

Cooling Geothermal Brine for District Heating



- A district heating company in Iceland was looking for possibilities to recover heat from severely fouling geothermal brines.
- Conventional heat exchangers were out of the question because of severe fouling from Silica.
- A mixture of brine and vapor recovered from the borehole is separated. The brine is used to heat well-water (which is further utilized for district heating purposes) and the vapor is utilized in the turbine to produce electric power.

Process Conditions	Tubes Side		Shell Side	
	Medium	Geothermal Brine		Well water
Pressure	5 barg		11.4 barg	
Temperature (°C)	In	Out	In	Out
	175	45	4	46
Flow (m ³ /h)	46 m ³ /h		175 m ³ /h	

Pilot Test

- Test in new pilot cogeneration plant using self-cleaning heat exchangers
- Two self-cleaning heat exchangers in series to cool brine from 150°C to 30°C
- Several years of successful operation

Commercial Unit

- After successful test two self-cleaning heat exchangers were installed in series to cool brine from 175°C to 30°C
- Successful operation with constant heat transfer