

Cape Solar Microgrids for Municipal Use

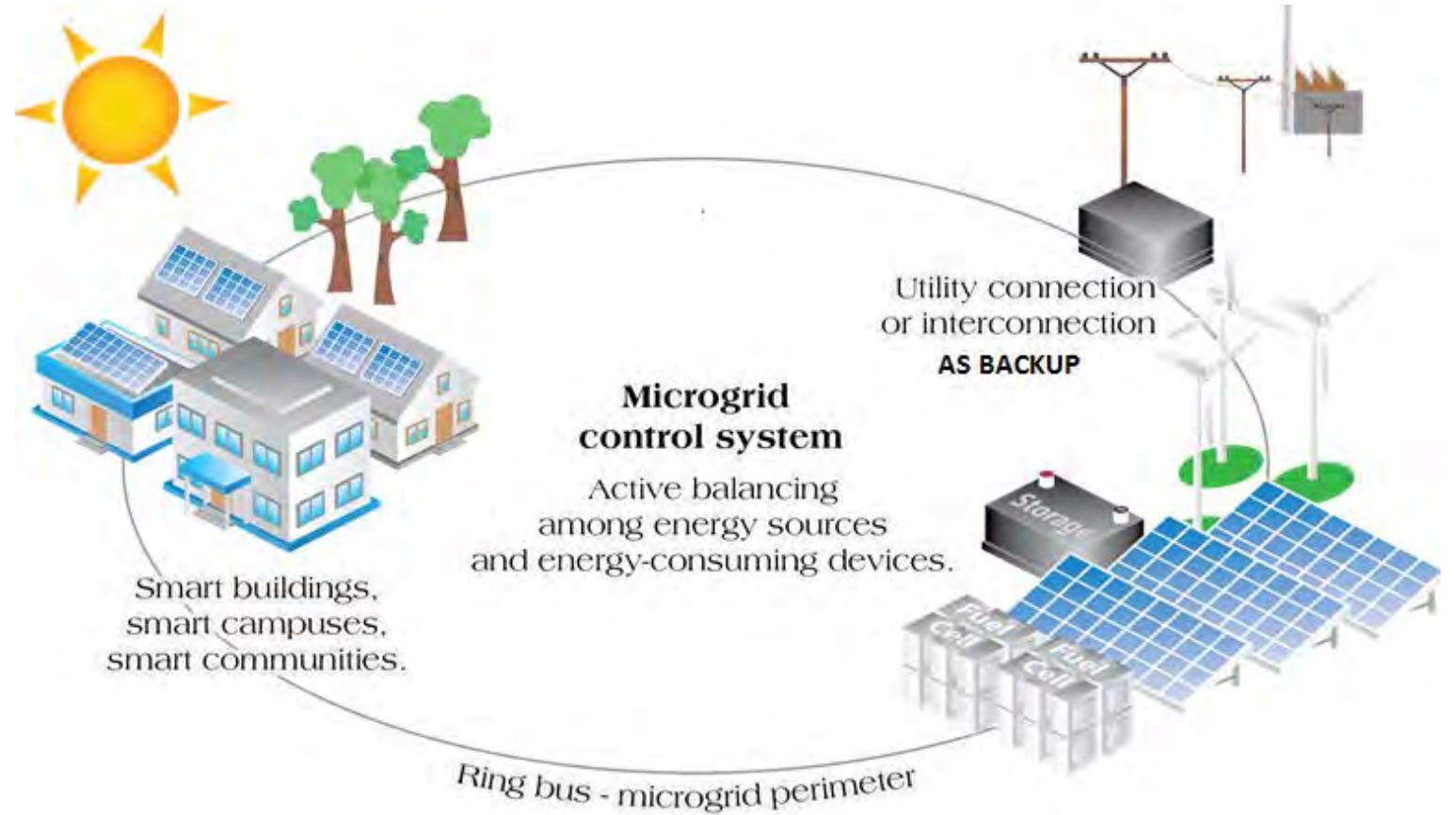
Achieving community goals with solar energy

*Adapted
Courtesy Microgrid Institute
Michael Burr*

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 Strengthen Flexible Communities

Microgrid systems help communities to:

- 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/Cost >1

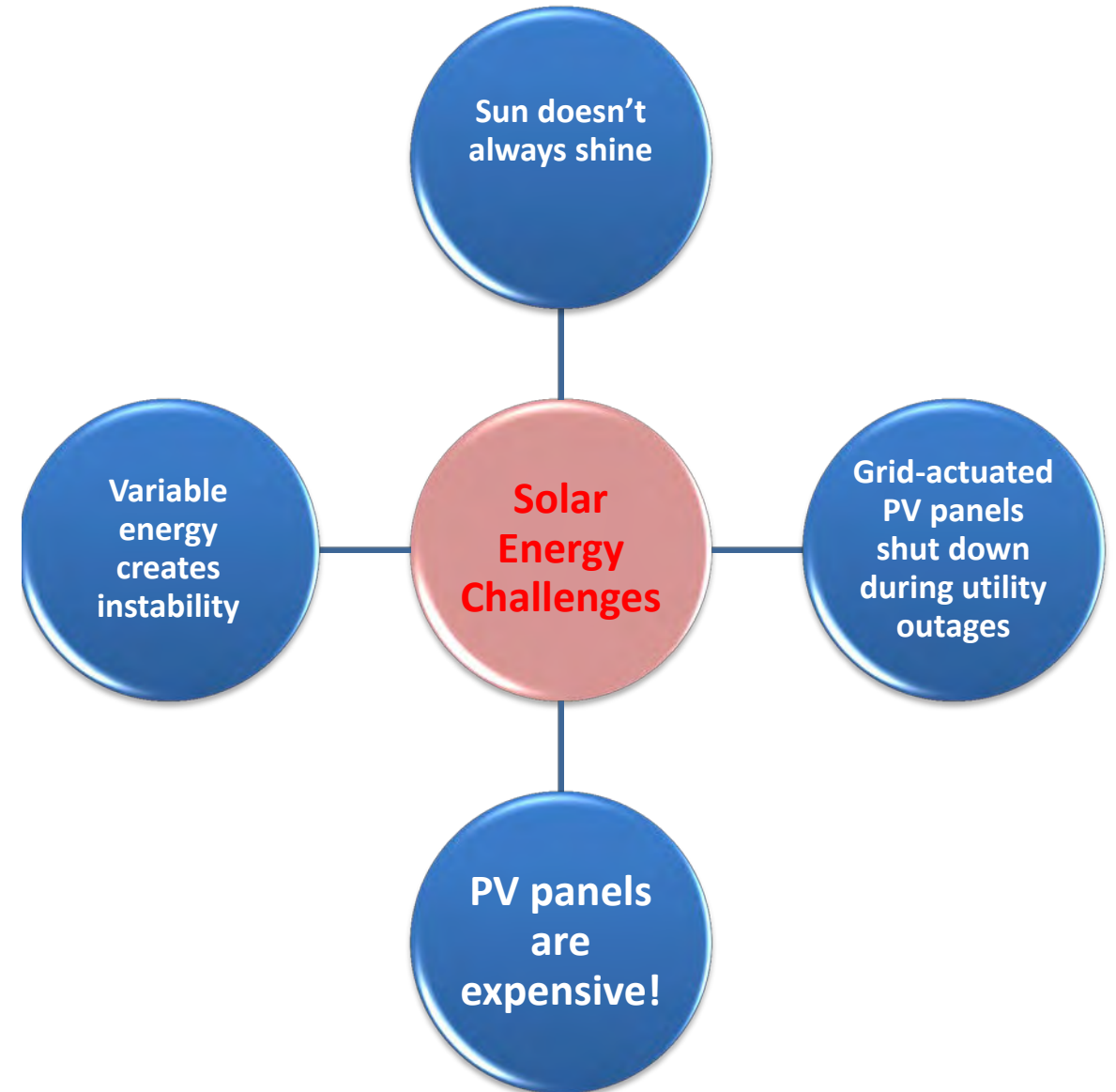
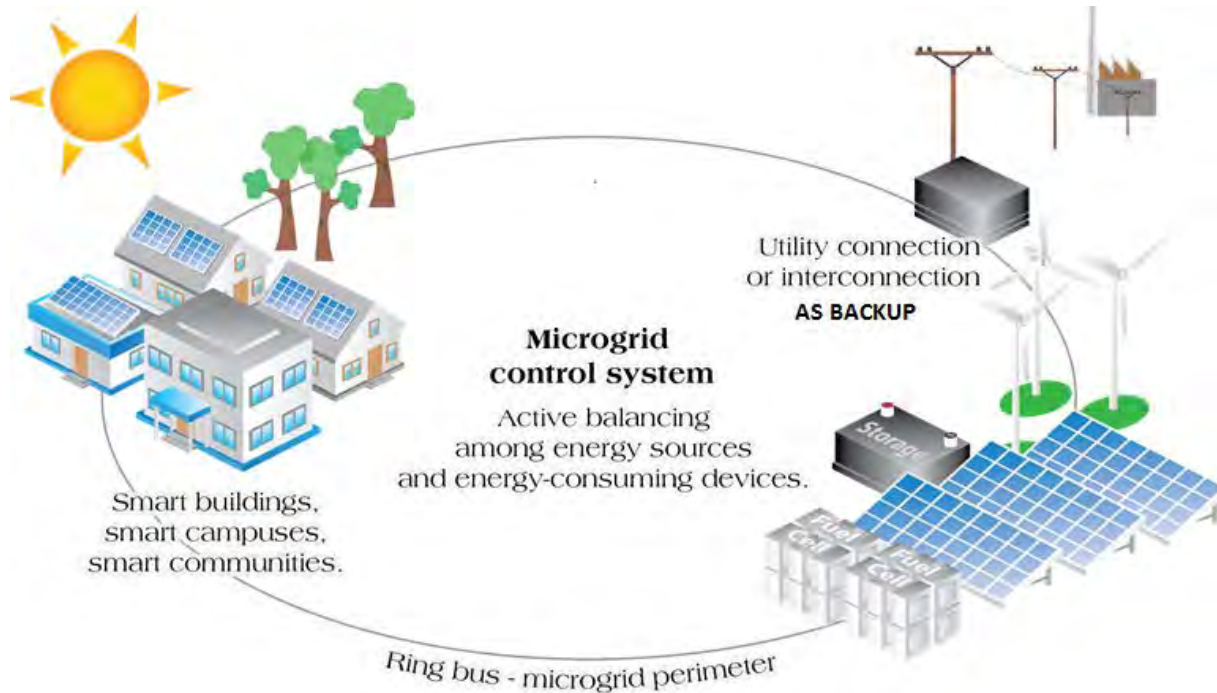
Microgrid energy management systems yield many community benefits:

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



Solar Energy + Microgrids

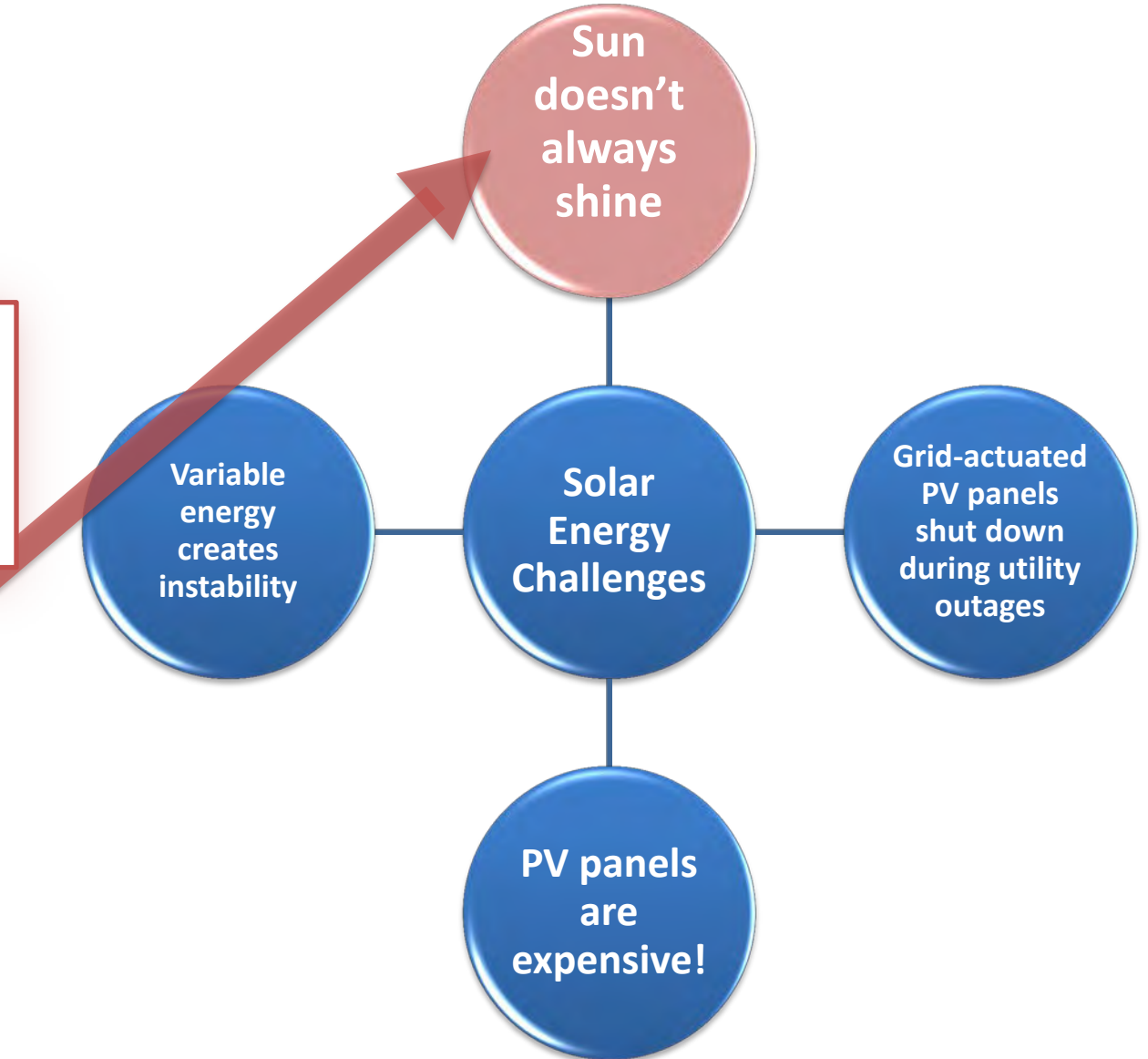
Community microgrids solve many challenges of integrating solar energy.



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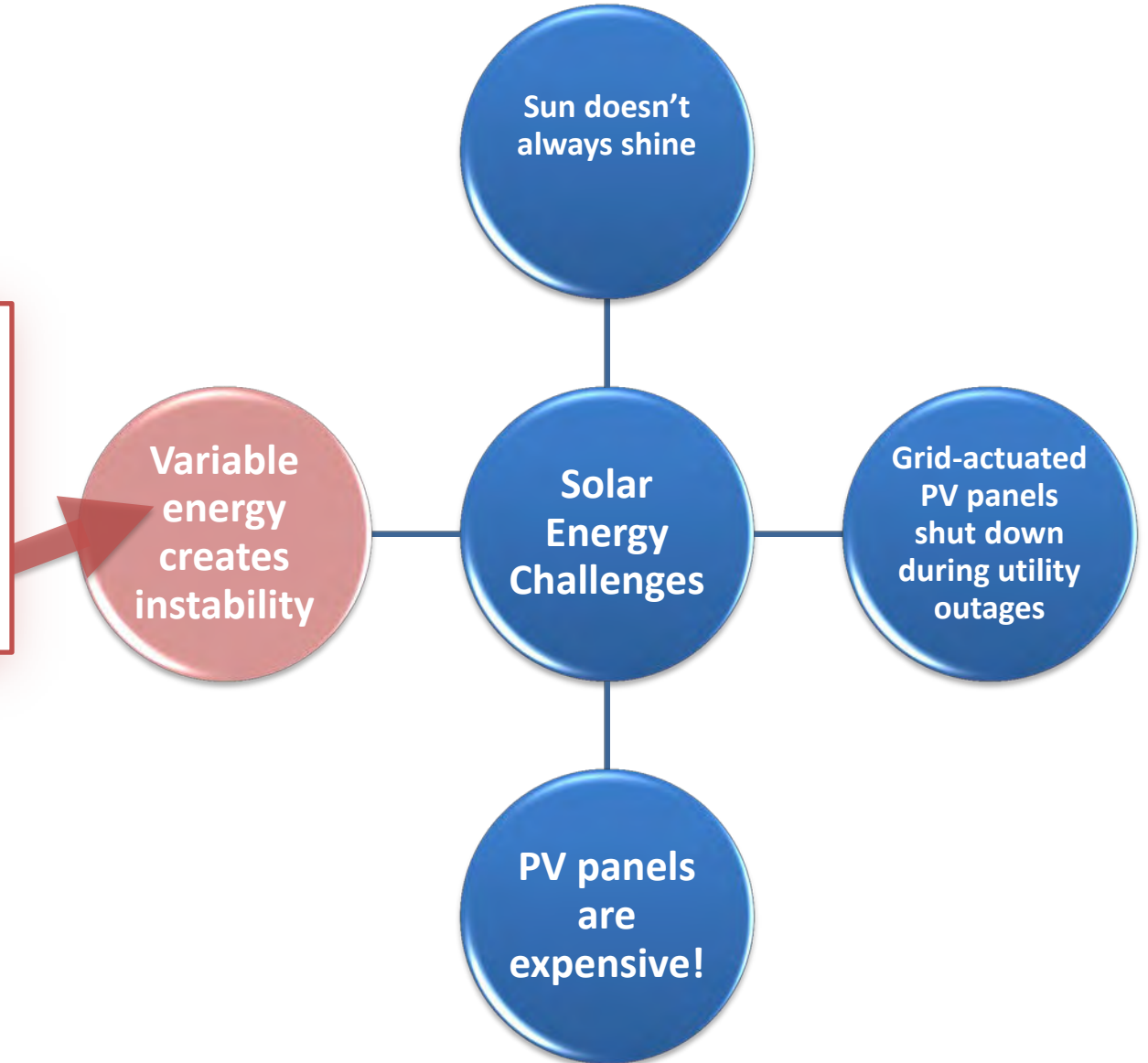
Load-shifting, efficiency, and conservation technologies to *optimize use of solar generation*



Solar Energy + Microgrids

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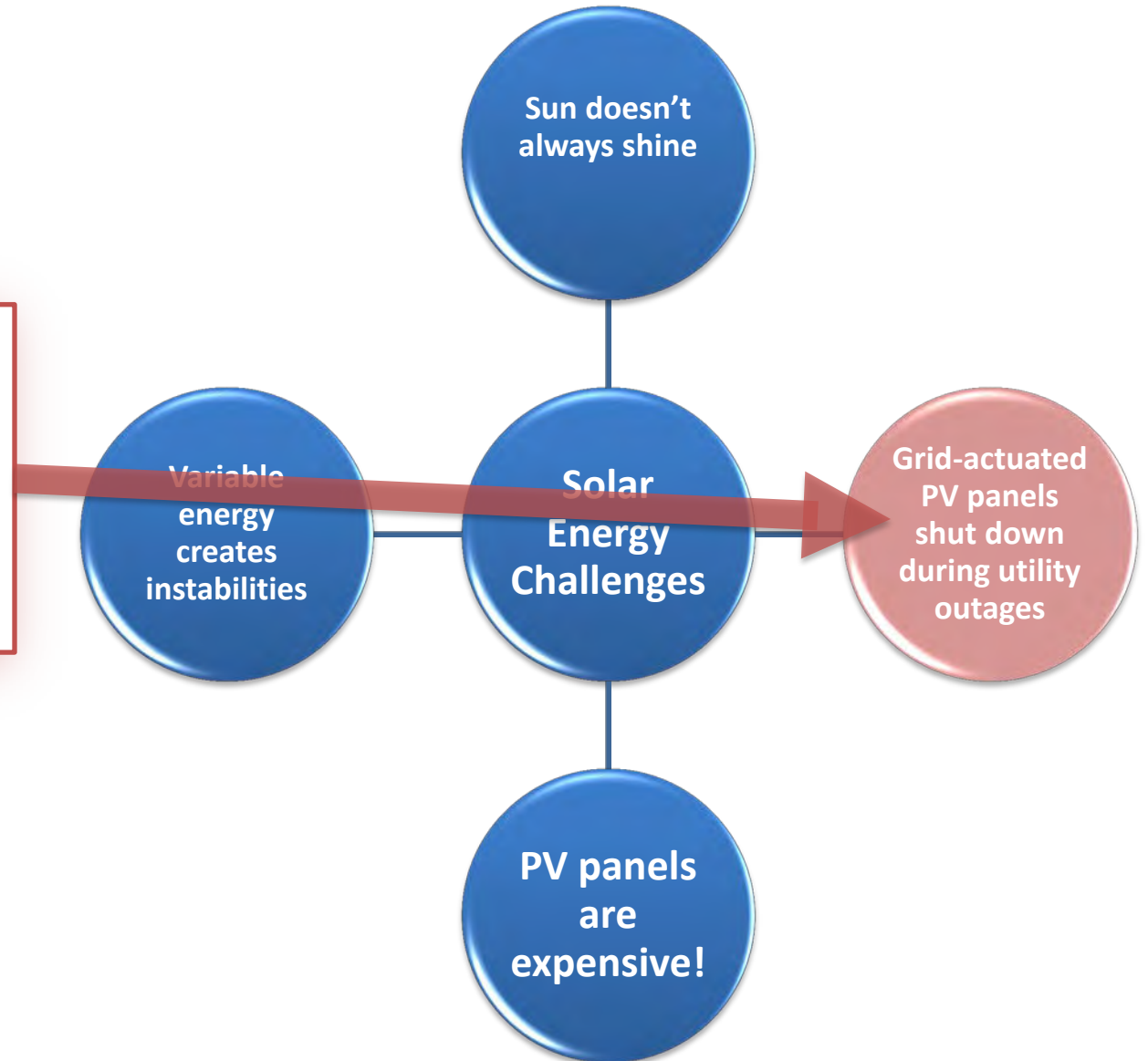
Microgrid control systems manage supply and demand in real time to ***maintain balanced and stable operation***



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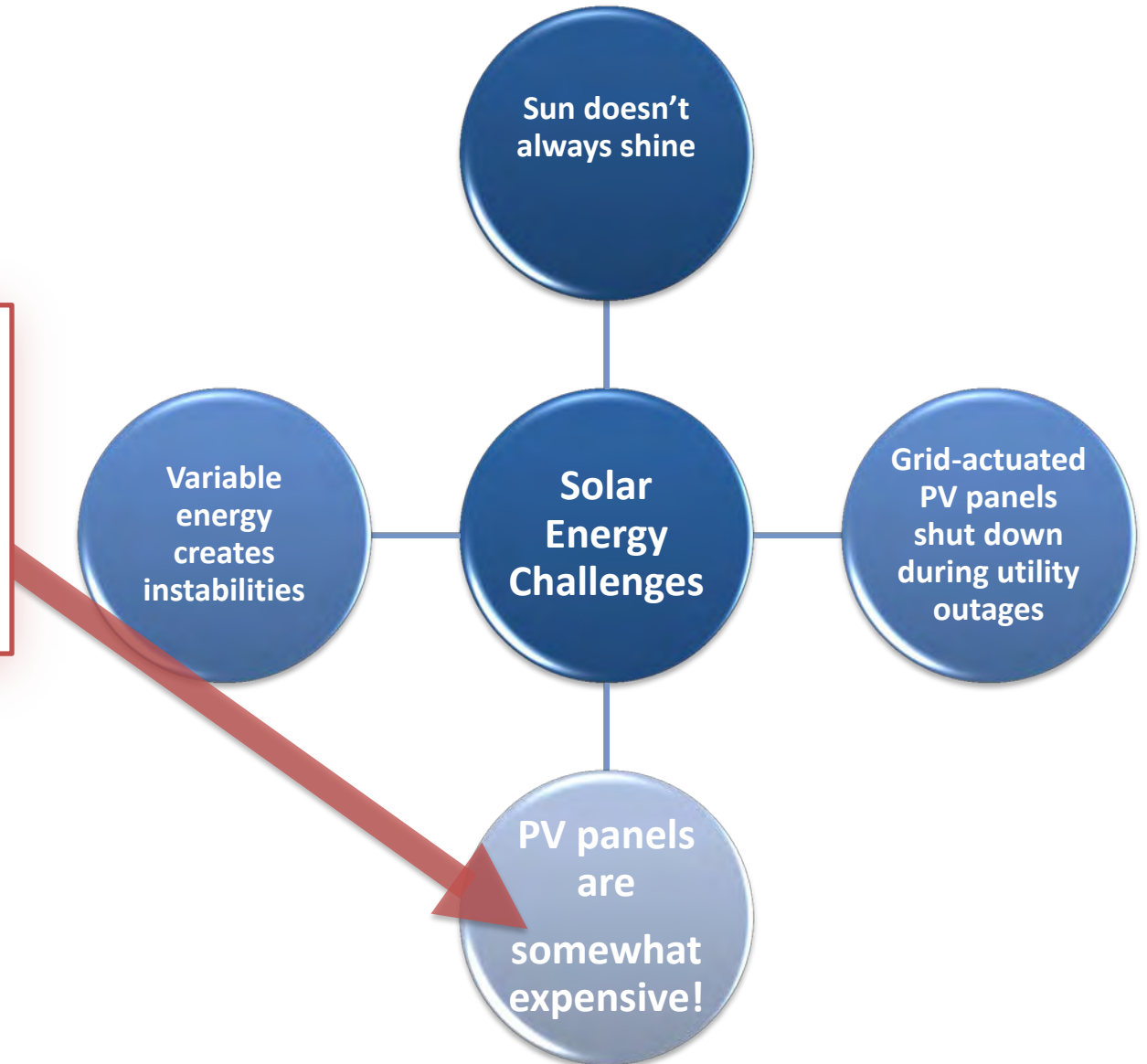
Safe islanding; industry-standard (IEEE 1547) interconnection to ***keep PV operating during outages***



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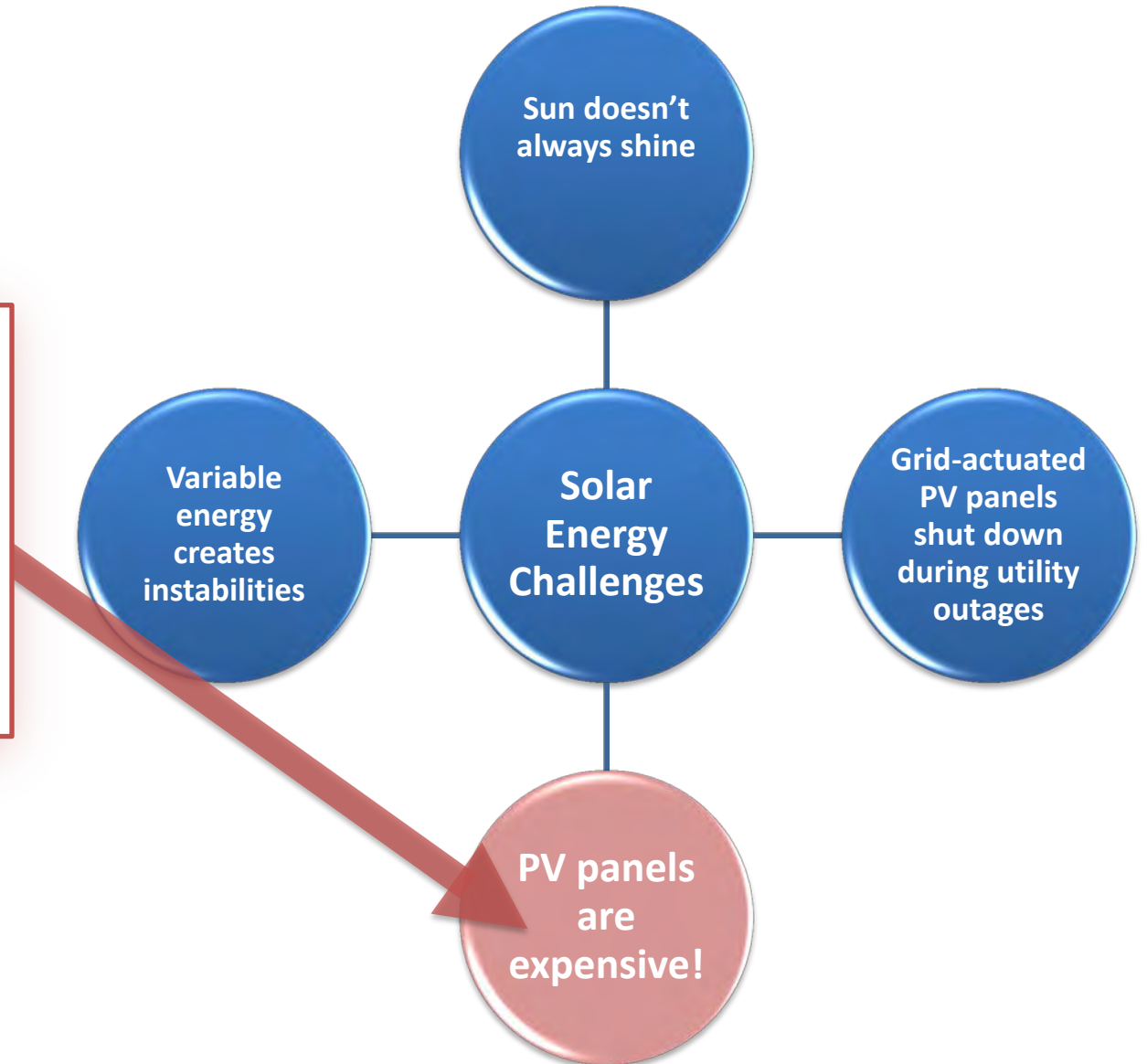
Flexible community microgrids represent a **creditworthy customer** for accessing low-cost financing



Solar Energy + Microgrids

Community microgrids solve many challenges of integrating solar energy.

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



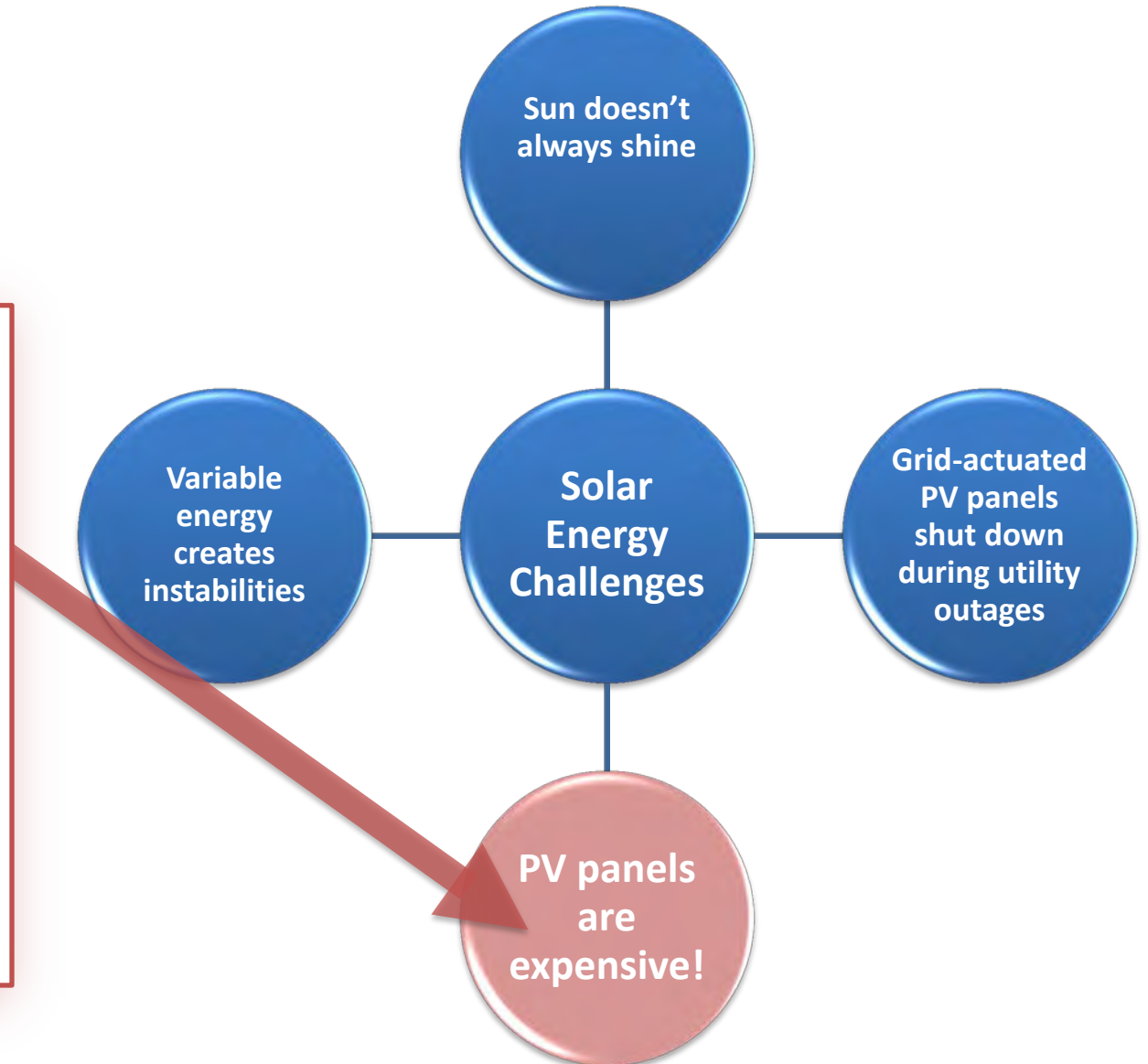
Solar Energy + Microgrids

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Flexible 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 flexibility**.

