

# GEOHERMAL POWER STATION IN KARKAR

**Location: Syunik marz, Armenia**  
**Project cost: USD 90-110M**

## **PROJECT BACKGROUND:**

Within the framework of the project, the first geothermal power plant is planned to be constructed in Armenia upon the confirmation of the availability of the resource. The plant is to be situated at Karkar site in the Syunik marz – the southernmost region in Armenia.

The selection of the Karkar site for exploratory drilling is based on the field investigation works that were completed for two prospective sites deemed the most promising by the local and international geothermal experts – Jermaghbyur and Karkar. The investigation works of those prospective sites were supported under the Armenia Geothermal Project, financed by the Global Environmental Facility (GEF) and completed in 2012. As a result, the Karkar site



has been identified as the one having the highest potential - sufficient to support the development of a 28.5MW flash cycle power plant.

Unlike other renewable energy technologies, such as wind, solar and hydro, it is not possible to validate the geothermal resource with sufficient confidence for commercial development without performing exploratory drillings at depth to assess specific geologic conditions in the field. Hence, in order to confirm the availability and quality of the resource for commercial power generation, exploratory drilling is initiated. Drilling project is implemented with the financial support of the World Bank, which provided a USD 8.5M grant under Geothermal Exploratory Drilling Project. Main objectives of the project are to: (a) carry out the exploratory drilling to confirm the resource; and (b) if the resource is confirmed, assess the feasibility of a geothermal power plant at Karkar and support involvement of the private sector for the full development of the geothermal power project. Under the project the construction of the access road to the Karkar site and rig pads, required for equipment and facilities for drilling of slim well(s), as well as other necessary infrastructure is already completed. The drilling of first slim well is already commenced in July 2016. In case the information obtained from the first well is non-conclusive regarding the nature of the geothermal resource, the drilling of the second well will be supported under the project. If the presence of a geothermal resource for constructing power plant is confirmed, a full feasibility study will be developed for the project that will include recommendations on the type of geothermal technology/plant to be constructed, economic and financial viability assessment, compliance with environmental and social safeguards, and legal and regulatory issues.

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The Government contribution to the project includes provision of land, support in obtaining all necessary permits, co-financing of taxes or provision of tax exemptions and development of transmission lines or other infrastructure required at the site.

The future plant will occupy an area of around 1.5 hectare. A total of 4 to 10 production and injection wells (with casing diameters of 18 5/8 inch-diameter at the surface progressively reducing to 7 inches at 1250m) would be drilled and installed. The overall plant footprint will also contain piping, parking, warehouse and maintenance facilities, fluid storage, worker quarters and associated facilities.

### **PROJECT FINANCIAL INDICATORS:**

The total cost of the project is within USD 90M-110M depending on the results of the Geothermal Exploratory Drilling Project.

