What to Know About Generator Fuel Delivery

When a storm knocks out the power, a generator can turn a difficult situation into a manageable one. But a generator only runs if it has fuel, and getting that fuel to the generator is not always as simple as filling a tank. Whether you own a portable unit for occasional use or a standby system for a commercial building, understanding how generator fuel delivery works can save time, money, and frustration.

The process sounds straightforward: fuel arrives, you pour it in, and the generator starts. In reality, the details matter a lot. The type of fuel, how it is stored, how it is transported, and how it is transferred into the generator all affect performance and safety. Taking a few minutes to understand those details can prevent a failed start when you need power most.

Fuel Types for Generators

Most generators are designed to run on diesel, natural gas, or propane, but diesel is the most common for larger standby and portable units. Diesel fuel is energy-dense, stores reasonably well when treated, and is widely available. However, not all diesel is the same. On-road diesel is taxed for highway use and contains lower sulfur levels. Off-road diesel is dyed red, taxed differently, and intended for equipment not used on public roads. Generators typically qualify for off-road diesel, which can be more cost-effective for large tanks.

Some smaller generators run on gasoline, but gasoline has a short shelf life and degrades quickly, especially with ethanol blends. For standby power, diesel or propane tends to be more reliable. Propane stores indefinitely and burns clean, but it requires a different engine design and a pressurised tank. For most residential and commercial backup systems, diesel is the standard choice.

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Storage and Fuel Quality

Fuel sitting in a tank for months can develop algae, water condensation, and oxidation. Diesel fuel begins to degrade after about six months to a year if not treated. Additives like biocides and stabilisers help extend the life of stored fuel, but they are not a substitute for regular maintenance. A fuel polishing service can filter out contaminants, but that adds cost and scheduling complexity.

Tank material matters too. Steel tanks can rust from the inside if water accumulates. Polyethylene tanks resist corrosion but can be damaged by sunlight unless kept in a shaded or enclosed area. Underground tanks keep fuel cool and stable but are harder to inspect. Above-

ground tanks are easier to maintain but more exposed to temperature swings, which can cause condensation.

A good rule is to test stored fuel every three to six months. If the fuel looks clear and smells normal, it is probably fine. If it looks hazy or smells sour, it may have bacteria growth or oxidation. In that case, treating or replacing the fuel before an emergency is wise.

Getting Fuel to the Generator

This is where the practical side of generator fuel delivery comes into play. For small portable generators, you can use a standard fuel can with a spout. But for larger tanks, a pump or siphon is needed. Gravity feed works if the fuel source is above the generator, but most setups require a transfer pump. Some generators have built-in pumps that draw fuel from a separate tank, but many do not.

When using a portable transfer pump, choose one rated for the type of fuel you are moving. Some pumps are designed for water and will be damaged by diesel. Also, pay attention to the hose size and length. A long, narrow hose can slow the transfer and make it hard to get the last bit of fuel out of the drum.

For larger standby generators with a dedicated fuel tank, the generator fuel delivery process is often handled by a professional service. They bring a truck with a meter and hose, fill the tank on site, and leave. That is convenient, but it requires planning. You cannot always call for a delivery the moment the power goes out. Roads may be blocked, or the supplier may be overwhelmed. Having a full tank before storm season is smart.

One point that many people overlook: the fuel tank should be filled to at least 85 percent capacity before a major storm. Air space allows for expansion in warm weather, but too much empty space means more condensation. A nearly full tank minimises water buildup and ensures you have enough fuel for several days of continuous run time.

Safety During Fuel Transfer

Fuel is flammable, and vapors are even more dangerous than liquid. Always transfer fuel outdoors or in a well-ventilated area. Never fill a generator while it is running or hot. Static electricity can ignite fuel vapors, so use plastic funnels and containers that are rated for fuel. If you use a metal funnel, ground it by touching the generator frame before pouring.

Spills happen. Keep absorbent pads or a spill kit nearby. Diesel leaves a slippery, smelly mess that is hard to clean up. More importantly, spilled fuel is a fire hazard. If you spill fuel on the generator casing, wipe it off before starting the engine. Fuel on hot engine parts can ignite.

Seasonal Considerations

In cold climates, diesel fuel can gel. At low temperatures, paraffin wax in the fuel crystallises and turns the fuel into a thick sludge that will not flow through filters or lines. Winter-grade diesel has additives to lower the gelling point, but even winter-grade fuel can struggle in extreme cold. Keeping the generator in a sheltered location, using a fuel heater, or adding an anti-gel additive can prevent this problem.

In hot weather, fuel expands and evaporation increases. A tank that is too full can overflow when the sun heats it. Leave some expansion room, but not much. Also, high temperatures accelerate fuel degradation. If you store fuel for summer storm season, use a stabiliser and keep the tank out of direct sunlight if possible.

Planning Ahead for Backup Power

The best time to think about fuel delivery is before you need it. If you have a standby generator, establish a relationship with a fuel supplier early. Know their delivery minimums, their service area, and their typical lead time. Some suppliers offer automatic delivery programs that monitor your tank level and schedule fill-ups. Others require you to call each time.

For homeowners, a 100-gallon tank might last three to five days of continuous use, depending on the generator load. Running the generator at 50 percent load uses roughly half the fuel of full load. That is a good reason to manage your electrical load carefully during an outage. Turn off unnecessary circuits and run only essential appliances.

For businesses, the stakes are higher. A construction site with electric tools, a farm with milking equipment, or a medical office with temperature-sensitive supplies cannot afford an unexpected fuel shortage. Having a backup fuel contract in place, with a guaranteed delivery window, is worth the cost.

The key is to treat generator fuel delivery as part of your emergency plan, not an afterthought. A full tank of fresh fuel, a proper transfer method, and a reliable supplier make the difference between a minor inconvenience and a serious problem.

American Energy Supply, Co., located at 1704 Chichester Ave, Linwood, PA 19061, can be reached at (610) 494-4874 for fuel delivery needs in Pennsylvania, Delaware, and Maryland.