

Reducing Utility Costs

Part 2: On-site Generation



Electricity is usually one of the largest financial burdens faced by plant managers. Fortunately there are options available to minimize these costs or even generate profits.

Industrial clients are utilizing on-site generation to manage their electrical costs, to increase the reliability and availability of their electrical supply, and to protect the environment by saving energy and minimizing pollution. Perhaps your facility can realize these benefits by installing on-site generation, or by reconfiguring existing generators.

Many facility managers are negotiating drastically reduced energy rates with their utilities by agreeing to disconnect from the electric grid when asked. Generators are used to keep facilities running during these planned and unplanned outages. Generators can shave load peaks to reduce your demand charge, and they can generate energy to be sold back to the utility.

Often facilities have the capability of operating cogeneration units that not only generate electricity but also capture waste heat for productive use. For example, many cogeneration units are powered by natural gas. The waste heat from the generator is then captured to serve the facility's hot water, process steam or drying needs. Other cogeneration units use the facility's waste heat, gas or steam to power an electrical generator. Cogeneration usually results in a better return on investment than "generationonly" units.

If your electrical rate is \$0.06/kWh or higher you should consider on-site generation. Other good candidates for cogeneration include food processors and industrial facilities with thermal loads, such chillers, boilers and dryers. It is also helpful if your utility welcomes private generation with a rate reduction. The size of your facility is usually unimportant—successful on-site generation projects have been implemented for hotels and for huge petro-chemical plants.

Payback is usually 2-4 years for on-site generation. After that, the unit directly contributes to your bottom line profit. Retrofits, allowing existing installations to capture waste heat or to sell power back to the utility, are also very feasible. Typically, payback for the necessary upgrades is about one year for generators that run 250 or more hours per year.

Having a generation plant on your facility is easier than you might expect. Installation causes little downtime and maintenance is easily outsourced to vendors. If your facility meets the criterion noted above, I'd encourage you to consider on-site generation.

For more information...

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This article was featured in the March 6, 2006 issue of Feedstuffs magazine. For the full article, read "Lower Electrical Costs Possible."