south pole
Carbon Asset Management Ltd.

VCS VERIFIED CARBON STANDARD
A Global Benchmark for Carbon

Geothermal Power, Turkey

The power plant generates emission free electricity for the growing demand of the turkish power grid. Greenhouse gas emission reductions are achieved through utilizing geothermal power to generate electricity, which otherwise would have been generated through burning fossil fuel (coal).

Location

The project is situated in the asian part of Turkey, in the province of Aydın, coasting the Aegean Sea. Geothermal drilling is taking place in a sparsely populated region, on the southern hillside of the Aydın - Mountains.

Project

The plant's activity aims to generate electricity from geothermal energy at a heat from 78° C to 170° C. The geothermal fluid is pumped up to the surface through production wells located in the Aydın Sultanhisar-Salavatlı geothermal field. The thermal fluid is passed through a heat exchanger, and the heat from the fluid is transferred to a secondary fluid - hydrocarbon. The secondary fluid is vaporized to generate electricity via the turbine and the generator. After having passed the heat exchanger, the geothermal fluid drops to 78°C and is re-injected back to the reservoir via a re-injection well. The production cycle is closed due to complete re-injection of the geothermal brine; thus avoiding any adverse affects to the environment and the performance parameters of the geothermal reservoir.

The inhibitor and the dosing pump installed at the well prevent the fluid from causing corrosion and silica sediment deposits.

The project covers an area of 25'000 m^2 including two sites. The electricity is being fed to the national grid through a 3.5 kilometer long underground cable, which has been constructed by the project owner.

A farm with greenhouses heated by waste heat from the geothermal plant is planned.

Project achievements

Socio-economic impact:

- By replacing fossil power from the grid, air pollution and associated diseases are being reduced.
- The project generated extra employment in the region during both construction phase (100 additional employees) and operation (25 permanent jobs).
- The project owner financed the road pavement in the village to reduce the villagers' exposure to sand and dust.
- The project owner supported the introduction of a waste collection system ("çöp" written oin the bin stands for waste) in the village.
- The local school received fundings to support sustainable development of this rural region.

Socio-economic impact:

- The planned greenhouse farm will benefit the local economy without generating extra emission for the heating needed.

Checklist Project 300 272

✓ Additionality and permanence:	according to the rules of the VCS
✓ 3rd party verified::	by Germanischer Lloyd Certification
✓ Transparency:	provided by the Markit Environmental Registry
✓ Annual CO_2-reduction:	32,000 tCO_2e
✓ Social and environmental benefits:	as documented in our database
✓ Marketing material:	high resolution pictures available

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