



HOW TO MEET ILLINOIS POWER CAPACITY NEEDS WITH DISPATCHABLE ON-SITE POWER

John Kelly

Altorfer CAT

Phone: 312-579-6115

Email: John.Kelly@altorfer.cat.com

Ameren Illinois Power Challenges



Energy Efficiency
PROGRAM



Illinois is facing a major power capacity shortage (SB-2408 CEJA to retire 10,000MW).



Resulting in higher capacity and power costs.



Storms ravaged the electrical system leaving customers without power for days.



Cybersecurity threats could disable the entire Illinois grid.

Ameren Illinois Response



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Accelerate the deployment of 10,000 MW of Site DG



Energy efficiency and demand response incentives and support



Cogeneration incentives and support



Natural gas fueled dispatchable generation (DG) to provide backup and avoid peak demand charges (e.g. capacity and transmission costs)



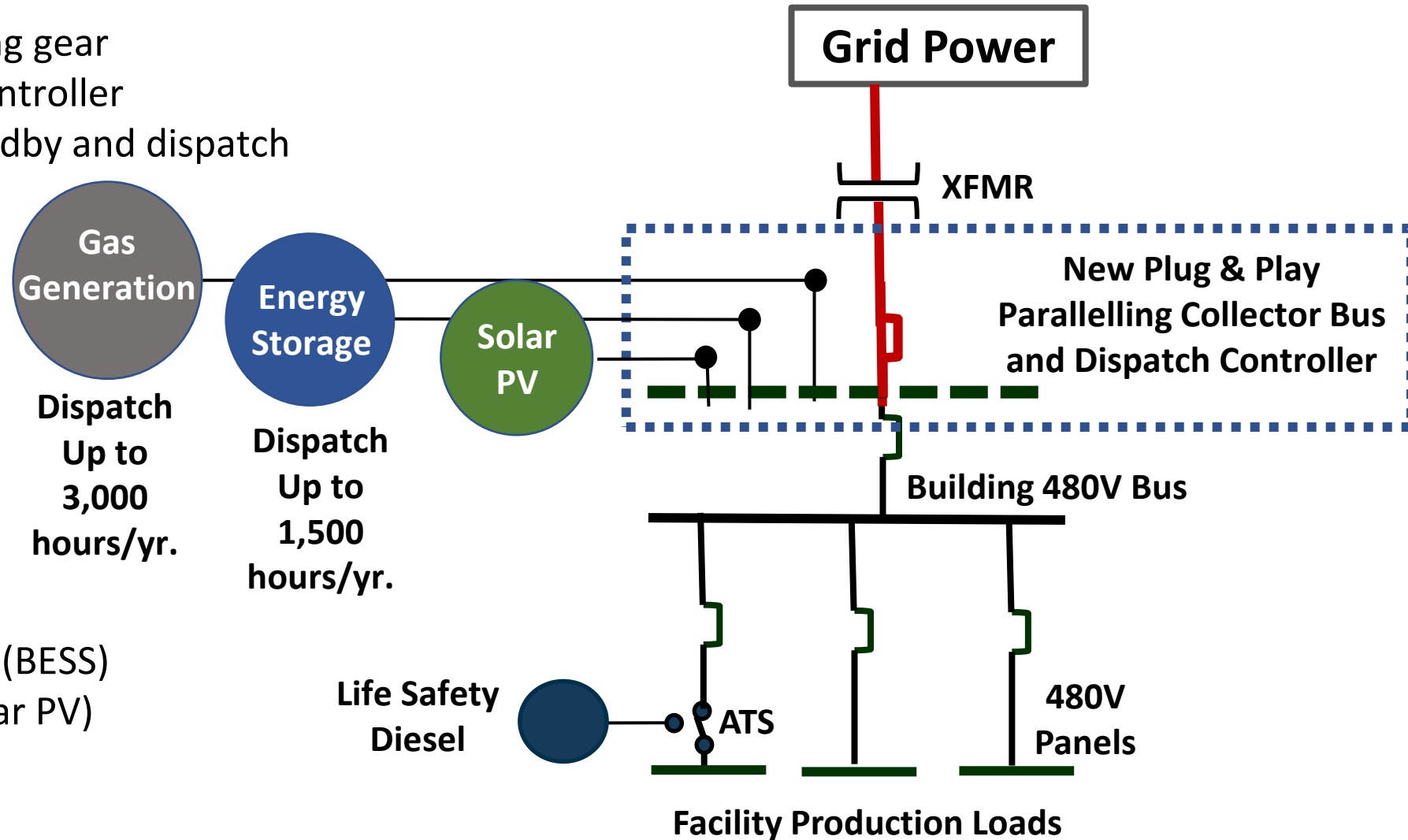
Net metering, export and virtual power plants incentives



New Standalone Battery Energy Storage System Incentives (SB-0025)

What Does a Site DG Solution Look Like?

1. Plug and play parallelling gear
2. Automated dispatch controller
3. Gas generation for standby and dispatch



4. Battery Energy Storage (BESS)
5. Spare breaker (e.g., solar PV)

Why Site DG



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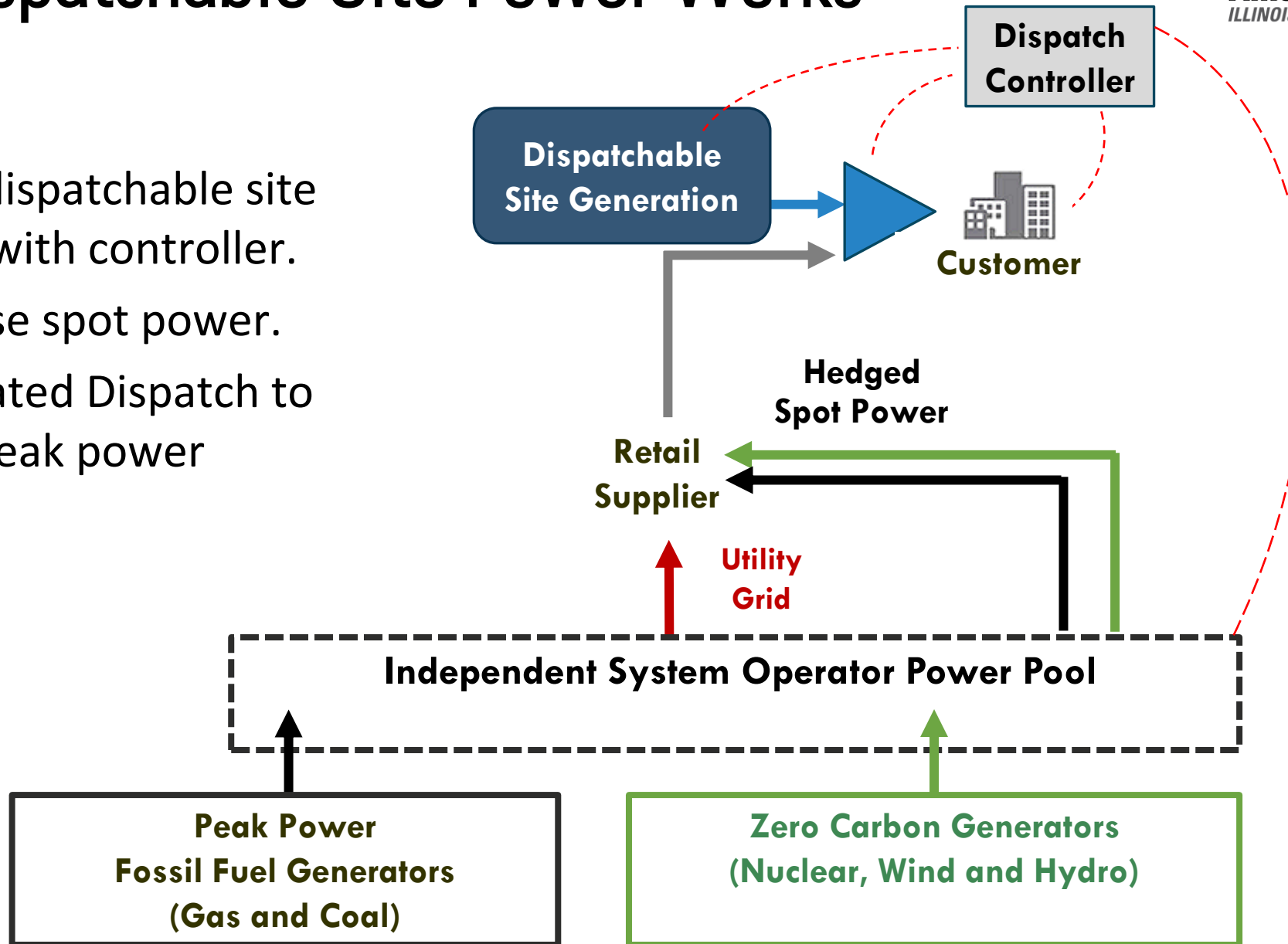
Savings Category	Savings per MW	Dispatch Site Generation to:
Capacity & Transmission	\$120,000	→ Avoid PJM charges
Ameren Demand	\$60,000	→ Monthly peak demand reduction (25% of total Ameren bill)
Power Supply	\$80,000	→ Avoid peak power costs by real-time
Grid Service Revenue	\$20,000	→ Payment for grid service
Total Savings per Peak MW	\$280,000	→ 50% reduction
Typical Customer Cost per MW	\$560,000	→ Typical bill

How Dispatchable Site Power Works



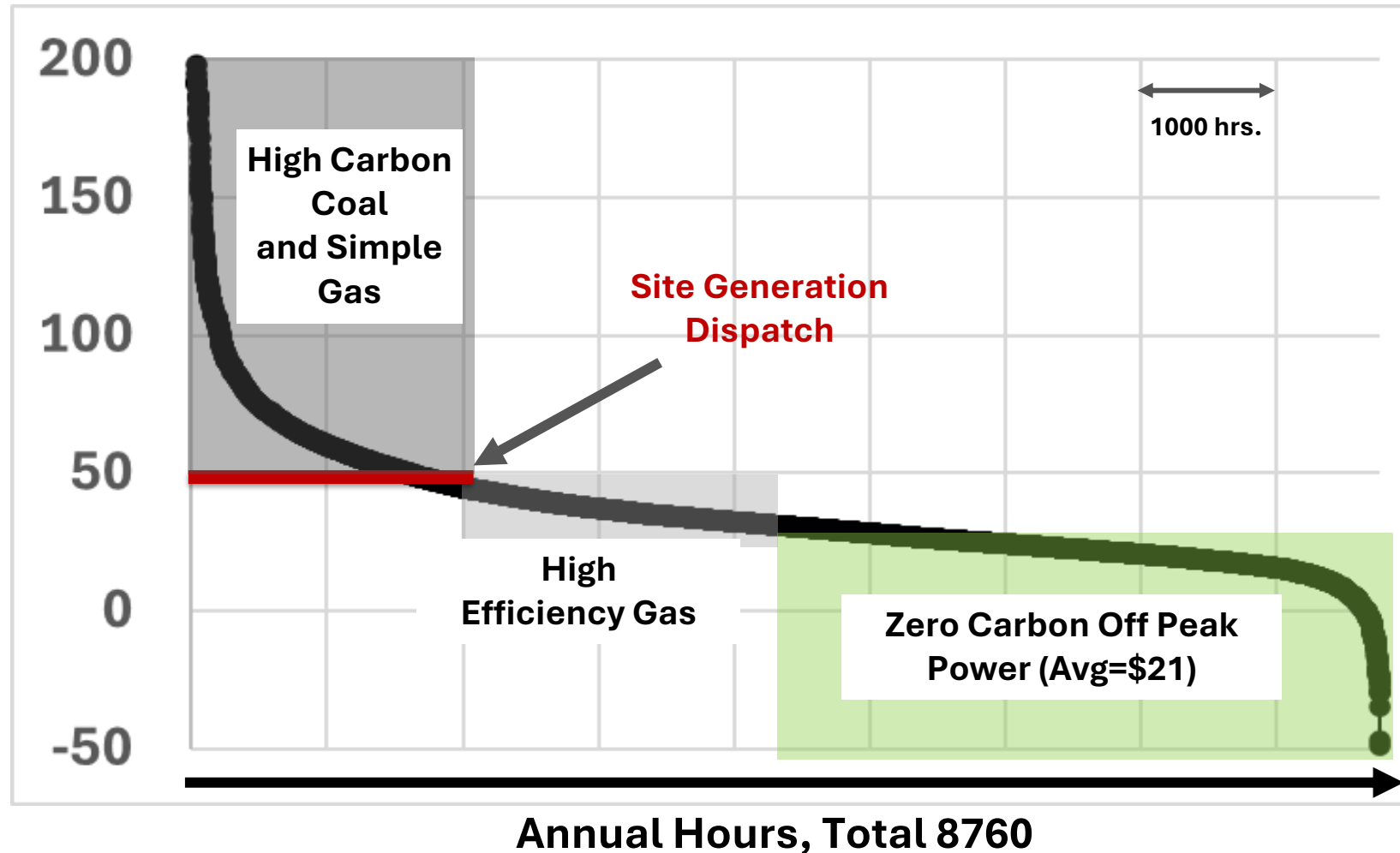
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1. Install dispatchable site power with controller.
2. Purchase spot power.
3. Automated Dispatch to avoid peak power costs.



How Dispatchable Site Power Works

— 2025 MI ISO ComEd Day Ahead Price Curve, \$/MWh



Site DG Advancements: Dispatch Controller



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CAT AMP

- **Operating Center**
- **Dispatch Controller at 6,600+ sites monetizing 7,500MW**

Capacity

- Automated dispatch to avoid

Transmission

- Automated dispatch to avoid

Utility Demand

- Reduce monthly demand cost

Sync Reserve

- Revenue from Sync Reserve

Day Ahead

- Sell power contract in day-ahead or hedge purpose

Export Revenue

- Revenue from hourly export

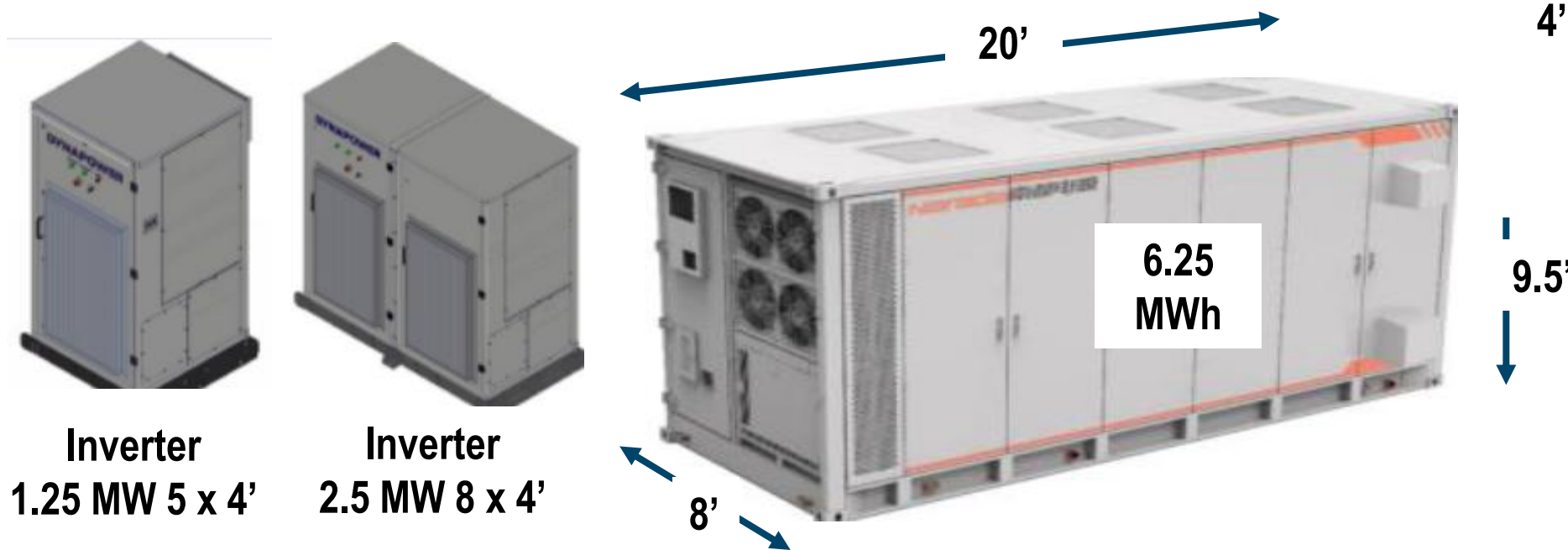
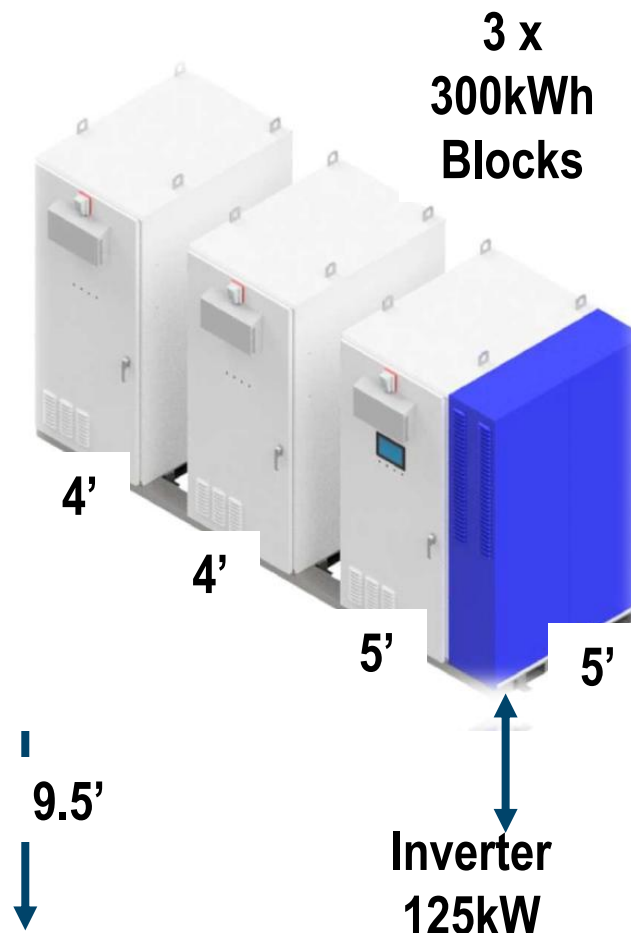
Site DG Advancements: BESS



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Key design features:

- Safety – Improved chemistry and fire suppression
- Higher power density = smaller footprint (6.25MWh in 20' cont.)
- Lifetime degradation not less than 20%
- Roundtrip efficiency > 93%
- Lead times, spare parts, warranty, O&M



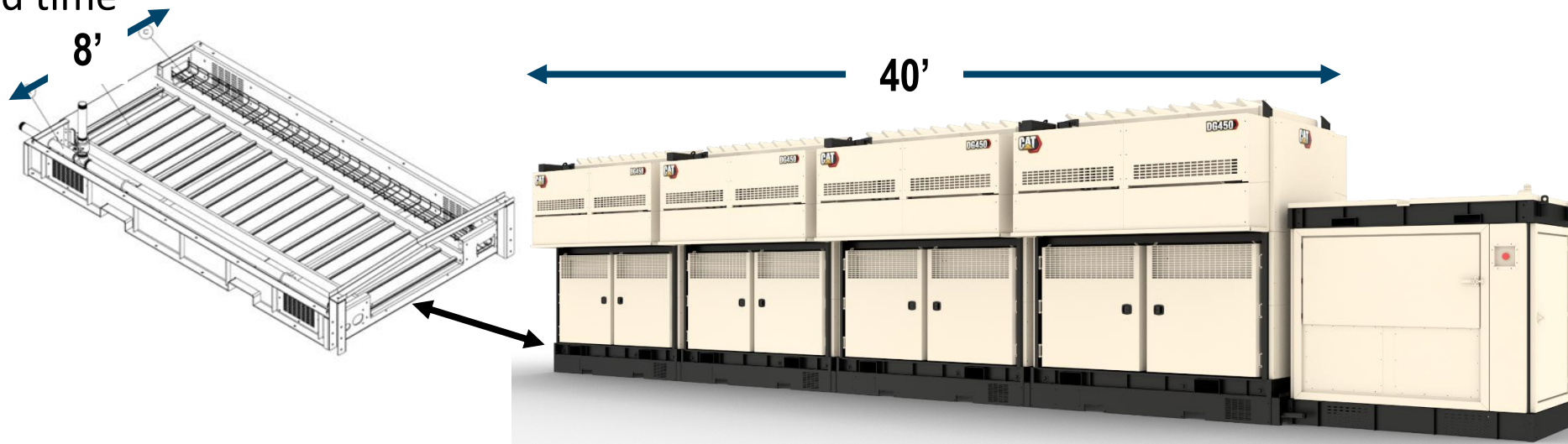
Site DG Advancements: CAT DG450



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Caterpillar next generation dispatchable power:

- Significantly lower cost at about \$1,000/kW
- Fast start and Full load acceptance (100% load step, NFPA 110)
- Noise levels: 73dB @ 23'
- Ultra-low emissions leveraging 3-way catalyst
- Small footprint (1,600kW = 40' ISO container)
- Lower installed cost - separate DG450 base for cable and piping
- Less than 20-week lead time

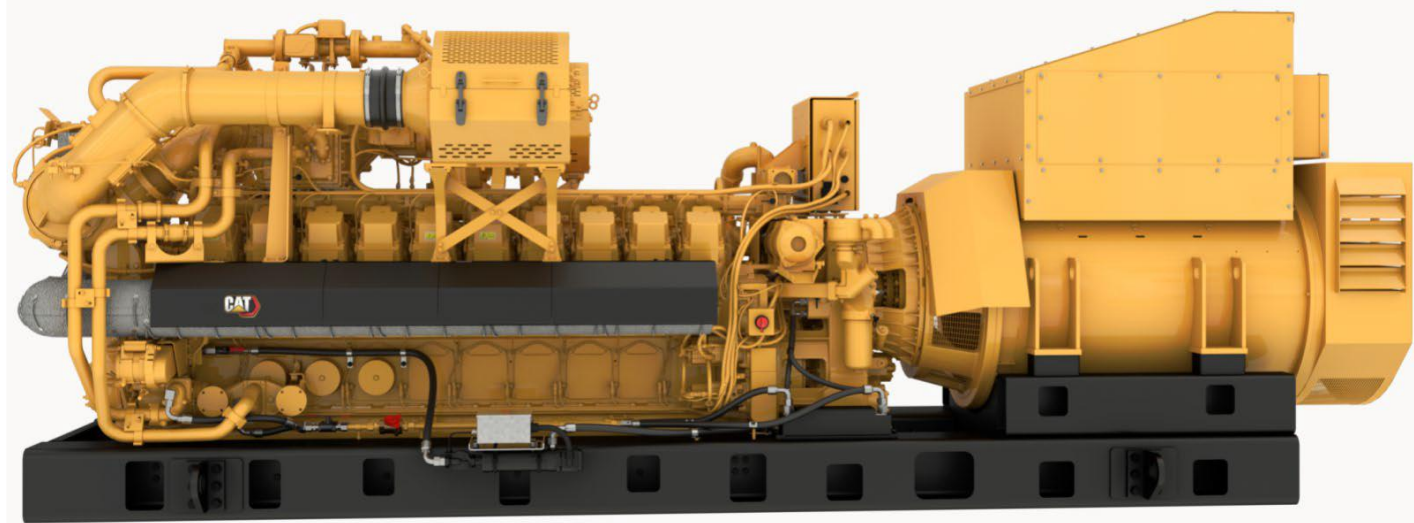


Site DG Advancements: CAT G3500 Series



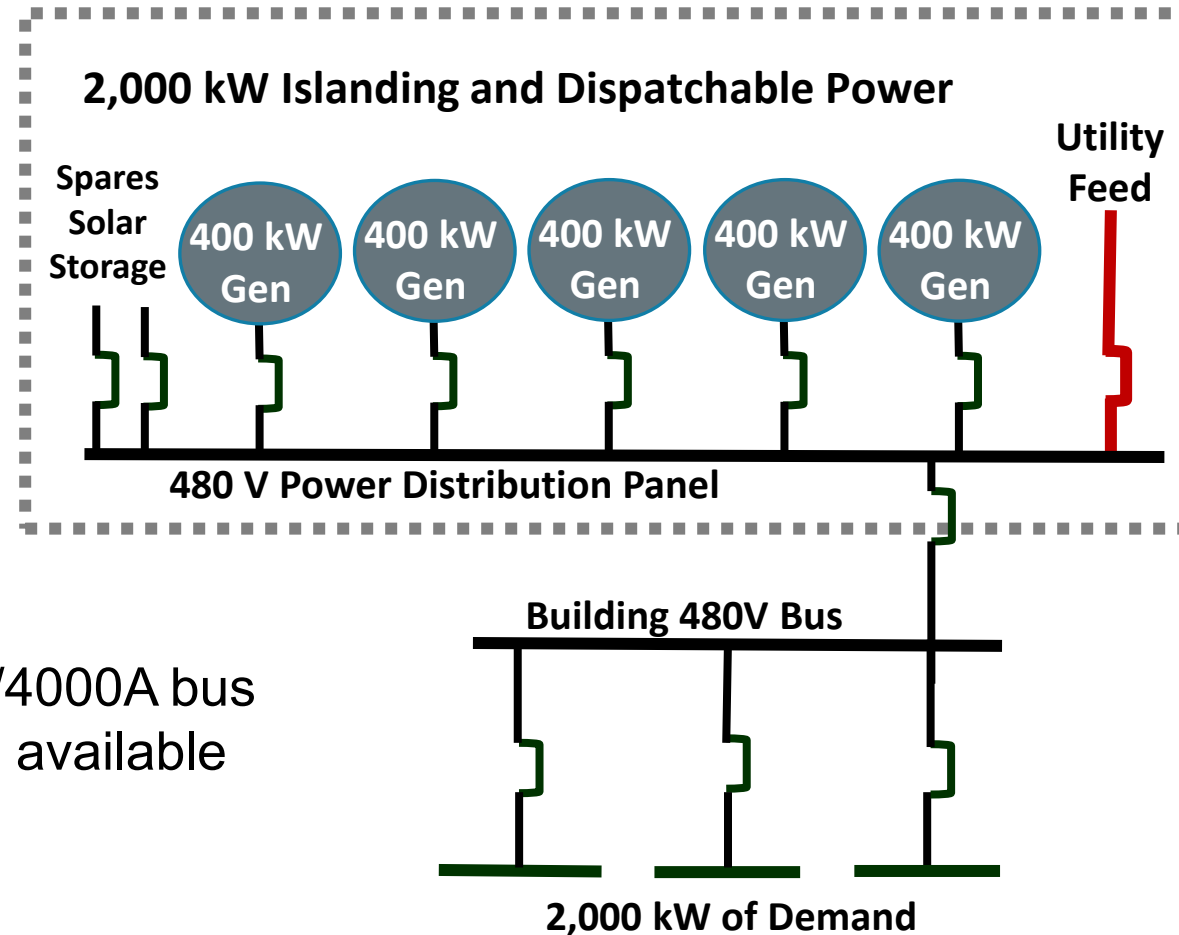
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- 1,500, 2,000 or 2,500 kW
- 100% load step capable
- Improved efficiency: 43% efficiency or 8.9 MMBtu/MWh HHV
- 0.5 g/BHP-hr. NO_x
- Lower maintenance by extending oil and spark plug intervals
- Improved reliability



Site DG Advancements: Bridge to Grid

Altorfer can supply modular power to each facility 480V bus:



- 9-12 months startup
- Feed each facility 3000/4000A bus
- Plug in utility feed when available

Site DG Dramatic Improvement in ROI



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Savings per MW Category	Savings 2024	Savings June 2026
Capacity & Transmission	\$50,000	\$120,000
Ameren Charges	\$50,000	\$60,000
Power Supply & Generation	\$60,000	\$80,000
Grid Service Revenue	\$20,000	\$20,000
Total per Peak MW	\$180,000	\$280,000

Gas Fueled Packaged System Cost:	>\$2,000,000/MW	<ul style="list-style-type: none"> • ~\$1,000,000/MW • Lower installation cost • Cat financing
Battery Systems:	Fed. tax credit	+ \$250/kWh Ameren rebate
Simple Payback:	>8 years	~ 1 to 3 years
Future:	Ameren TOU and VPP rates and expanded MISO services	

Summary



Energy Efficiency
PROGRAM

- Provide standby power for the entire operation
- Lower facility power costs by up to 30%
- Leverage lower cost containerized power systems
- Leverage utility BESS rebates
- **Provide Illinois with critically needed power capacity**
 - Replace the loss of about 10,000 MW of fossil generator over 10 years



CONTACT JOHN KELLY

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Phone: 312-579-6115

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