

# RESILIENT POWER

A project of **CleanEnergy**Group



## Solar+Storage Industry Perspectives: JLM Energy

# Housekeeping



All participants are in “Listen-Only” mode. Select “Use Mic & Speakers” to avoid toll charges and use your computer’s VOIP capabilities. Or select “Use Telephone” and enter your PIN onto your phone key pad.

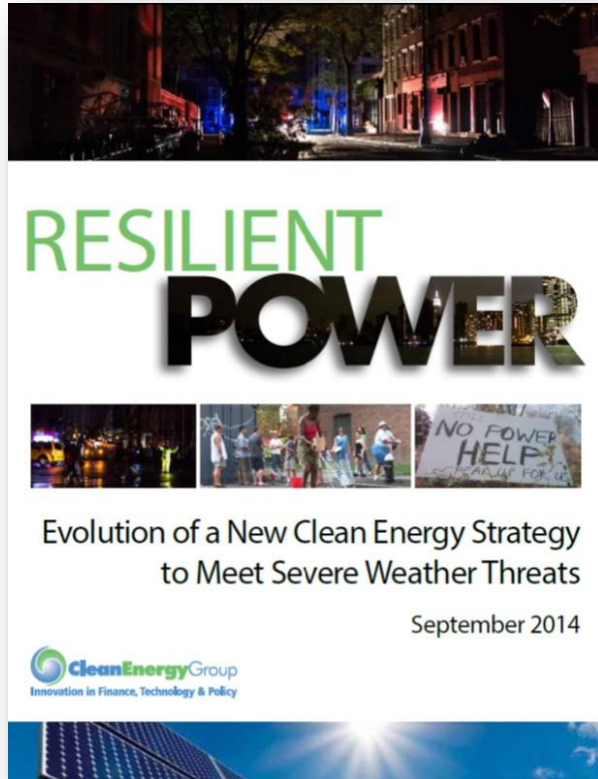
Submit your questions at any time by typing in the Question Box and hitting Send.

**This webinar is being recorded.**

You will find a recording of this webinar, as well as previous Resilient Power Project webinars, online at:

[www.resilient-power.org](http://www.resilient-power.org)

# Who We Are



Meridian Institute  
*Connecting People to Solve Problems*



[www.cleanegroup.org](http://www.cleanegroup.org)

[www.resilient-power.org](http://www.resilient-power.org)

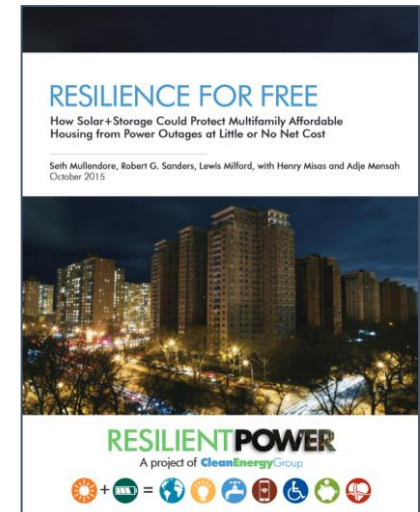
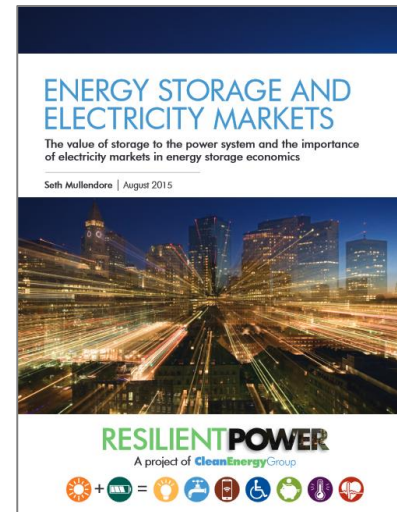
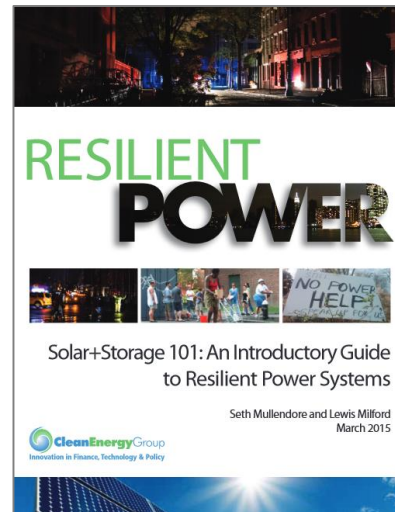
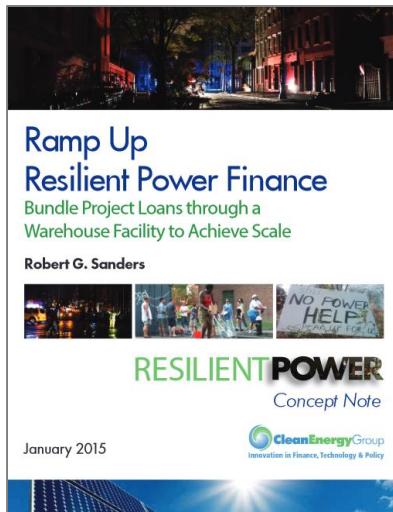


SURDNA FOUNDATION

*Fostering sustainable communities in the United States*

# Resilient Power Project

- Increase public/private investment in clean, resilient power systems
- Engage city officials to develop resilient power policies/programs
- Protect low-income and vulnerable communities
- Focus on affordable housing and critical public facilities
- Advocate for state and federal supportive policies and programs
- Technical assistance for pre-development costs to help agencies/project developers get deals done
- See [www.resilient-power.org](http://www.resilient-power.org) for reports, newsletters, webinar recordings



## Resilient Power Project

You are here: [Home](#) / [Projects](#) / [Resilient Power Project](#)

### RESILIENT POWER PROJECT

To reduce impacts and dangers of power outages in communities now and in the future, the Resilient Power Project works to provide technology and policy solutions to address three challenges: Community Resiliency, Climate Adaptation, and Climate Mitigation.

[Overview](#) | [Toolkits](#) | [Publications](#) | [Webinars](#) | [Blog](#) | [Newsletters](#) | [FAQs](#) | [Project Map](#) | [Featured Installations](#)



Sign Up for the Resilient Power Project Mailing List

#### CONTACT

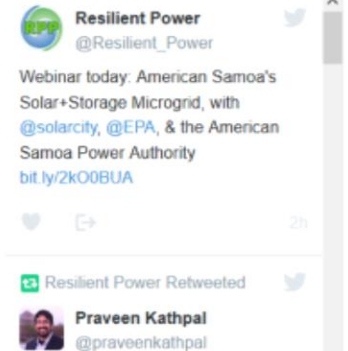
Seth Mullendore  
Project Manager  
[seth@cleanegroup.org](mailto:seth@cleanegroup.org)  
(802) 223-2554 x213


The Resilient Power Project, a joint initiative of Clean Energy Group and Meridian Institute, is focused on accelerating market development of **resilient, clean energy solutions** for affordable housing and critical community facilities in low-income and disadvantaged communities. The Project is targeted to the deployment of solar PV combined with energy storage (solar+storage) – to power essential services during extended power outages and to reduce the economic burden of energy costs in vulnerable communities. The goal is to further clean energy equity by ensuring that all communities have access to the economic, health, and resiliency benefits that solar and energy storage technologies can provide.

Clean Energy Group's role in this process is to inform, coordinate, and assist in the planning and implementation of **resilient power projects** in underserved communities, in both rural and urban areas, across the country. In addition to providing program guidance to policy makers and technical assistance to developers and community organizations, we also prepare **reports and analysis** on resilient power programs and projects, clean



#### Follow the Resilient Power Project on Twitter


Tweets by [@Resilient\\_Power](#)




 **Resilient Power**  
[@Resilient\\_Power](#)

Webinar today: American Samoa's Solar+Storage Microgrid, with [@solarcity](#), [@EPA](#), & the American Samoa Power Authority  
[bit.ly/2k00BUA](http://bit.ly/2k00BUA)

  2h

 Resilient Power Retweeted

 **Praveen Kathpal**  
[@praveenkathpal](#)

# Today's Speakers

- **Ellen Howe**, V.P. Marketing and Corporate Development, JLM Energy
- **Roman Couvrette**, Director of Product Marketing, JLM Energy



**Moderator: Seth Mullendore**, Project Director, Clean Energy Group



JLM ENERGY

Declare your energy independence.



“Electricity was like magic to me, as a child.”  
~ Co-founder and CEO, Farid Dibachi

Six years, dozens of products and hundreds of installs  
spanning residential, commercial and industrial...

Our sights are set on a clear **vision**... Through education and technology, we  
build a better world and together, propel an energy-conscious culture where  
choice and control empower citizens.



A wide-angle photograph of a desert landscape during a vibrant sunset. The sky is filled with warm, golden light and scattered clouds. In the foreground, there are dense, low-lying desert shrubs. Several saguaro cacti are visible, some in silhouette against the bright sky. In the background, a range of rugged mountains stretches across the horizon. The overall mood is serene and natural.

## Mission

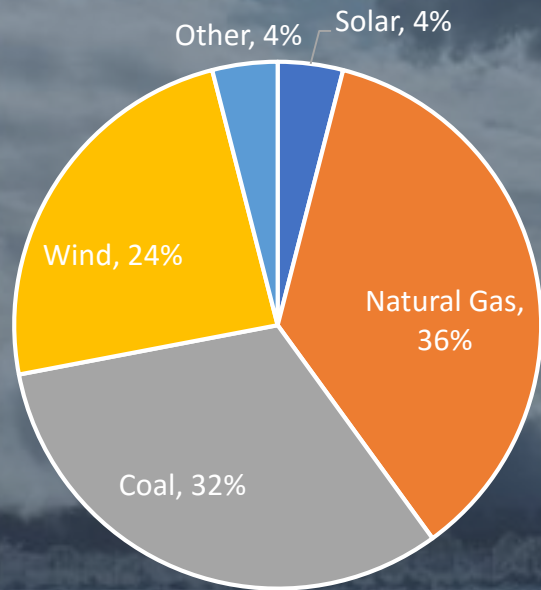
We develop and deploy innovative energy technologies and products that provide choice and control for our customers to save on energy.

Americans use \$400 billion of electricity every year



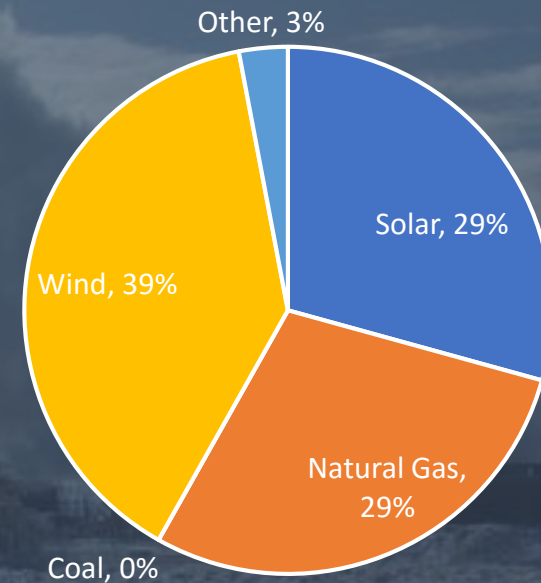
# Renewables will Supply Growing Demand

97% of utility executives expect a medium or high amount of disruption in their home market by 2020



2010

New US Electricity  
Generating Capacity  
Additions



2015



800 kW / 1.2 MWh Microgrid  
North Ridgeville, OH



30 kW / 60 kWh Demand Shaver  
Fresno, CA

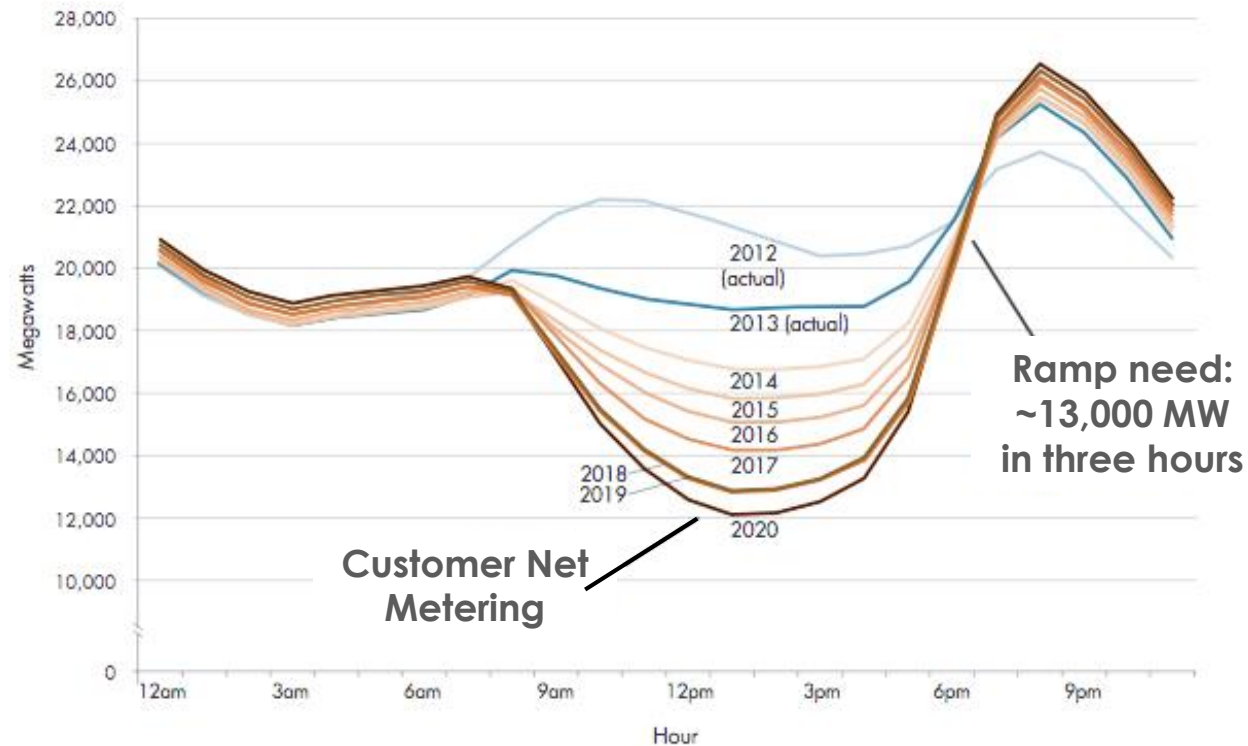


100 kW / 60 kWh Microgrid  
Lolita, CA

## Form. **Function.** Finance.

3 levels of customization to help you create the **highest value investment** with energy storage.

# Utility's #1 Problem: "Duck Curve"



# Solar Challenge...

---



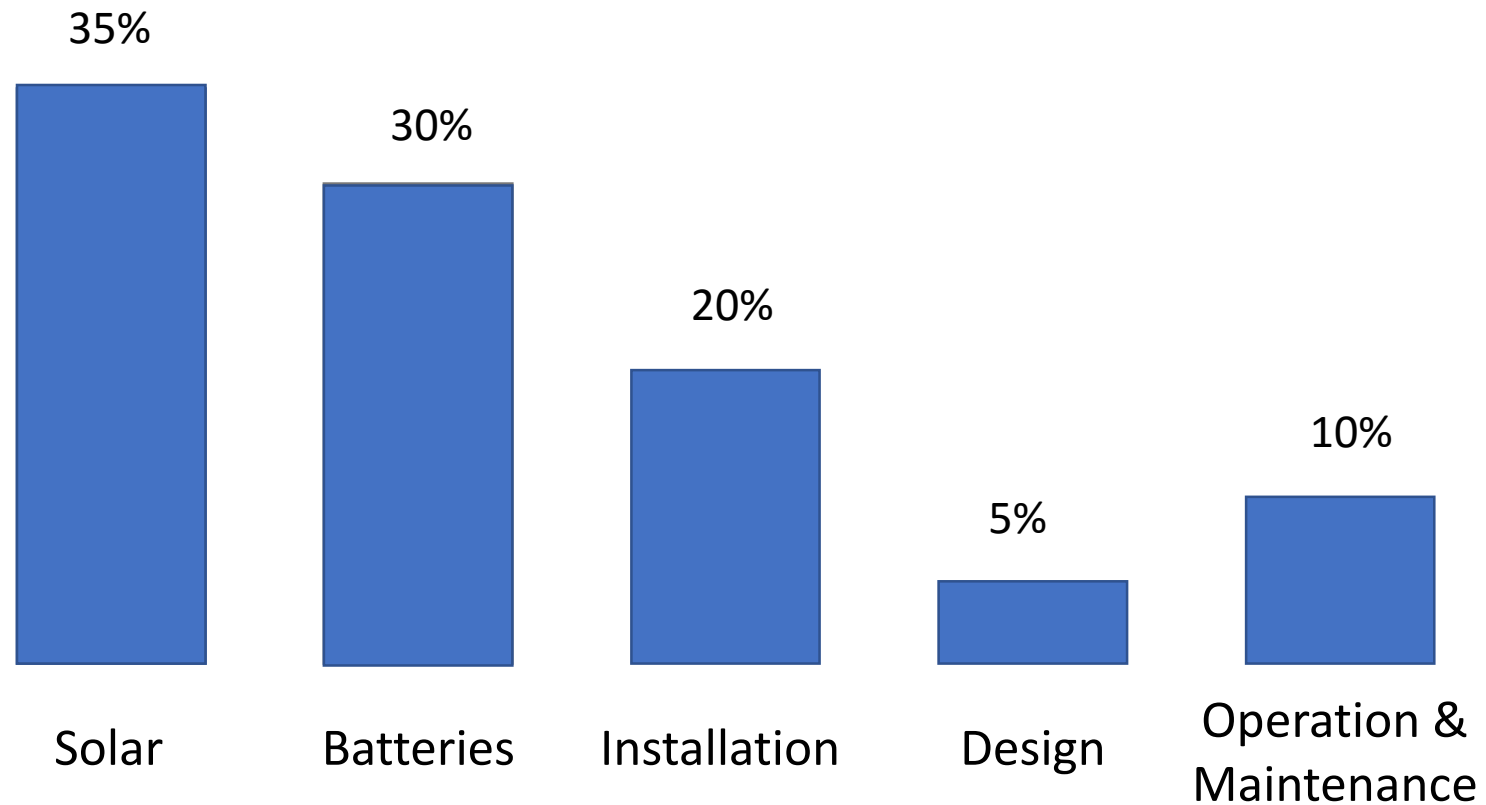
Solution: Solar + Storage

<http://www.solardirect.com/pv/systems/gts/gts-sizing-sun-hours.html>



# Today's Costs

---

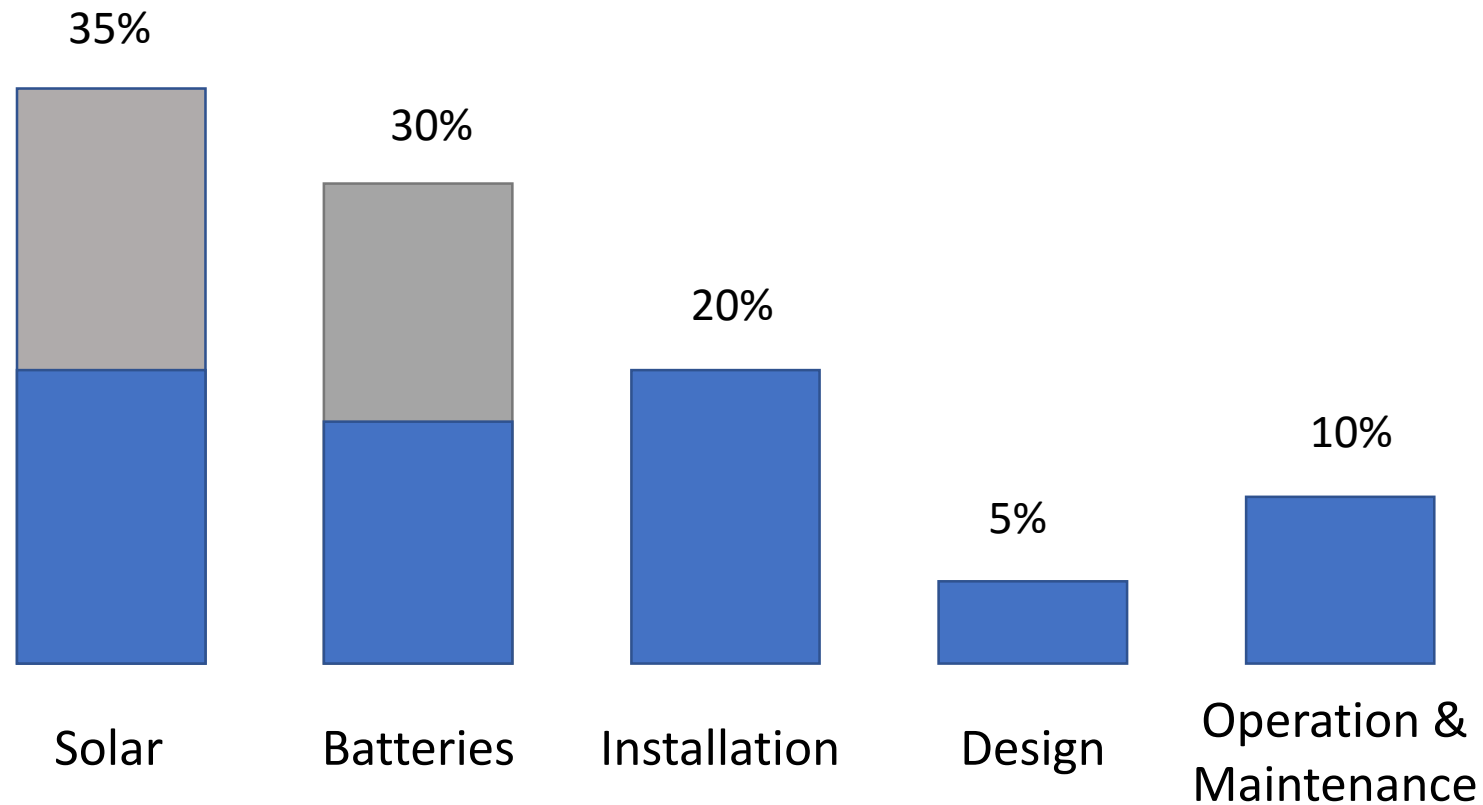


Source: Energy Storage Study Dec. 2016



# Better Manufacturing Lowers Some Costs

---

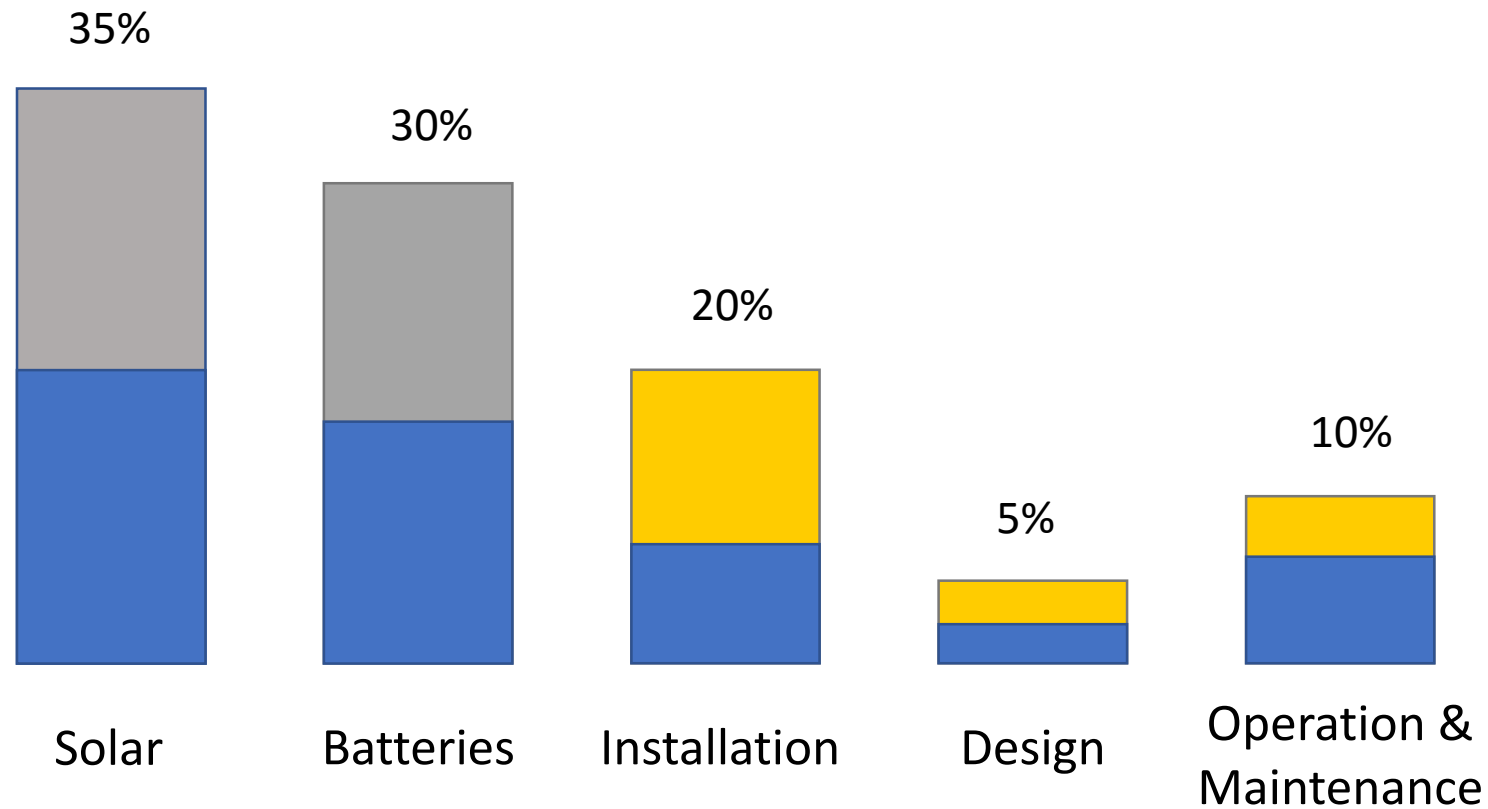


Source: Energy Storage Study Dec. 2016





# Simpler, More Efficient Systems are the Missing Piece



Source: Energy Storage Study Dec. 2016



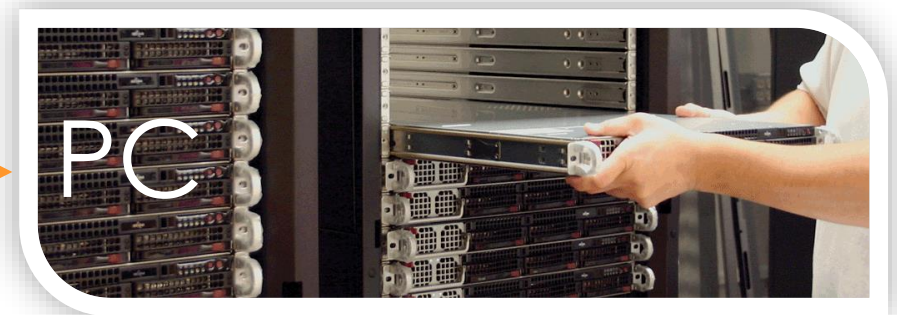


# Phazr

MicroStorage Technology



# Phazr Computing Paradigm Shift



## Bulk Storage



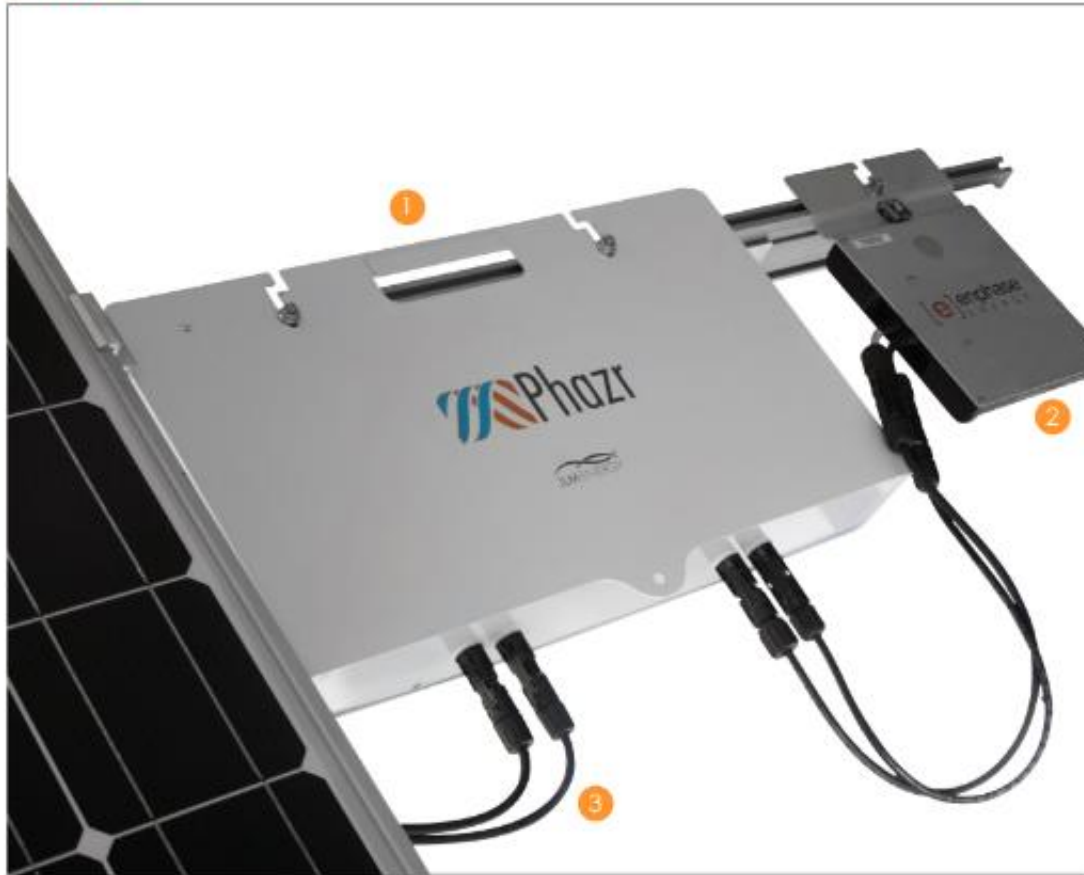
## MicroStorage



# Phazr Ships in May



## Phazr™ Behind the Solar Panel



### 1 Rack-mountable batteries

Compatible with a II racking types. Virtually no design, installation, or maintenance costs.

### 2 Single Microinverter

Uses JLM's patent-pending Symmetric DC Regulation for unmatched efficiency.

### 3 Industry Standard Connections

Convenient MC-4 wiring for fast installation and replacement



- Lithium Iron Phosphate battery chemistry
- No Single-Point-of-Failure
- 20-Year Warranty

# Phazr Lowest Total Cost of Ownership



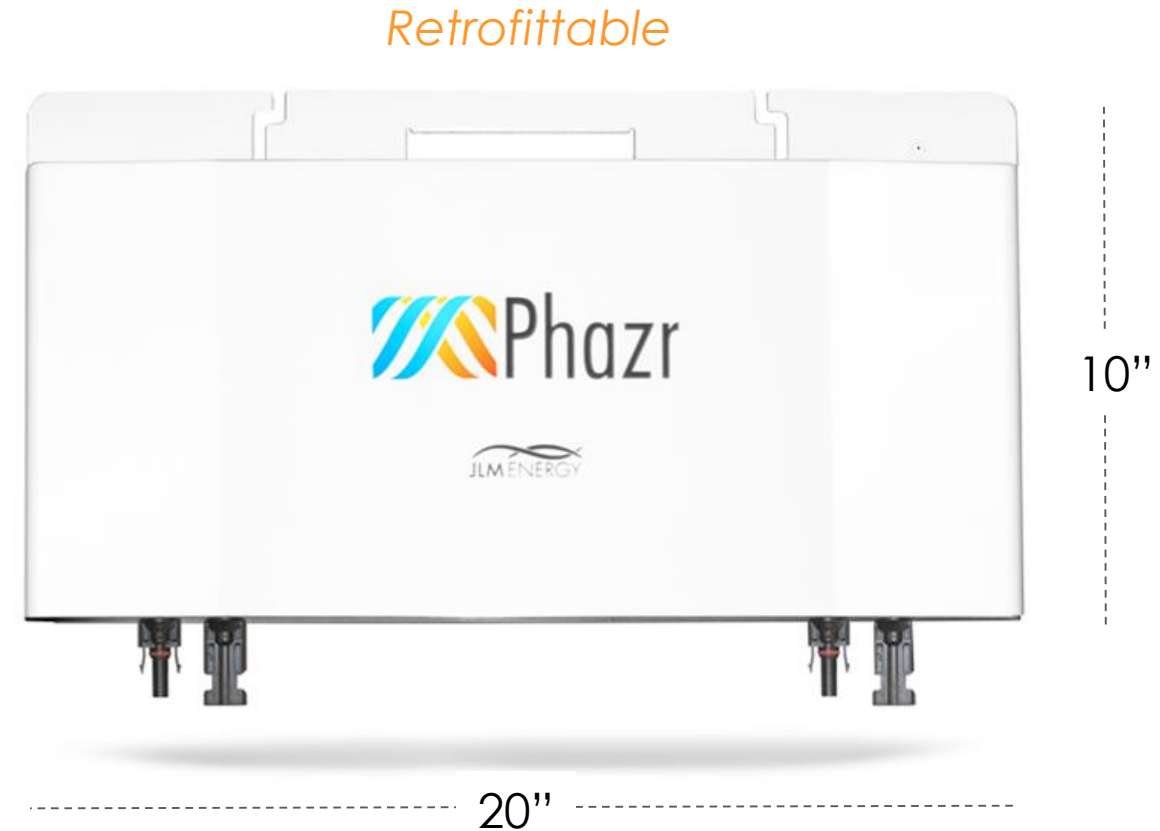
Costs	Traditional	Phazr
Design	~\$100/ kWh	\$0 / kWh
Installation	~\$300 / kWh	\$5 / kWh
O&M	~\$50 / kWh	\$0 / kWh





# Phazr Basic Specifications

- Full 30% ITC guaranteed
- Approved for Hawaii self-supply
- Works with virtually all PV modules
- Pair with any microinverter
- Lightweight – meets building code requirements
- 50% higher efficiency through SDCR
- Backup option available



Roofs | Ground-mounts | Overhead Structures



---

Ecosystem approach  
for Home & Enterprise



# JLM Product Ecosystem

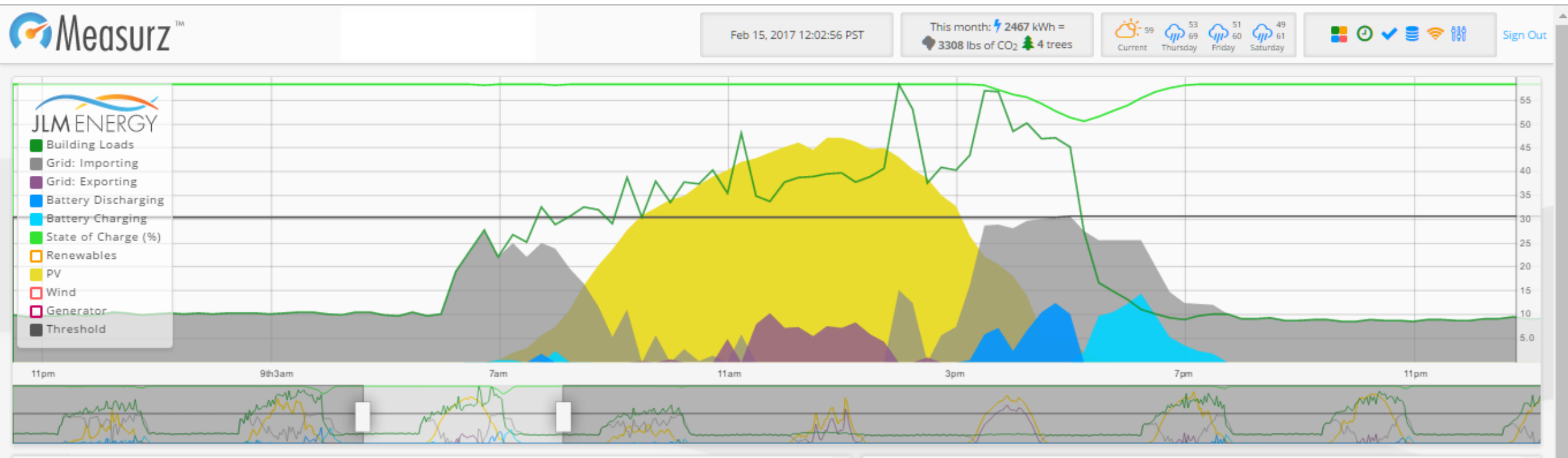




100% developed and owned by JLM Energy Inc.

**Design Systems**  
**Monitor in Real-time**  
**Control Fleets**  
**Mobile App**

# Measurz™ **Visability** into energy usage

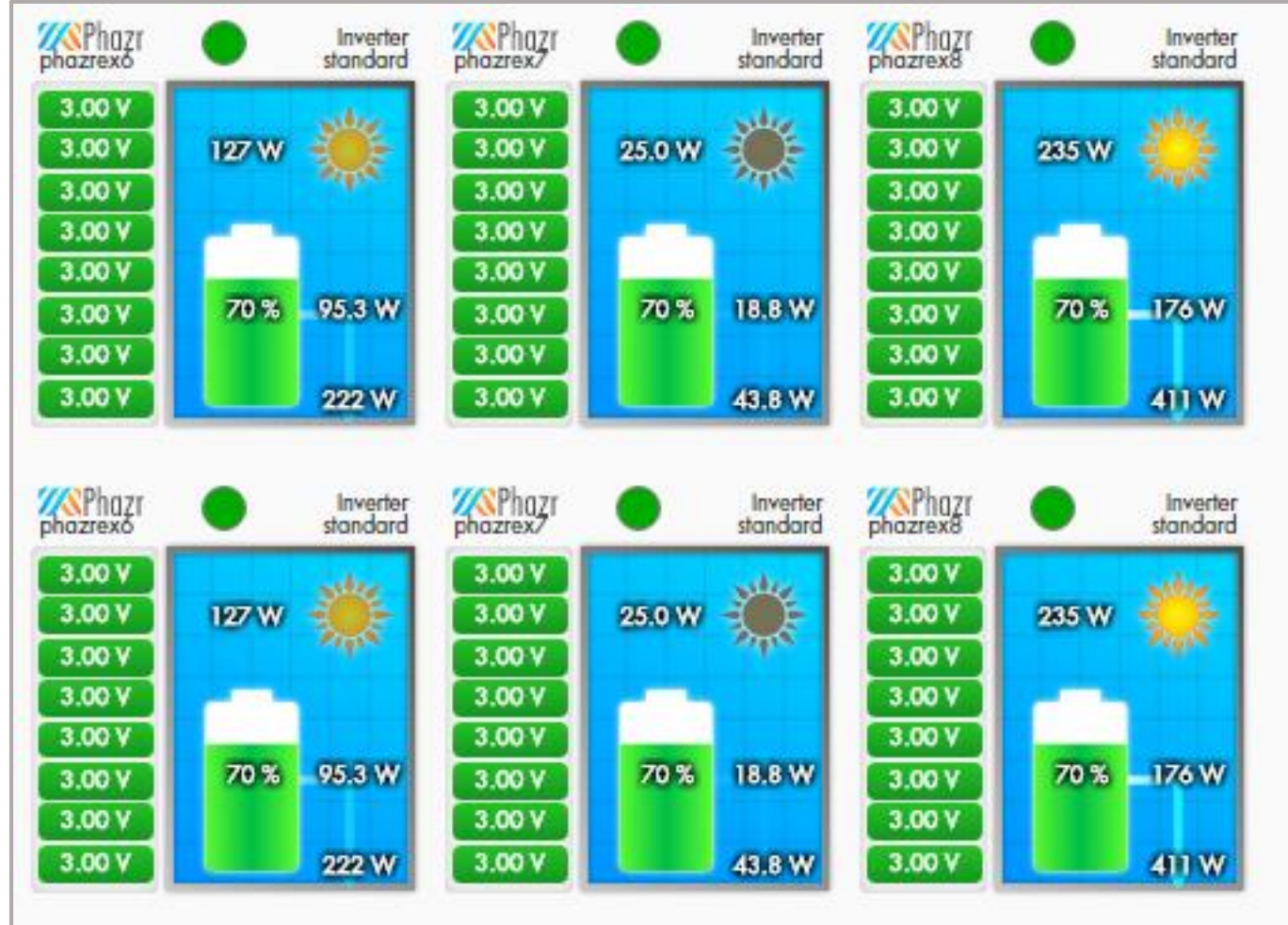


Real-time Data

Lifetime Engagement



# Measurz™ **Visability** into hardware performance



# Bear River Community Center



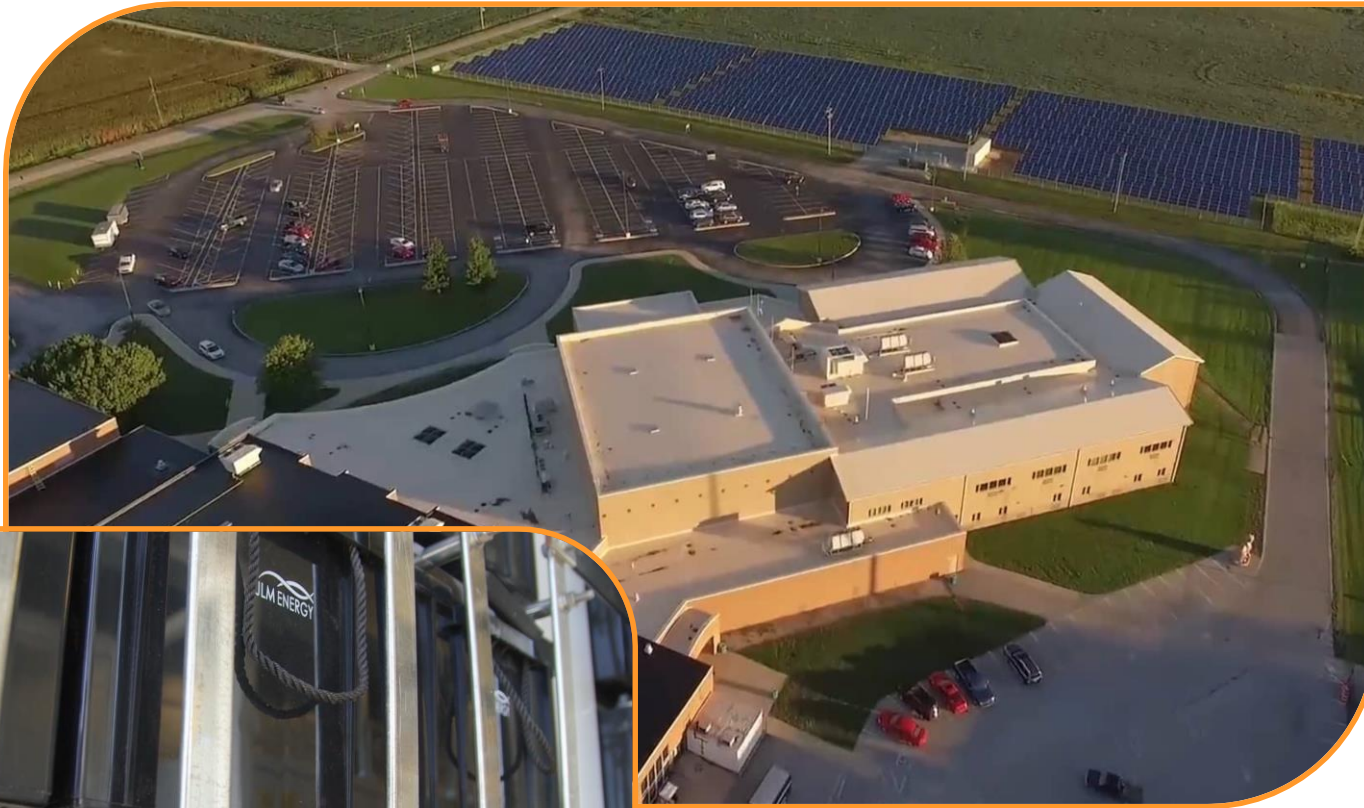
## Implemented System:

Gridz 30 kW/60 kWh & 100 kW  
Ground Mount Solar

Annual Energy Use	301,923 kWh
Monthly Peak Demand	51-61 kW
kWh Usage Offset	40%
Monthly Cost Reduction	40%
First Year Savings:	\$41,592



# North Putnam School District



**Implemented System:**  
Solar 1.3 MW –  
Energy Storage 300 kW/960 kWh

PV Smoothing	Yes
Annual Energy Use	2,153,000 kWh
Monthly Peak Demand	750 kW
First Year Savings	\$241,895
Payback Period	14.2 Years
25% Internal Return Rate	6.1%





# Target Markets

---

## Commercial Verticals:

- Golf Courses
- Tribes & Casinos
- Printing, Labeling & Packaging
- Plastics & Metal Processing
- Food Processing
- Churches & Schools

## Residential Direct Markets:

- Arizona
- Hawaii
- California
- Nevada





## **Ellen Howe**

Vice President Marketing and Corporate Development

[ellen.howe@jlmei.com](mailto:ellen.howe@jlmei.com)

## **Roman Couvrette**

Director of Product Marketing

[roman.couvrette@jlmei.com](mailto:roman.couvrette@jlmei.com)

[www.jlmei.com](http://www.jlmei.com)

March 22, 2017

# Thank you for attending our webinar

Seth Mullendore  
Project Director  
Clean Energy Group  
[seth@cleanegroup.org](mailto:seth@cleanegroup.org)

## Find us online:

[www.resilient-power.org](http://www.resilient-power.org)

[www.cleanegroup.org](http://www.cleanegroup.org)

[www.facebook.com/clean.energy.group](https://www.facebook.com/clean.energy.group)

@cleanenergygrp on Twitter

@Resilient\_Power on Twitter

# Upcoming Webinars

## **Low-Income Solar, Part 1: Lessons Learned from Low-Income Energy Efficiency Programs**

Thursday, March 23, 1-2pm ET

## **Low-Income Solar, Part 2: Using the Tools of Low-Income Energy Efficiency Financing**

Thursday, March 30, 1-2pm ET

## **NYC's Policy Target and Roadmap for Resilient Solar+Storage**

Tuesday, April 4, 1-2pm ET

## **Tools for Building More Resilient Communities with Solar+Storage**

Thursday, April 6, 1-2:30pm ET

## **The Solar Massachusetts Renewable Target (SMART) Program**

Wednesday, April 12, 1-2pm ET

[www.cleangroup.org/webinars](http://www.cleangroup.org/webinars)