

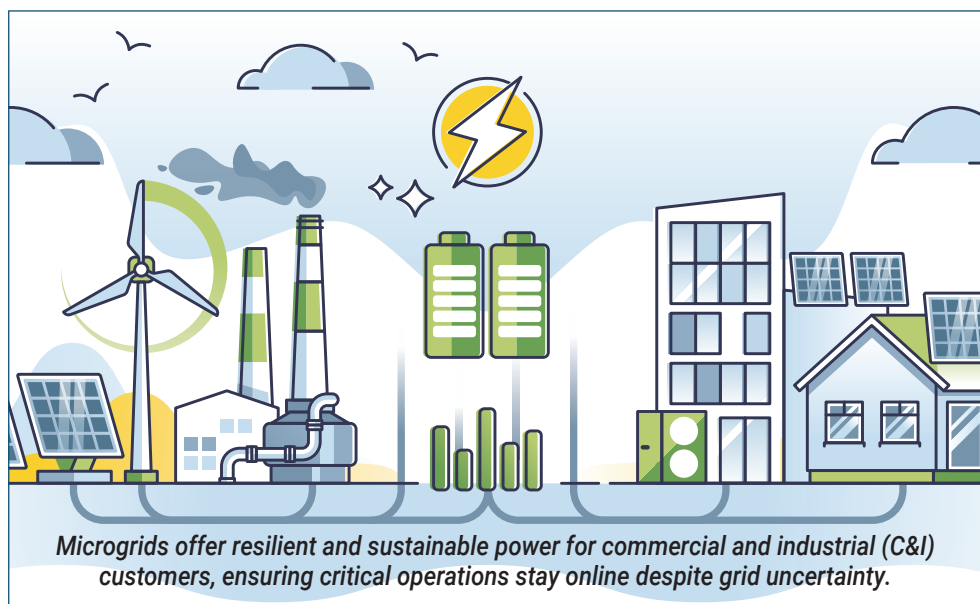
## Helping Commercial and Industrial (C&I) Customers Design Resilient Microgrids

Microgrids, defined as “a group of interconnected loads and distributed energy resources (DER) within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid,” are gaining traction all around the world to address power reliability and resiliency in the aftermath of increasing natural disasters.

Mitsubishi Electric Power Products, Inc. (MEPPI) Power Systems Engineering Division (PSED) helps C&I customers address critical questions for a resilient microgrid design, such as what components and configurations are optimal for your specific facility and what is the expected payback period of the proposed microgrid.

### Microgrid Feasibility Studies and Detailed Design

Our team of experienced engineers can take an initial microgrid concept and bring it to a 100% design or can develop microgrid specifications to be used for procurement after 30% design.



Typical microgrid feasibility study deliverables include:

- Microgrid preliminary/30% designs
- Microgrid component costs and cost-benefit analysis of various DER options including optimal sizing for lowest levelized cost of electricity (LCOE)
- Microgrid options and benefits resulting from the various DERs such as solar, combined heat and power (CHP), fuel cell, energy storage, and existing generation
- Microgrid operation modes and control functionality descriptions
- Microgrid protection and grounding strategies

Software tools that we use for microgrid analysis include CYME, Synergi Electric, PSCAD/EMTDC, Homer Grid, Homer Pro, XENDEE, System Advisory Model, DER-CAM, REopt, and DER-VET.

*For more information and relevant case studies visit [www.meppi.com/industries/consulting](http://www.meppi.com/industries/consulting)*

Microgrids offer resilient and sustainable power for commercial and industrial (C&I) customers, while also helping them navigate capacity constraints with utilities and aging infrastructure and ensure critical operations stay online despite grid uncertainty.

Diagram illustrating a Microgrid connected to the Grid. The Microgrid (dashed circle) contains a solar panel, a transformer, houses, a factory, a building, and a storage unit. It is connected to the Grid (red line) via a Point of Interconnection (POI).

• Early engagement with customer  
• Understand the drivers of a microgrid

Customer Requirements  
Load Data  
Electricity Rates

• Develop microgrid specifications using the feasibility study outputs  
• Issue an RFP for a turnkey microgrid

Project Start/Initial Discussions

Feasibility Study

30%

60%

90%

100%/IFC