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Remote Scaled Power Plants

PROVIDING - FUNDING – LOGISTICS – SUPPLY – OPERATION - TRAINING

Robust Modular “One to Ten Megawatt Power Plants” - Power 24/7

Power Generation and Power Storage Systems via Molten Salts

Humanitarian - Third World - Private Commercial Local Power

And “*the only solution to real commercial power storage*”





- NO FUEL BURN OF ANY KIND IS REQUIRED TO PRODUCE POWER - 24/7
- Cost of the power plant is a fraction of a equivalent diesel system!
- Scalable robust proven power plants. “1 to 10 megawatts plus”, that operate 24/7
- Using high rate solar troughs to heat molten salts to over 800C for power storage to operate the system during nights or in bad weather operation for up to a month.
- On demand power increase requirements and larger heat storage for power is expandable.
- Ideal for remote areas, villages or islands in third world countries. Also for company commercial use eg: mines, islands or irregular, unreliable power grids or power support
- The power system and technology is not new, its robust and has been operational for over 10 years and requires little maintenance for its operation.
- Space required for the power plant is 3 acres of level ground.

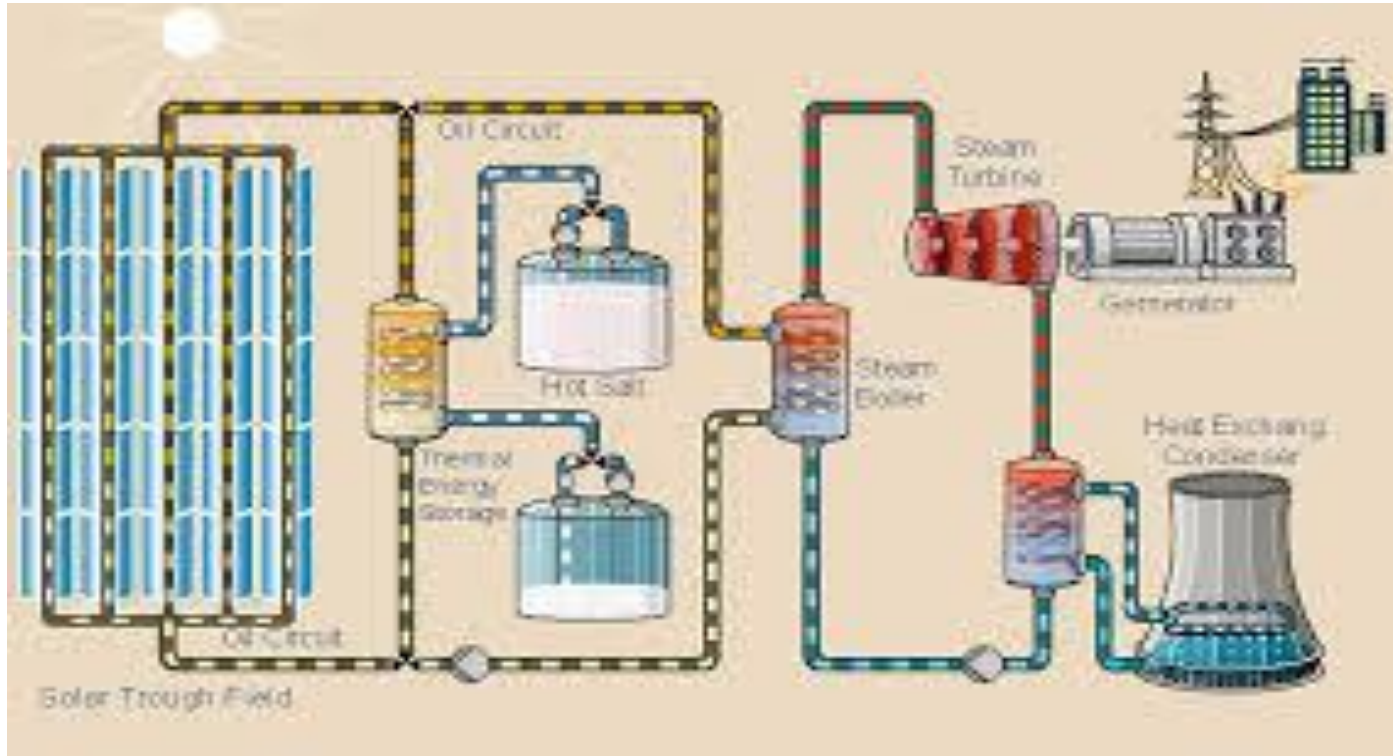


Back Ground - Distributed generation, also called on-site generation, dispersed generation, embedded generation, decentralized generation are small to medium power sources used at the source. Power directly embedded in a location for power supply to villages , islands, remote or existing grids that need support or reliability. These highly efficient, reliable and proven small scaled power plants are enormously low cost compared to diesel systems usually used in similar situations or solar panel with expensive battery systems. Power plant also has a 25 year life and zero emissions using European and Australian technology that is proven.

The plant space requirement is 2 to 3 acres depending on individual requirements.

- Direct Local Power for remote areas, islands, villages or commercial mines, industry - 24/7
- Direct Local Power for farming and irrigation
- Direct Local power for remote or village light industry
- Direct Reliable support for existing power grids
- Expandable and modular for growth (or the whole system can be relocated if required)
- No need for power transmission towers
- Expandable storage and power for on demand growth
- Standby Power storage capability (reserves) also expandable for usually for up to one month
- **** “Power and systems for producing water out of thin air” Yes -you have read this correctly

How it Works





- Providing green power solutions for remote areas, villages, islands or towns
- Power provides solutions to governments, NGO's, commercial enterprises such as mines and industrial groups with 24/7 power in developing countries , islands, existing grid support or remote areas
- 1.6 billion people don't have power. What is the one thing that provides fresh water , food and growth to a remote village, islands or towns?

POWER FOR WATER DELIVERY, IRRIGATION AND CROPS





Power for Clean Water Systems and Irrigation

- Power also can provide the power and technology for clean drinking water standard system produces 120,000 gallons of clean drinking water per 12 hours.
- Power for village mills, crushers and light industry
- Power for homes, water and electric stoves (no more wood gathering or burning)
- Power for pumping water over distance - irrigation / farming – increased crop farming



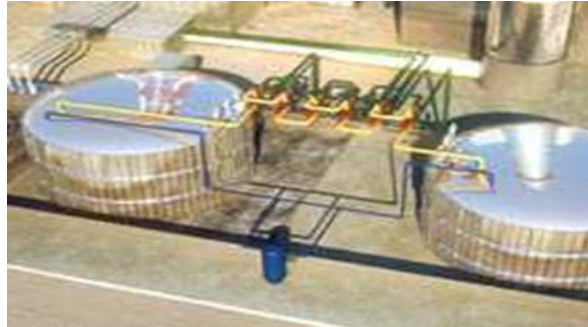


POWER FOR CLEAN DRINKING WATER 120,000 GALLONS DAILY

Water Purification Plant 120,000 gals per day of pure drinking water. Can also provide with the power plant a clean drinking water system. As the example above and can be varied to suit the requirements needed



- Power is a standalone power system, from one to ten megawatts of electricity 24/7
- No Toxic or hard-to-obtain materials, simple operation, comes with education and training with locals to take over the operation and to maintain the power plant
- Energy storage configurable and modular expandable, independent of power output
- Primary civilian usage is for remote and un-electrified villages, towns, islands or for remote commercial applications
- Cheap Power Generation to replace costly diesel systems or PV solar battery systems
- Starting from one megawatt, modular and expandable (for later demand growth) up to 10 megawatt . The system is always rated above power required for high peak loadings.
- Modular and Moveable to other locations if required (usually for commercial units e.g. mines)
- **Rugged Performance, Durability, 25 year life, and Low maintenance**
- The technology and operation is proven, in performance , operation and durability

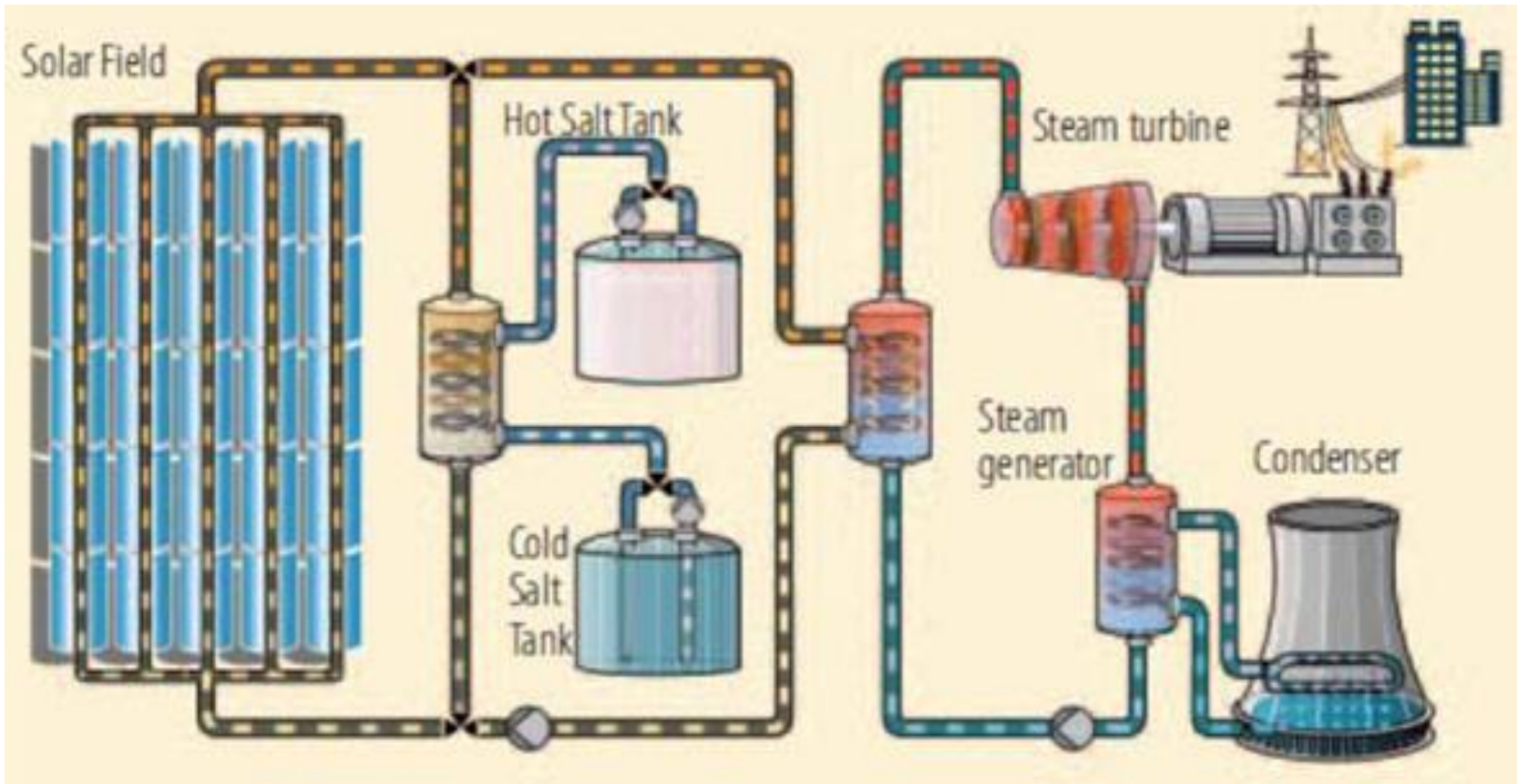


- The heart of this proven, robust system are the storage vessels of the molten salts. The powerhouse of the system and able to reuse it thousands and thousands of times with no degrading effects. Heat in the molten salts are called on by demand for the turbine generator and is a totally sealed system.
- The process of the solar troughs that heat the molten salts to over 800 degrees Celsius during the day as well as running the power turbine, and at night the molten salts continue to provide steam for the turbine. No need to replaced the molten salts ever.

Power One to Ten Megawatt or More

- Clean Power Funding Options for Third World
- Power 24/7
- No Carbon Fuel Required
- No Air Pollution
- No Emissions
- Modular and Expandable in power capacity and power storage
- 25 year life
- Training for operation and very low maintenance requirements
- Clean drinking water system available and water transfer for irrigation

Requires 3 Acres of Level Ground



Funding Options for Third World

- Funding Solutions for Governments or NGO's or Commercial
- Upon engagement for the power plant system the review and solution offered which may include non government liability:
- Structured *debt defeasance*
- Or **debt liquidation** process
- **Carbon** based friendly **zero emissions funding**
- **Institutional or Humanitarian based** funding
- **A combination** of structures providing solutions
- All solutions are based on individual needs and report of the location and requirements

Funding

- Immediate engagement and conditional funding is available for the replacement of existing diesel or coal systems to Power Plant
- Expansive power system services with funding with delivery, operational solutions for local regions also with local education, employment and operation
- Engagement required for evaluating country, situational review, power infrastructure needs, operation, and supply applications of remote power plants and other needs for example water cleaning and water pumping etc.
- Also Providing Commercial Use Funding Solutions



- POWER PLANTS do **not** use ANY batteries to store energy. Power storage technology costs less than 20% of battery technology, is **not** cycle-limited, does **not** degrade, is **not** toxic, is **not** subject to spontaneous ignition, and does **not** use rare or toxic materials.
- No carbon emissions or toxic emissions = No fuel burn.



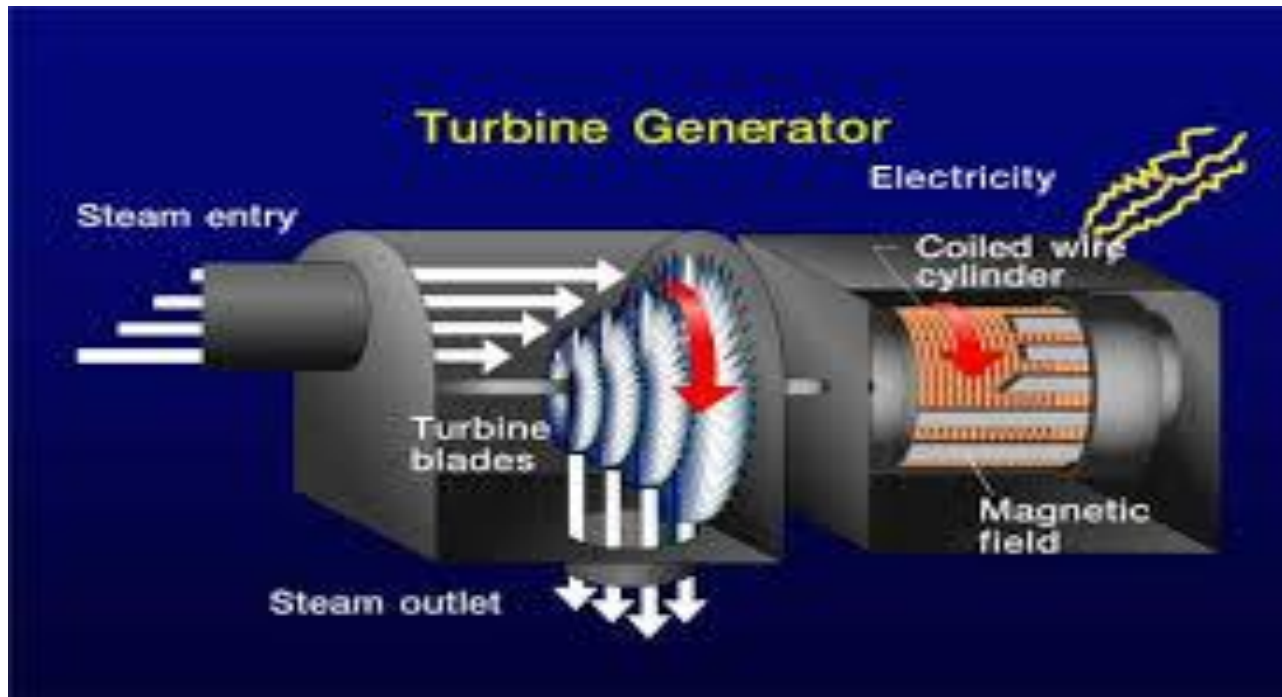
- To be clear this does **not** use photovoltaic (PV) solar panels or batteries.
- This is **not** in direct competition with solar panels or expensive battery storage.
- Battery storage is extremely expensive, battery recharge life is limited before huge reinvestment for replacement.
- Solar panels only compete in markets where storage has no value.
- Molten salt heat storage is far more efficient, **much less** expensive, **unlimited life** rather than any costly battery storage and dose not wear out or need to be replaced

The Heart of the System

Storage of Energy by Heat

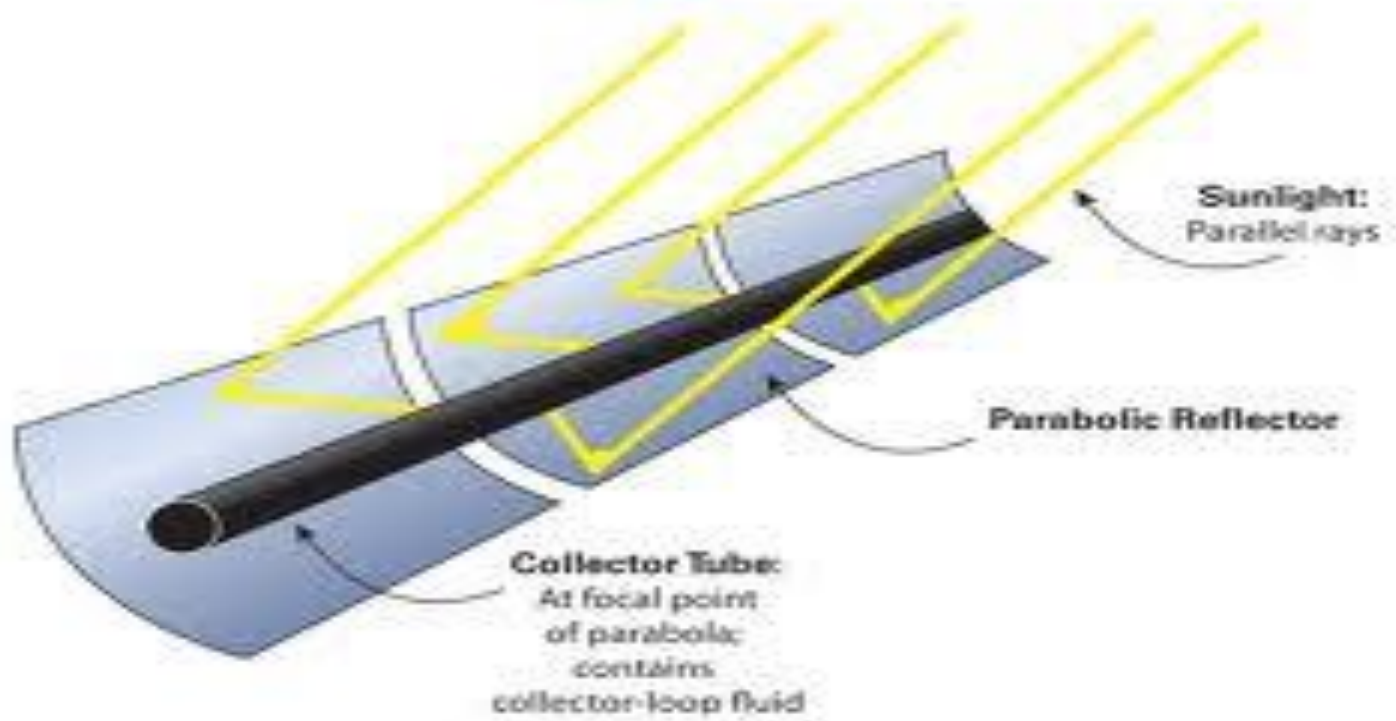
- Solar Trough heats molten salt to ranges of the storage temperature range average $>600^{\circ}\text{C}$ to over 850°C). The salts are held in simple English, large high temp insulated designed tanks
- Molten salts have a heat exchanger that allow contact to water pipes to turn water into steam and in turn provide this steam power to the turbine generator. This is a decades proven system and solar troughs have now broken the 900 degrees Celsius for faster or larger heat recharging of molten salt reserves
- Our storage of molten salts now can be stored at temperature for up to a month awaiting use as needed on demand on a 24/7 basis
- Power Storage can be easily expanded for wet seasons or bad weather

How A Steam Turbine Generator Works



How A Solar Trough Works

Parabolic Trough Reflector





Terms - requires an engagement process and review of the proposed location and the power needs before any specific funding request can be completed. This provides a detailed report for the client providing funding options and expected system specifications required.

Commercial enquiries are welcome and require a similar process above.

The power system generally above has many variations, of power, output, salt storage capacity and operational locations, as so it is a general description above is correct in its descriptions and operation.

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