Solar Power Plants

Qaleh Ganj (4 MW) and Rafsanjan (10 MW)

Business plan and financial projection

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Executive summary:

Saba Power and Energy Group as one of the subsidiaries of Islamic Revolution Mostazafan Foundation (IRMF) was established in 2004 with the aim of producing, supplying, and trading electricity. As the first private company in Iran’s electricity industry, it moved toward privatization of the governmental power plants in 2005. Having 10 subsidiary companies, Saba Group conducts its activities in three main fields as follows:

1. Investment in construction and purchase of power plants: Saba Group is the outright or partial owner of 5 power plants including Zargan, Khoramshahr, Aliabad, Qom, and Chabahar with a total capacity of 3500 MW.

2. Operation and Maintenance of power plants: By relying on capabilities and experience of Iranian specialists as well as enforcing audited standards, Saba Group is responsible for the operation and maintenance of 6 prominent thermal power plants including Zargan, Khoramshahr, Qom, Chabahar, Zanjan and Jahrom with a total capacity of 4,100 MW in Iran. In this regard, Saba Group has successfully performed more than 13 overhauls in different power plants and it plans for carrying out major overhauls of 13 other units in the current year.

3. Sales and Marketing: Saba Group is responsible for selling the electricity produced by the power plants it owns in the electricity wholesale market, stock exchange, or in form of bilateral contracts.

Project’s objectives and short description:

Iran is considering deployment of renewable energy sources and these plans are driving energy transition in the country. Iran is becoming a highly attractive emerging market for renewable energy projects. The country is set to experience rapid growth and the renewable energy production capacity is predicted to reach 5,000 MW in the next five years, under Iran's sixth Five-Year Development Plan.

Iran Ministry of Energy (MOE) has adopted feed in tariffs (FiTs) of renewable electricity generated from non-governmental power plants. The ministry established incentives for renewable power plant developers, including 20 years Guaranteed Power Purchase Agreement (GPPA) with a high price. The Purchase Price is the product of a Base Price and an Adjustment Factor. For instance the Base Price for solar power plants with a capacity of 10 MW is 4900 IRR/kWh (0.10 EU/kWh), which will be adjusted by MOE each year in order to compensate for devaluation of money based on internal inflation and Euro exchange rate. The purchase price will be reduced by 30% starting from the first day of the second 10 years till the end of the contract.

Following its major goals regarding investment in construction of power plants as well as given the need to preserve fossil fuel resources to protect the environment, Saba Group has planned to invest in construction of at least 50 MW renewable power plants in its medium-term program (2016-2019) either by forming a joint venture or by obtaining finance in the following projects as a first step:

1- Construction of a photovoltaic power plant with the capacity of 4 MW in Qaleh Ganj industrial park:

   Summary: the land has been purchased, all the required permissions are obtained, and the first phase (1 MW) is under construction.

2- Construction of a photovoltaic power plant with the capacity of 10 MW in Rafsanjan:

   Summary: the land has been reserved.

PROJECTS INFORMATION:

Project Name	Qaleh Ganj Solar Power Plant	Rafsanjan Solar Power Plant
Nominal Power	4 MW	10 MW
Total Investment	6,859,667 Euros[1]	11,854,294 Euros
Expected Start Date	Oct 2017	-
Expected Completion Date	Oct 2018	-
Operational Period	20 years	20 years
Project Location	Qaleh Ganj industrial park, Kerman Province, Iran.	Rafsanjan free zone, Kerman Province, Iran.

1 Euro/Rial = 47000

The feasibility study of the solar farms has been done and the results are listed in the tables below:

No	Title	Unit	Quantity		Description
			Qaleh Ganj	Rafsanjan	
1	Capacity	MW	4	10	Expansion plan is possible
2	Land area	Hectares	7.5	20	The land is reserved
3	Annual energy production	KWh	7,713,086	19,493,321	Simulated by Bluesol software[2]
4	Total investment cost	Euro	5,232,000	11,445,636	-
5	O&M cost	Euro	136,803	224,169	-
6	***Static*** revenue of the first year of operation	Euro	953,625	2,410,100	-
7	***Static*** Internal Rate of Return (IRR)	%	11.74	15.49	-
8	***Static*** Net Present Value (NPV)	Euro	-1,704,616	-1,806,935	Discount rate: 20%
9	Normal payback	Year	7.7	6.31	-
10	***Dynamic*** revenue of the first year of operation	Euro	1,015,338	2,566,068	-
11	***Dynamic*** Internal Rate of Return (IRR)	%	17.57	21.96	***Inflation rate: 10% Annual increase in exchange rate: 5%***
12	***Dynamic*** Net Present Value (NPV)	Euro	-583,504	928,960	Discount rate: 20%
13	Normal payback	Year	6.6	5.5	-

2 Bluesol Design is a professional tool for the design of photovoltaic systems which is extended by CADWARE Company. It allows you to perform the entire process of designing a PV system, from the preliminary assessment of productibility to the realization of the project documentation.

Advantages of Qaleh Ganj project:

- A 20-year period power purchase agreement (PPA) with specified tariffs
- Free income tax (25%) for 13 years
- Direct access to local decision makers
- Flat ground with low civil costs
- Available areas for possible expansion plans
- Good solar radiation level
- Appropriate air with low tiny dust particles

Advantages of Rafsanjan project:

- A 20-year period power purchase agreement (PPA) with specified tariffs
- Free income tax (25%) for 7 years
- Free Customs fees
- Flat ground with low civil costs
- Proximity to substation and transmission lines
- Available areas for possible expansion plans
- Access to basic infrastructures such as road, telecommunication, etc.
- Good solar radiation level
- Appropriate air with low tiny dust particles

Terms of coinvestment:

- SABA Group very much welcomes foreign investors in the field of renewable power plants, and also is ready to cooperate in proposed projects of partners.
- Since transferring more than 25% of the company is prohibited (based on attachment 3), a new Special Purpose Vehicle (SPV) shall be established for implementing common renewable projects,
- The SPV is involved from the beginning up to the end of the common projects, including site selection, obtaining all the required permission, financing, land acquisition, construction, and operation, etc.
- In cases, the SPV may take out loans to finance, if need be and possible.
- Partners will be contributing in revenues and expenses, in proportion to their shares.
- SABA Group has no limitation on the share of co-investment.
- SABA Group is not necessarily obliged to require the equipment or services supplied by the partner.
- The SPV will require the equipment or services supplied by the partners in terms of being technically and economically efficient.
- The projects shall be developed according to international standards to ensure bankability.
- The manpower and other resources of the SPV will be allocated from the shareholders.
- The governance of the SPVs will be defined in subsequent negotiations.

Contact information:

Initial discussions of the proposed structure of a co-investment will be held by Development and Technology Manager and final decision will be made by Dr. Mohammad Reza Eslamian the CEO of SABA Group.

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