

SVARTSENGI: GEOTHERMAL POWER PLANT

- ✔ 150 hectares
- ✔ Nameplate electrical generation capacity 74.4 MW
- ✔ Nameplate thermal (hot water) production 150 MWth
- ✔ 13 production wells in the field, 5 dry steam wells
- ✔ Feedstock to a variety of integrated and cascaded geothermal uses
- ✔ Further integrated and cascaded uses such as renewable methanol production
- ✔ Existing reservoir monitoring program de-risks Eldvörp sub-field development

Alterra Power's subsidiary, HS Orka operates the Svartsengi geothermal power plant, a combined heat and electricity plant is located in the Svartsengi geothermal field, approximately 20 km SE of Keflavik airport and 45 km from Reykjavík. The property comprises 150 hectares of land owned both privately and by the Grindavik municipality. The municipal land is currently under a 65 year lease that began in 2009. The power plant is next to the famous tourist attraction, Blue Lagoon, created by the brine from the power plant.

The Svartsengi power plant is accessible by paved roads and all production and injection wells are accessed by all-season gravel and dirt roads. The power plant is connected to the Icelandic electrical transmission grid with a 132 kV transmission line.

The first electrical power plant in Svartsengi was built in 1976-1978. It was the world's first geothermal power plant utilizing high-temperature geothermal systems to produce electricity and hot water. Since 1976, the power plant has been upgraded in several stages. The current capacity of the plant is 150 MWth for district heating and electrical power capacity is 74.4 MW. The power plant has 10 turbine-generator units.

The Svartsengi geothermal reservoir is well understood and has been monitored and modeled for response to production since the beginning of production in 1977. Below 600 m the reservoir temperature is uniform around 235°- 240°C, and the geothermal fluid is brine with approximately 2/3 seawater and 1/3 freshwater. Since the production began, the geothermal system has changed from being completely liquid-dominated to liquid dominated with a steam cap. Today, 13 production wells are connected to the power plant, consisting of 5 shallow steam wells and 8 wells with a mixture of steam and brine.

