

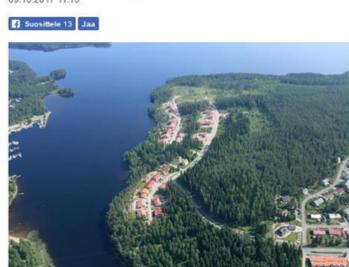
Geoenergy use in a new residential area in Äänekoski city

In this pilot, regional geoenergy potential was studied for a new residential area in Äänekoski City, Ääneniemi.

As a part of the study, geophysical characteristics of the area were studied. Also, energy well (200m) was drilled in Jaakopintie, Ääneniemi. These together gave information on the geothermal energy potential of the area.

As a result, the study showed with concrete examples, the potential of the geoenergy utilization in the area, on different house types and the amount of heat energy required for heating.

Ääneniemessä saattaa koti lämmitä tulevaisuudessa oman pihan energialla
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Äänekosken Ääneniemessä on mahdollista hyödyntää kallioiperän geoenergiaa alueen asuntojen lämmitykseen. Tulos saatiin Keski-Suomen liiton ja "Baltic Energy Areas - A Planning Perspective" -hankkeen tilaamissa koeporauksissa.



Figure 1. Pilot case raised local attention.

Main results

Based on the results geoenergy can be recommended as a warming system for households in this area.

Results indicate good potential for geoenergy (geothermic gradient 1,2°C/100m), e.g. average rowhouse or apartment building (95MWh) requires 3-4 boreholes (typical depth 100-300m), average single house (150-250 m) 1 borehole.

Investment costs are high, payback time is app. 6-7 years.

In this project a map of the geoenergy potential of the area was done (Figure 2.).

Geoenergy pilot study provided information on geoenergy implementation for municipality level land use planning.

Main aspects and lessons learned

Central Finland's bedrock has good qualities for larger scale geoenergy utilization (Regional geoenergy potential study 2011). Larger scale geoenergy is very new in Finland.

Geoenergy is a prominent RE source for heating and cooling purposes. Geoenergy potential has been identified on regional land use plan.

Municipality is a key player in implementation. It will provide the framework via land use planning, e.g. by giving recommendations for energy type.

These kind of pilot studies can act as driving force for municipality level planning and thus implementation.

Land use planners have now an example on geoenergy potential in detailed planning, and on implementation.

Residents are important in implementation. In new areas this is problematic, since no residents exists during the planning phase.

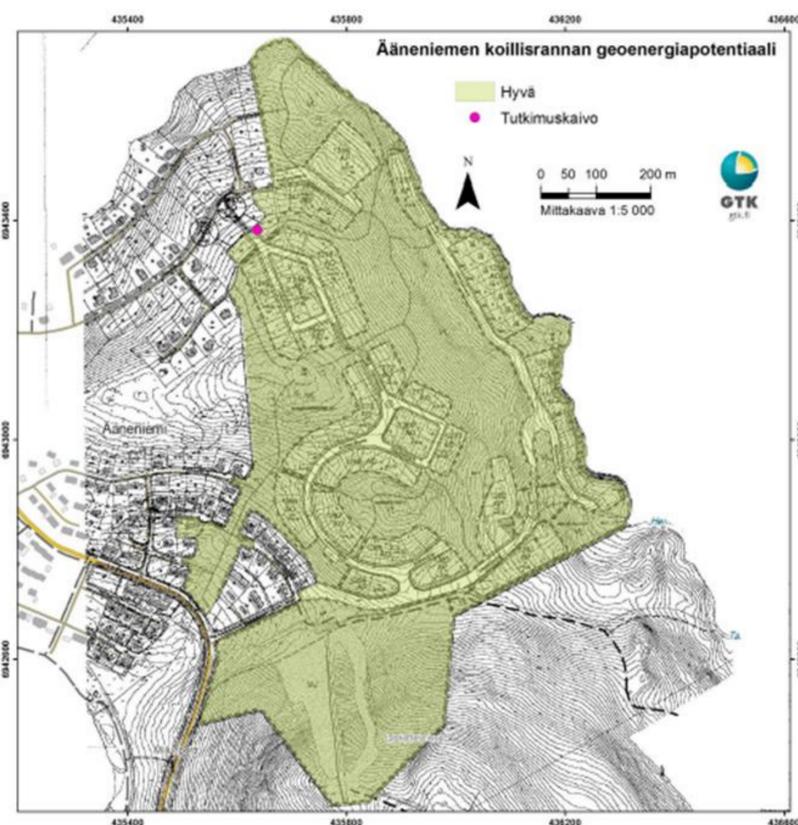


Figure 2. Map of the geoenergy potential of Ääneniemi area.

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