

ThermoRay™

A solar-powered system

“Harvest Heat. Power Life.”

Technology

This invention relates to a small-scale, ecologically friendly energy conversion system that generates electricity from ambient thermal energy. The system captures and stores heat from various natural and man-made sources, including sunlight, vehicle exhausts, power plants, industrial processes, and other waste heat streams, and converts it into usable electrical energy. Designed for household or small community use, the system provides a reliable electricity supply even in areas with limited or unstable grid access. It operates through a continuous conversion cycle, ensuring a steady generation of power from available thermal sources. By utilising readily available heat energy that would otherwise be wasted, the system contributes to energy efficiency, sustainability, and environmental conservation.

Market need

A significant portion of global energy is lost as waste heat from vehicles, factories, and power plants. At the same time, millions of households lack reliable or affordable access to electricity. This invention addresses both challenges by providing a sustainable, small-scale energy recovery solution that converts ambient thermal energy into electrical power. The system supports energy independence, reduced grid reliance, and climate-friendly electrification, making it highly relevant for rural communities, remote households, and low-income urban areas.



Features

- Thermal Capture Unit, which collects heat from various ambient and waste sources.
- Energy Storage Module that retains captured heat for continuous conversion.
- Electric Conversion System that converts stored heat into electricity efficiently.
- Easy to install and adapt for different household environments.
- Requires minimal maintenance and uses no fossil fuels.



Benefits

- Uses renewable and waste heat sources, reducing carbon emissions.
- Operates on a sustained cycle for consistent electricity output.
- Low installation and maintenance costs make it accessible to low-income households.
- Can harvest heat from sunlight, engines, and industrial systems.
- Provides clean energy to off-grid and underserved communities.



Industry

Energy

Potential applications

- Household and community electrification in off-grid or energy-scarce regions.
- Supplementary power generation for homes, small businesses, and rural facilities.
- Waste heat recovery from vehicles, factories, and power plants for renewable electricity production.
- Backup or hybrid energy systems integrating with solar, wind, or battery storage units.
- Sustainable energy solutions for eco-friendly housing, smart villages, and low-carbon infrastructure projects.

Creator

Prof Lukas Snyman

Stage of development

Prototype

Intellectual property

Patent Protection

Desired relationship

Co-development, Investors