

# PJM Energy Storage Solutions

Behind-the-Meter Opportunities with Stem

stem

PJM is a regional transmission organization (RTO) that covers primarily the mid-Atlantic but also the Chicago and Ohio regions. As the RTO for the largest wholesale power market in the world, it facilitates the purchasing and selling of electricity for all 65 million commercial, industrial, and residential consumers of energy within its footprint. It's also a market that has the majority of participating states operating in a deregulated manner – meaning, the supply and delivery of electricity are separated and generators have to operate in the PJM market as competitive generation assets.

## Mitigate Coincident Peaks and Participate in Wholesale Markets

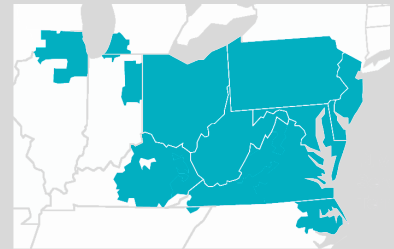
An extension of deregulation is that retail customer choice is allowed, meaning businesses and other customers can purchase energy supply from a retail energy provider (REP). This gives end-users much more control over their billing mechanics than end-users in monopoly regions.

This billing flexibility combined with high coincident peak (CP)-based charges – i.e., Capacity and Transmission – create lucrative and bankable opportunities for behind-the-meter (BTM) storage systems in PJM. CPs are not easy to predict, especially while trying to optimize around other revenue streams. Your energy storage system must be able to stack multiple value streams while also responding in real-time to catch shifting peaks. BTM systems can also participate in the wholesale power markets by acting as load reducers at the customer site. The combination of these two strategies offers a diverse revenue mix at a level substantially higher than observed in most other BTM markets.

## Stem Services

- CP forecasting and management
- Energy storage project design and modeling
- Energy storage procurement
- End-to-end installation & operation
- Co-optimization of multiple value streams: transmission & capacity CP reduction, demand response based wholesale market participation, and utility bill optimization

### Location



### Best-fit Customers

- Large retail, warehouse & logistics, data centers, universities, and hospitals
- Sites with >1000kW load from 4-8pm during summer months

### Best-fit Utility Territories

- ACE
- ComEd
- Dominion
- Penn Power
- PPL
- PSE&G

### Tariff

- Customers must be on a CP based tariff, usually by purchasing energy from a REP

### System Size

- 2+ MWh
- 2 hour batteries have better ROI than 4 hour batteries

# Why Partner with Stem?

Stem is a C&I storage leader that helps with all elements of adopting energy storage and participating in CP-based wholesale markets like PJM. We work with the largest utilities, Fortune 500 companies, project developers, solar EPCs, and asset owners to manage the process of designing, procuring equipment, deploying, and operating storage systems. We offer integrated, end-to-end support as you add storage to your standalone, community solar, or commercial behind-the-meter projects.

With new policies emerging in states and utilities across PJM, you need a solution that can adapt and keep your project deriving value over its lifetime – whether that means participating in new demand response programs, maximizing wholesale market revenues, or co-optimizing multiple value streams. Stem holds an advantage in entering this territory because our experts understand the complexity of the value stack and CP mitigation, which requires the type of forecasting that only a leader like Stem can deliver. Stem's experts will guide you through wholesale market participation, ancillary services, and frequency regulation programs and will determine and optimize your storage systems for the most efficient operation. We can do so within the context of local tariffs and ensure that your demand charges do not increase.

Our best-in-class Athena® smart energy software drives success under this framework by having the most experience in demand response and market participation of any commercial storage software, ensuring that you get the most value possible out of new revenue streams. Athena is able to co-optimize multiple value streams including transmission & capacity CP reduction, demand response based wholesale market participation, and utility bill optimization.

**To learn more about Stem's solutions, contact [stem.com/contact-us](https://stem.com/contact-us).**

