

## Ex-Ante Evaluation (for Japanese ODA Loan)

August 31, 2023

### Middle East Division 2, Middle East and Europe Department, JICA

#### 1. Name of the Program

- (1) Country: The Hashemite Kingdom of Jordan
- (2) Program Site/Target Area: Entire territory of the Hashemite Kingdom of Jordan
- (3) Program: Electricity Sector Reform and Resilience Enhancement Program Loan (Phase 2)

Loan Agreement: September 5, 2023

#### 2. Background and Necessity of the Program

- (1) Current State and Issues of Development in the Economic and Electricity Sectors 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, 2023). Jordan accepts a number of refugees from Palestine, Syria, and other countries, and especially since the 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. 6.4%, or 660,000 people, of the country's total population of 10.3 million people (IMF, 2023) are registered as refugees from Syria (UNHCR, 2023), 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). At present, this plan has been extended up to 2023, and a succeeding plan for 2024 to 2026 is under development.

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 returned to a positive growth rate of 2.2% in 2021, and is expected to grow at rates of as low as 2.5% to 2.7% in 2022 to 2024 (IMF,

2023). The country's unemployment rate still remained high at 21.9% in the first quarter of 2023 (Department of Statistics of Jordan, 2023).

In order to promote the economic stability and development of the country, which is suffering the pressures of accepting refugees, a conference named "Jordan: Growth and Opportunity, the London Initiative 2019," 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. 9,560 million USD (approx. 20% of the GDP) in debt at the end of 2022 (IMF, 2023). 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. 567

million USD because their revenue from electricity tariffs will not be sufficient to cover the power purchase agreement. They are also expected to have an annual deficit of approx. 350 million to 500 million USD in and after the following year (IMF, 2023).

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 in 2022, and the program was approved by the relevant minister in 2023. The electricity sector reform program mainly intends to develop infrastructure according to a plan in order to ensure a 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, which is 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. In addition, JICA’s Global Agenda (Issue-Specific Project Strategies) sets promoting the introduction of renewable energy as an issue that JICA intends to address. The Program is also consistent with these policies.

## (3) Other Donors’ Activity

The World Bank concluded a loan agreement for Program-for-Results

Financing (PfR), a results-based financing mechanism, to promote the implementation of the electricity sector reform program in the Spring Meetings of the World Bank and the IMF held in April 2023.

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 purchases, etc.). They conducted the sixth review of the EFF in May 2023, and the completion of the sixth review was approved by the IMF board on June 29, 2023.

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) has been providing technical assistance for improving energy efficiency and promoting the use of renewable energy (assisting the country in putting regulations imposed on the electricity sector in place, installing solar power generation facilities, conducting surveys on energy use, etc.) (2022, 40 million USD).

JICA shares information on support for the electricity sector with these donors as appropriate, and in particular, collaborates closely with the World Bank for promoting the implementation of the electricity sector reform program.

### **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 a 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 coordination with the PfR of the World Bank.

Pillar I: Electricity Sector Efficiency

Pillar II: Electricity Supply Adequacy, Reliability, and Green Energy

### Pillar III: Electricity Sector Governance

#### ③ Beneficiaries of the Program (Target Group)

All citizens of Jordan (10.3 million people)

- (2) Estimated Program Cost: 15,000 million yen  
(Amount of co-financing: 250 million USD by the World Bank)

#### (3) Program Implementation Schedule (Cooperation Period)

The confirmation of the achievement of Prior Actions (May 2023) and the disbursement of the loan (scheduled for November 2023) are 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:

The Program is characterised as the co-financing with "Electricity Sector Efficiency and Supply Reliability Program-for-Results," extended by the World Bank for promoting the implementation of the electricity sector reform program. The Program also works closely with the World Bank in monitoring the outcomes.

#### (6) Environmental and Social Consideration

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.

#### (7) 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 a sustainable and stable supply of electricity.

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

<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.

- (9) Other Important Issues: None in particular

#### **4. Targeted Outcomes**

- (1) Quantitative Effects

- 1) Outcomes (Operation and Effect Indicators)

The indicators, baselines (February 2023), 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 on the premise that there is no particular concern about the progress of the IMF EFF program from the perspective of assessing debt sustainability.

- (2) External Conditions

None in particular

#### **6. Lessons Learned from Past 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 indirect benefits in social development (a 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.

Based on the lesson described above, in measuring the effects of the Program, clear and measurable indicators and targets are set and a system for monitoring them is built while taking into account the abilities of Jordanian-related organizations to implement policies.

### **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 a 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 two of the SDGs: Goal 7 (Affordable and Clean Energy) 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 (Phase 2)"

## JICA's Policy Matrix on Electricity Sector Reform Resilience Enhancement Program Phase 2

Reform Area	Prior Actions (By Beginning of May 2023)	Performance Indicator	Base Line (Feb 2023)	Target (End 2026)	Authority in Charge
Electricity Sector Efficiency	The minister approves the "Government Program for Reliability, Improved Governance, and Foundations of Financial Viability: Jordan Electricity Sector 2022-2033"(*)	Extra revenues of NEPCO generated by implementing the Program	0	JD115mil JD300mil*1 (end 2030)	PA: MoPIC PI: MEMR
	The Government adopts a time-bounded Action Plan for Cost Saving and Revenue Enhancement Measures	Achievement of cost saving and additional revenue targets	0	JD 55 mil	PA: MoPIC PI: MEMR
	MWI and MEMR's Coordination Platform for nexus solutions between water and energy sectors holds the monthly meetings(*)	Annual shifted load of water facilities with differentiated tariffs such as ToU scheme	0	17GWh	PA: MEMR and MWI  PI: MEMR and MWI
Electricity Supply Adequacy, Reliability, and Green Energy	A specialized department within NEPCO to update Electricity Master Plan is organized(*)	Periodic updates of Master Plan	-	Implemented	PA: NEPCO PI: NEPCO
	NEPCO sets the target for renewable energy purchase	The amount of electricity received by NEPCO from solar and wind power plants	2,530 Gwh	At least 2,530 GWh	PA: NEPCO PI: NEPCO
	NEPCO awards tenders of Resha substation*2 (*)	Annual electricity transaction amount between Jordan and Iraq	0	130GWh	PA: NEPCO PI: NEPCO



## ANNEX I

Reform Area	Prior Actions (By Beginning of May 2023)	Performance Indicator	Base Line (Feb 2023)	Target (End 2026)	Authority in Charge
	NEPCO specifies prioritized transmission facilities for maintenance and upgrade	SAIFI (System Average Interruption Frequency Index)	$\leq 0.5$	$\leq 0.5$	PA: NEPCO PI: NEPCO
	MEMR completes Task 1 report (Charging infrastructure deployment options analysis) of 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	PA: MEMR PI: EMRC
Electricity Sector Governance	NEPCO drafts separated 2022 annual financial accounts for each business unit	The electricity market structure is reviewed by EMRC in accordance with the General Electricity Law	-	Reviewed	PA: NEPCO PI: GoJO
	NEPCO Board approves monitoring, implementation, and reviews of NEPCO's strategy and budget	Indicative three-year financing plan is systematically embedded and adopted by NEPCO	-	Adopted	PA: NEPCO PI: NEPCO
	TCFC* <sup>3</sup> assesses New Electricity PPP Projects registered in the NRIP as a systematic practice by the Government	Guidelines for evaluating the contingent liabilities and direct fiscal cost of electricity sector PPP pipeline projects registered in the NRIP, is submitted to the PPP Higher Committee* <sup>4</sup> , and effectuated	-	Submitted and effectuated	PA: MOF PI: MOF

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

## ANNEX I

Actions suffixed with an apostrophe (\*) are prior actions set by JICA on its own.

\*1: 1 Jordan Dinar = 1.41 USD

\*2: Substation to be constructed along the border between Jordan and Iraq. This substation is scheduled to be constructed as part of the development of the regional interconnection network.

\*3: Special committee engaged in assessment of issues handled by the PPP committee.

\*4: Committee established by the Ministry of Finance based on the PPP law. The scope covered by the committee is not limited to the electricity sector.

### <Abbreviations>

EMRC (Energy & Minerals Regulatory Commission), JICA (Japan International Cooperation Agency), MEMR (Ministry of Energy and Mineral Resources), MoPIC (Ministry of Planning and International Cooperation), MWI (Ministry of Water and Irrigation), NEPCO (National Electric Power Company), ToU (Time of Use), TCFC (Technical Committee for Fiscal Commitment), PPP (Public Private Partnership), NRIP (National Registry of Investment Projects), MoF (Ministry of Finance)