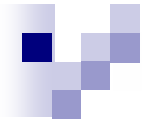




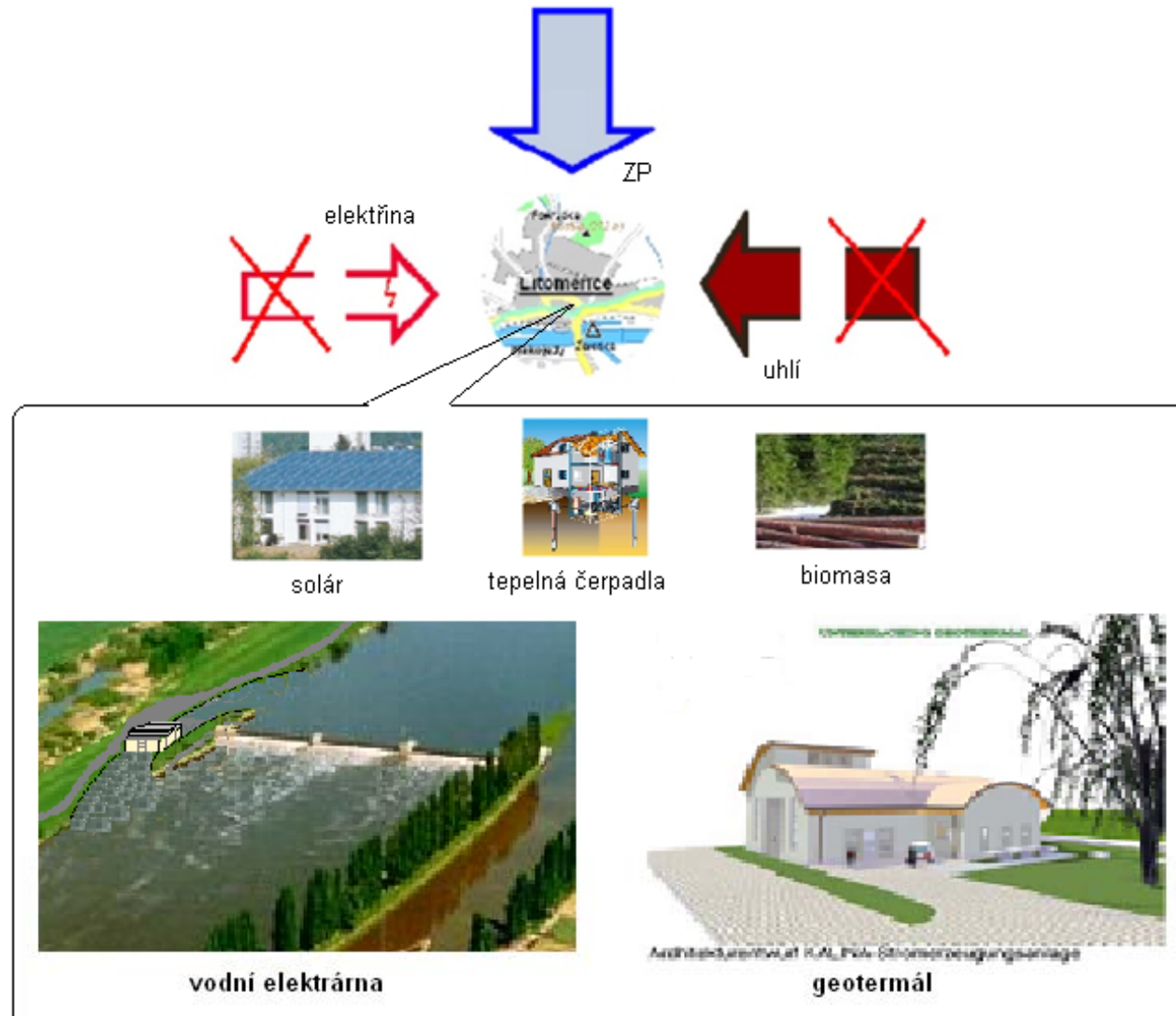
City of Litoměřice Geothermal Project

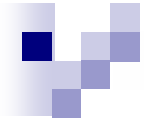


September 2009



Vision of the City = clean air and energy independence!





Our Inspiration - Altheim in Austria

18,8 MW heat output, 0,5 MW electric output



Shallow well – use of heating pumps



Buildings owned by municipality

swimming pool, city hall

Buildings owned by private firms

HENNLICH INDUSTRIETECHNIK, I.I.c

JURIS LTM I.I.c, etc.

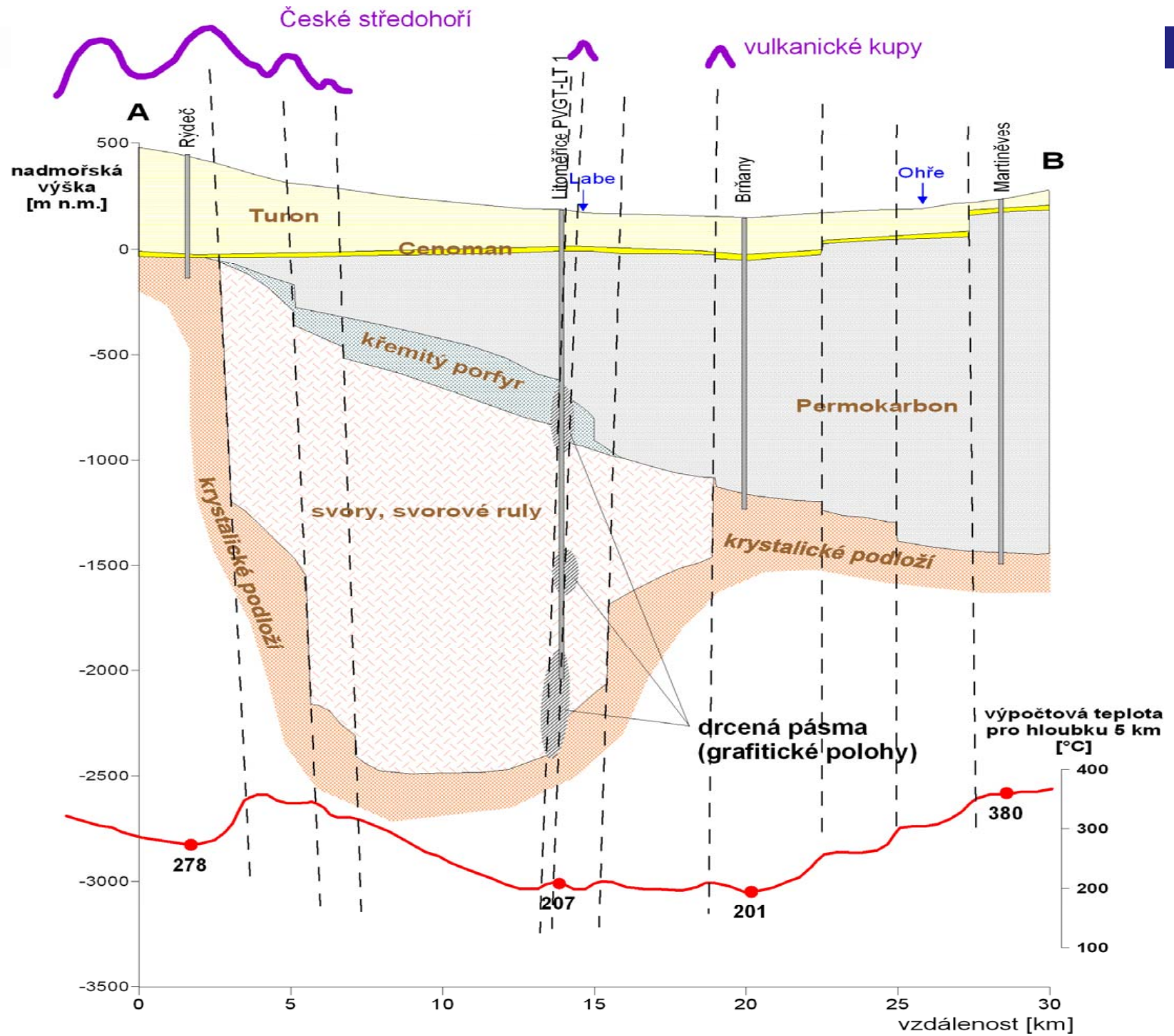
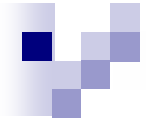
Family houses





Lineamental Areas of Litoměřice region

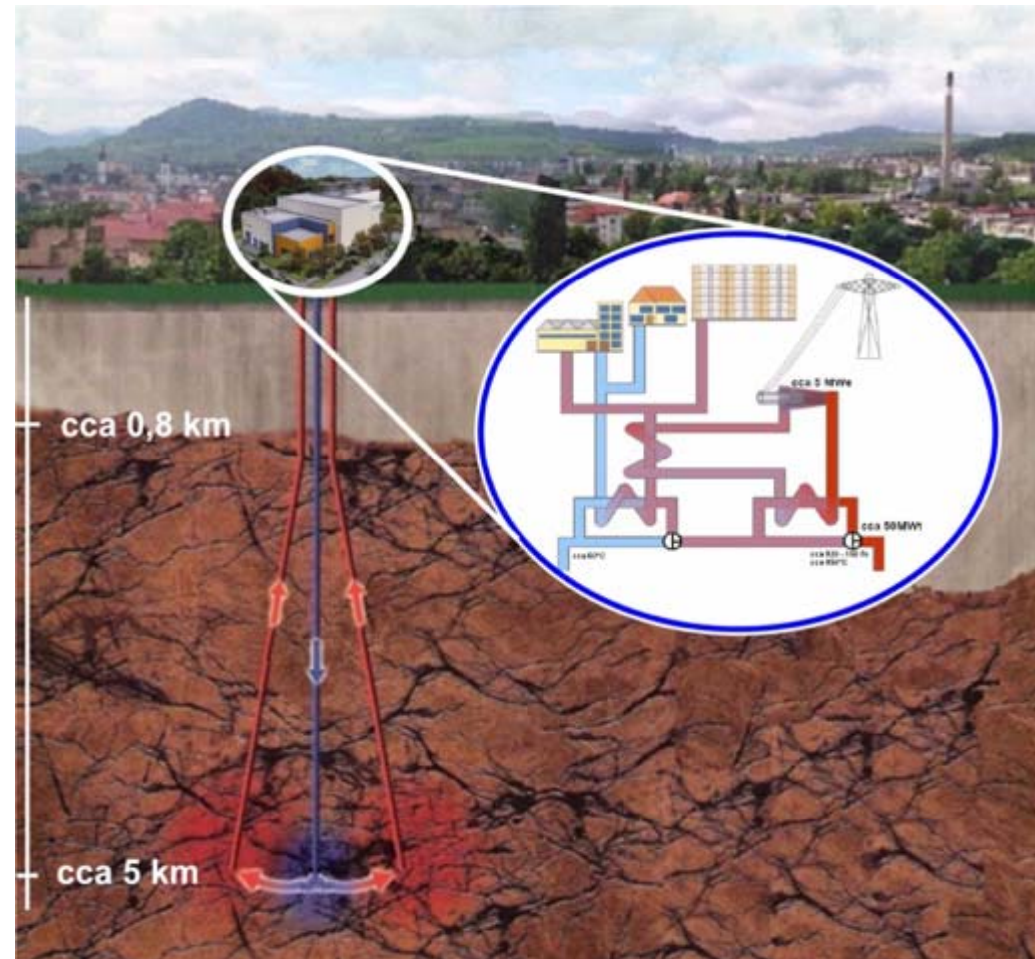


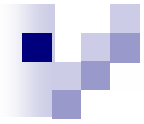


Goal: Geothermal Project Litoměřice

1 injection well and 2 production wells in depth of 5 km

- estimated to gain medium of rate flow of 120 lps and temperatur of 178°C (heat output of 50 MW)
- use of the medium for heat and electricity production
- 4,4 MW power plant
- estimated production per year: 18,4 GWh
- water of 80°C at the output of the exchanger





Geothermal project – wildcat well



Wildcat well – results



The realisation of the exploration works on the well has clarified the geological profile and has brought data about temperature parameters in the depth of 2 111,2 m. In this regard the wildcat well has fulfilled the given purpose and goal.



Complications with drilling

(tectonic erosion, landslides, creeping, clamping of the well)

In the course of drilling of the wildcat well (after successful completion of lacing and cementation) a few complicated geological segments have occurred in the non-laced part of the well that have influenced the process of drilling negatively.

- **I. stage (852,5 - 1282 m) with a strong natural contortion - tectonic eroded rocks. This stage was eroded by a system of tectonic breaks aslope at an angle of 45°. The break was proved by a quick drilling progress (1 m per 8 min.)**
- **II. stage (1790 - 2024 m) accompanied by eroded, cohesionless rocks with creeping character (heaving shale)**



Geothermal heat plant with co-generation of power

Year energy production: 18,4 GWh
Electrical power: 4,4 MW

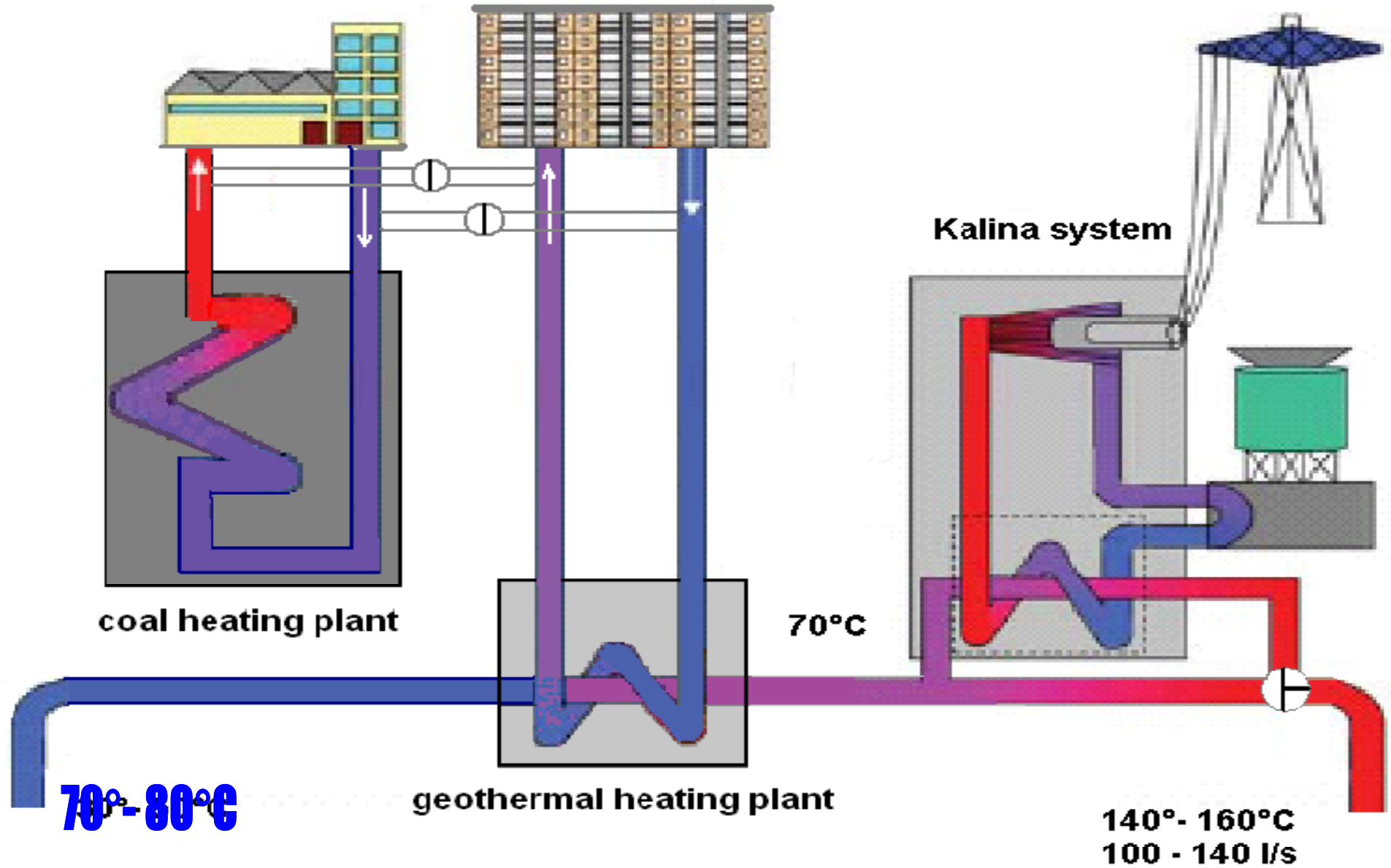
A wish by 2012





district heating

generating of electricity





Thank you for your attention.

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