

Generators for data centers

Power generators are selected based on the load they are intended to supply power for power servers, and that load's "mission critical" needs (e.g. data centers & power servers) . Server farms don't run without power, and that's why the search for cheap and reliable electricity has pushed data center designers to build their inelegant constructions in some out-of-the-way places for power servers. This concern over power servers marks a major change in thinking; no longer worried just about one-time capital expenses, data center operators factor in on-going expenses for the power that runs both computers and air conditioning.

"A couple of years ago I would measure a data center in square footage," Debra Chrapaty of Microsoft told Fortune this summer. "Now I look at megawatts of power. It is a new way of measuring technology." But what happens when the power fails? Because they often host mission-critical servers, data centers are built with both battery and generator backups. If the power cuts out, the batteries take over, just as they might in a home user's uninterruptible power supply. The generators also chug to life automatically and start pumping out the juice before the battery system fails.

A run on generators has made them tough to get, especially in the massive sizes needed to power a data center. A recent New York Times article points out that power has gotten so expensive that the costs of building a data center have risen from \$500 a square foot to \$800 a square foot in five years, and generators have gotten scarce. "The first thing we look at is power," Margie Backaus of data center host Equinix told . "Getting generators today is the No.1 thing that will drive your construction schedules." Finding one giant generator is difficult, tracking down dozens of them can be almost impossible. "Some of the newer Microsoft and Yahoo data centers can use up to 20 or 30 generators," said Chris Dolan, president of 365 Main, told Data Center Knowledge.

Microsoft, Google, Yahoo, and others are trying to save money by setting up new data centers in cooler climates with inexpensive power—heat and electricity prices have both made California less than ideal for this purpose. Who's ready to relocate to Anchorage?