



# The Evolution of Electrification:

## Three Key Considerations Impacting Battery Facilities and Battery Energy Storage

As the demand for electric vehicles (EVs) and battery energy storage systems (BESSs) surges, the landscape for battery facilities is swiftly transforming. For stakeholders, comprehending local regulations and actively engaging with the community during the permitting process is becoming increasingly vital. While the global push toward electrification intensifies, the U.S. may be trailing, underscoring the societal urgency to decarbonize.

At SSOE, we're recognized as a major player in the battery / EV sectors, bringing unparalleled expertise from adjacent markets like semiconductor manufacturing. For eight consecutive years, we've ranked nationally as a Top 2 Semiconductor Design Firm by *ENR*. Our extensive 40 years of experience

in the semiconductor industry—standard in its procedures yet constantly changing within the walls of its fabs as manufacturers race to bring new products reliably to market—uniquely positions us to tackle the challenges of the battery industry and project complexities that often stem from its newness.

With a deep understanding of the considerations in the EV market informed by our 75 years serving the automotive market, we project that electric vehicles and hybrid EVs will remain a significant part of automakers' transportation portfolios, despite the uncertainty in the headlines and the powertrain options of their products. As lower EV projections are counterbalanced by the increasing demand for BESS, strategic planning becomes essential.

# Three Key Considerations Impacting Facilities

1

## Financial Preparedness

Before embarking on battery facility projects, securing the correct funding is vital. The current landscape shows that government mandates and market dynamics are driving investments in BESS, yet projects that rely on Department of Energy (DOE) grants or private equity are currently facing significant delays. Battery projects that avoid delays typically secure full funding for the design phase upfront, or rely on internal funding, before kicking off.

2

## Designing for Dynamic Needs

Identifying the correct battery type for each project is crucial, but this information often remains unclear until after the design phase. At SSOE, we offer solutions to help jump-start design processes even before the battery type, chemistry, or end use is finalized. Our agility, flexibility, and innovative approach set us apart from competitors, allowing us to deliver effective solutions even in the face of uncertainty.

3

## Technical Site Evaluation & Community Engagement

Choosing a suitable location for battery facilities involves careful consideration of utilities, such as water, gas, and electricity. Rezoning property may also be necessary, which requires thorough and thoughtful community engagement and local public relations strategy.

SSOE is prepared to assist in the early design phase, whether clients choose to establish facilities in the U.S., Mexico, or both. And we're experts in Foreign Direct Investment, so if you're a global manufacturer looking to establish operations on U.S. soil, our team paves the way for seamless execution. We prioritize educational outreach to regulatory agencies and use it as an opportunity to build or solidify existing relationships and support our clients in navigating the complexities of community buy-in and permitting.

## Leveraging Technology for Enhanced Efficiency

Our approach to designing battery manufacturing campuses extends beyond traditional methodologies. We leverage data-driven technology to design truly massive "mini-cities" at scale. By creating a digital framework, we streamline the design process, enabling off-site manufacturing and improving procurement experiences. This integration fosters quicker, safer construction and enhances facility management while connecting disparate information silos for owners.

## SSOE: Your Electrification Experts

The evolution of battery manufacturing projects requires strategic planning and a flexible approach. SSOE is well-equipped to provide tailored solutions that address the unique challenges of the battery / EV market.

Our size and expertise afford us the agility to pivot in project execution, ensuring high-quality outcomes even amid unforeseen challenges. Battery manufacturers know batteries, but many are new to greenfield construction. We're seeing a need for established tools and methodologies as we get them up and running. By introducing our best practices and standards that are uniquely SSOE, we empower our clients to thrive in this rapidly evolving industry. The future of electrification is bright, and with SSOE as your design partner, you can navigate this complex landscape with confidence.

Let's address your critical issues and manufacturing site needs.  
Learn more at [www.ssoe.com](http://www.ssoe.com)

