

Nominee: Riello UPS on behalf of Pure Power Systems

Nomination title: Driving efficiencies for Ireland's largest telecoms operator

What was the driving force behind the project – what business or technology challenge needed to be addressed?

Ireland's largest telecommunications operator eir (formerly eircom) embarked on a project to repurpose existing space into a brand new data centre to support its current and future business enterprise. The driving force behind the overall €6.7m project was to consolidate five operational and enterprise data centres into two, driving efficiencies and giving the company the ability to expand.

For this, eir required a resilient UPS power solution for a highly critical environment that would effectively support its core business functions including management information systems and general business enterprise but also covering customer care, TV services and other business critical services. The three major driving factors in this project were to ensure resiliency, efficiency and maintainability, whilst working with a very small footprint for the UPS and batteries.

The chosen power solution was Riello UPS equipment – eight Riello Master HE standalone units at 400kVA configured in a 2N system with four UPS' on each side. In addition, there were five strings of batteries per UPS (210 batteries per UPS) with 1680 total batteries.

Riello's Irish distributor Pure Power Systems was charged with delivering the solution following a competitive tender process.

How did the solution address the challenges and were there any particularly innovative aspects that made it stand out?

Pure Power Systems selected the Riello Master High Efficiency (HE), a product known for its premium protection, power quality and green energy. The UPS and battery solution addressed

these challenges by being set up in an ultra-resilient fashion to ensure the highest levels of availability and redundancy.

Resilience was a key consideration which is why the UPS' were arranged in this configuration. If one UPS was to fail there would still be the required 1200kVA of capacity. This level of redundancy was also increased by mirroring the system in a 2N arrangement. It's the same with the batteries - by having five strings per UPS, if one battery fails, there is inherent redundancy within each UPS module.

Speaking about this on site, Owen Wynne, contracts manager at eir, said: "The multi-module redundant installation using standalone systems offered the perfect solution for us because it presented the most efficient and cost effective solution but with the additional redundancy. The Riello product gave us the necessary resilience and allowed us flexibility in how we use it. We can tap into this power resource and grow according to the business needs because it is a modular design data centre. Every piece of redundancy we can think of has also been put in but in such a way that it has been optimised."

What major challenges were faced during the project and how were they overcome?

One of the major project challenges was finding an efficient solution which would fit into a relatively small footprint. Riello's Master HE solved this problem by providing an efficient solution which could fit into a tight space.

Transporting and installing 60 tonnes of batteries into the data centre was also a challenge in itself as this had to be done by hand. Staff worked incredibly hard around the clock to carry out the task and make sure it was done in time.

What tangible benefits has the organisation seen as a result of the project's implementation?

Riello's Master High Efficiency (HE) has made a significant contribution to the energy efficiency levels in the data centre. Not only has it helped to reduce energy losses but it has helped to reduce the energy lost through heat, which also reduces cooling requirements.

The goal PUE figure of the data centre is 1.3 and Riello is contributing to this through the extremely high efficiency of its UPS systems which are nearing maximum efficiency even at 40 to 50 per cent load. The high efficiency of the Riello systems means that less power is consumed in the provision of the necessary UPS back-up.

Driving levels of efficiency in the modular data centre, there is a hot aisle configuration with a roof over it to contain the warm air. Cool air (around 22 -23 Degrees Celsius) is drawn in at the front of the racks and then dissipated into the back of the cabinets in a loop. Another way of boosting efficiency levels is having the data centre configured in a modular design, ensuring that only the required load is used.

Why nominee should win

1. Riello's Master High Efficiency (HE) made a significant contribution to the energy efficiency levels in the data centre, contributing to eir's goal PUE figure of 1.3.
2. The outstanding UPS solution provided eir with a solution which allowed resiliency, efficiency and maintainability – all in a small footprint.
3. Master HE saved eir money with its incredible efficiency - even at loads of 40 to 50 per cent.
4. The project saw the UPS set up in an ultra-resilient fashion.
5. The high efficiency of the Riello systems means less power is consumed in the provision of the necessary UPS back-up.