalization of economic activities, among others.

(3) Internal Rate of Return: Not calculated because the Program is a program loan.

5. External Factors and Risk Control

(1) Preconditions

The loan shall be disbursed in consideration of the progress in the fifth IMF EFF program review from the perspective of assessing debt sustainability.

(2) External Conditions: None in particular

6. Lessons Learned from Past Programs

(1) Lessons from Similar Programs

The ex-post evaluation of the Fiscal and Public Service Reform Development Policy Loan, an ODA loan for Jordan (evaluated in 2017), etc., confirms cases in which it is not recognized by related organizations in Jordan that the effects brought through the implementation of policy actions lead to new indirect benefits in social development (stable supply of water and electricity as well as support for refugees and host communities), and the lesson learned from this is that it is desirable to present specific goals while taking into consideration the range of effects brought by policy actions.

(2) Application of the Lessons to the Program

Based on the lesson described above, in measuring the effects of the Program, clear and measurable indicators and targets are set while taking into account the abilities of Jordanian related organizations to implement measures.

7. Evaluation Results

The Program is consistent with the development issues and policies of Jordan as well as Japan's and JICA's cooperation policies and analyses. It will contribute to the realization of sustainable and stable supply of electricity by providing budget support and to the improvement in the balance of payments and fiscal balance of Jordan. Also, the Program will likely contribute to three of the SDGs: Goal 7 (Affordable and Clean Energy), Goal 8 (Decent Work and Economic Growth), and Goal 13 (Climate Action). All these aspects suggest that it is highly relevant to support the implementation of the Program.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in section 4.

(2) Timing

Ex-post evaluation: 2 years after program completion

End

Annex: Policy Matrix of the “Electricity Sector Reform and Resilience Enhancement Program Loan”

Policy Matrix of the “Electricity Sector Reform and Resilience Enhancement Program Loan

Policy Area	Prior Action	Performance Indicator	Baseline (July 2022)	Target (end of Dec. 2026)	Relationship with Other JICA Programs
Entire area	Minister of Energy and Mineral Resources approves the outline of the “Government Program for Reliability, Improved Governance, and Foundations of Financial Viability: Jordan Electricity Sector 2022-2030”	Extra revenues of NEPCO generated by implementing cost saving measures per the Program	0	*115 [MJD]	
Ensuring Electricity Supply Adequacy and Reliability	NEPCO drafts a guideline for making Electricity Master Plan	A specialized department within NEPCO to update Electricity Master Plan systematically per the guideline	None	Organized (June, 2023)	JICA is implementing technical cooperation program “the Project for Integration of Variable Renewable Energy into Electric Power Network System and Enhancing Supply Reliability” (Renewable TCP). The TCP helps the formulation of the guidelines.

Policy Area	Prior Action	Performance Indicator	Baseline (July 2022)	Target (end of Dec. 2026)	Relationship with Other JICA Programs
	NEPCO finalizes the TOR of the Advisor for Regional Grid Interconnection	Annual electricity transaction amount between Jordan and Iraq	0	130 GWh	<p>○ JICA plans to dispatch an individual expert called “Power Energy Sector Advisor for Regional Collaboration in Jordan, Iraq and Egypt” in this fiscal year. The Advisor will give counsel on the construction, operation, etc., of Regional Grid Interconnection.</p> <p>○ JICA plans to implement grant aid program “the Project for Enhancing Power System Operating Capacity.” The Project is expected to enhance the reliability of Regional Grid Interconnection as well.</p>
Improvement of Electricity Sector Financial Standing	MWI and MEMR establish Coordination Platform to discuss and agree on nexus solutions between water and energy sectors	Annual shifted load of water facilities with differentiated tariffs such as ToU scheme	0	17 GWh	JICA plans to commence technical cooperation program “the Project for Decarbonisation by Promoting Renewable Energy and Energy Efficiency” (Decarbonisation TCP) in this fiscal year. The TCP will consider the implementation of capacity enhancement for building virtual power plants (VPPs) utilizing power load shifting in water facilities.

Policy Area	Prior Action	Performance Indicator	Baseline (July 2022)	Target (end of Dec. 2026)	Relationship with Other JICA Programs
	The board of JREEEF approves the shortlist of SMEs which benefit from 2 nd phase of Energy Efficiency Program	The number of SMEs which have conducted energy audit	42	142	
	MEMR starts the National E-Mobility Strategy Option Study	The number of operational public charging stations and private charging stations with a meter dedicated to EV	54	750	<ul style="list-style-type: none"> ○ JICA is conducting a demonstration project using charging stations at government buildings under the Renewable TCP. The project is expected to generate data conducive to the formulation of an EV strategy. ○ JICA plans to enhance the capacity to implement policies related to the promotion of wider EV use under the Decarbonisation TCP.
Improvement of Electricity Sector Governance	NEPCO develops a training curriculum for the smooth introduction of Accounting Separation	Issuance of the 2022 annual report in accordance with the CGAP	None	Issued (June, 2023)	<ul style="list-style-type: none"> ○ JICA is implementing country-focused training program “Management Efficiency and Analyzing the Impact of Tariff Structure to the Power Utilities” The program is intended to support smooth introduction of account separation by covering it as a topic.

The Policy Matrix has been formulated based on the energy policy dialogue between the World Bank and the Government of Jordan.

*Expected to reach 300 MJD by 2030 (1 JD (Jordan Dinar) = 1.41 USD).