



## Eaton gives energy efficiency a boost in Meilahti Tower Hospital

**Location:**

Helsinki, Finland

**Segment:**

Data center/IT

**Challenge:**

Improve energy efficiency and provide secure power protection for critical hospital applications while accommodating possible future upgrades.

**Solution:**

Three UPS devices installed in parallel which use Eaton's Hot Sync and Energy Saver System (ESS) technologies to ensure that they operate at a very high level of efficiency.

**Results:**

Eaton's reliable UPS devices secure power for the hospital's mission-critical applications whilst meeting the demand for high energy efficiency, exceeding the set goal of 1-hour+ power continuity. Eaton's dependable technical support and 24/7 maintenance and services also help ensure the continuity of the operations and contribute to the patient's safety.

*"It is crucial that we have an unimpeded and completely dependable electricity supply as well as reliable 24/7 maintenance and repair services. Eaton's UPSs are a good fit for us and provide more than enough punch, exceeding our goal of 1-hour+ power continuity."*

*Jukka Tikkanen,  
HUS facility management  
and services company  
(HUS Kiinteistöt Oy)*

**Background**

Meilahti Hospital is the best known central hospital in Southern Finland, serving patients across the districts of Helsinki and Uusimaa. The tower wing of the hospital, built in 1965, recently underwent extensive renovation inside and out. While only minimal maintenance was allowed on the façade of the iconic building, which is protected under the city plan, the dated power management infrastructure inside the building was in need of a complete overhaul to meet modern energy efficiency goals, guarantee uninterrupted electrical supply for critical applications and accommodate possible future upgrades.

**Challenge**

The hospital wanted to improve energy efficiency across all areas in order to cut unnecessary costs and make operations more environmentally friendly. In addition to power infrastructure upgrades, architectural changes were also required to minimise energy waste and to introduce more efficient heating and cooling methods. Extensive electrical upgrades to applications including emergency lighting were also required to ensure continued operations in critical situations and enhance patient safety. During the renovation project, around 1200 km of IT and electrical cables were run through the patient tower.



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## Solution

The optimal solution to improve the energy efficiency with the power infrastructure was to install three Power Xpert™ 9395 - 225 kVA UPS running in parallel. Each UPS has a power rating of 225 kVA/200 kW and utilises Eaton's Energy Saver System (ESS) technology, which ensures that it operates at 99% efficiency. The ESS technology allows the UPS to safely feed the mains current directly into the load when the current supply is within acceptable voltage and frequency limits. This process reduces energy consumption and the power bill for the hospital, saving them money.

The parallel connection of the UPSs makes use of Eaton's patented Hot Sync system to ensure a high level of system reliability. Hot Sync removes the possibility of malfunction in one part of the system by using synchronisation technology which is independent of the rest of the system's UPS devices. This approach allows the UPSs to share the load without

the need for communication between them. The significant improvements in reliability that Hot Sync system provides are particularly notable in demanding applications such as these parallel UPSs.

As an additional option, the UPS devices can also be configured to use Eaton's Variable Module Management System (VMMS) technology, which raises the efficiency level when the load is low. VMMS achieves this by switching some of the power supply units into inactive mode to raise the overall efficiency level of the system. As the load rises, the inactive units switch back in under two milliseconds so there is no disruption.

As the population of Helsinki grows at a steady rate, the hospital expects an increase in patient numbers. In anticipation of this, the hospital wanted to prepare its power infrastructure to be flexible to future upgrades. To meet this need, the capacity of each of the UPS unit can be increased by up to 275 kVA/247 kW.

## Results

Eaton's three UPS devices running in parallel provide a reliable and energy efficient solution for the hospital's mission critical applications. Making use of Eaton's proven solutions, including Hot Sync and ESS technologies, the hospital can rely on Eaton UPSs to provide reliable power now and in the future.

"Ever since the very beginning of the procurement process, we have had very high requirements for quality of

the UPS devices. It is crucial that we have an unimpeded and completely dependable electricity supply as well as reliable 24/7 maintenance and repair services. Eaton's UPSs are a good fit for us and provide more than enough punch, exceeding our set goal of 1-hour+ power continuity," says Jukka Tikkanen, HUS facility management and services company (HUS Kiinteistöt Oy).



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