

Green Energy in Asia

Energent Corporation has recently expanded our green energy activities to Asia. Applications include recovery of waste heat in incinerators, recovery of waste heat from the main propulsion engine of container ships, recovery of waste heat from refineries and generation of power from geothermal resources. To have an impact we have formed relationships with Asian companies having Engineering Procurement and Construction (“EPC”) capabilities.

For example, a hermetic Variable Phase Turbine generator was developed to generate power from an incinerator. This unit is a part of an Organic Rankine Cycle operating with a refrigerant working fluid. The refrigerant cools the generator and bearings, resulting in a unit with no external shaft seals. Greenhouse gas emissions from this turbine are zero. A view of the turbine is shown in figure 1. Power can range from 100 kW to 300 kW depending upon the heat source.

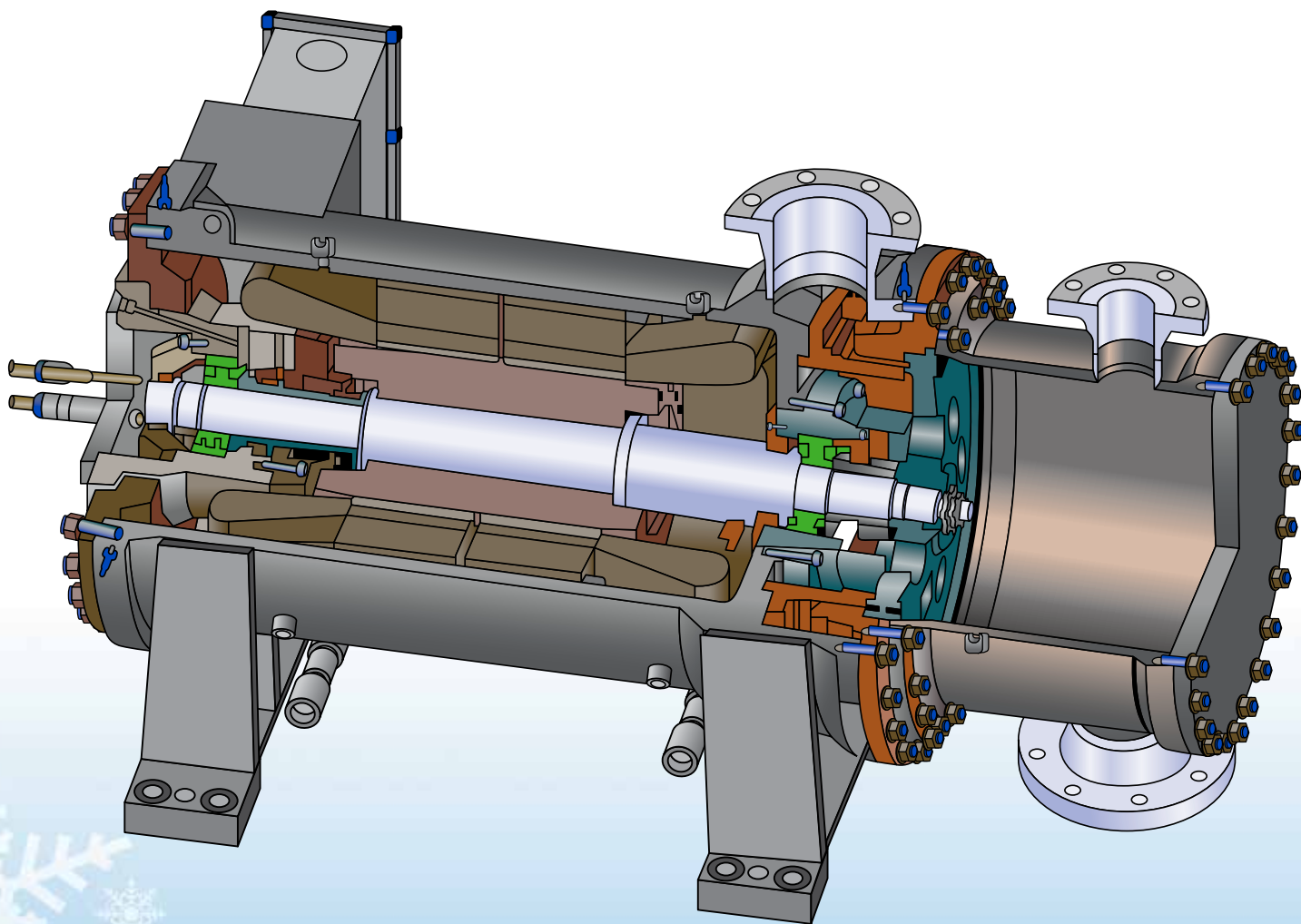


Figure 1 Hermetic Variable Phase Turbine for Waste Heat Recovery



Figure 2 Nanosteam® Turbine Operating in Power Plant

In addition to Japan, a geothermal power plant was demonstrated in Taiwan. The Energent turbine for this power plant was the Microsteam® turbine (see www.energent.net for details).

This unit produces a maximum of 300 kW from the ammonia-steam mixture used in the power plant or from steam alone for pressure reducing valve replacement. The demonstration plant, shown in figure 3 produced power successfully in a 30 day acceptance test.



Figure 3 Geothermal Plant Operating at Qingshui, Taiwan with Microsteam® Turbine



Figure 4 Euler Turbine Generator Operating in Geothermal Power Plant

A ubiquitous source of energy lies in the low temperature water found in refineries and other process plants. The water occurs as condensate from steam used for heating and water used to cool higher temperature product streams. Energent is providing an Euler turbine generator to generate 3.4 megawatts from a waste water stream in China. The low temperature water is used to vaporize an ammonia-steam mixture which is expanded in the turbine. A similar unit was provided for the same working fluid for a geothermal plant in Germany. This unit, with a capacity of 600 kW is shown in figure 4.

For inquiries for projects or turbomachinery in Asia contact Lance Hays at Energent at +1 949 261 7533 or lhays@energent.net and we will forward the inquiries to our EPC partners in Japan and China.