



RELIABILITY SOLUTIONS FOR BUSINESS

by MidEnterprises, LLC







THE OPPORTUNITY

- Less than 30% of commercial facilities have a reliable back-up power supply
 - Only 10-15% of those having existing installations can power entire facility load (3-4.5% overall)
- Effective May 2015, emergency generators can no longer participate in any demand response programs (U.S. Court of Appeals - DC Circuit reversed certain provisions of NESHAP and RICE MACT provisions)
- Extreme Weather is causing more frequent and prolonged power outages
- US grid is aging and needing modernization
- In some utility regions, transmission costs are rising faster than seen in the last 25-30 years.

Power Outages are Becoming More Frequent

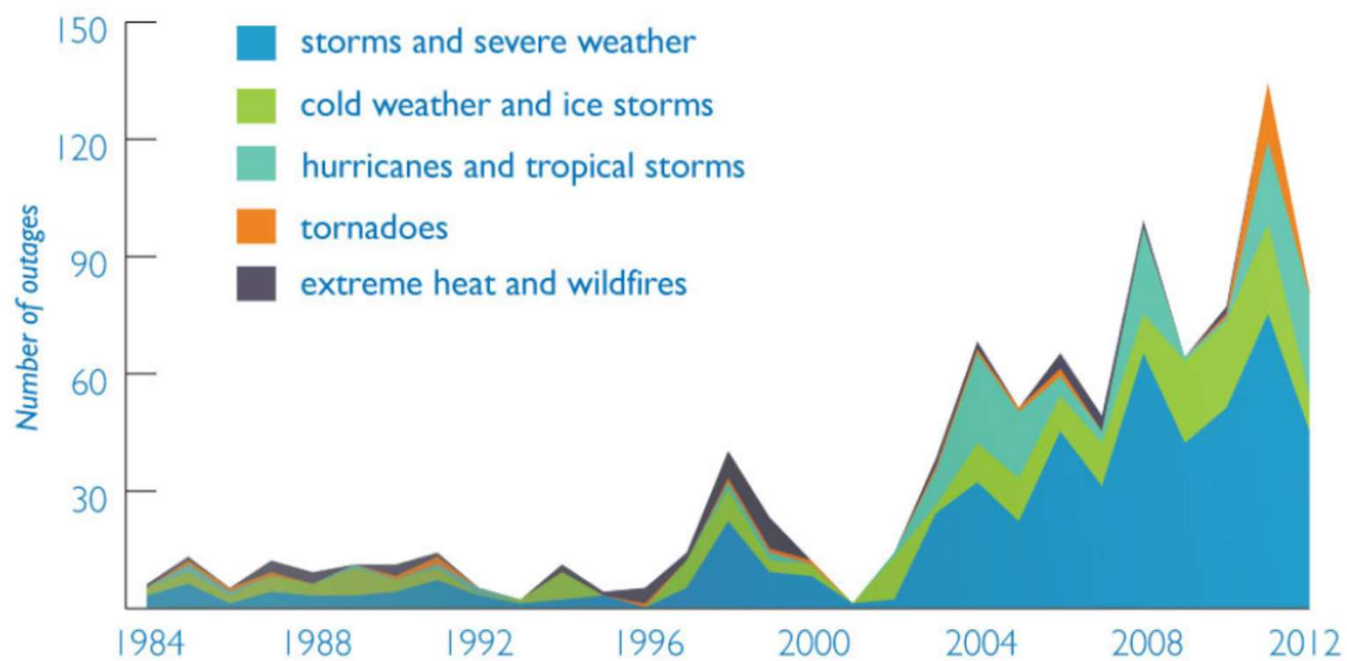


	500k	Average number of people affected by power outages <u>daily</u> in the US
	\$150 Billion	Estimated cost of power outages to the US economy in 2014.
	285%	Percent by which the US grid loses power more frequently today than in 1984
	4X	Increase in 5-year annual outage average (2015 vs. 2000)



Extreme Weather Is Causing More Major Power Outages

(major = at least 50,000 customers affected)

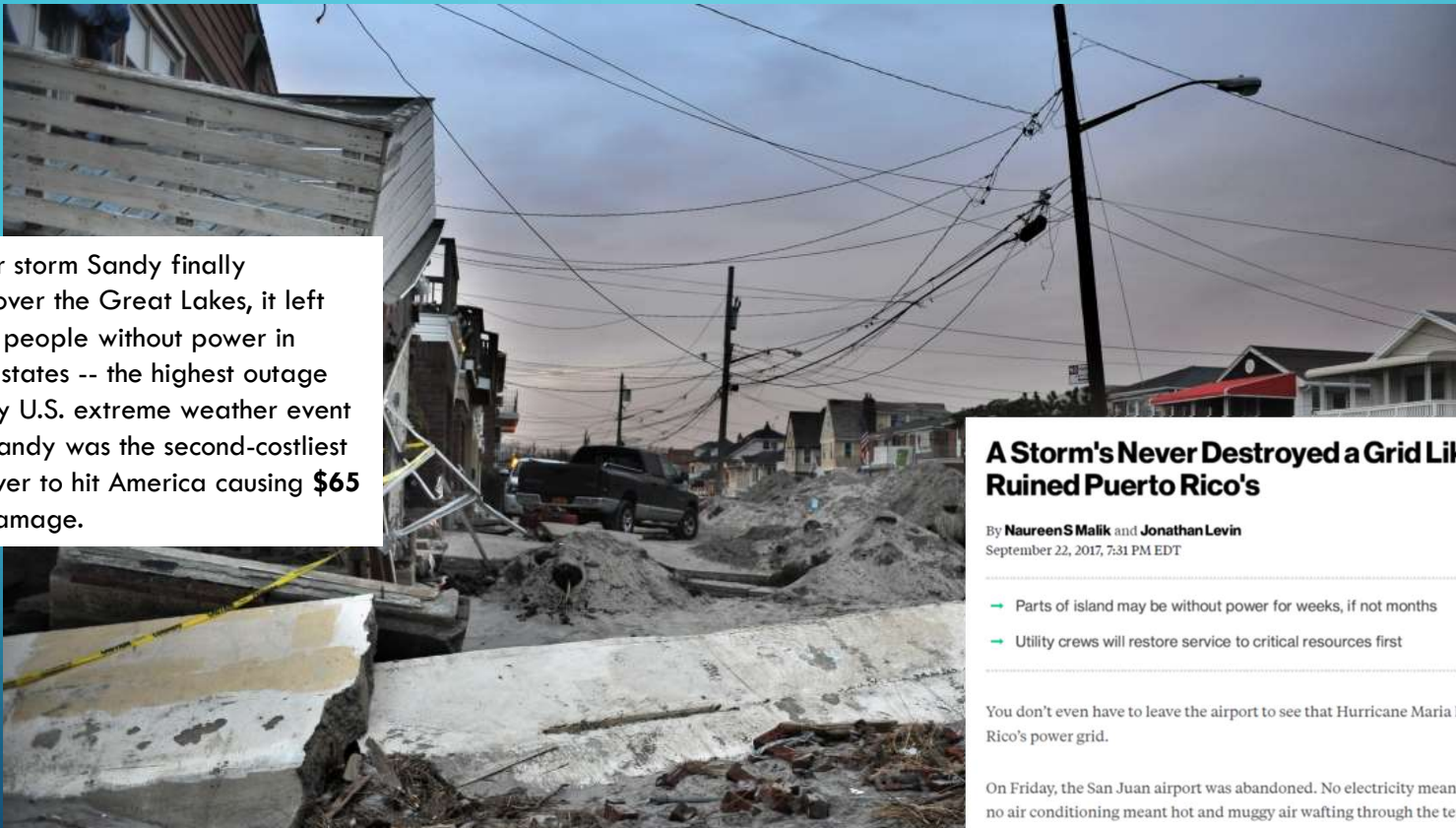


CLIMATE CO₂ CENTRAL

Extreme Weather is Causing Major Power Outages



When super storm Sandy finally dissipated over the Great Lakes, it left **8.5 million** people without power in twenty-one states -- the highest outage total for any U.S. extreme weather event in history. Sandy was the second-costliest hurricane ever to hit America causing **\$65 billion** in damage.



A Storm's Never Destroyed a Grid Like Maria Ruined Puerto Rico's

By **Naureen S Malik** and **Jonathan Levin**
September 22, 2017, 7:31 PM EDT

- Parts of island may be without power for weeks, if not months
- Utility crews will restore service to critical resources first

You don't even have to leave the airport to see that Hurricane Maria has laid waste to Puerto Rico's power grid.

On Friday, the San Juan airport was abandoned. No electricity meant no air conditioning, and no air conditioning meant hot and muggy air wafting through the terminals. Ceilings were leaking. Floors were wet. Only the military, relying on its own sight and radar systems, was landing planes. The airport is one of the first places crews will restore power -- whenever they can get to it. Hundreds are still waiting for the all-clear to move in and start the arduous task of resurrecting Puerto Rico's grid.

What is Resiliency Anyway?



Resiliency - The ability to quickly recover to its previous status and functionality. In emergency management terms, many think of **resilience** as something that kicks in during a post-disaster recovery effort. A community that is **resilient** is one that rapidly recovers from a disaster

The images show the largest grocer in Texas, H-E-B, with about 350 stores scattered throughout the region. The 112-year-old retailer is drawing widespread praise after managing to open 60 of its 83 stores in Houston last Sunday, hours after Hurricane Harvey slammed into Texas as a Category 4 storm.



Dead after Irma leaves Florida Home with no A/C

and Emanuella Grinberg, CNN

Updated 11:54 PM ET, Wed September 13, 2017



More from CNN



The racist next door: A family's tragedy



MLB team spent \$900M; still doesn't have a ring



Nursing home deaths after Irma power outage 00:45

Commercial Offer



- Provide reliable back-up power to mitigate risk in case of utility power interruptions
- Provide customer ability to lower overall energy spend
- Turnkey installation including factory start-up
- Maintenance Plans and Extended Warranty Options
- Multiple Funding Options
- Engines are EPA Certified capable and permitted to operate for extended hours to lower overall energy spend



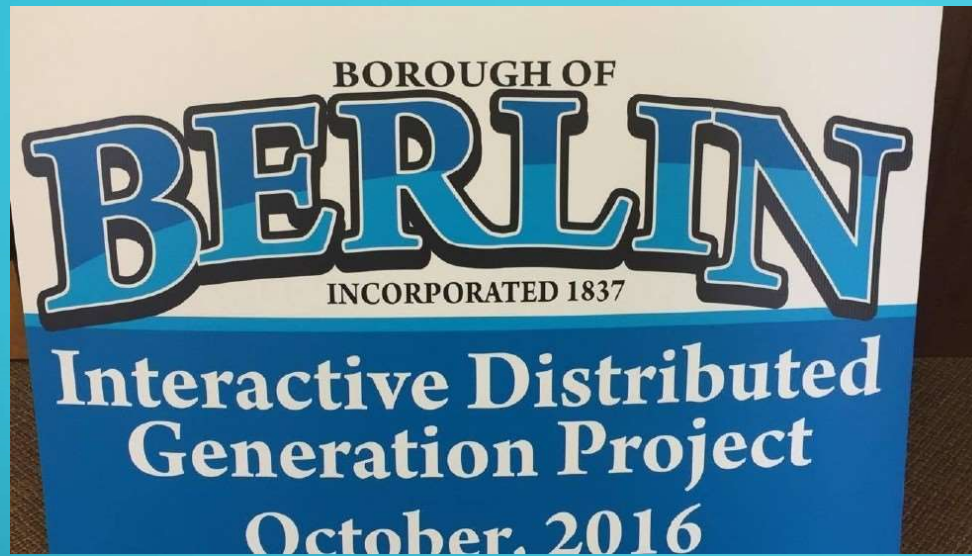
Target Customers

- Manufacturing Facilities
- Office buildings
- Financial Centers
- Data Centers
- Pharmaceuticals
- Food Processing
- Refrigerated Storage
- Emergency and Transport Control Centers
- Medical
- Military
- Entertainment Venues
- Safety and Security

Customer Qualifying Questions



1. How much do power outages cost your business (lost sales, production scrap, etc.)?
2. Do you currently have back-up generation?
 - a. If yes, does it supply entire facility?
3. Have you considered installing back-up power in the past?
 - a. If yes, what prevented you from proceeding?
4. Have you evaluated how electricity supply charges will be reduced once generation is installed?
5. What is preferred purchasing method?
 - Cash
 - Lease
 - Power Purchase Agreement (PPA)
 - On-bill Finance (if available)



ACTUAL INSTALLATION: BOROUGH OF BERLIN, PA

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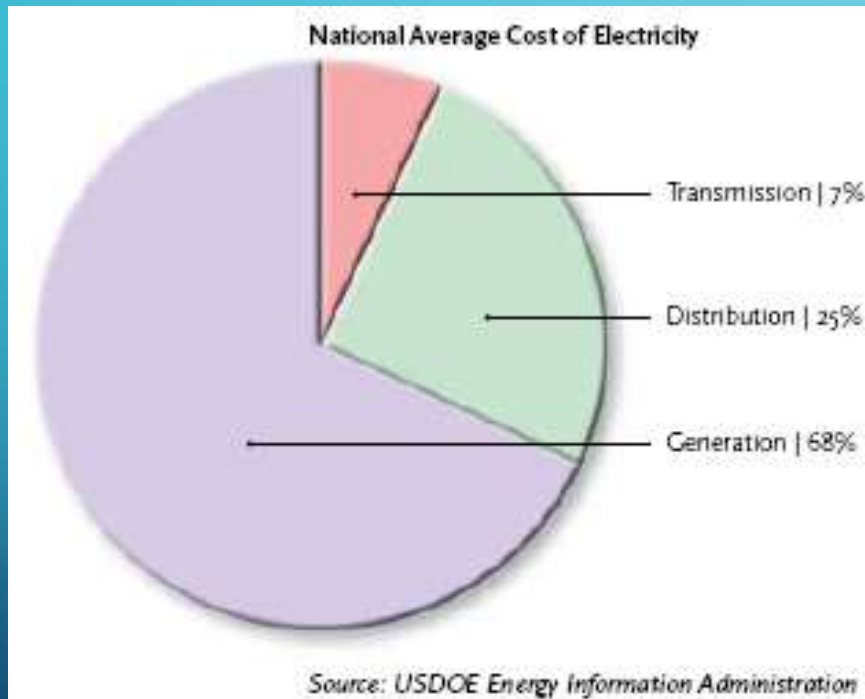




LET'S PAUSE FOR SOME QUESTIONS

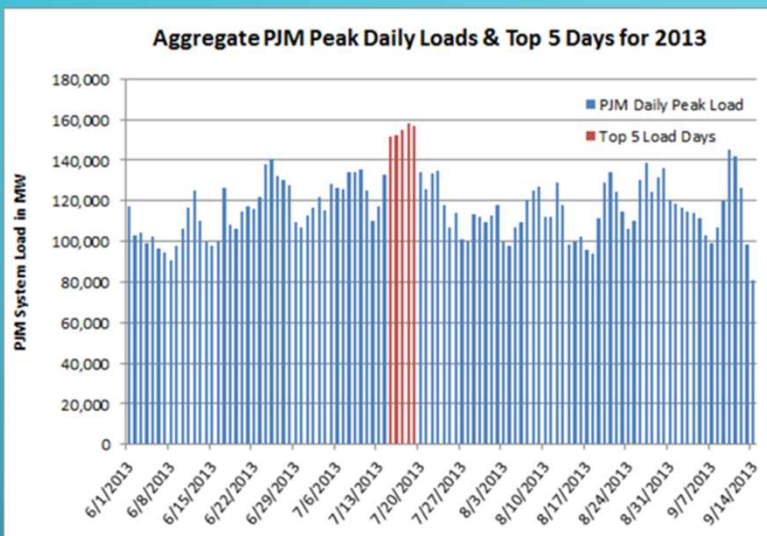
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ELECTRICITY COST BREAKDOWN



- Capacity= 1/3 of generation costs
- Generation + Transmission + small adders = Competitive rate (75% of total cost)

DETERMINING CAPACITY OBLIGATION OR PLC



**Peak Load Intervals During
PJM Top 5 Load Days**

Date	Peak Load (MW)	Hr Beginning
7/15/2013	151,264	17
7/16/2013	152,441	17
7/17/2013	154,932	17
7/18/2013	158,138	17
7/19/2013	156,599	14

EXAMPLE: PSEG Delivery Zone

Delivery Year	PLC/ICAP (kW)	Capacity Price (\$/kW/yr)	Annual Cost
2014/15	845	\$82.12	\$69,391
2015/16	845	\$61.12	\$51,646
2016/17	845	\$79.93	\$67,545

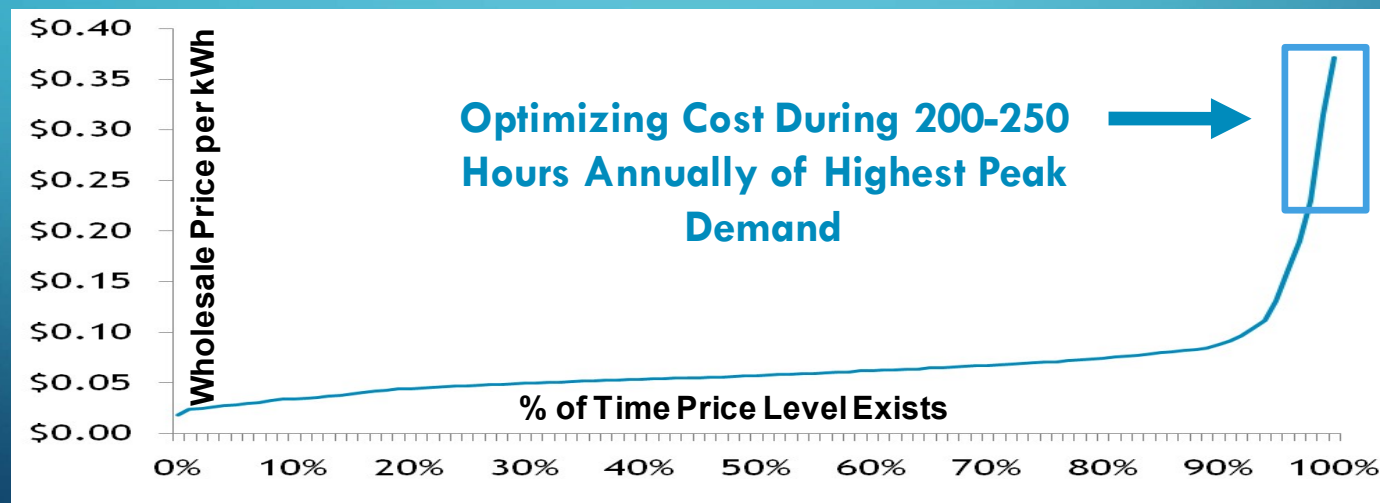


LET'S LOOK AT AN EXAMPLE

- ACME Manufacturing Co. located in NJ in PSEG zone has a PLC (Peak Load Contribution) of 275 kW and NSPL/NITS (Network Service Peak Load/Network Integration Transmission Services) of 250 kW and uses 1,500,000 kWh annually
- ACME currently purchases competitive energy via a fixed rate product from ConEd Solutions for \$0.075/kWh
- Using a 250 kW natural gas generator provided by AEG , customer is able to reduce their PLC to 50kW and NSPL to 75kW.
- This reduction saves customers $200 \text{ kW} \times \$75.11$ or \$15,022 and $175 \text{ kW} \times \$111.00$ or \$19,425 for total annual savings of \$34,447 or \$0.023/kWh
- Additional savings are available by participating in Synchronous Reserves and running genset when LMP is greater than \$75/MWh (usually less than 100 hours per year)

Operating Strategy

- Reduce PLC/ICAP and transmission charges (avoided cost)
- Participate in Load Management programs (revenue)
- Run unit when wholesale electricity prices (LMP) are highest (energy)





Funding Options – A Closer Look

- **Cash Purchase** – customer owns asset, customer takes tax benefits and is responsible for monetization (we can provide this service), customer is responsible for non-warranty repairs
- **Lease** – customer or 3rd party owns asset, customer or 3rd party takes tax benefits, customer is responsible for monetization, customer is responsible for non-warranty repairs if they own it
- **Reliability as a Service** – 3rd party owns asset, takes all tax benefits and monetization benefits and is responsible for all maintenance and repair
- **On-bill Financing** – customer typically owns asset, customer takes tax benefits and is responsible for monetization, repair and maintenance

Equipment

EPA Certified
Natural Gas
Diesel Tier 4F
Alternative Fuel
Major Manufacturers

- Volvo
- Mitsubishi
- Gillette
- HiPower

ENER-G RUDOX

**ERM750GS (750 KW)
MITSUBISHI NATURAL GAS GENERATOR SET**

STANDBY RATING FOR EMERGENCY USE (%)	
60 HZ	750
ERM750GS RATED OUTPUT	937
GENERATOR OUTPUT (KW)	1800
GENERATOR OUTPUT (KVA)	
GENERATOR SPEED (RPM)	

FUEL EFFICIENCY	BTU/kWh	CFH
FUEL CONSUMPTION	9,455	5.635
At 100% load based on L.H.V.		

NOTE: Fuel consumption has a 5% tolerance

VOLTAGE RANGE	
HZ	WIRE
60 HZ	3 416 — 480 208 — 240
60 HZ	4 240/416 — 277/480 120/208 — 138/240

NOTE: 4,160 & 13,800 are also available

WEIGHT / DIMENSIONS WITH RADIATOR	
W x L x H (in)	85" x 226" x 100"
Wet Weight (lbs)	28,000

WEIGHT / DIMENSIONS WITHOUT RADIATOR	
W x L x H (in)	76" x 152" x 100"
Wet Weight (lbs)	20,000

CLEAN EXHAUST EMISSIONS DATA (FOR NOX CO NMHC)

NOX	1.0 g/hp
CO	2.0 g/hp
NMHC	0.7 g/hp

STANDARD NATURAL GAS SUPPLY R

Requires a minimum of 8.5 Million Btu/hr

Gas at 1040 BTU/CF, Minimum Gas



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CUSTOMERS



CONDÉ NAST



Coca-Cola



REUTERS

BMO Bank of Montreal



BARCLAYS
CENTER
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THE PORT AUTHORITY OF NY & NJ

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The Sherry-Netherland

Pratt & Whitney
A United Technologies Company



Atlantic
Health System



WESTIN
HOTELS & RESORTS



NOMURA



CHASE



UConn



Vanguard

CROWNE PLAZA
HOTELS • RESORTS

Next Steps

- If you want to expand your offerings and help customers manage their energy costs while enhancing their reliability, call Sam Adjangba today at (732) 202-2926 Ext. 2002.
- If you have customers who want to take advantage immediately of this program, call Sam Adjangba at (732) 202-2926 Ext. 2002 to discuss specific opportunity.
- We offer customized sales collateral for your use, call Sam to request document creation.
- Recorded webinar or slides are available upon request.
- Technical specialists are available to join on sales calls once you register opportunity with Sam.





Questions and Discussion