

## case study

# ENGINEERING & CONSTRUCTION CO.

USING SOLAR + ENERGY STORAGE TO MITIGATE  
HIGH UTILITY CHARGES & REDUCE DEMAND

## THE CHALLENGE

The Energy Toolbase Acumen EMS™, paired with solar, was installed alongside an Eguana Technologies storage system at a light manufacturing facility to help mitigate high utility charges with a focus on reducing demand. With this site, there was limited historical data for the building's energy use profile, making it difficult to estimate savings and train the EMS pre-deployment. The site also had an electric vehicle (EV) charger on site, creating unpredictable load patterns. This challenge was further compounded by the size of the ESS on site which had a smaller capacity and power rating than most EV's on the road today. Weather was also a factor, being located in Northern Alberta and exposed to weather extremes.

## THE SOLUTION

The Energy Toolbase team built a solution to overcome these challenges. To supplement the lack of historical data, a virtual energy storage system was installed at the site giving engineers the requisite data to evaluate the contribution to savings by the ESS by setting up various sizes of virtual storage to run in real-time. It also allowed us to collect historical data to train the machine learning models ahead of deploying the physical storage unit. To overcome the unpredictable nature of the EV charger as well as the size difference between batteries, the team changed how the system was evaluating the incoming data and made changes to the tolerances which improved the responsiveness and overall behavior of the system.

## PROJECT SUMMARY



### LOCATION

Alberta, Canada



### DEPLOYMENT DATE

October 2018



### ESS PROVIDER

Eguana Technologies



### COMBINED SYSTEM SIZE

15kW/39kWh



### FACILITY TYPE

Manufacturing Facility



### EMS APPLICATIONS

Demand Charge Management  
for EV Charging



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