

Industrial new construction case study: Schilling Cider

Custom energy-recovery system produces industrial-size savings

It began as an intriguing idea and turned into an industrial energy-efficiency reality that saves more than 96,000 kWh every year. Spurred by a custom grant from Puget Sound Energy that covered a quarter of the project's cost, Auburn-based Schilling Cider installed a custom energy-recovery system in their production line that allowed them to downsize from a 120 kW electric heater to a 15 kW heater. That translates to nearly \$7,000 in utility savings for Schilling Cider every year.

The energy recovery occurs within the glycol loop portion of Schilling Cider's production, housed in a 30,000-square-foot warehouse. The project included installing a glycol-heated shell and tube exchanger, which recaptures heat from the glycol used within production. This heat is used to phase change liquid carbon dioxide (LCO₂) to carbon dioxide gas (CO₂), which is then distributed into the nearly 2 million gallons of award-winning cider that Schilling produces every year.

This installation coincided with the addition of a high-speed canning line. Schilling uses the relatively warm returning glycol to handle the phase change to CO₂ and then utilizes a 15 kW trim heater to adjust the temperature. The addition of this cryogenic heat exchanger removed the need for a 120 kW vaporizer and also had the added benefit of helping the cooling of the returning glycol. The electrical energy requirement is significantly lower, which means Schilling now sees significant year-after-year savings.

"We knew conceptually that using our returning glycol would provide enough energy to do the phase change from LCO₂ to CO₂, as it had been done in similar industrial applications," says Mark Kornei, chief financial officer and co-founder of Schilling Cider. "But we had not seen it done before in the craft beverage industry."

The project was a first for PSE, as well, which had never received an industrial proposal like this. Through collaboration with PSE energy engineers and the straightforward grant process, Schilling was able to determine just how much of a difference the upgrade would make to their annual energy requirement for production. It was an investment that was highly worth it.

"We're always interested in looking at how we can do things better, easier and greener," says Mark. "The incentive from PSE helped bring this concept to reality and will hopefully pave the way for other industrial businesses to use a similar setup in the future."

Project numbers

96,426: annual kWh savings

\$6,943: annual energy savings

26%: portion of project cost covered by PSE incentive

