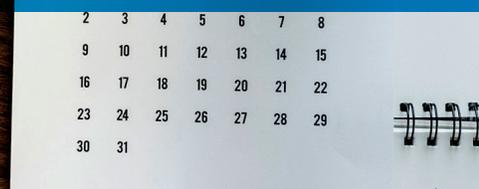




An AEP Company

CUSTOMER INSIGHTS

JULY 2019



Behind-the-Meter Generation: Is it for you?

Today, businesses like yours are looking for ways to reduce energy spend while achieving goals and managing energy consumption. One way to do that is with behind-the-meter (BTM) generation. If you own your building or land, BTM generation might be the right fit for your business.

The AEP family of companies offers a comprehensive suite of products and services designed to exercise control over your energy, manage risk, maximize savings and increase profitability. Together, AEP Energy and AEP OnSite Partners work with you to provide a complete BTM energy solution package for your business.

AEP OnSite Partners currently owns and operates over 100 megawatts (MW) of BTM distributed generation located on customer sites in 15 different states. AEP OnSite Partners is committed to over \$300 million in additional investment in these types of energy assets over the next two years. In this edition of *Customer Insights*, our experts provide an overview on why there is a shift from central station generation to behind-the-meter generation, and how your business can benefit from BTM generation.

What is behind-the-meter generation?

Behind-the-meter generation refers to a variety of technologies that generate electricity at or near where it will be used. There are several behind-the-meter generation technologies to choose from, including solar panels, batteries, natural gas or diesel generators, fuel cells, and combined heat and power systems. These systems help you control the amount of energy your business purchases from generation plants. With BTM solutions, you avoid the electricity losses along the massive network of transmission lines, distribution lines, and transformers and substations connecting your business to the electricity you need to operate your business.

Before deciding on a system, it's best to speak with a provider, like AEP OnSite Partners, who has the market knowledge and technical expertise to guide you with these cost-reducing energy technologies. Below are a few examples of BTM generation.

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1. Solar

Solar systems are available in a variety of options. The most common are ground-mounted and roof-top systems as shown in the picture below.



3. Natural Gas or Diesel Engines (Backup Generators)

Businesses can install natural gas or diesel backup generators which can be directly connected to underground fuel sources. When power outages occur, backup generators are used to provide electricity to critical operations.



2. Battery Storage

Installing a battery storage unit allows you to target specific demand-based charges and reduce these charges without impacting business operations.



4. Fuel Cells

Fuel cell systems can be installed to provide electricity and heat to power your business.



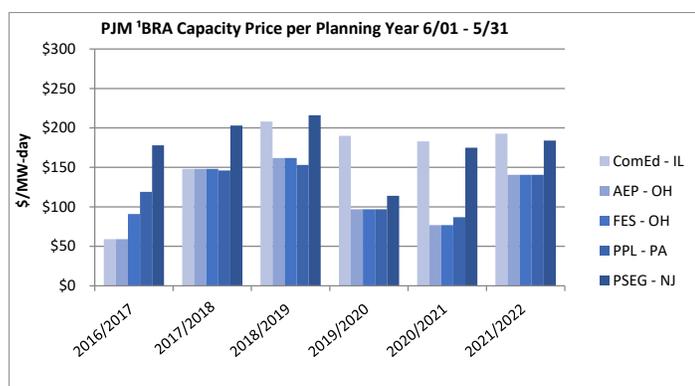
Why is behind-the-meter generation so valuable?

There are several reasons why behind-the-meter generation provides the most value for many businesses. You can use energy-reducing technologies for savings on your energy bills. Additionally, BTM generation is more resilient than traditional energy sources. Many BTM generation technologies produce energy from renewable sources, so your business can reach its sustainability goals. We'll describe the most common of these values below.

1. Bill Savings

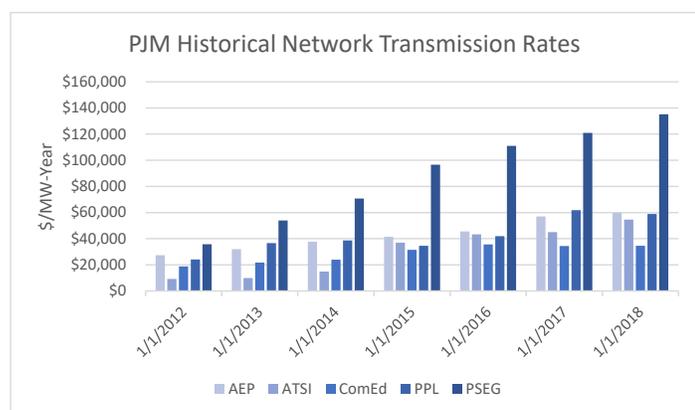
BTM generation is particularly effective at reducing peak demand-based charges such as capacity, transmission and distribution charges. As utilities continue to make investments in aging grid infrastructure, these charges are rising quickly and in many parts of the country, the charges account for more than half of your total cost of electricity. The following charts below show historical capacity and transmission charges in a few areas AEP Energy serves.

Chart 1 – PJM Capacity Prices



¹Base Residual Auction (BRA) Results

Chart 2 – PJM Transmission Prices



Our operating BTM generation projects have already saved our customers millions of dollars by reducing these charges!

2. Resiliency

As commercial and industrial customers, you know firsthand the importance of receiving reliable electricity to operate your business. Lengthy power outages can cause businesses like yours to lose revenue either through reduced production or the inability to serve your customers, because of wasted goods or damaged equipment.

One way to help reduce those losses is with BTM generation. Behind-the-meter generation is physically located at the point-of-use, on your site, and therefore doesn't rely on the massive system of transmission and distribution wires in this country that are increasingly vulnerable to weather, accidents and potential threats against the grid.

3. Sustainability

Installing and operating BTM generation is an effective method to controlling the carbon intensity of electricity your business consumes. Several of the BTM generation technologies listed above produce electricity at a lower carbon intensity than can be purchased from the grid. For businesses with sustainability goals, BTM generation can be an excellent complement to energy efficiency and reduction measures.

How can your business participate in the benefits of behind-the-meter generation?

Once you've determined that BTM generation is right for your business, you need to develop an implementation plan. That plan should include how you will procure and finance the system. Generally, there are two ownership structures that dominate the U.S. market for commercial and industrial customers. These structures include direct ownership or third-party ownership.

1. Direct Ownership

Under direct ownership, you will invest your own capital and resources to own, operate and maintain the BTM generation.

When you finance the system yourself, you reap benefits such as the energy offset and BTM savings, plus receiving federal tax credits and tax depreciation benefits. These benefits reduce the overall cost of the system; however,

they do not relieve the owner of engineering, procurement, construction, production, operations and maintenance costs, and risks. If you do not have enough taxable income to offset these incentives or do not have the risk tolerance on the other aspects, direct ownership is probably not the best choice for you.

2. Third-Party Ownership (Power Purchase Agreement – PPA)

With third-party ownership, you will enter into a Power Purchase Agreement (PPA) with a developer who will purchase the energy produced by the asset. In most cases, the third-party developer will design, build, own, operate and maintain the array for the term. During the PPA term, the developer, as the asset owner, will also receive all the tax credits and depreciation benefits. PPA terms typically vary from 10 to 30 years, depending on the technology and project. Some developers may offer a leasing option. Your business will enjoy the BTM savings, plus benefit from reduced risk through a partner aligned with maximizing system production.

When selecting a developer, it is important to consider the history and qualifications of your PPA partner and to ensure they will be the owner throughout the term. A strong PPA partner will be equipped with a proven safety record and resources to take on risk and operations for the life of the system. The PPA partner should also be a one-stop shop to absorb tax credits and depreciation benefits without a third-party financing the debt or equity. This will ensure direct alignment with your goals and allow that value to be passed directly to you as the end user.

Interested in learning more?

AEP OnSite Partners provides customers with turnkey offerings to design, own, operate and maintain behind-the-meter generation. Learn more about our family of companies and AEP OnSite Partners by clicking [here](#).

Are you interested in learning more about how to reduce your electricity and distribution costs, increase your sustainability and increase your site resiliency to grid outages? Contact Joe Glanzman, Director of Business Development for AEP OnSite Partners, at jaglanzman@aepes.com, or contact your AEP Energy sales representative to find out if BTM generation is right for your organization.

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