



AKÇA ENERJİ  
DENİZLİ, TURKEY



## 01 CLIENT BRIEF

The client is part of the Akça Holding, Turkish diversified business extending from textile industry to agribusiness. In this case the client was looking for the best solution to utilize the untapped potential of an existing geothermal source, due to low temperature of the primary fluid(105°C/220°F)

## 02 THE SOLUTION

EXERGY's solution was the world first installation equipped with 2 pressure level cycle on a single disk turbine.

The turbine fed by high and low pressure organic fluid steam, drives a generator to produce electrical power.

## 03 THE RESULT

The plant produces electricity saving 5,250 tons of oil equivalent per year.

The Akça plant is the world's first low enthalpy geothermal plant utilizing a 2 pressure level cycle on a single disk turbine.

The plant has been awarded the EGEC European Innovation Geothermal Award as the best innovation in the geothermal sector in 2016.

<b>CLIENT NAME</b>	AKÇA ENERJI
<b>PLANT NAME</b>	TOSUNLAR 1
<b>PLANT LOCATION</b>	SARAYKÖY (DENIZLI), TURKEY
<b>DATE OF IMPLEMENTATION</b>	MAY 2015
<b>PLANT SIZE</b>	4 MWe
<b>APPLICATION</b>	GEOHERMAL
<b>MODEL USED</b>	GEX 350
<b>FLOW OF GEOTHERMAL STEAM/BRINE</b>	8.8 t/h / 691 t/h
<b>PRESSURE OF GEOTHERMAL STEAM/BRINE</b>	3.5 BAR
<b>TEMPERATURE OF GEOTHERMAL STEAM/BRINE</b>	105°C
<b>TYPE OF FLUID</b>	STEAM/BRINE
<b>ELECTRICAL GENERATION GROSS</b>	3,878 kW <sub>e</sub>
<b>EFFICIENCY GROSS</b>	10.9 %
<b>CONDENSING SYSTEM</b>	COOLING WATER FROM COOLING TOWERS OR RIVER WATER (18°C)
<b>GENERATOR VOLTAGE</b>	6 kV
<b>INSTALLATION</b>	OUTDOOR