

Disruptive Innovation for AC Datacenters

Why change?

Today's UPS have been designed and optimized for companies investing for their own needs. Because more and more companies desire to take profit of the cloud solution, more and more **colocation datacenters** are being built around the world.

The main problem colocation datacenters face today is related to the **non-flexibility** of these large UPS solutions. While their revenues increase with the number of customers convinced, they are obliged to **invest immediately heavily** for an oversized power infrastructure.

To meet the needs of these colocation datacenters, CE+T Power has developed a disruptive solution to offer the desired flexibility: a **pay-as-you-grow** solution. Concretely, you can invest rack by rack with an increment of only 2.5 kW. In addition to this, our solution will allow you to **generate more revenues** (from IT racks), **reduce the total cost**, make **maintenance and repair easier** while still ensuring the highest **reliability**. To resume, we propose a solution offering:

Pays-as-you-grow



Less expensive



Reliable



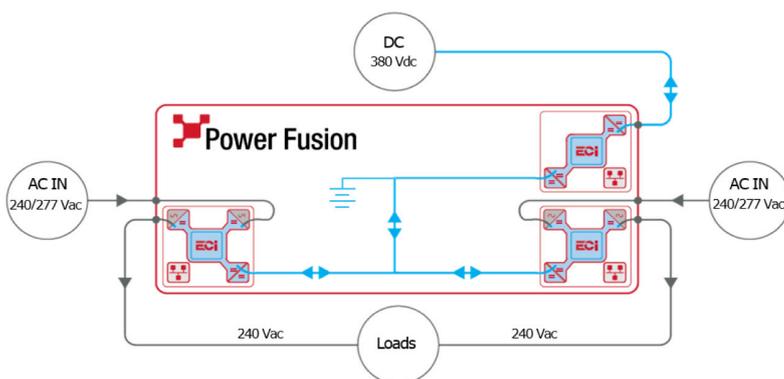
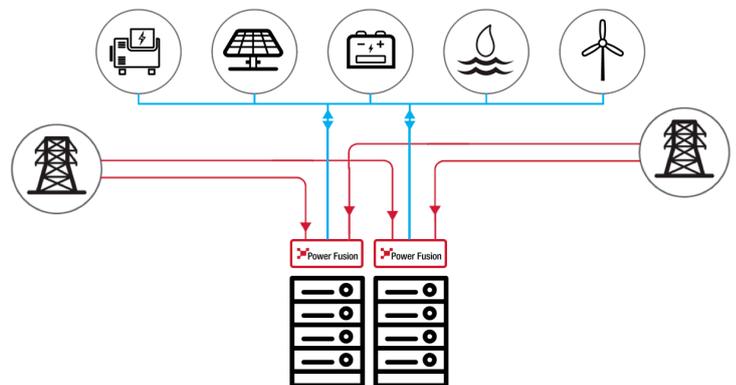
Easy to repair



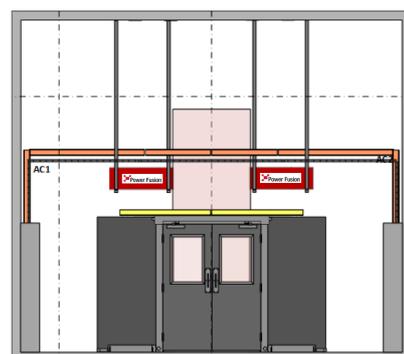
How is it possible?

To achieve this incredible solution, we simply completely changed the way to secure the powering of a datacenter. The concept is based on a common **DC BUS**, **distributing the power** from the batteries, gensets and renewable energies (optional) toward the complete infrastructure (see picture on the right).

To do so, we developed a complete solution in a box, called the **Power Fusion Satellite** including the power converters, local batteries and a monitoring solution and directly connected to the both AC distribution (from the grids) plus the DC distribution. This satellite is located on top of the IT racks:



Power Fusion Satellite



Location on top of IT racks

What are the advantages?



The first one is the ideal **flexibility**. Because large centralized UPS solutions are replaced by a local backup solution, you can invest only in what you need with an increment of 2.5 kW only. Simply purchase another Power Fusion Satellite each time you sell or rent a new server rack to a customer. Compared to a 1 MW central UPS requirement before to install the first server racks as the first step of your project, our solution is the best way to **reduce your investment risk** and **save on your cash-flow**.

About the **reliability**, the basic of the concept is to **mutualize** all the power sources (grid and genset) and batteries. Each source and battery can therefore secure all the other loads through the DC distribution. On top of this, we have **3 power distributions** within the datacenter and up to our Power Fusion Satellites instead of 2 (we approach a 3N distribution). Finally, we also remove other elements which can be a single point of failure such as the ATS (Automatic Transfer Switch) and the switchgear.



Finally, our solution is based on only **3 main equipment**: a battery module and two types of power converters. In addition, our power converters are **hot swappable** (can be replaced in operation live). This is a so **easy maintenance & repair** process that it can be done by any level of maintenance operator.

At what price?

But what is the cost of this pay-as-you-grow, reliable and easy to maintain solution? If you only look at the cost/Watt of the UPS, of course our innovative solution cost more. But what matters is the **total cost/IT Watt**. And Power Fusion brings 3 major savings:



- 1) **Over 20% more revenues**: because the Power Fusion Satellite is located on top of the servers, you save over 20% space on your infrastructure (the space a traditional UPS) to install more IT racks.
- 2) **50% less grid**: traditional UPS need to double everything (grid connection, gensets and UPS). Thanks to our DC distribution, we can achieve the same with only 50% of the grid connection. This represents huge savings knowing the cost of the 2nd grid connection is in most case fully at the expense of the data center plus the time it will take to have it installed.
- 3) **20% more power per rack**: the power infrastructure is always oversized to absorb the peak demands from the servers. Our DC distribution can easily distribute the power available to cabinets with more demanding servers.

At the end of the day, we calculate the **total cost for the power infrastructure** (including UPS, gensets, power skids, etc.) and the result is impressive: **Power Fusion is about 10% less expensive** than an optimized central UPS solution for the same period for return of investment.

Read our white paper



Watch our video



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