

Overview

For a commercial building owner, demand charges based on the fifteen minutes each month a building uses the most power can account for up to 70% of a building's monthly electricity bill. Peak power usage can occur when it is cloudy or dark, and drive the costs hundreds of times higher than power used during the rest of the month.

The Tumalow Solution

Tumalow's Demand Sentry™ solution mitigates the high demand charge with a battery energy storage system (BESS) to flatten peak utility demand, in many instances combining the BESS with solar PV systems. We provide our channel partners with everything they need to deploy BESS(s), and ultimately reduce demand charges for their customers.

Demand Sentry™ is a full BESS integration that addresses the technical, commercial **and** business model considerations including:

- Sizing and sourcing the BESS hardware, delivered as a turnkey solution
- White-labeled, single interface for the building owner to monitor his installed systems (e.g., solar PV plus BESS)
- Flexible shared savings model – own (sell) or 3rd party finance (lease or PPA)

BESS Monetization

Our OnGuard™ technology is software optimized for operating and controlling a BESS in order to monetize it, achieved in two ways:

1. Reducing the building's demand charge on the monthly bill
2. Selling high-value services to the electrical grid, such as frequency regulation and demand response to both regional ISOs and local utilities

All parties in the value chain share the savings and revenue generated from the BESS: building owner, channel partner and Tumalow.

Confirming the BESS Business Case

Tumalow calculates each commercial building's load profile and applies it to the relevant region in order to determine the specific economic viability of a BESS.

We utilize three methods to do so:

1. Collect interval data (thirty minutes or less), either from the building owner or the utility – the most accurate method

2. Interview building operations to profile the daily electrical usage patterns¹
3. Review 12 prior months of the building’s monthly electrical bills¹.

If none of the above are adequate, Tumalow may work with our technology partners to install data collectors in the building to capture interval data.

Flexible Shared Savings Model Example

A 50 kW, 65 kWh BESS² is fully integrated with a commercial solar PV system, can yield the following results based on the shared benefits models offered to our channel partners (over a 10-year period)⁶:

Sell*		Lease or PPA	
BESS CAPEX Cost ⁴	\$67K	BESS CAPEX Cost	\$0
Partner Markup	10-20%	Partner	\$1.1k/yr.
O&M	\$2.3k/yr.	Building Owner	\$2.3k/yr.
Tumalow	\$3.4k/yr.	Tumalow ⁵	\$6k/yr.
Payback Period**	< 4 years		

* Either the building owner or the channel partner can own the BESS asset.

** Actual payback period depends on partner markup percentage.

For each shared benefits model, Tumalow validates the monthly electric bill savings and utility revenue credited to the building owner, enabling the channel partner to invoice the customer for the combined monthly percentage attributable to the channel partner and Tumalow. The channel partner then disburses the agreed proportional share back to Tumalow. Finally, Tumalow reports any incremental grid services revenue and disburses the agreed proportional percentage back to the channel partner.

¹ May not provide sufficient information to determine the economic viability

² Actual BESS system size will vary based on the building’s load profile

³ Total savings plus revenue will vary by building load profile and region

⁴ Includes the BESS hardware, shipping and installation, but does not account for any tax or utility incentives

⁵ After capital financing costs

⁶ For illustrative purposes only, actual contract durations are subject to negotiation