Battery facility integrators

Building the circular battery economy with seamless engineering and reliable delivery

HATCH

Design. Build. Integrate. Deliver.

There are a lot of “end-to-end solutions” that don’t show how successful projects come to fruition. Why? Because it’s impossible to solution the end without a firm understanding of where the challenges begin.

This is an invitation to pause. Reflect. And to plan your next battery integrator partnership with rigor.

We bring critical recycling and battery material and cell manufacturing capabilities earned through decades of successful project delivery. We combine with applicable lessons, expertise, strategies, and the experience to execute battery projects that avoid familiar traps and deliver lasting value.

Here’s how.

What do stakeholders need?

What's stopping you from getting there?

Battery projects fail due to poor response to…

High schedule pressure

High design risk

High operation risk

High CAPEX estimation risk.

Set yourself up for project success. Ensure the right components are considered at the right time and in the right order:

1. Technical risk management
2. Integrated facility design
3. Cost and schedule control
4. Operational readiness.

How can we get you there?

Technical risk management

Challenges

- Fast schedules
- Lack of testing, piloting, demonstration
- Ambitious plans with too many product lines, and too many adjacent projects
- Insufficient funding
- New, evolving projects and processes
- Stringent quality certification and control processes
- Poor ramp-up and low yields lead to a failed business case.

Solutions

Engage and listen to knowledgeable engineers and project partners

- Don’t fall for consultants that simply tell you what you want to hear

Focus on one viable product and one project to minimize complexity

- Get revenue going, then diversify cautiously

Establish a robust commercial strategy

- Prioritize quality and give yourself enough time in the project schedule when considering offtake agreements

Recognize your risks

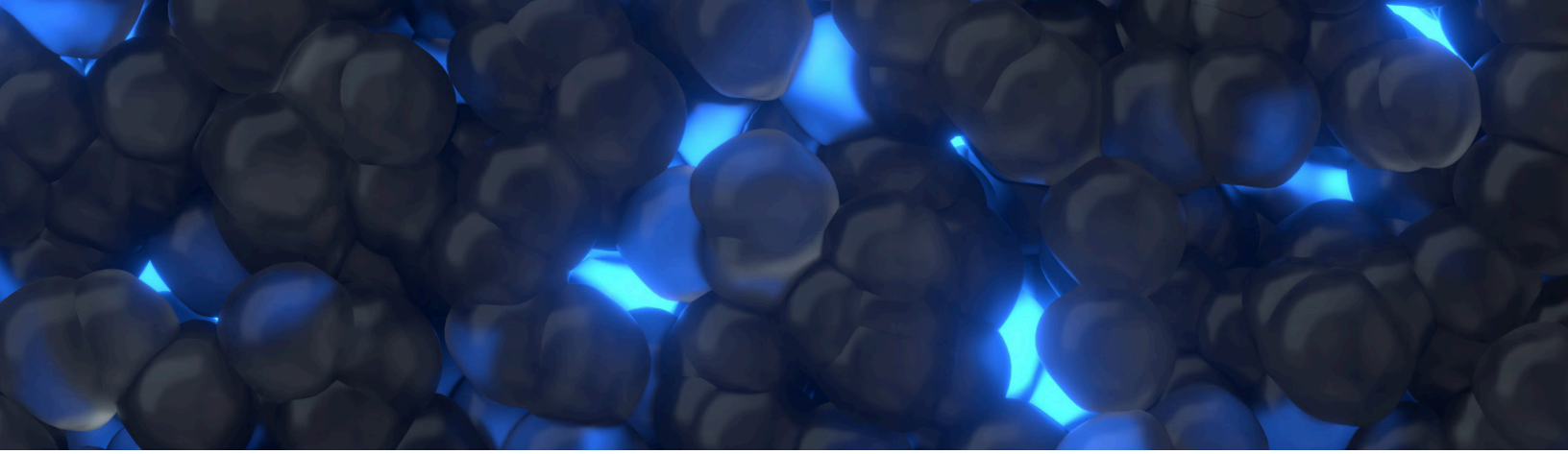
- Apply lessons learned and avoid overconfidence traps

Understand quality certification

- Design, plan, pilot, and scale for real life conditions

Balance quality with schedule pressure

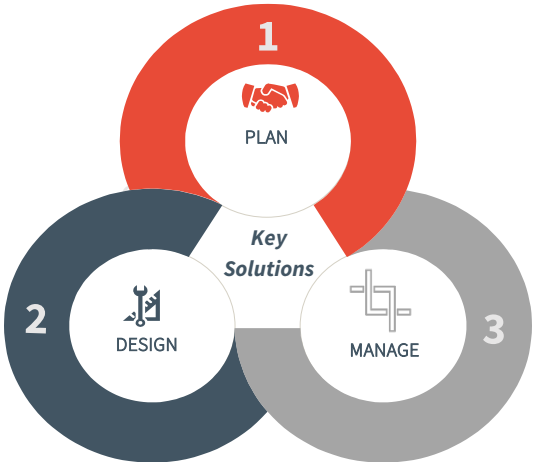
- Functionality matters just as much as the schedule



Design, cost, and schedule control

Challenges

- Project scope is poorly defined when seeking bids from general contractors
- Bids from general contractors may not be scrutinized sufficiently
- Change management (including rates) is not properly negotiated
- Unrealistic schedule, poor planning, and unaccounted expediting costs
- Interfaces between facility and core process are improperly managed
- Effort required for code compliance is underestimated.



Solutions

1. Plan

- Assemble a sufficiently detailed design basis for the bid
- Scrutinize bids
- Minimize gaps
- Establish a solid contract and an integrated, detailed schedule.

2. Design

- Develop pre-construction engineering design to support early-works construction packages
- Manage/design the interfaces between core process and facility
- Support vendors to help ensure process and code compliance
- Be involved in design reviews.

3. Manage

- Engage all project partners to establish a fully integrated schedule to meet start of operation date
- Trend and manage schedule and cost
- Rigorous change-control according to contract
- Project manager supports general contractor.

Operational readiness

Challenges

Operational systems, including purchasing, warehouse management, operational procedures, and maintenance protocols, may not be adequately designed and implemented. There's also a significant challenge in hiring and training operators.

Effective operator training programs

Developing a comprehensive training program is essential to effectively prepare the large number of operators required for factory operations.

Well-defined maintenance protocols

Develop a robust maintenance schedule and procedures to ensure the smooth operation of the facility by examining the equipment and processes.

Efficient standard operating procedures

Developing a comprehensive sequence of operations, quality control measures, material handling procedures, and safety protocols ensures effective and efficient operating procedures.

Streamlining production with manufacturing execution systems (MES)

Using technology to monitor and track process and quality metrics for all products, integrating this data into a centralized system for enhanced tracking and analysis.

Solutions

Hire a consultant with:

- Experience in establishing operating systems
- Ability to develop procedures for complex industrial facilities
- Best practices for establishing operating contingent requirements
- Experience with attracting workforce and developing effective training strategies
- Strong resources for commissioning and ramp-up.

Our services

Project management consulting services

We find the right general contractor for a design-build mandate, put enforceable contracts in place, and stringently manage and support the general contractor during the execution phase to meet quality, cost, and schedule objectives, particularly over the course of execution.

We plan and oversee the core manufacturing equipment installation process, working with the general contractor, vendors, and owners to ensure each party's requirements and responsibilities are understood and adhered to.

Engineer's services

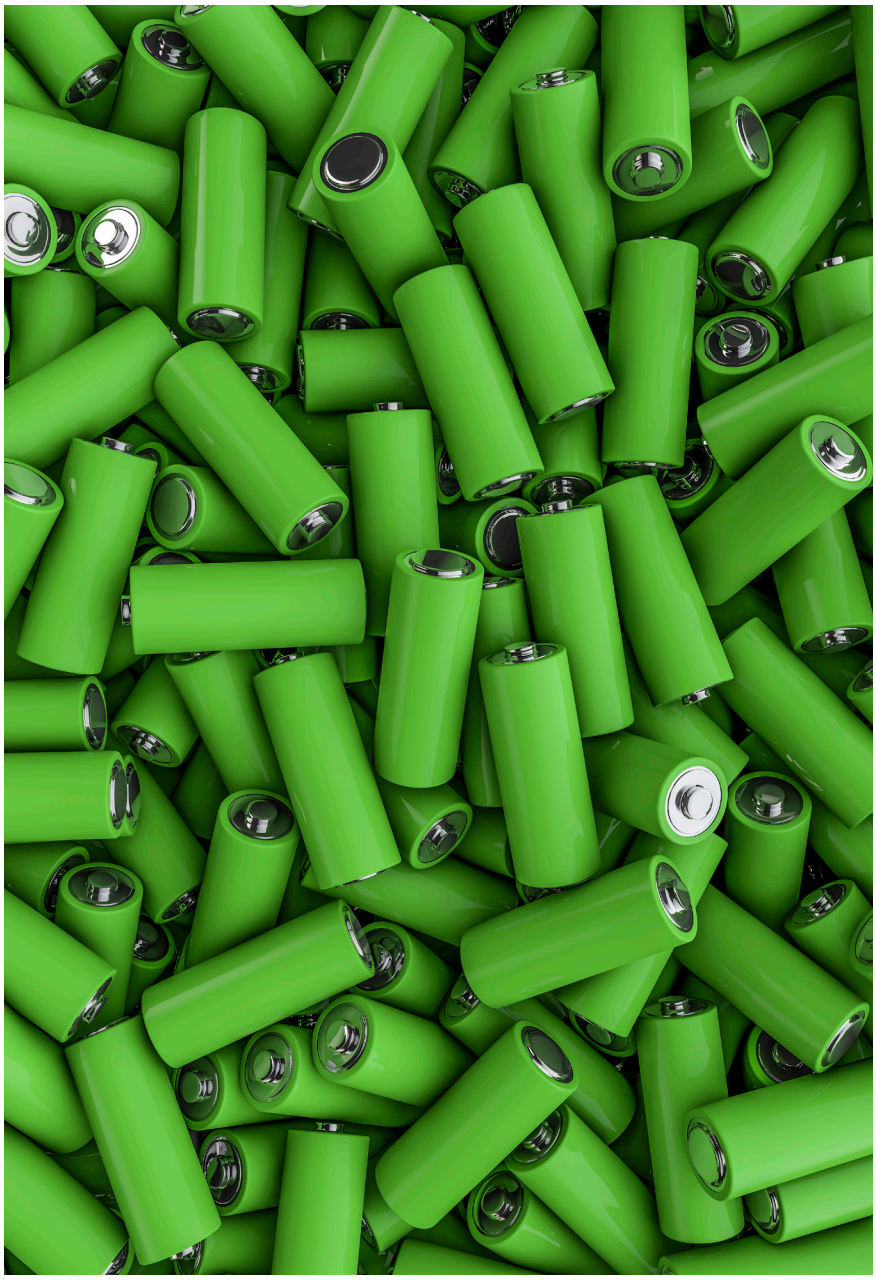
We support clients across the full life cycle of battery projects with expertise in materials, cells, and recycling, helping to de-risk technology through test work and scale-up. Our services include front-end engineering design to establish budgets and schedules for general contractor bids, pre-construction support to accelerate early works, and engineering oversight to ensure vendor designs meet local codes. We provide integration engineering to align facility and utility scopes with core manufacturing processes, as well as design services that include plant buildings, utilities, reagents, warehouses, quality control, and core process systems.

Operational support services

Our operational support services include developing commissioning plans, establishing systems and workforce readiness, and overseeing training. With experts in battery materials and cell manufacturing, we guide clients through commissioning and ramp-up to achieve stable operations quickly and confidently.

Other support services

We provide broad support, from permit applications and site selection to marketing and business intelligence, to strengthen market positioning. We assist with partner engagement and licensing opportunities to maximize value.



Projects

Battery Recycling

Altilium

Altilium is a UK-based clean technology group supporting the transformation of the global energy sector from fossil-based to zero carbon. Their vision is for a domestic EV battery supply chain, where the critical minerals powering the energy transition are recovered from recycling existing waste streams, reducing mining and preserving our natural resources.

Hatch has engaged with Altilium for five years to help them develop their critical UK battery recycling projects. We have assisted from initial early conceptual design and laboratory testwork, to completing engineering studies on their major projects. This included scaling up testwork data, process optimization, plant layout development, equipment package development, execution planning, and cost estimation. We have assisted them on their two key commercial scale projects:

- ACT 3: Black mass to MHP and lithium sulphate, completing the pre-feasibility sudy
- ACT 4: Feasibility study for a black mass and MHP feed to battery and technical-grade salts project.

We have also assisted with smaller studies working towards Altilium's ultimate vision of an integrated EcoCathode™ battery metals plant, including battery recycling to black mass production, and producing pCAM & CAM products.

Cathode active material

Confidential client

We were appointed to perform two roles at the project site in Quebec. In the initial mandate, Hatch performed the detailed design of the "outside-battery-limits" scope (OSBL), which included the site infrastructure, utilities, and buildings as a sub-contractor. Detailed engineering was completed in 2025.

Shortly after this mandate kicked off, the client requested support from Hatch on the "inside-battery-limit" scope (ISBL, or the core manufacturing process), where we were responsible for the integration of the ISBL scope with the OSBL component. We worked closely with equipment suppliers in Asia to review their designs and provide input on compliance with local codes and regulations.

Once nameplate production is reached, the first-of-its-kind in North America plant is expected to produce 30,000 tonnes per year of high-nickel NCM CAM.

Anode active material

Vianode

By 2030, Vianode aims to deliver a world-leading carbon footprint of only 1 kg CO2 emission/ kg high-performance, high-quality anode graphite for 3 million EVs annually. The current market average is 20 kg CO2/kg conventional anode graphite. Vianode is in the process of commercializing proprietary graphitization furnace technology and is expected to set a new industry standard for low-carbon production of graphite anode material.

Hatch was appointed by Vianode to prepare a feasibility study for the design of their first commercial-scale battery-grade graphite anode production facility in North America. Our work includes integration of the core manufacturing process packages, and design of the “balance-of-plant” including the site plan, buildings, on-site infrastructure, and utilities. Vianode and Hatch have kicked off the basic engineering phase as the project progresses toward execution.

Forge Battery

Gigafactories

Forge Battery plans to establish a 3-GWh gigafactory in Morrisville, North Carolina, to produce high energy density cylindrical cells and has secured $100 million in funding from the U.S. Department of Energy. Hatch contributed by providing the design FEED for the 3-GWh facility, which includes process design and equipment selections, plant layout and integration (including the dry room), as well as CAPEX/OPEX estimates and control and manufacturing systems architecture.

About Hatch

Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 10,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

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We can provide a full range of services across the battery value chain.

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