

# How small steps power big sustainability goals

These batteries give back.



**Microsoft is already 98% more carbon efficient. We can help you get there, too.**

As Microsoft continues the journey to carbon negative, you can lessen your impact on the environment simply by moving your workloads to the cloud. One of the ways we're trying to reduce our carbon footprint is by working to add capacity and reduce the demand on the grid, and small steps like implementing grid-interactive UPS batteries make a big difference.

## Delivering short-term backup power

Datacenters use fossil fuel generators for back-up power during the rare emergency. By replacing generators with long-duration batteries, we're finding ways to further reduce our emissions and also give back to the grid.

## Less energy demand

A recent study of a Microsoft datacenter found that optimal battery utilization will lower energy demand on the grid by 10% under peak load.

**"In the future, you don't have a datacenter or a power plant. It's something in the middle. A data plant."**

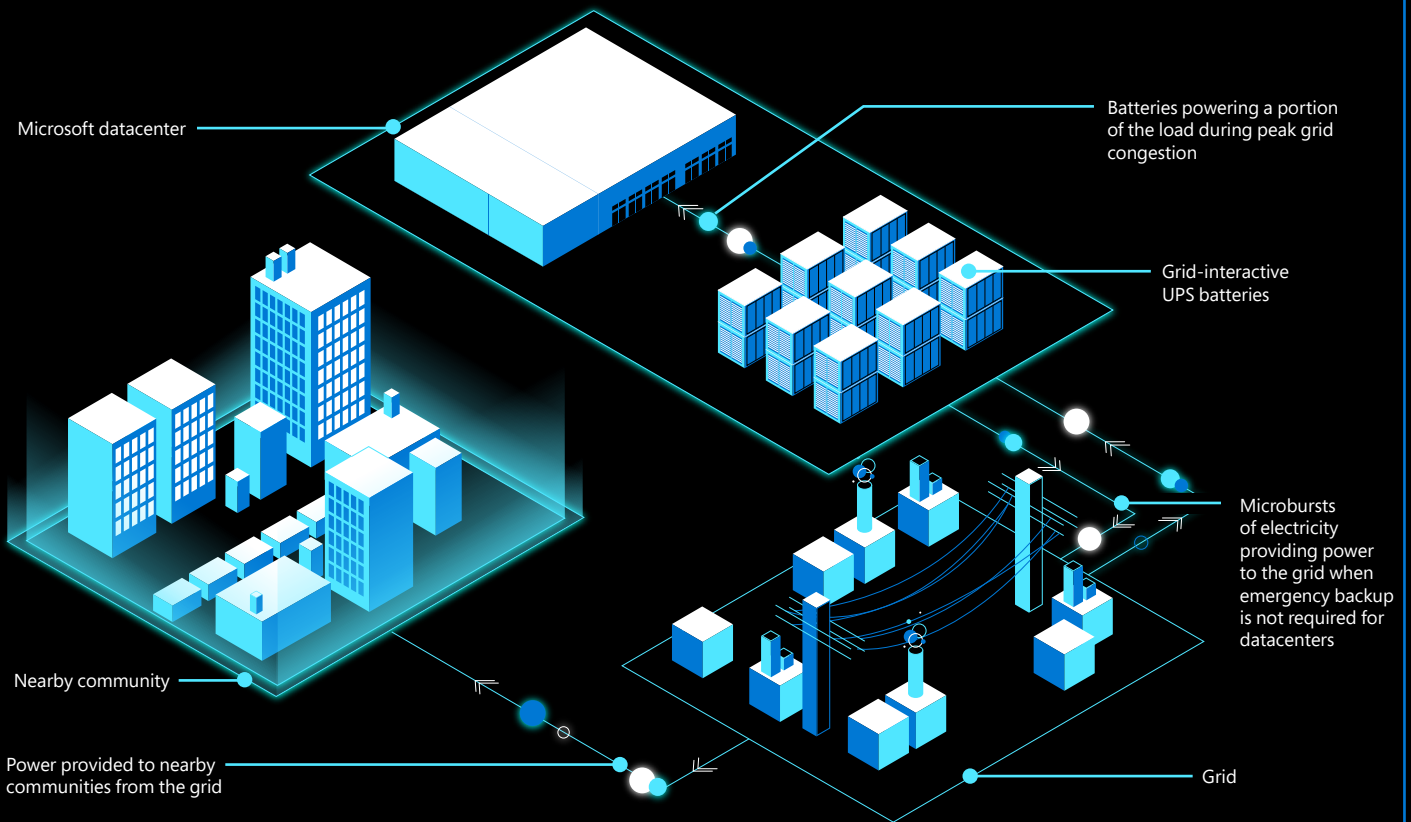
— Sean James, Director of Energy Research, Microsoft

## Directing energy more efficiently

Unlike legacy lead acid batteries, grid-interactive UPS batteries store energy at up to 90% efficiency. An algorithm would regulate frequency between batteries and an intermittent grid by dictating microbursts of electricity in either direction based on need in any given moment.

### Faster power delivery to the grid

Once deployed, grid-interactive UPS batteries will start delivering short-term power within a fraction of a second—faster than diesel generators.



### Long-term goals

As this technology continues to mature, the goal is to extend the duration of the batteries—from a few minutes to several hours. The long duration batteries have the potential to be a replacement for diesel generators.

### Advancing the use of renewable energy

With the implementation of grid-interactive UPS batteries, intermittency from renewables will be less concerning, rendering them increasingly viable, more broadly adopted—and widely affordable for all. By using Azure, businesses will drive the renewable energy economy and keep their own environmental impact low.



Work with us toward a carbon-negative future.

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