

ENERGY EFFICIENCY WITH MODULAR UPS

POWERING IRELAND'S DATA CENTRE REVOLUTION

By Chris Cutler,
Corporate Account Manager
Riello UPS



With Ireland's booming data centre sector showing no signs of slowing down, serious questions are being asked about whether the country will keep up with the increased demand for electricity. Chris Cutler of Riello UPS highlights one solution that helps IT administrators significantly reduce their power consumption.

There's already three million square foot of server rooms in the Dublin Metro area, capacity that's predicted to double within five years. More than 50 data centres now operate throughout Ireland, growth driven by the presence of global tech giants Amazon, Facebook, Google, and Microsoft. While this ongoing trend brings billions of Euro worth of inward investment into the country and

it's not only Brexit where there's been a fundamental shift in UK-Ireland relations... Late last year, Dublin overtook London as Europe's largest data hosting cluster with a 25% share of the market.

creates valuable jobs, it poses a significant challenge too. Data centres are power-hungry beasts. All that ICT equipment and servers need electricity, then there's energy-intensive air conditioning to keep those machines running safely. Larger sites typically use up to 30 GWh of electricity a year, the equivalent of a €3.5 million bill.

As more and more such facilities are built, will the electricity network be able to keep up with growing demand? By its own calculations, the state-owned operator Eirgrid predicts that data centres will use almost a third of Ireland's electricity (31%) by 2027, a more than fivefold increase on the current figure of 6%.

Opportunities For Efficiencies

The industry has made efforts to improve efficiency in recent years, such as significant advances in cooling technologies – much-needed moves considering air conditioning accounts for up to half a data centre's energy costs.



Fortunately there's another area where technology has come on in leaps and bounds too. No matter the size, every data centre depends on an uninterruptible power supply (UPS) to provide emergency backup in case of any disruption to the mains supply. A UPS is the ultimate insurance against the threat of damaging downtime and data loss. Until recent years, however, UPS systems were very much part of a data centre's power consumption problem. They've tended to be large transformer-based static towers – the stereotypical big black box in the corner of the IT room.

Such units only hit peak operational efficiency carrying high loads (80-90%). But more often than not, these UPS systems are oversized at initial installation to build in redundancy in case of failure. This means UPSs run at lower than ideal loads, inefficiently wasting lots of energy. These large and heavy units also pump out heat so need constant air conditioning.

Moves To Modular UPS

Now there's a different, modern approach to power protection that combines performance with enhanced efficiency – modular UPS. Instead of sizeable standalone units, modular systems such as our award-winning Multi Power consist of several individual rackmount-style modules that work in parallel to deliver the necessary capacity and redundancy. This reduces the risk of wasteful oversizing at installation, as capacity closely matches a data centre's actual load. The result? Less wasted energy and lower electricity bills. Initial infrastructure investment is minimised

too as you aren't paying for capacity that isn't needed. When it comes time to expand, simply 'pay as you grow' by adding extra power modules.

Modular UPS are transformerless, which enables them to run at efficiency up to 96% even when carrying low loads (20-25%). They generate less heat, so air conditioning requirements are lower. While they're smaller and lighter too, offering operators the same power in a smaller footprint. This frees up space for either additional lucrative server racks or to install extra batteries to tap into the burgeoning energy storage market.

For many of Ireland's newer data centres – or those currently under construction – modular UPS would be a logical choice. But even for older server rooms, they offer energy saving opportunities. Every UPS has a natural shelf-life and industry best practice suggests many systems should be replaced every 7-10 years. Operators facing up to this choice anytime soon should strongly consider making the move to modular – economic benefits go hand-in-hand with environmental savings, without compromising on resilience. That's a truly win-win outcome.

Riello UPS Ltd is a leader in the manufacture of uninterruptible power supplies (UPS) and standby power systems which combine engineering excellence with high quality performance and energy efficiency, enabling reliable power for a sustainable world. The company is part of the Riello Elettronica group which has support offices in 80 countries. For further information visit www.riello-ups.co.uk.

