

Distributed Generation Opportunities for DEMEC and Lewes, DE

September 5, 2018

Agenda

- Lewes BPW Current Situation
- Benefit of Peak Load Reduction
- About PowerSecure
- PowerSecure Solution
- PowerSecure Reference Customer
- Discussion/Next Steps

Current Situation

Lewes, DE Board of Public Works

- 9.5MW average load
- 16MW average monthly peak load
- 22MW maximum peak load
- 35% of Lewes BPW's energy cost are demand based charges – DEMEC remits to PJM and DPL

Peak Load Reduction Solution

- Lewes previously contracted Alevo to install a Battery Energy Storage Solution
- Benefit to Lewes
 - Reduction of peak load reducing demand charges
 - Participation in PJM RegD market

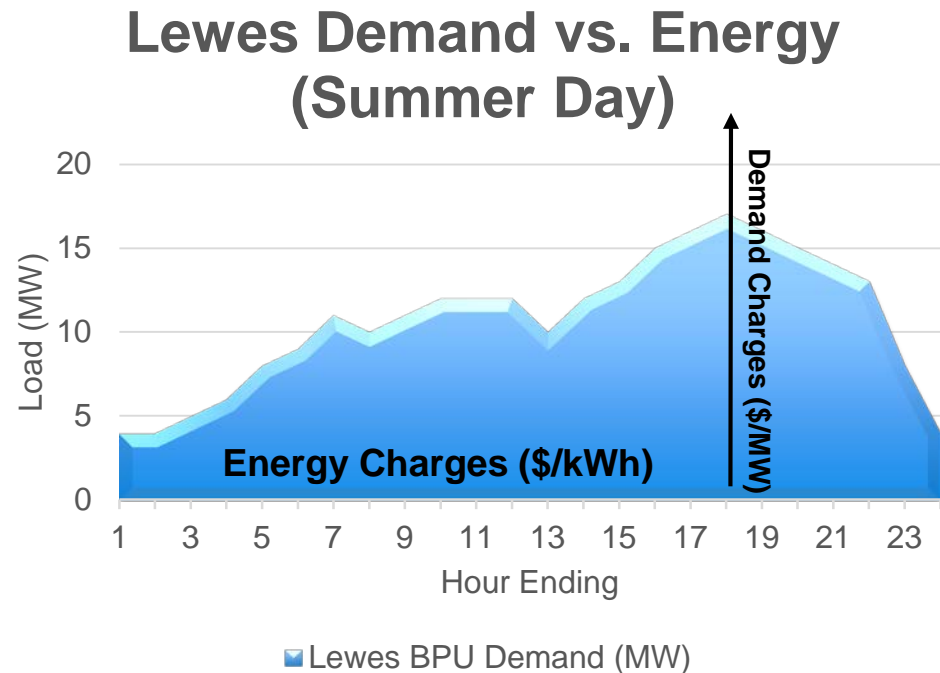
Alevo is no longer a going concern

Lewes Still Desires Peak Load Reduction Solution

Benefit of Reducing Peak Load

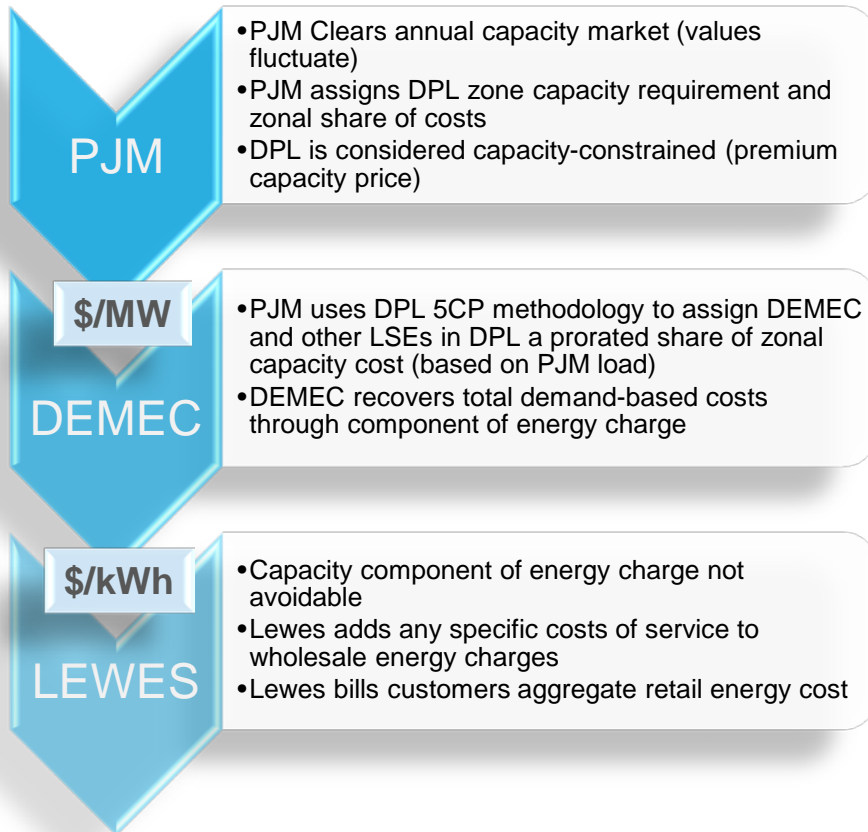
Explanation of Demand Charges

- Charges are based on kW
- Demand charges - signal for utility cost drivers
 - Generation *capacity* to meet peak demand
 - *Transmission* ampacity to transport peak generation to peak load
- PJM calculates demand charges at account level
 - Lewes meter is “account”
 - DEMEC billed for members’ combined load
- Two different demand bases
 - Capacity is contribution to PJM peak load
 - Transmission is contribution to DPL peak load

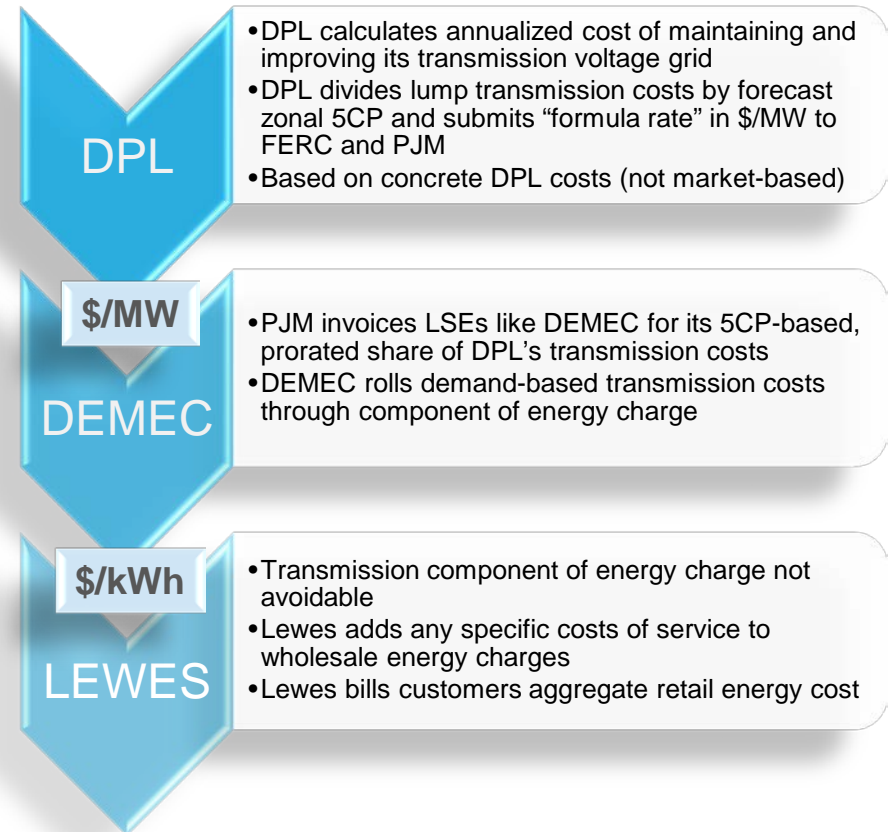


Capacity and Transmission Charges Can Behave Differently

Capacity Charge Flow (PJM-Based)







Transmission Charge Flow (DPL-Based)



10 Hours of Load Curtailment Annually Benefits Lewes and DEMEC

- Capacity demand charges based on annual Capacity Peak Load Contribution (PLC) to PJM peak demands
 - Summer 5CP (June-September)
 - 5MW can generate \$310,000/yr. in savings
- Transmission demand charges based on annual Network PLC to Delmarva Power and Light (DPL) system or “network” demands
 - Annual 5CP (11/1-10/31 base year)
 - 5MW can generate \$200,000/yr. in savings

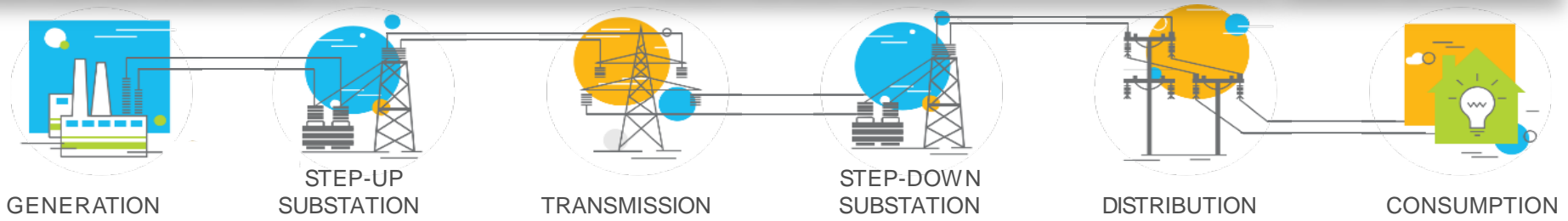
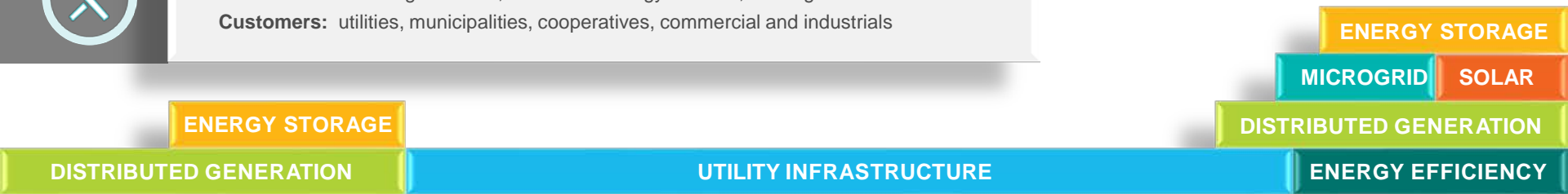
PowerSecure

	<p>Distributed Infrastructure</p> <p>Solution: onsite generation, switchgear, microgrid, energy storage, fuel cells, and solar solutions</p> <p>Customers: data centers, healthcare, military and national accounts</p>
	<p>Energy Efficiency & Lighting</p> <p>Solution: highly engineered solutions for maximizing energy efficiency</p> <p>Customers: ESCOs, government, “big box” retailers, department stores, high-end retailers, utilities, and grocery/drug/convenience stores</p>
	<p>Utility Infrastructure</p> <p>Solution: T&D, substation, engineering & design, energy services consulting</p> <p>Customers: utilities, municipalities, cooperatives, commercial and industrials</p>
	<p>Distributed Energy Resource Services</p> <p>Solution: distributed generation, renewable energy controls, switchgear</p> <p>Customers: utilities, municipalities, cooperatives, commercial and industrials</p>

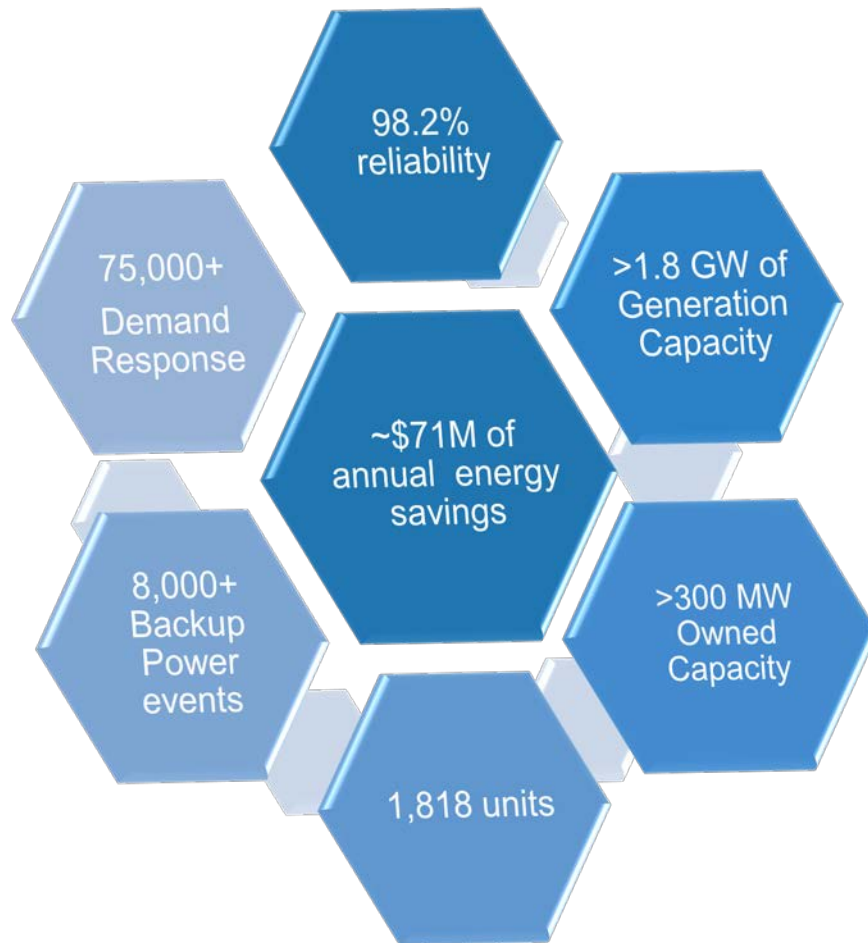
Value Proposition:

Innovation in Supply of Energy

Evolving the established means for maintaining reliable, resilient and sustainable supply of energy at an ever improving economic value to our customers.



Unmatched in Scale, Customer Reach or Performance



Develop

Build

Operate & Maintain

Sales &
Business
Development

Economic
Value Analysis

Engineering/
Design.
Estimating

Manufacturing

Construction

Commissioning

Monitoring

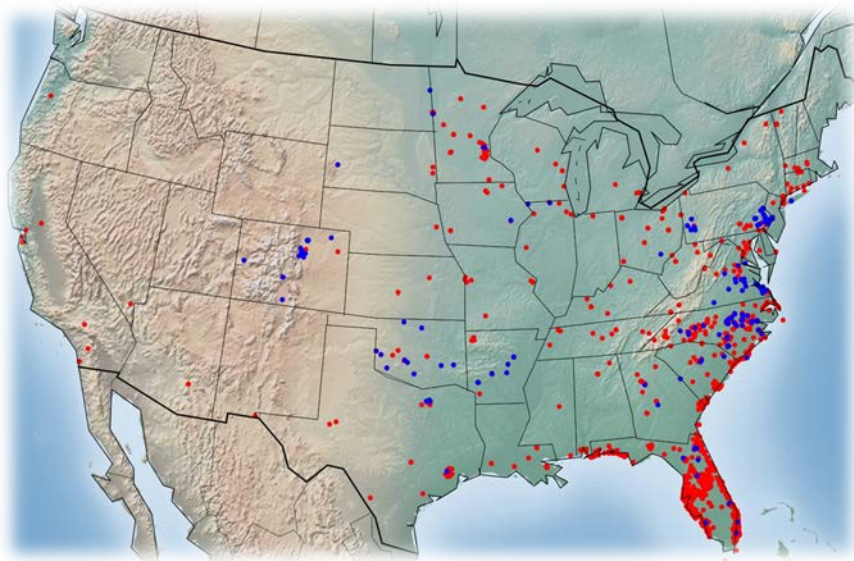
Service/
Maintenance

Vertical integration of equipment and services allows for a supply of consistent value to our customers and utility partners...

- **Stand-by Resiliency**
- **Peak Load Management**
- **Demand Response**
- **Energy Efficiency**
- ***Reliability as a Service***

PowerSecure Solution

Ever Increasing Value to PowerSecure Customers



Blue = PowerSecure Owned Sites
Red = Customer Owned Sites

DBOOM Model

Develop

Build

Own

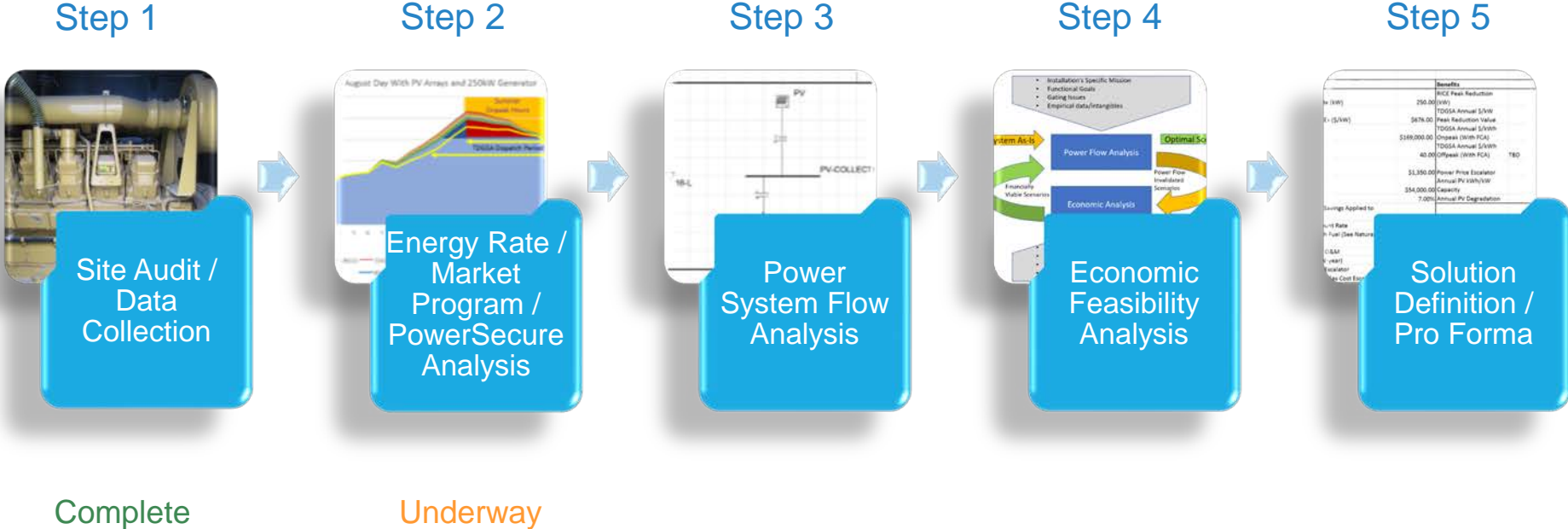
Operate

Maintain

Putting PowerSecure Experience to Work

PowerSecure Owned Sites Growing at a Rate Twice that of Customer Owned Sites

Systematic Approach to Confirming Financial Viability



Possible Solution

- Existing generator house will readily accommodate 5 MW of ultra clean Tier 4 final diesel generation
- Existing open breakers at substation
- Protections to be implemented to prohibit export onto Delmarva 69kV system
- EPA Tier 4 Final technology streamlines Delaware emissions permitting
- EPA Tier 4 Final Technology solves for peak load reduction solution and economic program participation



Interactive Distributed Generation® (iDG®)

Flexible solution offerings for high reliability onsite generation

The PowerBlock® Advantage

- Highly robust Volvo engine built in 600/625kW “Blocks”
- EPA certified T2 or T4 Final engines – the most stringent EPA diesel standards – 90% reduction in PM and NOx emissions
- Fuel flexibly: Natural gas, propane, wellhead gas – any combination
- Run-up synchronization: fastest load acceptance in the industry

NexGear® Customized Switchgear

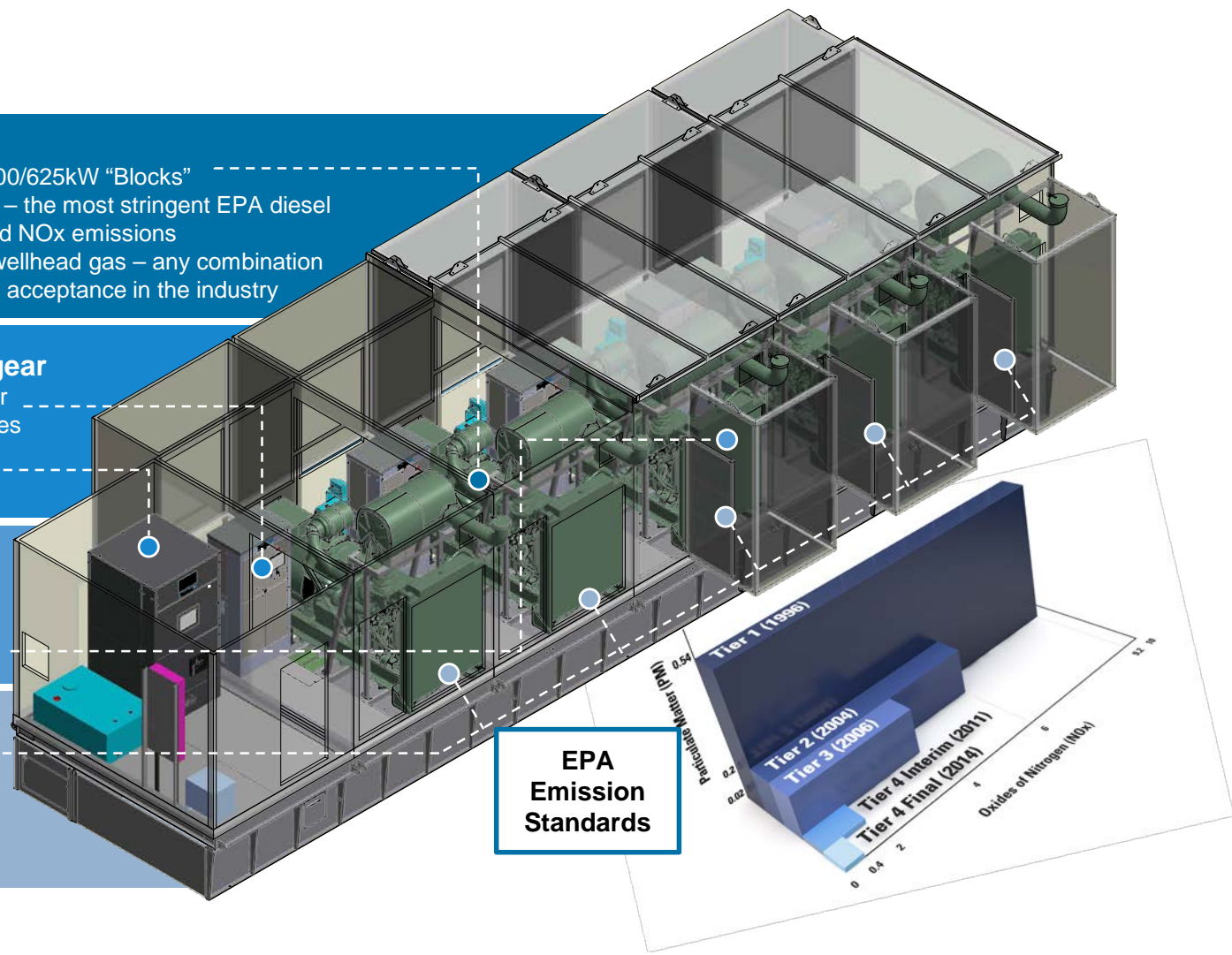
- Medium and Low Voltage Switchgear
- Automatic paralleling transfer switches enables QuickPower transfer
- Single customer connection point

Customer Focused Design

- Drop-over enclosure: welded aluminum frame and skin
- Sound attenuation updraft discharge

Modular Construction

- US patented scalable solution
- Pre-wired for minimal on-site construction and configuration
- Modular units create redundancies upon each other



PowerSecure Reference Customer

PJM Case Study: Borough of Berlin, PA

- 3.75 MW installation operating for PJM and Penelec peak hours on which capacity/transmission charges are based
- Provides full backup power to Borough of Berlin in event of outage
- PowerSecure monitors and dispatches at AMP's direction
- Berlin calculated <10 year simple payback
- Combined value of capacity/transmission cost avoidance in Penelec only ~2/3 of value in DPL



Links:

- <https://www.youtube.com/watch?v=CBY3JzIWjYY>
- <https://www.youtube.com/watch?v=ehFly8HKVZY>

Next Steps