

# Shallow Geothermal Potential of the Sant'Eufemia Plain (South Italy) for Heating and Cooling Systems: An Effective Renewable Solution in a Climate-Changing Society

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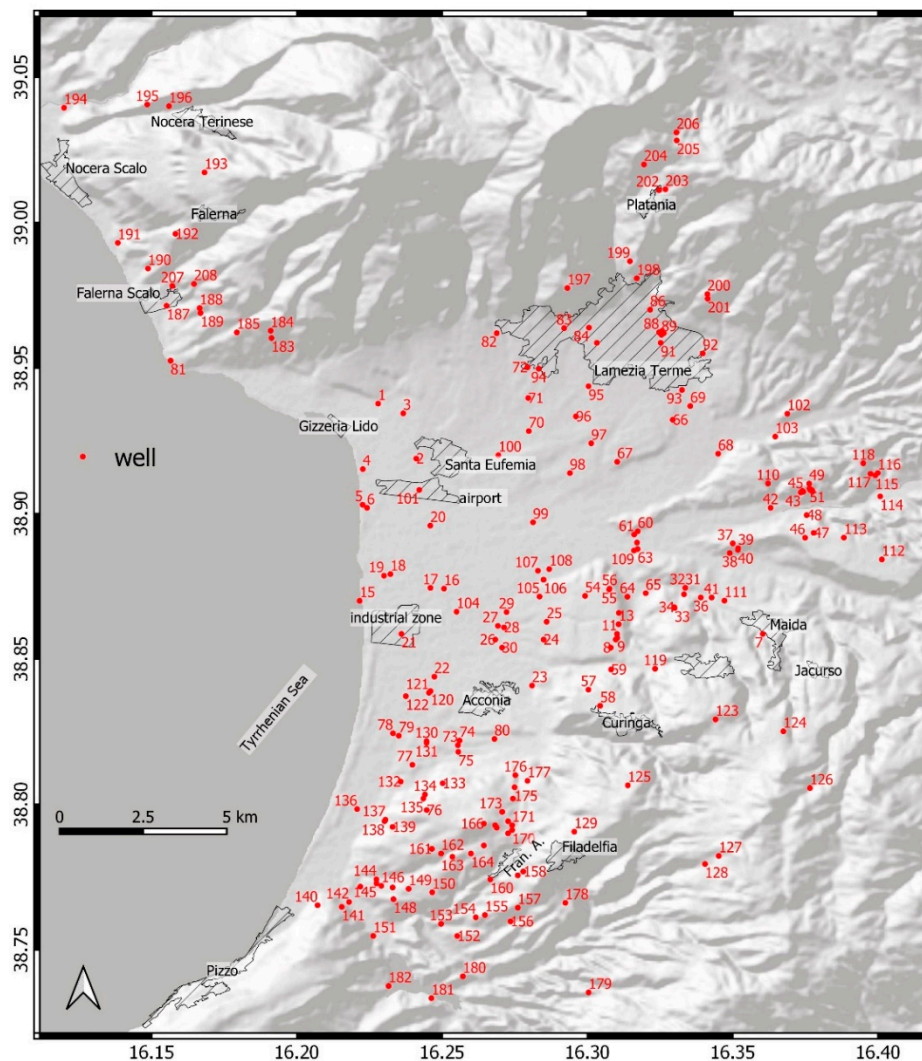
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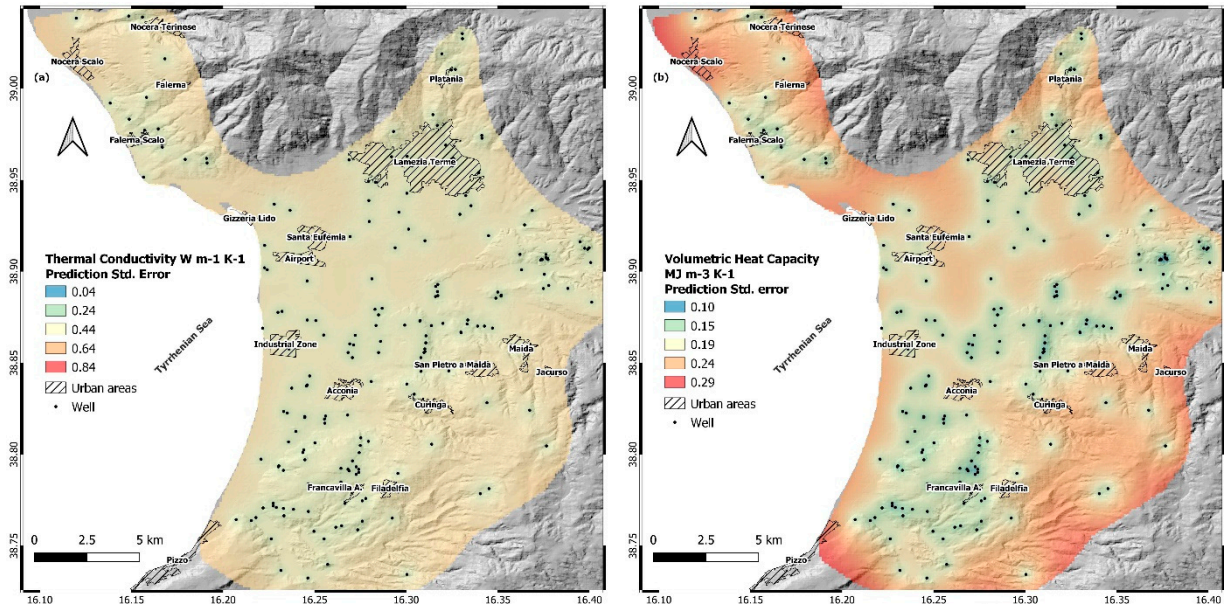
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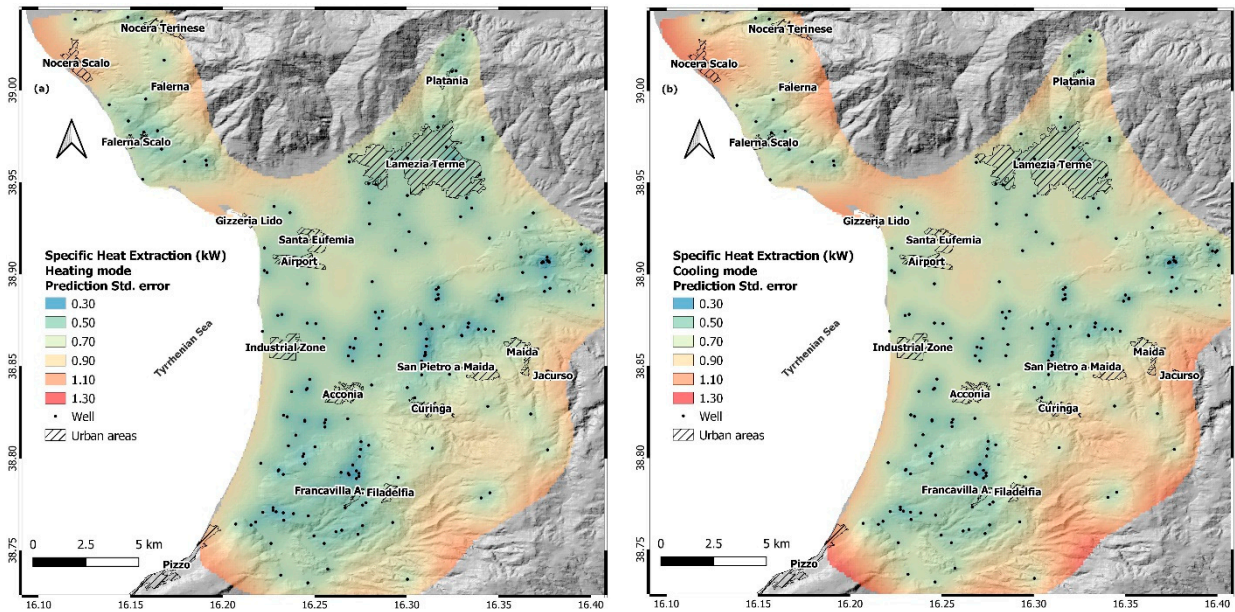
## Supplementary Material



**Figure S1.** Location and ID of each borehole (more details in [Table S2](#)) used to reconstruct the geothermal potential in the Sant'Eufemia Plain.

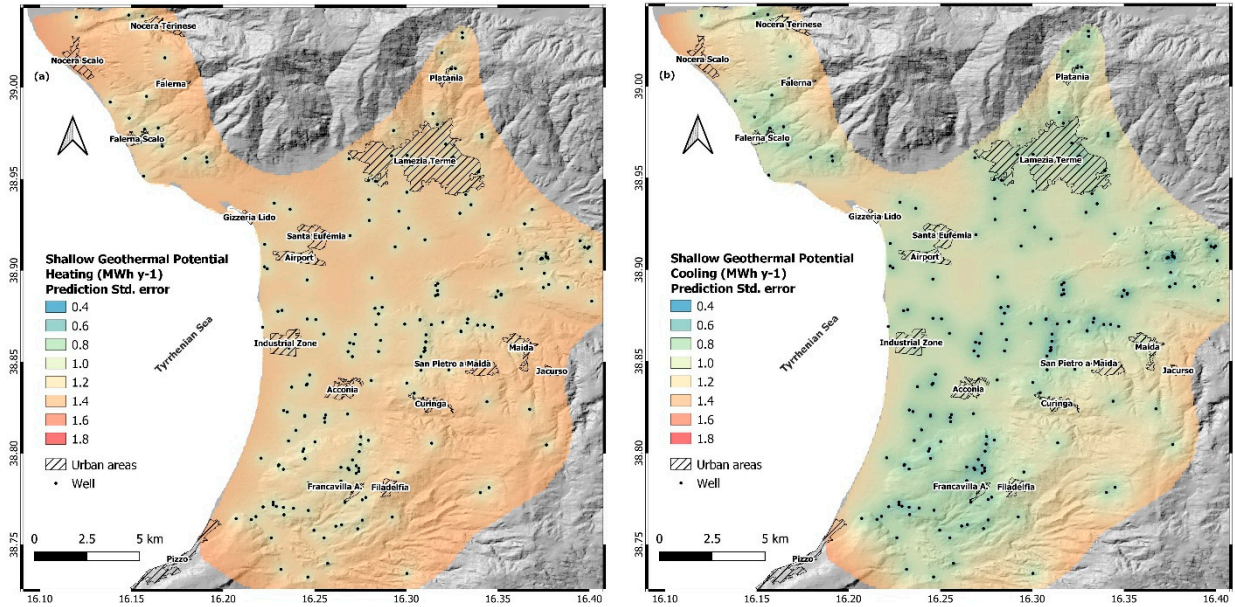


**Figure S2.** (a,b) Maps of the *Prediction Standard Error* of the estimated *thermal conductivity* ( $\lambda$ ) and *volumetric heat capacity* ( $\rho_c$ ) of the ground averaged over 100 m of depth from the surface in the Sant'Eufemia Plain.

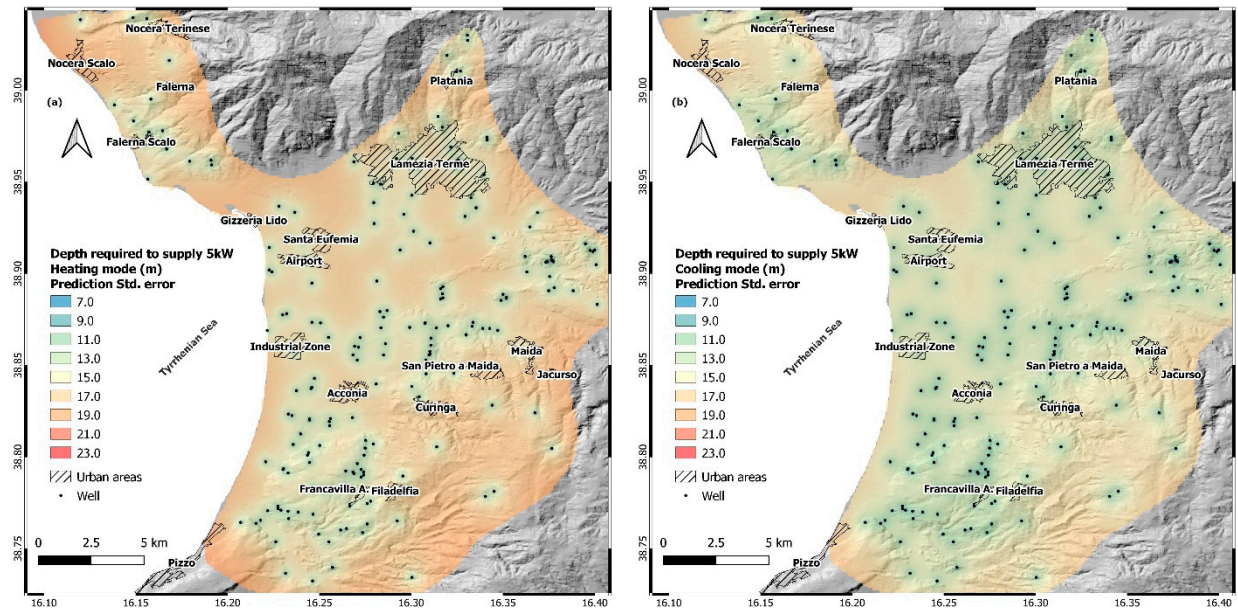


**Figure S3.** Maps of the *Prediction Standard Error* of the estimated *specific heat extraction* (SHE) for (a) *heating* and (b) *cooling* for 100 m depth boreholes in the Sant'Eufemia Plain.

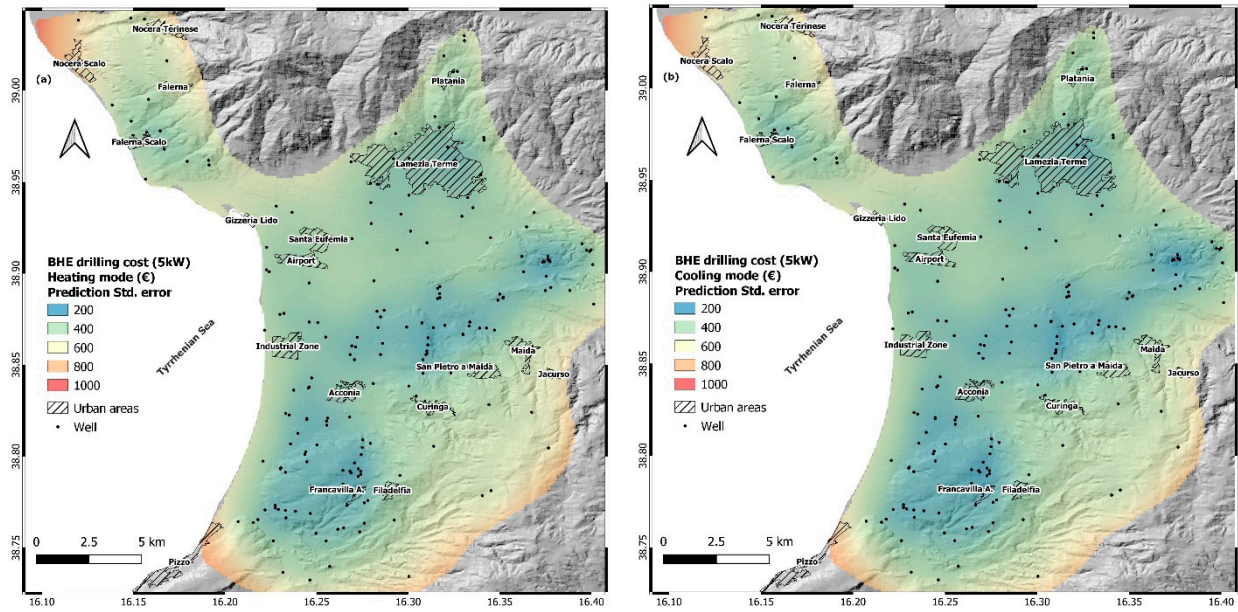




**Figure S4.** Maps of the *Prediction Standard Error* of the estimated Shallow geothermal potential for space (a) heating and (b) cooling in Sant'Eufemia Plain with 100-meter BHE length.



**Figure S5.** Maps of the *Prediction Standard Error* of the estimated depth to be drilled for supply a fixed domestic energy demand of 5.0 kW for space (a) heating and (b) cooling in Sant'Eufemia Plain.



**Figure S6.** Drilling cost *Prediction Standard Error* maps for space (a) heating and (b) cooling. Costs are calculated on the basis of the BHE length required.