

Strategic Research to Shape the Future

Battery Market and Technology Intelligence by Fraunhofer ISI

Our Project Offering

Three Strategic Research Areas to Shape the Future

Describe & Detail

Customized market models and forecasts to provide a solid basis for your strategic decisions.

© shutterstock.com/MJgraphics

Discover & Design

Technology analyses
Stakeholder and market analyses

© shutterstock.com/MJgraphics

Define & Do

Backcasting and Roadmapping
Development of business models

© shutterstock.com/MJgraphics
© shutterstock.com/pichit

Describe & Detail

Customized market modelling and analysis



Describe & Detail

Customized market modelling and analysis

Interest & Research

How are your battery target markets evolving?

You are supplying highly specialized products to the battery industry and want to align your business model to this dynamic market? We not only offer insight into "GWh" but also understand and follow trends from the sealing ring to the production system.

Activity & Service

Market modelling and demand / supply analysis

We develop a customized market model for you that takes into account all relevant technology trends and the specifics of your value creation step. This includes the analysis of economic and political framework conditions, decisions by market participants and influences along the entire value chain.

Outcome & Deliverable

Trend report and quantification

Our forecasts are based on comprehensible and transparent assumptions, which we present to you scientifically and clearly. On request, we can provide you with region- and sub-market-specific information or provide you with models that you can use to test your own market assumptions.

Budget

Typical project volume is 10-20 person days.

A large, dark blue telescope is shown in a perspective view, pointing towards the top right. The background is a gradient of light blue to dark blue. A semi-transparent white box is overlaid on the left side of the image, containing text.

Discover & Design

Technology analyses or player and market analyses

Discover & Design

Technology or player and market analyses

Interest & Research

What is the industry structure? What are your competitors strategies?

How is the industry sector structured, who are competitors and what are their strategies? We offer an insight into the structure of the battery value chain, your specific sector, relevant stakeholder and emerging technologies.

Activity & Service

Stakeholder analysis and technology assessment

We analyze emerging technologies and trends in the battery ecosystem. We assess the impact of these technologies and trends on the battery industry as a whole and specifically on your business. We identify relevant stakeholders and compare their strategies.

Outcome & Deliverable

Industry and technology analysis report

Our analyzes are based on scientific results and experts insights that we present to you scientifically and clearly. Based on your needs, the report can include information on technologies and competitors, network analyses, economic data and production capacities, or supply relationships throughout selected value chains.

Budget

Typical project volume is 15-30 person days.

Define & Do

Backcasting and Roadmapping

Define & Do

Backcasting and Roadmapping

Interest & Research

What will the future of your technology and business be?

You want to plan your company strategy (e.g. go to market strategy, expansion of product portfolio, integration of products and services) based on data and expert knowledge of the sector? We do not only understand the dynamics of the battery industry/ecosystem, but have also a deep knowledge of the emerging technological developments.

Activity & Service

Expert and data-based scenario and roadmap development

We develop customized scenarios for your business area in the battery value chain in close collaboration with you to address your needs. These contain relevant aspects of technology, the market and framework conditions. It can also include an expert roadmapping workshop with Fraunhofer and external battery and industry experts.

Outcome & Deliverable

Roadmapping report

Our analyses are based on scientific data, experts knowledge and industry insights. We develop scenarios tailored to your needs that can be used to build your company strategy. As a result, you receive a customized development roadmap that shows external developments and important internal milestones for your company.

Budget

Typical project volume is 20-40 person days.

Expertise

A comprehensive network of knowledge

Our team members have a broad academic background in the fields of physics, chemistry, engineering and economics. For more than 15 years we have been working closely with industry and policy makers on various aspects related to battery technology development and commercialization.

Our partners are inside and outside Fraunhofer. We constantly expand our network through collaboration in research projects and strategic committees such as the Batteries Europe Partnership Association. We are part of the Fraunhofer Battery Alliance and in close contact with industry associations (e.g. VDMA, KLiB), the major European research organizations, consulting firms and NGOs in the fields of energy transition and sustainability.

Our clients come from the automotive industry, battery and component manufacturing, recycling and investment sectors. We also advise German federal ministries and the European Commission on research funding and industrial policy issues.



We combine a deep understanding of technology and markets with scientific methods and a huge network of knowledge

References and Resources

Scientific models and databases at Fraunhofer ISI

Fraunhofer ISI in-house xEV database: The database has been developed in 2014 by Fraunhofer ISI and is updated since on an annual basis. The last update was done in March 2024 covering international xEV sales up to Q4 2023. It covers global production and sales numbers for xEV models broken down to countries as well as information on battery capacity, chemistry, cell format and range of the vehicles. The database aggregates information provided by Marklines Co, Ltd., the European Automobile Manufacturers Association, European Alternative Fuels Observatory, several market and technology studies, OEM websites and numerous online sources.

Fraunhofer ISI in-house LIBDB database: The database covers information on the major industrial players in the Li-ion business from materials to cell production as well as information on cell KPI. The database includes supply chain relationships between material producers and cell producers as well as between cell producers and cell integrators.

Fraunhofer ISI in-house Producer database: The database includes production capacities and factory locations of players along the LIB value chain, e.g. for battery materials and components, cell production and battery recycling. Capacities are sorted by specific technologies (e.g. material type, battery chemistry, depth of production). The database is continuously updated based on public announcements by producers.

Fraunhofer ISI market model: Raw materials, active materials and components, battery cells, main battery applications (3C, ESS, EV and others), recycling streams

Fraunhofer ISI cell-design tool: In-house developed tool for the cost and performance modelling of battery cells. Customizable to materials, components, form factors, technologies and other parameters

Curious? Let's have a chat!

—

Dr. Christoph Neef
Coordinator battery projects
Business unit industrial technologies
Tel. +49 721 6809-350
christoph.neef@isi.fraunhofer.de

Fraunhofer Institute for Systems and Innovation Research ISI
Breslauer Straße 48
76139 Karlsruhe
www.isi.fraunhofer.de



Fraunhofer Institute for Systems and
Innovation Research ISI