



Two powering strategies shaping the future of energy

AI is redefining what it takes to power data centers.

As electricity demand accelerates and grid constraints become more common, Battery Energy Storage Systems (BESS) have evolved beyond emergency backup. They're now the critical component helping turn AI-ready power management into a competitive advantage.

BESS can be deployed in two ways: Behind-the-Meter (BTM) or Front-of-the-Meter (FTM). Explore the differences between the two approaches below.

Behind-the-Meter (BTM)

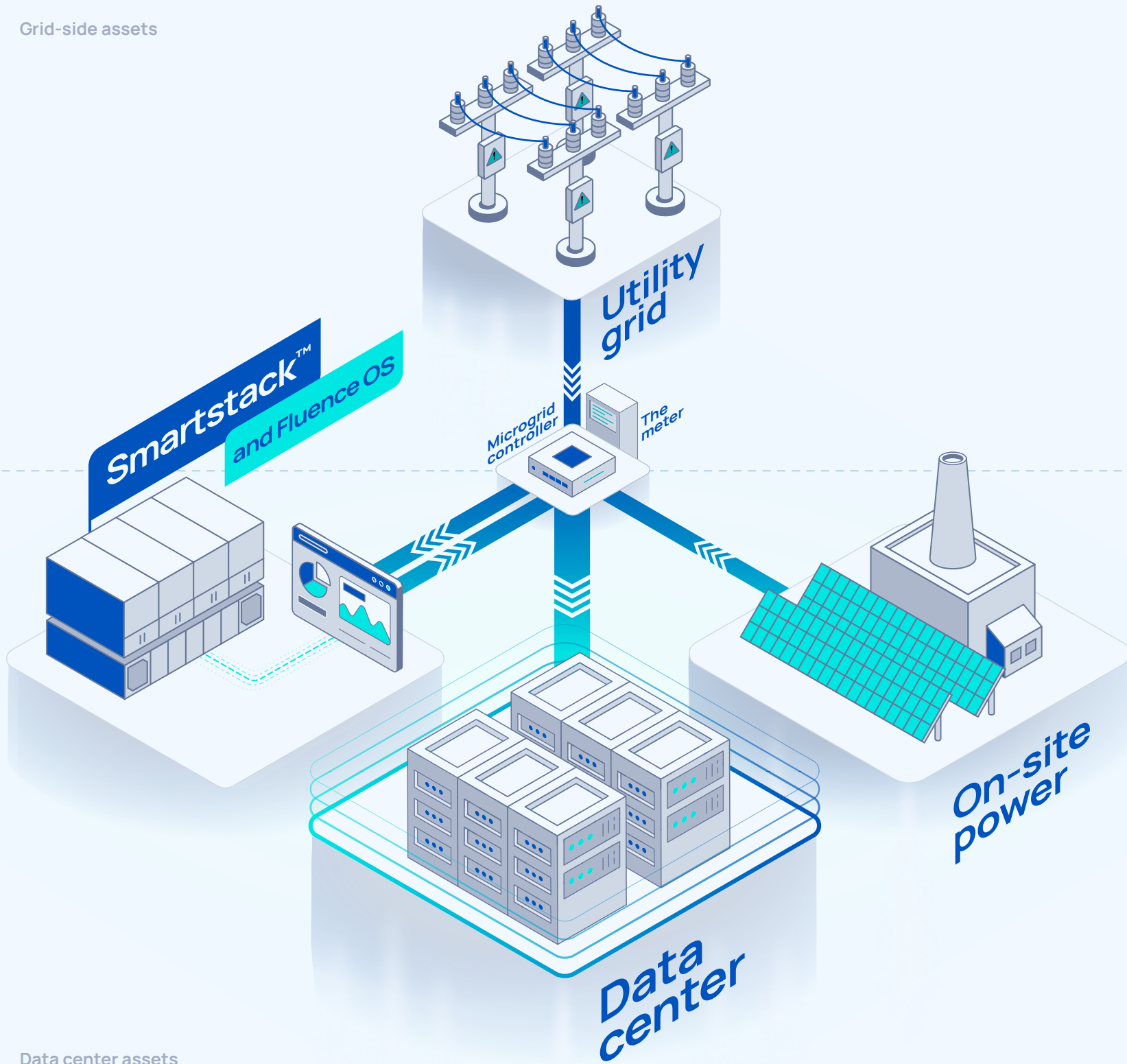
The energy storage system is deployed on the data center side of the utility meter to help optimize on-site power, improve resilience, and reduce peak demand spikes. Fewer peak demand spikes also mean lower operating costs.

BTM use cases

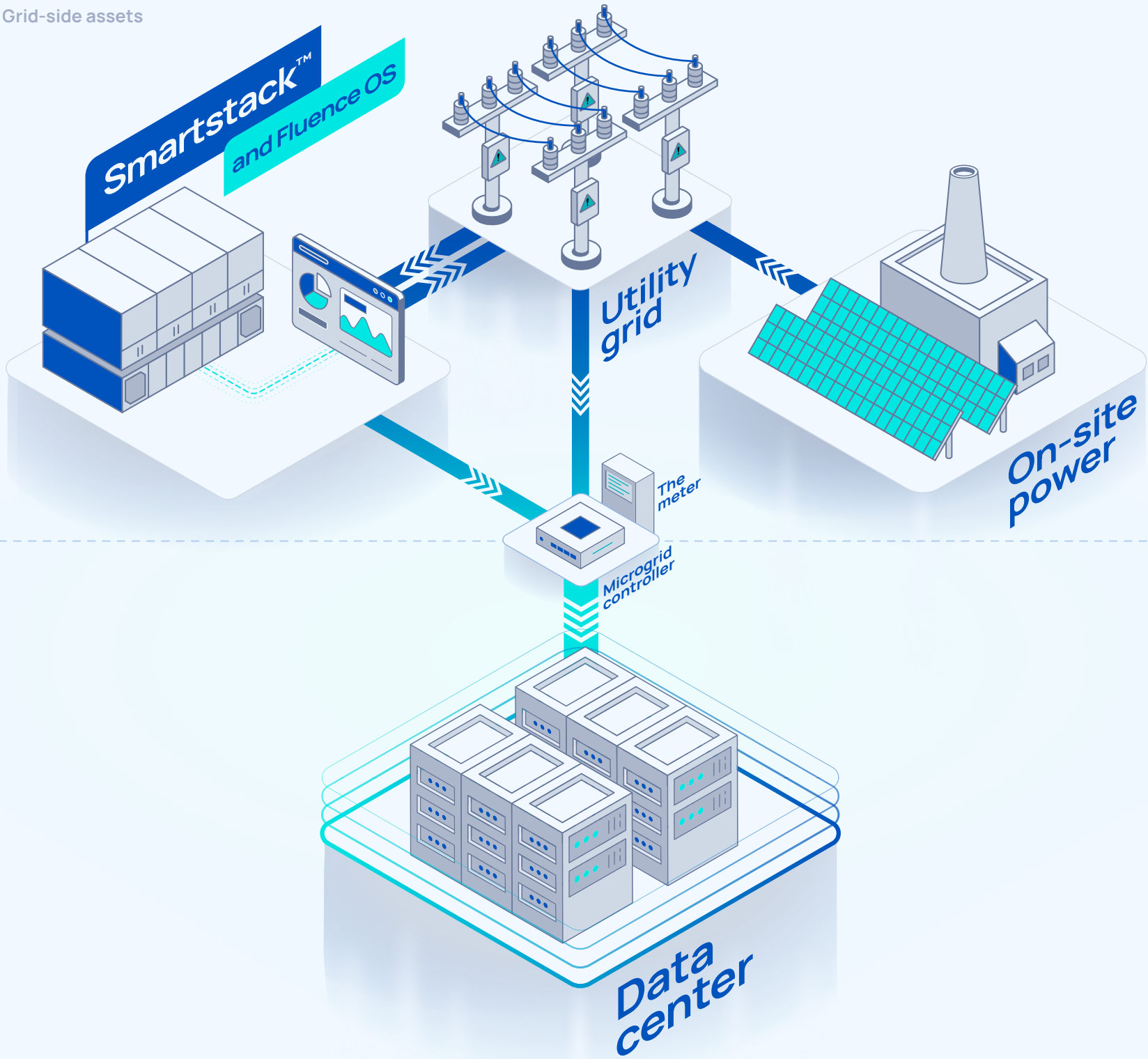
Intelligent software controls from Fluence OS enable key BTM use cases, including:

- Energizing before grid connection**
 - Island operations
- Optimizing grid integration**
 - Load smoothing
 - Flexible capacity
- Ensuring reliable power**
 - Backup power
 - Grid disturbance management
 - Voltage ride-through

Grid-side assets



Data center assets



Front-of-the-Meter (FTM)

In an FTM approach, the energy storage system is directly connected to the utility grid. This helps utilities and independent power producers (IPPs) expand capacity and deliver reliable power to meet growing demand, including demand from AI data centers.

FTM use cases

For utilities and IPPs, Fluence OS helps maximize the value of FTM energy storage across key areas:

- Accelerating grid connection**
 - Flexible capacity
 - Clean energy procurement
 - Peak shaving
- Optimizing wholesale market participation**
 - Market scheduling
- Supporting grid stability**
 - Ancillary services
 - Fast frequency services
 - Voltage and frequency regulation



The key to smarter energy storage

Designed for both BTM and FTM deployments, Fluence Smartstack is a modular, grid-scale energy storage platform that is flexible, scalable, and secure. Its split-architecture design separates critical control hardware from the battery pods, simplifying maintenance and improving thermal safety.

Fluence OS is the software and controls layer that brings Smartstack to life. It monitors, manages, and optimizes energy storage in real time to help data centers and utilities strengthen reliability and enhance system performance.

Powering what's next

No matter your energy strategy—or which side of the meter you're on—Fluence Smartstack gives you the flexibility to solve today's energy challenges while preparing for tomorrow's demands.