



# ORC FOR GEOTHERMAL ENERGY

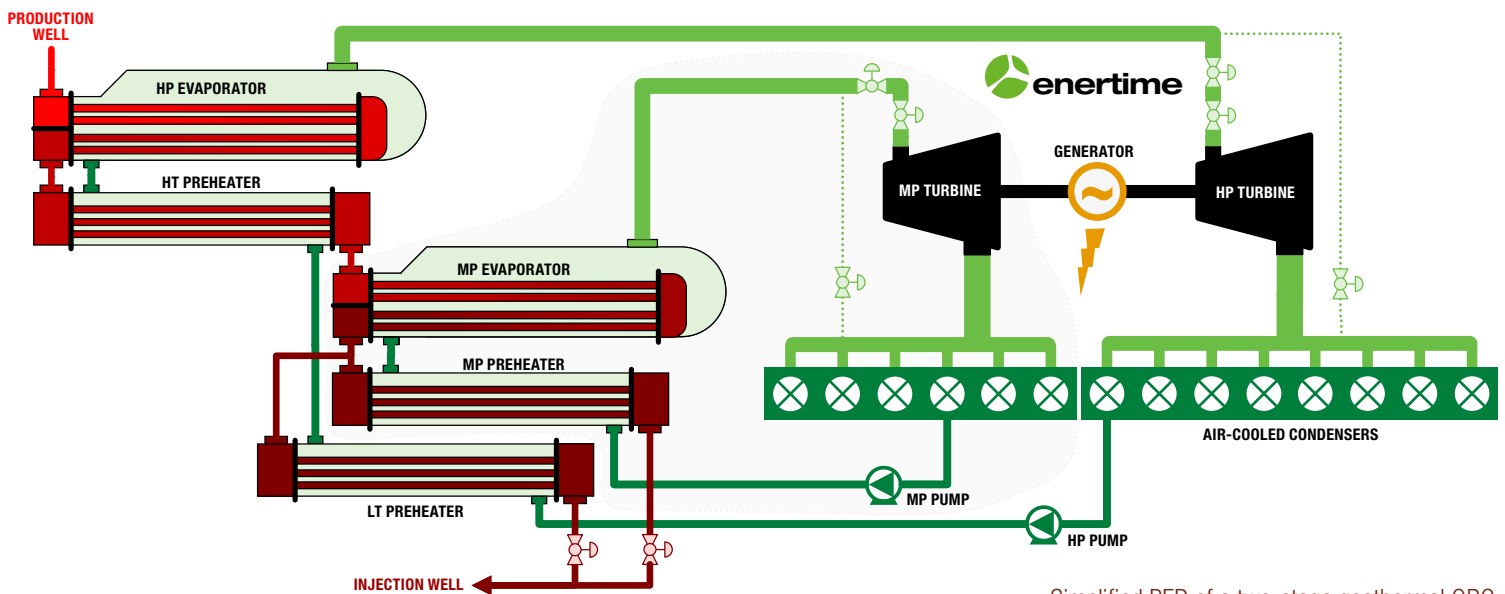
Geothermal electricity generation is the most developed application for Organic Rankine Cycles (ORC) which are perfectly adapted to low and medium temperature geothermal resources and when it's prohibitive to make the deployment of steam cycle plants.

Enertime optimizes its proposal according to targeted electricity price, offering the best economic balance-to-any kind of geothermal project as follows.

- **ORC for low and medium temperature resources (100 to 180°C):** ORC allows reinjecting 100% of the geothermal resources and facilitate the management of non-condensable gases. Our 1 and 2 stage plants are optimized for each project's characteristics in order to offer the best profitability of the project
- **ORC for steam resources,** designed to fully exploit the low or medium-sized steam resources while using the brines for preheating.
- **Existing flash plants improvement:** Existing plants output can be significantly improved by separator brines, previously injected without any recovery
- **Wellheads:** ORC can be installed on new wells pending the installation of conventional large-scale plants or as a more economical replacement of them.
- **ORC CHP:** Our 2-stages ORC CHPs are designed for summer and winter operation, maximizing the electricity generation while supplying heat to a district heating network in winter.

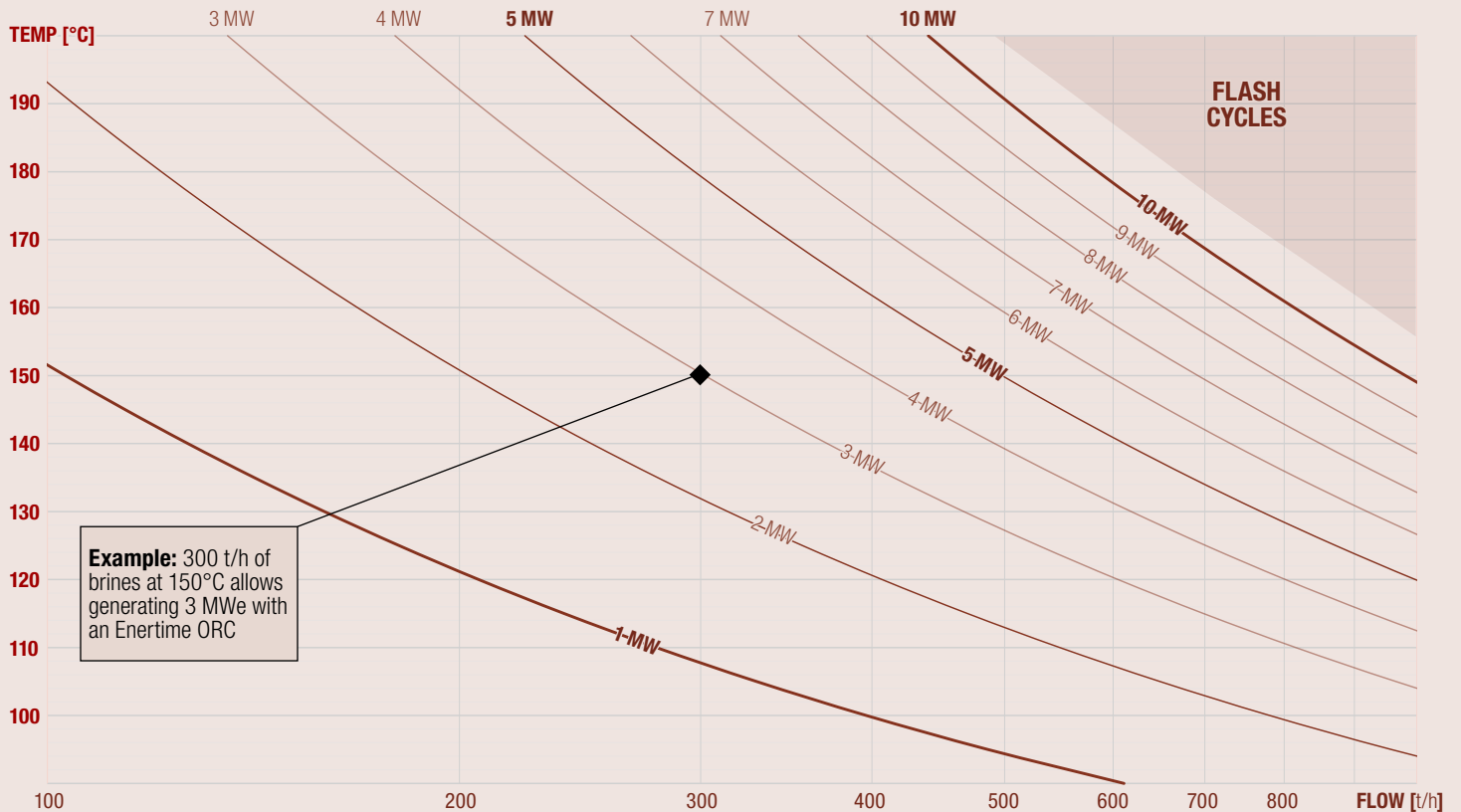


Enertime 2 MWe ORC turbine, Caen, France



Simplified PFD of a two-stage geothermal ORC

# GEOHERMAL BRINES ORC POTENTIAL



Enertime has a wide competitive, reliable and efficient ORC systems portfolio. Choosing the right product and plant configuration for a project requires an intimate understanding of customer needs as well as equipment features and benefits.

At Enertime, our sales, product management, and engineering teams work together and with you to fully understand project requirements and performance expectations to develop a customized plant solution delivering the best lifecycle economic value:

- **Single or two stage** thermodynamic cycles adaptation to the generation and injection temperature of the resource.
- **Working fluid selection** according to resource temperature and environmental constraints (pentane, butane, HFO, ...)
- **Cold source optimization** according to local climatic characteristics and environmental constraints (air-cooled condensers, evaporative condensing, wet cooling towers and loop)
- **Materials and equipment selection** according to brine's characteristics (corrosion, precipitation, metallurgy selection)

ORC turbines are entirely designed and assembled by Enertime.

With a remarkable robustness and excellent efficiency, our multi-axial turbines offer low vibration levels due to the between bearings technology with high partial-load performance.

Our turbines are designed to facilitate maintenance service with a great accessibility.

Turbines are optimized for our ORC machines and are compliant with alkane fluids and the HFO new generation fluids available on the market.

Our scope of supply is tailored to the capabilities of our customers and industrial partners, ranging from turbine supply and ORC power plant engineering, to full turnkey project.

