2025

Diesel generator vs Aema Mobile ESS

Of a 100 kVA diesel generator and a 672 kWh AEMA mobile ESS + hybrid option

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Microsoft replaces diesels with battery system at Swedish data center

Saft provides BESS

Key operating scenarios

(8-hour shift supplying ~80 kW AC)

- Load requirement: 80 kW over 8 hours ⇒ 640 kWh/day
- 72 kWh ESS can supply 100 kW for ~8 hours per shift
- Diesel Genset must be loaded accordingly

Diesel Generator (Ramirent 100 kVA/80 kW)

- Rental cost: €559/day
- Fuel consumption: ~22.8 L/hour
- Daily fuel usage: 22.8 × 8 = 182.4 L/day
- Fuel cost (1.75 €/L): 182.4 × 1.75 = €319/day
- O&M estimate: Approx. €50/day
- **Total daily cost: €559 + €319 + €50 ≈ €928/day**

Pros: Proven, rugged

Cons: High fuel cost, noise (~93 dB), emissions, requires refueling

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Unveiled revenues: FCR markets, arbitrage

Hybrid model: Diesel + Mobile ESS

Assume a split of duties:

- ESS: 50 % of energy supply (320 kWh)
- Diesel: remaining 320 kWh

ESS rental: ~€450/day
Diesel genset rental: €559/day
Diesel usage: 320 kWh/(80 kW × 8h) = 0.5 genset load

- Fuel ~22.8 L/h × 8h × 0.5 = 91.2 L/day
- Fuel cost: 91,2× 1.75 = €159.6 day
- O&M: Reduced genset runtime ⇒ ~€30/day

Total cost: €450 + €559 + €159.6 + €30 ≈ €1,198.6 /day

Pros: Reduced emissions, quieter, gradual transition to clean energy
Cons: Higher combined rental, complexity of dual system

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Cleaning up construction: the fuel cell alternative to diesel

Adam Keenan Business Development and Account Manager, Intelligent Energy

Intelligent Energy takes us through the new technology offering net zero solutions for a cleaner industry

20 Jan 2022, 3 min read

Mobile ESS Only (672 kWh)

- Rental cost: €450/day
- Energy available: 672 kWh ~ 8 hours at 80 kW
- O&M: Minimal (~€10/day)

Total cost: €450 + €10 = €460/day

Pros: Clean, quiet, instant deployment, zero fuel logistics, suitable for PV + EV charging synergy

Cons: N/A

Daily Cost Summary: mobile ESS vs diesel

Configuration	Total Daily Cost, €	Capacity (kWh)	Notes
Diesel Generator Only	928	~640	Full 8h coverage
Hybrid (Diesel + ESS)	1,198.6	800 (400+400)	Transition mix + night silence
ESS Only (1 unit)	460	672	Covers ~8h, can integrate solar/ charging

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Unbeatable Benefits of ESS

- EV Charging Support: Provides stable power for EVs during or post-shift
- Power Quality: ESS supplies clean, stable 400 V three-phase power
- Quiet Operation: <65 dB vs. ~93 dB from gensets
- Grid-Free Use: No permits, instant deployment, remote control, VPP-ready
- No fuel risk: Zero logistics, no spill risk, no emissions fines or carbon taxes

Recommendation

Need	Best Option
Full 8h 100+ kW coverage	Hybrid
8h shift + silence night shift flexibility, PV integration	One 672 kWh ESS
Short-term rental, simplicity	Diesel generator

If sustainability, noise reduction, and EV/solar synergy are priorities, eve a single 672 kWh ESS is highly compelling

For full 8-hour shift + flexibility for silent night shift, use ESS units or a hybrid setup.

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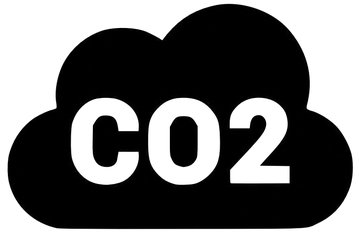

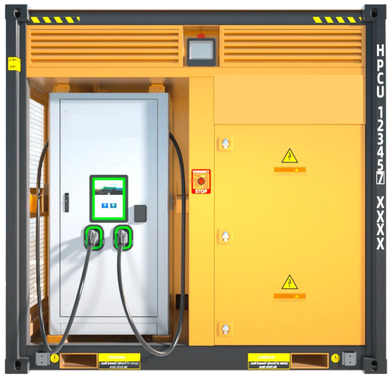

CO2 emissions Diesel VS ESS

Daily, Monthly and Yearly CO2 Emissions (kg)

Scenario	Daily CO2 (kg)	Monthly CO2 (kg)	Yearly CO2 (kg)
Diesel Only	488,8	14 665	178 423,7
Hybrid (Diesel + ESS)	305,5	9 165,6	111 514,8
ESS Only	0.0	0.0	0.0

Still want to burn diesel? You are fueling the problem. Switch to ESS - lead the green transition and show your real input.

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Contact Us

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