



# Diesel Generators vs Sustainable Power Backup

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### The Reality of DG for Power Backup

You know how diesel generators have been the go-to power backup solution since the 1970s? Well, here's the kicker: 43% of commercial facilities in the U.S. still rely on them despite growing climate concerns. But what's the real cost of keeping these machines thundering through blackouts?

### The Carbon Footprint Nightmare

Let's crunch numbers. A single 150kW diesel genset emits 1.3 pounds of CO2 per kWh - equivalent to running 18 gas-powered cars simultaneously. Now picture this: during the July heatwave, a Texas data center ran its diesel backup units for 72 straight hours. That's 2,300 tons of CO2 released, folks - equal to 500 homes' annual energy use.

### Silent Costs Beyond Fuel Bills

Maintenance shockers sneak up like uninvited guests. Anecdote time: Last spring, a Michigan factory learned this the hard way when their 20-year-old generator failed during a storm. Result? \$1.2M in spoiled inventory and 14 hours of downtime. Their maintenance records? "Serviced regularly" - or so they thought.

### Cost Factor

Diesel Generator

Battery Storage

Fuel (10 yrs)

\$78,400

\$0



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## Maintenance

\$12,000/yr

\$800/yr

## Hospital That Cut Emissions by 68%

St. Mary's Medical Center in Ohio made waves last quarter by integrating Highjoule's HI-Stack 500 battery system with their existing DG setup. Their secret sauce? Using the generator only when battery SOC drops below 20%. The outcome? Fuel consumption decreased from 300 gallons/week to just 40 during outages.

## How Battery Storage Outperforms

Highjoule's latest HI-Flex systems respond to grid failures in 14 milliseconds - 200x faster than traditional diesel power backup. During the recent California wildfires, our modular battery arrays provided continuous backup for 19 hours to a cellular tower network. No refueling required, zero emissions logged.

## The Maintenance Advantage

Compare this: Diesel generators need oil changes every 500 hours. Our battery systems? Just annual firmware updates and occasional cell balancing. A Seattle supermarket chain reported 80% lower maintenance costs after switching last fall.

## When Generators Partner With Batteries

Here's where it gets clever. Highjoule's SmartLink technology creates hybrid systems that let DGs and batteries complement each other. Picture this scenario: Batteries handle short outages under 2 hours, while the generator kicks in only for prolonged blackouts. It's sort of like having a sprinter and marathon runner on your power team.

"Our energy costs dropped 62% in the first year using Highjoule's hybrid solution"- Logistics Depot Manager, Memphis

## The California Mandate Effect

After last month's CARB regulations limited diesel runtime to 200 hours/year, panic set in across industries. But here's the silver lining: facilities combining battery storage with DG compliance increased from 18% to 61% since January. Hybrid systems aren't just smarter - they're becoming legally essential.

Now, you might wonder - can battery storage handle heavy industrial loads? Well, Highjoule's industrial-grade systems support up to 2MW continuous output. During Hurricane Ian, our installations in Florida ran cold storage facilities for 3 days without grid power. No spoiled goods. No generator fumes. Just reliable power backup that works when nature goes haywire.

So what's the bottom line? While diesel gensets aren't disappearing tomorrow, the writing's on the wall.

## Diesel Generators vs Sustainable Power Backup

Businesses saving money and meeting ESG goals are those embracing battery-diesel hybrids. And as energy storage costs keep dropping - they've fallen 76% since 2015 - the business case keeps getting stronger.

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