

Case Study

Partnering with ESS for C&I Success



“In collaboration with TerraSol, we identified ESS’s sustainable, American-made energy storage technology as the best solution on the market to achieve our climate and business operations goals. This solar + energy storage microgrid delivers backup power when needed to keep our facility fully operational, has a very reasonable return on the capital investment through both electricity production and peak load shaving, and enables our facility to operate comfortably with a net zero carbon footprint.”

Steve Figgatt
CEO of Sycamore International

Client

TerraSol Energies Inc.

Project

Sycamore International
Energy Storage Solution

Background

TerraSol Energies, Inc., a turnkey solar and storage solutions provider, partnered with ESS for a microgrid project at Sycamore International in Pennsylvania. The project involved the installation of a 115 kW solar array coupled with ESS’s 75 kW / 400 kWh flow battery. Sycamore International, a technology recycling company with a focus on data security and circular economy, required a safe, reliable and clean energy storage solution to ensure reliable energy, smooth operations and carbon emission reduction at its facility.

Challenges

Power Reliability and Security

Located in a region with unreliable grid infrastructure, Sycamore International faced significant financial losses during power outages, highlighting the need for a reliable and long-duration energy storage solution to ensure business continuity.

Environmental Sustainability

Sycamore International wanted a sustainable solution that aligned with its environmental values and circular economy approach.

Return on Investment (ROI)

The solution needed to offer a favorable ROI and reduce operational costs over time. Solar energy production coupled with peak shaving capability provide an 8-year payback for the investment based on utility savings alone. Elimination of unexpected power outages saves between \$25,000 and \$40,000 in lost revenue for every incident. Sycamore typically experiences 2 to 3 unplanned outages per year, resulting in up to \$120,000 in savings per year. By eliminating power outages alone, the project payback is approximately 4 years after factoring in ITC benefits.

Solution

ESS's Energy Warehouse Flow Battery

TerraSol Energies
Sycamore International
Case Study

Clean and Reliable Energy Storage

The ESS Energy Warehouse flow battery paired with solar ensures reliable and clean energy for TerraSol Energies' customer, Sycamore International. This combination guarantees power availability during outages, reducing revenue losses and maintaining operational continuity.

Customizable and Flexible

TerraSol Energies highlighted the versatility of the technology, emphasizing its potential application for schools, universities, and businesses of all sizes. The solution can be tailored to specific needs, making it adaptable for various use cases.

Results

Cost Reduction and Revenue Protection

The implementation of ESS's energy storage solution provided Sycamore International with reliable backup power during outages, preventing substantial revenue losses that had previously reached up to \$40,000 per day.

Conclusion

The partnership between TerraSol Energies and ESS demonstrates the advantages of integrating long-duration iron flow batteries into solar + storage microgrids for commercial and industrial businesses. The success of the Sycamore International Project highlights the benefits of clean, reliable, and sustainable energy storage solutions that offer not only energy security but also financial savings, environmental responsibility, and grid stability. This case study demonstrates the potential for similar partnerships to drive growth and innovation in the solar-plus-storage industry, providing businesses with a competitive edge in a dynamic energy landscape.

Long Operating Life and Low Total Cost of Ownership

TerraSol Energies chose ESS's iron flow batteries due to their long operating life and superior total cost of ownership. This minimizes replacement and maintenance costs over the system's lifetime.

Enhancing Grid Infrastructure

The combination of solar power and long-duration energy storage supports regional grid infrastructure. The ability to store excess solar power for future use and provide frequency regulation contributes to grid stability.

Sustainability

The partnership with ESS aligned with Sycamore International's environmental values, promoting sustainability and contributing to the global circular economy.

Safety and Sustainability

ESS's iron-based flow batteries offer safety, sustainability, and are built leveraging a predominantly domestic supply chain. This solution aligned with Sycamore International's environmental and safety considerations.



ROI and Financial Benefits

The long operating life of ESS's flow battery combined with the solar array provided Sycamore International with a favorable ROI by reducing operational costs over time. Additional benefits from participation in PJM's ancillary markets are being explored with the potential addition of a second PV + ESS system at Sycamore.



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