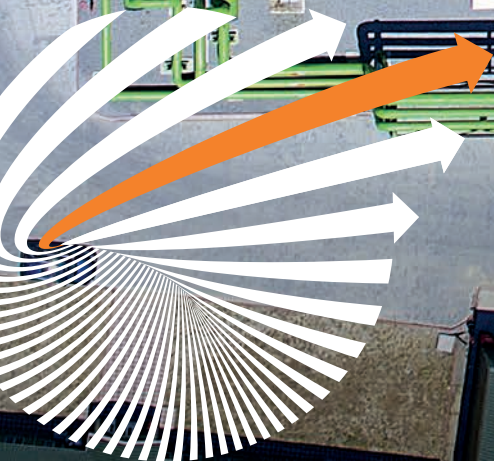


01
GEOTHERMAL

02
HEAT RECOVERY

03
BIOMASS

04
CSP



SARAYKÖY I, II
SARAYKÖY, TURKEY

01 CLIENT BRIEF

Greeneco Enerji, active since 2011 to meet Turkey's energy needs by harnessing local renewable resources, sought the best solution to exploit their geothermal resource located in Sarayköy – Denizli area. GreenEco is a subsidiary of Saray Holding, one of the Turkish leaders within the confectionary business, well known for their delicious products.

02 THE SOLUTION

EXERGY proposed a unique solution for two 12 MWe units granting high performance and increased profitability. Each plant has a tailored design consisting of a water cooled 2 pressure level cycle with 2 radial outflow turbines (high pressure and low pressure) coupled to a single double-ended generator. EXERGY preferred a condensing system utilizing water, considering the abundant local supply, as a cooling agent. This allowed the client to exploit another natural resource, ensuring a more constant power production during the year, especially considering the local climate conditions in summer time. Moreover, the units are among the first equipped with Made in Turkey turbines, assuring a higher feed in tariff and hence a higher profitability of the plant.

03 THE RESULT

EXERGY's solution provides a reliable source of baseload power sufficient for approximately 7300 households per year and saving about 16,000 tons of oil equivalent per year. The two units generate 24 MWe gross with over 99% availability. In addition in October 2016 the client ordered a third air cooled unit, which has entered successful operation in October 2017.

CLIENT NAME

GREENECO ENERJI (SARAY HOLDING)

PLANT NAME

SARAYKÖY I, II

PLANT LOCATION

SARAYKÖY, TURKEY

DATE OF IMPLEMENTATION

2015 (PHASE I) 2016 (PHASE II)

PLANT SIZE (PER UNIT)

12 MWe

APPLICATION

GEOHERMAL

MODEL USED

GEX 1200

FLOW OF GEOTHERMAL STEAM/BRINE (PER UNIT)

20 t/h – 1350 t/h

PRESSURE OF GEOTHERMAL STEAM/BRINE

5 - 10 BAR

TEMPERATURE OF GEOTHERMAL STEAM/BRINE

135°C

TYPE OF FLUID

ISOPENTANE

ELECTRICAL GENERATION GROSS (PER UNIT)

11,950 kWe

EFFICIENCY GROSS

11,0%

CONDENSING SYSTEM

COOLING WATER 20°C

GENERATOR VOLTAGE

11 kV

INSTALLATION

OUTDOOR