

# Babadere Geothermal Power Plant

## PROJECT DESCRIPTION

The plant is based on 7MW/5.9MWe, fed by the geothermal resources from 6 wells and using the binary organic cycle (ORC) technology. The plant is expected to produce 41.68 GWh/year equivalent to cover the demand for over 19 thousand households. The energy produced will allow saving around 22,174 tCO<sub>2</sub>/year.

## CARBON FINANCE

The project sponsor of the Babadere GEPP has considered the Gold Standard (GS) for carbon certification, but has not yet initiated any related study.

## ENVIRONMENTAL AND SOCIAL KEY ISSUES

- Potential pollution/contaminant emissions during construction and operation activities
- Potential visual impact
- Land acquisition
- Potential impact on fauna and flora;
- Cumulative impact Assessment
- Potential impacts due to: noise, subsidence and micro seismic activity due to fluid pressure increase during the reinjection;
- Stakeholder Engagement
- Community/workers health and safety both during construction and operation phases

## MITIGATIONS/SUCCESSFUL IMPLEMENTATION

- Supervision of the construction activities by environmental, social and H&S experts to avoid, prevent, minimize and monitor impacts
- Implementation of a photo-simulation study to present the dwellers;
- In case of land acquisition a mutual agreement procedure is to be preferred
- Implementation of a monitoring plan that should be include at least noise, subsidence and seismic events monitoring
- A cumulative impact assessment is required to evaluate also the possible cumulative impact with the Plants around, ETL and ancillary works,
- Stakeholder Engagement Plan implementation to involve and inform the stakeholders and to reduce the risk of conflicts with ensuring good public relations
- Naturalistic survey of flora and fauna during construction phase is suggested and mitigation measures in case;
- Implementation of workers' safety and protection action plans

Developed by



European Bank  
for Reconstruction and Development

Supported by



### GENERAL INFORMATION

<b>Project Location</b>	Çanakkale Province
<b>Technology</b>	Geothermal Power Plant
<b>Plant Capacity</b>	7 MWm
<b>Annual Energy Production</b>	41.68 GWh/year
<b>Annual CO<sub>2</sub> Reduction</b>	22,174 tCO <sub>2</sub> /year

### TIME SCHEDULE

<b>Start of Construction</b>	June 2014
<b>Expected Commercial Operation</b>	June 2016

### FINANCIAL PARAMETERS

<b>Total Project Cost</b>	EUR 11,000,000
<b>MidSEFF Loan</b>	EUR 7,900,000
<b>Payback Time</b>	8.9 years
<b>Internal Rate of Return</b>	8.5 %