



**UT Energy Week: “How Smart Grids Enable Consumers”**  
**Feb. 18, 2015**

# Who We Are

- » **Active Power** is a global leader in flywheel energy and power technology for mission critical applications
- » Products built on elegant and proven **flywheel and power electronics technology**
- » Combined benefits of products' **power density, reliability, and total cost of ownership** are unmatched in the market
- » Chosen by **marquee customers and partners** around the world

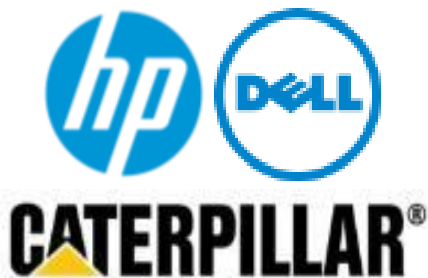


# Active Power...By the Numbers

- » Founded 1992; IPO 2000
- » HQ in Austin, TX, with operations centers in UK, Germany, and China
- » 200+ employees
- » 4,000+ flywheels in systems shipped worldwide
- » 200+ infrastructure modules deployed worldwide
- » 50+ country deployments
- » 200+ million hours of field runtime
- » 1,000+ megawatts of critical power deployed
- » 116 active issued patents and pending applications worldwide



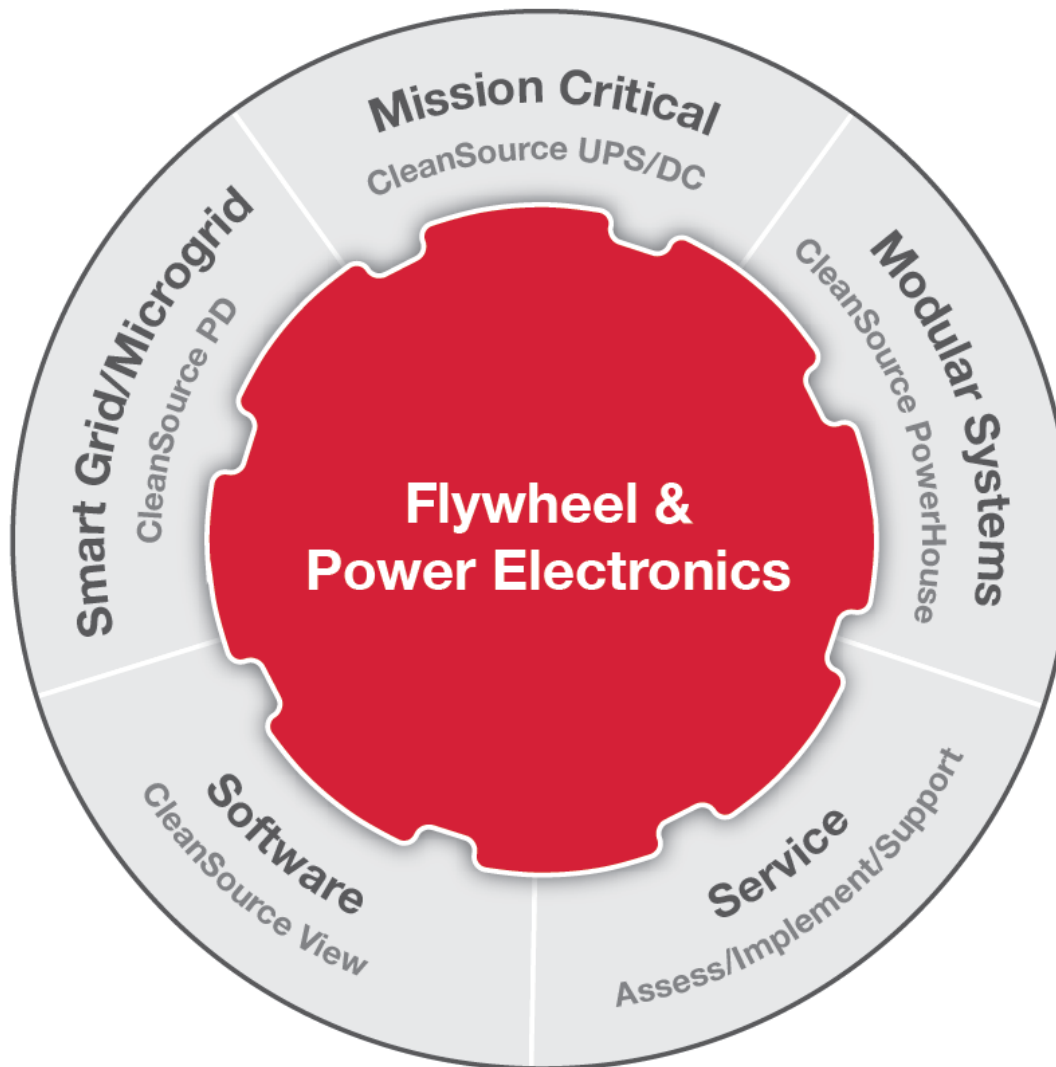
## Global Partners



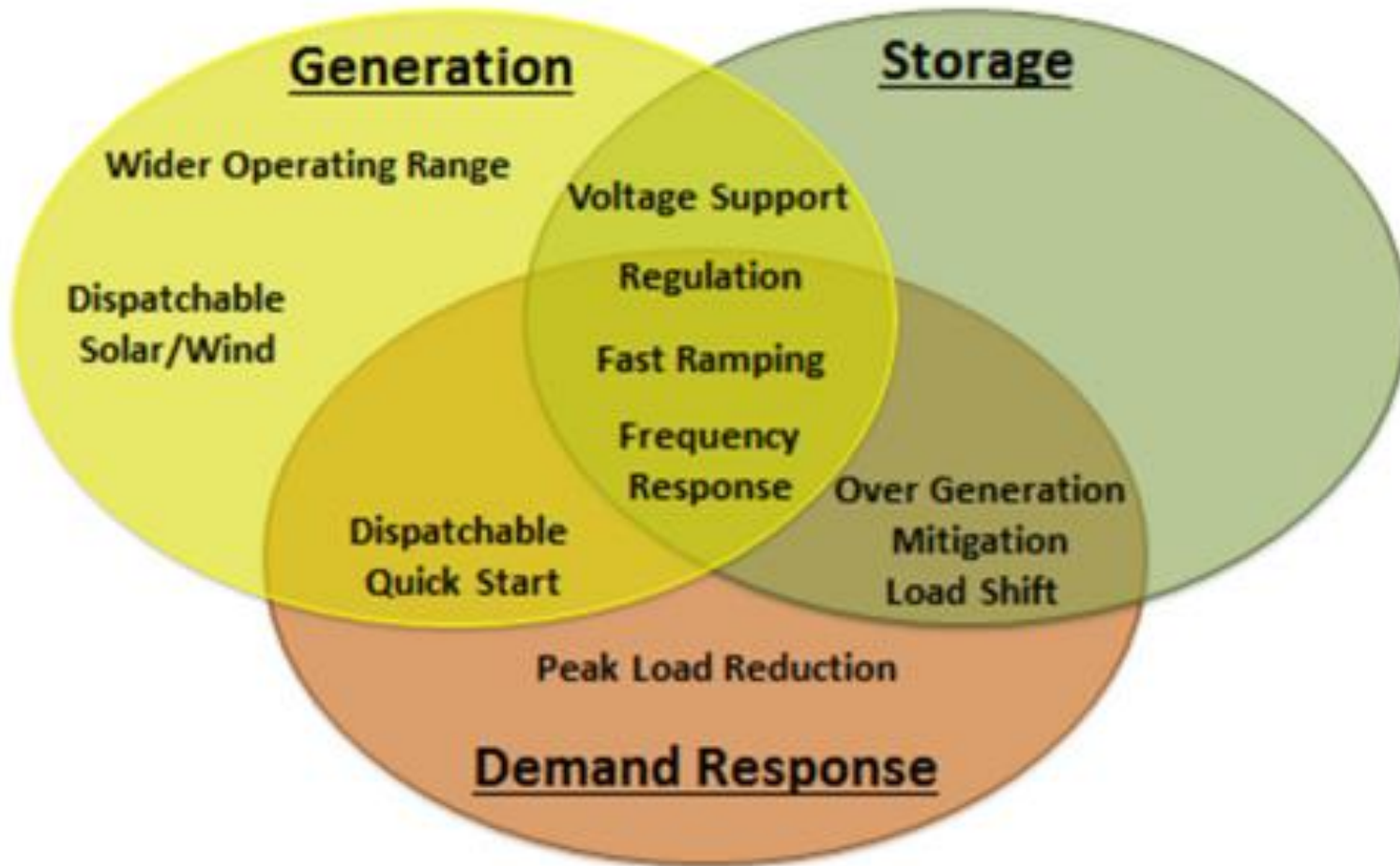
## Global Customers



# Flywheel and Power Electronics Support Five Core Solutions

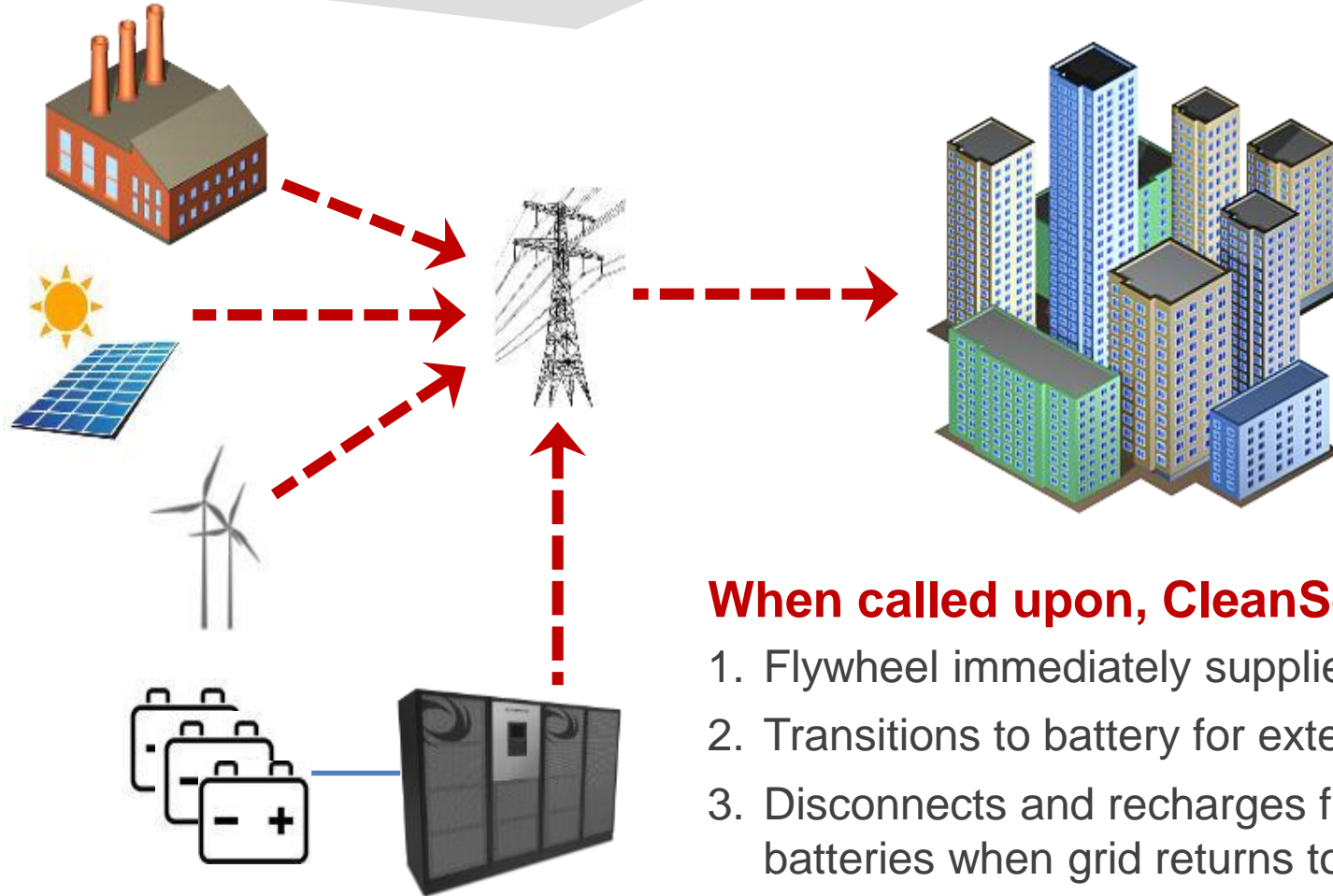


# Where Do We Fit In?



# Smart Grid / Microgrid

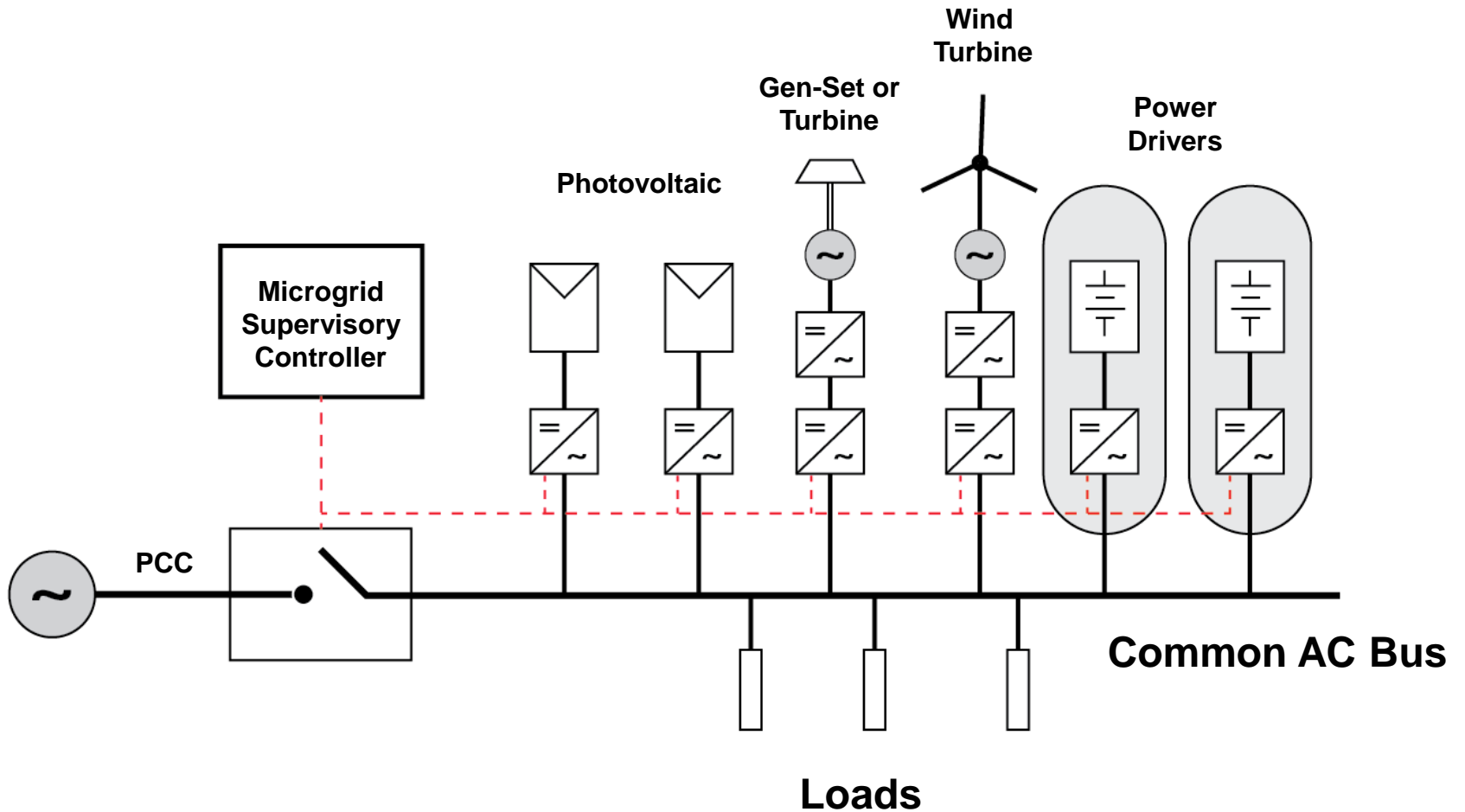
CleanSource PD stores energy and supplies power to grid on demand, smoothing transitions among sources and responding to frequency issues



## When called upon, CleanSource PD:

1. Flywheel immediately supplies power to grid
2. Transitions to battery for extended response
3. Disconnects and recharges flywheel and batteries when grid returns to nominal

# CleanSource Power Driver (PD)



# Value Proposition

CleanSource PD allows for the microgrid to seamlessly transfer between modes.

- PD topology has voltage and current controllers working in parallel in order to achieve transfers between grid connected and off-grid modes without a glitch.
- PD helps microgrid to minimize loss of control, thus it is easier to control
- It enhances TCO and ROI of microgrid by avoiding utilization of components with higher cost such as batteries (ES) and generators (Source)



# How does AP benefit customers?

- » We enable the integration of renewables into the smart and micro grids
- » We improve the power quality of electrical systems
- » We provide stabilization to mitigate unpredictable components of smart and micro grids
- » We make renewables and energy storage technologies more affordable
- » We enhance the reliability of electrical systems

