



SelfReHeating (SHR): a new Geothermal power plant upgrade to increase

efficiency

Applicant

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Protection

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Priority

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What we are looking for

We are looking for a suitable partner to enter into license deal/co-development partnership

What it is needed for?

The present invention, named SelfReHeating – SRH, is a new configuration of the geothermal power plant, that allows for more efficient – compared to current standards – power generation. The technology uses a regenerative re-heating process. It consists of using the steam separated at the wellhead through a cyclone separator in a backpressure turbine where it is expanded at a pressure generally higher than atmospheric pressure. The wet steam at the outlet of the backpressure turbine is heated using the liquid separated at the wellhead and sent to a steam turbine for expansion up to the pressure of the condenser. Re-heating increases both the enthalpy drop and the isentropic efficiency of the expansion process.

So, the present geothermal power plant has an unedited configuration that allows to obtain a significant increase in power generation compared to known system with the same boundary conditions.

Advantages

- Significant increase in power generation compared to existing technologies;
- Simpler power plant upgrade compared to known technologies (i.e., Single or Double Flash);
- Reduction of erosion phenomena in the turbine due to the presence of liquid droplets;
- Compliance with the solubility constraints of silica in the geothermal fluid.

Applications

This is the upgrade of the existing geothermal powers plants to improve plant efficiency and reduce power generation costs.

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TRL scale

