SMART ON-SITE ENERGY STORAGE

Reduce Peak Demand Charges and Control Ongoing Electricity Usage With On-Site Power and Battery Storage Solutions

For commercial and industrial energy users who pay high peak demand charges, on-site power generation and energy storage systems have become an affordable, cost-saving solution for lowering and controlling long-term energy costs. These distributed power systems use either solar or combined heat and power (CHP), paired with on-site energy battery storage, to help economically generate and store energy in compact, low maintenance battery storage units.

Using battery-stored energy, generated from either solar or CHP, is a realistic and economically viable approach providing these major benefits:

- Low-cost power generation
- Energy resilience
- Produced on-site
- Less reliance on the grid
- Fast paybacks and 25-year service life
- Simple, no out-of-pocket financing

On-site power systems combining solar and/or CHP with battery storage provide significant energy savings by cutting or eliminating peak utility energy costs.

COUPLING TECHNOLOGIES = INCREASED VALUE $$$.

How On-Site Power Generation and Storage Significantly Reduces Peak Demand Energy Costs

On-site energy generation and storage can be the perfect cost-saving solution for companies experiencing narrow peak spikes in electrical use. For example, a facility that runs high-energy use equipment for a couple of hours each day can offset higher peak demand costs by using stored power, generated by its on-site system. This can result in a substantial and immediate savings over what the business pays for the balance of its utility-generated power, as well as long-term savings over the long 25-year service life of these systems.

A custom-tailored, on-site power system is designed to "load shift" during the most cost-effective times of the day. Storing energy to use during peak demand times can optimize a facility's total energy savings, and minimize the infrastructure build-out costs required by the local utility to supply peak power. This way, the business receives the lowest possible ongoing utility rates.

Which System is Right for You?

- **Combining solar power generation with on-site energy storage (solar + storage) provides the best solution for most companies.** Solar panels and battery storage generate and store power during daylight hours, even on cloudy days and during winter months. This stored power is then used directly by your company during daylight peak demand periods, such as when running equipment that draws a heavy power load for a short period of time each day. Using battery-stored on-site power reduces the amount of utility-generated power required during these time periods, which can be charged at much higher peak rates.
- For some companies, adding a CHP system, which consists of highly reliable microturbine generators fueled by low-cost natural gas, provides both ongoing power generation and reliable backup power. When combined with battery storage, a CHP system can also help companies further reduce their peak demand.
- For example, a company can run its CHP system to charge its battery storage system during off hours, and then release this power during peak daytime periods to reduce or even eliminate higher utility-based peak demand costs.
- CHP systems provide the added benefit of generating excess heat that can be efficiently recovered to offset a facility's heating and cooling needs, further reducing energy costs.

SOLAR OR CHP + STORAGE

Solar or CHP, combined with on-site energy storage, is often the best cost-saving fit for many companies.

Financing and Incentives Can Eliminate Out-of-Pocket Costs for On-Site Power and Storage Installation

A variety of financing options are available to fund on-site power installations. Financing options can eliminate out-of-pocket costs for these systems, allowing your company to reap immediate cost saving benefits on its energy needs, with no impact on capital reserves.

1. SELF-FUNDING:

New 100% Depreciation Tax Rules Provide Substantial Tax Benefits

- Under the new 2018 tax law, companies can now write off 100% of the capital costs of a solar power installation in the first year, which can provide substantial tax savings.
- These benefits are further enhanced when combined with the new, lower 21% corporate tax savings and 30% federal tax credit for solar installations, and various available state and local funding incentives.

2. LEASING:

Off-Balance Sheet Financing With Tax and Depreciation Benefits

- Under a capital lease, payments are applied to the total cost of the solar installation. At the payoff of the lease, the company then owns the solar installation outright.
- With an operating lease, companies make payments over a 7-10 year term, with a residual payment at the end of the lease term. This option enables a company to keep the cost of its solar implementation off its balance sheet, and still take the tax and depreciation benefits.

3. POWER PURCHASE AGREEMENT (PPA):

Pay a Single Low Monthly Rate for the Life of the System

- Under a Power Purchase Agreement (PPA) a solar installation is financed by a third-party investor group, who owns the installation and sells power to you at a rate that is lower than the rate you now pay for utility-generated power. For non-profit organizations, donors can fund a portion of the project, reducing the amount to be financed for the PPA and reducing the cost of electricity to the organization. The donor receives the interest, tax and depreciation benefits.
- Owners gain the benefit of a solar implementation without bearing any out-of-pocket costs, in exchange for agreeing to buy solar power under the PPA for the lifetime of the agreement, usually 25 years.
- Maintenance costs and other risks are transferred away from the company using the system to the third-party owner. The third-party owner then bears the risk of providing the solar power available from the system to the company user, who only pays for the actual electricity they receive and use.
- Electric rates are set at levels which are lower than electric utility rates, offering business owners immediate savings with no capital outlay, and predictable energy rates for the life of the system.

New York State-based organizations receive even greater savings benefits of up to 25% through state incentives offered for installation of on-site power and battery storage systems. Upcoming NY-Sun storage incentives will be released in October, 2018. Available on a first-come, first-received basis.

To Maximize Your Benefits, Partner With an Experienced On-Site Energy Implementation Partner

Implementing the most successful and cost-saving on-site power solution is a complex and specialized process. It requires an installation partner with the background and expertise to fund, design, configure, engineer, build and maintain the best system for your company's needs.

GEM Energy's engineering team has the experience and knowledge to make on-site power work for your organization:

- Pairing the best mix of solar and/or CHP power generation with on-premise storage is a critical first step.
- By analyzing your company's current energy expenditures and use profile, GEM Energy can choose the right power generation combination for you. The correct configuration will deliver the best energy cost savings at the lowest installed-system cost.
- Other on-site power implementation providers may not offer this level of customized energy use analysis and configuration, both which are essential to insuring the success of your on-site power and storage installation.
- GEM Energy will also create the right financing package for your on-site power and battery storage implementation. This package can include added savings from state and federal incentive programs.

IMMEDIATE ENERGY COST REDUCTION AND LONG-TERM ENERGY PRICE STABILITY WITH ON-SITE POWER GENERATION AND BATTERY STORAGE

With an on-site power system implemented by GEM Energy, your organization achieves immediate financial savings on its energy costs using funding options and incentives that can eliminate out-of-pocket costs. Additionally, organizations that deploy intelligent, on-site power generation and storage solutions are able to stabilize future energy costs.

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