

Overview of international projects in petroleum well redeployment for geoheat development

Table 1: Asia-Pacific region-based projects.

Location / Country	Project / Organisation	Tech / Focus	Status / Notes – incl. links
China – Shengli Oilfield, Shandong	Sinopec / Shengli Oilfield Company	Utilizing heat from idle wells and produced fluids at one of China’s major oilfields for local heating; converting “idle wells” to geothermal heat extraction and integrating with industrial heat networks.	Project has been completed and is operational, delivering millions of GJ of heat and reducing CO₂ emissions. This is one of the clearest practical examples of using former oilfield infrastructure for geothermal heat. (ThinkGeoEnergy)
Japan & Indonesia (Regional)	GreenFire Energy Inc. + Toyo Engineering Corporation	Advanced Geothermal Systems (AGS) — closed-loop geothermal technology that can be deployed to revitalize under-performing wells or retired hydrocarbon/geothermal wells. Focus countries: Japan & Indonesia .	A Memorandum of Understanding (MOU) has been signed to identify sites, conduct feasibility studies, and deploy retrofit projects, with China/Indonesia/Japan specifically mentioned. This target converting existing well infrastructure or underperforming fields to productive geothermal energy using patented tech. (Green Fire Energy)
Taiwan (Feasibility studies)	GreenFire via local partner Taiteck; CPC Corporation	Feasibility study using closed-loop GreenLoop AGS technology — design/testing of wells for geothermal retrofit.	Tender and feasibility contract awarded; project is in design/testing stage to assess potential geothermal conversion of wells. (ThinkGeoEnergy)
Asia Pacific region	University and industry research (China, Malaysia,	Enhanced Geo Systems (EGS/AGS) and well reuse research — examining repurposing oil/gas wells for	Emerging research trend in academic literature on feasibility and technology potential. (Tobias Massier)

(research & trend)	India, Japan noted in academic reviews)	geothermal heat extraction in countries with legacy hydrocarbon assets.	
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Table 2: Well Of Opportunity (WOO) affiliated projects (USA DOE)

Location / Country	Project / Organisation	Tech / Focus	Status / Notes – incl. links
Geothermix, LLC	Texas	Thermoelectric power generation from oilfield fluids — using heat that would otherwise be wasted.	Built and tested novel thermoelectric cells that convert low-grade heat from oil-produced fluids into electricity. (The Department of Energy's Energy.gov)
ICE Thermal Harvesting	California (San Joaquin Valley)	Electrical power from produced fluids using an integrated heat-to-power system across ~11 wells.	Characterised wells and is engineering/commissioning heat-to-power systems — evaluating scaling across basins. (The Department of Energy's Energy.gov)
Gradient Geothermal	Blackburn Oil Field, Nevada (working via Colorado partner)	Geothermal co-production at an oilfield using existing wells; involving ORC/heat engines.	Completed Phase 1 feasibility: secured Bureau of Land Management approvals for geothermal conversion and planning EV charging infrastructure on site. (The Department of Energy's Energy.gov)
United States – Oklahoma	<i>Wells2Watts consortium:</i> Baker Hughes, Continental Resources, INPEX, Chesapeake Energy, plus tech partners like GreenFire Energy	Closed-loop geothermal retrofit technologies tested in <i>existing dry/non-product oil or gas wells</i> . Initial closed-loop test facility constructed at Baker Hughes Energy Innovation Center for technology trials.	First-of-its-kind closed-loop geothermal test facility commissioned. Research & scale tests ongoing; pilot readiness being developed for field implementation. (Baker Hughes)

United States – Colorado (Gradient Geothermal)	Gradient Geothermal (startup)	Utilising existing abandoned oil wells where hot water dominates to provide heat to buildings or district systems.	Projects in Pierce, CO (and studies elsewhere) to heat/cool local buildings and demonstrate cost-effective reuse of infrastructure. (Planetizen)
United States – Oklahoma (university research)	University of Oklahoma Mewbourne School of Petroleum & Geological Engineering	Open-loop geothermal from abandoned wells (hot water circulation and heat extraction).	Grant-funded project evaluated viability of four abandoned wells: aiming to heat local schools (Tuttle, OK) using heat from repurposed wells. (GlobalSpec Insights)

Table 3: European Union- based projects

Location / Country	Project / Organisation	Tech / Focus	Status / Notes – incl. links
Central Europe – TRANSGEO Project (Austria, Germany, Hungary, Croatia, Slovenia)	TRANSGEO partnership (GFZ Potsdam + regional partners)	Study and develop repurposing workflows, well databases & feasibility assessments; pilots of borehole thermal energy storage or geothermal systems in existing hydrocarbon wells.	Built a well database, evaluated workflows, and conducted feasibility studies in multiple pilot areas; socio-economic & policy reports delivered. (Keep.eu)
United Kingdom (UK)	CeraPhi Energy	CeraPhiWell™ — single-well closed-loop geothermal systems in old hydrocarbon wells.	Demonstrator testing in North Yorkshire; feasibility projects for repurposing wells and early commercial installations (e.g., geothermal heat for Scunthorpe Hospital). (Wikipedia)

UK (General exploration)	Various research & industry groups	Open loop or thermal reservoir usage of hydrocarbon wells (research).	GIS-based well potential mapping and technical evaluation of repurposing sites. (MDPI)
Hungary (pilot reuse and research)	National research teams and local partners	Closed-loop systems using abandoned oil wells (WeHEAT type).	Pilot geothermal systems generate ~0.5 MWth heat in a repurposed oil well (e.g., Kiskunhalas). Hungarians estimate many existing wells could be reused. (IRENA)
Croatia (TRANSGEO pilot)	Regional energy agencies & university partners	Assessment of existing wells with a view to geothermal energy provision (heat) in rural areas.	Feasibility and pilot studies underway at Mihovljan oil field; assessments of heat potential up to ~2 MW thermal. (Interreg Central Europe)
Austria (TRANSGEO)	Regional partners & energy companies	Evaluating repurposing hydrocarbon wells for geothermal heat in the Vienna Basin.	Pilot evaluation and planning alongside Austrian geological surveys. (Interreg Central Europe)
Slovenia (TRANSGEO)	University & local energy agencies	Pilot support and feasibility assessment of hydrocarbon well reuse.	Projects in preparation stage; delivering data and tech pathways. (Interreg Central Europe)