

Ex-Ante Evaluation

1. Name of the Project

Country: The Hashemite Kingdom of Jordan (hereinafter “Jordan”)

Project: Al-Muwaqqar Solar Energy Project

Loan Agreement: December 13, 2017

Borrower: Baynouna Solar Energy PSC (A Special Purpose Company (SPC) which was established in Jordan for the Project)

2. Background and Necessity of the Project

Since the wake of Syrian conflict in 2011, as many as 1.27 million of refugees (including both UNHCR registered and unregistered refugees, Sep. 2017) defected to Jordan, which exceeds 10% of the whole population in Jordan. 75% of the Syrian refugees in Jordan live in urban host community outside of the refugee camp. More than 25% of the national budget is used for refugee related expenses and it is severe burden for the national finance and the public service. Supporting a host community is the urgent task.

Jordan relies 97 percent of its energy on imports and has been easily influenced by fluctuation of fuel price. Especially, since 2011, natural gas import from Egypt has sharply decreased due to the pipeline explosion in Sinai Peninsula, and Jordan had to import expensive oils from the Gulf countries. This burdened the national budget, and in 2014, the budget deficit has exceeded 10% of GDP. Nowadays, the financial situation is getting better due to the low oil price, but in order to solve the structural problem to heavily rely on the oil / gas import, the Government of Jordan is promoting to increase renewable energy generation .

The government sets “Jordan Response Plan for the Syria Crisis 2017-2019” as a measure to tackle with the vulnerability and development needs of host community. The plan says that development of renewable energy is necessary for sustainable solution to accommodate refugees. Also, in the National Energy Development Plan (2015- 2025), the government aim to increase renewable energy generation capacity up to 20% by 2020. In December 2016, renewable energy generation capacity is 285 MW, which consists 5.9% of total existing capacity in Jordan.

Japan’s Country Assistance Policy for the The Hashemite Kingdom of Jordan (July, 2017) says that the stability of Middle East region is vitally important for Japan because Japan heavily relies on oil import from the Middle East region. It also says that and Japan is assisting Jordan to maintain its stability because Jordan plays key role as the moderate and buffer state in Middle East region. Regional stability and electricity sector are identified as the priority areas, and therefore Japan has been supporting the Syrian refugee and host community.

The Project contributes to the policies of the Government of Jordan, helps to solve and the development issues, and promotes the assistance policies of Japan and JICA.

In addition, this will also contribute to Sustainable Development Goal 7 (energy), 11 (sustainable cities and communities), 13 (climate action) and 16 (peace, justice and strong institutions), and therefore, it is highly meaningful for JICA to implement the Project.

### 3. Project Description

#### (1) Project Objective

The objective of the Project is to increase the electricity supply and to accelerate the diversification of power sources, by constructing a photovoltaic power plant and related facilities in Al-Muwaqqar, thereby contributing to economic growth, host community development and climate change mitigation.

#### (2) Project Site/Target Area

Al-Muwaqqar, The Hashemite Kingdom of Jordan

#### (3) Project Component (s)

The Project consists of the construction and operation of a Solar PV power plant (200 MW) and affiliated facility.

#### (4) Schedule

Expected Completion in 2020

#### (5) Environmental and Social Consideration / Poverty Reduction / Social Development

##### 1) Environmental and Social Consideration

###### a) Category: B

b) Reason for Categorization: The project is not located in a sensitive area, nor has sensitive characteristics, nor falls into sensitive sectors under the JICA Guidelines for Environmental and Social Considerations (April, 2010), and its potential adverse impacts on the environment are not likely to be significant.

##### 2) Promotion of Poverty Reduction: None

##### 3) Promotion of Social Development: None

#### (6) Collaboration with Other Donors: co-finance with IFC

#### (7) Other Important Issues: None

### 4. Targeted Outcomes

As quantitative effects maximum power (MW), performance ratio (%), power generation at sending end (GWh/year) and CO<sub>2</sub> Reduction (t/year) will be monitored. As qualitative effects, climate change mitigation and improving the living environment of the host community are expected as a result of improving access to power.

### 5. External Factors and Risk Control

None

### 6. Lessons Learned from Past Projects

#### (1) Lessons Leaned from Past Projects

The ex-post evaluation of "Northern Negros Geothermal Project" in Philippine tells that resource supply risk must be considered because development of geothermal heat source is essential for power generation and project impact.

(2) Application on Lessons Learned to the Project

In the Project, the resource supply risk – sunshine risk - is important, for generating power and revenue. It was confirmed that the site of the Project has enough amount of sunshine through due diligence.

7. Plan for Future Evaluation

(1) Indicators to be used

- 1) Maximum Power (MW)
- 2) Performance Ratio (%)
- 3) Power Generation at Sending End (GWh/year)
- 4) CO2 Reduction (t/year)
- 5) FIRR

(2) Timing: 2 years after project completion

END