

Alternative Energy : Cooling

The Objective

Develop a sanitary heat exchanger solution for an alternative energy application involving a “water-like” process fluid.

The system needed to maintain precise temperature control using a 30% propylene glycol cooling medium entering at 10°C and 10 GPM, while meeting strict cleanliness and performance standards.

The Challenge

The customer required a high-efficiency cooling system compatible with a specialized process fluid used in an alternative energy project.

The challenge was balancing compact design, sanitary construction, and consistent performance across variable operating conditions.

The system also had to maintain a smooth surface finish and reliable flow distribution to prevent contamination or fouling, while fitting within existing installation parameters.

The Solution

Exergy designed a custom sanitary shell & tube heat exchanger (Model #00686-01, 60 Series) optimized for this application.

Key features included:

- Heat transfer area: 4.19 ft²
- Sanitary flange for easy integration
- NPT fittings on the shell side
- Electropolished tubing with 15 µin (0.4 µm) Ra max surface finish
- All components fabricated from 316L stainless steel for corrosion resistance and durability

The design utilized 30% propylene glycol as the cooling fluid, ensuring stable and efficient thermal exchange for the “water-like” process medium.

The Results / Benefits

The Exergy solution provided consistent temperature control, maintaining the process within the required specifications while minimizing energy consumption.

Its sanitary, electropolished construction ensured hygienic operation and eliminated risk of fouling or contamination.

The compact design and durable 316L stainless steel build provided long-lasting performance with minimal maintenance—ideal for the demanding conditions of an alternative energy application.

This case highlights Exergy’s ability to engineer precise, sanitary cooling systems that meet specialized performance standards in emerging energy technologies.



ISO 9001:2015 CERTIFIED
QUALITY MANAGEMENT SYSTEM