

How DeJoule's
Intelligent Automation **reduced**
ITC Panchla's chiller plant energy
use by 28%, saving millions and
lowering emissions.

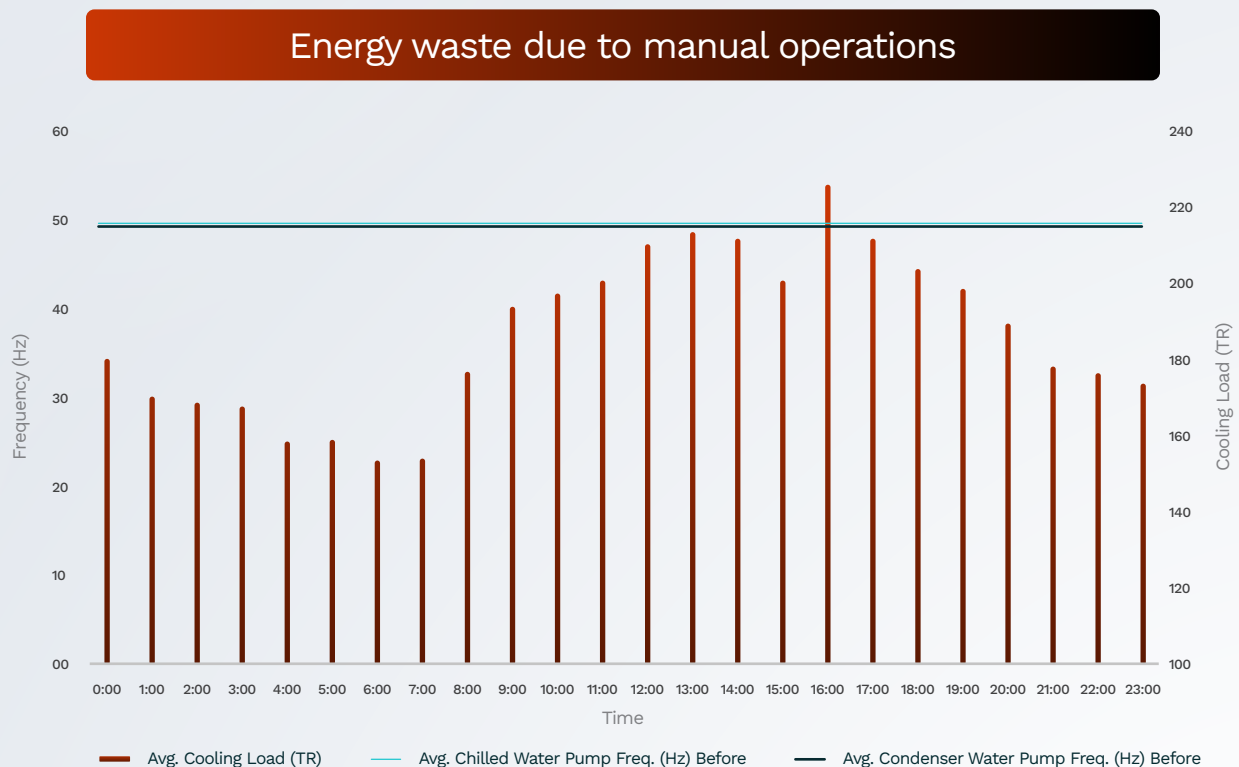


A facility on a mission to **cut carbon**

ITC Ltd's Panchla Unit—home to beloved brands like **Yippee! Noodles, Bingo, and Aashirvaad Atta**—wanted to advance their decarbonization efforts by transforming how they managed and eliminated hidden energy waste.

A major barrier to decarbonizing their facility was its manually operated HVAC system. The operations team relied on past energy consumption trends to operate the chiller plant, without access to live data on energy use, temperature zones, or chilled water flow.

Additionally, key equipment, such as pumps and cooling towers, operated constantly at full speed, regardless of fluctuating cooling loads, resulting in significant energy waste.



Monthly average
energy consumption

1.8 lakh kWh

Monthly average
energy cost

INR **1.22** million

Chiller plant-specific
energy consumption

1.36 kW/TR

From manual operations to Intelligent Automation

How DeJoule drove real-time efficiency

ITC Food Factory, Panchla, implemented DeJoule, a full-stack BMS that intelligently eliminates energy waste while boosting facility performance, every operational minute.

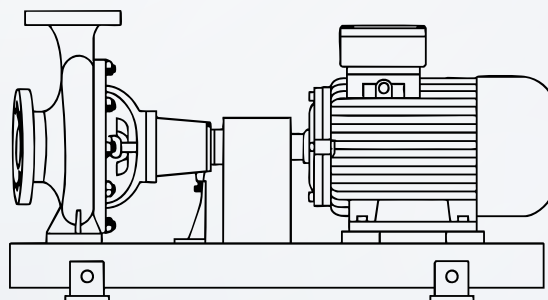
DeJoule digitized manual operations and unlocked peak efficiency with the following automation strategies:

Dynamic Chilled Water Pump Selection

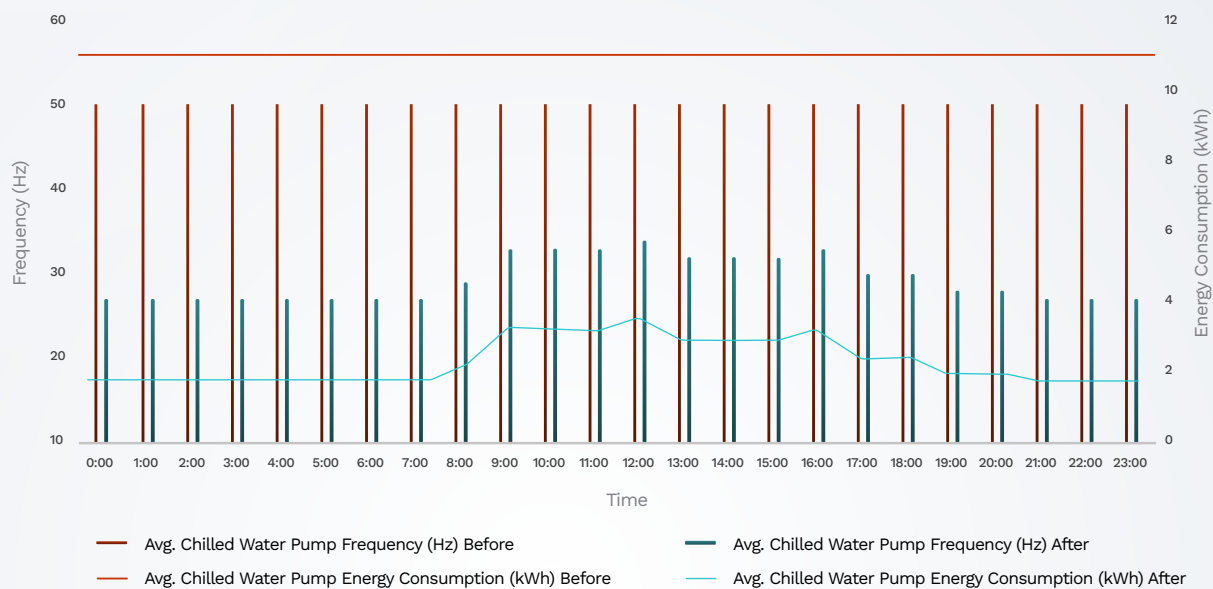
Before DeJoule, one of the chilled water pumps ran at 50 Hz, non-stop, regardless of the varying cooling load throughout the day. When implemented, DeJoule's parallel pumping solution started dynamically selecting and running different pumps based on real-time cooling load. This approach prioritized collective efficiency and delivered the required chilled water flow while effectively eliminating energy waste.

Chilled & Condenser Water Pump Modulation

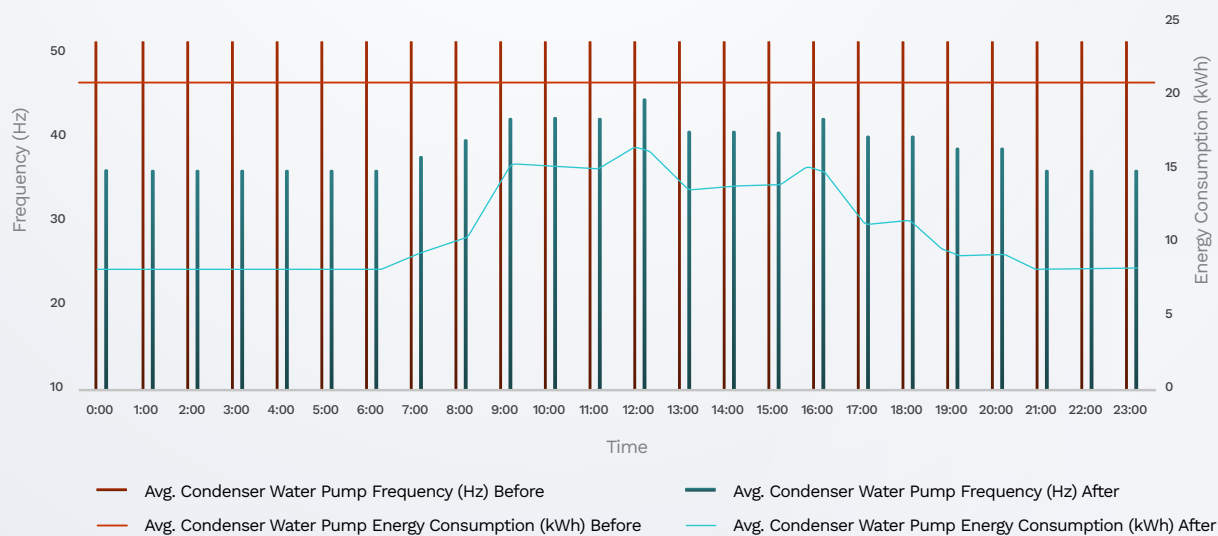
To meet the varying cooling load at the facility in real time, DeJoule modified the operation of both the chilled water and condenser water pumps. Instead of using a fixed frequency of 50 Hz, the frequency of the pumps was now adjusted based on the actual cooling load. This approach ensured optimal cooling performance while economically using equipment for collective efficiency.



Energy savings via chilled water pump modulation

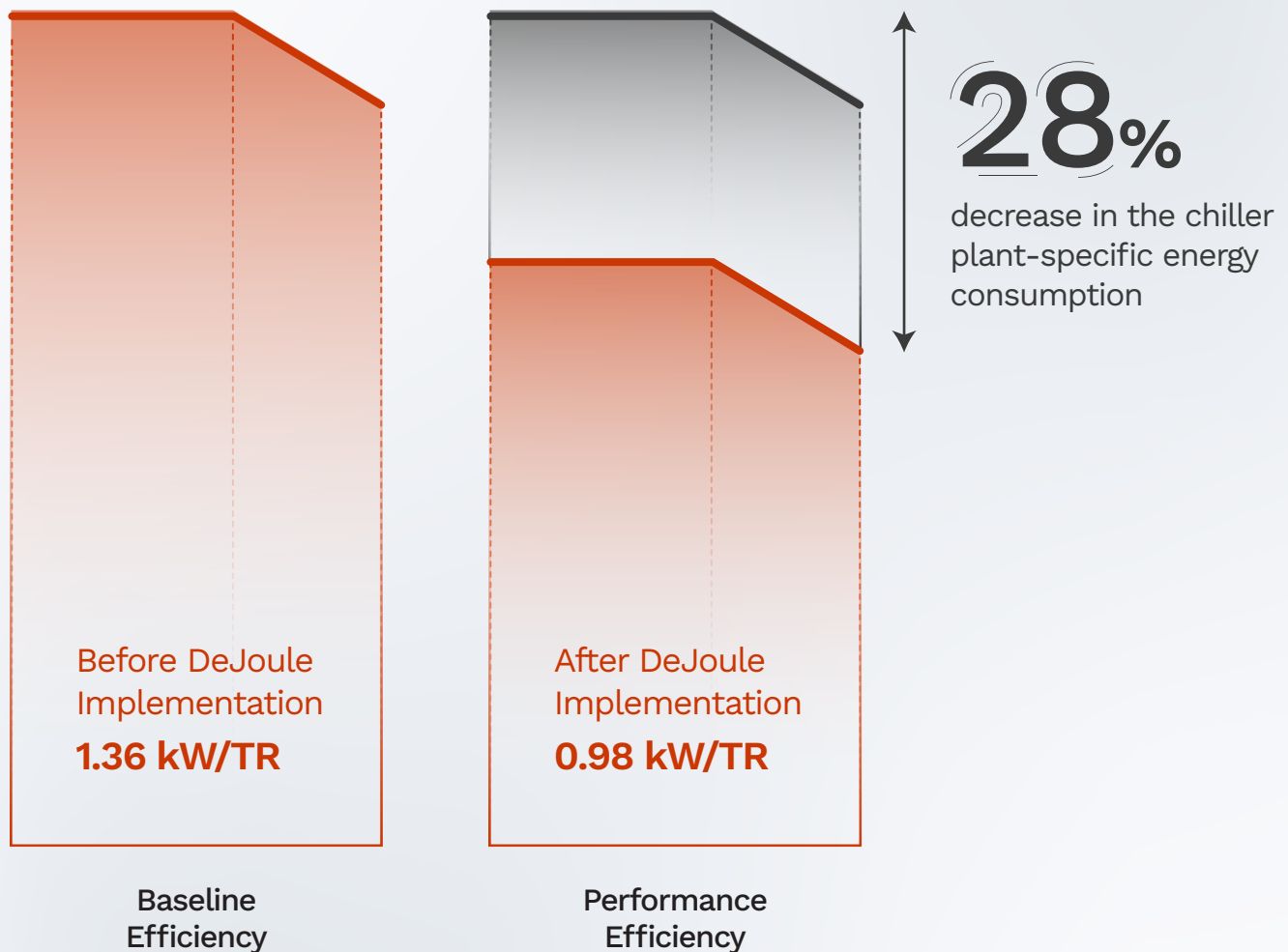


Energy savings via condenser water pump modulation



Impact of **Intelligent Automation**

DeJoule's Intelligent Automation transformed ITC Panchla's chiller plant operations, successfully contributing to their decarbonization goals while **delivering an unprecedented ROI in just 1.3 years**.



Overall **impact** (until January 2025)

Energy waste eliminated

5.9 lakh kWh

Energy costs saved

INR **9.4** million

Carbon emissions abated

639.7 tons

Did you know?

Lowering the chiller setpoint by just 1°C during the day over the course of a year in an average commercial building can increase energy consumption by 6–8%, adding up to ₹10–12 lakhs annually to your utility bill, releasing 60 to 80 tons of avoidable CO₂ emissions into the atmosphere.

That's the equivalent of running 25 petrol cars for a year, just for a 1°C drop in setpoint.

That's where DeJoule's intelligent Chiller Plant Optimizer comes in—continuously optimizing cooling supply to match real-time demand by dynamically selecting the right equipment and fine-tuning setpoints every operational minute.

No assumptions, no overcooling, just precision and comfort.

About **dejoule**

DeJoule is a full-stack, intelligent building management system designed to eliminate hidden energy waste, boost operational excellence, and help buildings perform at their peak, every minute, every day.

Born from SmartJoules' mission to make energy efficiency simple, substantial, and profitable, DeJoule combines lean, frugal hardware with cloud-native capabilities and AI-driven automation to keep your building running at its best, 24/7. From hospitals to factories and commercial spaces, our solutions empower operations teams to spend less time firefighting and more time delivering measurable impact.

Since 2016, we have enabled this transformation in over 60+ buildings. Now is your turn!

[Contact us for a demo](#)

✉ info@smartjoules.in | 🌐 dejoule.co.in