

The Grid of Grids

Presentation and Pre-show Sneak-Peek



NORTH AMERICA
SMART ENERGY
WEEK

POWERED BY



September 23-26, 2019

Salt Palace Convention Center | Salt Lake City, UT

The Grid of Grids

Presentation and Pre-show Sneak-Peek

- “Grid of Grids” – EMerge Alliance
 - Show Sneak-Preview #1 - CE+T Energy Solutions
 - Show Sneak-Preview #2 - WES.net
 - Show Sneak-Preview #3 - Nextek Power Systems
- 

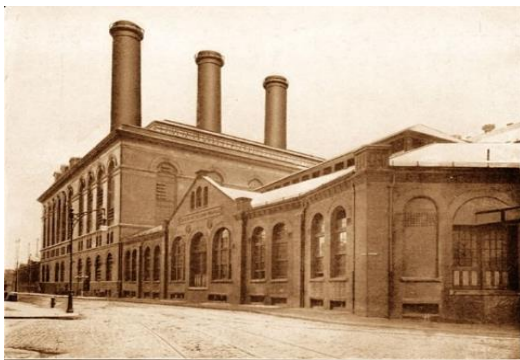


Brian T. Patterson
President
EMerge Alliance

The
GRID OF GRIDS
By
Brian Patterson

Evolution or Revolution?



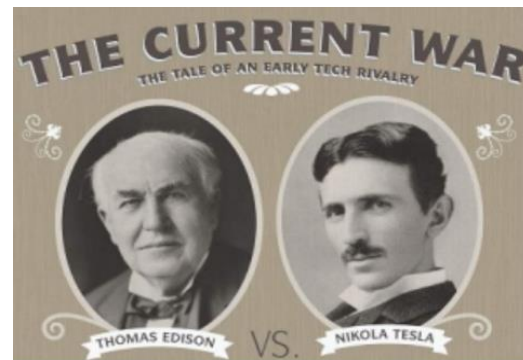


Thomas Edison's DC/Co-Generation Pearl Street Station—NY, NY.—1882

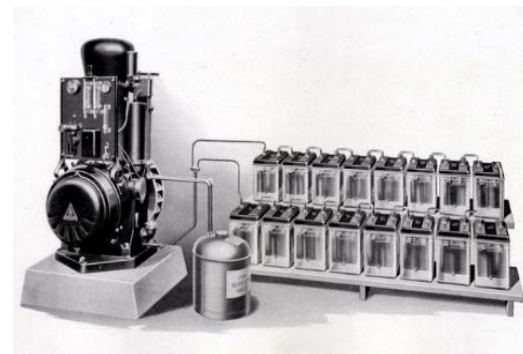


America's AC Powered Grid—East, West and Texas—1900—2016

In the beginning...



The Battle of the Currents—Edison vs. Tesla/Westinghouse—circa. 18



Delco-Light 32Vdc Power Plant—Dayton Oh.—1916

Eventually, things settled down...



**So we
could...**

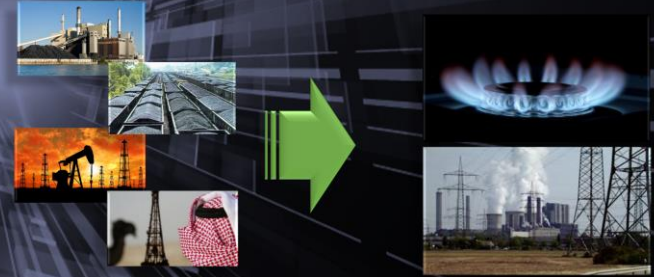


Electric Infrastructure Issue #1



Increasing Use of Electricity
Despite Conservation Efforts – Use Grows at Double-Digit Rates

Electric Infrastructure Issue #2



Over Dependency on Fossil Fuel Sources
Coal & Oil issues are leading to Increased Reliance on NG & Nuclear

But more recently...

Electric Infrastructure Issue #3



Resistance to Expanding Centralized Infrastructure
There are real & perceived problems with using public domains

Electric Infrastructure Issue #4



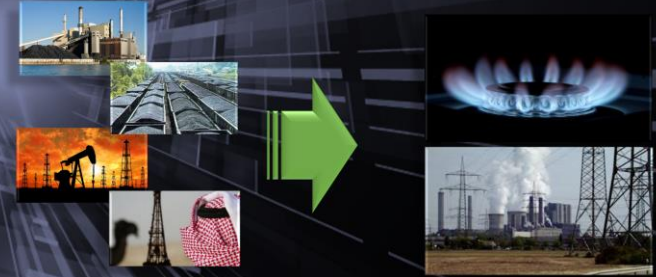
Growing Problem of Resiliency
There are no easy answers for the existing grid

Electric Infrastructure Issue #1



Increasing Use of Electricity
Despite Conservation Efforts – Use Grows at Double-Digit Rates

Electric Infrastructure Issue #2



Over Dependency on Fossil Fuel Sources
Coal & Oil issues are leading to Increased Reliance on NG & Nuclear

...we've been having some "issues."

Electric Infrastructure Issue #3



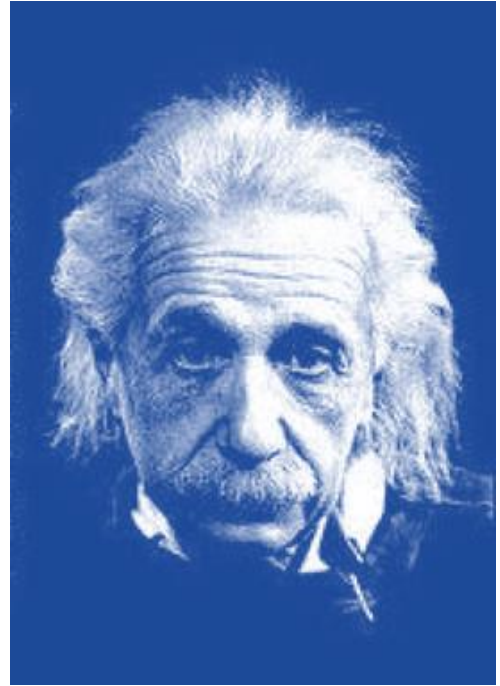
Resistance to Expanding Centralized Infrastructure
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Electric Infrastructure Issue #4



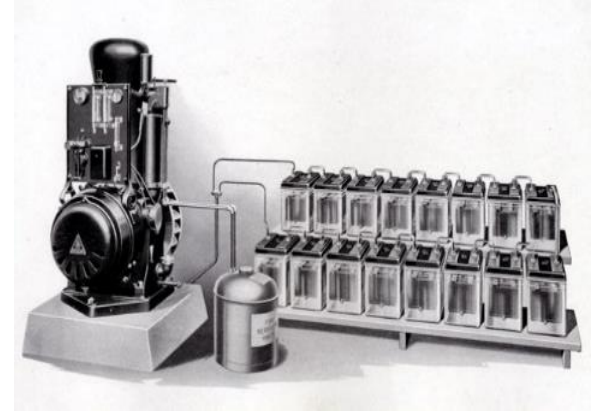
Growing Problem of Resiliency
There are no easy answers for the existing grid

**“we cannot solve our
problems with the
same thinking we
used when we created
them”**





**But, can we
take two old
ideas...**





**...add some
'smarts' & some
new technology...**



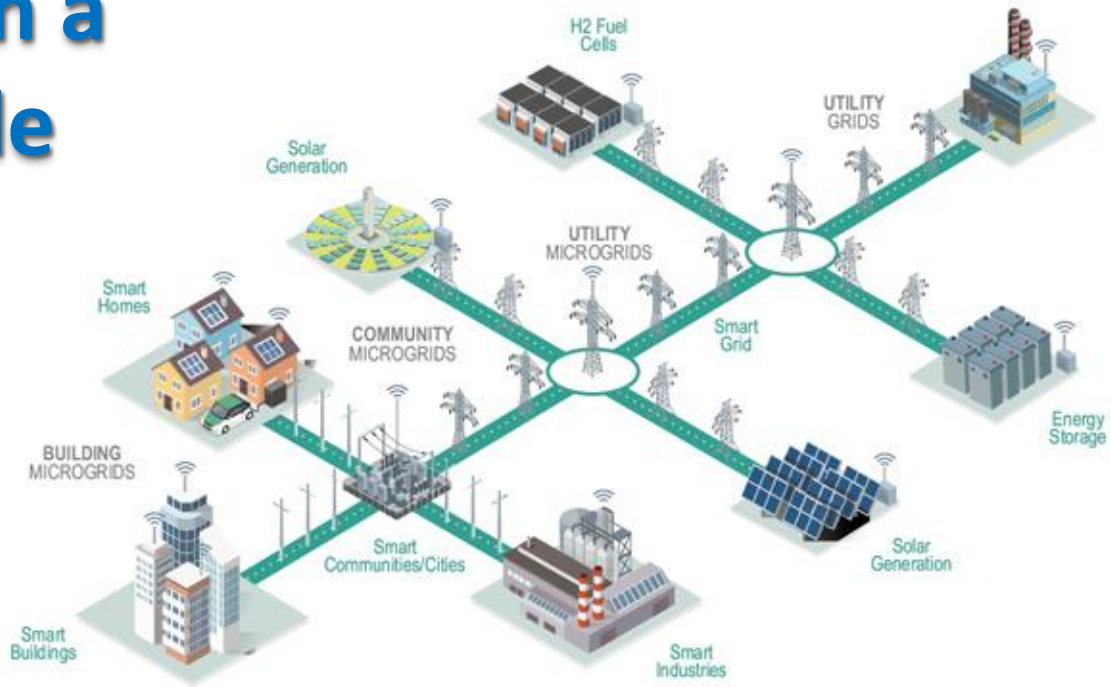


...connect the old

with the new...

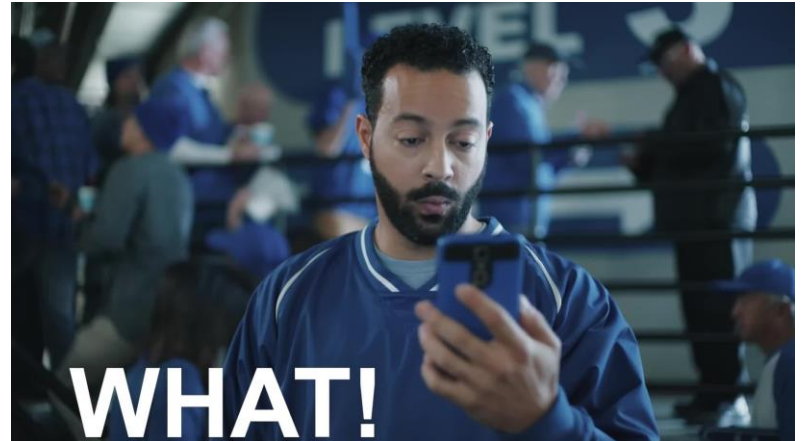


...and end up with a
more sustainable
Grid of Grids?

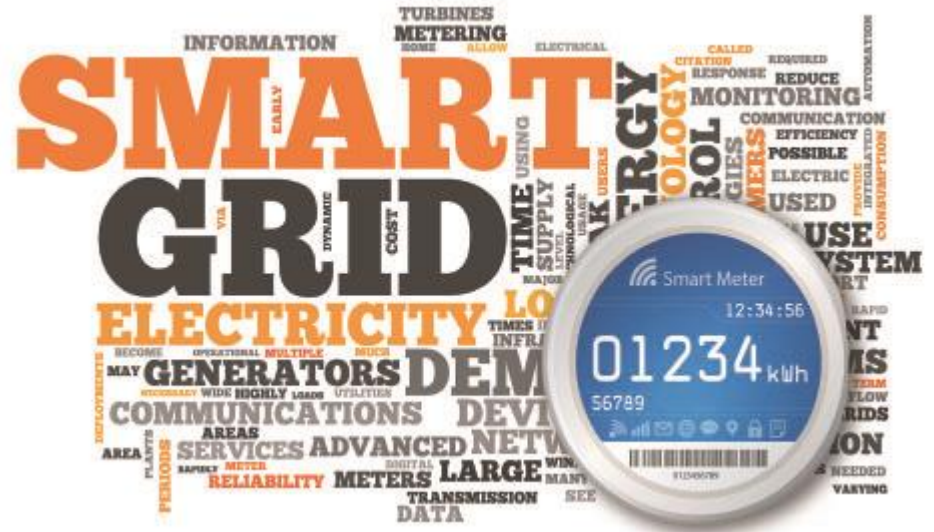




**The Grid of Grids
evolution is well underway...**



...as the Grid is getting “Smarter”...



...Microgrids are evolving to help!



Let's see how...



Microgrids are comprised of 5 major functions...

**LOCAL
SOURCES**

**ENERGY
STORAGE**

**ENERGY
MANAGEMENT**

**CIRCUIT
UTILIZATION**

**LOCAL
LOADS**

LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

**But before we go
there...let's go
back to the
beginning...**



**In the
beginning...**

ENERGY MANAGEMENT



UTILITY AC DISTRIBUTION GRID

CIRCUIT UTILIZATION

AC Load Panel



LOCAL LOADS

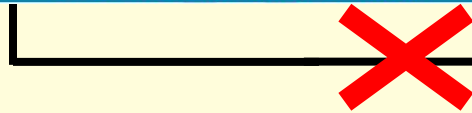
AC Loads



ENERGY MANAGEMENT



UTILITY AC DISTRIBUTION GRID



CIRCUIT UTILIZATION

AC Load Panel



LOCAL LOADS

AC Loads



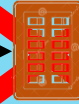
ENERGY MANAGEMENT



UTILITY AC DISTRIBUTION GRID

CIRCUIT UTILIZATION

AC Load Panel



LOCAL LOADS

AC Loads



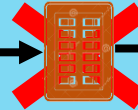
ENERGY MANAGEMENT



UTILITY AC DISTRIBUTION GRID

CIRCUIT UTILIZATION

AC Load Panel



LOCAL LOADS

AC Loads



LOCAL SOURCES

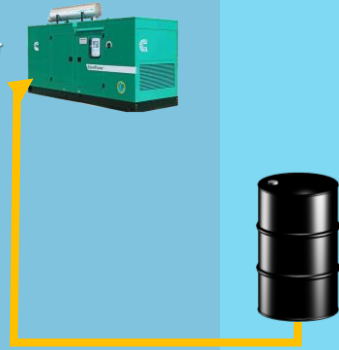
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

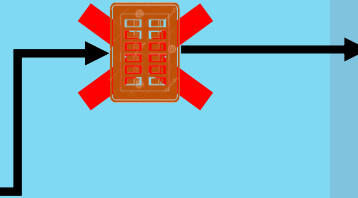
LOCAL LOADS

ICE Generator



UTILITY AC DISTRIBUTION GRID

AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads



LOCAL SOURCES

ENERGY STORAGE

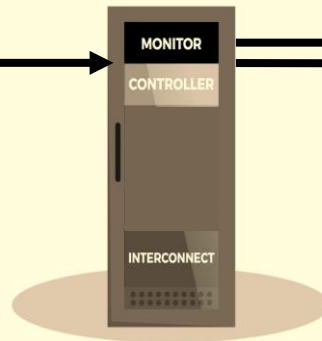
CIRCUIT UTILIZATION

LOCAL LOADS

ICE Generator



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Critical Load Panel



AC Convenience Loads



AC Critical Loads

LOCAL SOURCES

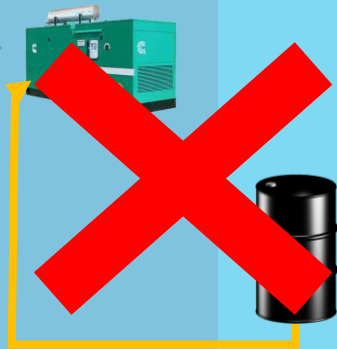
ENERGY STORAGE

ENERGY MANAGEMENT

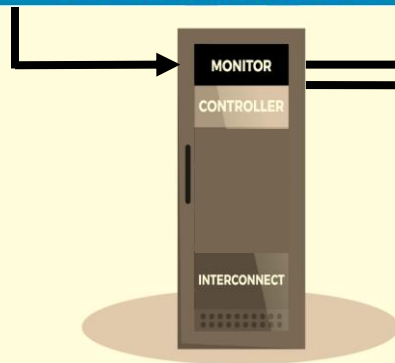
CIRCUIT UTILIZATION

LOCAL LOADS

ICE Generator



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Critical Load Panel



AC Convenience Loads



AC Critical Loads



ENERGY MANAGEMENT



UTILITY AC DISTRIBUTION GRID

CIRCUIT UTILIZATION

AC Load Panel



LOCAL LOADS

AC Loads



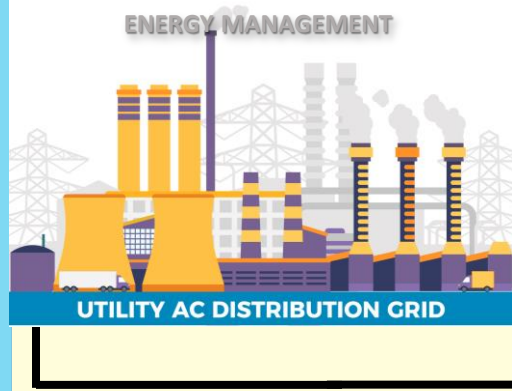
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



AC Load Panel

AC Loads



Solar PV



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



AC Load Panel



AC Loads



Solar PV



Grid Tied Inverter

LOCAL SOURCES

ENERGY STORAGE

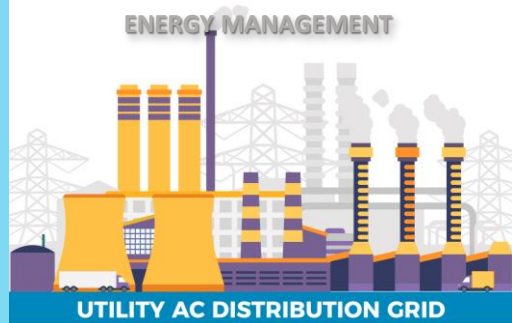
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



Solar PV



UTILITY AC DISTRIBUTION GRID



Grid Tied Inverter

AC Load Panel



AC Loads



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

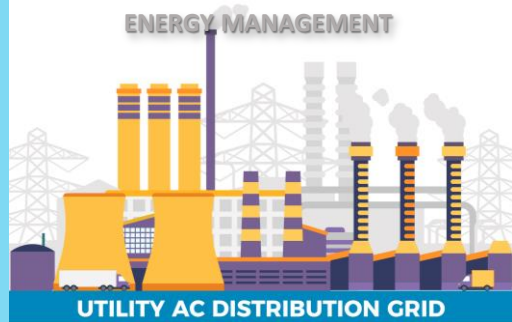
LOCAL LOADS



Solar PV



Wind



UTILITY AC DISTRIBUTION GRID



Grid Tied Inverter

AC Load Panel



AC Loads



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

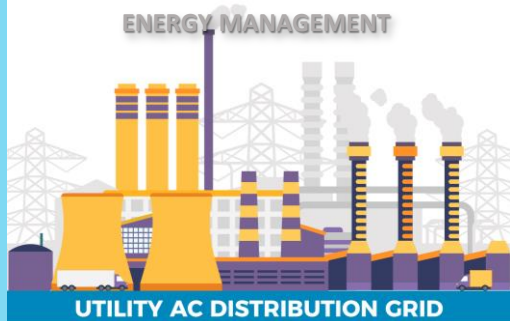
LOCAL LOADS



Solar PV



Wind



UTILITY AC DISTRIBUTION GRID



Grid Tied Inverter

AC Load Panel



AC Critical Load Panel



AC Loads



AC Critical Loads



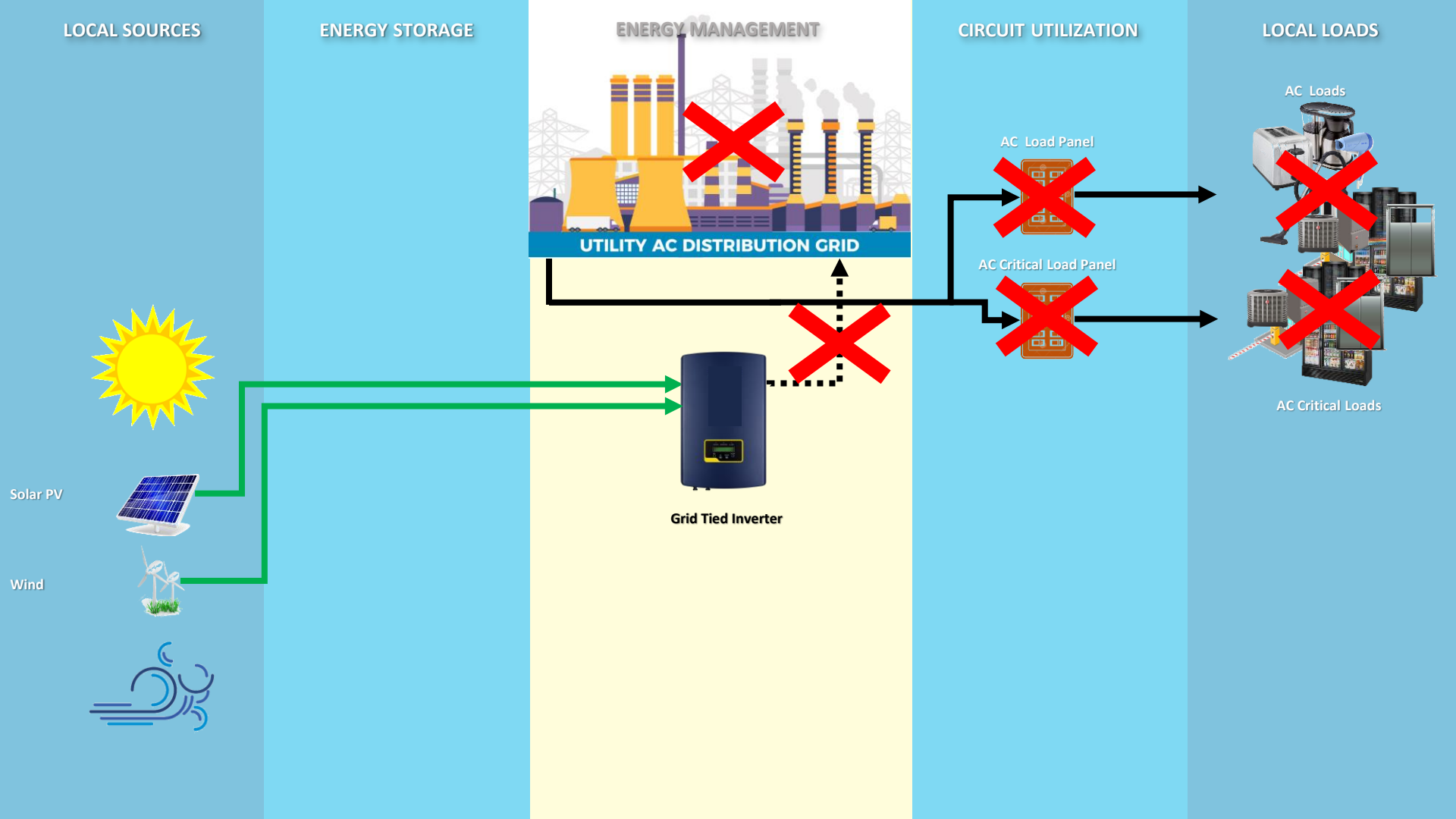
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



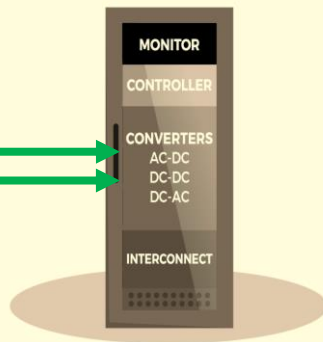
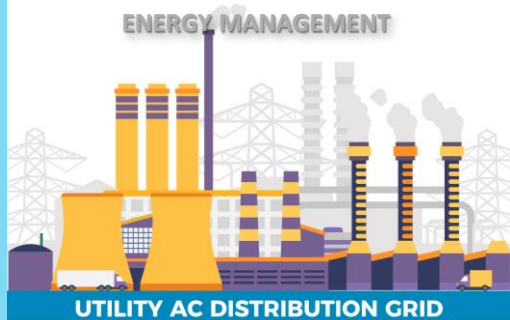
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



Smart
Islandable
Controller/Inverter

AC Load Panel



AC Critical Load Panel



AC Loads



AC Critical Loads



Solar PV



Wind



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



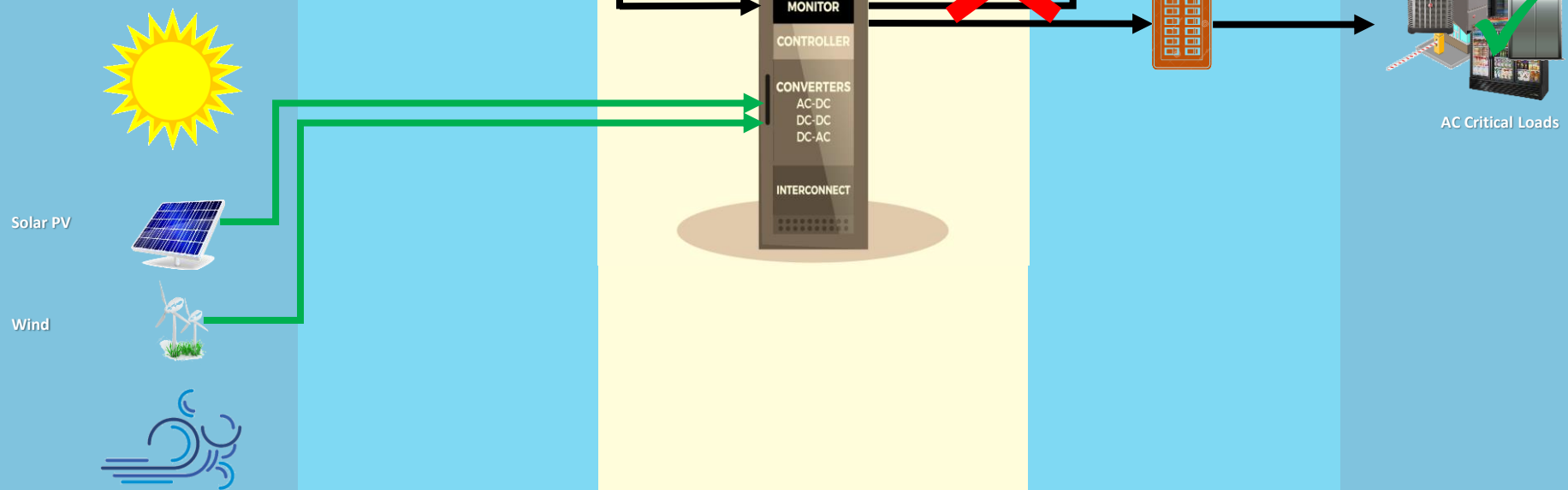
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



LOCAL SOURCES

ENERGY STORAGE

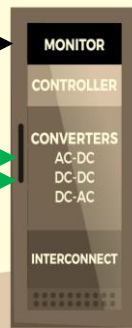
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



UTILITY AC DISTRIBUTION GRID

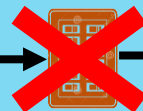


AC Convenience Load Panel

AC Convenience Loads



AC Critical Loads



Solar PV



Wind



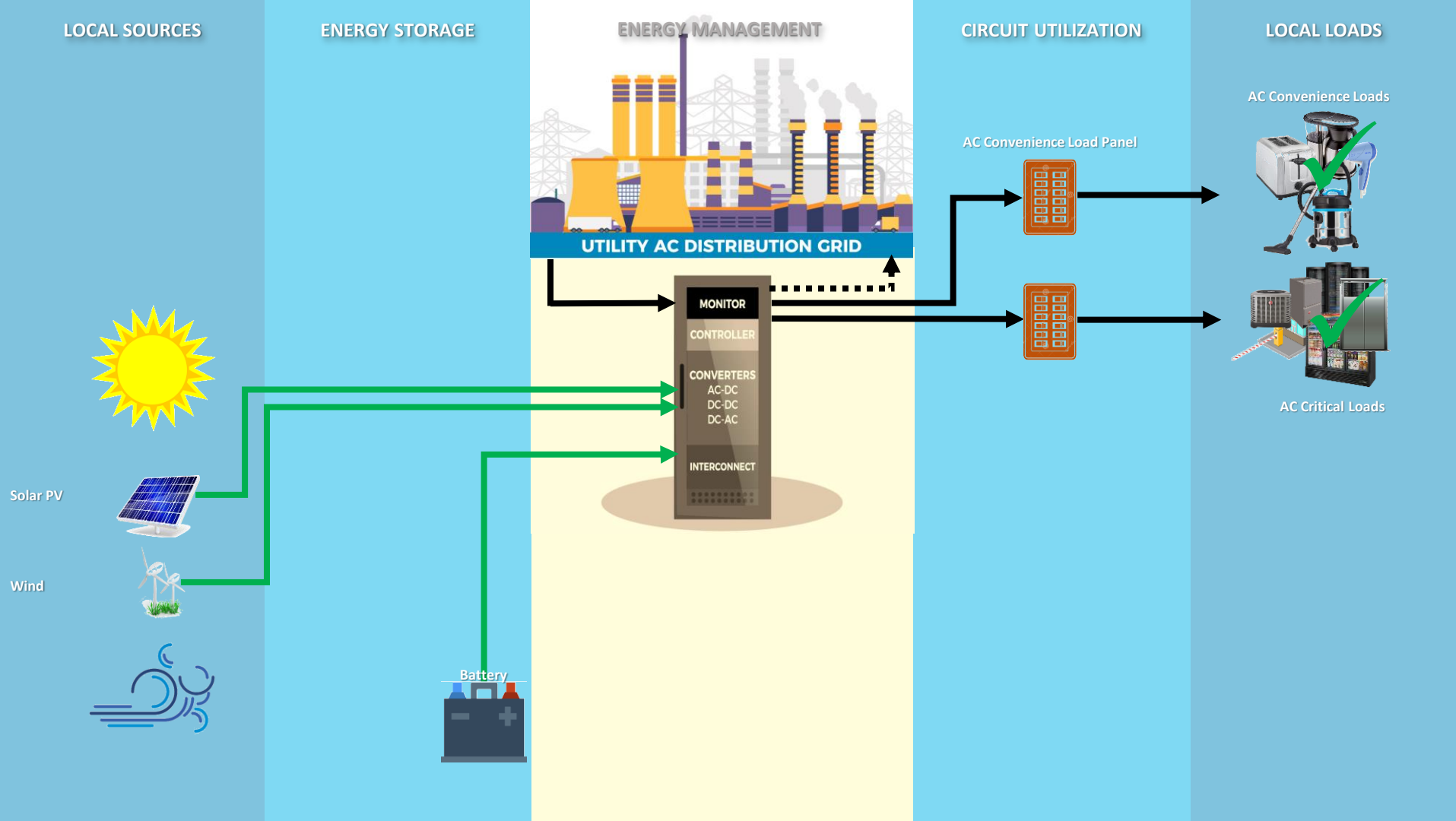
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



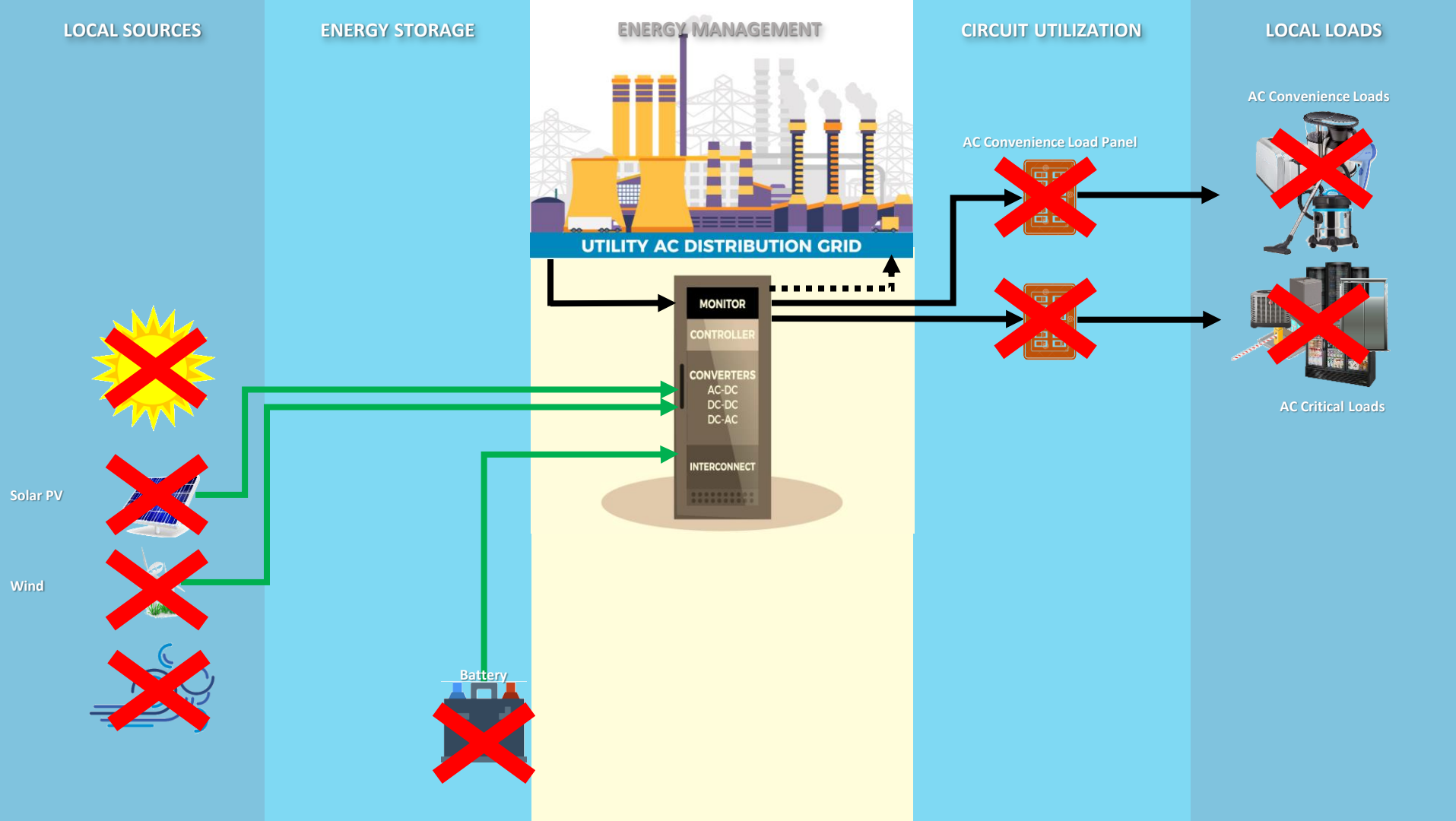
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Solar PV

Wind

Battery

UTILITY AC DISTRIBUTION GRID

MONITOR

CONTROLLER

CONVERTERS

AC-DC

DC-DC

DC-AC

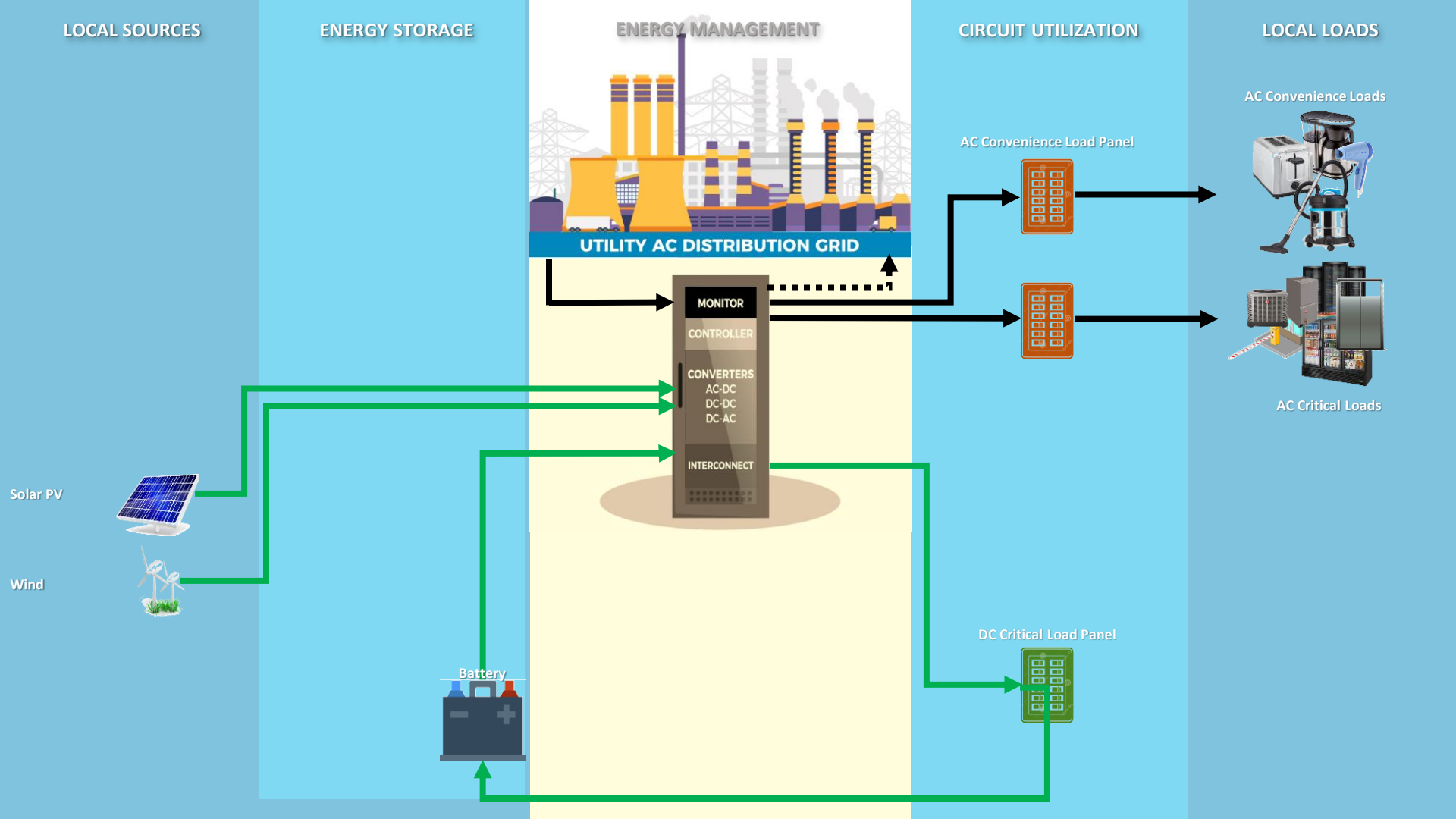
INTERCONNECT

AC Convenience Load Panel

DC Critical Load Panel

AC Convenience Loads

AC Critical Loads



LOCAL SOURCES

ENERGY STORAGE

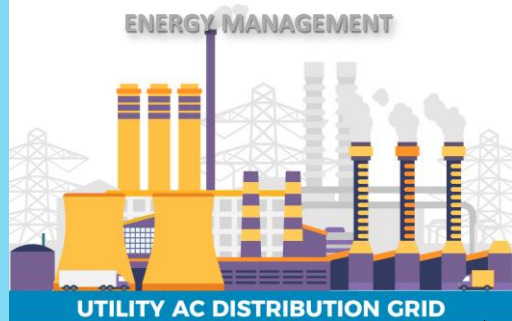
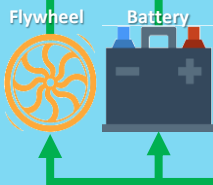
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Solar PV

Wind



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads



DC Critical Load Panel



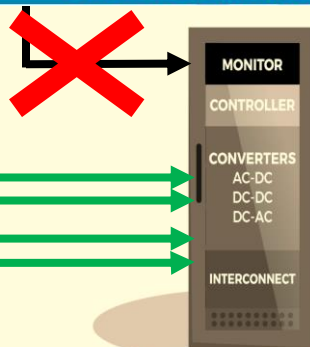
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads



DC Critical Load Panel



Flywheel

Battery



Solar PV



Wind



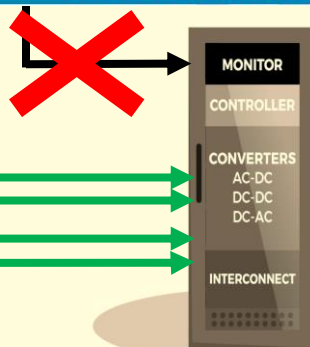
LOCAL SOURCES

ENERGY STORAGE

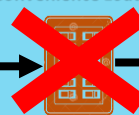
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

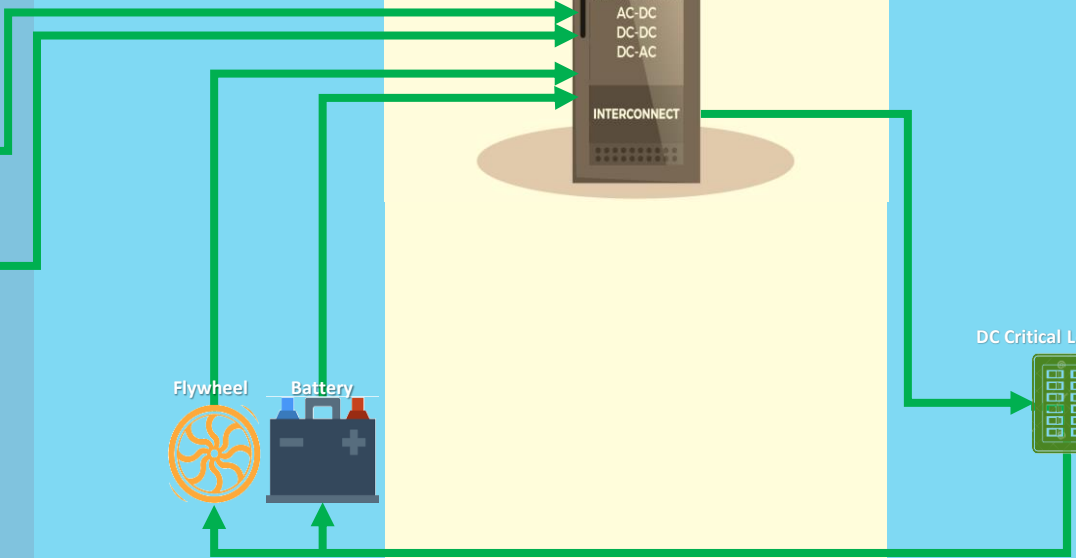
DC Critical Load Panel



Solar PV



Wind



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Solar PV

Wind



Flywheel

Battery



UTILITY AC DISTRIBUTION GRID

MONITOR

CONTROLLER

CONVERTERS

AC-DC

DC-DC

DC-AC

INTERCONNECT

AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads



DC Critical Load Panel



DC Critical Loads



LOCAL SOURCES

ENERGY STORAGE

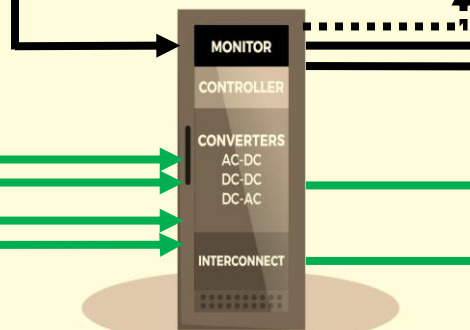
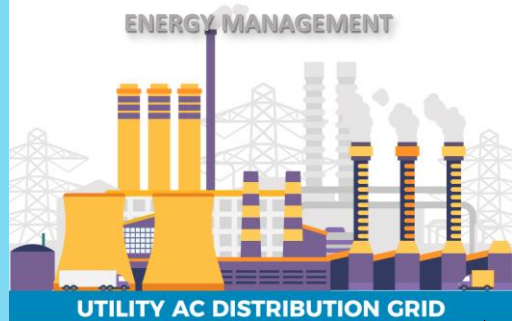
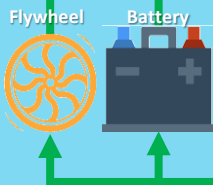
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Solar PV

Wind



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Convenience Loads



DC Critical Load Panel



DC Critical Loads

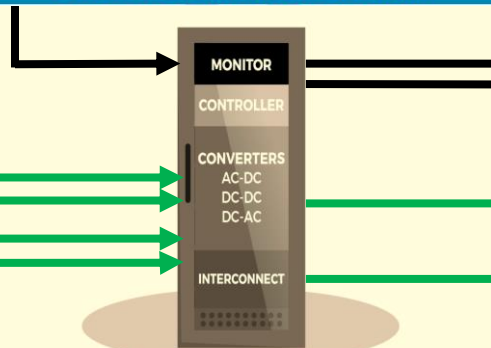
LOCAL SOURCES

ENERGY STORAGE

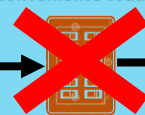
ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



AC Convenience Load Panel

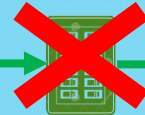


AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Critical Load Panel



DC Convenience Loads



DC Critical Loads

Solar PV

Wind

Flywheel

Battery

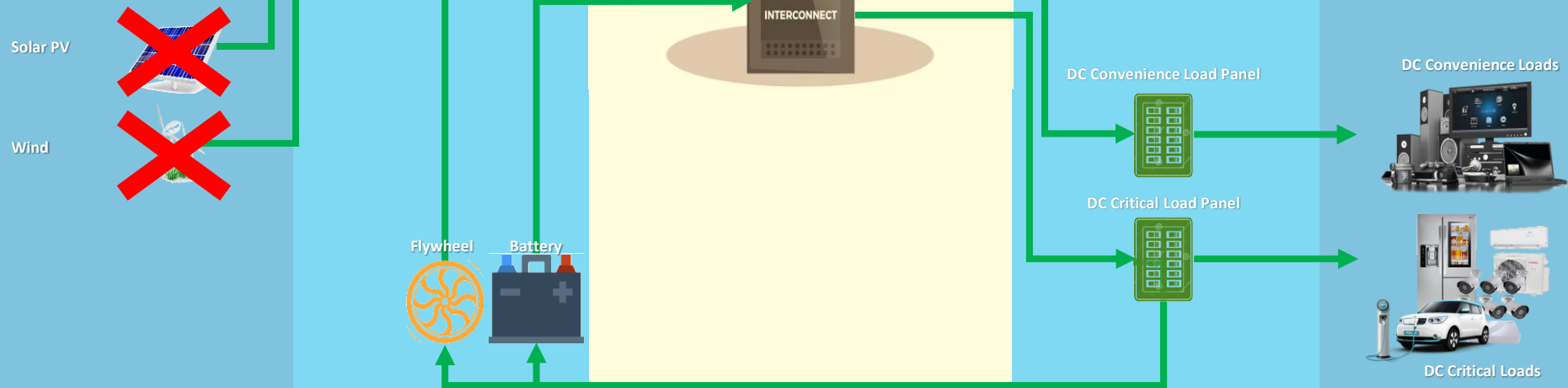
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



LOCAL SOURCES

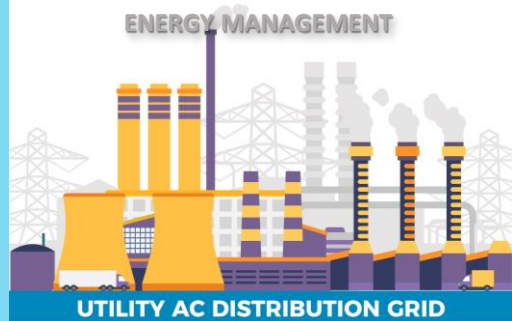
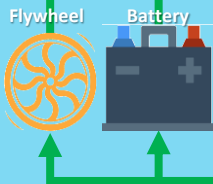
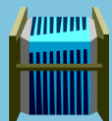
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Fuel Cell



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Critical Load Panel



DC Convenience Loads



DC Critical Loads



LOCAL SOURCES

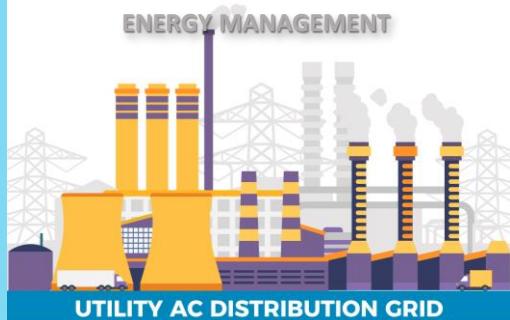
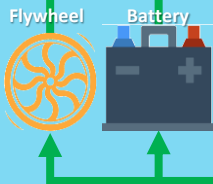
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Fuel Cell



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Convenience Loads



DC Critical Load Panel



DC Critical Loads

LOCAL SOURCES

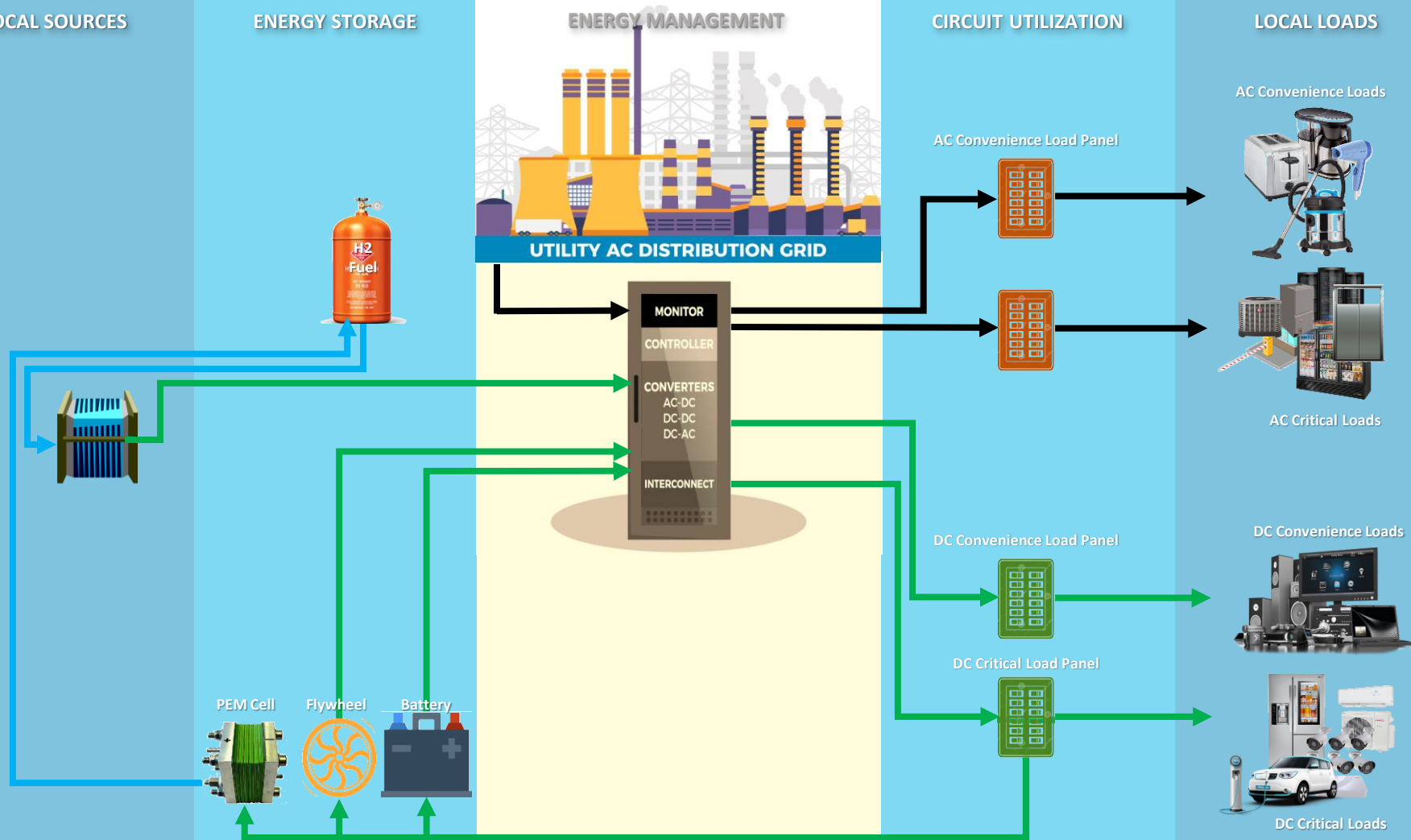
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

Fuel Cell



LOCAL SOURCES

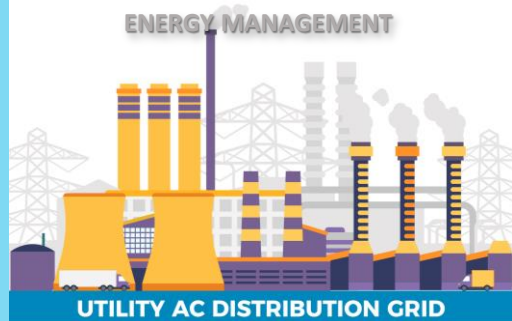
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

CHP
Generator



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Critical Load Panel

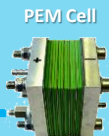
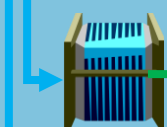


DC Convenience Loads



DC Critical Loads

Fuel Cell



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

CHP
Generator

Fuel Cell

PEM Cell

Flywheel

Battery

UTILITY AC DISTRIBUTION GRID

MONITOR

CONTROLLER

CONVERTERS

AC-DC

DC-DC

DC-AC

INTERCONNECT

AC Convenience Load Panel

DC Convenience Load Panel

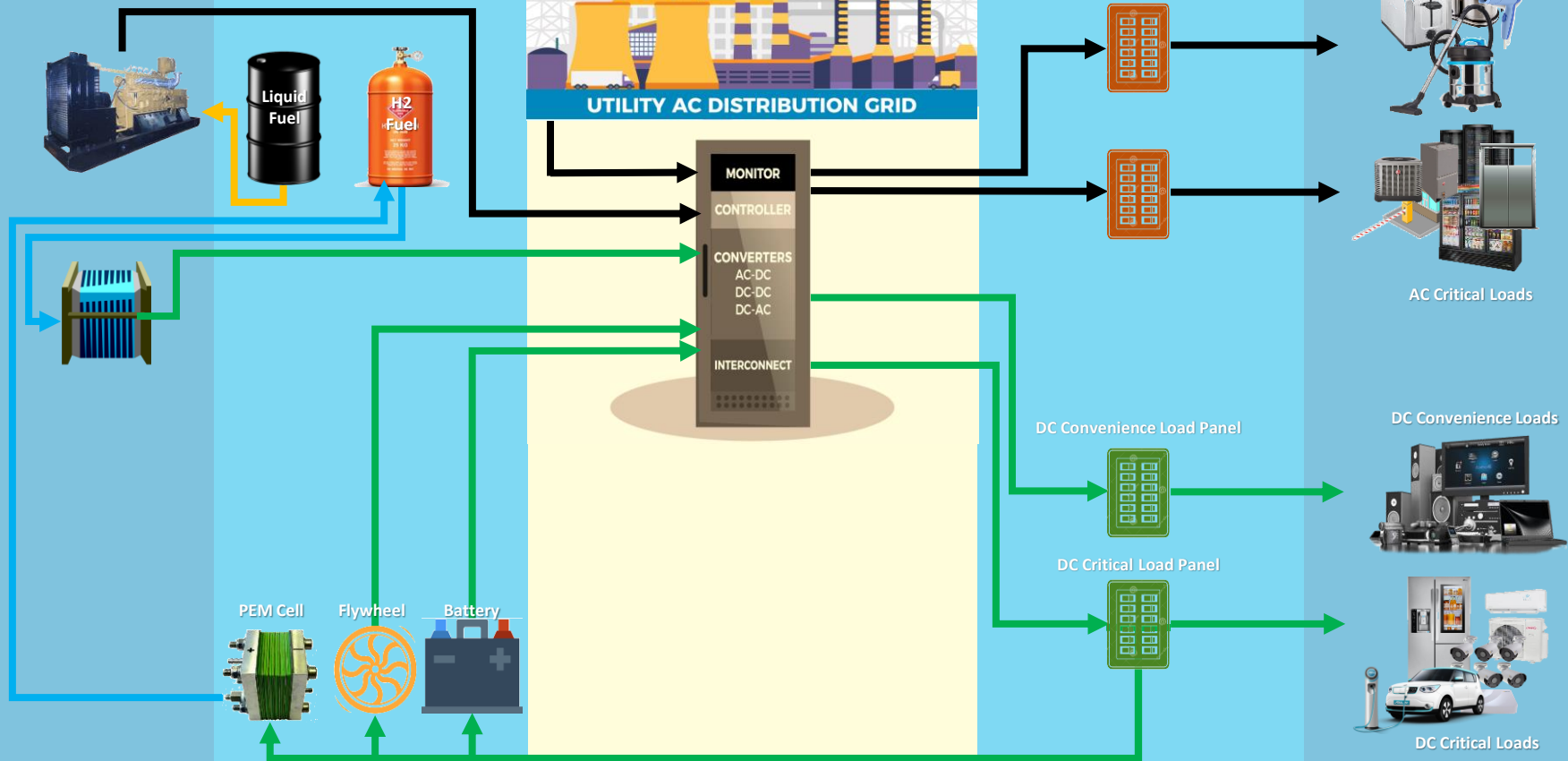
DC Critical Load Panel

AC Convenience Loads

AC Critical Loads

DC Convenience Loads

DC Critical Loads



LOCAL SOURCES

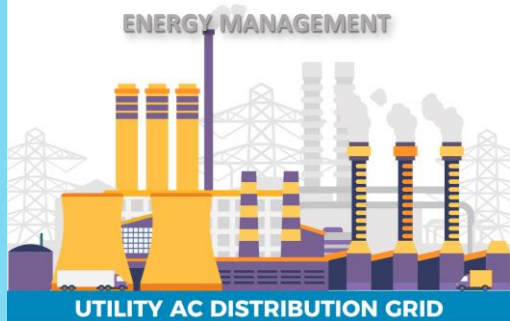
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

CHP
Generator



UTILITY AC DISTRIBUTION GRID



AC Convenience Load Panel



AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel



DC Critical Load Panel

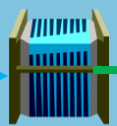


DC Convenience Loads



DC Critical Loads

Fuel Cell



Geothermal



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

CHP
Generator

Liquid
Fuel

H₂
Fuel

UTILITY AC DISTRIBUTION GRID

MONITOR

CONTROLLER

CONVERTERS

AC-DC

DC-DC

DC-AC

INTERCONNECT

AC Convenience Load Panel

AC Convenience Loads



AC Critical Loads

DC Convenience Load Panel

DC Convenience Loads



DC Critical Load Panel



DC Critical Loads

Fuel Cell

Geothermal

PEM Cell

Flywheel

Battery

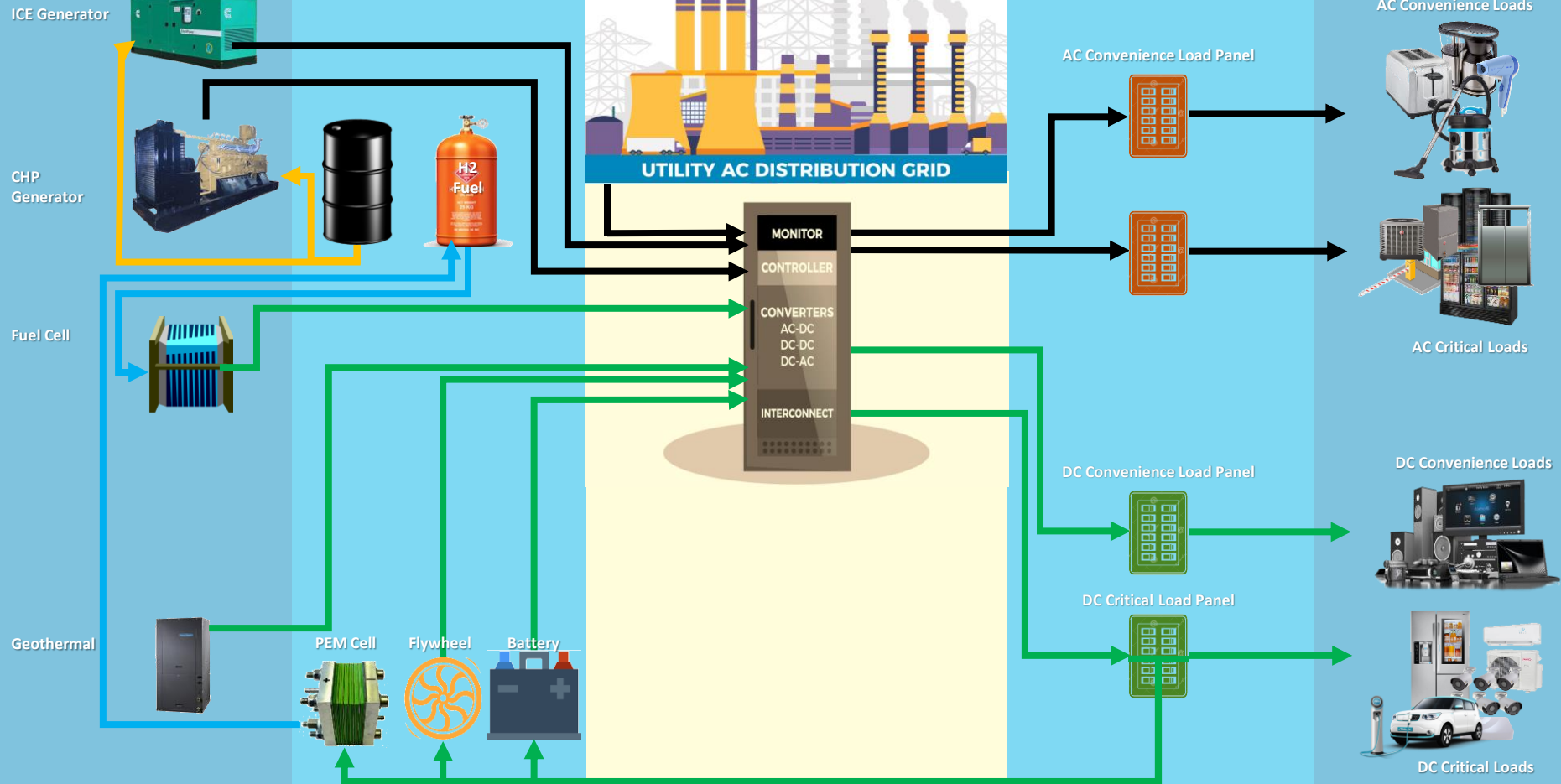
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



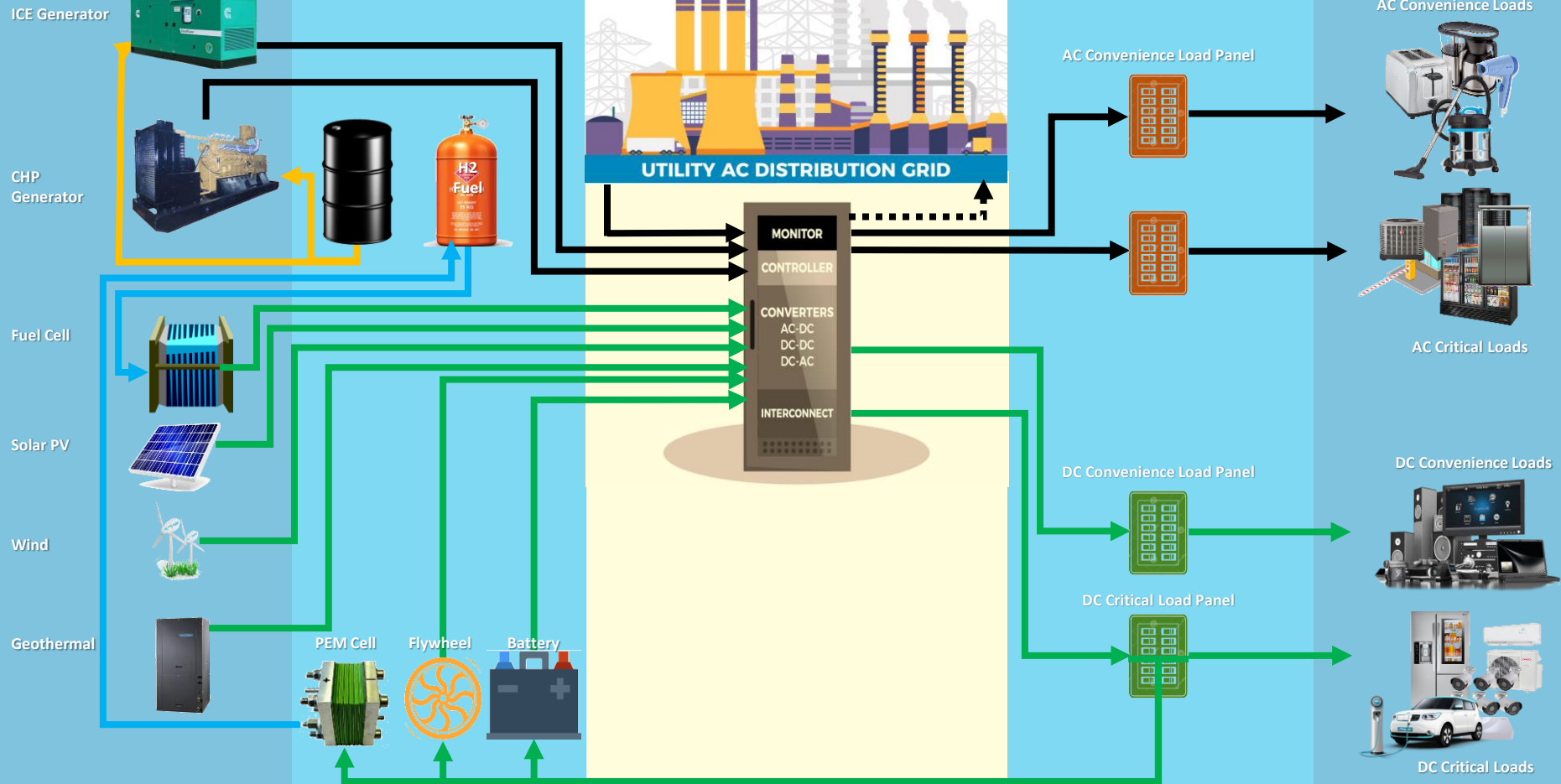
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



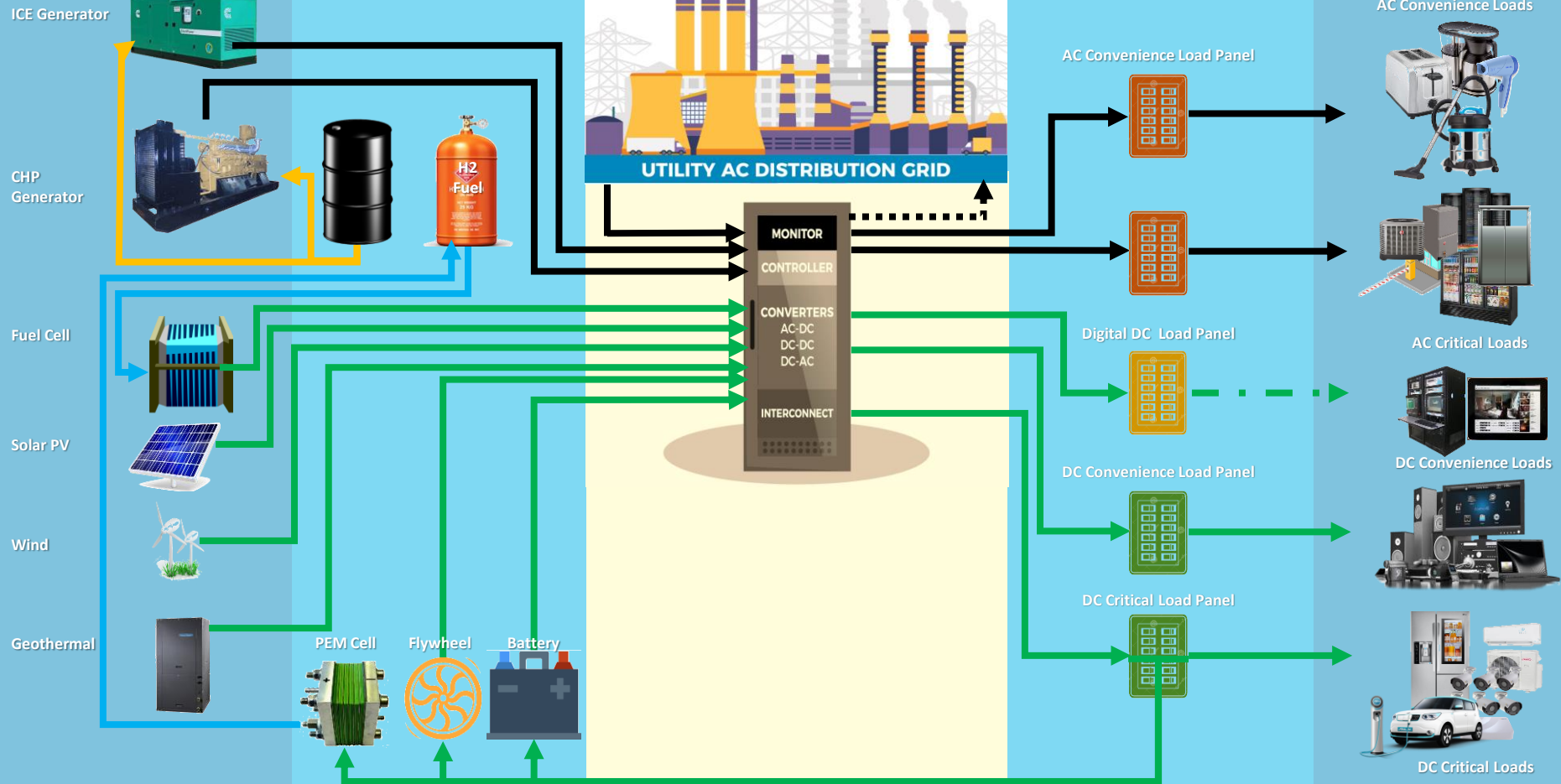
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



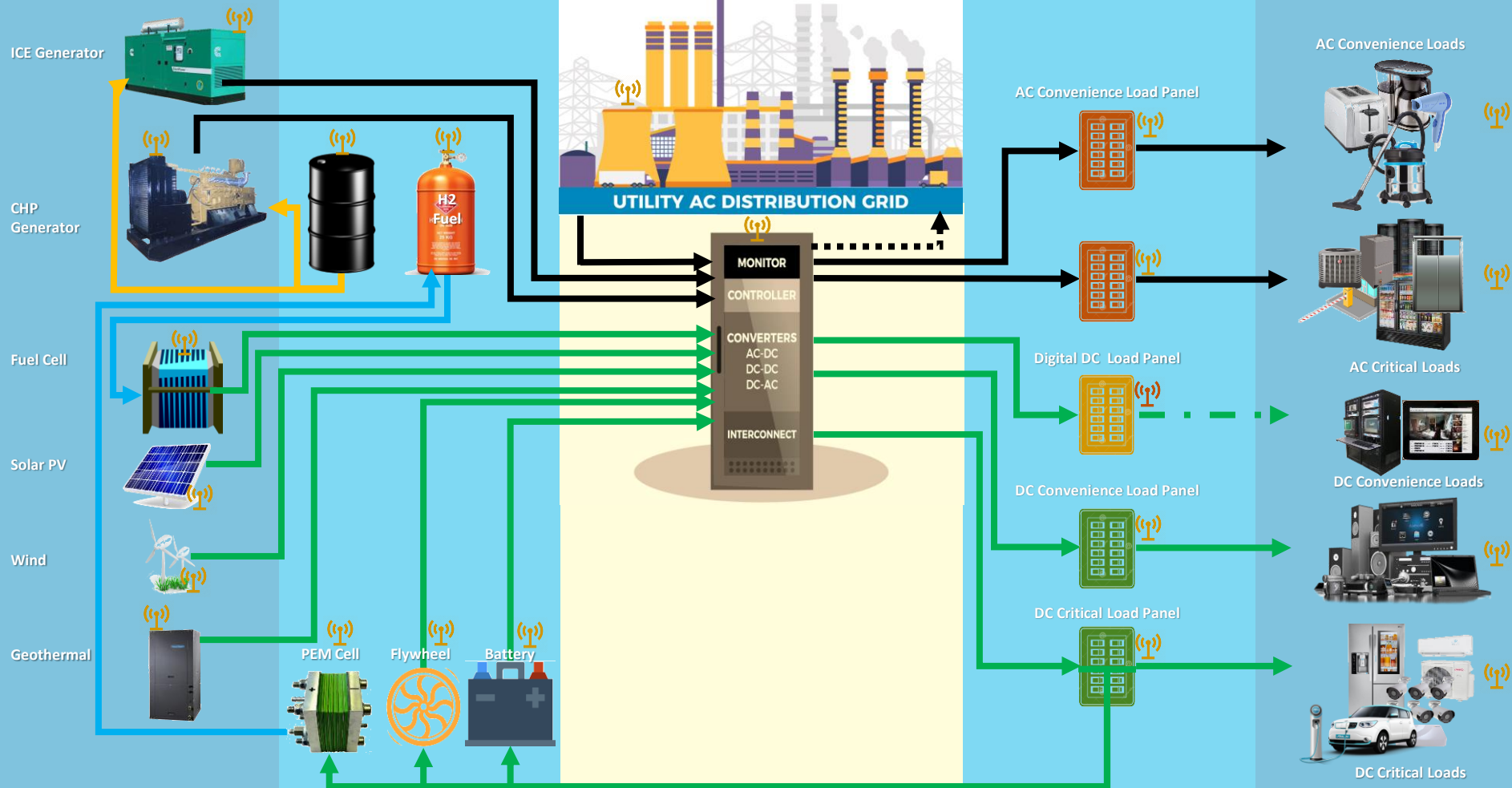
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



LOCAL SOURCES

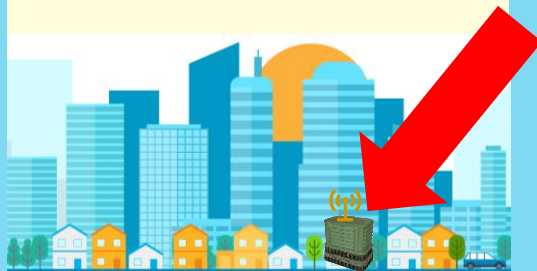
ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

1 LITTLE MICROGRID



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

MANY LITTLE MICROGRIDS



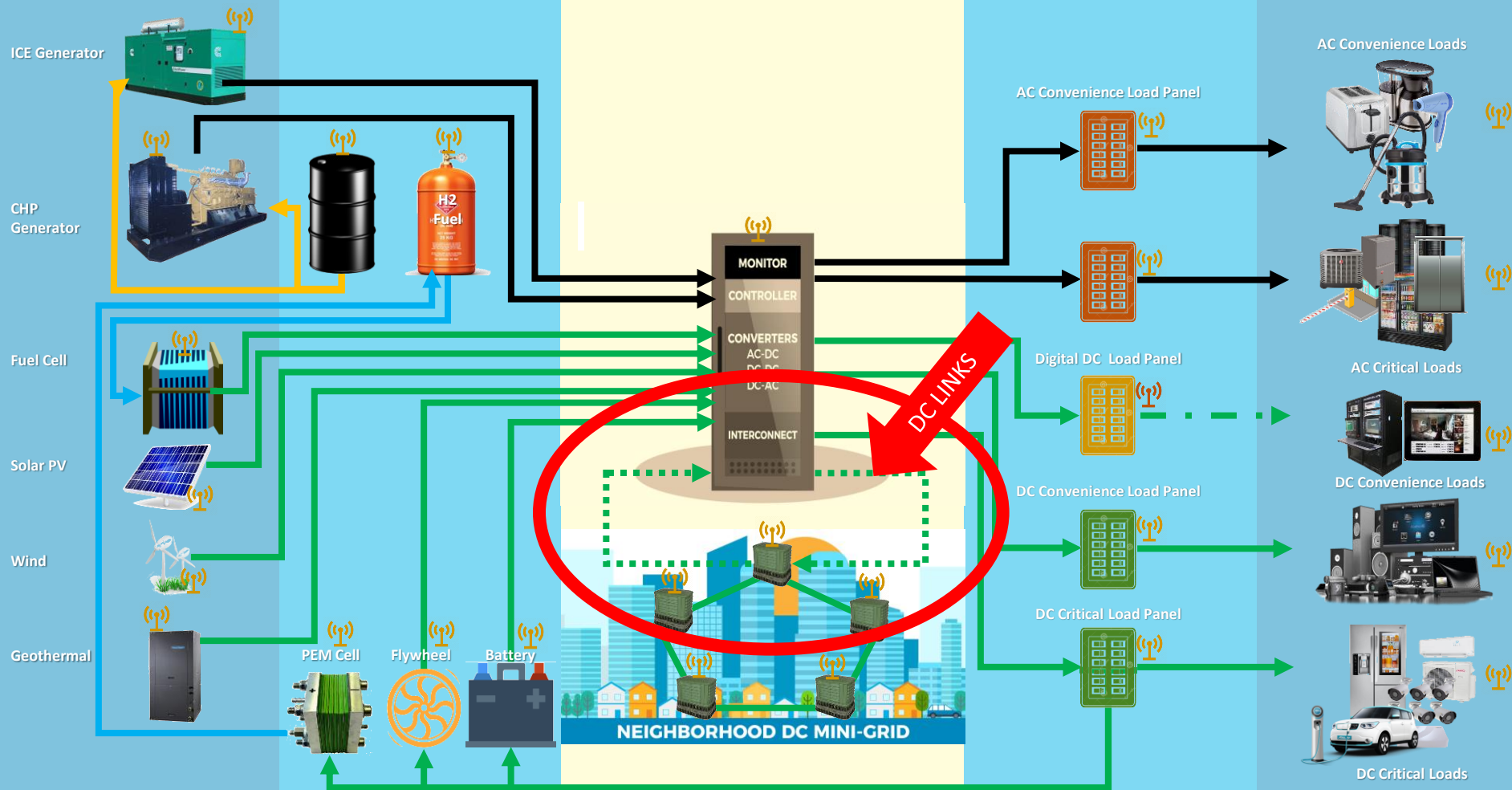
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS

ICE Generator

CHP
Generator

Fuel Cell

Solar PV

Wind

Geothermal

PEM Cell

Flywheel

Battery

NEIGHBORHOOD DC MINI-GRID

UTILITY AC DISTRIBUTION GRID

MONITOR
CONTROLLER
CONVERTERS
AC-DC
DC-DC
DC-AC
INTERCONNECT

A Convenience Load Panel

C Load Panel

DC Convenience Load Panel

DC Critical Load Panel

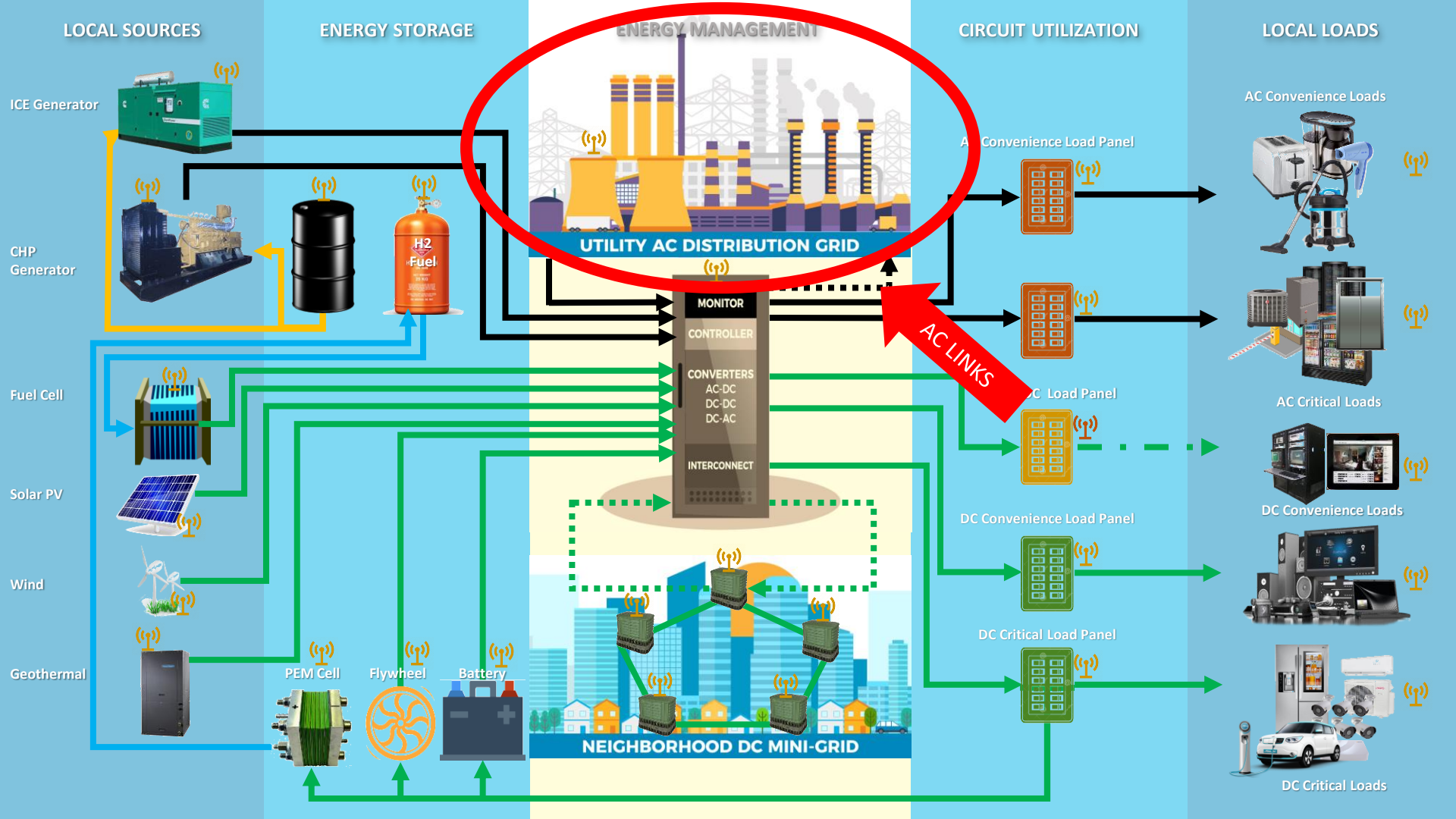
AC Convenience Loads

AC Critical Loads

DC Convenience Loads

DC Critical Loads

AC LINKS



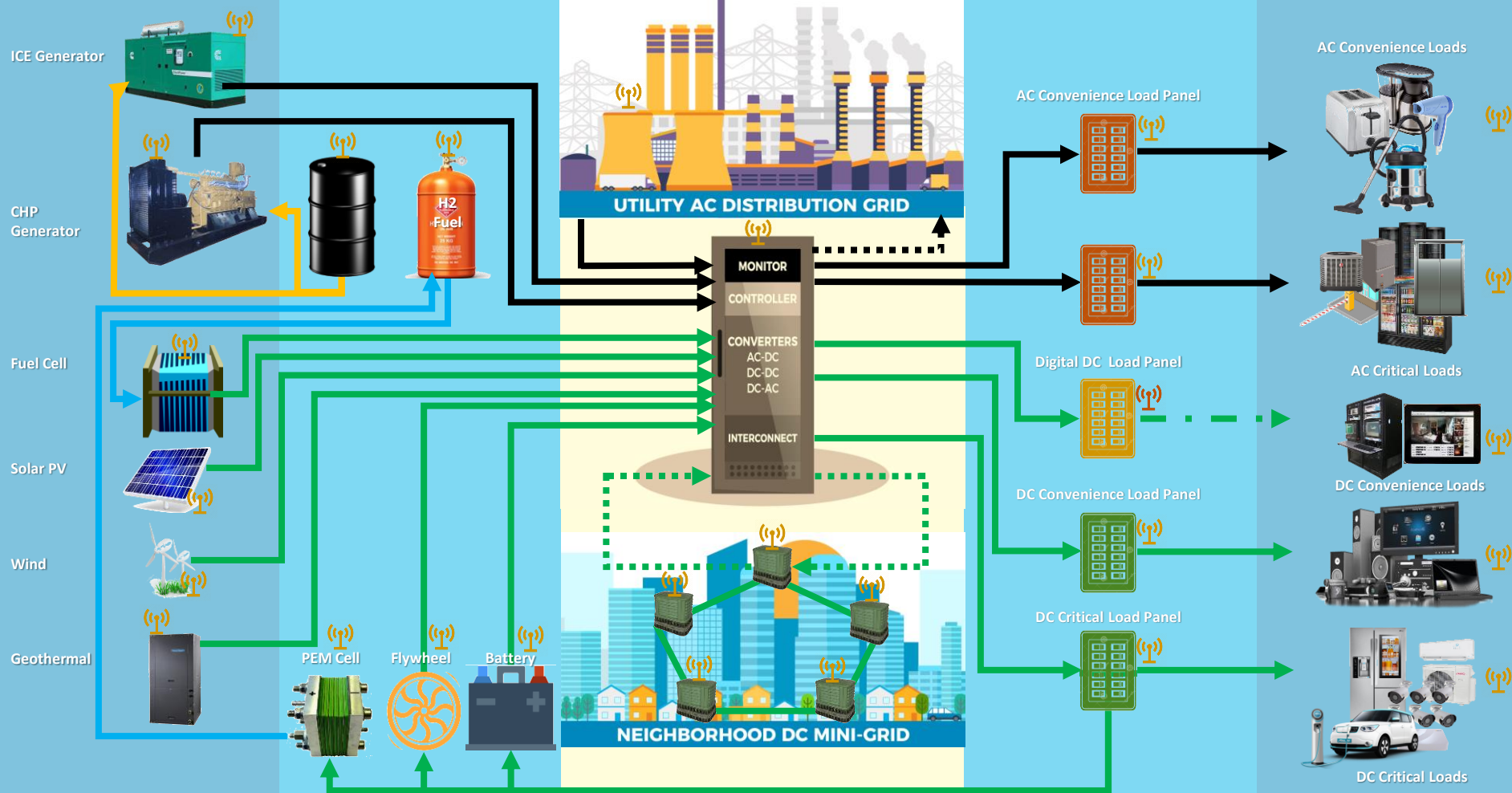
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



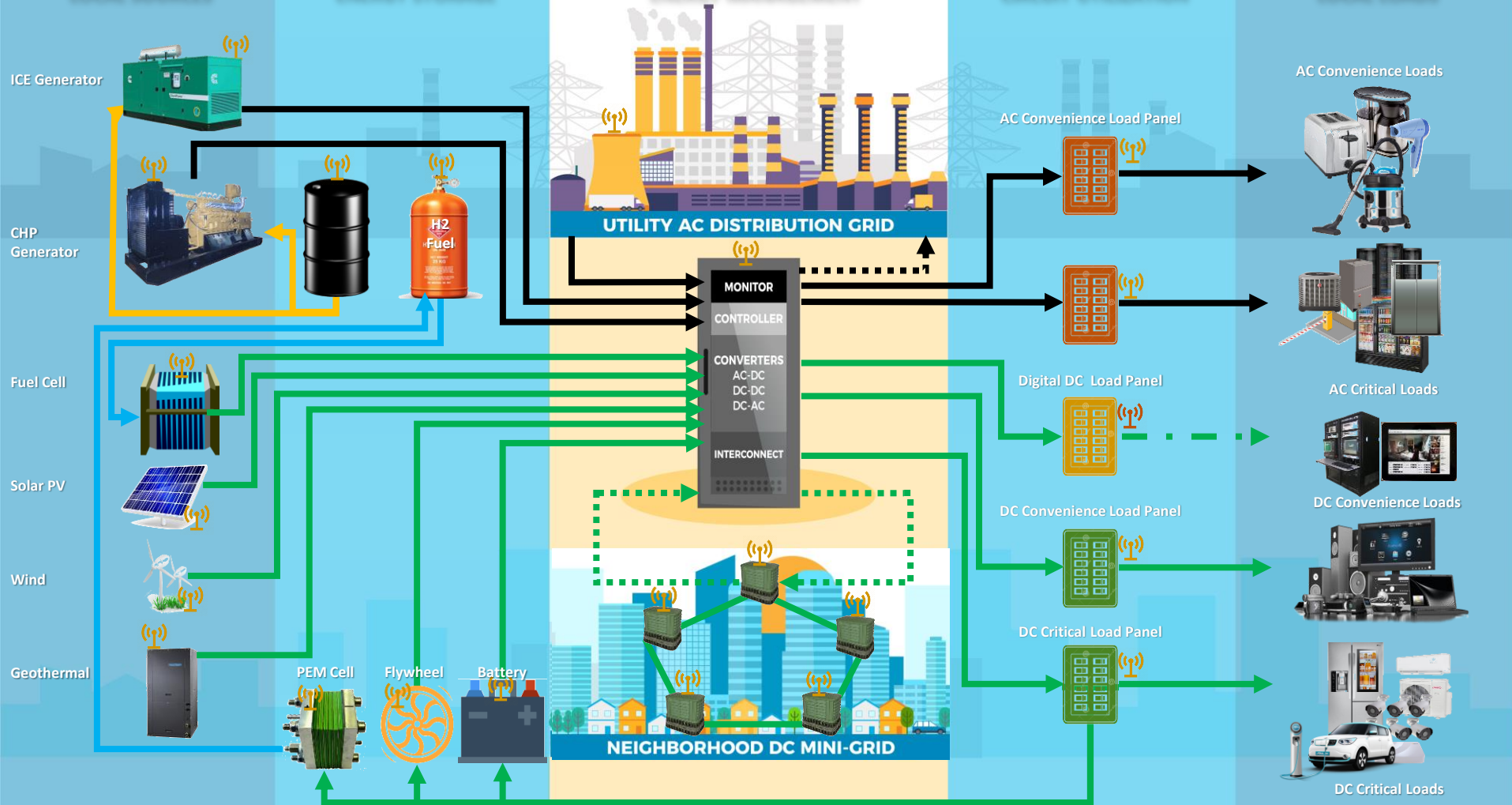
LOCAL SOURCES

ENERGY STORAGE

ENERGY MANAGEMENT

CIRCUIT UTILIZATION

LOCAL LOADS



Key Attributes of the Grid of Grids:

- **Most new power capacity is generated at the fringe**
- **Most new generation, storage and loads are natively direct current.**
- **dc-coupling minimizes impact of distributed resource integration**
- **Self-healing mesh topology is resistant to linear dynamic failures**
- **Semi-autonomous distributed control via transactional management**
- **Local microgrids enables “energy as a service” differentiation**

The Live Microgrid

An Onsite Demonstration of Advanced Microgrid Capability

North America

Smart Energy Week

SOLAR
POWER
INTERNATIONAL

ESI
ENERGY STORAGE
INTERNATIONAL

SMART ENERGY
MICROGRID
MARKETPLACE

H₂+fci
Hydrogen+
Fuel Cells
International



Evolution and Functionality of the “Grid of Grids”



The MICRO-PEDIA™

An Electronic Self-directed Microgrid Encyclopedia

How
Microgrids
Work

Microgrid
Applications

Explore the
Microgrid
World

Microgrid
Technologies

Microgrid
Anatomy

CONTENT BY



NORTH AMERICA SMART ENERGY WEEK





“Plug ‘n Play” DER Challenge Demonstration

This challenge made possible by...



U.S. DEPARTMENT OF
ENERGY



American Made Challenge Solar Prize Demo Day Winner
Announcement

Tuesday, September 24

5:00 PM - 6:00 PM

Location: Smart Energy and Microgrid Stage: Booth 5837

Winner announcement for the American-Made Solar Prize. Two winning teams will each receive \$500,000 in cash prizes and \$75,000 in vouchers. Refreshments will be served.

Pre-show Sneak-Peeks

CE+T Energy Solutions

WES.net

Nextek Power Systems





Energy Solutions

Smart Solutions at the Grid Edge





Mario Barbaresso P. Eng., President and CEO of CE+T Energy Solutions has been a part of the power industry for more than 30 years.

Barbaresso is an accomplished executive having held senior management positions for multi-national companies around the world. Prior to joining CE+T in 2018, Barbaresso managed a number of operations for Power Survey, Benning Power, Bombardier, Emerson Network Power, Nortel Networks and ABB Advanced Power Systems in Canada, Europe and the United States. Throughout his career, Barbaresso has established a history of organic and M&A growths by defining and executing creative strategies, streamlining operation processes, revitalizing product development efforts, establishing sales structure while boosting profits.

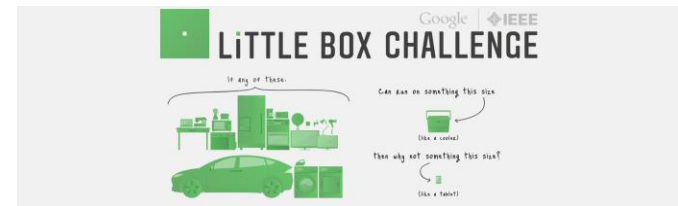
Barbaresso is a certified member of the Canadian Engineer Board, and has graduated from Quebec's Ecole de Technologie Superieure in 1986 with a Bachelor's degree in Power design and Power Transmission. He is fluent in French, English and Italian, and has been trained in numerous project management, negotiation, and conflict management courses.

About CE+T Energy Solutions

CE+T Energy Solutions was formed to provide turn-key power solutions for datacenters, utilities and C&I customers **adapting CE+T Power's disruptive technologies for next-generation mission critical applications.**

...with products that:

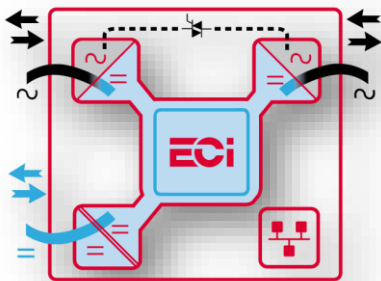
- Reduce energy cost and TCO
- Improve reliability and resilience
- Allow the seamless blending of power between various energy sources
- Offer harmonious integration of renewables, stored energy and the grid



***CE+T Power Wins
Google's \$1,000,000
Little Box Challenge***

Next-generation Technology

Our Patented Multi-Directional Power Converter



- Allows energy to flow from source to load and vice versa
- Provides harmonious mix of multiple energy sources including stored energy and renewables
- Is modular and hot-pluggable
- Adapts to varied customer requirements with flexible, customizable configurations
- Ranges from a few watts to 3 MW



3 kW module



Controller

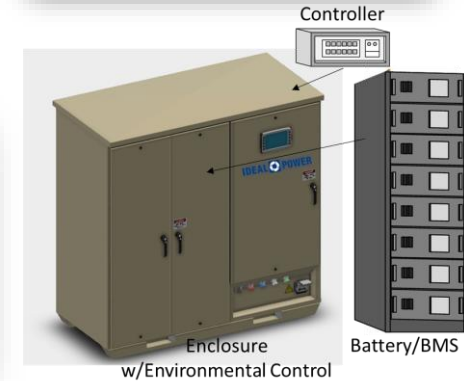
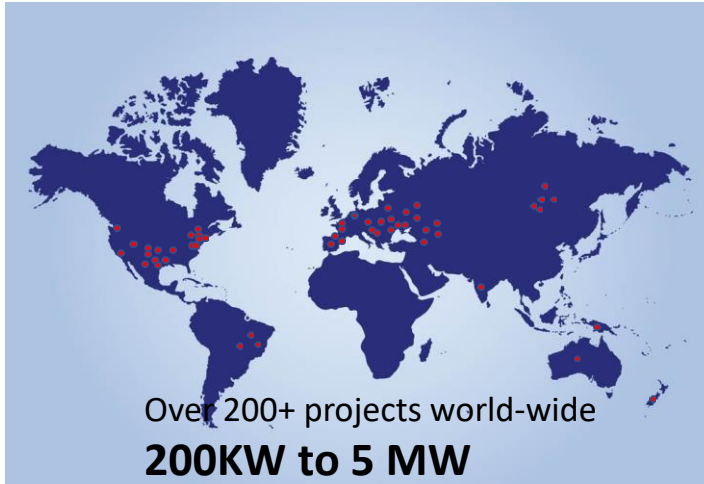


Rack-mount system



Stand-alone system

Worldwide Energy Projects



Turnkey Solutions & Services Capabilities

Site assessment

Experienced Power System assessment, energy consumption, ROI study

Solution Design

Tailored engineering based upon standard building blocks

Project Management

Dedicated project management from start to finish

Factory acceptance testing

Tailored to your needs

Installation and Commissioning

Performed on-site by our specialists

Technical Training

Specific training or general sessions

Continuous Monitoring

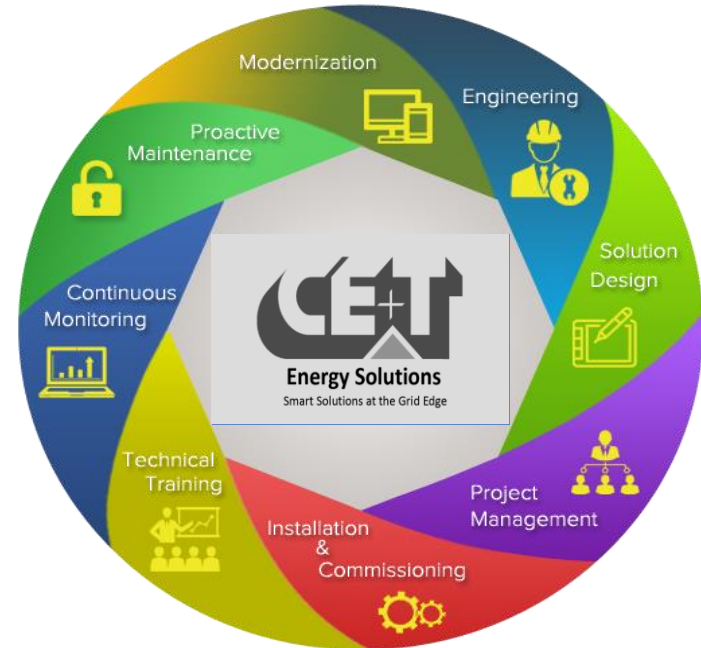
Live or specific monitoring services

Proactive Maintenance

Resolve issues before it's too late

Modernization and After-Sales Services

Update, upgrades, expansions, or repairs



CE+T joins efforts with Partners to deliver creative Energy solutions





Presenting for WES.net – Joe Magno

Before joining the WES Team Joe's career included executive positions in government, academia and the private sector focused on IT operations and energy resiliency.

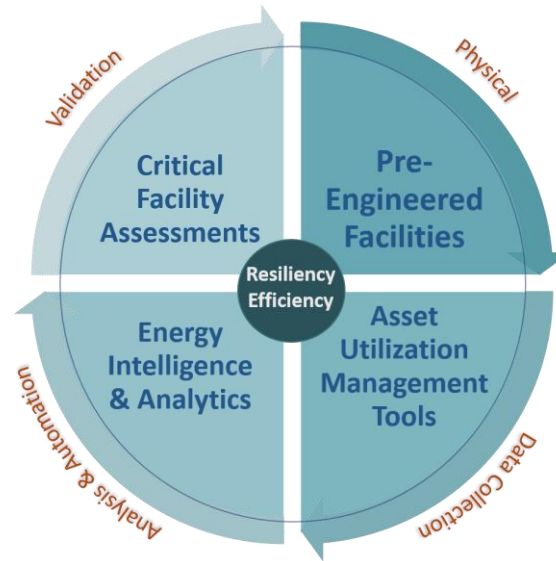
Joe can be reached at joe.magno@wes.net



For over 40 years with over 5,000 engagements across the globe WES.net has successfully provided trusted support, services, and products that positively impact energy efficiency, resiliency, and continuity to owners and operators of mission critical facilities.

WES.net's years of experience implementing asset utilization and management tools such as Eaton's Foreseer WES has developed a set of non-proprietary (open) tools and techniques for mission critical energy management.

As a result, WES's knowledge base and experience can provide real solutions to clients interested in integrating microgrid technology into their existing environments.



Knowledge is Power When Implementing a Microgrid Solution

The Standardization and Integration of Multiple Systems Is Critical



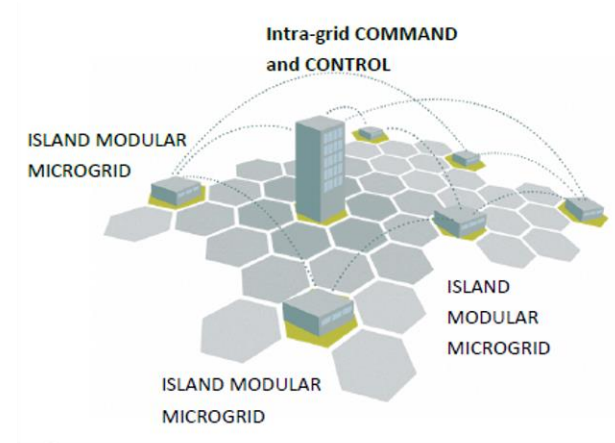
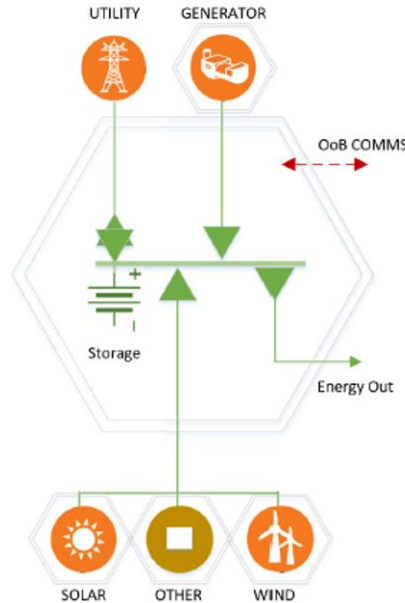
- Utilize CI Data Intelligence Asset
- Understand Advanced Operating Modes
- Model Future States
- Model Emergency Operating Modes
- Capacity Planning
- Mine Dataset for Advanced Functionality
- Predictive Maintenance

Avoiding “Cross Platform Dissonance” Is Critical

Resilient Adaptive Microgrids for Continuity of Operations

Command Management Systems

- Immediate and continuous real time situational awareness.
- Knowledge enables Resiliency, Resiliency = Saving Lives
- Enhanced protection modes for extended outages, EMP, or similar.



RAMS™ deploy geographically and operate independently but have full knowledge and interaction with peer systems

Please Join Us and our Partners in the Smart Energy Marketplace Microgrid Demonstration Theater and Learn More...

Demonstrations and Technical Experts will be there



Eaton's Foreseer connects an operation's vast array of devices, regardless of the manufacturer or model to facilitate real-time power and environmental system monitoring at a single facility or multiple locations throughout the world, reducing power consumption and avoiding unplanned downtime due to system failure.



Building, factory, or facility data is aggregated from a variety of sources, protocols, and data streams to normalize across product types, equipment vendors and communications protocols. Data is presented to advanced processing for added intelligence, decision making, and visualization.



Do More with Your Energy[®]

POWERED BY



September 23-26, 2019

Salt Palace Convention Center | Salt Lake City, UT

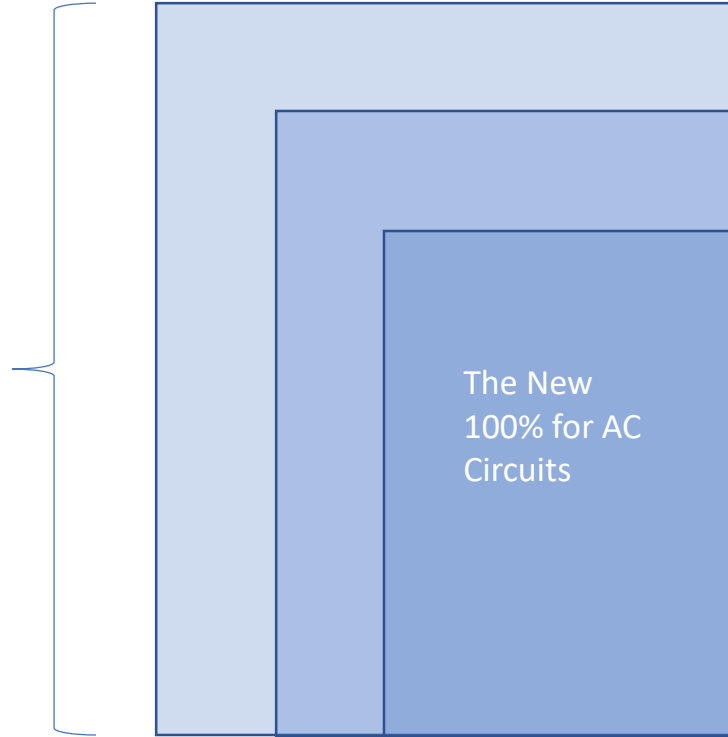
High Impact; Low Cost
Energy Technology

Started With Driverless
Lighting & Controls As A
Best-Practice For Smart
Buildings



Better Fit For Today's Load

100% of the
conventional AC
circuits



Any Building

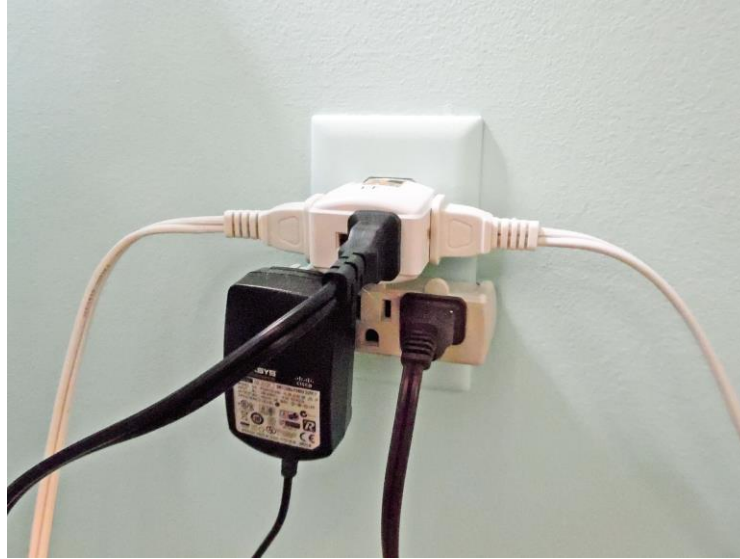
25% reduction in circuits
needed for dc lighting

25% reduction in circuits
needed for dc outlets

The New
100% for AC
Circuits

Why The Mismatch?

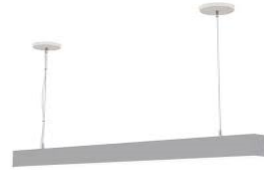
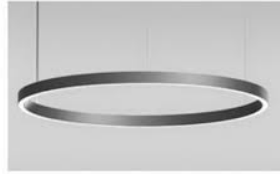
40 watts of
load



180 watts of
capacity

Receptacle Doesn't Appear 78% Underloaded

Class 2 Loads And Interfaces To Them



(Receptacle Not Actual Size)



Lower First Cost, Either \$1 psf, or up to 25%



Faster Installation, up to 50% fewer hours



Lower Operating Costs, > 10%



Longer Warranty of 10 years



More Robust Hardware & Fewer System Components

DC Power Systems Are Increasingly Specified in Buildings, Saving Time & Money For National Customers



Thank you and see you in Salt Lake!

Questions?



NORTH AMERICA
SMART ENERGY
WEEK

POWERED BY



September 23-26, 2019

Salt Palace Convention Center | Salt Lake City, UT

**Explore the world of microgrids at one of these
regional or national events**



Produced for



By



The Grid of Grids Virtual Microgrid Presentation & Pre-show Microgrid Marketplace Sneak-Peek