

Training Course on Geothermal Electricity

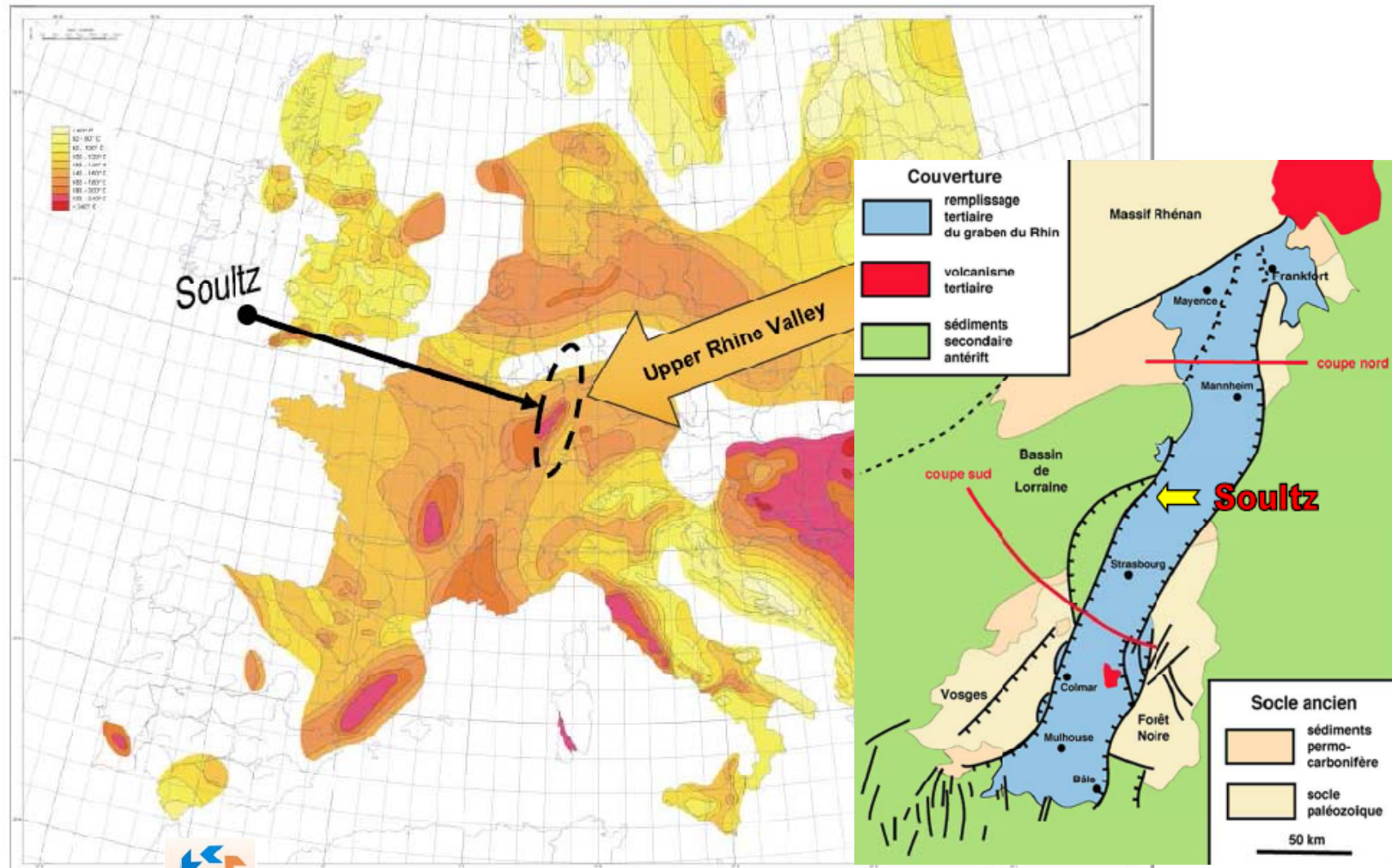
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Soultz EGS power plant

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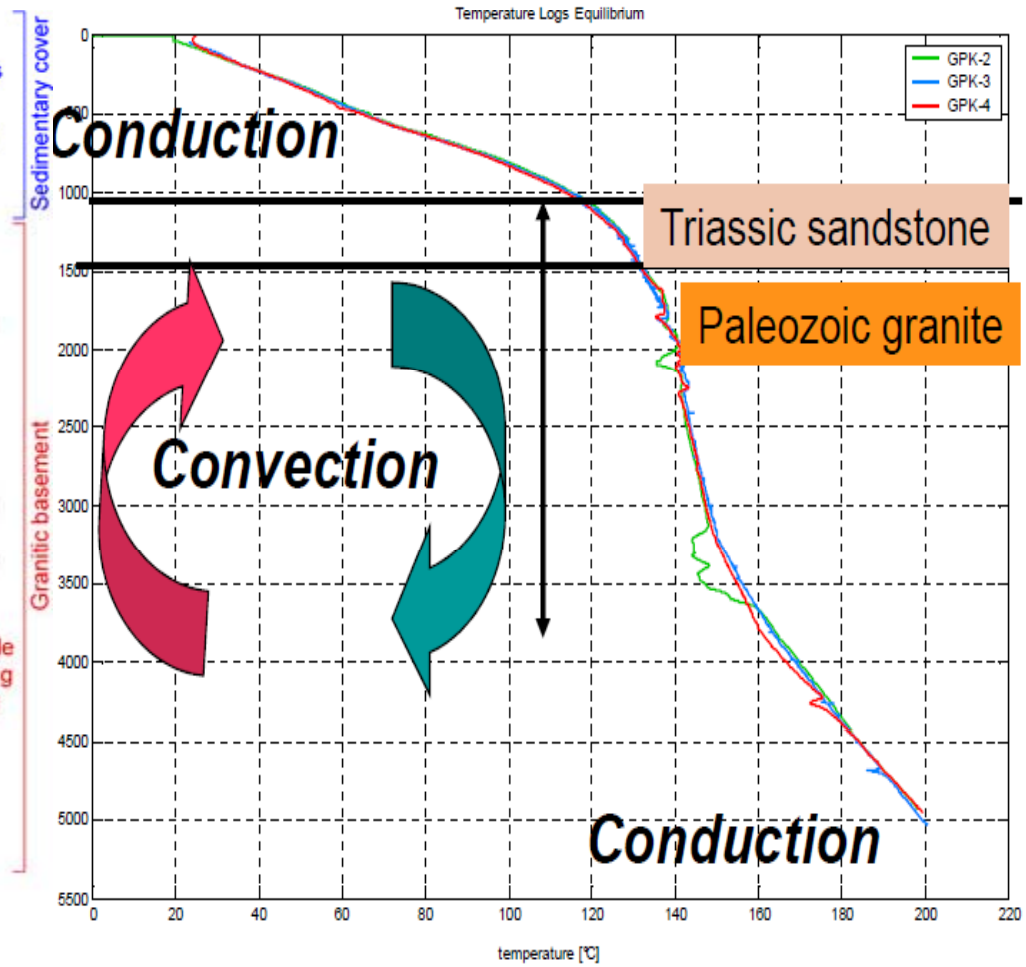
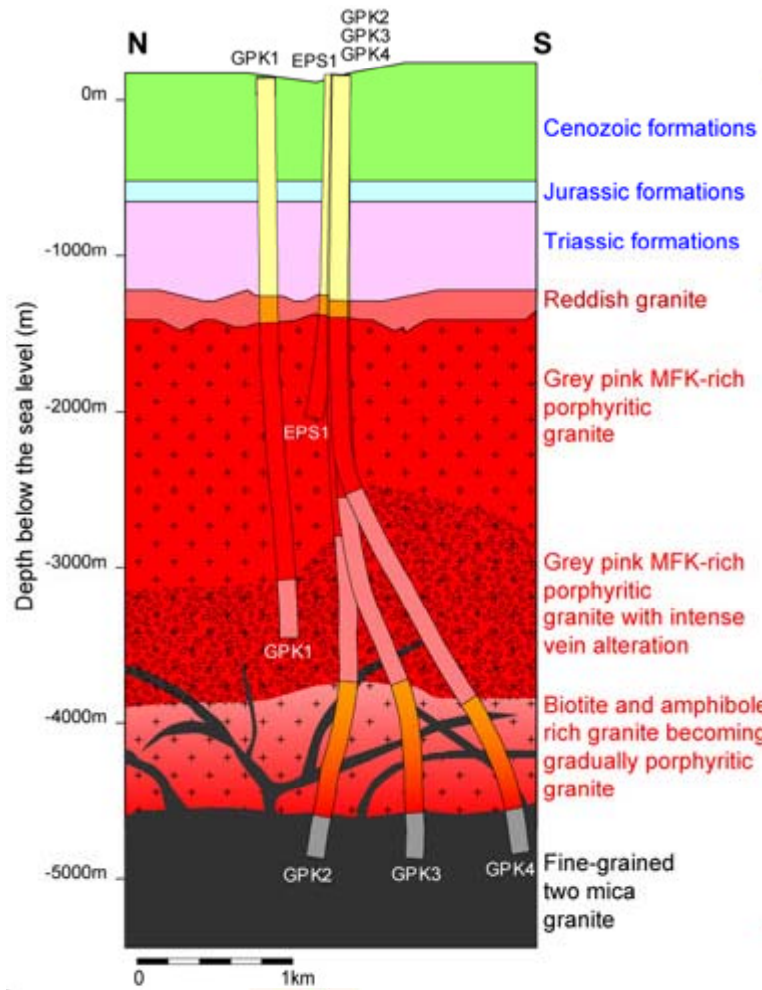
Favorable geothermal location



► Source:



Geology & geothermal gradient



► Source:  Géothermie Soultz

Fluid production characteristics

	GPK2	GPK2 + GPK4
Flow rate	23 kg/s	35 kg/s
Well head temperature	158 °C	152 °C
Reinjection temperature	70 °C	70 °C
Thermal energy	8 MW(th)	12 MW(th)
Production pressure	20 bar	
Reinjection pressure	1,5 – 5 bar (GPK1); 14 – 29 bar (GPK3)	
Salinity	100 g/lit with Calcite deposits	



Power plant view



▶ Source:  Géothermie Soutz

Power plant features

Heat to electricity conversion efficiency	6 – 10 %
Nominal power, gross	2,1 MW(e)
Nominal power, net	1,5 MW(e)
Power sold to the grid	400 – 600 kW(e)
Downhole pump power consumption	35 – 150 kW(e)
Condenser fans power consumption	270 kW(e)
Downtime per year for maintenance	2 – 6 months
Make up fluid needs	zero



Plant commencement

- ▶ Inauguration on 13 June 2008
- ▶ by French Prime Minister, Francois Fillon



Economic aspects

- ▶ Total plant costs excluding research: 54 million €
- ▶ Electricity sales price: 20 c€ per kWh
- ▶ Guaranteed for 20 years with contract, starting in January 2011
- ▶ One customer absorbing all electricity generation: Electricité de Strasbourg



thank you for your attention

