OUC
The *Reliable* One®

To find out how backup generation can help you enhance workplace productivity, preserve vulnerable inventory, secure valuable data transactions and avoid disruptions to normal business activity, contact OUC at 407.423.9109.

One of our power experts will visit your location and meet with you to discuss your backup generation needs.

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Evaluating Backup Generation

Things Any Business Person Should Know
A White Paper From OUC—The *Reliable* One

Preface

Thank you for taking the time to learn more about this important business issue.

For the fourth consecutive year, OUC—The *Reliable* One lives up to its name by ranking at the top in the state for the reliability of its electric service. Unfortunately, all systems sometimes have unavoidable outages caused by things like severe weather, construction accidents—and even the occasional wayward squirrel or nesting bird.

While these outages are usually brief, more and more of our customers are telling us they simply can't afford to be "offline" for even a few minutes. If a severe storm does hit, backup generation can improve the chances that your business could survive. That's why we have put together this white paper on backup generation.

The paper explains what backup generation is and how it works. It also provides some useful guidelines for evaluating the technology as a business investment.

Spend a few minutes with our paper, and we think you'll see why so many companies are choosing to go with backup generation as the first step in a solid Business Continuity Plan.

READERSHIP

This white paper is for executives and business owners who want to learn more about backup generation.

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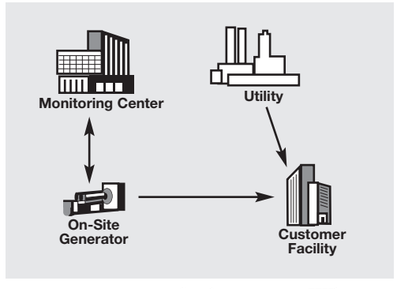
So what is backup generation?

Backup generation is a strategy for ensuring your business can stay "in business" even during a temporary power interruption due to unforeseen events caused by severe weather or construction accidents. The technology behind the most common types of systems is actually quite mature. That's a good thing since mature systems tend to be
(1) robust (that is, they seldom break),
(2) simple (which means maintenance and support are easy), and
(3) affordable (because of economies of scale and wide availability).

Typical system components

A typical backup generation system includes a generator, transfer switch, and battery charger. A system designed for the demands of business ranges from about the size of a refrigerator to the dimensions of a railroad boxcar. It is permanently installed outdoors or in a specially designed equipment room within a structure. An enclosure, sound attenuators, and fuel tanks are also sometimes part of an installation.



The heart of any system is its backup generator, which is essentially a self-contained electrical plant. Several technologies are widely used for generating current, but combustion engines — like those used in vehicles — are the most common. They can be fueled by natural gas, LP gas, or diesel.

Some systems offer a dual-fuel configuration that provides more flexibility and efficiency than a single-fuel system. Where utility access is available, natural gas is an attractive option since it enables a generator to run for extended periods if needed.

The transfer switch is the system's "brains." It is an electronic device that monitors local utility service. If service is interrupted, the transfer switch starts the generator and sends backup power to your business. When utility power is restored, the transfer switch shuts down the generator and switches service back to the local utility.

All commercial-grade systems that use combustion engines require a battery to start the generator in the event of an outage. Most systems include a charger to ensure that the battery remains ready to go at all times.

Why are businesses installing backup generation?

The big reason is that downtime is expensive (and backup generation is more affordable than ever). In fact, an article in "Energy User News" noted that outages cost some cellular companies $40,000 an hour, credit card operators $2,500,000 an hour, and brokerage firms an astonishing $6,000,000 an hour.

A few words on insurance

Many business owners think their property insurance will protect against power-related losses. But such policies generally only pay for direct physical damage such as broken machinery or a fire tied to an outage.

It's unlikely that property insurance will pay for anything other than physical damage to your business directly linked to an outage event. Lost sales, lower productivity, and things like missing data are typically not eligible for reimbursement.

Some companies have anticipated this exposure by investing in business interruption insurance. But many of these policies are also triggered by a physical loss. The lesson here is that, regardless of which type of insurance you have in force, it is advisable to know the terms and conditions of all your policies before an event occurs.

A review of your policies may reveal that backup generation is actually your best option from a loss avoidance standpoint.

Cost of Downtime (DATA)*

Business type	*Hourly Downtime Cost*
Stock Brokerage Firm	$5M-$7M
Credit Card Services	$2M-$3M
Phone 800# Services	$150,000-$225,000
Airline Reservation Services	$ 50,000-$100,000
Phone 900# Services	$ 50,000-$ 75,000
Phone Ticket Sales Services	$ 50,000-$ 75,000
Cellular Phone Services	$35,000-$ 45,000
Packaging/Shipping Services	$ 25,000-$ 30,000
Network Connection Services	$25,000-$ 30,000
Bank ATM Service Fees	$10,000-$ 15,000

* Energy User News Posted on: 11/08/2000
Continuous UPS Availability:
How Important Is It to Your Company?
JOERGEN MADSEN

Cost Justification

Admittedly, most companies don't have these sorts of huge exposures, but that doesn't mean they aren't at risk for serious losses during an outage. Here's a simple scenario to give you some sense of the risk level a mid-sized business might have.

Let's say you're the owner of a business that's open 7 days a week. What would happen if you experienced just one natural disaster leaving you without power for 3 days? Some general categories of loss considerations are listed in the example below:

Downtime Loss Considerations	Example
■ Net Income	$150,000
■ Productivity	$ 15,000
■ Inventory	$ 10,000
■ Data	$ 5,000
■ Restart	$ 5,000
■ Customer base / satisfaction	$ 5,000

Add all these figures together and your potential loss is $190,000 dollars. In this type of scenario, a 250 kilowatts (kW) diesel-fueled backup generator would more than recover its entire installed cost after only one event.

How backup generation works

Installing a backup power system is relatively simple. Once the generator is on-site, in most cases it can be operational in just a few hours or days.

The system you select can be used to power specific, critical devices or an entire facility in the event of an interruption. In some cases it is more cost-effective to power only specific areas or devices.

For example, if you are a food distributor, you might decide it's essential to protect your frozen-food inventory, but that the rest of the operation can be left off-line during an outage. If you are a hotel operator, you might want a way to ensure guest safety by providing power for emergency lighting, registration systems, and HVAC equipment. If you manage a call center with a worldwide client base, on the other hand, you might want to backup virtually all its electrical requirements so normal operations can continue without prolonged interruption.

A typical start-up process

In a typical installation, the backup generation system is located in an area with easy access to your building's main electrical panel. The transfer switch is connected to the main electrical panel and also to the backup generator. A fuel source (usually natural gas, LP gas, or diesel) is also connected.

When the system is operational and the transfer switch detects an outage, it uses power from the battery to start the generator. With most systems, this process takes about 30 seconds, but additional technologies are available to ensure a virtually uninterrupted switch over to backup power.

When the generator reaches a nominal operating level, the transfer switch sends power to a business' main distribution panel. Power is then "distributed" to all devices and electrical outlets that need to remain available during an outage. In cases where only specific devices need to be powered during an outage, a new sub-panel can be used to distribute power.

Depending on the type of fuel source selected, the system can continue to provide power for a 24 to 48 hour outage. When normal service is restored, the transfer switch shuts down the generator and reconnects the main distribution panel to the utility grid.

How to get started

Every business owner who is interested in extra protection against unexpected events that could lead to unnecessary losses should consider adding a backup generation system. An OUC power expert can help you calculate your current requirements and propose an appropriately sized system. Systems capable of producing up to 6 megawatts (MW) are readily available.

Our power experts can also help you to determine the potential return on investment from installing a backup generation system. Most business owners are amazed by how easy it is to cost-justify this type of investment.

To schedule an appointment with one of our representatives, call 407.423.9109.

Backup Generation at a Glance

- Backup generation is a strategy for replacing some or all of your normal electricity needs during a power outage.
- Several technologies are available for backup generation. Systems that use a combustion-type engine are most common.
- They can run on natural gas, LP gas, diesel, or a combination of fuel sources.
- Backup Generation provides the ability to continue operations or deliver services that would normally be disrupted by an outage.
- Hotels, apartment buildings, commercial building, retail stores, manufacturing plants, government offices, and many other types of establishments are installing backup generation as a way to remain up and running at all times.
- Outages cost most businesses hundreds or thousands of dollars an hour. Insurance does not usually cover this loss.
- A backup generation system that uses an on-site fuel source can usually run for many hours.
- A system fueled by a natural gas utility connection can run indefinitely with proper maintenance.
- Loss avoidance is a major benefit of backup generation.
- Business owners are able to continue some or all of their normal activities. This reduces the potential for lost sales, inventory, and productivity.
- A single, extended outage can often provide more than enough loss avoidance to justify this type of investment.