FTSE 100 PHARMACEUTICAL COMPANY

CHILLED WATER SYSTEM REPLACEMENT STUDY FOR A LARGE PHARMACEUTICAL COMPANY

THE CLIENT:

A multinational pharmaceutical and biopharmaceutical company specialising in research and production of life saving medicines.

THE TASK:

The scope of the project involved carrying out a central chiller replacement study that should address the replacement of ageing chillers with most efficient chillers containing low/zero GWP refrigerants.

The existing system comprised of 2x1MWt chillers with chilled water supply at approx. 6°C, serving site HVAC and process loads. The chillers contained R410a refrigerant.

OUR APPROACH:

We conducted a detailed survey of the entire cooling system and generated an energy balance of the system to understand the demand, use and chilled water generation profile. From this survey we were able to confirm the thermal cooling demand of the chilled water system. We proposed multiple chiller system, designed to operate in duty, assist and standby configuration. The smart sequencing of chillers enabled to maintain higher system efficiency at every stage of load profile (from base load to peak load).

PROPOSED SOLUTION:

The solution included multiple options such as heat recovery, HFO refrigerants and combination of chillers and heat pumps. The heat recovery solution allowed site to avoid future investments in boiler system upgrade to maintain redundancy.

The conventional circulation pump system was redesigned and replaced with primary and secondary pumping system. The secondary pumps were fitted with variable speed drives (VSDs) designed to maintain a constant pressure but with variable volume; allowing the system to deliver significant pumping energy savings.

Further improvements were achieved with better metering and monitoring enabling site to keep track of energy savings.

THE OUTCOME:

The smart solution would provide site a robust system with 100% redundancy and 25% reduction in chiller electricity consumption with 45% carbon emission savings.

- 25% reduction in electricity consumption
- 45% reduction in CO_2e
- Reduced environmental impact
- Future proof
- Increased system reliability

For more information please contact
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