Dantherm®
CONTROL YOUR CLIMATE

SAVING ENERGY IN OFF-GRID BATTERY BANK

By transforming the traditional AC-powered air condition solution to a DC-powered Dual-Zone climate control solution, a mobile operator has reduced its energy consumption and achieved a far more efficient conversion between the off-grid energy source and the batteries.

A better overall solution

A mobile operator with operations in several African countries was looking to replace its AC-powered cooling system with DC in order to achieve savings on both energy and expenditures. Dantherm presented a DC-solution that would optimise the operator's overall solution. Dantherm's solution eliminates the need for conversion, it focuses the cooling and it is very secure and easy to install.

The African challenge

Operating in Africa, a mobile operator has a number of important issues to consider. The ambient temperature rises to very high levels, the power supply is often unstable or even non-existent and the sites are vulnerable to vandalism due to the valuable electronic equipment. In order to protect its numerous African sites against melt down following the high ambient temperature, the mobile operator has now chosen to implement Dantherm's Dual-Zone climate control solution and thus separating the temperature sensitive batteries from the transmission equipment, Area Sales Manager Randi Sandfeld Larsen explains.

Separating cooling and ventilation

In Dantherm's Dual-Zone solution, the batteries are placed in an outdoor cabinet powered by DC, while the transmission equipment is placed in a ventilated indoor cabinet. The result is significantly lower energy consumption as the operator only cools down the temperature sensitive batteries. Furthermore, Dantherm's DC Air Conditioners operate without inverters that reduce the chain of conversion – leading to minimal power loss and further savings.

Mono-block design is easy to install

Dantherm replaces the mobile operator's existing split air conditioner design with a mono-block unit, which eliminates the visible pipes. This not only protects the units against vandalism but also makes them very easy to install.

Savings will vary

The mobile operator has approved Dantherm's Dual-Zone solution and Dantherm is now supplying the units as the partner services the sites. The savings result will vary between sites and depend on a series of factors such as the indoor site temperature, the ambient temperature and the sites' previous energy sources. If all the options offered by Dantherm's DC-solution are utilised, we expect that the mobile operator will achieve approximately 60-70 per cent savings on the power used for cooling, Randi Sandfeld Larsen says.

China	tel: +86 512 6667 8500	e-mail: dantherm.cn@dantherm.com	Denmark	tel: +45 96 14 37 00	e-mail: dantherm.dk@dantherm.com
Russia	tel: +7 495 642 95 60	e-mail: thj@dantherm.com	Sweden	tel: +46 121 130 40	e-mail: infose@dantherm.com
USA	tel: +1 864 595 9800	e-mail: dantherm.usa@dantherm.com	Germany	tel: +45 96 14 37 00	e-mail: kw@dantherm.com
MEX	tel: +52 1 55 54047568	e-mail: dantherm.mx@dantherm.com	France	tel: +33 612 698 604	e-mail: ylr@dantherm.com

The mobile operator achieves a number of significant advantages:

- The off-grid sites no longer have to convert the diesel, solar or wind generated DC power to AC power, which caused them to suffer 10-15 per cent current loss.
- DC powered cooling does not use extra current when starting up. AC powered cooling, on the other hand, spends up to 10 times its running current every time the temperature reaches its tolerance level and the cooling system has to start up.
- The compartment cooling prolongs battery service life and generates substantial savings.
- The sites are safer from vandalism as the mono-block unit consists of one, closed-loop air conditioner without exposed pipes.
- The solution is easy to install and maintain.

China	tel: +86 512 6667 8500	e-mail: dantherm.cn@dantherm.com	Denmark	tel: +45 96 14 37 00	e-mail: dantherm.dk@dantherm.com
Russia	tel: +7 495 642 95 60	e-mail: thj@dantherm.com	Sweden	tel: +46 121 130 40	e-mail: infose@dantherm.com
USA	tel: +1 864 595 9800	e-mail: dantherm.usa@dantherm.com	Germany	tel: +45 96 14 37 00	e-mail: kw@dantherm.com
MEX	tel: +52 1 55 54047568	e-mail: dantherm.mx@dantherm.com	France	tel: +33 612 698 604	e-mail: ylr@dantherm.com