



Key Messages - Socio-economic Analysis of Well Reuse (TRANS GEO Deliverable 1.2.2. Agricultural use)

A. Target Groups



The main agricultural users of heat from repurposed wells are:

1. Greenhouses (year-round heating, baseload supply)
2. Drying applications (wood, fruit, herbs, seeds)
3. Aquaculture and aquaponics (stable temperatures between 19-30 °C)

B. Energy Potential



Applicable well-reuse technologies include:

1. Closed-loop systems; DBHE/BTES → suitable for small-scale, local agricultural systems
2. Open-loop systems; ATEs/HE/EGS → suitable for larger greenhouses or clustered agricultural facilities

C. Economic Findings



1. significantly lower investment than drilling new geothermal wells.
2. Typical reuse investments range for DBHE/BTES/ATES, 0.23-0.63 million €
3. Typical reuse investments range for HE/EGS, 0.59-1.72 million €
4. Drilling a new geothermal well typically costs EUR 2.25-8.34 million €

D. Socio-economic Benefits



1. Increased local energy independence
2. Reduced heating costs in agriculture
3. Lower CO₂ emissions and fossil fuel replacement
4. Reuse of existing infrastructure with limited environmental footprint
5. Job creation and increased competitiveness of rural areas

E. Key Challenges



1. Well integrity and availability of historical data
2. Legal, ownership and permitting procedures
3. Fluid chemistry, scaling, and reinjection issues
4. Public perception and regulatory complexity (especially for EGS)

F. Drivers for Implementation



1. Clear and targeted communication with agricultural communities
2. Public access to data on abandoned wells
3. Transparent legal frameworks for well ownership transfer and reuse
4. Possibility to test wells before final investment decisions
5. National and EU-level financial incentives



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