



HETR

Hybrid Energy Thermal Remediation

HETR Models: FDG-HETR-150X & FDG-HETR-250X

The Group's Patented Hybrid Energy Thermal Remediation (HETR™) system provides a simple, cost effective, renewable energy oriented & sustainable option to tradition thermal conduction heating (TCH) technologies. The HETR™ transforms and applies multiform energy to an individual, or multiple connected, points, well(s), or installations, by means of convective, conductive, and radiative heat transfer to an outer casing, which in turn thermally conducts heat to contaminated

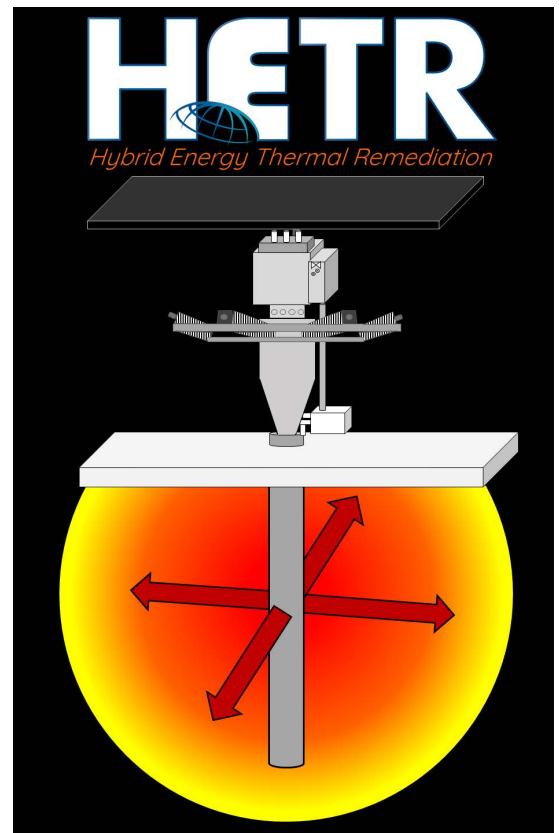
media in contact with the device, including soils, groundwater, and non-aqueous phase liquids. The HETR technology is well suited to thermal remediation applications targeting temperatures anywhere from 35 °C all the way up to 400 degrees °C.

Technical Overview

The HETR technology can reliably target stable and homogenous temperatures of ~500°C (+) at the heater well-formation interface, fluxing ~400 to 550-Watts per linear foot of well as heat energy to the subsurface formation. This output rivals or exceeds the sustainable output of any other commercially available thermal conduction heating technology, allowing the technology to comfortably target subsurface temperatures between 100°C and 400°C at a wellfield spacing between 8-ft (for higher temp applications) to 17 feet on center.

Each HETR well produces 100-500 Watts of renewable energy 24/7 during operation, depending on configuration and project requirements, using thermoelectric energy harvesting, which can be further combined with auxiliary sources of renewable energy generation, such as PV solar panels, to offset energy consumption even further.

In various configurations, the HETR™ system can be designed to utilize variable energy reliance from different energy sources, be it fuel combustion, or electric based heating, and both energy systems can be configured and utilized in a grid-connected modality, partial grid connected modality, or entirely isolated from grid. Furthermore, this device allows differential heat application both longitudinally within the well and laterally across a wellfield, affording greater control of heat distribution than many traditional thermal technologies. The Groups unique



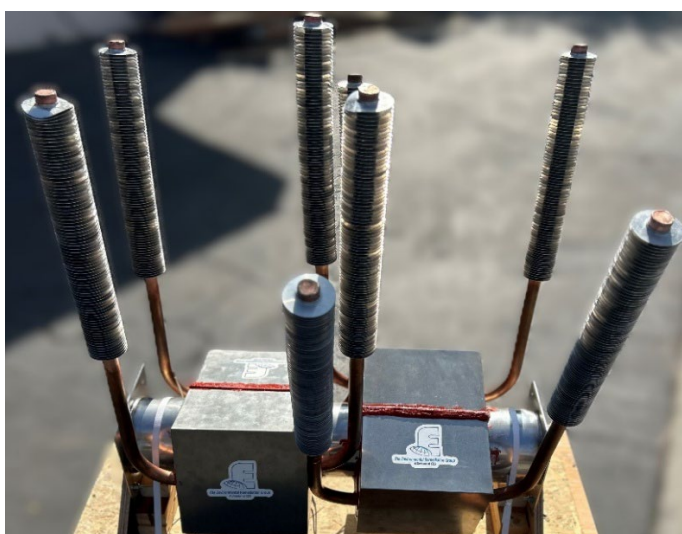
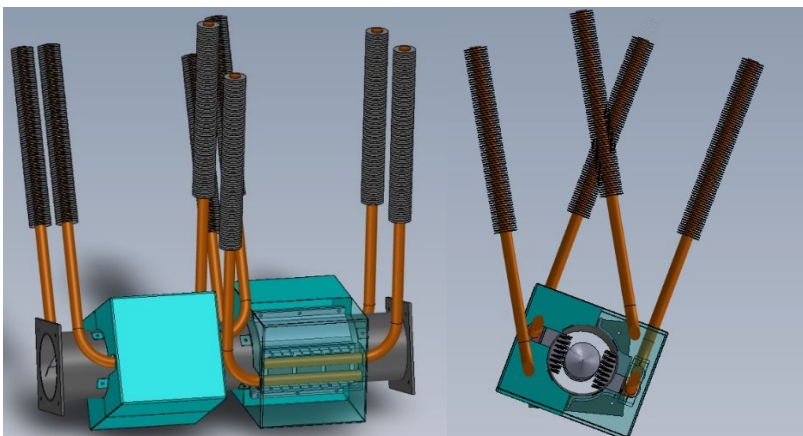


Hybrid Energy Thermal Remediation (HETR) Technology

FDG-HETR-150X & FDG-HETR-250X

Technical Specifications Sheet

design allows the HETR well to “boost” energy output at discrete intervals, while the top of heating can be displaced in applications where targeted impacts occur at deeper intervals. This allows a high degree of optimization to match the dynamic conditions engendered by thermal remediation projects, while optimizing efficiency and reducing unnecessary energy where possible.



ERG's Patented CADC-TEG System for Renewable Energy Generation
(Model Pictured above produces ~200-300 Watts per well, 24/7).

In all its variations, the HETR™ technology significantly reduces the carbon footprint of thermal remediation projects, increases the efficacy of energy consumption and utilization, minimizes reliance on traditional energy sources requiring heavy infrastructure and helps circumvent availability constraints impacting traditional ISTR technologies.

Hybrid Energy Thermal Remediation (HETR) - Performance and Specifications						
Model	Energy Output Range	Energy Flux (to formation)	Thermoelectric Renewable Energy Generation	Electrical Requirement	Max Operating Length	Max depth of displaced upper heating interval
	Kilowatts	Kilowatts	Watts	VAC	ft	ft
FDG-HETR-150X	8.8 to 44	4.5 to 23	100-500	None (offgrid) to 115V/1Ø AC	55.0	15
FDG-HETR-250X	8.8 to 74	4.5 to 36	100-500	None (offgrid) to 115V/1Ø AC	85.0	20