# COORDINATED CLUSTER TOOL ENERGY DELIVERY SYSTEM

## ABSTRACT

A coordinated cluster-tool energy distribution system provides a systems level approach to supplying all process energy needs for such industrial applications as those found in the semiconductor manufacturing industry, *e.g.* a single-wafer or multiple chamber processing chamber. The system is preferably provided as an integrated whole, rather than as a piece-meal collection of various energy distribution elements. The system comprises a shared DC bus that provides load diversity at lower energy levels, eliminates power supply components and/or minimizes the operating capacity of such components, and provides a lower installed cost; a common rectifier/filter or switcher power supply front end that lowers overall system cost, eliminates redundant power supply components, and provides a smaller system form factor; and (optionally) an energy storage device,such as a battery, capacitor, or flywheel, that reduces peak demand, thereby allowing smaller feeder circuits and a smaller energy source, and further providing ride through protection against brown-outs.

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