## Canberra microgrid design



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By combining different components, a microgrid can be tailored to every customer need, providing the ideal technical and economical solution. These systems are designed to satisfy an electrical and/or thermal energy demand that is traditionally supported by the natural gas or electric utility provider. A microgrid most commonly operates in island mode, but it also can be connected to the grid.

Distributed energy resourcesThese include conventional resources, like natural gas or diesel generators, that convert fuel mechanically to make electricity and thermal energy as well as renewable systems, like solar and wind, that utilize natural resources.

Energy storageEnergy is held in reserve to be dispatched as needed to supplement other distributed assets. Systems include electrochemical (BESS), mechanical (flywheels), thermal (hot water) and energy conversion. This energy can come from the overproduction of renewables, or it can be stored/charged when energy is cheaper for use at times of peak cost.

Control systemsIntelligent controls are used to optimize the available assets to provide the lowest cost of electricity by automatically dispatching supply to the most efficient resource. For example, shutting down one generator when two are running at the highest load factor to increase fuel efficiency. Control systems can operate with or without dynamic control (smart grids).

A successful microgrid solution provides modularity, scalability, energy dispatchability, power management and balancing of resources. Whether off-grid or on-grid, these powerful and reliable distributed energy generation systems can provide high performance under any site condition.

The energy world is undergoing a transformation. Various factors are driving growth in energy demand, and encouraging the development of flexible, sustainable, cost-effective energy solutions like microgrids. As a result, microgrid capacity and revenue continues to rise all over the world.

By combining renewable power generation, power storage and conventional power generation to meet energy demands, microgrids can provide cost savings, reliability and sustainability.

Energy cost optimization

Positive environmental impact

Reliable and economical operation

Schedule and dispatch of units

## SOLAR PRO.

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**Distribution Level Protection** 

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