Emergency Preparedness

Commercial Backup Generators: Why Your Business Needs One

Matt Morgan | Dec 18, 2020

The facility is buzzing with productivity: Workers are dutifully on task and products are predictably making their way to boxes for shipment to customers. Then, without warning, the building goes dark. Do you have a backup plan?

You've lost power in an instant. The sounds of business as usual fade to silence, and everything comes to a standstill—including your company's ability to make money.

Unbeknownst to you, a lightning bolt struck a transformer nearby, cutting the electrical supply to your building, for who knows how long. Next time, it could be ice or high winds downing a power line, or a vehicle striking a utility pole, or an unfortunate squirrel venturing too far into an electrical substation, or a heat wave driving up electricity demand and causing the supplier to institute rolling blackouts.

There are many reasons for the power to go out at your facility and virtually no way to predict when it might happen. But you can be prepared.

> **"Lost power can be detrimental to a manufacturing company, costing them money every second the facility is without electricity. Product lines can be brought to a standstill, which can translate into lost product, a decrease in production and the possibility of a breakdown of the machinery."**
> Dan Piggot
> Generac Power Systems

Having a backup power generator on-site can keep your entire operation—or only the essential parts of it—running until electricity is restored.

The Cost of Power Outages to Manufacturing Businesses

Unexpected downtime is bad for business.

Different Types of Fuel for Backup Power Generators

Power generators can run on unleaded gas, liquid propane, natural gas or diesel, depending on the model. Certain generators can use more than one type of fuel: They start with one type, then automatically switch over to another type when the first runs out.

Here is an overview of fuel types:

Unleaded gas is used by most portable generators. This fuel is widely available—just go to your local gas station—and easy to store, though you'll need to take precautions because of its volatility. Stored gas has a shelf life of about a year.

Liquid propane has a longer shelf life than other fuel types, but it is less efficient than unleaded gas or diesel.

Natural gas is piped to a facility and metered by a utility company. Provided you already have a line installed, this economical fuel is available when you need it, and there is nothing to store on-site. Natural gas is also a cleaner energy source.

Diesel is the most common fuel type because it is widely available, efficient (especially for higher kilowatt applications) and easy to store. Diesel has a shelf life of a year and a half to two years and has a larger carbon footprint.

"Lost power can be detrimental to a manufacturing company, costing them money every second the facility is without electricity," says Dan Piggot, account manager at ***Generac Power Systems***. "Product lines can be brought to a standstill, which can translate into lost product, a decrease in production and the possibility of a breakdown of the machinery."

Let's look at some numbers.

According to a ***2017 report by research firm Vanson Bourne***, about 8 in 10 companies in manufacturing and several other industries experienced unplanned downtime in the previous three years. A ***survey by S&C Electric Co.*** found that more than half of manufacturing companies reported power outages of an hour-plus in the previous year.

How much would an hour of downtime from a power outage cost you? Figuring out this number can help you determine your return on investment of a power generator. Start by examining your manufacturing and labor costs.

From Peter Brand, writing for ***Oden Technologies***: "Let's say a company can produce 100 units per minute, and each of these units represents a potential of $1 of profit. For this company, the cost of downtime in manufacturing based on lost production would be $100 per minute, $6,000 per hour, etc."

Carrying the example further, a 16-hour day without power could cost this company $96,000 in lost production.

Read more: Will Your Manufacturing Facility Be Ready If a Disaster Strikes?

Not only would a company be losing out on production revenue during a power outage, it would still have to pay employees for their idle time on-site. To estimate this cost at your facility, multiply the following factors:

- Number of employees at the facility during the outage
- Average hourly wage of those employees
- Number of hours of power outage

For example, if your company employs 18 workers who earn $18 per hour on average, you are paying $324 per hour for no work to be done during a power outage.

Besides productivity loss, there may be other costs involved, ***Data Foundry says***. These include the cost of employees working overtime to make up for the productivity lost during the outage and the cost of disruption in the supply chain caused by the downtime.

Then there are intangible costs, such as damage to a company's reputation caused by missing delivery deadlines to customers.

By calculating your total losses during a power outage lasting an hour or even a full day, you'll be in a prime position to see the return on investment of backup generator equipment—including installation, fuel and maintenance—to keep operations running.

Fortunately, there are many types of backup power generators to choose from. To find out which solution is right for you, it helps to identify your facility's needs.

How to Calculate the Right Generator Size for Your Needs

The average manufacturing facility uses 95.1 kilowatt-hours per square foot each year, with most of that energy going to heat and cool manufactured products and to power machinery, according to ***E Source***, a research and consulting firm serving the utility industry. That's a lot of energy required to do business.

Generators are measured by the amount of energy (in watts) they can produce. The generator you purchase must be able to handle the total wattage of all of the systems that you want to power during an outage.

To figure out the size of the generator you need at your facility:

1. Make a list of the systems that are essential to keep your business running when the power goes out.
2. Figure out how much energy the essential systems require. Each electrical appliance should have a label with the wattage, but you might have to do some investigating. Add up the wattage for all of the appliances you've deemed essential during a power outage.
3. Factor in the starting watts. This is the additional watts an appliance uses to start up, which can be 200 percent or more of the normal running wattage. For example, an air compressor might require 1,600 watts to run but 4,500 watts for a couple of seconds to start. Whatever appliance

has the highest additional starting watts of your essential systems (it could be the additional 2,900 watts of that air compressor), it must be factored into your total wattage capacity for the generator.

Figure Out Which Type of Backup Generator You Need

There are two types of backup power generators: portable and standby.

See all portable power generators

Portable power generators are smaller and lighter and can be moved to wherever there is a need. They also have a lower price point, making them an economical solution for many businesses. Smaller manufacturers may be able to power all of their essential systems with these generators, and larger companies can use them for air conditioning units or break rooms. Portable generators are more labor-intensive: When the power goes out, the unit needs to be retrieved from storage, wheeled into place, gassed up and started up before any power can be restored.

See all standby power generators

Standby power generators tend to be used by larger businesses with greater power requirements, though smaller models are available. As the name implies, these units "stand by" for times when they are needed. They switch on automatically when they sense a dip or outage in electrical supply. Standby generators usually are professionally installed in a permanent location on the outside of the building, wired into the facility's electrical grid and fueled by an underground line.

What Are You Waiting For?

Losing power is not so much a matter of if, but when. A backup power generator is a relatively small investment for your business to avoid costly productivity losses during an outage. A wide variety of generator models and features means there is something to suit your company's unique needs.

Have you used a backup generator to keep your business running during a power outage? Share your story in the comments below.