

**Infinite variety
needs limitless
creativity.**

**CellPac PLUS –
Your individual battery
design service.**



**CELL
PAC** PLUS

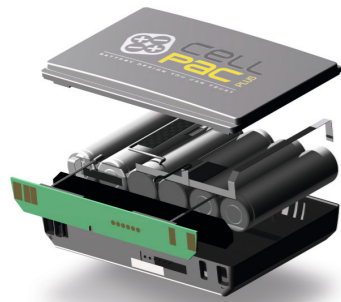
YOUR BATTERY, PRECISELY.

► Your requirement: the perfect energy solution

Outstanding, innovative technology deserves a battery solution that fits seamlessly into the system and its design. A highly individual, tailor-made battery, which powers your ideas into life. Medical technology, robotics, power tools, telecommunications – whatever the industry, we develop, design and build your batteries in harmony with your product.

► Your solution: the battery design service by VARTA

CellPac PLUS is our development and production service for customers with the highest standards. With CellPac PLUS, VARTA supports and accompanies the development process of your project from the first idea to the start of production and through to the final end of life of your product. With our experience and expertise we develop, together with you, a custom solution in accordance with your ideas for an ideal battery.



CellPac PLUS

The experts at VARTA Storage GmbH offer solutions for every aspect of the design and manufacture of your lithium-ion battery.

► Your partner: VARTA Storage GmbH

VARTA Storage GmbH, is a company leading the field of intermediate energy storage and a subsidiary of VARTA AG, which also includes the company VARTA Microbattery GmbH with more than 125 years of battery technology experience. The company, located in Nördlingen, Bavaria, specializes in lithium-ion-energy storage for the use in private households and industrial solutions.

FULLY LOADED EXPERTISE.

► VARTA Storage offers you extensive project management from the first specification, through to the production of your battery and until end of life of your product.



With CellPac PLUS, project managers and engineers are at your disposal with years of experience in design, implementation, certification and production of batteries. Our experts are responsible for designing and delivering the best possible battery

for your product at the given schedule and budget. Through our international presence, you can access our global network of VARTA Storage specialists. Wherever you need us, we are there for you with all our power.

- GLOBAL PROJECT MANAGEMENT
- WORLDWIDE SUPPORT
- RISK MANAGEMENT
- AUTHENTICATION AND CERTIFICATION

THE POWER FOR SOLUTIONS.

► The development of an individual energy solution encompasses a number of success-determining factors such as the selection of the right cells, the mechanical and electrical design, as well as certification and tests. In addition to the high-quality battery solutions, VARTA Storage provides a comprehensive service and consultation, which leads you through the development process.

1. CONSULTING

VARTA Storage presents our services and early options in a first meeting. With our specialists, you can also discuss your individual requests and the exact requirements for the battery. With this very first dialogue, we lay the foundations for a long-term and constructive partnership.

2. CONCEPT

On the basis of these needs, we develop a project plan in which all milestones from development to mass production are recorded. A tailor-made concept that leads to a tailor-made solution.

3. DESIGN, CERTIFICATION, PROTOTYPING & TEST VERIFICATION

With your acceptance of the concept, the development of the battery begins. Project management executed in detail guarantees timely realisation. Once approved, VARTA Storage produces the first prototypes of your battery, which are used for test, verification and certification.

4. PRODUCTION

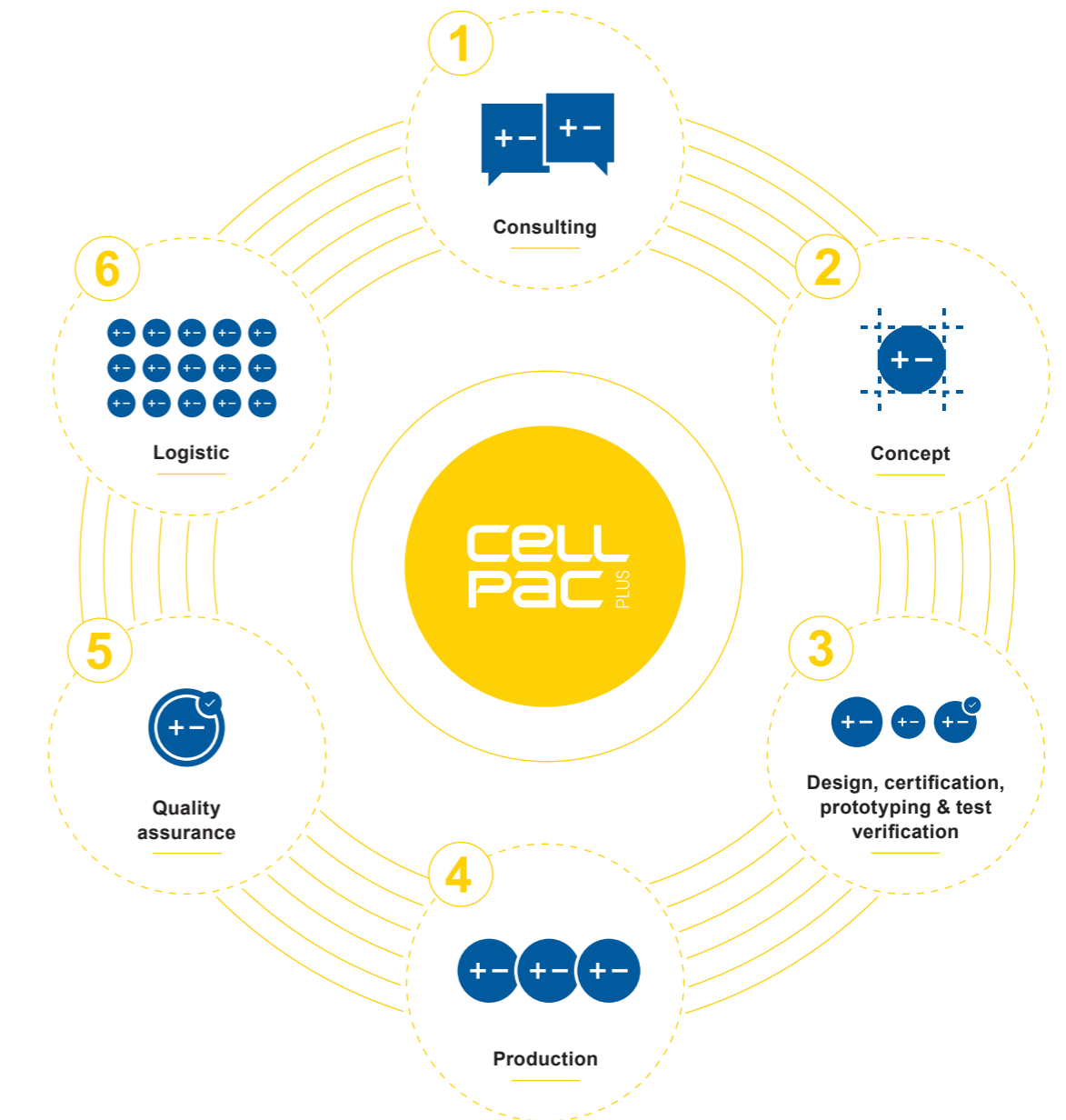
After successful completion of all tests and certification, we can undertake serial production in one of our production facilities worldwide. Each fulfills the highest ISO-standards and ensures a high quality production.

5. QUALITY ASSURANCE

Quality is designed in. Throughout the entire product life cycle, our experts at VARTA Storage manage and monitor continuously to ensure only products of the highest quality will be delivered.

6. LOGISTIC

VARTA Storage meets the challenges of transporting lithium-ion batteries with great experience, efficiency and safety. Our world-wide logistics network guarantees a fast and flexible delivery interacting with your own transport and storage requirements.



EVERYTHING REVOLVES AROUND YOUR SUCCESS.

Our specialists ensure that each battery meets the high performance and safety standards of VARTA Storage as well as specific customer requirements.



THE COMPOSITION OF INDIVIDUALITY.

► The most important components of your battery are usually those that are not seen. VARTA Storage gives you the assurance that each one of them works exactly as intended.

► **1. HEAT FLOW**

Efficient heat flow prevents overheating of the battery and ensures reliable battery performance.

► **2. CHARGE CONDITION**

The current flow in and out of the battery is continuously measured to report the battery charge level.

► **3. HOUSING**

Without a suitably designed housing, vibrations, impact or other forces would result in avoidable battery damage.

► **4. CHARGING SYSTEM**

Algorithms constantly control the charging of the battery pack. We optimise the charging circuit for the application as well as for the chosen cells, in order to guarantee a long battery life.

► **5. LITHIUM-ION CELLS**

Using specific tests and careful selection of lithium-ion cells for your application VARTA Storage maximizes the running time and the lifetime of the application.

► **6. CELL BALANCING**

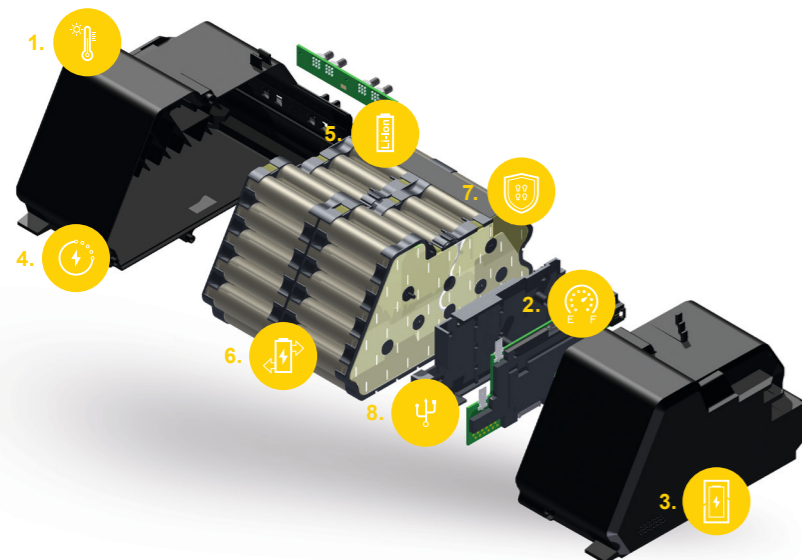
Lithium-ion cells have different charge and discharge characteristics. Where needed, your VARTA Storage battery management system manages this in all cells, thereby increasing the battery life.

► **7. PROTECTIVE CIRCUIT**

A battery from VARTA Storage contains a four-level protection concept, which ensures a careful shutdown of the battery in case of instability.

► **8. COMMUNICATION INTERFACE**

Each customer application is individual and needs different information from the VARTA Storage battery management system. Test and verification on the communication between the battery and the controller ensures continuous functionality.



► COMMUNICATION



► TEST & MEASUREMENT




► MEDICAL

STRESS-TEST RESISTANT

With CellPac PLUS, VARTA Storage offers a unique expertise in battery design for a wide range of markets as well as applications in complex environments. Often our tests exceed ordinary requirements and involve such performance needs as extreme temperatures, waterproofing or special certifications. We understand every requirement.

Applications we power:

- PORTABLE INDUSTRIAL
- COMMUNICATION
- MEDICAL
- HUMANOID ROBOTICS
- HOME AND GARDEN

- 
- ▶ **Address**
VARTA Storage GmbH
Nürnberger Straße 65
86720 Nördlingen
Germany
 - ▶ **Hotline**
+49 9081 240 86-60
 - ▶ **Email**
info@varta-storage.com
 - ▶ **URL**
www.varta-storage.com