dejoule
INTELLIGENCE MEETS IMPACT

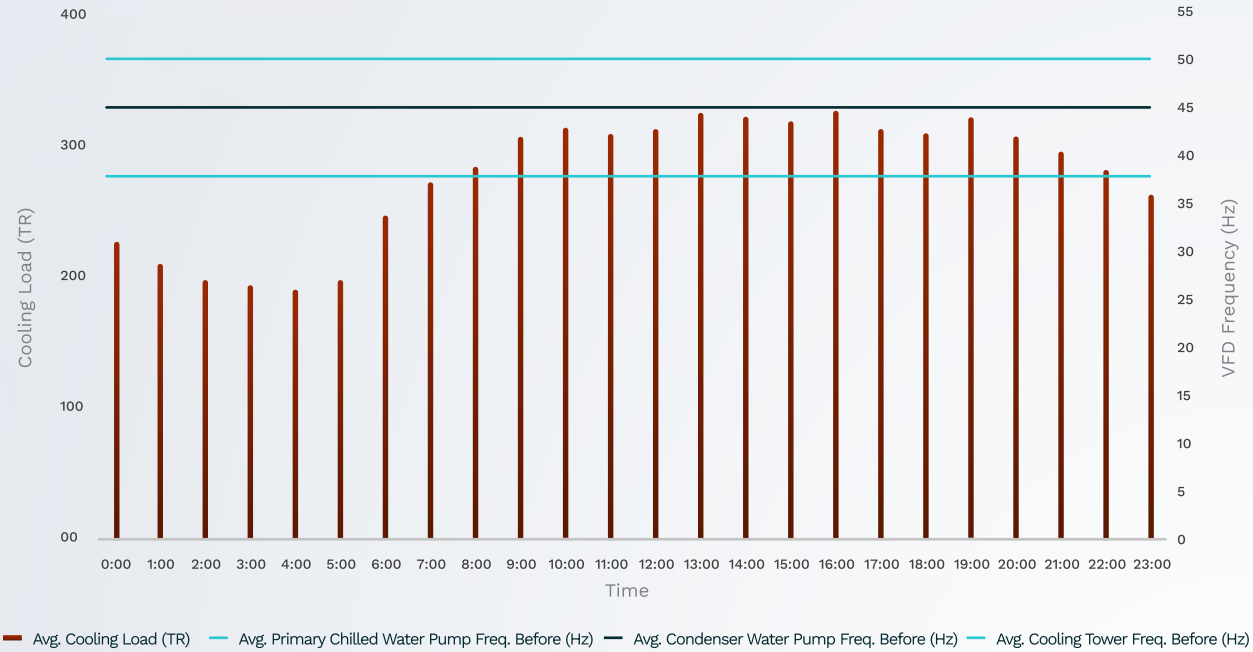
How DeJoule eliminated **114 tons of CO_2 emissions** at Le Méridien, Gurgaon, through AI-driven Intelligent Automation.

A luxury property, **fighting the constraints of legacy BMS.**

Nestled in the scenic Aravali range, **Le Méridien, Gurgaon is a luxurious 300+ room five-star hotel,** located just 15 minutes from Delhi International Airport. Known for luxury, creativity, innovation, and modern technology, the property's energy-intensive cooling system posed a significant barrier to its decarbonization goals.

Le Méridien operations team's prior experience with building management systems left them underconfident about a BMS's ability to deliver impact with quality, convenient access, and guest comfort. As a result, they relied on manual operations of their HVAC system, making it difficult to respond to fluctuating weather and occupancy patterns, ultimately leading to energy loss and hindering decarbonization efforts.

Energy waste due to manual operations



5.2 lakh kWh
Monthly average energy consumption

INR **37.4** lakhs
Monthly average energy cost

0.4 kW/TR
Chiller plant ancillary specific energy consumption

Partnering with Smart Joules to deploy **intelligent building automation**

Le Méridien implemented DeJoule, Smart Joules' full-stack BMS that intelligently eliminates energy waste, while boosting building performance, every operational minute.

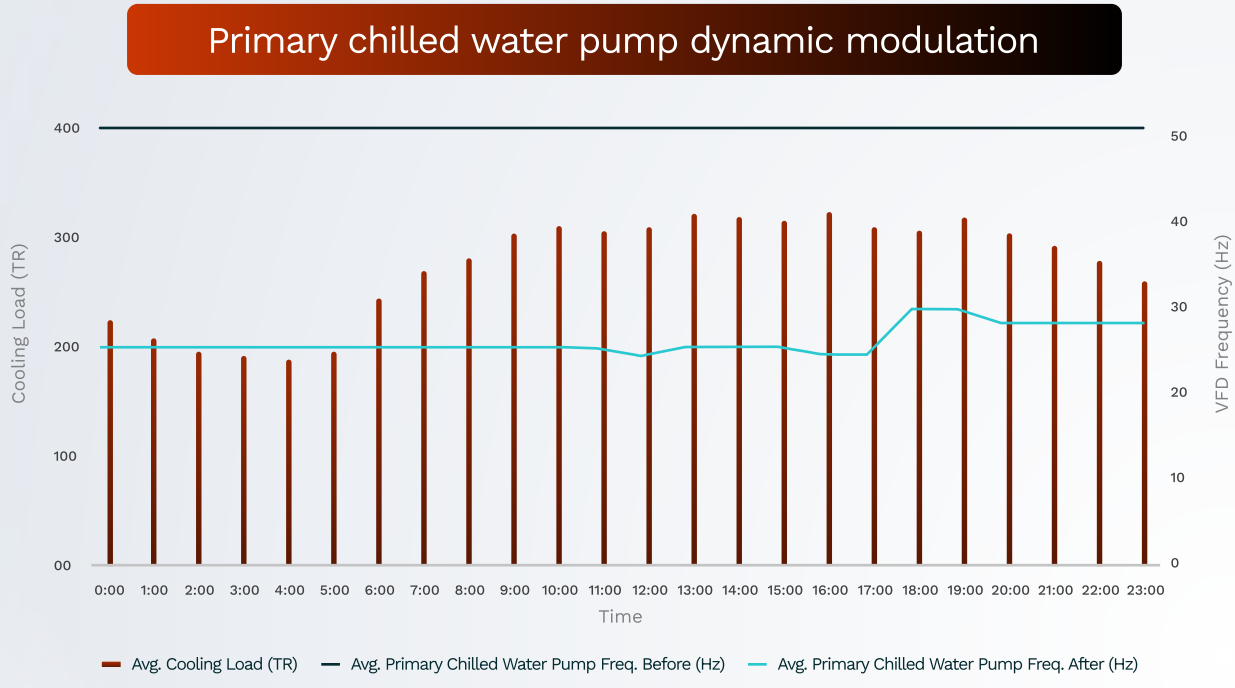
DeJoule was deployed to automate and optimize chiller plant operations. By integrating with the control infrastructure, it utilized real-time, machine learning algorithms for the chiller and its ancillaries, intelligently adjusting to conditions to maintain optimal temperature and enhance system performance.

Dynamic Modulation of Chiller Plant Ancillaries

Dynamic equipment modulation uses machine learning to set optimal setpoints for equipment, based on real-time conditions. At Le Méridien, this was applied to the condenser pumps and the cooling towers.

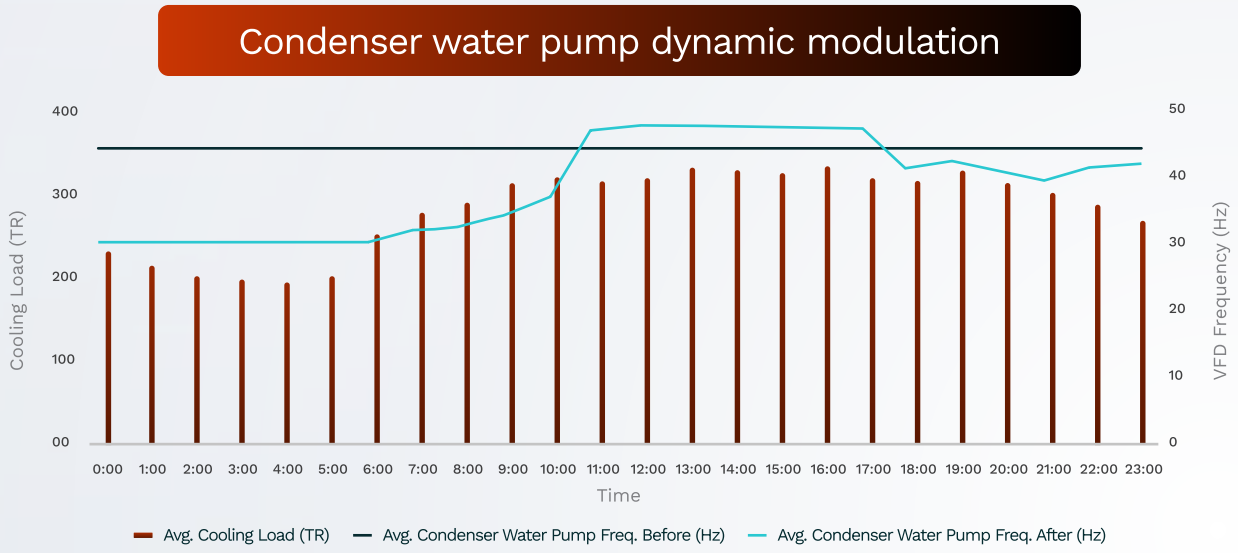
Primary Chilled Water Pump Modulation

Before DeJoule's intervention, one primary chilled water pump operated at its full capacity of 50Hz. DeJoule's Intelligent Automation utilized two pumps, adjusting their operating frequencies according to the difference between the in and out temperatures of chilled water.



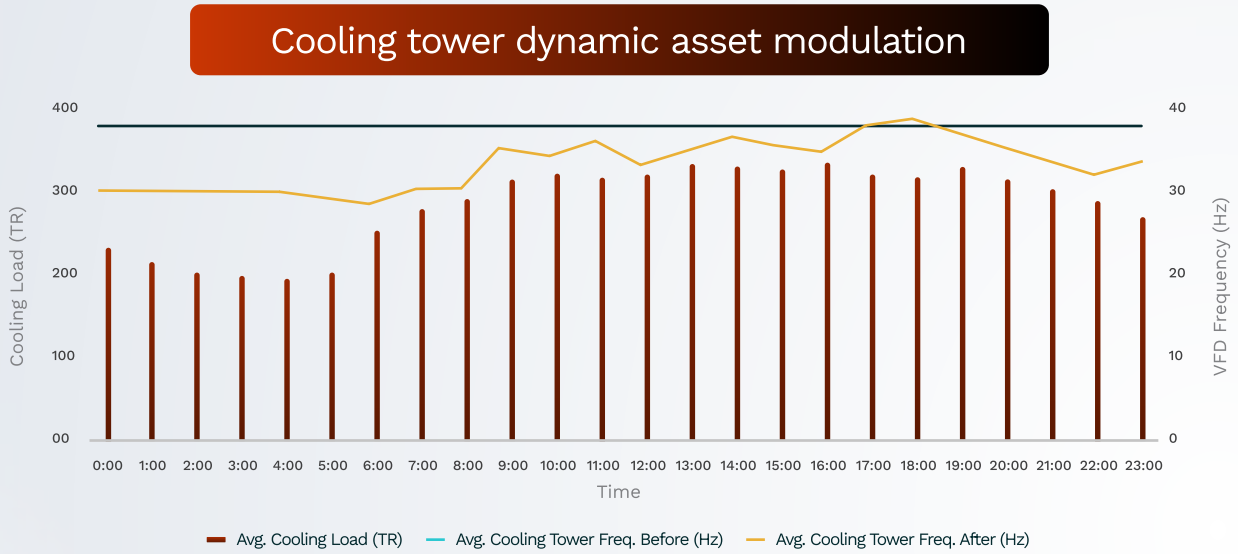
Condenser Water Pump Modulation

Prior to DeJoule, the condenser water pumps ran at a constant VFD frequency of 50Hz. DeJoule's Intelligent Automation Control modulated their respective frequencies based on the condenser water delta temperature and condenser entry temperature.



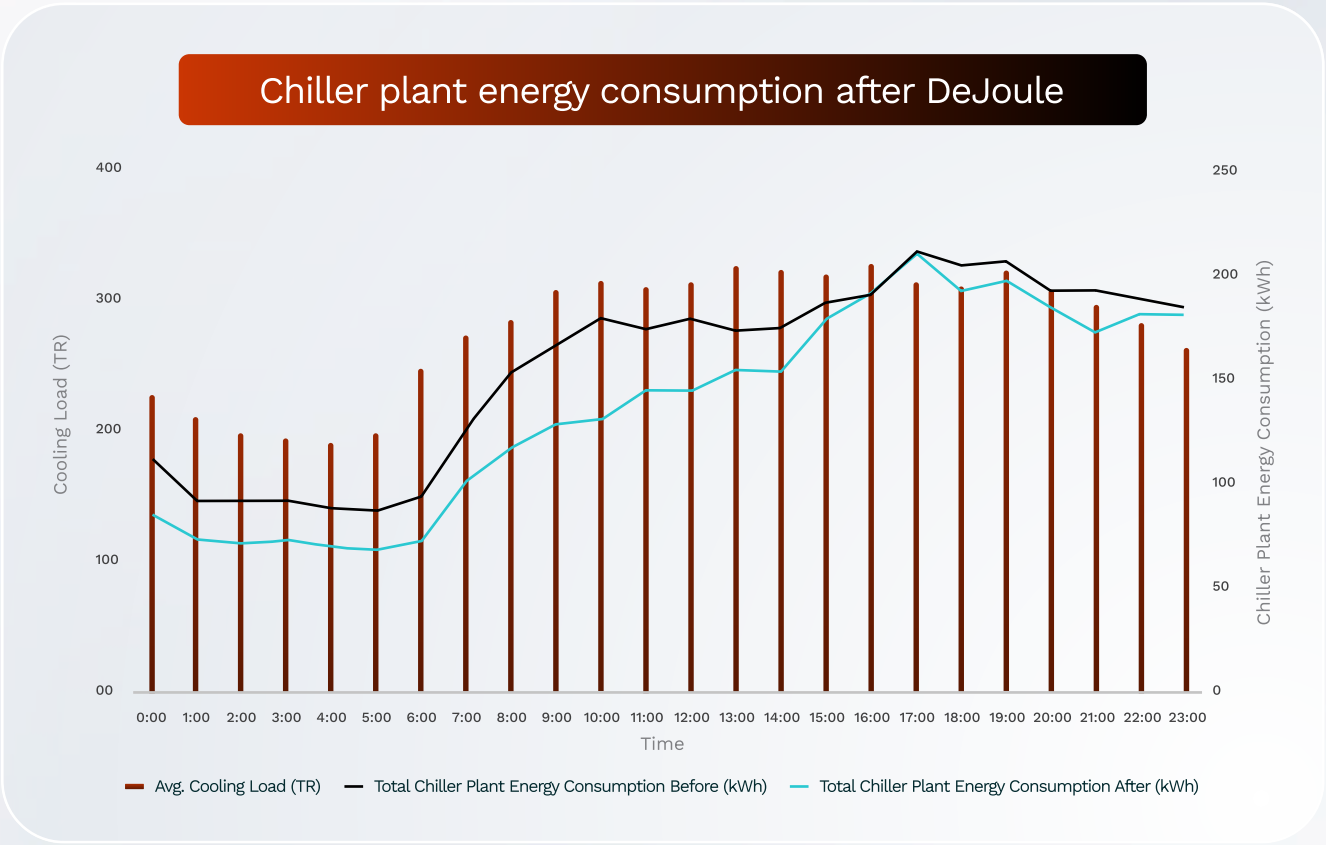
Cooling Tower Modulation

The cooling towers initially operated at a constant frequency without taking any varying factors into account. However, after the Chiller Plant Optimizer implemented frequency modulation based on the condenser water entry temperature, the performance of the chillers improved significantly. Additionally, the cooling towers were controlled to maintain a temperature equal to the wet bulb temperature plus a set offset, ensuring chillers received the lowest possible condenser entry temperature.



From energy waste to **peak efficiency and maximum savings**

DeJoule delivered a **15% improvement** in the specific energy consumption (kW/TR), from **1st April 2025 to 30th June 2025** across the chiller plant compared to the baseline period.



From **01st April 2025** to **30th June 2025**

INR 15.76 lakhs

Energy cost reduction
(4 months cumulative)

114 tons

Carbon emission reduction
(4 months cumulative)

0.87 kW/TR

Chiller plant specific energy consumption

27%*

SEC efficiency improvement

***Disclaimer:** Impact numbers are a result of end-to-end efficiency interventions, with DeJoule's automation at the core.

“A game-changer for our operations team”

> Since its deployment, DeJoule has transformed the way our chiller plant operates. It has effectively eliminated energy wastage and reduced the need for manual intervention in plant operations. What truly stands out is how intuitive and simple the platform is to use, enabling our engineering team to seamlessly monitor and manage plant efficiency.

Suman Gahlawat
General Manager, Le Méridien

Beyond energy efficiency

DeJoule’s Smart Alerts remained crucial for ensuring operational excellence at the property; eliminating energy waste and providing 24x7 alerting, monitoring, and prognosis. By delivering timely, relevant insights to operators, the alerts facilitated quicker decision-making and proactive measures.

Maintained Ideal Chiller Safety Conditions

A real-time alert was sent when the condenser entry temperature dropped below safety limits while cooling towers were operational, risking a chiller trip. DeJoule’s Chiller Plant Optimizer promptly shut down one of the cooling towers and notified all relevant personnel. The alert, generated by DeJoule at 3:54 PM on May 16th, was received by stakeholders on the DeJoule Smart Alerts Page and was automatically resolved by the CPO, maintaining system safety and efficiency.

Identified Automation Failure In Real Time

What good is an investment in an automation system if the system is taken into manual mode and the associated equipment are operated manually? This is the reality of most building management systems, with no one knowing when this happens and how long this issue persists. DeJoule is designed to maintain high automation uptime, partly by alerting responsible officials the moment systems go into manual mode. In this case, DeJoule instantly detected one of the condenser pumps switching out of automation mode and issued an alert at 6:17 PM on May 16th to an on-duty officer. Such an error could lead to command failures for the condenser pumps and hinder overall plant optimization efforts. The equipment was taken back into automation within 20 minutes.

Did you **know?**

Drifting sensors, clogged filters, fouled coils, scaling chillers—these kinds of issues don't scream for attention until they snowball into costly downtime and inefficiency.

In a typical Indian commercial building, such issues cause over 200 hours of operational underperformance every year.

That's ₹20–25 lakhs lost through energy waste, emergency maintenance, and productivity hits. The irony? Most of these issues are avoidable.

A clogged filter alone can waste ₹10 lakhs a year in a 100,000 sq. ft facility, but they go unnoticed because traditional systems don't raise a flag—until it's too late. That's where DeJoule's Smart Alerts step in.

They catch these failures in the making—a drifting temperature reading, an abnormal coil delta, a dip in airflow, and alert your team before it turns into a full-blown problem.

Because in operations, what you don't see is exactly what hurts you most.

About dejoule

INTELLIGENCE MEETS IMPACT

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, cloud-native hardware with AI-driven automation that keeps 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

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