

# *Solar Microgrids for Local Resilience*

*Achieving community goals with solar energy,  
microgrid technologies, and strategic planning and development.*



*Michael Burr, Director*



# What is Microgrid Institute?

*Microgrid Institute is a collaborative organization that focuses on key factors affecting microgrids and distributed energy.*

*Our efforts address markets, regulation, financing, and project feasibility and development.*

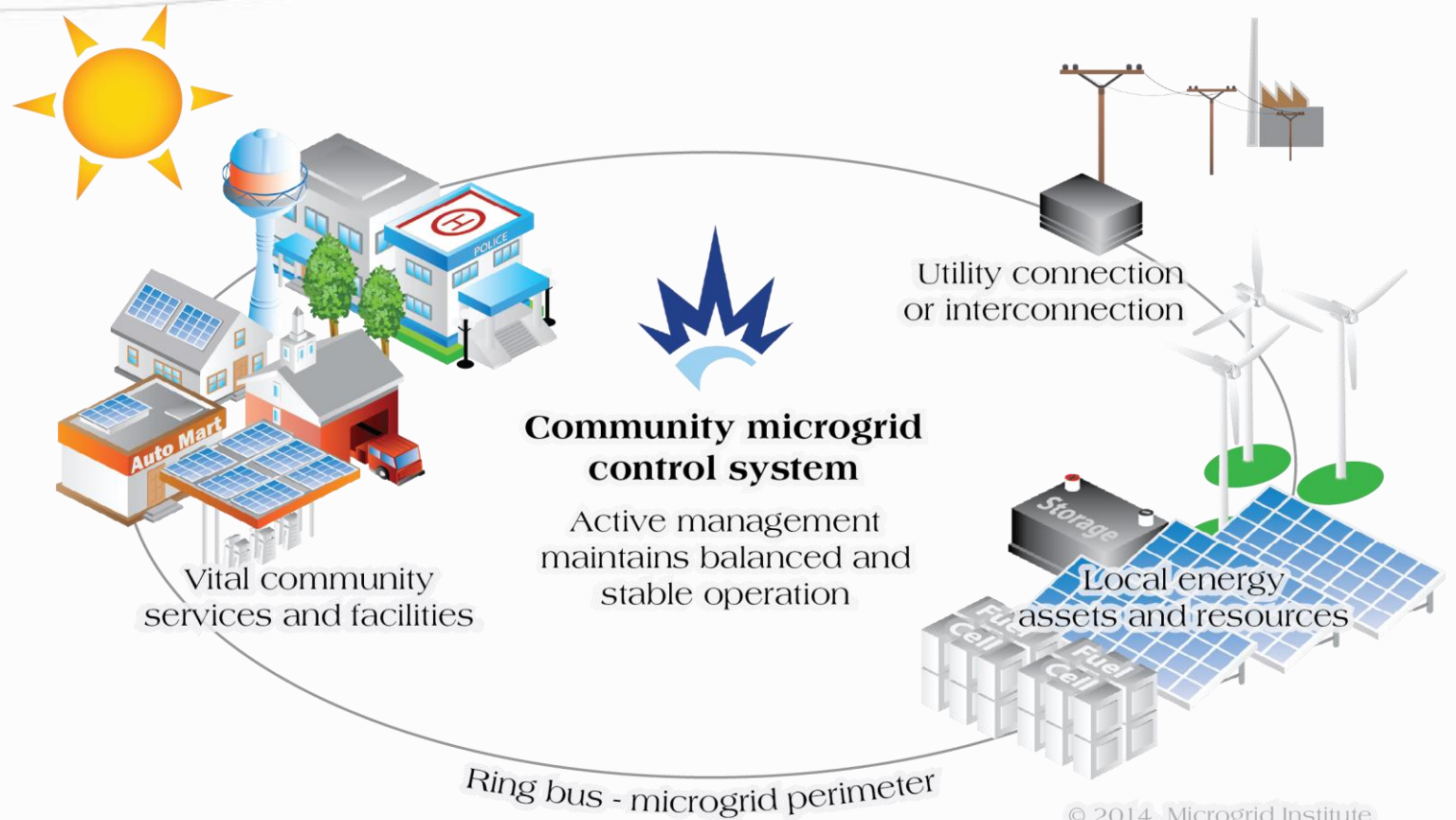
- Multidisciplinary collaboration with industry leaders
- Independent, objective thought leadership
- Studies, events, project management



# What is a microgrid?

*A microgrid is a small energy system capable of balancing captive supply and demand resources to maintain stable service within a defined boundary.*

*A community microgrid provides resilient and stable energy supplies for vital community facilities and assets.*



# Microgrids Empower Resilient Communities



*Microgrid systems help communities to achieve local resilience for vital services and interdependent community assets:*

- Lighting, street lights, traffic lights
- Pumping, refrigeration, HVAC
- City water and wastewater
- Cell towers, telecom, Internet
- Gas stations, grocery stores, pharmacies



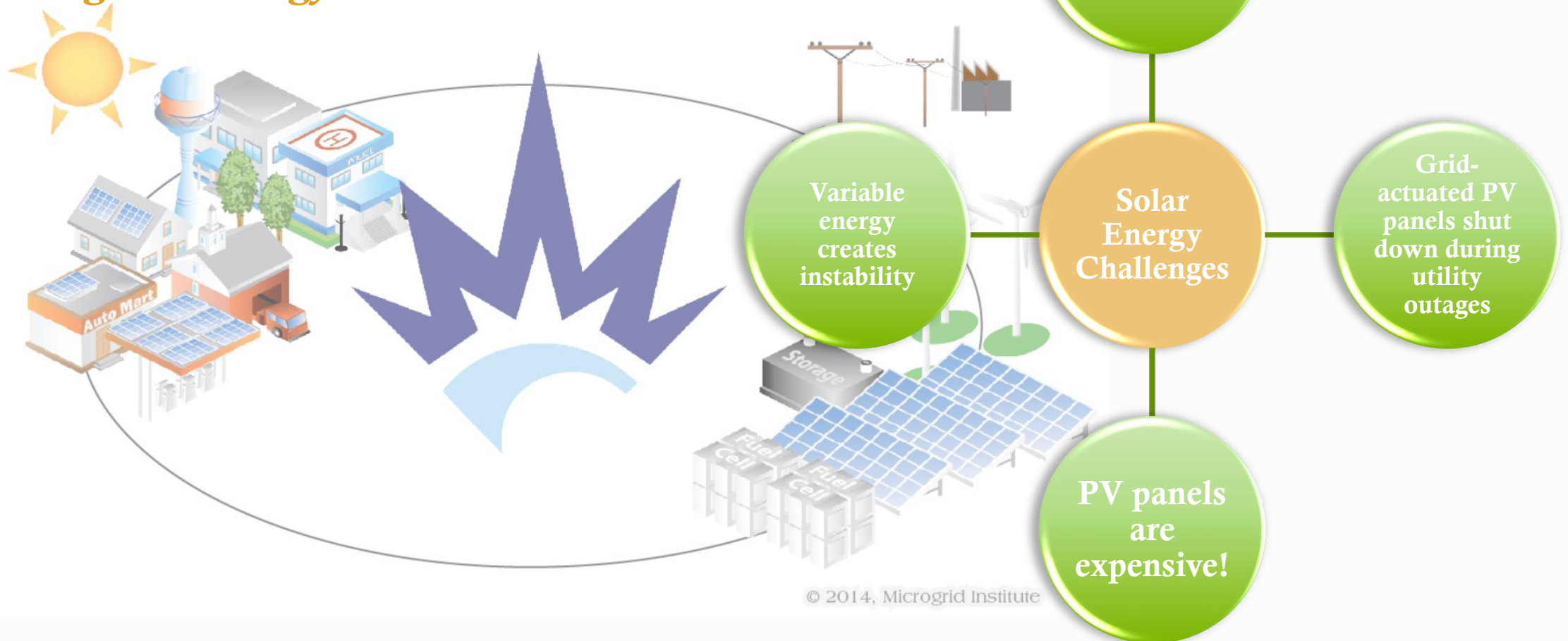
# Local Energy = Local Benefits

*Microgrid energy management systems help local communities to capture local energy resources – such as solar, wind, and biomass – at higher levels. This yields many community benefits:*

- Keeping energy dollars local
- Reducing dependence on energy that must be transported over long distances
- Shrinking total environmental footprint
- Conserving energy and reducing costs

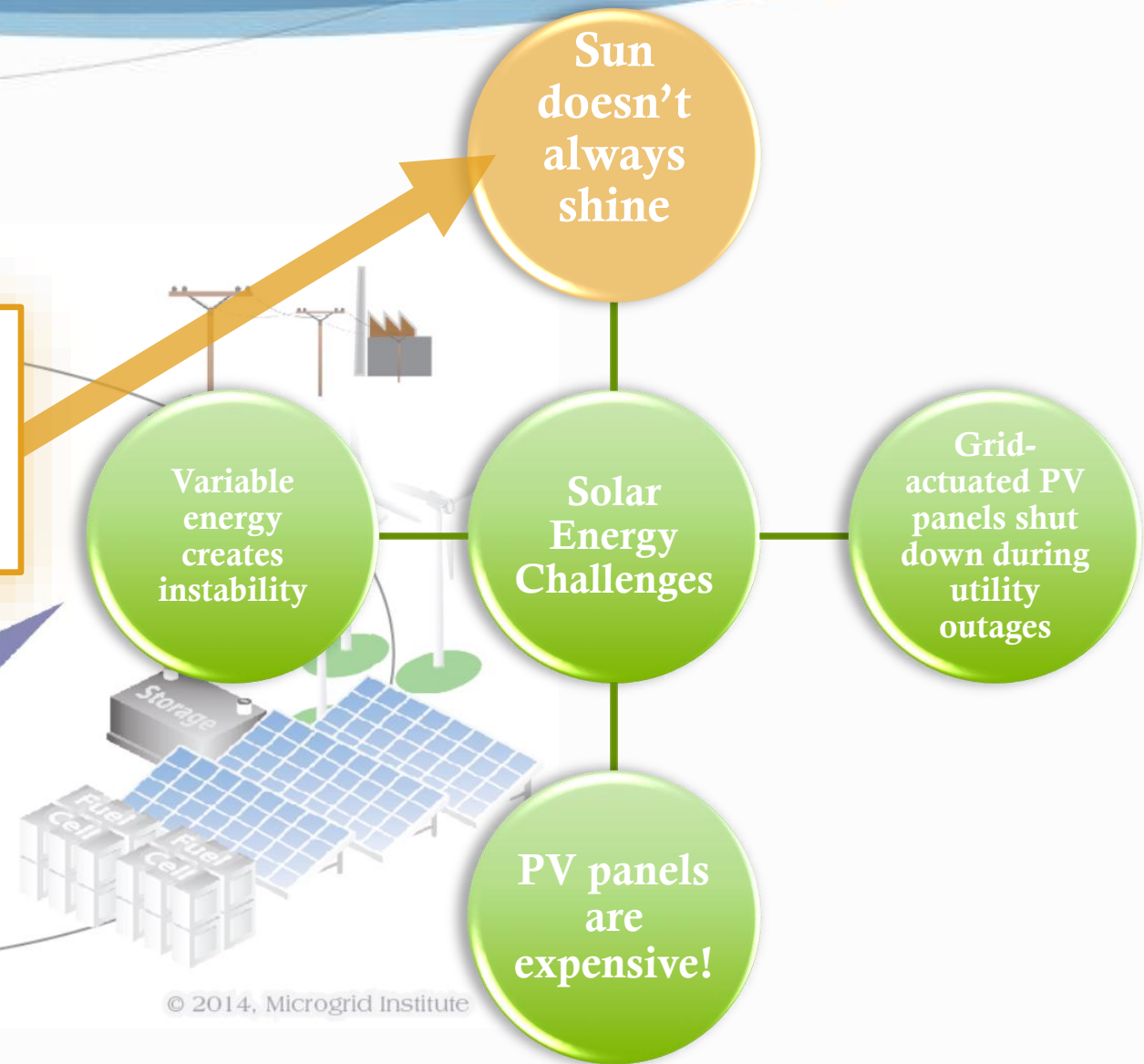


*Community microgrids can address many challenges of integrating solar energy.*



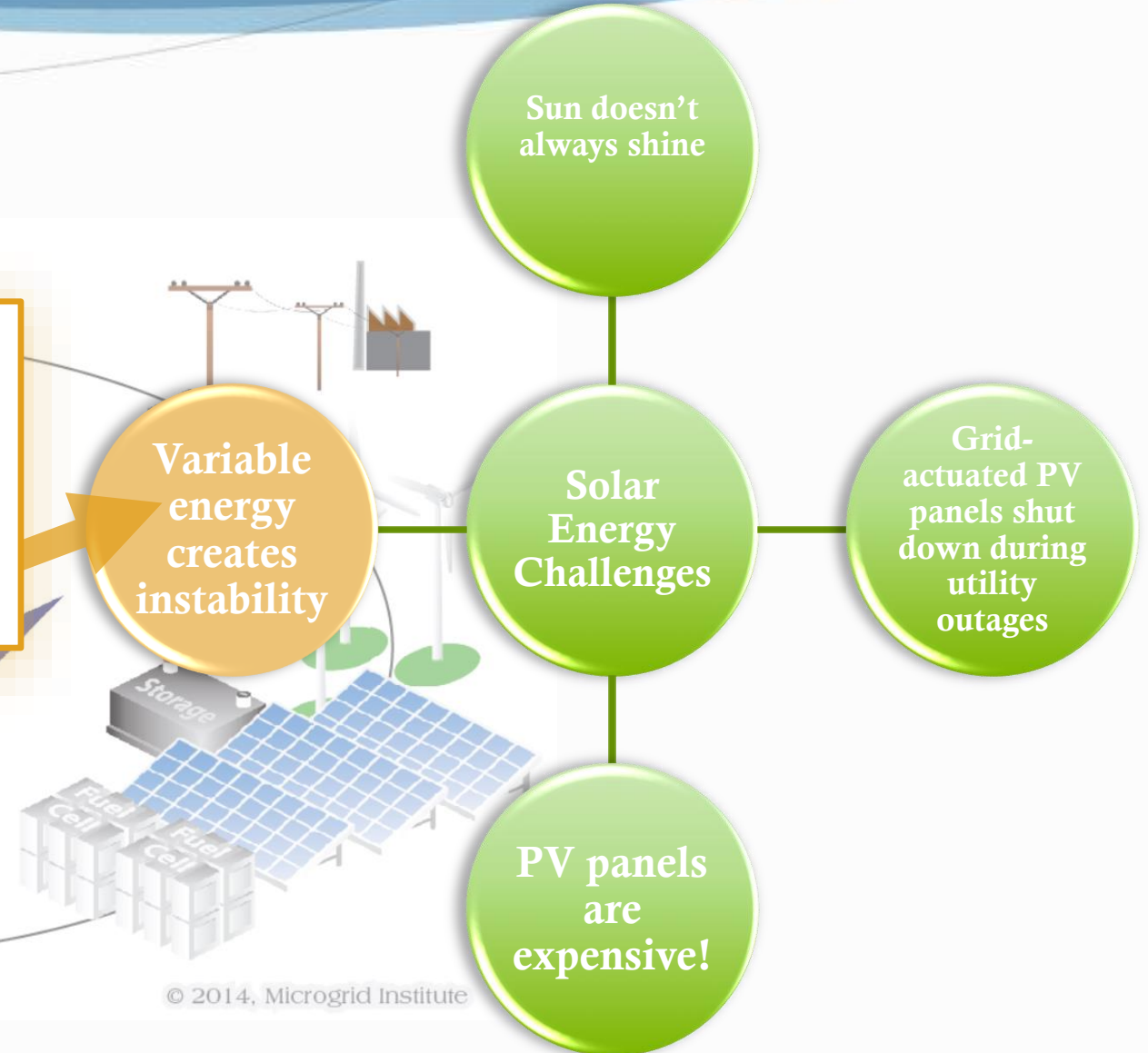
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Load-shifting, efficiency, and conservation technologies to *optimize use of solar generation*



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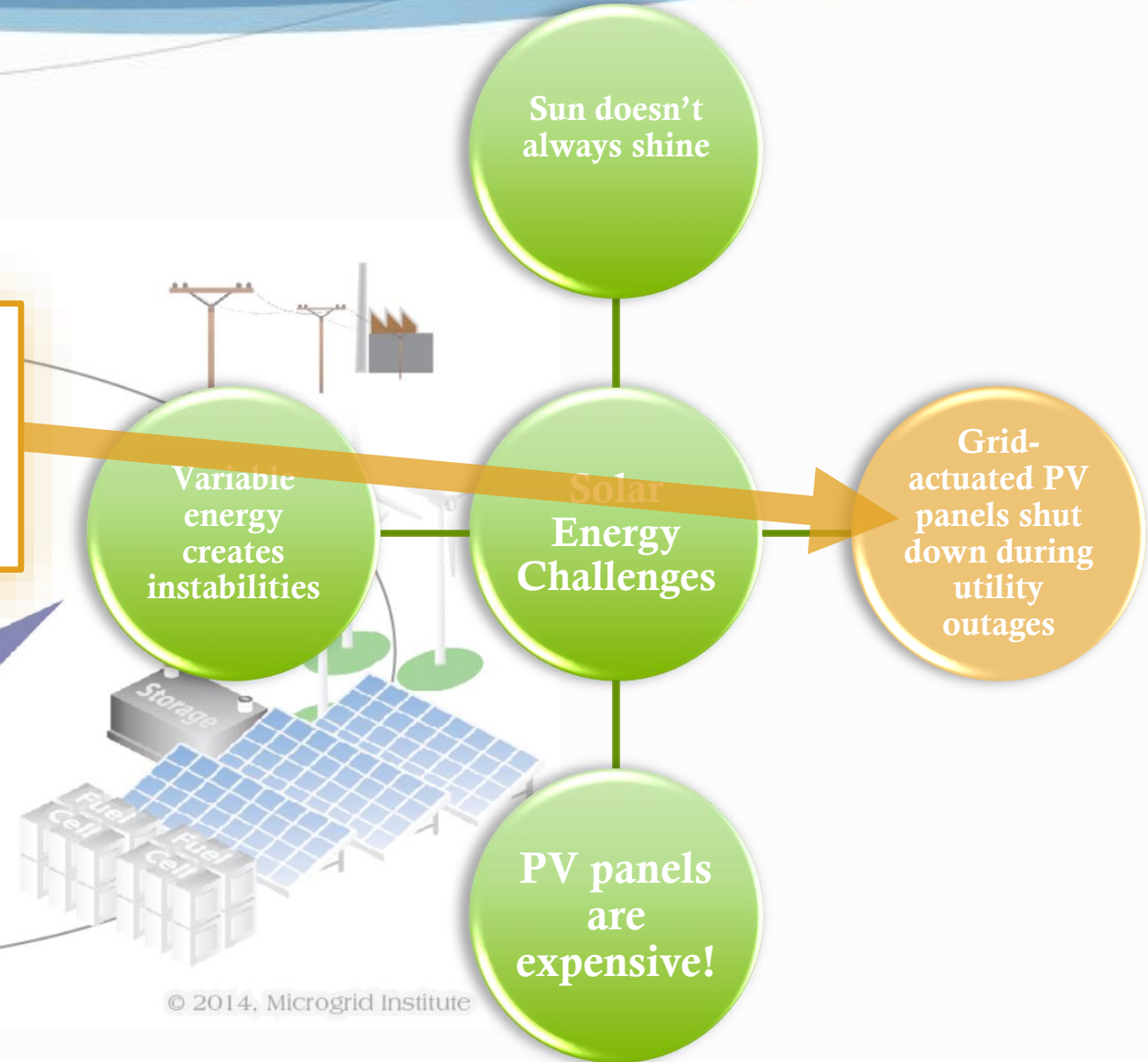
Microgrid control systems manage supply and demand in real time to *maintain balanced and stable operation*





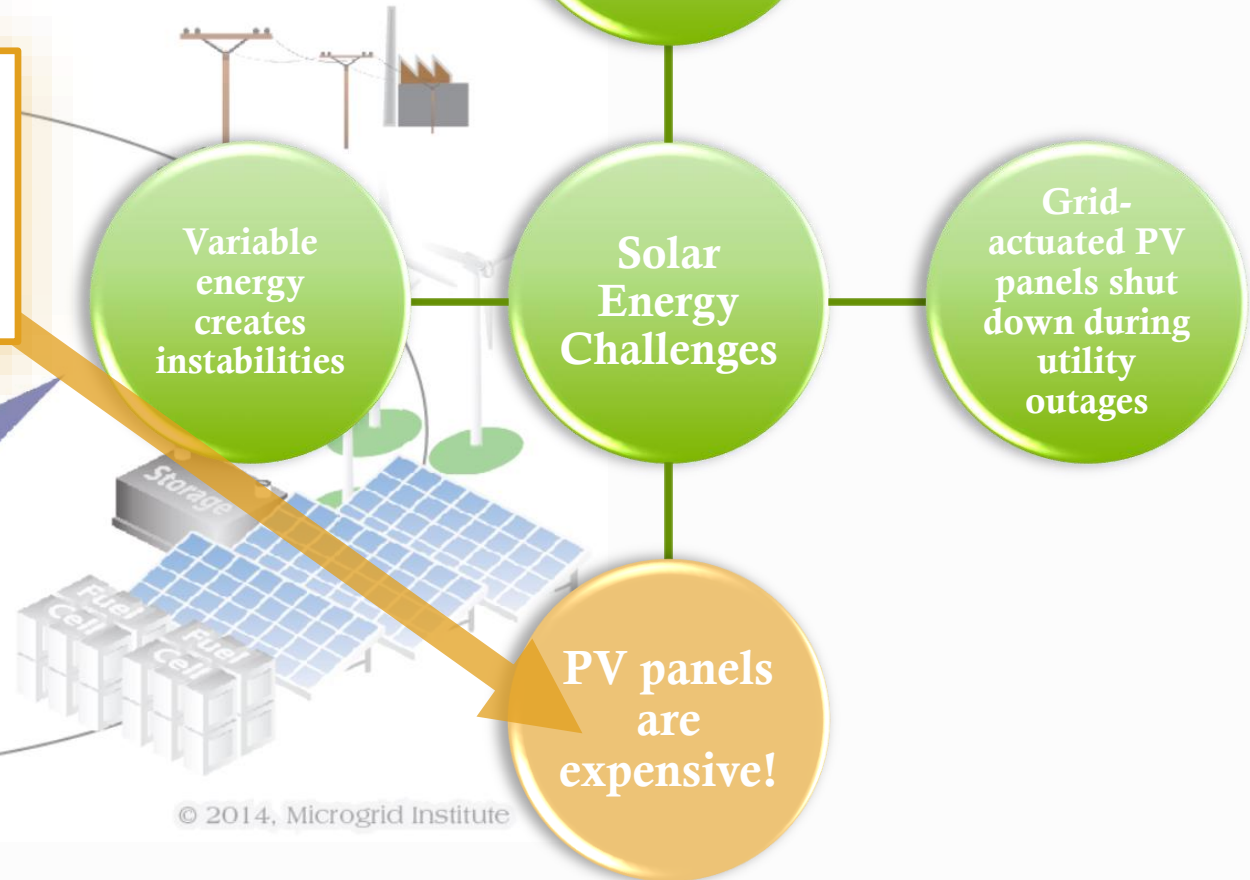
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*Safe islanding*; industry-standard (IEEE 1547) interconnection to *keep PV operating during outages*



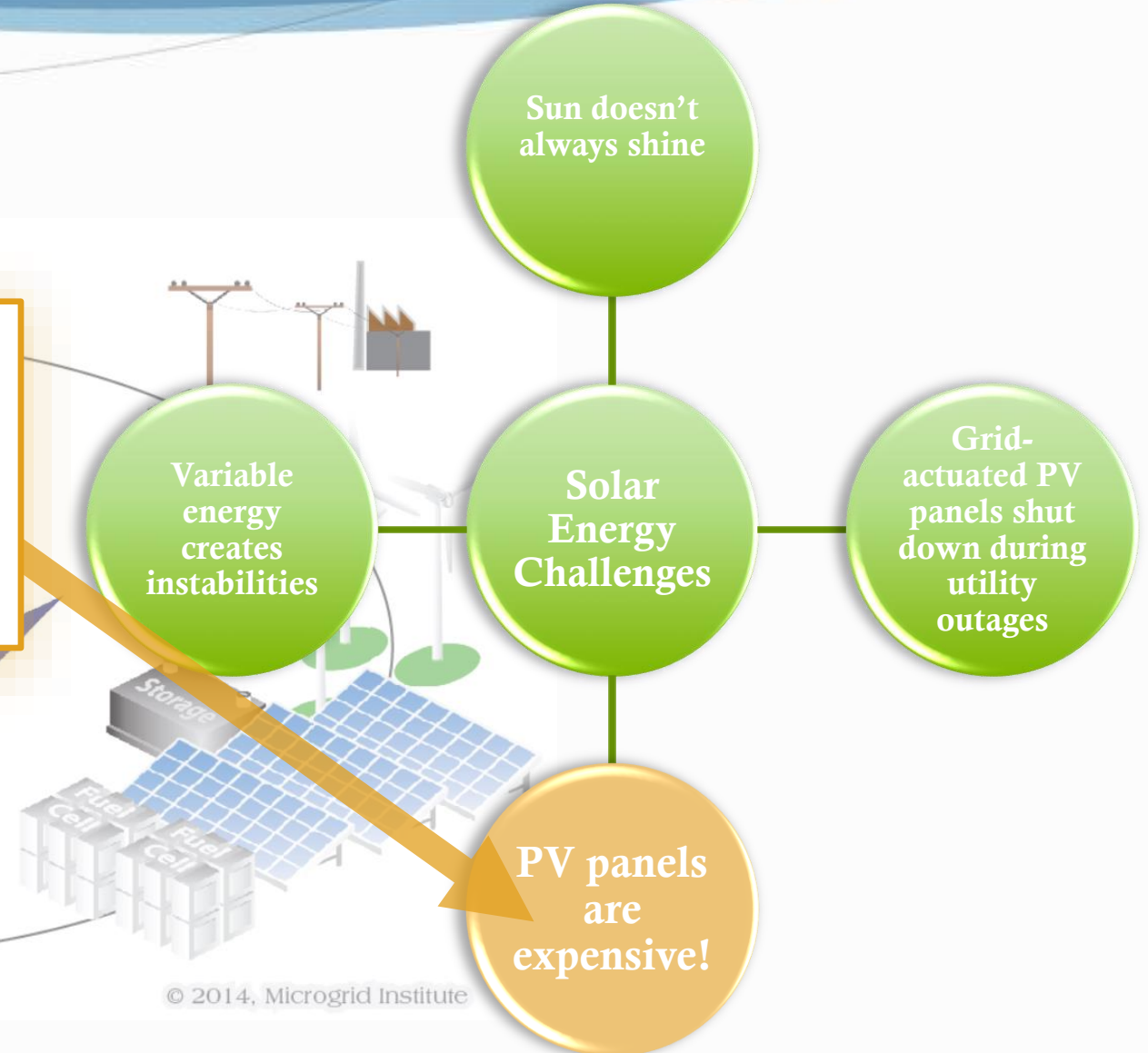
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Resilient community microgrids represent a *creditworthy customer* for accessing low-cost financing



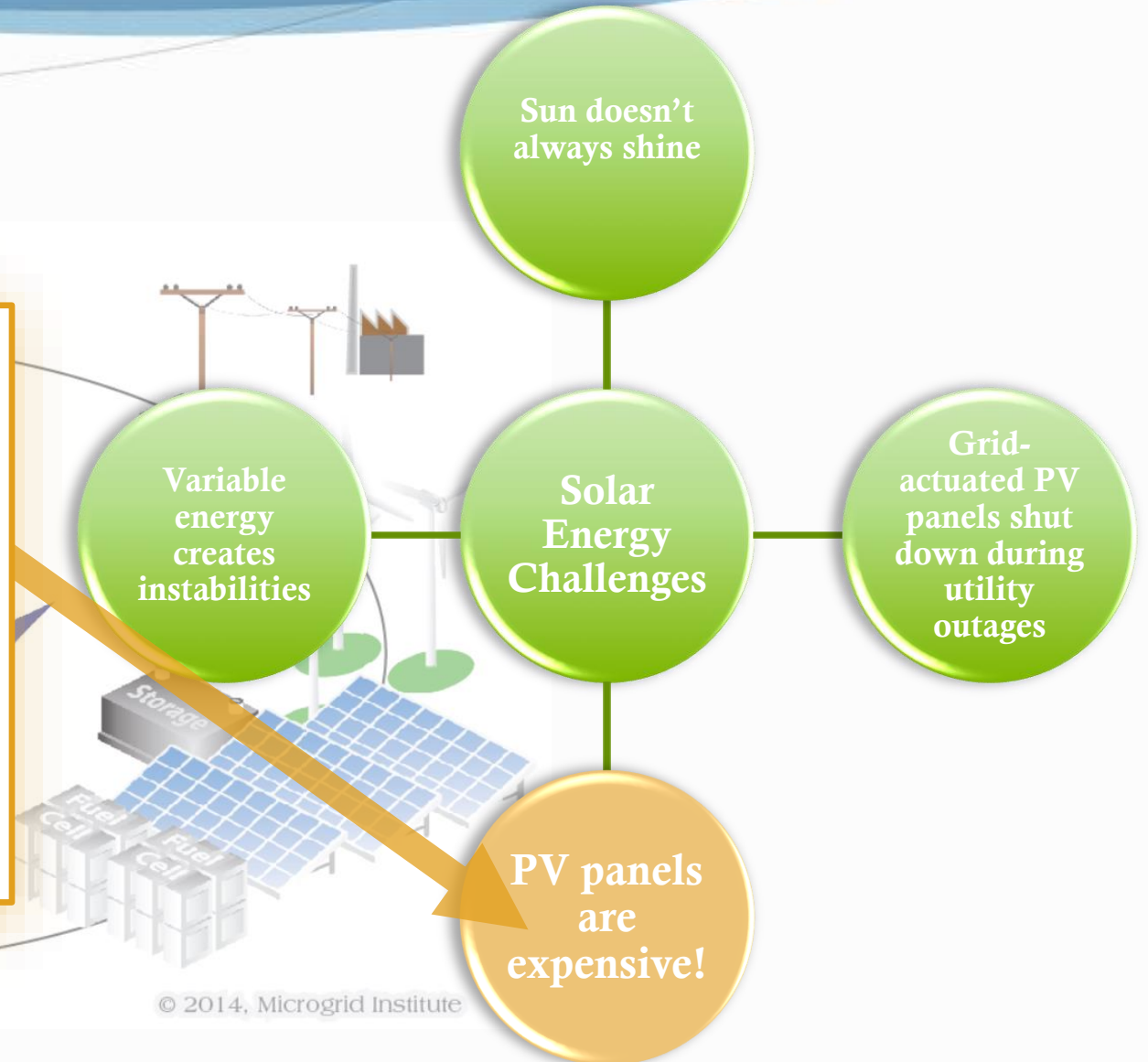
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*Community microgrids can address many challenges of integrating solar energy.*

Resilient community microgrids represent a *creditworthy customer* for accessing low-cost financing **-AND-** *Phased deployment strategies* allow taking advantage of falling PV system prices



# A note on nanogrids and solar storage systems



A **nanogrid** is the smallest type of microgrid, typically designed for a single building or asset.

A **solar storage system** is a PV array with connected batteries. If it can operate in isolation, it's a type of nanogrid.

Such systems allow individual customers (businesses, institutions, homeowners, etc.) to capture the benefits of microgrid control technologies and achieve sustainable **hyper-local resilience**.



# What is the Resilient Communities Initiative?



## Mission Statement:

*Microgrid Institute formed the **Resilient Communities Initiative** to help communities plan, develop, and implement their resilience strategies.*

*We assist communities as they strive to improve resilience for vital services, optimize local energy resources, increase energy efficiency, and reduce their environmental footprint.*



# Programs and services



	<b>Resilient Communities Workshop Series</b>	<b>Information Resource Center</b>	<b>Advisory Services and Support</b>
<b>Benefits for community leaders</b>	Learn how to plan and implement comprehensive community resilience strategies	Access data and objective analysis about community resilience strategies, programs, projects, technical options, and financing	Obtain help evaluating options, developing strategies, financing projects, and deploying solutions
<b>Resources</b>	Local workshops and online webinars	Online reports, data, and tools	Strategic consulting and project management services

from **Resilient Communities Workshop**  
*Questions and Action Steps*



	<b>Resilience Strategies</b>	<b>Microgrid Solutions</b>	<b>Feasibility Factors</b>	<b>Development &amp; Deployment</b>	<b>Pitfalls and Lessons Learned</b>
<b>Questions</b>	What do resilient communities do differently? What strategic approaches are most successful?	How do microgrids work? What are their limitations? What roles do they play in resilience strategies?	Which options are best for our community? What factors will determine success?	How do resilience projects get built? Who provides financing? Who leads the effort? Who contributes?	What mistakes can we avoid? What approaches have succeeded? What examples are most instructive?
<b>Actions</b>	Establishing a strategic vision to achieve multiple community goals	Setting project scope, priorities, and benchmarks	Research, planning, and feasibility analysis	Project initiation, planning, and execution	Integrating lessons and examples into strategic plans



# Can we help your community? Yes!

## Contact Us

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