

Clean Energy Grant Funding Assistance for K12 Microgrid Projects

SÄZÄN
GROUP



A4LE LearningSCAPES 2026 Presentation Agenda



1. Introductions & Project Background
2. Microgrid System & Technology Overview
3. Clean Energy Grant Funding Overview
4. K12 Microgrid Project Case Study Examples
5. Stakeholder & Community Engagement
7. Call to Action / Q&A Discussion



A4LE LearningSCAPES 2026 - Presentation Description



Presentation Description

This session illuminates the process and proven approach to apply for and implement clean energy grants with K12 schools. Learn more about the tools, funding resources, and best practices for stakeholder engagement to define both the energy performance requirements and educational outcomes with solar and battery energy storage system installation.

While a microgrid can provide both energy savings and community resilience benefits, how can these systems enhance CTE alignment, career pathways, and curriculum development opportunities? Our team will walk attendees through every step of completed projects, including several case study examples of recent K12 projects that obtained valuable grant funding to offset 100% of the cost for design and construction of a clean energy project on a school campus.



A4LE LearningSCAPES 2026 – Learning Objectives

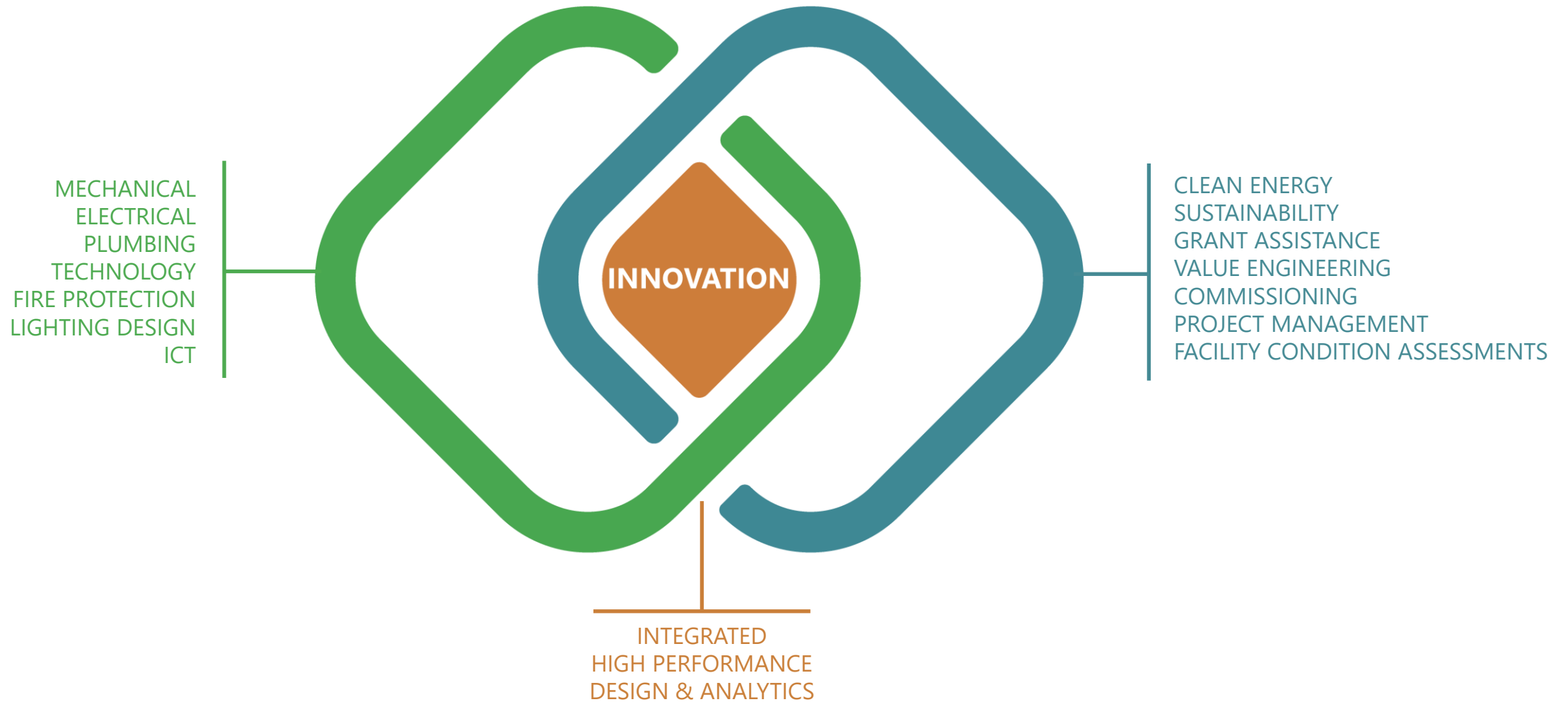


Learning Objectives

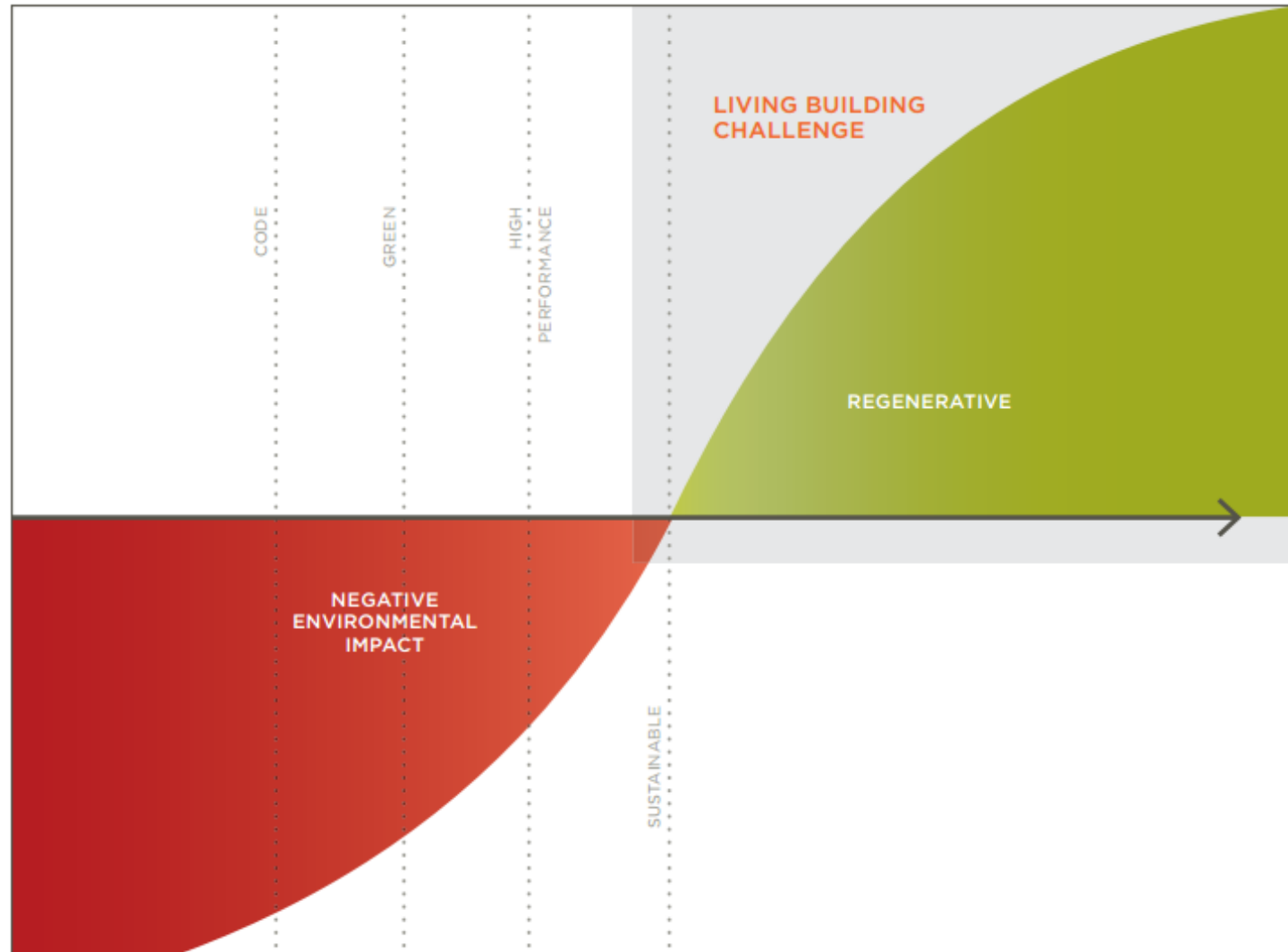
1. Navigate grant funding eligibility, schedule, and application requirements using an application response tracking template.
2. Learn more about grant contracting and reporting for K12 microgrid installations, from project kick-off through final measurement and verification.
3. Understand the connection between solar photovoltaics (PV), battery energy storage systems (BESS), and energy cost savings with resiliency benefits for K12 schools.
4. Assess opportunities and constraints for K12 School District staff on integrating educational curriculum into grant-funded microgrid projects, with an overlay of emergency response capabilities.



28 Years of Optimizing a Resilient Future



Net Positive Outcomes for K12 Schools



Introductions



Jack Newman, REP, VMA

Director of Clean Energy Solutions
Säzän Group

- Specializes in clean energy project development, over 15 years in industry
- Served for 6 years (2 years as president) on board of Directors for Solar Washington
- Background in:
 - Construction management
 - Utility renewable energy program management
 - Solar installation contracting
 - Clean energy engineering consulting



Brittany Kaple

Director of Public Relations
Toppenish School District

- Award-winning school communications professional and educational leader
- Named one of NSPRA's 35 Under 35
- Played key role in communication, community engagement, and partnership-building for Toppenish SD BESS + Microgrid project



Nolan Duce

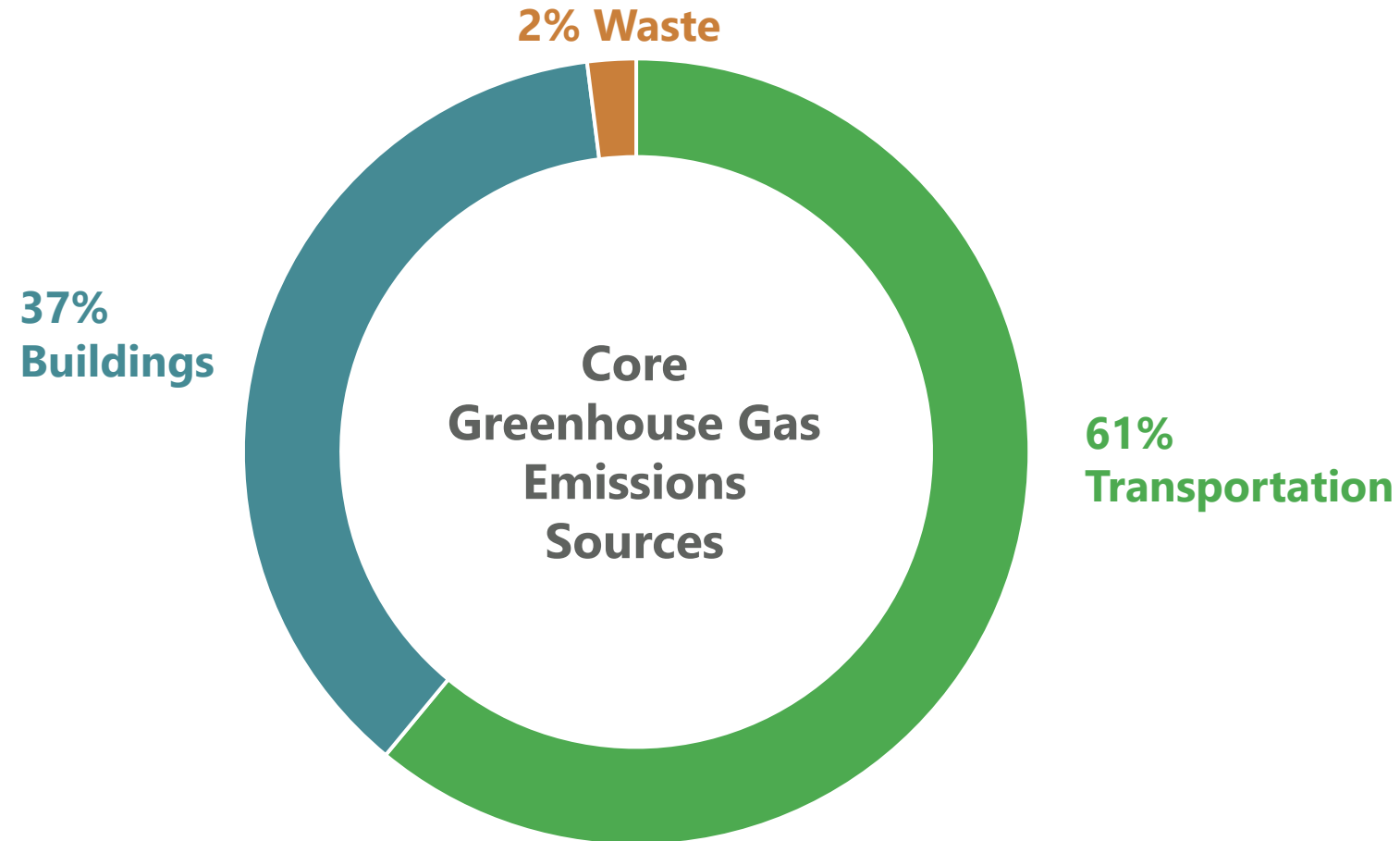
Director of Capital Projects
Port Angeles School District

- Oversees the new Hurricane Ridge MS construction project
- Received a grant for Solar + Battery energy storage system installation
- Microgrid project designed to provide energy cost savings and community resiliency

Seattle's Climate Pollution



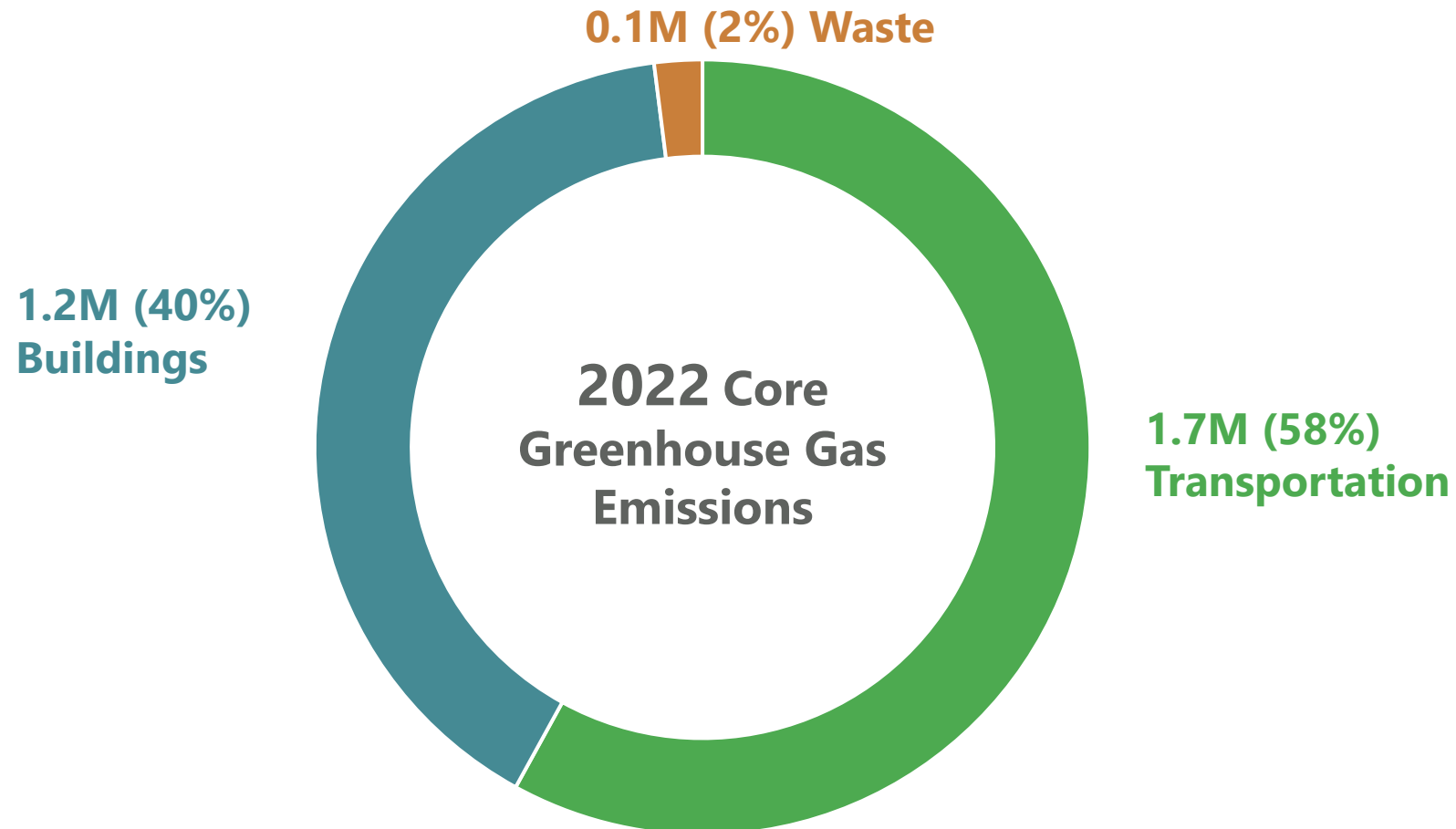
Buildings are one of the Largest sources of Seattle's Climate Pollution.



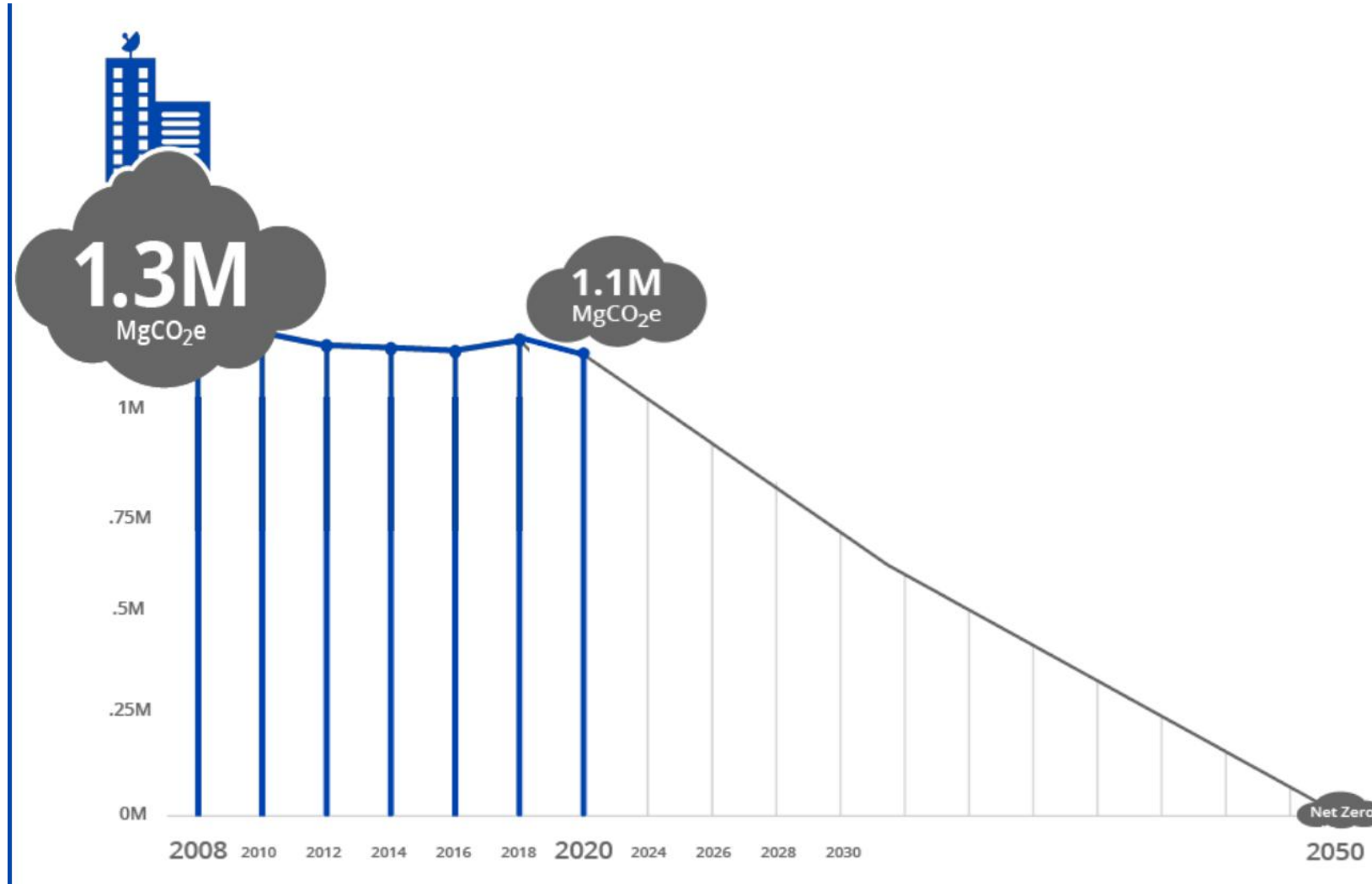
2022 Seattle's Climate Pollution



2,883,400 Metric Tonnes of CO₂e in 2022.



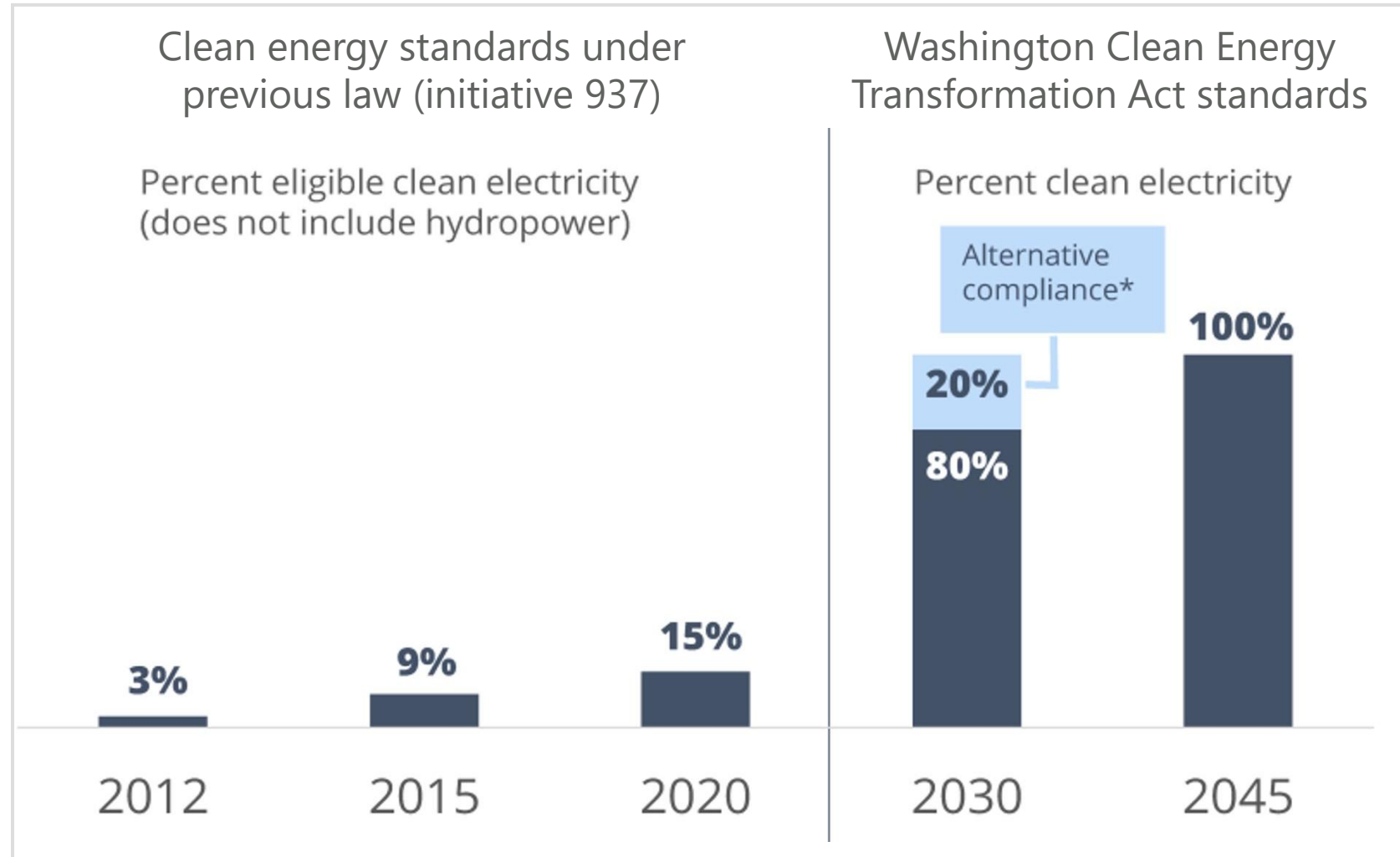
Bold Actions Needed to Reduce Climate Emissions from Buildings



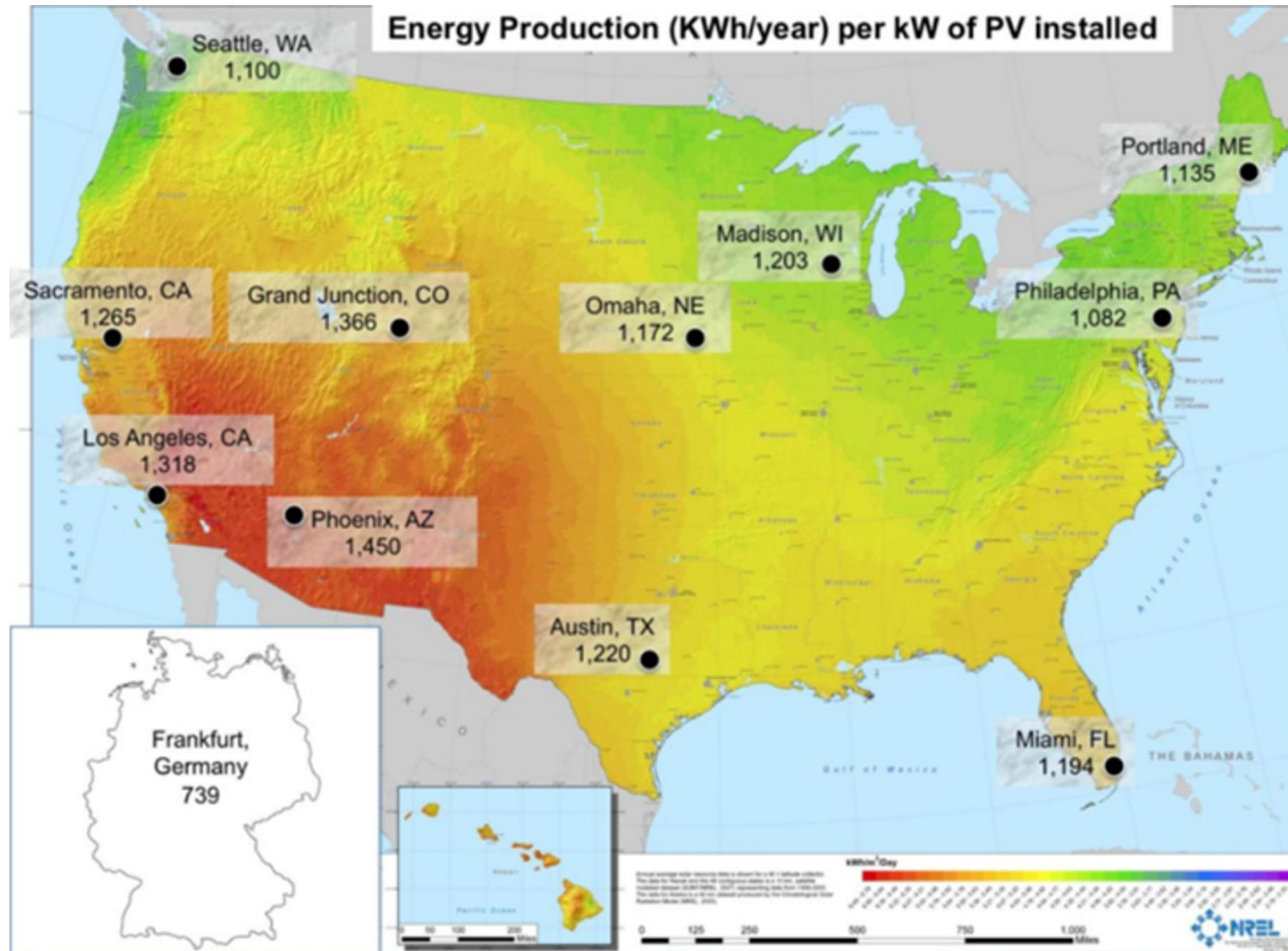
Path to Eliminate Fossil Fuels



Putting Washington on a path to entirely eliminate fossil fuels from electricity generation by 2045.

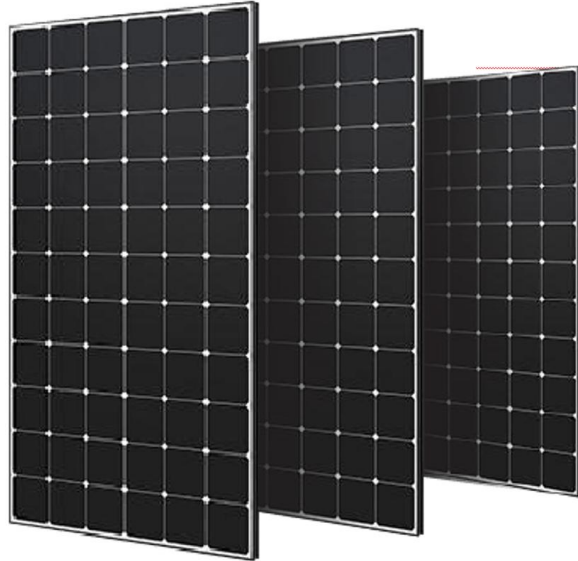


Solar Energy in Pacific Northwest



Solar PV in Seattle, WA

- 1,021 kWh/kW/year
- South-facing array (180° azimuth)
- Premium 590-Watt solar modules
- 10° tilt-angle for rooftop solar arrays



RESULTS

 [Print Results](#)

1,021 kWh/Year*

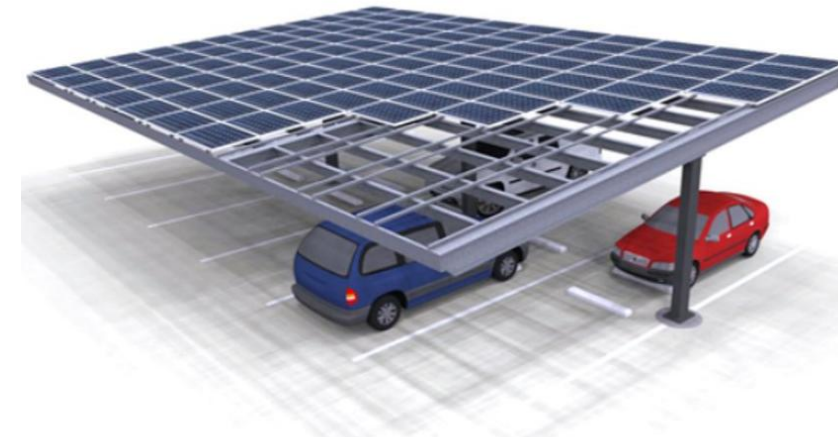
*System output may range from 981 to 1,068 kWh per year near this location.
Click [HERE](#) for more information.*

Month	Solar Radiation (kWh / m ² / day)	AC Energy (kWh)	Value (\$)
January	1.18	29	3
February	2.18	48	5
March	2.92	73	7
April	4.29	102	10
May	5.51	131	12
June	5.76	134	13
July	6.28	146	14
August	5.71	134	13
September	4.58	104	10
October	2.47	59	6
November	1.34	32	3
December	1.11	27	3
Annual	3.61	1,019	\$ 99

Solar PV Installation Types



- Rooftop, Carport, and Ground Mount
- Fixed vs Tracker Systems
- Requirements: "Anti-Islanding"
- Product Specification - Strategies



Establishing a Shared Language for Clean Energy



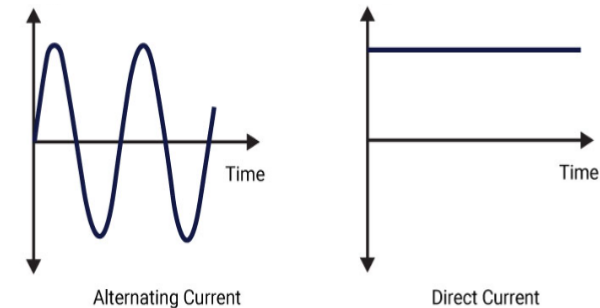
- Technical terminology and acronyms can be a barrier.
- Focus on outcomes, and educational and environmental beliefs.
- www.solaredge.com/us/home/glossary
- <https://www.microgridknowledge.com>
- <https://www.cleangroup.org>

A

Alternating Current (AC)

A type of electrical current that circuits and appliances in most homes utilize.

Expressed as a sine wave, the current of AC passes through zero when it changes direction, which makes it a safer electrical current.



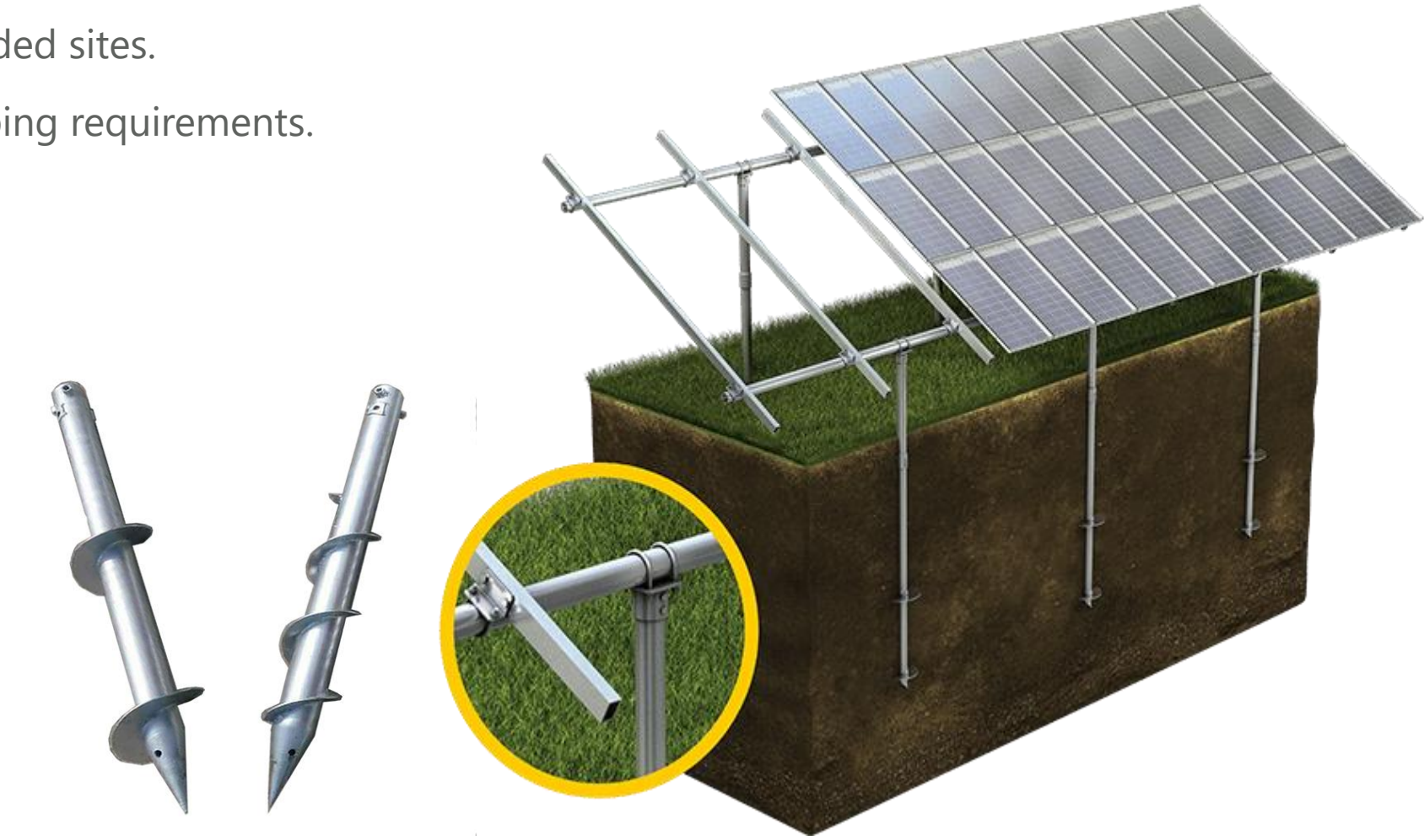
Azimuth

The direction that your roof faces (in the context of solar). The azimuth is measured in degrees, representing the angle between your roof and true north.

Helical Pile Ground Screw for Ground-Mounted Solar Array



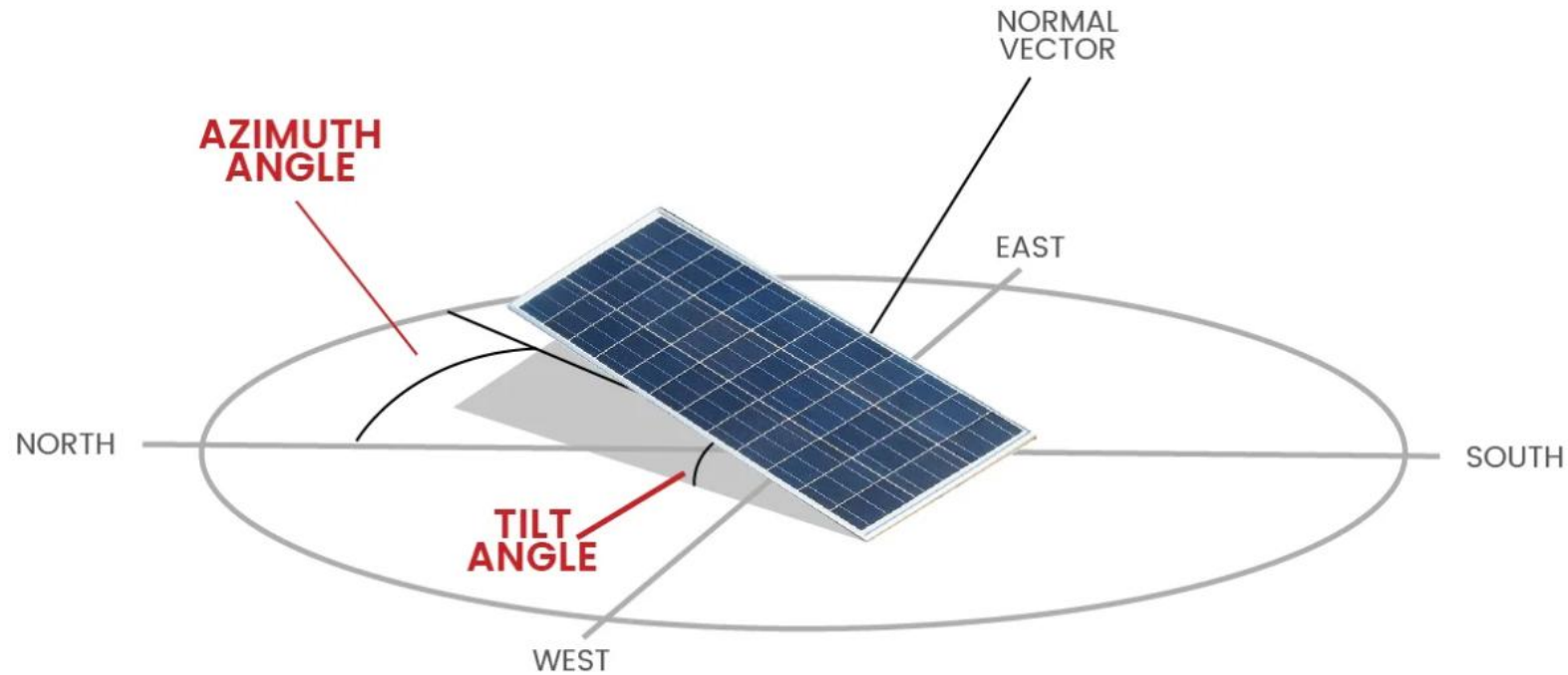
- Minimize site impact, ideal for graded sites.
- Reduce maintenance and landscaping requirements.



Azimuth Angle & Tilt Angle for Optimized Performance



- 180-Degree for Northern Hemisphere, “West is Second Best”.
- Tilt-angle determined by roof pitch, structural load, racking system specification, site conditions, Owner project requirements, etc.



Energy Monitoring Dashboards

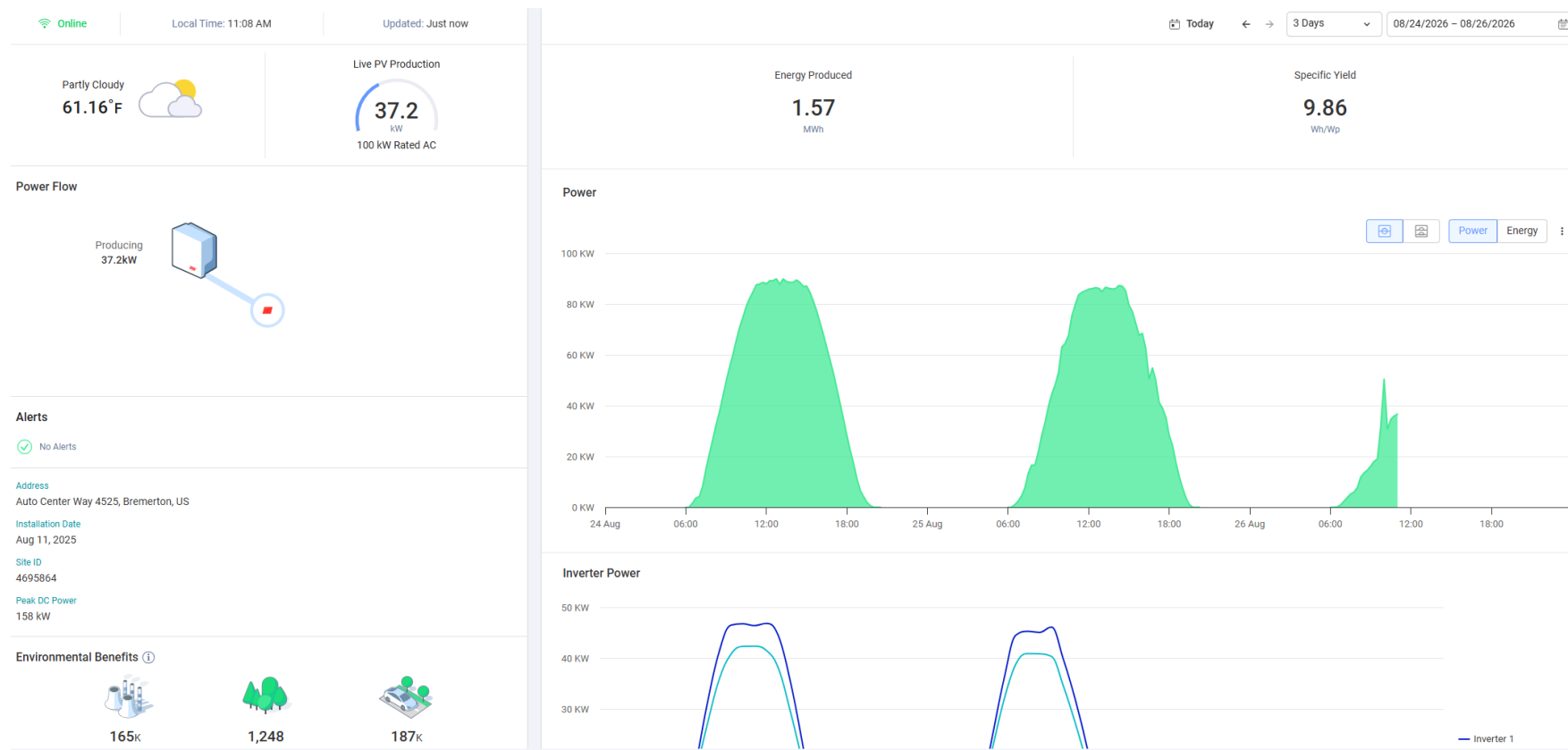
- Resource Equivalencies
- Performance Monitoring



Energy Monitoring Dashboards



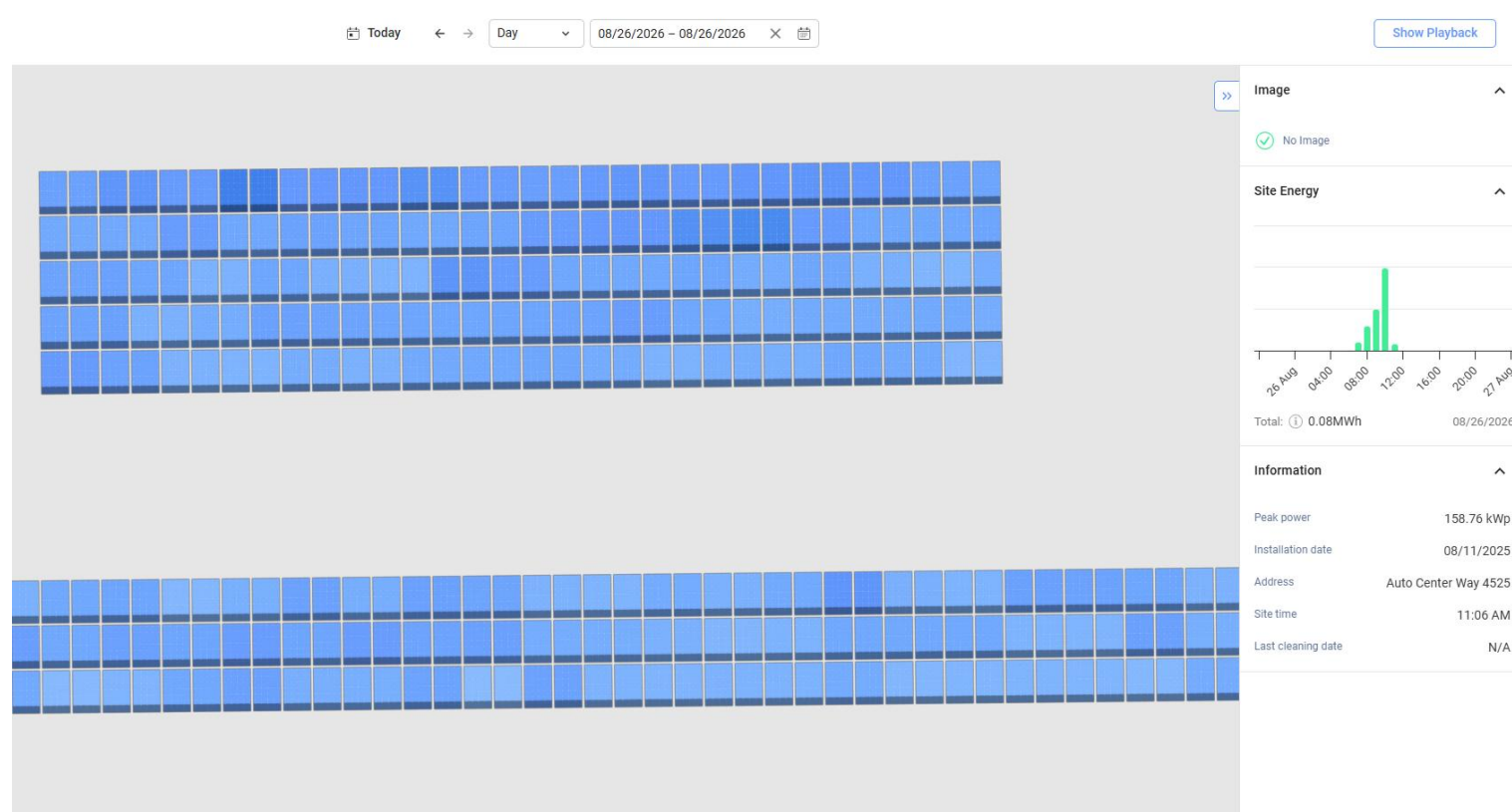
- Resource Equivalencies
- Performance Monitoring
- Weather Conditions
- Load Metering
- Measurement & Verification



Energy Monitoring Dashboards



- Resource Equivalencies
- Performance Monitoring
- Weather Conditions
- Load Metering
- Measurement & Verification



Energy Monitoring Dashboards



- Resource Equivalencies
- Performance Monitoring
- Weather Conditions
- Load Metering
- Measurement & Verification
- BESS State of Charge
- Fault Detection
- Education!



Microgrids & Energy Resilience – Project Background



[Serving Communities](#) ▾ [Building Infrastructure](#) ▾ [Growing the Economy](#) ▾ [Promoting Washington](#) ▾ [Q](#)

Solar plus Storage - Washington State Department of Commerce

[Home](#) | [Growing the Economy](#) | [Energy](#) | [Solar plus Storage](#)

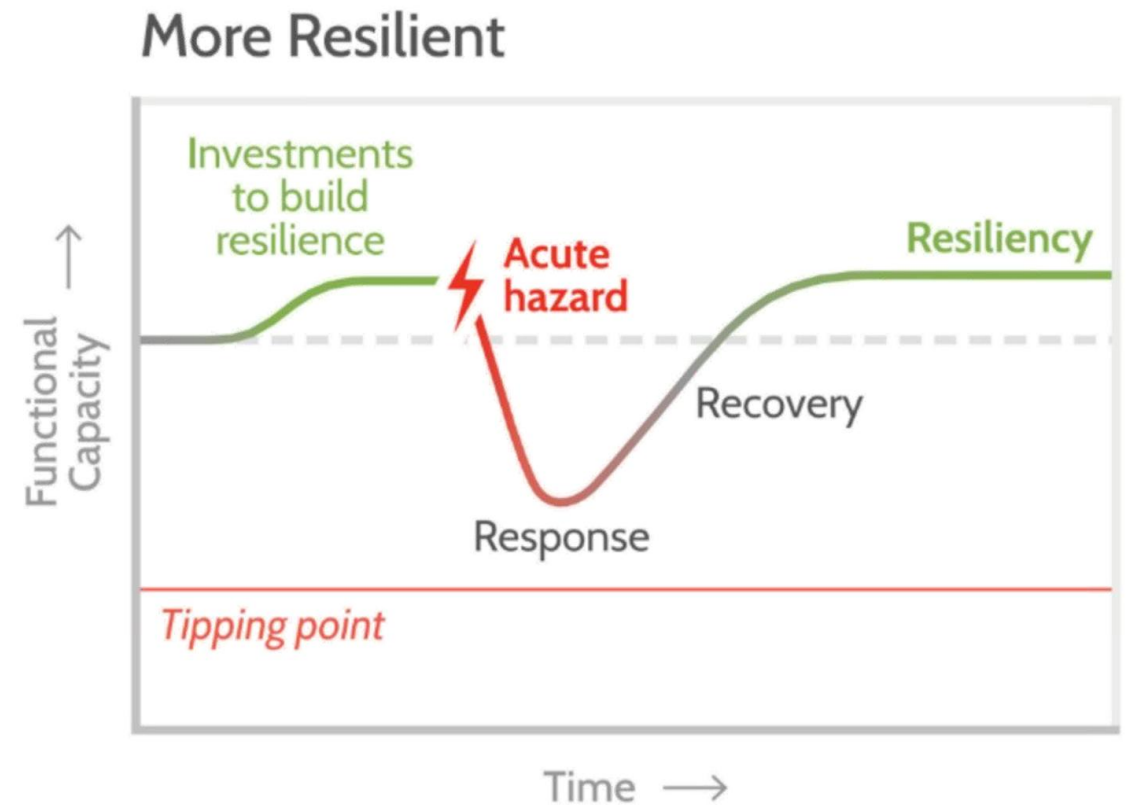
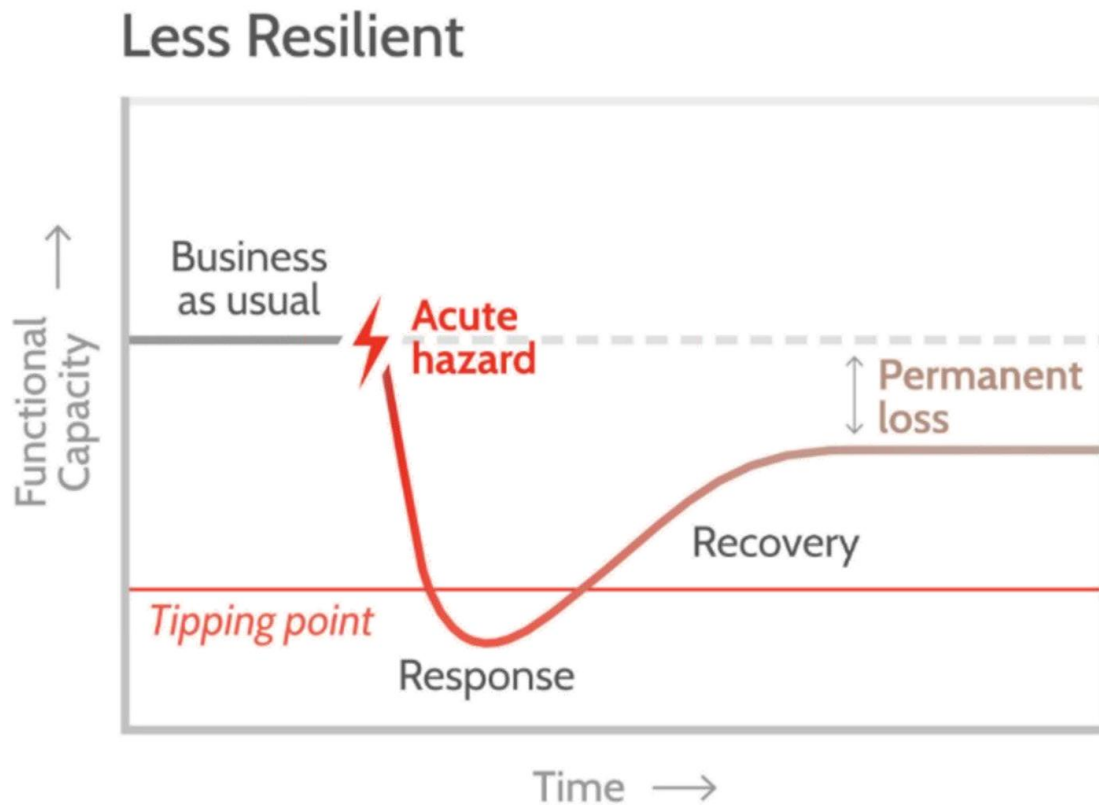
Solar plus Storage for Resilient Communities

The new Solar plus Storage for Resilient Communities program funds solar and battery back-up power so community buildings can provide essential services when the power goes out. Grants support installation as well as planning work for solar plus storage systems at community buildings, including schools, community centers, libraries, and other buildings owned by local, state, tribal governments and non-profits in Washington. Technical assistance opportunities help communities prepare to apply for future grant funding opportunities.

What is Resilience?



Resilience is the capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption.



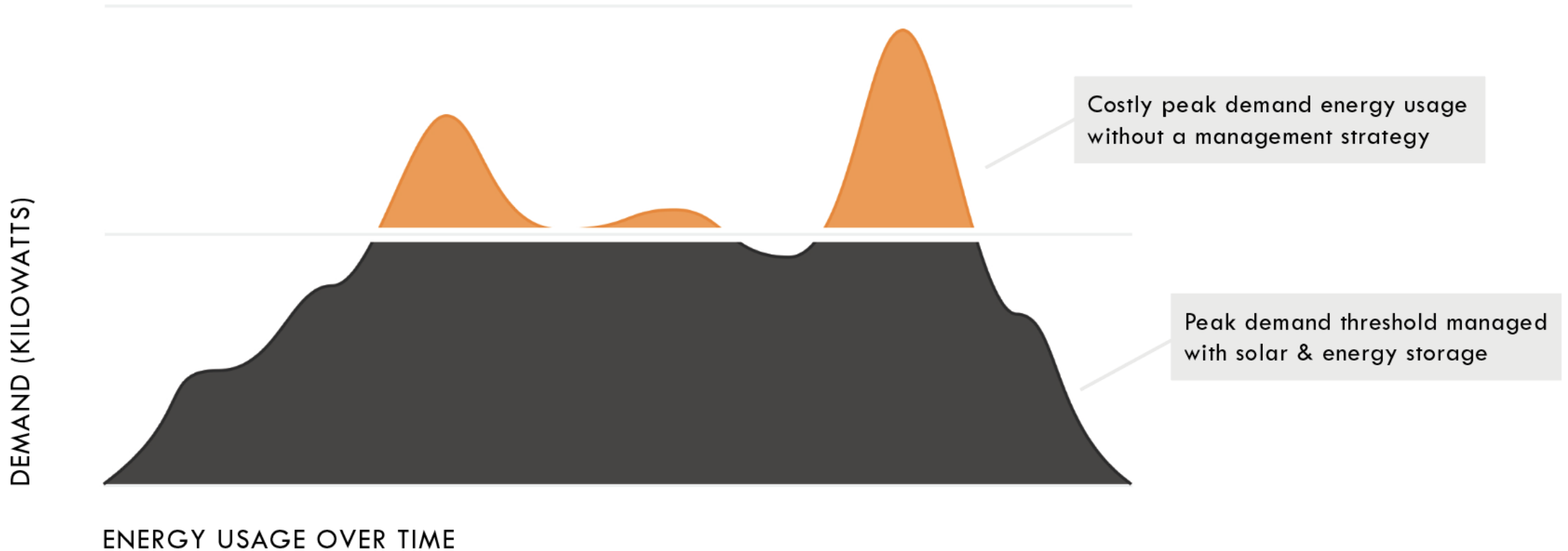
Microgrid System & Technology Overview



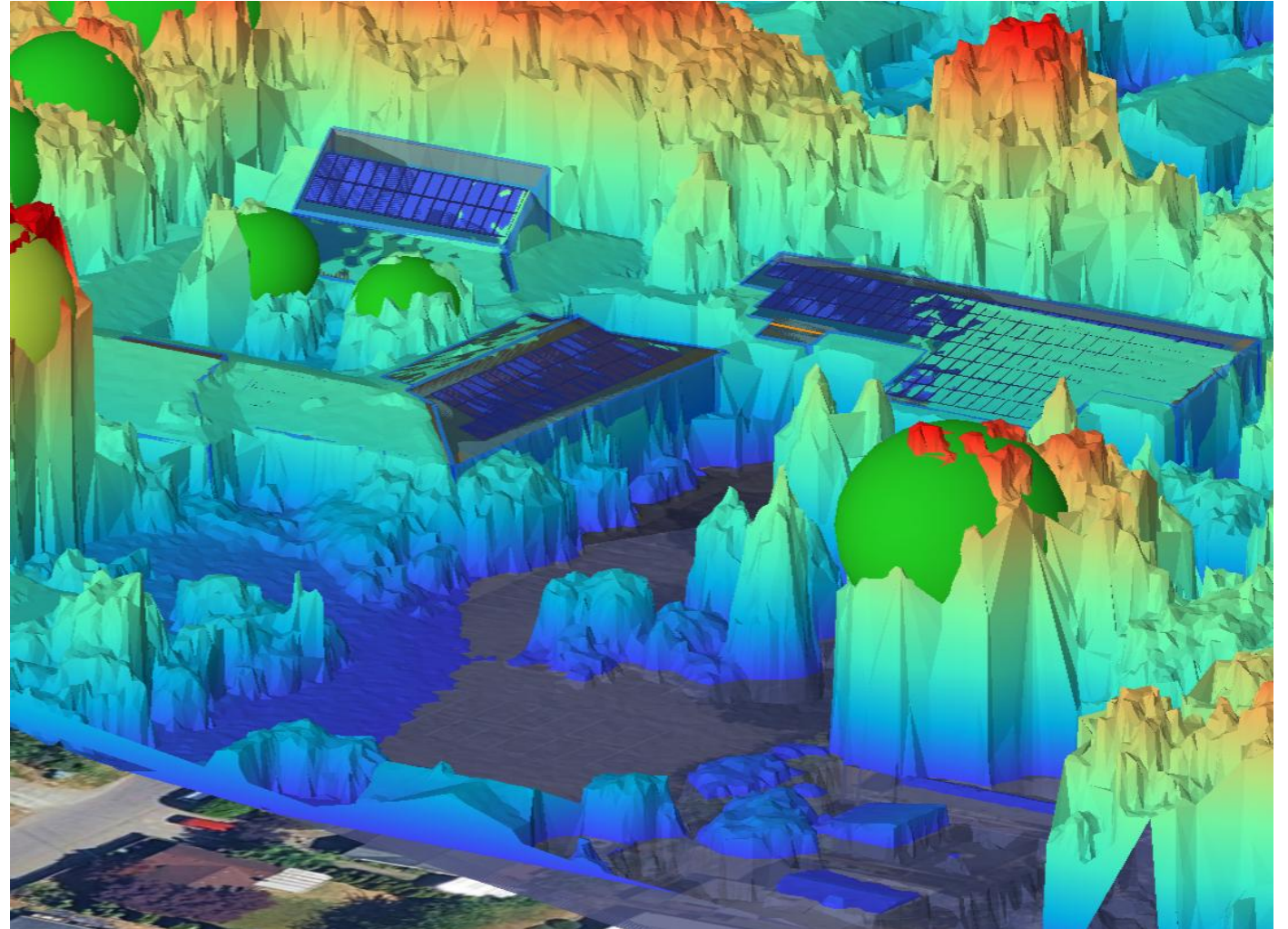
“ A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Microgrids can improve customer reliability and resilience to grid disturbances.”

- National Laboratory of the Rockies (NLR)

Microgrids & Energy Resilience – Project Background



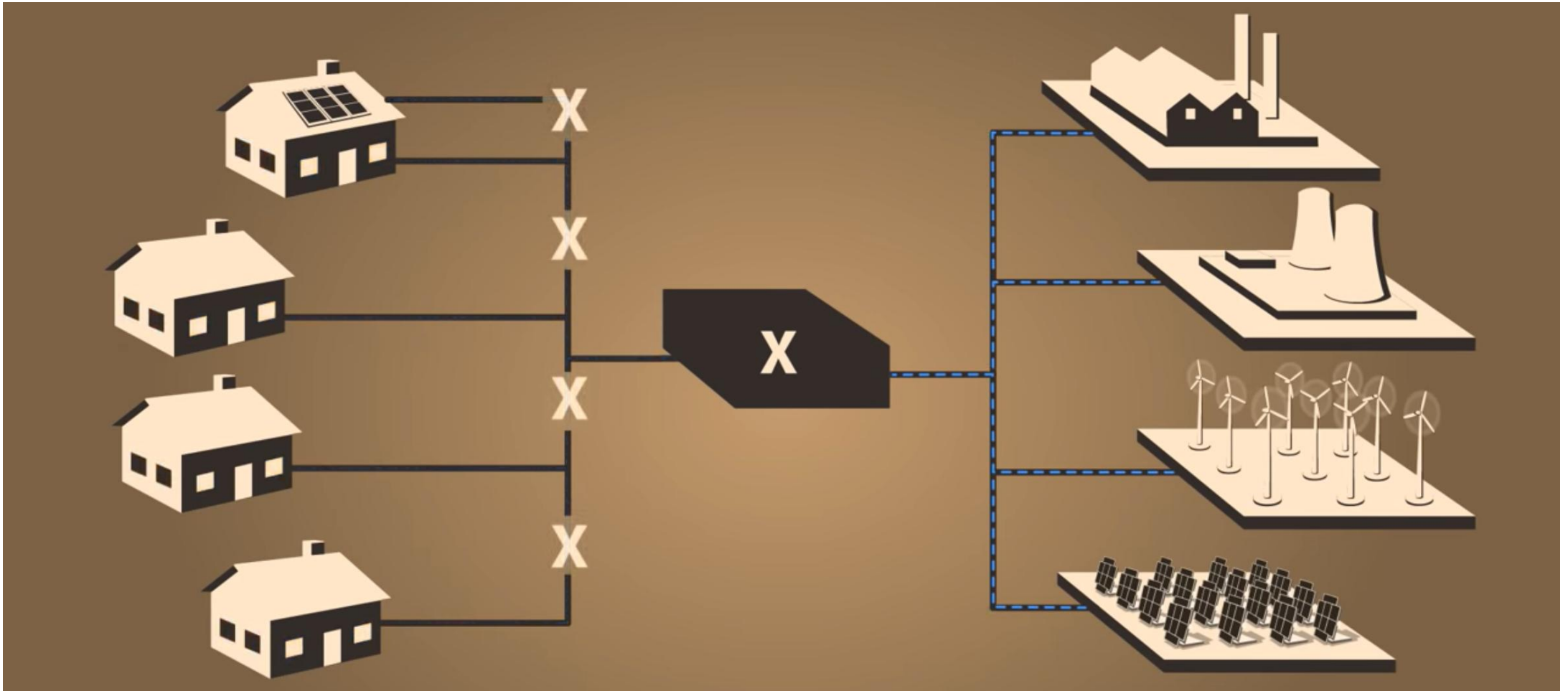
Microgrids & Energy Resilience – Project Background



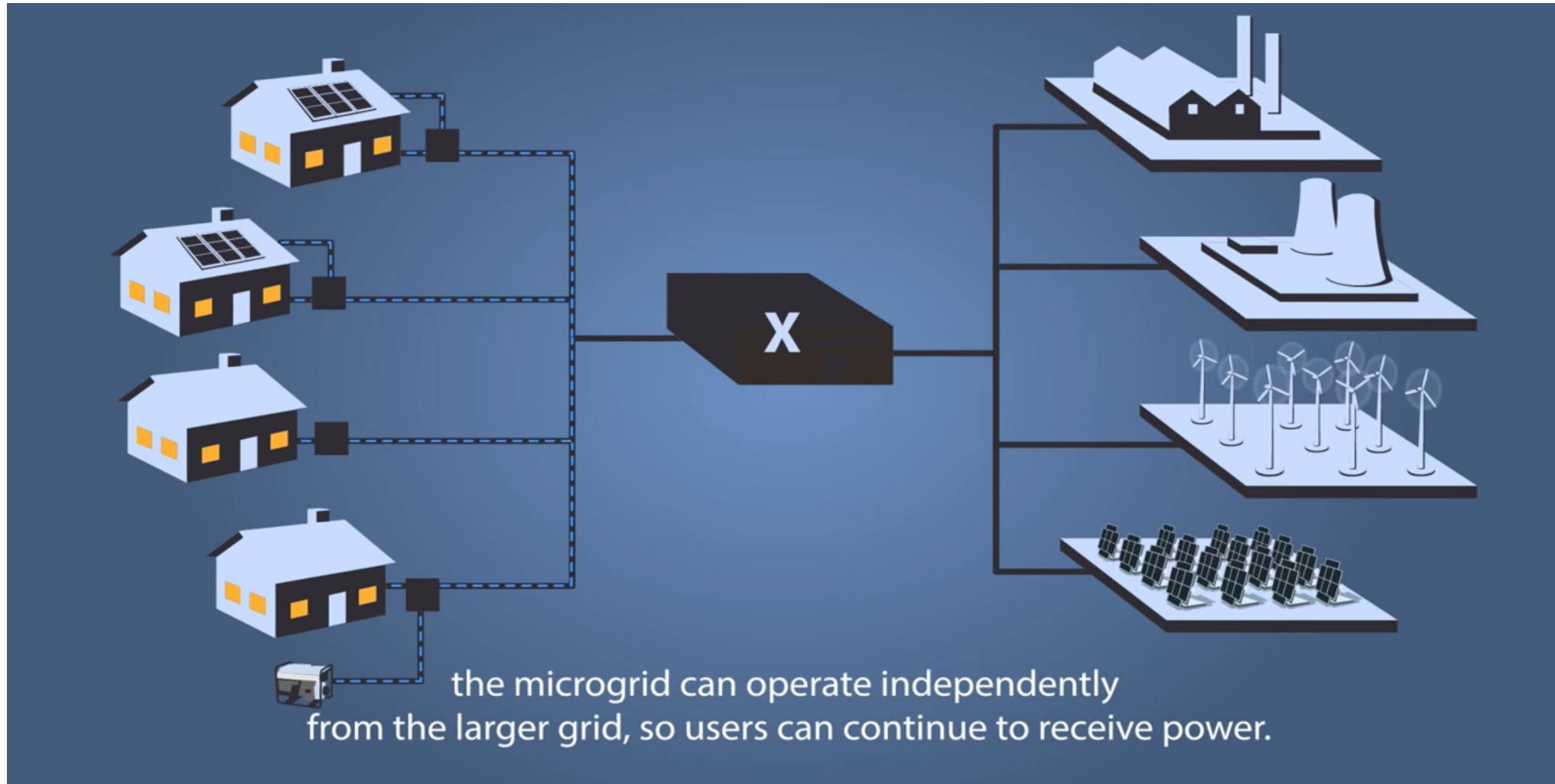
Conventional Power Grid



In a conventional power grid, a blackout at the utility company's substation would cause all users to lose power.



Microgrid Power Grid



Microgrid System & Technology Overview



ELM Microgrid – Battery Energy Storage System Example



Activity: What is your vision for Energy Resilience?



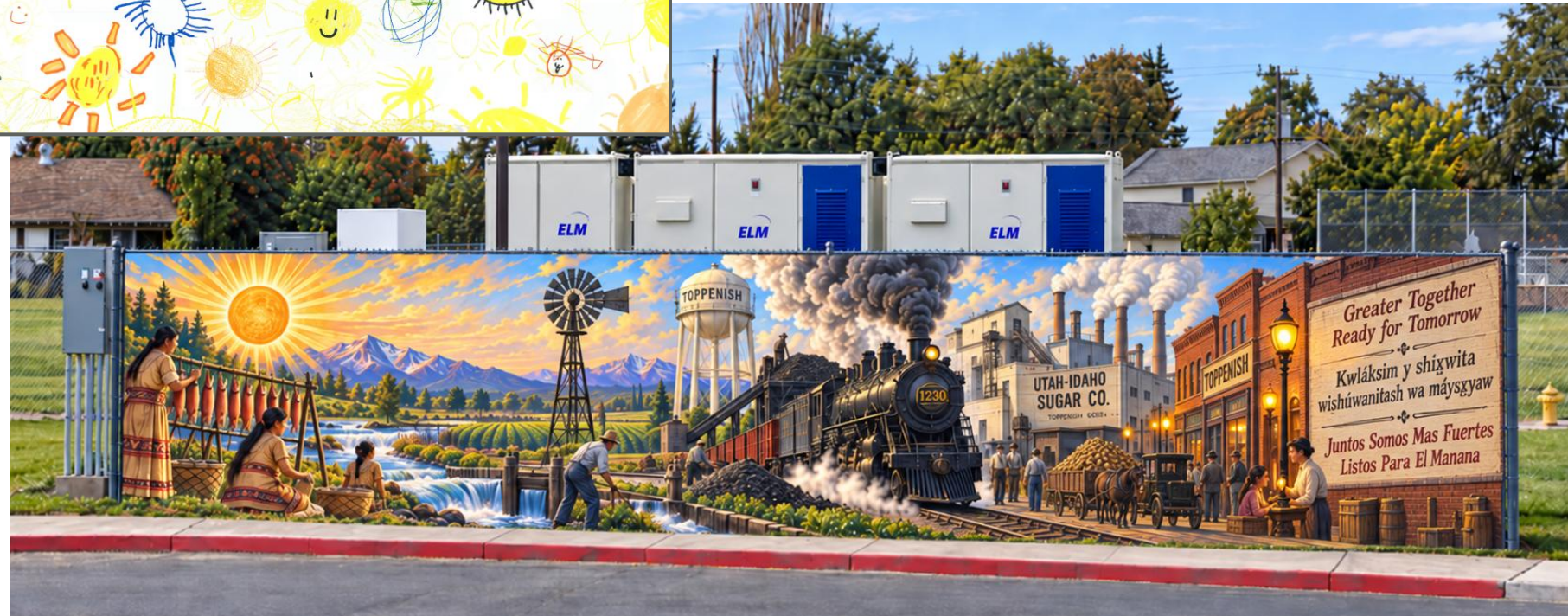
Project Example – Valley View Elementary School Microgrid



- 2023 WA Department of Commerce 'Community Decarbonization' grant recipient for \$1.7M
- Microgrid with 128 kW-DC rooftop solar PV array, 1,376 kWh Battery Energy Storage System
- Providing outage resilience and \$22,000 annual savings
- Project tour with elected officials, District leaders



Project Example – Valley View Elementary School Microgrid



Project Example – Valley View Elementary School Microgrid



YAKIMA HERALD-REPUBLIC

Toppenish unveils solar energy at Valley View Elementary School

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Toppenish unveils solar energy at Valley View Elementary School

ALEXANDER BANKS Yakima Herald-Republic Sep 24, 2026 0



Superintendent Toron Wooldridge, Natalia Winfield from the Sazan Group and district students celebrate the Flip the Switch event at Valley View Elementary School on Thursday, Sept. 17.

- “Flip the Switch” event brought together 350 families and students, faculty, staff, elected officials, and key stakeholders
- Activities included free book giveaways, auction, Clean Energy Career Pathways education
- Enhancing community resiliency
- Supporting educational outcomes and workforce development
- Energy monitoring and STEM / CTE integration

Project Example – Valley View Elementary School Microgrid



Project Example – Valley View Elementary School Microgrid



Project Example – Valley View Elementary School Microgrid



Project Example – Hurricane Ridge Middle School Microgrid



- 2025 WA Department of Commerce ‘Clean Energy Grants – Solar and Energy Storage Grants’ recipient for \$2.4M
- Microgrid with 124 kW-DC ground mounted solar PV array, 1 MWh Battery Energy Storage System
- Providing outage resilience and energy cost savings



Hurricane Ridge Middle School Microgrid: Enhancing Remote Community Resilience, Advancing the Lower Elwha Klallam Tribe Interlocal Partnership, and Strengthening Clallam County’s Disaster Airlift Response Plan (DARP)

Project Example – Hurricane Ridge Middle School Microgrid



Project Example – Hurricane Ridge Middle School Microgrid



Port Angeles School District breaks ground at new middle school

Published 1:30 am Tuesday, April 15, 2025

By Paula Hunt Peninsula Daily News



Project Example – Hurricane Ridge Middle School Microgrid



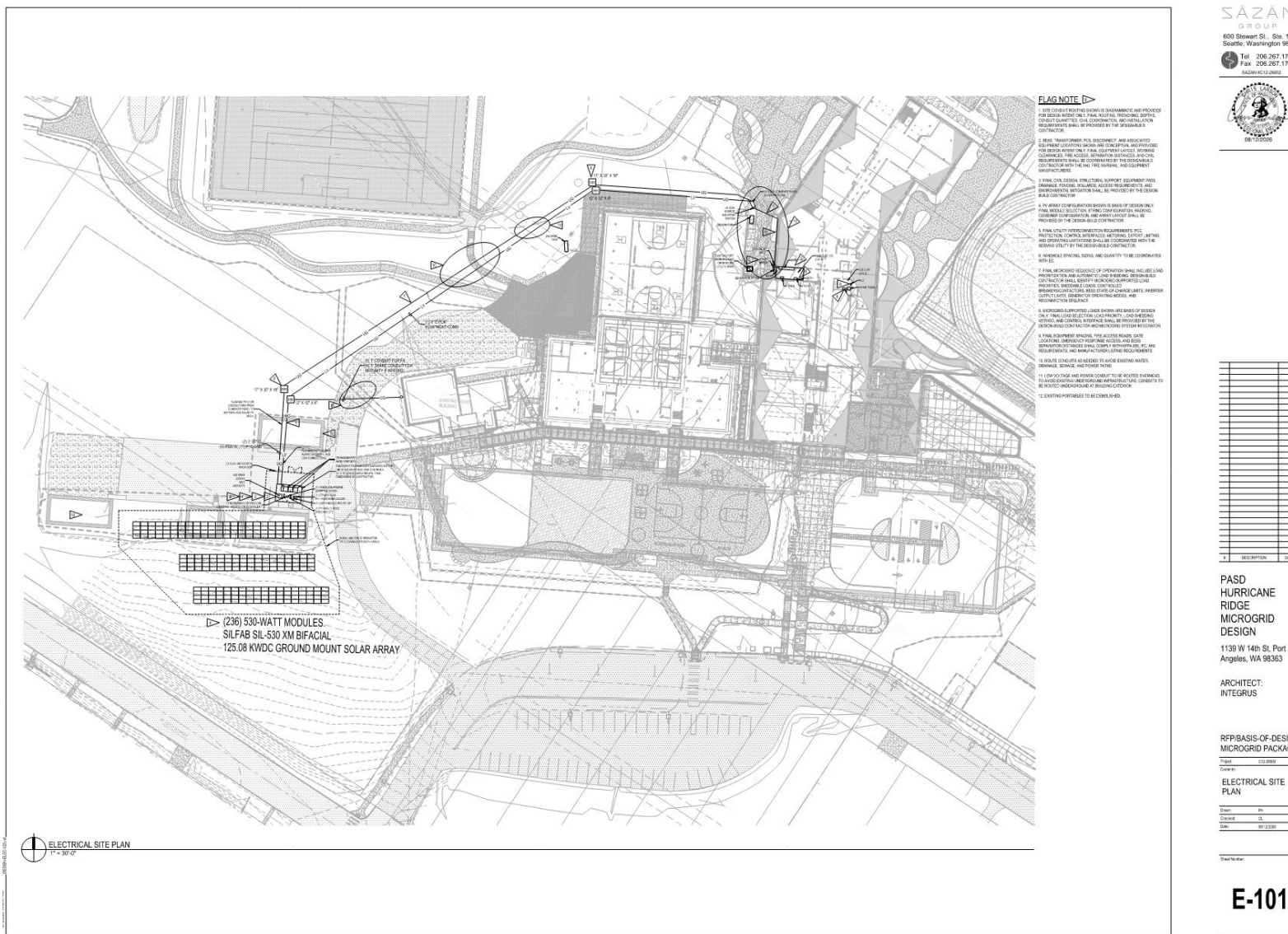
- Engagement with Tribal Community, Emergency Managers, Fire Marshall
- Disaster Airlift Response Program
- Educational outcomes with CTE
- Emergency Operation Center
- Hazard Mitigation Analysis
- Energy cost savings and demand management for new school
- Final completion in Fall 2027



Project Example – Hurricane Ridge Middle School Microgrid



Project Example – Hurricane Ridge Middle School Microgrid



Grants for K12 Schools



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Connecting you with funding opportunities across the state.

FundHubWA connects you to climate and clean energy funding opportunities to help improve your home, business, or community. Together, we can make Washington cleaner, healthier, and more resilient.



FEDERAL



STATE



WE FIND FUNDING



Educational Engagement with K12 / CTE Student 'Green Team'



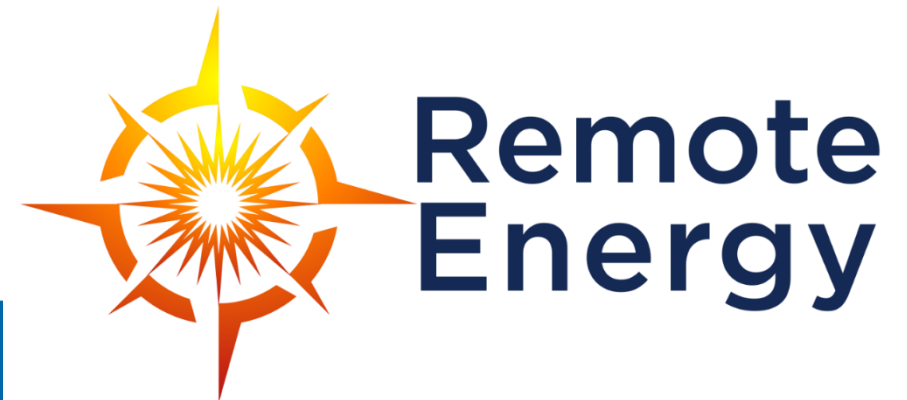
Microgrid Feasibility Study Process Overview



1. Facilitate Kick-off Meeting: Identify Evaluation Criteria
2. Determine Locations For Solar + Storage Development
3. Assess Baseline and Future Energy Consumption
4. Identify Outage Resilience Duration, Critical Loads
5. Conduct Modeling and Performance Estimates
6. Develop Cost Estimates for Each System Option
7. Prepare Resilience Analysis for Return on Investment
8. Funding Overview, System Diagrams, Grant Materials
9. Report Development, Presentation, Working Session



Clean Energy Education, Training, & Career Pathways



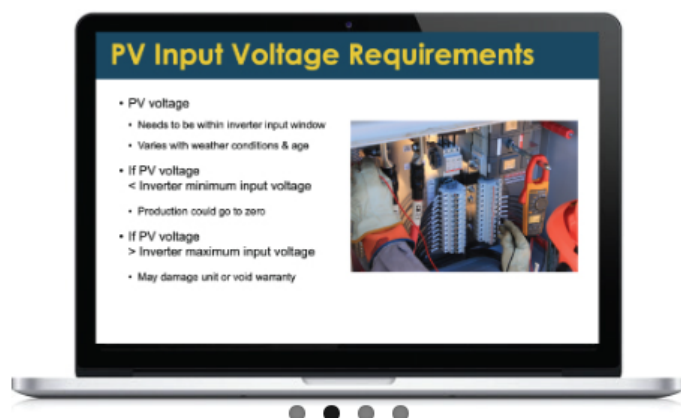
Educate. Engage. Empower.

Grant Funding for K12 Microgrid Project Development

Clean Energy Education, Training, & Career Pathways



- Solar PV 101 Training Course ([Solar Energy International](#))
- Laborers' International Union of North America ([LiUNA!](#))
- Interstate Renewable Energy Council ([IREC](#))
- Clean Energy Career Mapping Tools: ([DOE](#), [IREC Solar Career Map](#))



PVOL101: SOLAR TRAINING - SOLAR ELECTRIC DESIGN AND INSTALLATION (GRID-DIRECT) - ONLINE



APR
07

DURATION
6 Wks

LOCATION
Online

CONTACT HOURS
10-20 Hrs/Week

TUITION
US\$995.00

PVOL101 is your gateway to a career in the solar industry. It all starts with the fundamentals, and a solid understanding of various components, system architectures, and applications for PV systems. Other topics include site analysis, system sizing, array configuration, and performance estimation; electrical design characteristics such as wiring, overcurrent protection, and grounding; a detailed look at module and inverter specifications and characteristics; mounting methods for various roof structures and ground-mounts; and an introduction to safely and effectively commissioning grid-direct PV systems. This course focuses on grid-direct PV systems, but covers material critical to understanding all types of PV systems. These core concepts are expanded on in SEI's upper level PV courses. **This course was recently refreshed – [click here](#) to see what's been updated.**

AVAILABLE SESSIONS

Apr 07, 2025 - May 18, 2025



< ENROLL NOW

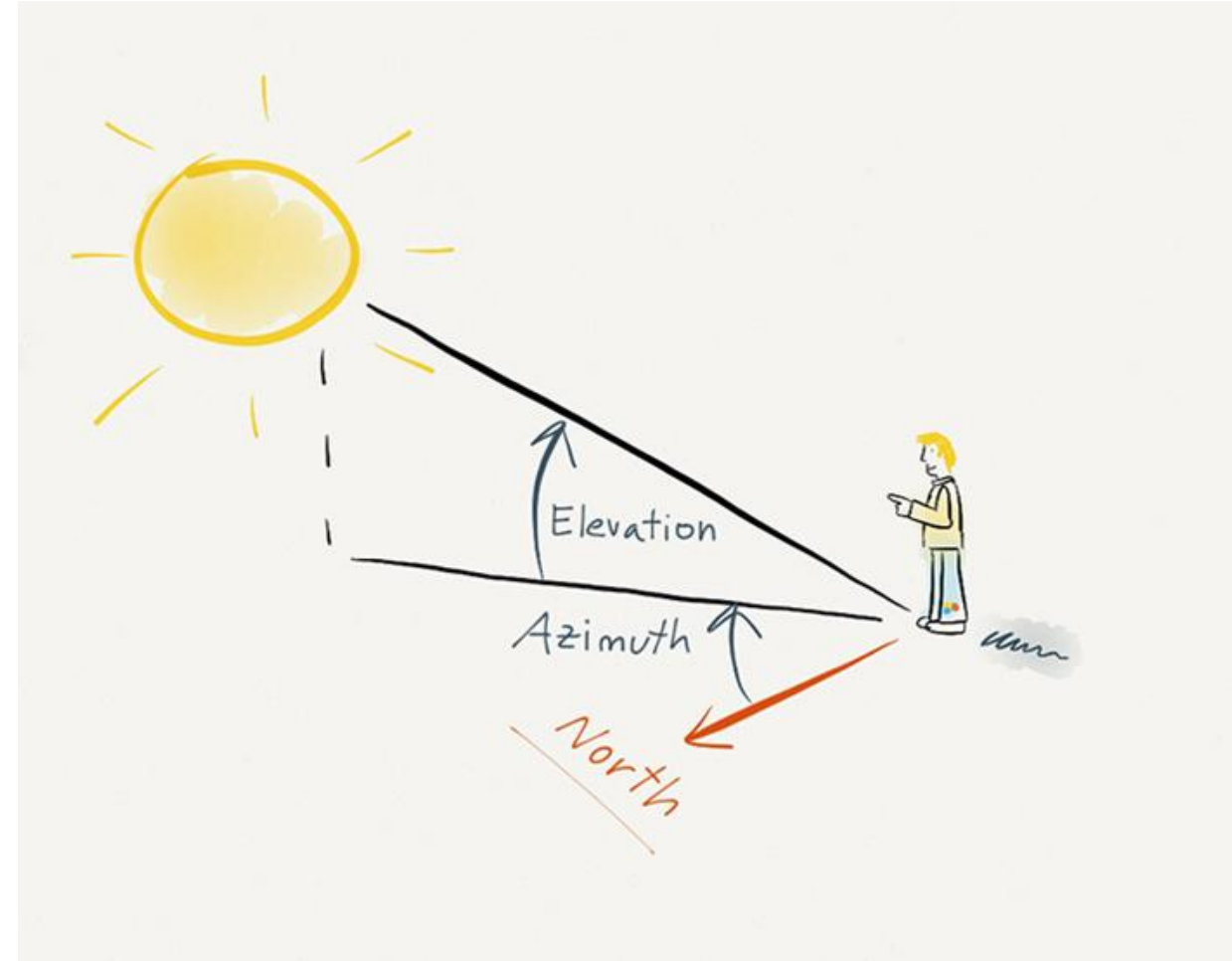
A wide-angle photograph of a flat roof covered with a large array of solar panels. The panels are dark blue and arranged in a grid pattern, held up by metal racking. In the background, a building with a light-colored, textured facade and several large windows is visible. A person is standing near a small utility structure on the roof. The sky is clear and blue.

Discussion, Activity Recap, and Questions & Answers

Clean Energy & Resilience Quiz



What is the ideal azimuth angle for solar in North America?



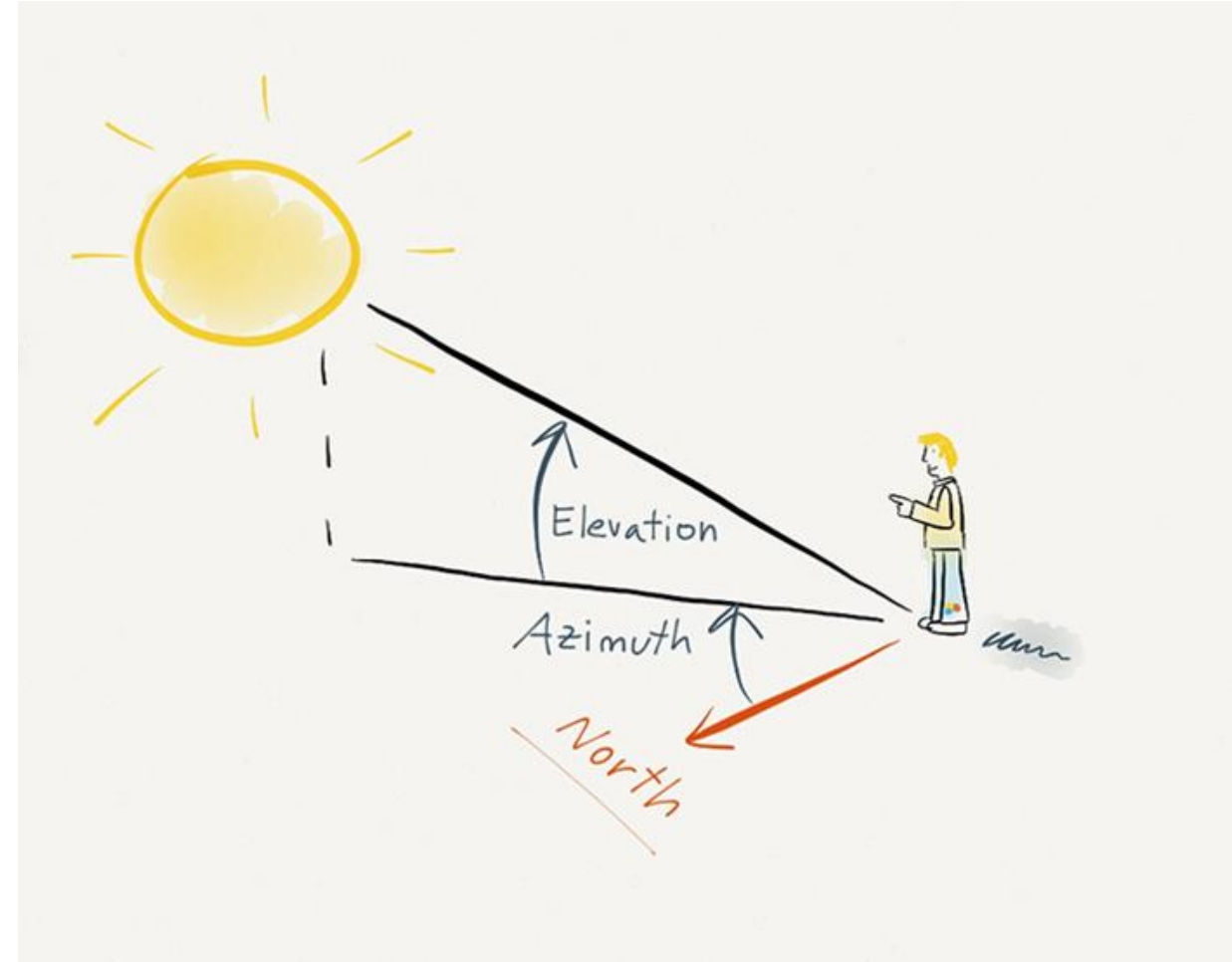
Clean Energy & Resilience Quiz



What is the ideal azimuth angle for solar in North America?

Answer: 180 Degrees (South)

In the Pacific Northwest “West is Second Best” 😊



Clean Energy & Resilience Quiz



What is the lowest cost solar racking installation type?

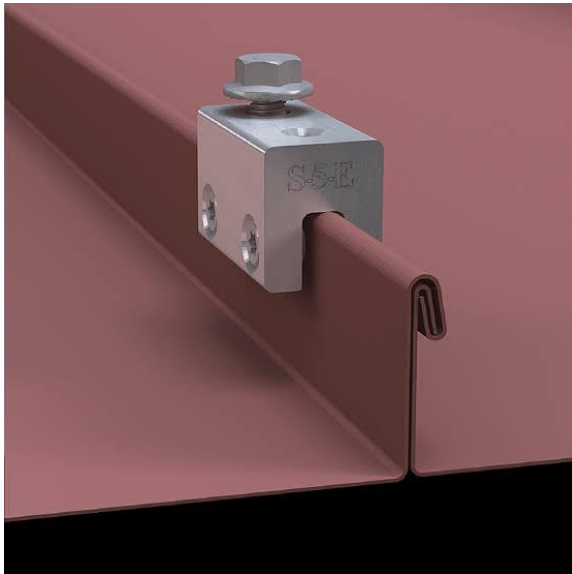


Clean Energy & Resilience Quiz



What is the lowest cost solar racking installation type?

Answer: Grid-tied, flush mounted rooftop solar PV array on a metal standing seam roof, using seam clamps to limit roofing penetrations and maximize installation efficiencies.



Clean Energy & Resilience Quiz



Can a grid-tied solar PV array operate during an outage?



Clean Energy & Resilience Quiz



Can a grid-tied solar PV array operate during an outage?

Answer: No...!

NEC Section 690.12 requires a rapid shutdown function for photovoltaic (PV) systems installed on or in buildings to protect emergency responders and firefighters from electrical shock



Clean Energy & Resilience Quiz



Can a BESS operate both in islanded/off-grid capacity, and provide demand management/peak shaving capabilities during normal grid operations?

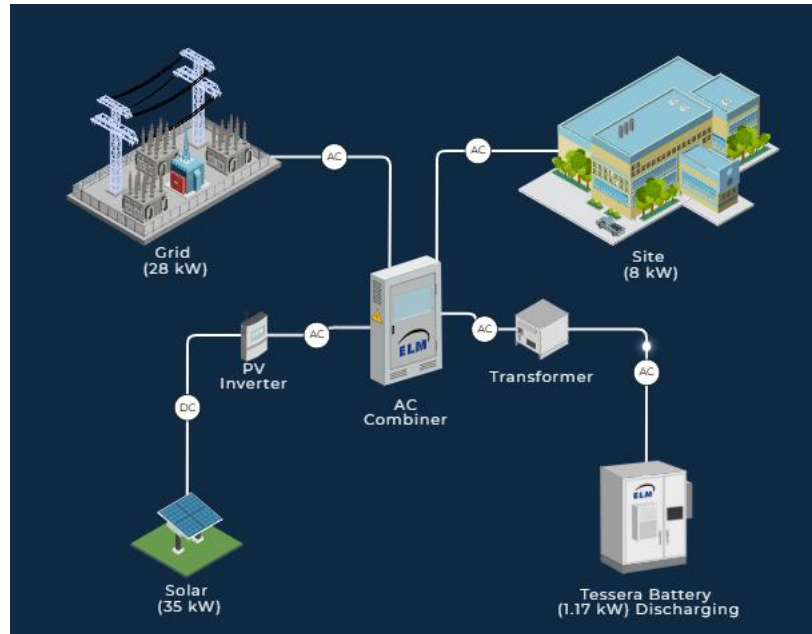


Clean Energy & Resilience Quiz



Can a BESS operate both in islanded/off-grid capacity, and provide demand management/peak shaving capabilities during normal grid operations?

Answer: YES!



Thank you!

Jack Newman

Director of Clean Energy Solutions

email: jnewman@sazan.com