

DATA CENTERS WANT TO BE GREENER

As data is continuously increasing and the complete equipment of data centers is powered by electricity, they need to invest a lot in renewable energies. But what happens when they can't produce energy when they need it the most? CE+T Power has solutions to help data centers to be greener by achieving these steps towards an effective use of renewable energies.



Context

Data is expected to only increase, reaching 175 zettabytes by 2025, which implies more activities for data centers. These infrastructures hosting all the digital transactions that happen every day are estimated to consume 1% of all electricity around the world, mainly for computing, data storage and the cooling of the data center.

Why data centers want to be greener?

In response to these trends, data centers focus their efforts on delivering a more efficient, low (or no) carbon footprint operation, in order to be greener. Some data centers move their workload to other colder regions in order to reduce energy costs for cooling. But this is not always desired or even possible.

As the complete equipment of a data center is powered by electricity, the impact on the environment of a data center is largely dependent on how that electricity is produced. Therefore, technology companies are increasingly investing to build their own sources of renewable energies.

What is the problem?

Even if data centers invest a lot in renewables to produce their own energy, as the demand doesn't always match the supply, the introduction of these renewables only solves half of the equation. Indeed, without a way to store that energy for later and redistribute it when needed, data centers still rely largely on the local grid.

Is there a solution?

A way to solve all the equation is to store the energy when production exceeds consumption and be able to use the excess of renewable energy at another moment. That stored energy can be used for example:

- When the production is lower than the consumption (self-consumption)
- When the energy cost is too high compared to a later moment (energy arbitrage)
- When the demand is larger than the actual desired grid usage (peak shaving)
- Or even sell it back to the utility when the market price is high enough (market integration)

Data centers need to solve their needs for more and more energy and at the same time being as CO2 neutral as possible. But how can they get enough energy and make it as green as possible? Our answer would be: go step by step!

- Step 1: invest in green energy (most common are PV panels)
- Step 2: install a small energy storage system to interact with the grid to relieve it and therefore reduce your footprint
- Step 3: combine multiple renewable energy sources (sun, wind, water, ...)
- Step 4: add more energy storage and become almost autonomous (and CO2 neutral) or at least consume as much as possible green energy without using the grid.

You understand the idea: you start small and increase when you need more or are ready to do more.

How CE+T Power can help you?

We have developed solutions to help you achieve these steps towards an effective use of renewable energies.

Converters & Systems

Our power converters are developed based on CE+T Power's ECI patented technology. They are able to connect multiple sources of AC and DC loads: batteries, renewable energies, EV charger, etc. We offer 3 technology platforms, each based on innovative converters with 3 bidirectional ports.

Select your building block depending on your voltage requirements and output power:

| Building blocks | AC voltage |
|---------------------------------|------------|
| Sierra 25 – 48/230 (info) | 230 |
| | 3×400 |
| Hercules (info) | 3×400 |
| Stabiliti 30C3 – 750/400 (info) | 3×400 |
| Stabiliti 30C3 – 750/480 (info) | 3×480 |

Monitoring

In order to manage the production and consumption, we have monitoring solutions including PMS functions such as peak shaving, demand response or energy arbitrage. Our PMS can be connected to a third-party EMS to do even more!

Ok but what is it for you?

Here are some benefits our solutions can bring you:

- Solution can be integrated in many ways: rack, cabinet or container
- Easy maintenance: plug & play, highly reliable (low MTBF)
- Evolve with your needs: converters are modular and scalable
- Advanced monitoring features
- Work on-grid and off-grid
- ... and many more!