

HYBRID POWER FACT SHEET:

On-Site Power Solutions to Reduce Utility Costs

A hybrid on-site power generation system, incorporating both combined heat and power (CHP) and solar, can help many facilities substantially reduce their energy costs. Used together, these systems can significantly reduce both baseload (the minimum baseline amount of energy required to continuously power the facility) and peak utility costs, and even more so compared to using only a CHP or a solar system alone.



CHP Systems:

WELL-EQUIPPED TO MEET A FACILITY'S MINIMUM BASELOAD ENERGY REQUIREMENTS

On-site CHP systems, powered by highly reliable, low maintenance microturbines that use low-cost natural gas, are an excellent on-site power generation solution to offset a facility's baseload utility use. Additionally, the thermal energy created by CHP units can be efficiently recovered to heat water, or generate steam or chilled water, to provide added energy cost savings.

Solar Energy Systems:

OFFSETTING PEAK-PERIOD DAYTIME ENERGY USAGE

Installed in either roof-mounted or land-based configurations, solar energy systems can provide a significant amount of energy year-round, often during a facility's highest demand periods. In the summer months, which often coincide with higher peak demand rates charged by utilities, solar energy can help reduce peak demand charges.

Major Benefits of a Hybrid CHP/Solar Power System:

- **Significant energy savings** for large-volume energy users;
- **Minimize economic disruption from future utility rate hikes**, with stable, predictable energy costs for the long service lifetimes of these systems;
- **Reduce or eliminate downtime** resulting from utility grid outages. On-site power is very stable and highly reliable;
- **Meet corporate emissions reduction and sustainability goals** using clean (CHP) and renewable (solar) power.

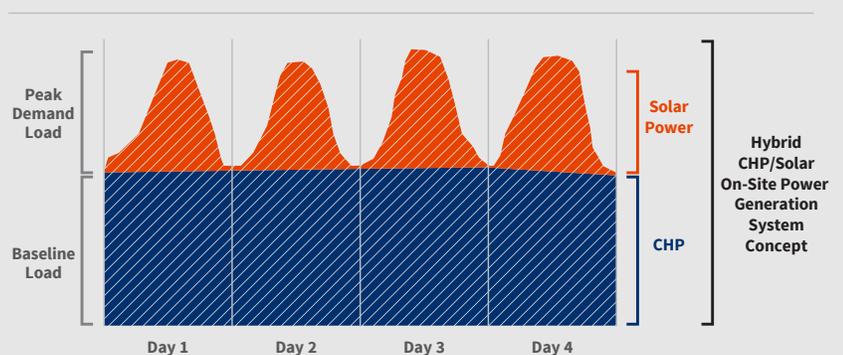
Combined CHP/Solar Power Systems:

MEETING UP TO 50% OF A FACILITY'S ENERGY NEEDS

When CHP and solar systems are combined as on-site power generation systems, the "Hybrid" CHP/Solar power system provides on-site energy that can offset both a facility's total baseload and peak demand energy requirements.

With a CHP system running continuously to supply a facility's baseload needs, and a solar system supplying most or all of its peak daytime load, facility owners can realize an immediate financial savings in their facility's utility costs. When combined into a highly efficient on-site generation solution, hybrid CHP/solar systems can economically replace 25-50% of the energy the facility currently buys from its local utility.

HYBRID CHP/SOLAR SYSTEMS: WORKING TOGETHER TO REDUCE BOTH BASELINE AND PEAK UTILITY COSTS



A "HYBRID" COMBINED HEAT AND POWER (CHP) AND SOLAR POWER SYSTEM REDUCES BOTH BASELINE AND PEAK UTILITY DEMAND LOADS, REDUCING ENERGY COSTS



WHICH TYPES OF FACILITIES BENEFIT MOST FROM HYBRID CHP/SOLAR?

Larger energy users at facilities with round-the-clock energy requirements will benefit most from a Hybrid CHP/Solar solution. These include industrial, manufacturing, higher education and hospitals.

Additionally, on-site power generation using Hybrid CHP/Solar is the ideal resiliency solution for companies or other organizations whose operations require steady, reliable power delivery to maintain continuous production, business, or service operations.

With on-site power, facility owners gain the maximum level of protection against grid outages, brownouts, and other energy supply uncertainties tied to utility-based power.

BENEFITS OF HYBRID CHP/SOLAR: LOWER, STABILIZED, PREDICTABLE ENERGY COSTS, REDUCED FACILITY EMISSIONS, AND HIGHER RESILIENCY

While either a standalone on-site CHP or solar system can each achieve notable savings in either baseline or peak usage demands respectively, combining these two systems on-site allows facility owners to achieve an immediate, significant utility cost savings by offsetting a substantial part of both their baseload and peak demand requirements.

Additionally, an on-site Hybrid CHP/Solar system provides facility owners with long-term predictability and stability in facility energy costs, insulating these facilities from utility rate hikes and peak demand charges, and keeping energy costs stable and predictable over the long service lifetimes of these installations.

Owners who generate most or all of their power on-site can reduce or eliminate the business interruption impact and costs of utility grid outages on production and employee productivity, adding resiliency to business operations.

INSTALLATION OF A HYBRID CHP/SOLAR SYSTEM

When properly designed and installed by an on-site power contractor having experience in both CHP and solar implementations, a Hybrid CHP/Solar system approach is a practical, straightforward installation project. While the best and most cost-effective option is to install a Hybrid CHP/Solar system at the onset, a carefully planned phase-in approach can also be utilized.

FINANCING OPTIONS AND INCENTIVES

A variety of financing options are available for implementation of these systems; additionally, individual federal and state incentives are available to offset the cost of both CHP and solar systems.

With the experience and knowledge gained from installing a variety of on-site CHP and solar power systems, the GEM Energy team can help you determine the savings and long-term advantages of an on-site Hybrid CHP/Solar system for your facility.

GEM Energy is the chosen energy partner for multiple facilities in a wide variety of industries. All aspects of an on-site power project are handled by GEM Energy, including identifying and procuring federal and state incentives to reduce capital costs, and arranging the financing, plus evaluating your company's energy use, configuring the right system, and installing and maintaining your system.



For more information or to talk with an on-site energy solution expert, contact:

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