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## **Eaton Launches Industry First UPS-as-a-Reserve Service to Support the Power Grid in Frequency Containment Reserve**

*Operators can be compensated for immediate adjustments to power consumption that help grid avoid power outages*

**ESPOO, Finland** – Power management company Eaton is building an energy service for data centers that will enable organisations to participate in grid level frequency regulation by using UPS back-up power. The service, dubbed [UPS-as-a-Reserve](#) (UPSaaS), is the first of its kind for the data center industry and is launched in response to industry needs to maximise potential gains from data center investments, as well as the opportunities from helping energy providers balance sustainable energy demands. It will enable data center operators to immediately respond to grid-level power demands to keep frequencies within allowed boundaries, thereby avoiding grid-wide power outages. The service is aimed at large data center operators, such as colocation or cloud service providers, and launches across European markets in Q4 2017.

Eaton has developed the service in close collaboration with Fortum, a leading energy provider in the Nordic and Baltic countries. As the energy market moves from fuel-based towards renewable energy, production itself has the potential to become more volatile and harder to both predict and balance electrical supply. Energy providers are looking at the Frequency Containment Reserve (FCR) market to maintain grid frequency by balancing power generation and consumption. At the same time, demand-side response, where organisations are incentivised to lower or shift their energy use at peak times, is already

changing the energy market. As some of the world's fastest growing energy consumers, data centers can play a significant role in this market.

There is a growing appetite amongst data center professionals to consider selling spare energy from their power systems back to the market. According to [Eaton's research of data center professionals across Europe](#)<sup>1</sup>, 55 percent of respondents would consider this approach, demonstrating a latent desire to increase the returns of investment in technology and to help the data center balance fluctuating energy needs.

"This turns supply and demand on its head. Instead of just demanding power, data centers can support the grid and be compensated for it," said Janne Paananen, technology manager for Power Quality, Eaton EMEA. "The data center industry has been moving away from focusing solely on energy and cost savings over the last five years, and it is now more about making investments pay for themselves. Data center professionals can create a revenue generation strategy around assets that they already have, such as the UPS. There's free money lying on the floor, just waiting to be picked up."

Extensive testing between Eaton and Fortum has proven that the Uninterrupted Power Supply (UPS) can work as part of a virtual power plant to enable data centers to take part in the high-value FCR and demand-side market. The UPS, which uses stored power in the event of a power failure, can be used to regulate demand from the grid, as well as for up and down stream charging, essentially to discharge the battery back to the grid. Data center operators can then support the grid in frequency regulation, generating additional revenue to offset the total cost of ownership of the UPS or as part of making the data center more competitive on price. Eaton's UPSaaS Service gives data center operators an opportunity to work with energy providers to momentarily reduce the power demands of the data center and even return power to the grid. A data center could expect to raise up to €50,000 per MW of power allocated to grid support per year.

The collaboration between Eaton and Fortum has demonstrated that UPS systems and batteries can be safely and effectively used to perform demand-response operations, without any risks to the UPS's primary function. Furthermore, the diesel gensets that data centers typically have, can also be connected to the virtual power plant and used when longer activations or additional power is required.

The service puts organisations in control of their energy, they can choose how much capacity to offer, when, and set the price they trade at. By working with a commercial energy

<sup>1</sup> Source: *Freeform Dynamics and Eaton, October 2016 (Online survey of 320 senior data center professionals)*  
[http://electricalsector.eaton.com/en-gb\\_infrastructure-with-intelligence\\_strategy-and-evolution](http://electricalsector.eaton.com/en-gb_infrastructure-with-intelligence_strategy-and-evolution)

aggregator, the data center will be able to offer its capacity to the 'national grid' or Transmission System Operator. Eaton will install the functionality and provide a communication interface to the aggregator's systems. The service will be aggregator neutral so that organisations can choose to work with their preferred supplier.

The service will initially be offered on the [Eaton 93PM](#) and [Power Xpert 9395P](#) UPS models across EMEA markets.

### **Notes to editors**

To learn more about Eaton's UPS-as-a-Reserve (UPSaaS), visit [www.eaton.eu/UPSaaS](http://www.eaton.eu/UPSaaS). For more information about Eaton's data center capabilities see [www.eaton.eu/datacenters](http://www.eaton.eu/datacenters). For all of the latest news follow us on Twitter via [@ETN\\_EMEA](#) or our [Eaton LinkedIn](#) company page.

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Eaton is a power management company with 2016 sales of \$19.7 billion. We provide energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton is dedicated to improving the quality of life and the environment through the use of power management technologies and services. Eaton has approximately 95,000 employees and sells products to customers in more than 175 countries. For more information, visit [www.eaton.eu](http://www.eaton.eu)

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