

PEAK SHAVING

Grid Connected Solar PV with Battery Energy Storage System



CLIENT CHALLENGE

Our client university in Illinois has multiple buildings with high power requirements like any other college campuses or universities. The grid purchasing costs consists of energy charging and demand charging, and demand becomes a large part of their bill when they use a lot of power over a short period of time.

The university is committed to utilizing renewable technology in conjunction with energy storage system to solve this issue of excess demand charges. The locale was suitable for the installation as well, since Illinois has good solar insolation, and its utilization would help alleviate power demand problems.

In this project, the solar PV was integrated with a BESS to ensure application of solar PV at highest efficiency. The power generated by solar panel could also be used to respond to the unpredictable nature of peak demand.

BACKGROUND

TROES is a Canadian company specializing in advanced distributed energy storage technologies, product and solutions.

TROES has completed a grid connected EV Solar PV and Battery Energy Storage System (BESS) solution, that addresses the power demand issues of commercial and residential buildings.

This system alleviates issues of excess demand on the grid by charging the BESS during off-peak time & using the BESS to charge building demands during peak period.

RESULTS



US\$95,000

Initial Cost



8 Hours

Daily Usage



US\$23,966

Annual Savings



6.9 Years

Payback Period

SGIP in California offers 85% rebates for BESS under equity category.

FINANCIALS & BENEFITS

The initial system cost is US\$290,000. The local electricity rate is US\$0.08/kWh. Assuming 8 hours of sunshine in a day, the annual consumption savings will be US\$23,330. With a demand reduction of US\$3,000, the total annual savings would be US\$26,330 with a payback period just under 7 years.

ABOUT THE SYSTEM

The system comprises of a 250kWh BESS charged by a 100kW solar PV array and the grid. This setup will be able to support the buildings' power demands during peak periods using the energy stored. Since the BESS is charged during off-peak period with either solar PV or the grid, significant amount of bill savings can be made.



401 Bentley St., Unit 3
Markham, ON
L3R 9T2, Canada



1-888-99-TROES (87637)



info@troescorp.com



www.troescorp.com