



## AZPROMO PROJECT PLAN

### PROJECT: Solar Power Generation Plant

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## **1) Background and Sector review**

### Alternative Energies in Azerbaijan

Alternative Energy accounts for 10% of electricity production, but the Ministry of the Energy, and the the State Agency on Alternative and Renewable Energy Sources (SAARES) want to increase this up to 20% by 2020. It wants to raise over \$7bn in alternative energy investments and to increase total renewables capacity to 2,000 MW.

Hydropower is the most developed alternative energy source, and has the biggest potential to help the nation reach the 2020 target. It accounts for 9.8% of the country's entire electricity production, and Azerbaijan's rivers have the ability to generate 16 billion kWh of economically viable power. In November 2014, the second unit of the Sheki Hydropower Station was launched, with equipment from the Chinese company 'Hunan Allonward'.

### Solar in Azerbaijan

Azerbaijan has good potential for solar electricity and heat generation. Representing only 2.3% of total energy consumption, renewable energy (RE) will require additional investment to become competitive. Energy consumption for heating and cooling, which represents more than 50% of total domestic consumption, is another major area that could be resolved partially by the introduction of efficient solar technology.

## **2) Project Objective**

To create a Solar Power Generation plant in Azerbaijan, to produce 10 MW of power .

## **3) Project Description**

The project will include a Solar Power Generation plant. The project will be implemented in partnership with the State Agency for Alternative and Renewable Energies.

## **5) Marketing Strategy**

Market Size: The market for Solar Energy is small but growing.

Key Customers: The main Azerbaijani consumer of the solar generation cells will be the state company, Azerishiq.

Key Competitors: There are no known competitors.

### 6) Production, Manufacturing Operations Overview

The creation of a Solar Power generation plant involves the following steps and components:

1	5 Acre per MW
2	Land levelling
3	Solar Modules
4	Module mounting Structure
5	Cables
6	Inverters with SCBs & SCADA
7	Switch yard 132/33/11KV
8	Evacuation line 132/ 33/11KV
9	Buildings
10	Internal Roads
11	Civil for foundation
12	Earthing, and lightning arrestor
13	Installation without material
14	Transportation

Investment model for 10 MW Solar Plant		
Capacity of Power Plant	10	MW
Generation Expected per year	4 Million	Manat
Degradation till 1st 10 years	0.05%	
Degradation from 11 to 25 years	0.67%	



Average Cost of Sale of Electricity	0.20	€/KWh
Cost of Project per MW	15 Million	Manat
O&M Cost per MW for 1st year	200,000	Manat

### 7) Project Management and Organization Structure

The Project will be led by the State Agency on Alternative and Renewable Energies, with support from AZPROMO.

### 8) Project Implementation schedule

The project will take up to 1 year to be realized, from initial creation of project team, and implementation. Return on Investment will be approximately 15 years.

Project Implementation	Year 0,25	Year 0.5	Year 0.75	Year 1
5 Acre/MW land				
Land levelling				
Solar Modules				
Cables				
Inverters with SCBs & SCADA				
Switch yard 132/33/11KV				
Evacuation line 132/ 33/11KV				
Buildings				
Internal Roads				
Civil for foundation				
Earthing, and lightning arrestor				
Installation without material				
Transportation				
Compound wall				
Testing				
System design				
Project management				

### 9) Balance sheet

To create a Solar Power Generation plant, capable of making 10MW, will require an investment of approximately USD 150 Million.



Estimated Project Balance Sheet								
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	>Year 15
<b>Assets US\$ Million</b>								
Land	20	20	20	20	20	20	20	20
Building	50	50	50	50	50	50	50	50
Equipment	80	80	80	80	80	80	80	80
Total Assets	150	150	150	150	150	150	150	150
<b>Liabilities</b>	140	130	120	110	100	90	75	0
<b>Owners Equity</b>	10	20	30	40	50	60	75	150