

Microgrid Solution for 5G Small Cells!

The challenge



5G is the new technology that everyone will need to guarantee **broadband** (up to 10 Gbps) and low **latency** (less than 5 ms) expected by all customers from their mobile operators. While 4G technology was introduced in 2010, it is now time to move to 5G.

To achieve this high speed and low latency, the 5G need to increase the frequency (about 30 to 300 GHz) and the wavelength (millimetre waves) of radios. As a result, mobile operators must **install thousands of antennas** (Small Cells) on the roof of the building or mounted on lighting poles. The problem is that these antennas will be installed where there is not always **power cable** and **optical fibre**.



The mobile operators need therefore a solution to **power** (and eventually secure) and connect **optical fibres** with thousands of small cells in a **cost-effective** and **timely** manner.

Power & Secure



Optical fibre



Cost



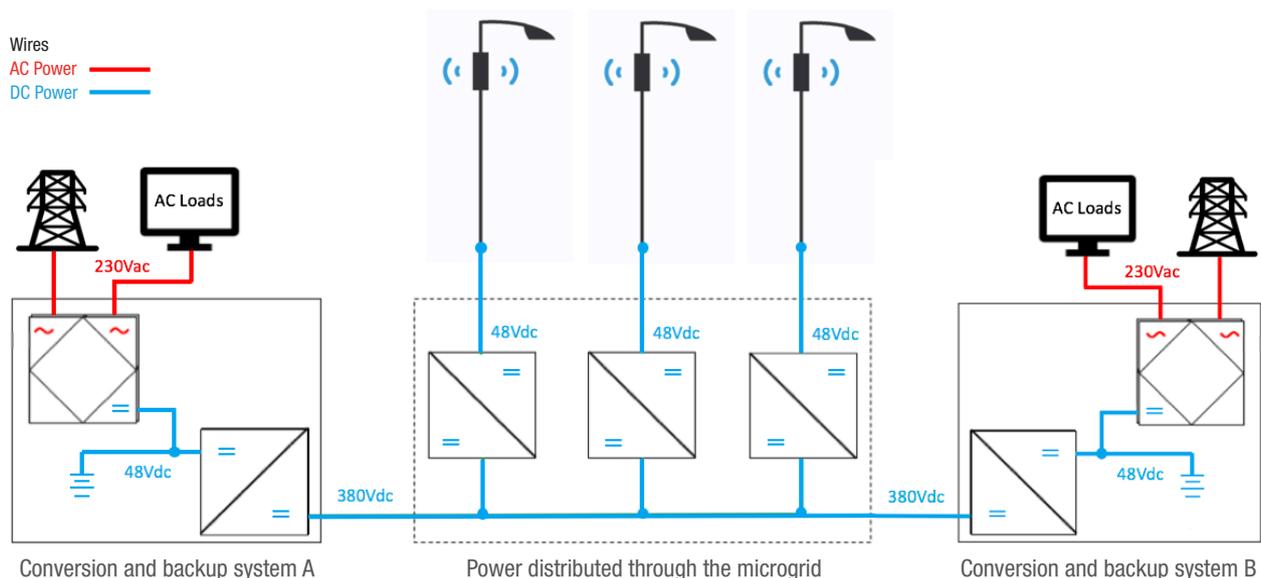
Time



Microgrid for 5G?

In collaboration with **CommScope**, a global leader in connectivity, we offer a microgrid solution based on power converters and a connectivity solution that combines optical fibers and electrical conductors to fulfill the requirements of 5G. The power from the grid is first converted to 48 Vdc to charge a local battery. Using this storage and power converters, the Metro Grid solution can both **secure AC Loads** (e.g. IT servers for Edge Computing) and up to **10 Small Cells** through this hybrid cable (380V DC distribution).

To increase the power and overall reliability, you can easily plug other grid sources or renewables to the **DC distribution**. Technically speaking, this means that the **DC voltage** on the cable will be **stable** regardless of the power sources and loads connected to it!



What are the advantages?



Using the **hybrid solution**, you can **easily connect** the small cells to **optical fibres** (to reach the communication speed required by 5G) and a **secure power distribution** (based on a 380 Vdc). This connectivity system, developed by CommScope, offers a single and easy way to connect new 5G antennas.

Because the Metro Grid solution only needs **1 grid source** to connect **up to 10 small cells**, you can save a lot of time and money. Indeed, each new grid connection costs several thousands of dollars, needs time and require an arrangement with the power utility (most often meter based or fixed fee arrangement).



The number of small cells you can connect to a single grid source depends on the power required by the antennas and the distance between each other. The first version is designed to power up to 10 small cells of 1 kW each plus local AC and DC loads. With this configuration, you can **save up to 10 times the cost for a grid connection** and a lot of **time**.



The reliability is seen by some mobile operators as not mandatory. Their argument is that if a small cell fails, the 4G technology is still available. But what is the interest to install 5G if you cannot rely on it? And what about the broadband and the latency mobile operators will offer to their customers without the 5G?

Using the microgrid concept, the **backup solution** is **centralized**, and the total **cost is extremely optimized**. An easy way to secure all the small cells without adding a local storage on each pole cabinet!

It is already working?

The Metro Grid solution is under development. We have already built two **demonstration cabinets** installed in Belgium and the United States. If you want to assist on a demonstration, you can simply give us a call to arrange a visit.

The Metro Grid is based on our innovative bidirectional power converter, **Sierra** (48 Vdc / 120 Vac), and a **rectifier** (48 Vdc / 380 Vdc, \pm 190 Vdc). Combined with our latest generation of monitoring, **InView**, we have a **complete solution** for powering **5G telecom infrastructures**.

Get in touch

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