Thinking
batteries further

FARASIS

Battery Goes Orange

Sustainable production of high-performance batteries

Shaping The Future Of Batteries Together

As a manufacturer of electric vehicles for the private or commercial sector, industrial machinery, or energy storage systems, you are at the forefront of innovation, facing many challenges. The global market is highly dynamic and competitive, your customers want performance, convenience, and sustainability all in one product. Also, there are increasingly complex regulations that require compliance, supply chain transparency and sustainable production — to name but a few.

Our goal is to shape the future of transportation, industrial machinery, and energy storage together with manufacturers like you. To this end we develop batteries that meet the highest standards of performance, safety and sustainability, and offer adjacent services along the entire value chain that save you time and effort.

With more than 20 years of experience, Farasis is a driving force behind battery technology, and a valuable partner that will help you to successfully meet the challenges of battery-based energy supply and storage.

Battery Goes Orange

Why orange? Because yellow is the colour of energy, which is the key to battery performance, and red is the colour of passion, which is the key to our diligent and dedicated work on battery solutions. Orange is the vibrant, joyful combination of both. In terms of sustainability, we are green. But to us, sustainability is a prerequisite in contemporary battery production. Our commitment to the environment and sustainability has led us to the slogan „Battery goes orange“. Orange is the new green!

Thinking Batteries Further

Our solution portfolio offers a wide range of tailor-made and off-the-shelf products as well as numerous services to make your batteries even better. Our products are made in world class manufacturing (WCM) factories with a focus on sustainability and performance. We also take care of end of life management and therefore provide a closed-loop value chain, so that you can focus on your core tasks.

Product design

+ Off-the shelf benchmark battery cells
+ EU automotive OEM verified design team
+ Easy customization based on modular design platform

Series production

+ WCM standards-based factories
+ Full validation through EU OEMs completed
+ Global supplier base allows JIT/ JIS supply of batteries

Carbon-neutral production

+ Local-for-local production
+ Carbon-neutral factory design
+ Sustainable supply chain design

End of life management

+ Battery collection and recycling process established as part of localization
+ Proprietary direct recycling method
+ Materials fed back into production

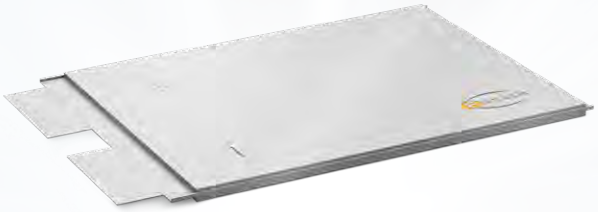
Farasis solution set

Going The Extra Mile For You

We do everything to supply you with the solutions that best suit your applications in industry, logistics, agriculture, public transport, commercial and private mobility, and motor racing. Together with you, we will work out the optimal chemistry and configuration that enables you to boost the energy efficiency of your products.

Powerful Cells, Modules And Packs For Your Applications

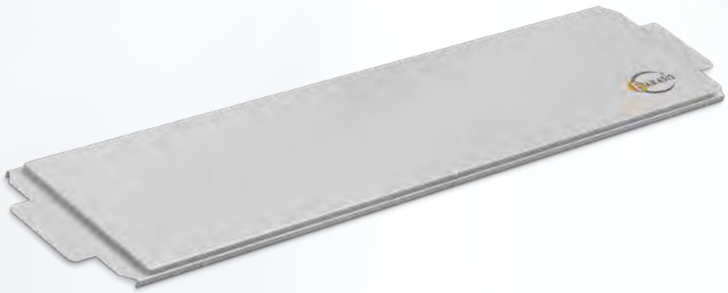
Our top-of-the-line battery range supplies plenty of power for a huge variety of applications. The wide range of cells manufactured by Farasis builds the basis of our powerful solution portfolio. We offer cells in multiple form-factors and chemistries to address the key market needs. The cells are assembled into modules to serve a great number of purposes, facilitating the deployment of Farasis products and enabling optimal performance.
Tailor-made configurations to meet your individual requirements are of course available.



Unidirectional pouch

Variant 1:
+ 231 x 161 x 6 mm
+ Chemistry: NCM

Variant 2:
+ 231 x 161 x 10 mm
+ Chemistry: NCM

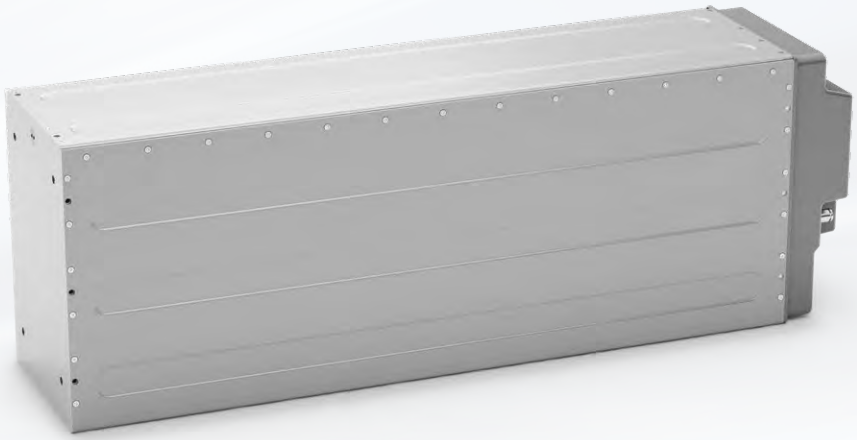


Bidirectional pouch

Variant 1:
+ 294 x 104 x 14 mm
+ Chemistry: NCM

Variant 2:
+ 542 x 102 x 8 mm
+ Custom: 250 – 580 x 80 – 120 x 8 – 15 mm
+ Chemistry: NCM

Modules for non-automotive applications



14s6p Configuration

+ 10.4 kWh
+ Max. system voltage: 800 Vdc
+ 176 x 256 x 672 mm

14s2p Configuration

Variant 1:

+ 3.5 kWh
+ Max. system voltage: 60 Vdc
+ 168 x 248 x 200 mm

28s1p Configuration

Variant 2:

+ 3.5 kWh
+ Max. system voltage: 120 Vdc
+ 168 x 248 x 200 mm

Please contact us at info@farasis.com if you have any further requests.

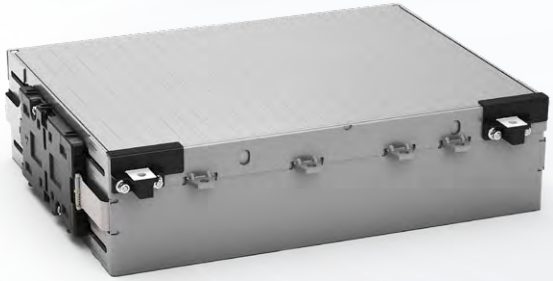
Modules for **automotive** applications

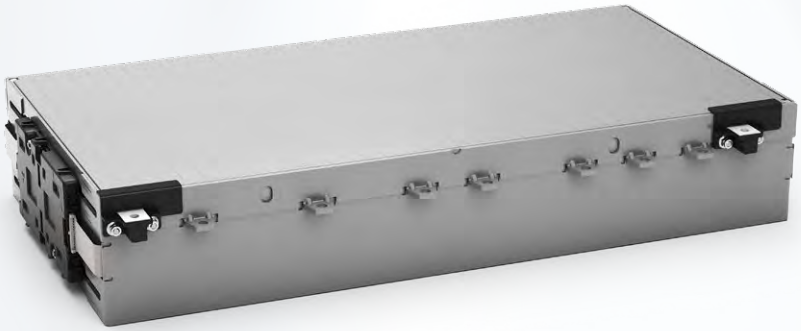
6s3p Configuration

+ 4.8 kWh
+ Max. system voltage: 450 Vdc
+ 355 x 108 x 331 mm

12s2p Configuration

+ 6.4 kWh
+ Max. system voltage: 450 Vdc
+ 355 x 108 x 430 mm





12s3p Configuration

Variant 1:

+ 9.7 kWh
+ Max. system voltage: 450 Vdc
+ 355 x 108 x 626 mm

18s2p Configuration

Variant 2:

+ 9.7 kWh
+ Max. system voltage: 450 Vdc
+ 355 x 108 x 626 mm

590 VDA Standard

Variant 1:

+ 12s2p configuration
+ 6.62 kWh
+ Max. system voltage: 800 Vdc
+ 225 x 108 x 590 mm

Variant 2:

+ 8s3p configuration
+ 6.62 kWh
+ Max. system voltage: 450 Vdc
+ 225 x 108 x 590 mm

355 VDA Standard

Variant 1:

+ 6s2p configuration
+ 2.3 kWh
+ Max. system voltage: 450 Vdc
+ 152 x 108 x 355 mm

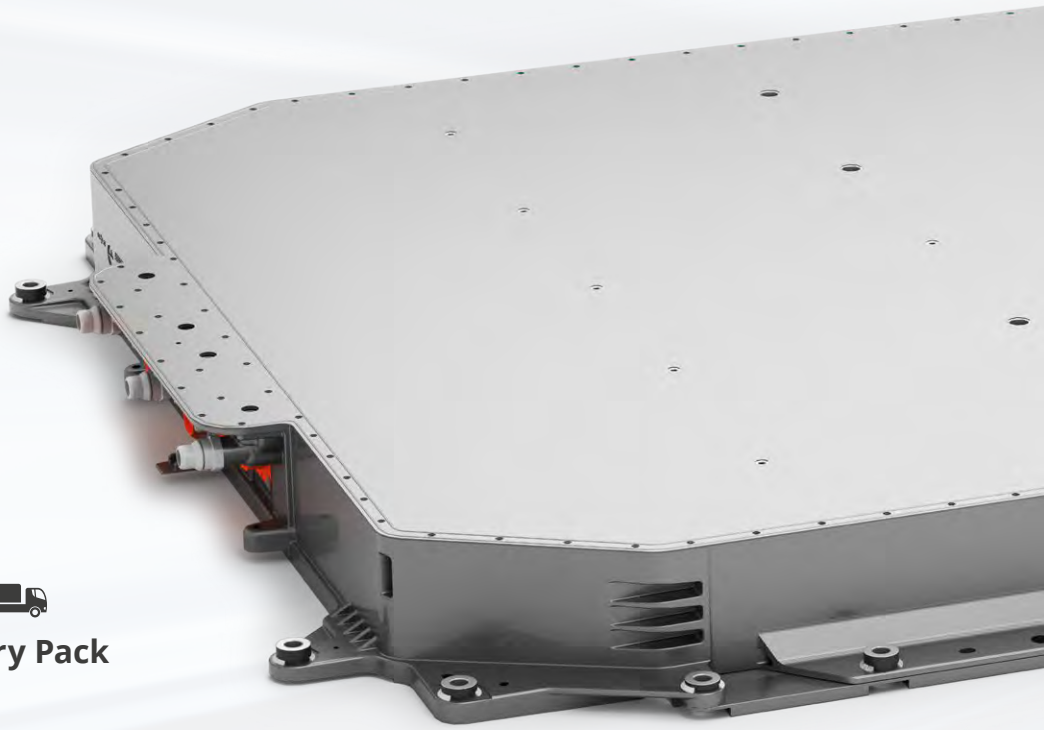
Variant 2:

+ 3s4p configuration
+ 2.3 kWh
+ Max. system voltage: 450 Vdc
+ 152 x 108 x 355 mm

Please contact us at info@farasis.com if you have any further requests.

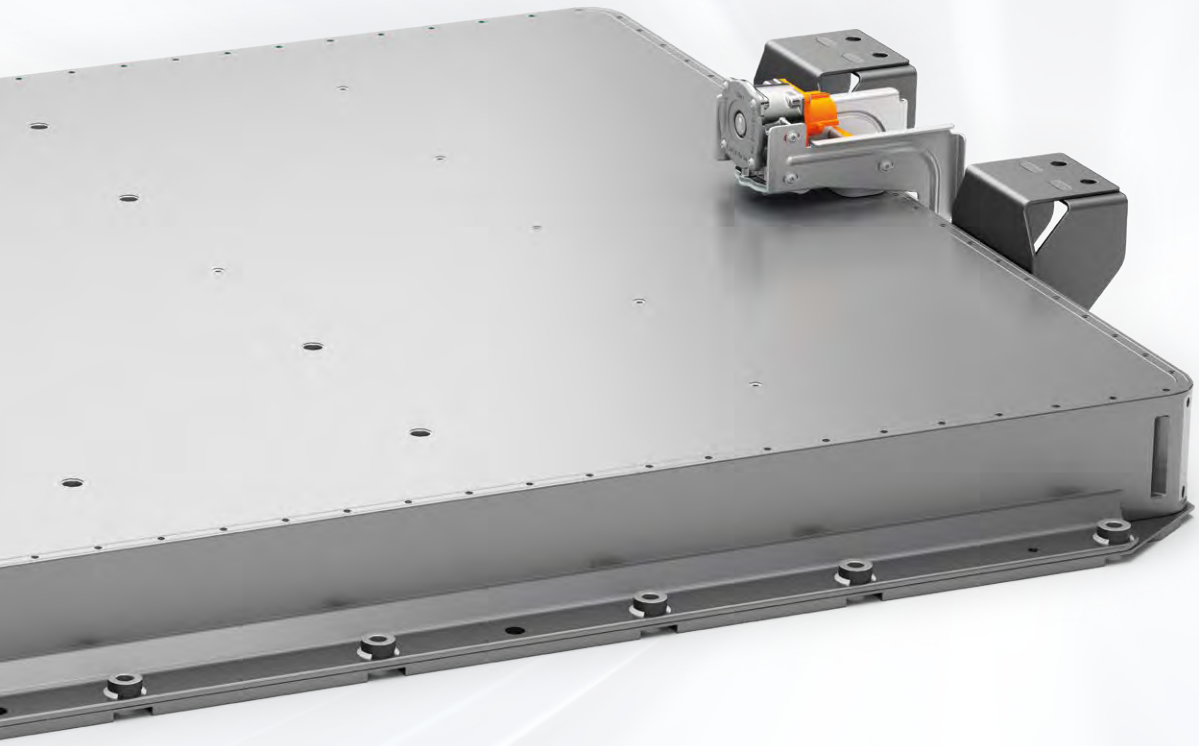
Battery Pack

Our battery pack impresses with flat design for low profile underfloor or roof mounting and complies with ECE R100, R10, UN38.3 and ISO26262 standards.
Packs can be mounted in parallel with external junction box.
Superior safety performance goes without saying.



Farasis Battery Pack

+ 86.4 kWh
+ > 2,500 cycles
+ 394.2 Vdc
+ 1990 x 1440 x 144 mm
+ NCM/Gr
+ ~ 520 kg
+ ~ 166 Wh/kg
+ Liquid cooling and heating



High-Performance Batteries
For High-End Applications

Farasis batteries offer outstanding performance in power delivery, safety, and versatility – key aspects that your customers will appreciate, particularly with regard to your electric vehicle brand, as Farasis batteries combine long range with fast charging. Solutions for other applications such as industrial machinery are available upon request (info@farasis.com).

Flat pack system

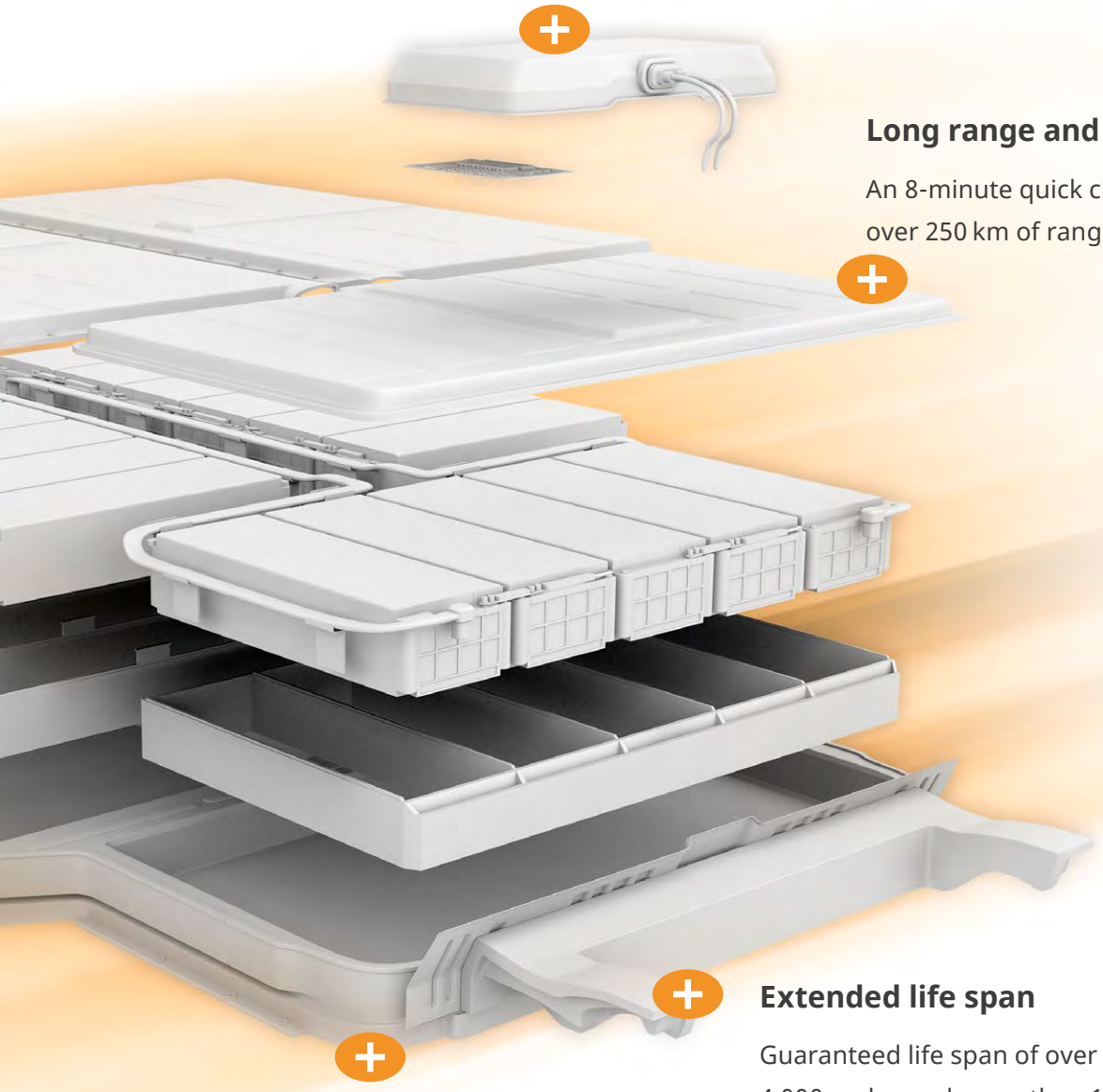
+ Standard battery heights of <140 mm for lower center of gravity, customizable down to 90 mm
+ Battery system can be tailor-made to fit even race car chassis and off-road vehicles

Proven functionality in harsh environments

Able to operate normally even under harsh conditions, e.g., at -30 °C

Compliant with global safety standards

+ Accredited by Mercedes-Benz, Volkswagen
+ Certified per GB 38031-2020, UN 38.3, ECE R100 etc.
+ Thermal propagation can be controlled or mitigated
+ Implemented BMS complies with ISO 26262



Long range and fast charging

An 8-minute quick charge recovers over 250 km of range

Extended life span

Guaranteed life span of over 4,000 cycles and more than 1,000,000 km

High energy density

+ In mass production as per 2021: 285 Wh/kg
+ Roadmap to 400 Wh/kg is laid out

Strong Research And Development Team

Farasis was founded in Silicon Valley, a place known for the spirit of innovation and the passion for trailblazing technologies. The same spirit and passion are part of our company DNA and are shared by all our developers and engineers. We have a continuously growing team of highly trained experts working on new solutions in all major markets.

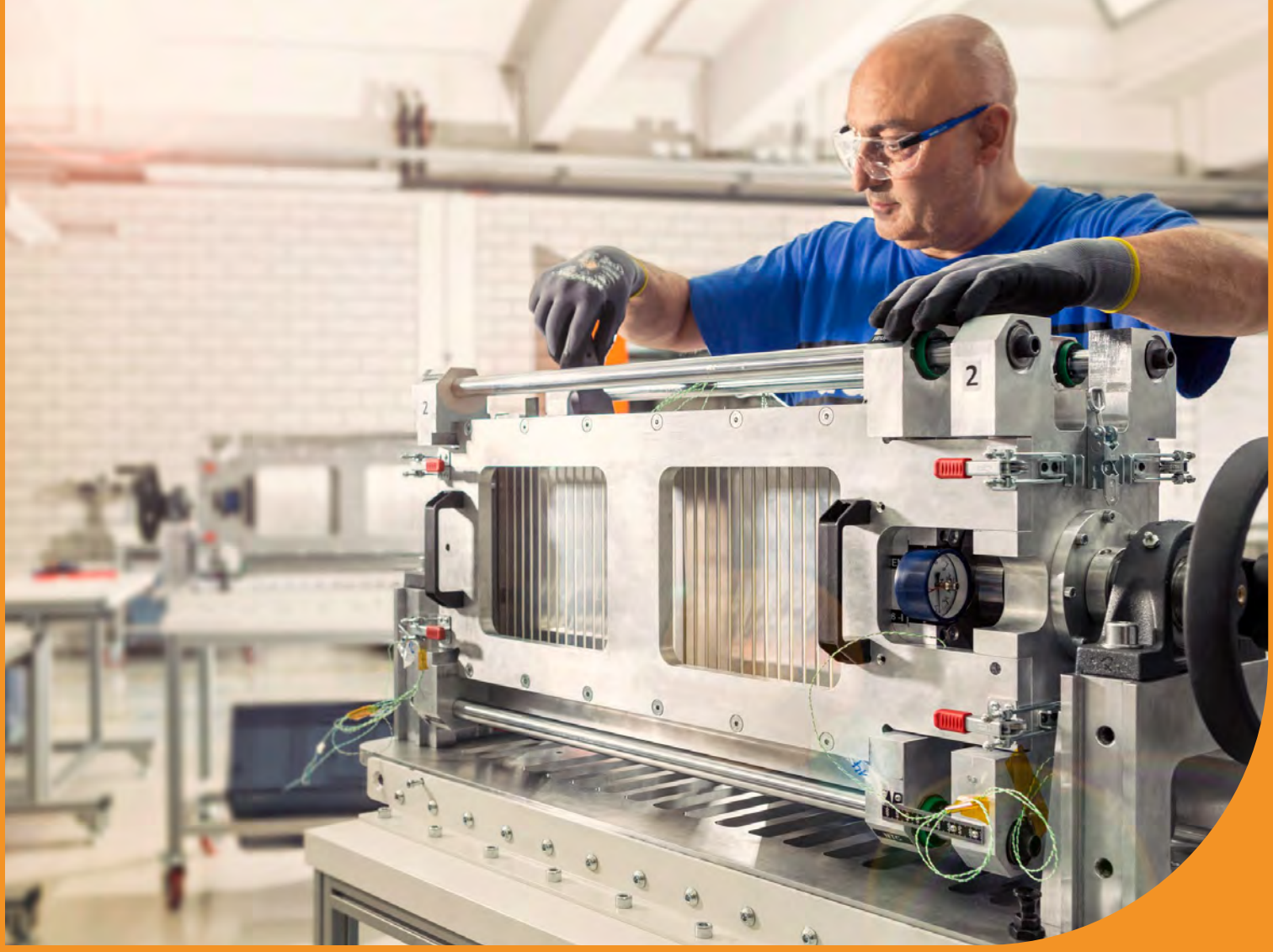
We are proud to have one of the largest Engineering teams in Europe: Close to customers, speaking their languages, meeting their requirements – from pre-development to development to series support.
Whilst identifying and analyzing customer needs in the pre-development phase, we're conducting feasibility studies, identify risks and challenges, and assess the financial viability of the project. We're also researching new materials upon request and develop battery management systems (BMS). No thermal propagation (NoTP) for our latest generation of cells (Generation 4, ultra high power) is also available.
In order to improve the performance of our batteries and optimize their design, we're using big data analysis and advanced modeling techniques.

What can we do for you? If you are looking to improve your battery performance results, contact us at info@farasis.com and get a quote for your individual project.

Designing, prototyping (incl. virtual protoyping), testing and refining products to best meet customers' needs are also part of our core competencies when developing high-voltage platform modules and packs for vehicles. We're validating cells, modules, and packs, as well as develop fixtures for sample shop, prototype build-up and testing – always with the intention to keep development costs and time as low as possible.
Our engineering portfolio also covers series support. This includes tear-down-analysis (TDA) and change management support, including cell upgrades. We also develop process specifications for remanufacturing and rework, ensuring that our solutions meet safety, performance, and environmental standards.
Publicly funded projects also play a crucial role in R&D, not just for funding reasons but also to further build know-how and expertise to best meet future customer demands.

Thermal Management NoTP: Breakthrough in Battery Safety Technology

Farasis Energy has developed a module design concept to prevent thermal propagation using its newest generation of cells (Generation 4). The performance of the modules has been tested and confirmed by independent laboratories on module and pack level. Battery safety is thus significantly increased – an important advantage for OEMs in view of increasingly stringent safety standards for e-cars, from which all other applications also benefit. Industrial production of the adapted modules is planned to start in 2025 and upgrading from current battery packs to packs with adapted models is possible without changing production.

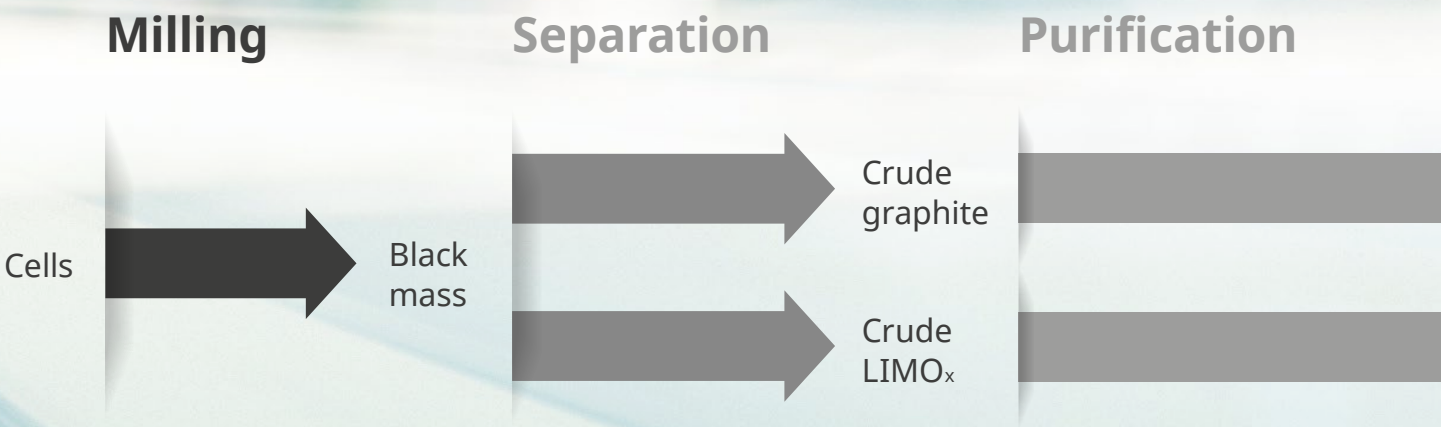


Extensive Production Capacities

We have the flexibility and innovative mindset of a start-up with the distinct advantage of also having the necessary production capacities to meet the demands of leading vehicle manufacturers as well as of other industries. There are currently two state-of-the-art production facilities in Ganzhou and Zhenjiang, China, with further production facilities being built by 2025, thereby increasing total planned capacity to 180 GWh/a.

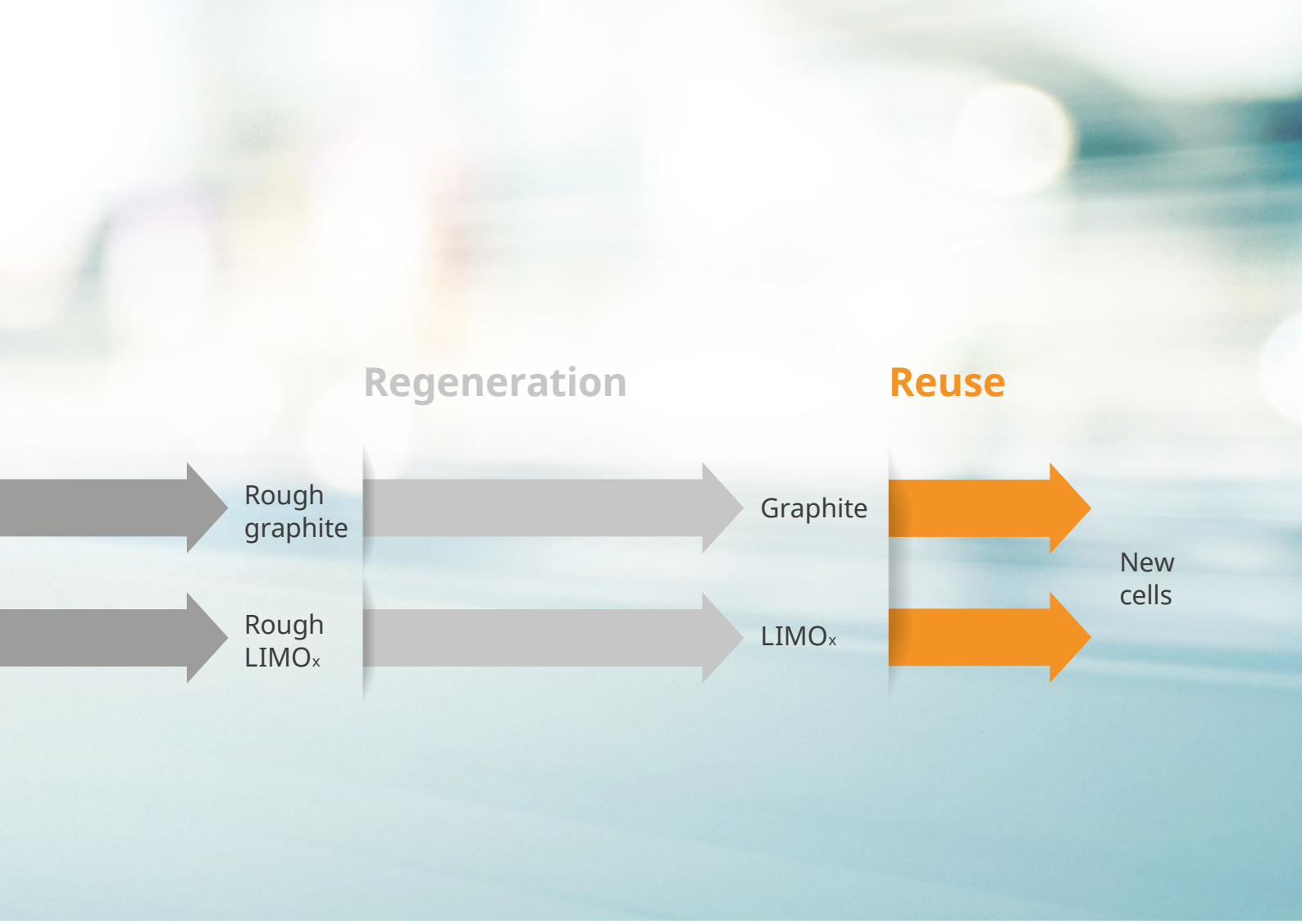
In Europe, there is a production facility as a joint venture with Togg in Gemlik, Turkey, under the name Siro. Siro will develop the energy storage solutions for Farasis Energy Europe in the future and already produces modules and packs. Thanks to a well-established and reliable global supply chain, we can ensure just-in-time as well as just-in-sequence deliveries.

Our Direct Recycling Process



Sustainable Throughout

Our understanding of corporate social responsibility includes the responsibility for sustainable products and production. Ultimately, this can only be achieved by producing and processing raw materials ethically and sustainably from the mine through to end of life management. We therefore use a carbon-neutral process certified by DEKRA to manufacture our cells.



Pioneering battery recycling

In addition, Farasis has a proprietary direct recycling process for lithium-ion batteries.
This process is the result of more than 10 years of pioneering research and development in the field of lithium-ion battery recycling. It reduces waste and conserves resources by recovering and reusing valuable lithium-ion battery materials, notably the cathode powder, from used batteries, and cell manufacturing scrap for new production – all whilst maintaining cell performance.

Value retention

The cathode material is one of the most expensive components in cell production. We have found a way to directly recover the active cathode material powder without the need for re-synthesis, thus retaining the high value of the original cathode material. This results in both cost and energy savings. In addition, the inclusion of scrap material in cell manufacturing can increase the cathode powder utilization efficiency to over 99 percent.

Mining

The extraction of raw materials is an important factor that needs to be considered when talking about the ethical implications of vehicle batteries. We are a member of the RCI (Responsible Cobalt Initiative), which aims to advance compliance with ethical standards in cobalt mining, and we are committed to implementing the IRMA standard for lithium and cobalt mines.

Industrial Strength – But Cleaner And Quieter

Our highly ruggedized solutions for electric industrial machinery deliver the power you need without any noise or fumes. They ensure a smooth workflow and efficient throughput indoors as well as outdoors. All of our solutions can be adapted to your needs.

About Us

We have one goal: to shape the future of battery-based energy supply as a top tier technology partner for the electric vehicle, industrial machine fabrication, and other markets.
We offer sustainable energy storage solutions that are researched, developed, manufactured, and trusted world-wide.

As a driver in the field of battery technology, we think lithium-ion batteries further. We combine long range and fast charging with sustainable production, offer tailor-made cells, modules and packs, responsible end of life management, and adjacent services along the entire value chain.

In short: we do everything to provide you with the best possible solution. Among our main strategic partners are major companies such as Mercedes-Benz, Geely, and Togg.

Energizing Facts And Figures About Farasis

6
R&D centers

4
production sites

145 GWh/a cell production capacity planned by 2025

100 %
carbon-neutral production

7,000+
employees worldwide

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Performance Knows No Borders

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