

# YOUR **ENERGY** YOUR FUTURE

THINKING INNOVATIVELY, ACTING AUTONOMOUSLY



# Thinking innovatively, acting autonomously



Independence and sustainability? We have the solutions!

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As an entrepreneur, are you facing challenges regarding the European Green Deal? Are you currently dealing with issues such as the digital product pass? Are you striving for greater independence and sustainability and would you like a self-determined energy supply? Good, because that's what we are doing too. And even better – we have the solutions.

At Commeo, we would like to support you with continually developing and improving your energy infrastructure. Through our expertise and technology we make the energy market accessible to industrial and commercial com-

panies, thereby contributing to the shift from heteronomy to autonomy. The combination of our intelligent energy storage system and energy management solutions from independent German researchers and developers and our comprehensive consulting and service activities are your key to success.

Independence and autonomy make us who we are. This is also exactly what we want for you. Complying with sustainability targets and the security of your own company are not mutually exclusive, they go hand in hand – with Commeo.

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Kind regards,  
**Michael Schnakenberg**  
Founder and Managing Director of Commeo GmbH



commeo

# WHO WE ARE

Since our founding in 2014, we have made it our mission to make you **self-determined**, not only in terms of energy but also **financially**, and to reach your sustainability targets together.

## We set standards

Commeo is more than just a battery manufacturer. As an integrated solution provider, we meet industry standards with our innovative products and services and enable sustainable, transparent and self-determined control of your energy infrastructure. We transform sustainability issues into clear competitive advantages through intelligent use of your energy. We are setting new standards for the manufacturing and production industry, the logistics sector and the real estate industry. Our philosophy not only includes the highest standards of quality for us and our products, but also the obligation to find and implement the best solution for you.

## We define benchmarks

Our battery storage system is developed and produced entirely in house and therefore completely made in Germany. With our patented and TÜV-certified systems, we set the benchmark for the highest safety and fire protection level on the market.

The storage system is our centrepiece and the management system our nerve centre forming the basis of our offerings Commeo Consulting, Commeo Realisation and Commeo Performance. They allow us to offer a tailored concept for your individual application scenario. See for yourself.

MADE IN GERMANY



Developed and produced in house with the highest safety and fire protection standards



# Strong partner on an equal footing

We have been part of Arendals Fossekompani (AFK) since 2022, a Norwegian investment company with a long-standing tradition in electricity trading and in the operation of hydro-electric power plants. AFK is the second-oldest listed company on the Oslo stock exchange. This strong partnership enables us to develop first-class, future-proof and modular solutions for you. At the same time, it opens up the opportunity for us to further optimise and expand our services portfolio.



ABOUT THE NEW  
**EU BATTERY  
REGULATION**  
AND THE  
**EUROPEAN\*  
GREEN DEAL**

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\*Climate neutrality  
by 2050 in the  
European Union

**WHY  
YOU ARE  
ON THE  
SAFE SIDE  
WITH  
COMMEO**

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# European Green Deal

## What is the Green Deal?

The EU would like to promote a circular economy with the European Green Deal, in which resources are used more efficiently and waste is avoided, and also support consumers with making more sustainable decisions. Among other things, a Digital Product Passport (DPP), which will become obligatory, initially for environmentally intensive sectors but then for all products sold in the EU in the medium term, is intended to contribute to this.

## Battery regulation as an opportunity

A cornerstone of the European Green Deal is the new Battery Regulation, which came into force in August 2023 and will be applicable in all EU member states from the middle of February 2024. In addition to the targets named in the Green Deal, it aims above all to improve the product life cycle of batteries with regard to climate neutrality and environmental protection.

However, the new guideline presents companies with various challenges: Technical adjustments, modified processes or revised information management are frequently necessary in order to meet the stricter requirements regarding safety, service life and sustainable production of batteries and identify them in the DPP.

At Commeo, we don't see the new battery regulation as an obstacle, but rather as an opportunity. From the beginning we have seen ourselves as advocates of industry equality – an industry equality that requires a minimum safety standard and focuses on products made in Germany. Through collaboration with and involvement in different institutions and committees such as the Federal Association of Energy Storage Systems (BVES), the German Commission for Electrotechnical, Electronic and Information Technologies (DKE) and the Federal Expert Commission for Energy Policy Economic Council, we not only bring the necessary expertise as experts, but we are also actively participating in the composition of these guidelines.

## We lead the way

This affords us a significant advantage: Our entire way of thinking and acting goes hand in hand with the content of the legal requirements and regulations; these are firmly anchored in our portfolio. We are always striving for the maximum; we not only meet these guidelines and standards – we exceed them.



In December 2019, the European Commission presented the **European Green Deal** – an ambitious concept that has the goal of making the European Union climate-neutral by 2050.

But that's not all: A key part of our value proposition is to take on a partner role for our clients. We want to help you fulfil these requirements and be equipped for the increasing demands on your sustainability reporting (Corporate Sustainability Reporting Directive, CSRD). We focus on the continuous improvement of your energy infrastructure and consider all three pillars of sustainability. We make the CO<sub>2</sub> footprint of your electricity mix measurable and monitor, analyse and evaluate all the important key figures and values.

We fully support the content of the new Battery Regulation, actively implement it and also combine it with intelligent energy management systems. We can therefore guarantee our customers that with Commeo solutions integrated into their infrastructure they are literally on the safe side and are prepared for all future challenges in the area of energy and sustainability.

# We transform sustainability issues into competitive advantages

Commeo supports you with your sustainability reporting – today and in the future



# GREEN



# A FRESH TAKE ON ENERGY OUR COMMEO PARK

In 2024, one of the **largest battery module production facilities** for stationary lithium-ion battery storage systems in Germany, CommeoPark, will open in Wallenhorst just outside Osnabrück on an area of initially around 19,000 square metres with an outset production capacity of 1 GWh.

# Self-determination starts here

As a pioneer in the industry, we show what is possible when a wide variety of energy sources are combined intelligently.



## Innovation, security, growth

CommeoPark will combine innovative production facilities, an advanced trainee and service centre as well as state-of-the-art premises for development and administration at a single location. Its building infrastructure will meet all requirements for comprehensive information and data security in accordance with ISO27001. In addition, a further 100 jobs will be created in the first construction phase. But that's not all: We are thinking ahead and already have further expansion stages in the pipeline, including plans to increase production capacity to 4GWh per year over the next few years.

## Sense of responsibility

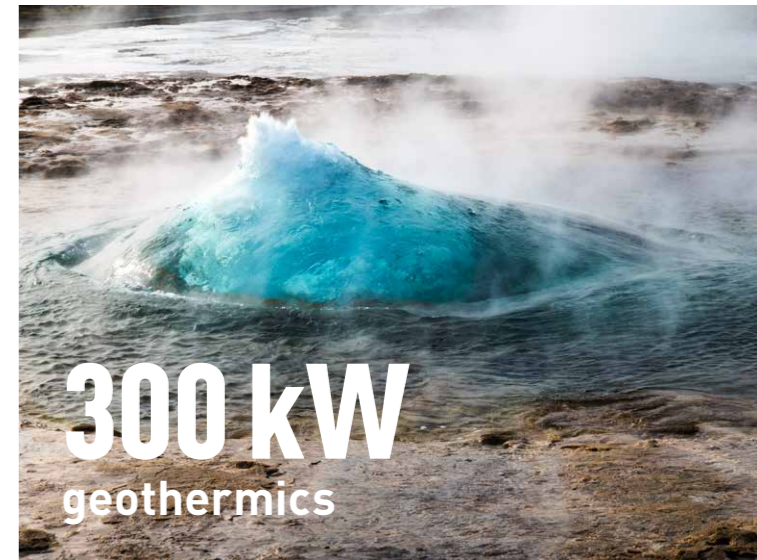
As part of the Osnabrück Land '100% Climate Protection Master Plan' model region, we are committed to the goals of this ambitious climate protection programme to achieve a complete switch to a climate-friendly energy supply by 2050 and thus reduce CO<sub>2</sub> emissions by 95% compared to 1990. We are therefore committed to self-determination – not only in terms of our product range, but above all

**2 MW**  
wind power

in terms of our energy. As a pioneer in the industry, we show what is possible when a wide variety of energy sources are combined intelligently: A powerful 485 kWp photovoltaic system, the connection to wind power plants run by the city of Osnabrück and the use of geothermal energy as a source of geothermal heat ensure an energy- and cost-efficient supply and, in conjunction with our battery storage systems, make it possible to dispense with fossil fuels. Thanks to a disproportionately large grid connection, we can also supply the surrounding infrastructure with our renewable energy.

## Forward-looking approach

CommeoPark is more than just a company headquarters. It represents our commitment to innovation, sustainability and self-determination and is an expression of our sense of responsibility and our forward-looking approach, in which the continuous improvement of our energy infrastructure plays a key role.



**300 kW**  
geothermics



**485 kWp**  
photovoltaic



# OUR SOLUTIONS FURTHER YOUR DEVELOPMENT

When developing our portfolio, we are always guided by our credo: “We enable you to utilise your energy infrastructure in a self-determined way and jointly transform sustainability aspects into significant competitive advantages”.



## Commeo Consulting

Our consulting services begin long before our systems are actually installed. We support you in establishing an economical and sustainable energy infrastructure in your company to not only meet your sustainability requirements, but to transform them into a competitive advantage for your company.



## Commeo Realisation

Planning, delivery, installation and commissioning from a single source – as a 360-degree solution provider, our integrated approach promises high efficiency and low integration costs when implementing your individual hardware and software solution.



## Commeo Performance

Benefit from working with Commeo – now and in the future. With our software portfolio, we support you even after the project has been completed to continuously improve your energy infrastructure and achieve your sustainability goals in the long term.

# Commeo Consulting

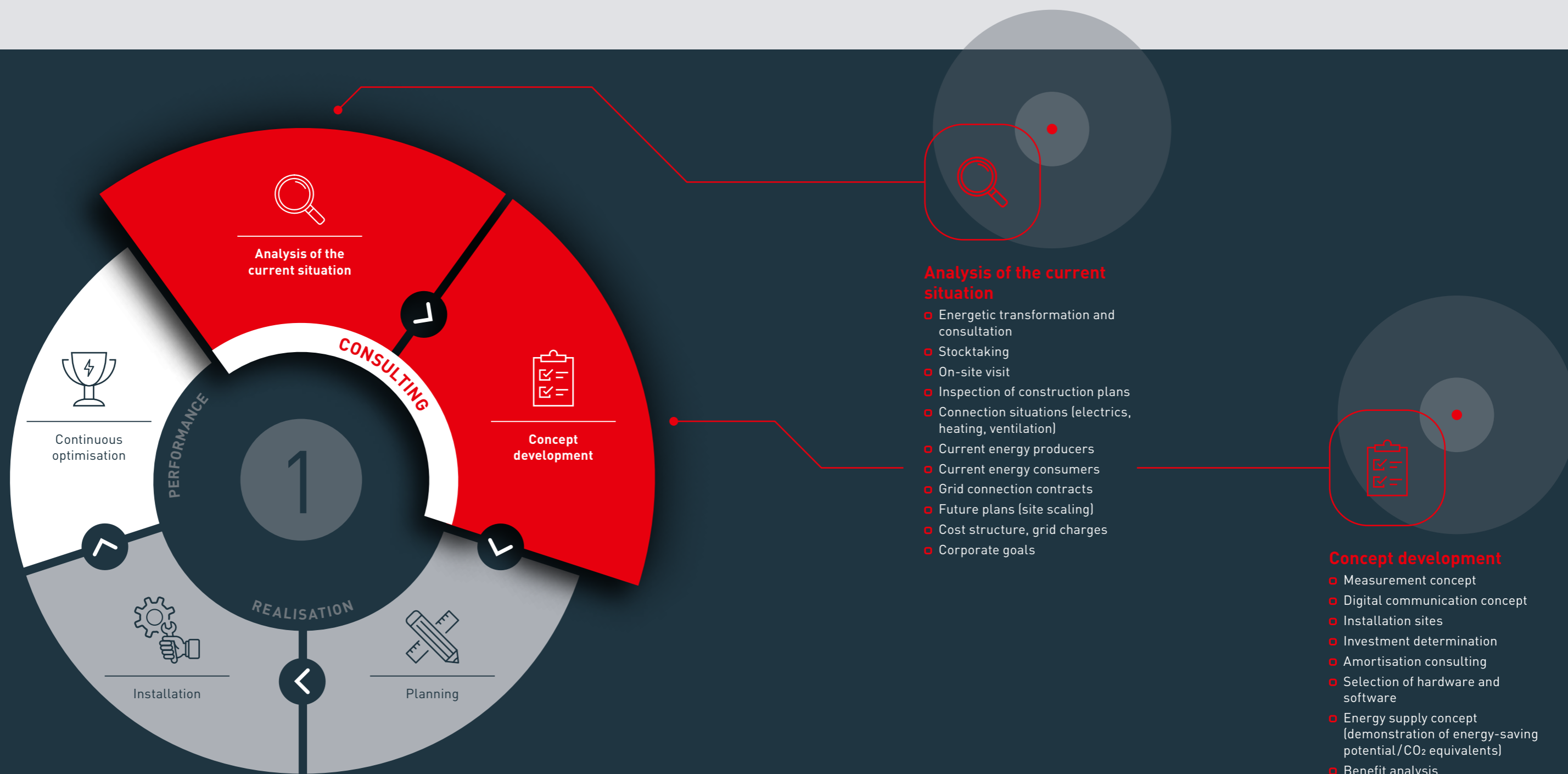


## Comprehensive and forward-looking

Our consulting services are about much more than just installing our systems. Our team works hand in hand with you to understand your current and, above all, your future requirements. We look at more than just the technical aspects – we consider the entirety of your company and its individual needs and focus not only on fulfilling standards, but also on deriving clear competitive advantages from improving your energy efficiency.



We take a future-oriented approach and set the highest standards in order to work with you to create a visionary and **sustainable energy infrastructure** in your company.



# Commeo Realisation



## Everything from a single source

As part of our service portfolio we follow an integrated approach that covers all aspects from conceptual design to the commissioning of our system solutions. Particularly when interlinking with existing energy infrastructure, we ensure that everything runs smoothly and efficiently throughout the entire process. Commeo systems guarantee a fast delivery time of under three months, low integration costs and fast approval processes, rounding off our promise of a turnkey solution.



Based on careful planning, we coordinate **precise assembly and implementation** as well as correct installation at the installation site.



## Planning

Coordination of the specialist planners of the individual trades in accordance with the conceptual design

- Installer
- Grid operator
- Client/BSE/fire protection
- Property insurer
- Energy Control System design



## Installation

Support during implementation

- Realisation of the installation according to conceptual design and planning

## Project manager

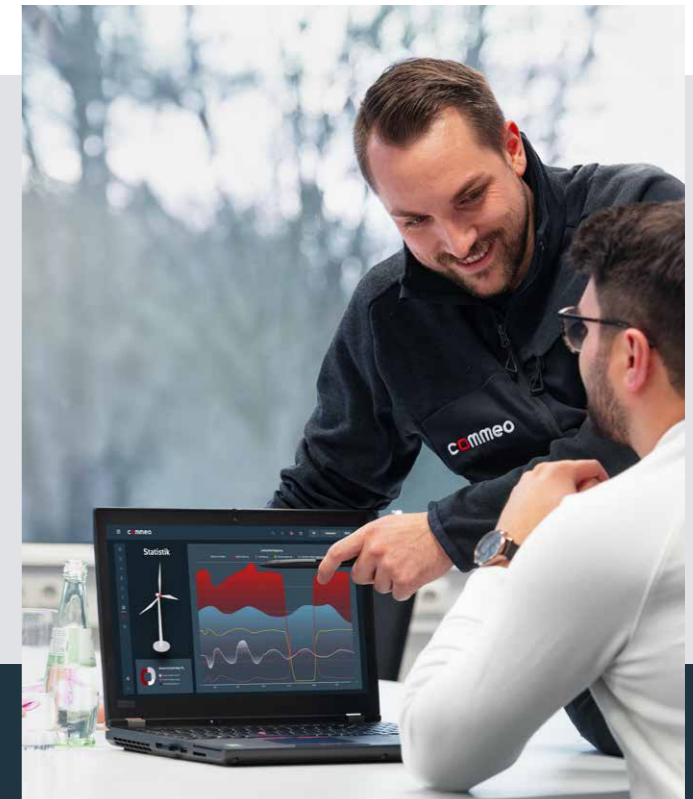
- Procurement of all trades
- Support during commissioning
- Implementation of the Energy Control System
- Documentation
- Run@rate acceptance



# Commeo Performance

## Prepared for future challenges

Our goal is to make you more independent in terms of energy and financially and to achieve long-term supply and planning security through the efficient and intelligent use of your energy. Open up new business models through the provision of energy, gain in-depth insights into the CO<sub>2</sub> footprint of your electricity mix and thereby support your sustainability management. We monitor all relevant key figures of your energy infrastructure, analyse strengths and weaknesses without losing sight of your sustainability targets and make suggestions for optimisation so that you are on the safe side in the future. Unleash the full potential of your energy infrastructure with Commeo!



## The future of your energy infrastructure

- Cloud services**  
 Secure data storage, weather and balancing group data, fast implementation, smart maintenance and digital services for optimised energy management.
- Trading services**  
 Generate income by trading self-generated energy, benefit from energy price fluctuations, guarantee long-term planning security and contribute to the stability of the public power grid.
- Energy supply services**  
 Establish an economical and secure energy supply, intelligently manage energy consumption, prevent downtime, extend the lifespan of devices and equipment and avoid costly grid upgrades.
- Control**  
 Optimise the control of charging infrastructures using intelligent integration into your vehicle fleet, steer targeted energy-related building segments and control energy flows in the production environment.
- Cost control**  
 Connect your energy sources to billing and accounting systems, automate reporting and integrate digital communication seamlessly into your ERP system.
- CO<sub>2</sub> data**  
 Comprehensive sustainability ratings, reliable analysis of the CO<sub>2</sub> footprint of your electricity mix and data-driven optimisation to support sustainable business management.
- Energy optimisation**  
 Optimise energy flows, increase self-consumption of renewable energy, reduce supply costs and maximise the performance and lifespan of your energy storage systems.



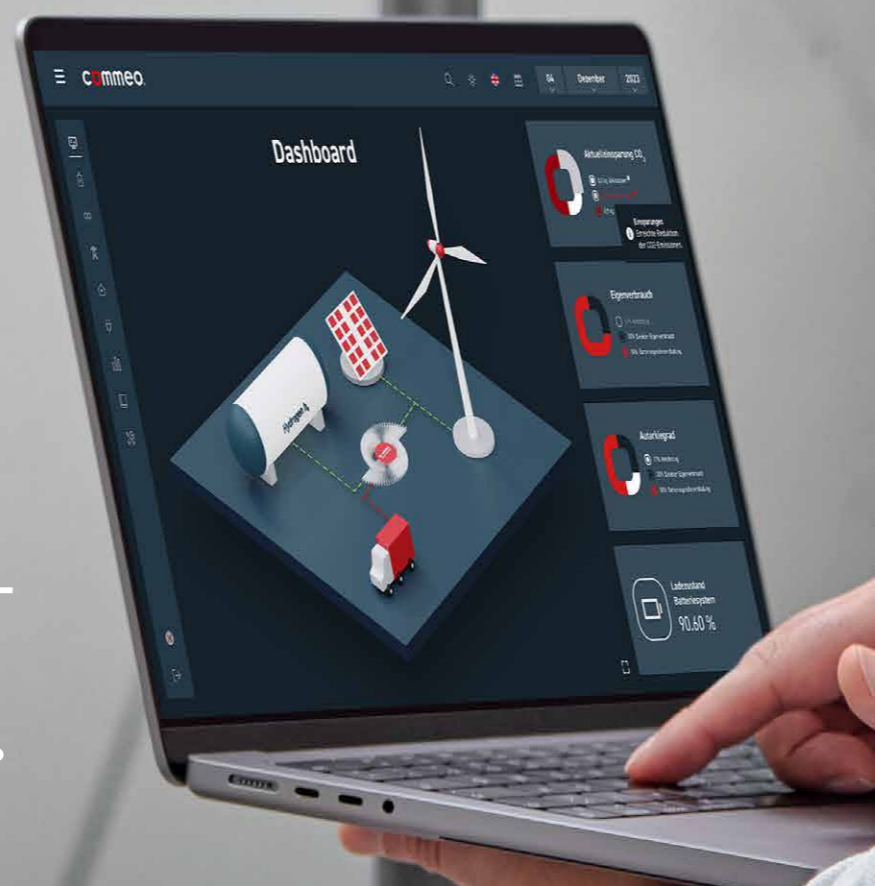
**Experience optimised energy management with comprehensive services from Commeo! Unleash the full potential of your energy infrastructure with Commeo!**

Our software portfolio opens up a wide range of new opportunities for you to integrate your energy into new business models, for example as part of energy trading.

We support you with using your energy as an integral component of your portfolio and thereby generating additional added value. Become your own energy supplier and trader, optimise the energy infrastructure at your location and trade your electricity on energy trading platforms at the same time – all in an automated manner with our services.

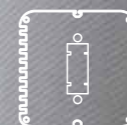
# OUR HARD- & SOFTWARE FOR YOUR INTELLIGENT ENERGY USE

By purchasing our products, you are not simply opting for a storage system or software. You are choosing an **all-in-one solution** with the aim of increasing economic efficiency. Whether peak load capping, emergency power and uninterrupted power supply or self-consumption optimisation – all this is enabled by a single system.



## Commeo software

Whether as a pure control centre or with integrated power electronics and reporting function – our Energy Control System represents the highly networked solution for visualisation, control and continuous optimisation of energy and information flows in any energy infrastructure.



## Commeo storage systems

The requirements for battery storage systems are as diverse as you are. Thanks to our modular energy storage solutions, we are the only player on the market that can provide the appropriate answer to all requirements and then integrate into any infrastructure.



## Commeo container

Regardless of whether you are looking for temporary support or a permanent solution: Our portfolio of energy supply containers gives you access to a complete energy supply landscape – optimally standardised to the size of a transportable truck load and 100% outdoor-capable.

# Energy Control System (ECS)

Our nerve centre: the versatile application areas of the Commeo ECS are the key to the continuous development and optimisation of your energy infrastructure.



## Energy Supply Services

Establish a permanently economical and secure energy supply at calculable electricity prices by intelligently linking hardware and software and minimising production downtimes.

## Security and sustainability

Our Energy Control System, ECS for short, makes a significant contribution to the security, sustainability and continuous improvement of the energy supply in your company – now and in the future. Through the symbiosis of software and hardware, the Commeo ECS creates an asset administration shell (AAS) platform that can be used to network and control every digitally communicating system in your energy infrastructure. We use the latest standards of the Industrial Digital Twin Association (IDTA) for this purpose. You receive a detailed overview of the energy flows in your company and can control your suppliers, consumers and prosumers at the touch of a button and without any programming knowledge.

Thanks to almost all industrial standard interfaces, connection to your existing energy infrastructure is not a problem. Integration of the highest IT security standards also guarantees reliable protection of your sensitive energy and information data.



## Sustainability

Data as the basis for sustainable corporate management. We identify the strengths and weaknesses of your energy infrastructure on the basis of all relevant energy-related key figures and thus ensure continuous optimisation in order to support your sustainability management in the long term.

## EC SYSTEM Energy Control System



## Cloud Services

Secure data storage in Germany. Back-up of your data and permanent remote services for fast implementation, smart maintenance and digital services.



## Trading Services

Actively generate income with self-generated electricity. Benefit from the opportunities to trade your energy with us on the electricity market and to ensure self-determined energy supply and marketing.



## Energy Optimisation

Optimise energy flows and supply prices. Bring your energy infrastructure up to date and save costs by making the best possible use of your hardware and self-generated energy.



## Energy Optimisation



### Self-Consumption Optimisation

Make more out of your energy and become more independent! Store self-generated energy surpluses from renewable energy sources, use them at the appropriate time and thereby increase your degree of self-sufficiency.



### Lifetime Optimisation

Highest performance in the long term. We always operate our energy storage systems in the optimal range to sustainably realize the best possible price-performance ratio for you over the entire lifetime of a system.



### Peak Shaving

Lower energy provisioning costs through fewer peak loads. Your provisioning prices are largely based on your peak consumption – with our intelligent systems, you can compensate for peak loads with energy from battery storage and thus reduce provisioning costs, and, at the same time, extend the service life of machines.



## Trading Services



### Time Shifting

Energy at the best possible price. Use the volatility of renewable energies and the resulting energy price fluctuations to your advantage by purchasing and storing electricity exactly when it is cheapest.



### Derivatives Market

Long-term planning security for your energy supply. With our services, you can trade your energy on the derivatives market for electricity and make the income and costs of the energy supply individually plannable through different terms.



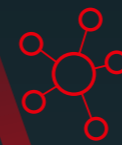
### Grid Services

Support the public grid with your energy. Provide reliable and effective primary control services with our energy storage solutions and contribute to the stability of the public grid.



### Energy Trading

Trade your self-generated energy. Take advantage of the opportunities offered by the interaction of energy storage, time-of-day overproduction, timedelayed energy provision and intelligent networking to turn your energy into a business model.



## Cloud Services



### Forecast-Based Charging Infrastructure

Operate charging stations the best way. Expand your business opportunities by providing a charging infrastructure that efficiently organises charging operations based on forecasted energy availability, supports them with boost energy from battery storage, and reliably bills them afterwards.



### Weather Data

Provision of weather data. Organise and optimise energy flows in your infrastructure based on the forecasted availability of energy from renewable sources such as wind and solar.



### Supporting Energy Data

Provide data to optimise energy management. Use operational and historical data of balancing groups to enable the trouble-free connection between the virtual world of electricity trading and the physical world of your energy infrastructure – for example, through forecast-based charging of e-vehicles.



### Billing Services

Integration with your software. Take advantage of automated billing thanks to direct connection of your energy sources with booking and ERP systems.





## Sustainability



## Energy Supply Services



### UPS and Emergency Power Supply

Ensure energy supply and prevent production downtime and economic damage.



### Intelligent Energy Supply

Building an intelligent energy supply network together. We connect all producers, consumers and prosumers with each other in order to continuously optimise the use of energy in your company and control it according to your demands.



### Stabilisation of Energy Supply

Minimize energy fluctuations and load peaks to extend the service life of electrical components and machines.



### Increase Mains Connection Power

Increase the maximum power of the grid connection. Through the intelligent use of battery storage systems, for example for load management of charging infrastructures, you can avoid costs for upgrading your grid connection.



### CO<sub>2</sub> Footprint

By reporting your energy footprint in detail, we enable you to make reliable statements about the CO<sub>2</sub> footprint of your electricity mix and thus support sustainable decisions.



### Warranty Mode

The visualisation, automatic compliance and continuous monitoring of specified limit values and the detailed history of relevant warranty data guarantee the longevity of our systems.



### Digital Product Passport

As part of the requirements of the European Green Deal, we supply the necessary energy data to provide you with the best possible support when creating Digital Product Passports.



### Displaying the Electricity Mix

With us, you always have an overview of where the energy in your company comes from and how it is finally used. This information enables you to make effective adjustments and maximise the resulting benefits.



# Energy storage block – our centrepiece

## Independent, flexible, fast

We develop and produce our battery systems and energy storage solutions independently and under our own management. This enables us to respond flexibly and independently to your individual requirements and to continuously optimise our products and solutions at a high speed. We are proud of our depth of value, our sustainable production and, of course, the products themselves, which are unconditionally entitled to the 'Made in Germany' seal of quality – a label that stands for the highest standards without compromise.

## We meet industry standards

### Fire protection that sets benchmarks:

- Unrivalled consistent hardware and software security level
- Type-tested and intrinsically safe battery systems
- Close collaboration with TÜV Rheinland
- Automatic shut-down on various redundant security architectures in the event of a critical condition, e.g. excessive temperatures, voltages or currents (single-cell monitoring)
- Flame filter prevents flames from escaping at module level in the event of a fire
- No special fire protection rooms are required

### Safest battery storage system on the market:

- Functional safety according to DIN EN ISO 13849-1:2016-06, Performance Level PL d
- Safety during transport: UN38.3 Rev. 7
- Electrical safety: DIN EN 61010-1:2011-07
- Battery safety: DIN EN 62619:2017-11
- Electromagnetic compatibility: DIN EN IEC 61000-6-2:2019-11; DIN EN IEC 61000-6-4:2020-09

## HV battery system

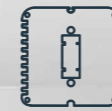
### High voltage power supply

Our energy storage systems impress with their scalability and a modular design at block and system level – from a few kW to several MW – as well as open interfaces for energy management systems and inverters. Specialised expansion variants for indoor and outdoor applications are possible thanks to the use of industrially proven cabinet systems.

## 48V system

### Specialist for exceptional tasks

A safe and stable power supply for electrically operated machines for stationary and mobile applications: Our 48V-C and 48V-L systems combine the outstanding performance and flexibility of our energy storage blocks with a further reduced space requirement thus optimally meeting the special requirements of special machine construction.



With our modular energy storage blocks as the heart of our hardware energy storage solution we have the right answer for every application.



## 48V system 'Edge UPS'

### Space saver for ensuring power supply

No more interruptions in the power supply to your critical infrastructure! With our 48V Edge UPS, you get the highest performance for a decentralised, interruption-free power supply with 3 phases and 400 V AC output voltage in the smallest space and with the highest security level.



MADE IN GERMANY

# MADE IN



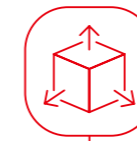
### Maximum the use of self-generated energy

Sell surplus energy and maximise your income.



### No project planning effort

We take care of the planning and implementation of the turnkey energy supply solution so that you can concentrate on your core business.



### Scalable solution

You can upgrade the container modularly to flexibly adapt your energy supply to increasing demands.



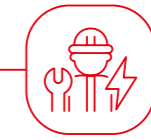
### Security against vandalism

Our containers are robust and vandal-proof to protect your investment against unwanted interference.



### Flexibility in any location

The container can be set up anywhere and provides you with a reliable energy supply completely according to your own needs.



### Simple installation

Our team takes care of the delivery, installation and commissioning of the container so that you are up and running quickly.

# Versatile, modular, location-independent

Our unique **BESS container landscape** offers you innovative possibilities to guarantee your energy supply independent of a specific location.

### Container solutions

Our energy supply containers can be used almost anywhere and provide maximum protection for your energy storage and energy management systems. They support your charging infrastructure and enable you to utilise your self-generated energy for electricity trading or optimised self-consumption – all without having to compromise on security and performance.

### HPC Cube

Our HPC Cube is the ideal all-in-one energy solution for your company's charging infrastructure, offering a charging station, battery storage system and energy management all in one ready-to-use package. The Cube can be easily connected to renewable energy sources and guarantees high-power charging without the need for an expensive extension to the grid connection.

# Impressive Service

**We continuously monitor your system and fix errors in the background to ensure trouble-free functionality.**

## In good hands

We are proud of our self-developed products and are fully convinced of their quality and performance. However, we also know that comprehensive and successful energy management is not just about hardware or software. That's why we not only provide you with support in all phases of project implementation, but above all with the development and optimisation of your energy infrastructure. For us, service means that we do everything possible to make your co-operation with us as pleasant as possible – from planning to installation and return.

## Everything at a glance

During ongoing operation, we provide you with continuous support via our EC system. We monitor the trouble-free functionality of your system, as well as all important activity and efficiency indicators, and we also take care of rectifying error messages or bugs and installing software updates in the background. In case of a problem, we start troubleshooting within 24 working hours of receiving the fault report. We guarantee complete recovery within 72 working hours. You can reach your personal contact via our service hotline to find the right solution for your problem – guaranteed to be fast, competent and reliable.

The purchase of a decentralised battery storage system can involve a high level of investment. Together with our service-orientated leasing partner for companies, we enable you to lease our products in monthly instalments.

This gives you planning security with consistent conditions and allows you to use our storage systems from day one without unforeseen costs. Get in touch with us!



Here for you: our sales team works hand in hand for your success

## Return and battery disposal

As a manufacturer of energy storage blocks, Commeo is obliged under the German Battery Act (BattG) to provide comprehensive information on the handling of our batteries and rechargeable batteries. As the end user, you are legally obliged to return used batteries. If you are unable to dispose of the batteries correctly yourself, Commeo will take them back free of charge. Our energy storage blocks must never be disposed of with household waste.

The proper return of the storage systems prevents potential environmental damage and enables individual raw materials to be recycled. You will not incur any costs for the return, but delivery or collection costs may be incurred. Contact our customer service department to organise the return and in doing so make a further contribution to environmental protection.



### Your contact person

Henning Koch

Monday to Friday  
8:00 – 16:00 h  
Service-Hotline:  
+49 5407 81381–80  
service@commeo.com

## References

Our references reflect the diversity of our projects, the quality of our services and the trust placed in us by our customers. Discover the challenges we have overcome and the successes we have achieved. We have always focussed on the needs of our customers and have built up a sustainable and successful partnership along the way.



[www.commeo.com](http://www.commeo.com)

# SERVICE



**commeo**®

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