

# Global Innovation Report<sup>©</sup> H1 2025

Celebrating Pioneering Solar & Storage Innovations: Insights from Top Innovation Awards Winners



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# Background

# Awarding Ingenuity

- The Top Innovation Award stand as a pinnacle of recognition in the global solar energy industry, celebrating technological excellence and groundbreaking advancements. These awards honor manufacturers that drive significant progress and innovation towards energy transition, showcasing the highest quality and most unique technologies in the market.
- With a rigorous evaluation process supported by expert analysis and comprehensive surveys, including feedback from intermediaries, the Top Innovation Awards ensure that only the most innovative technologies are recognized. This prestigious accolade enhances visibility and credibility, positioning recipients as leaders in solar innovation.
- The Global Innovation Report© serves as a platform to showcase awarded innovations and products, highlighting state-of-the-art technologies from around the world.

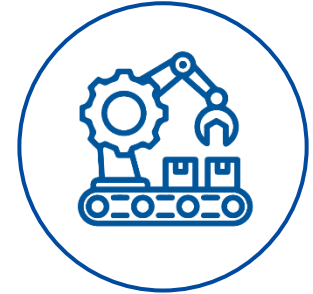




# Top Innovation Awards | Recipient Profile

## Innovators

- **Manufacturers**, with their extensive experience and market maturity, possess a deep understanding of industry needs and opportunities for innovation. Their established presence allows them to leverage existing resources and expertise to drive meaningful advancements in solar technology.
- **Startups** thrive on creativity, ideas, and disruptive solutions. Built on a foundation of ingenuity and ambition, startups bring fresh perspectives and breakthrough innovations to the forefront, challenging the status quo and pushing the boundaries of what's possible in the solar industry.
- By honoring both manufacturers and startups, the Top Innovation Awards celebrate the full spectrum of innovation in the solar industry while recognizing the contributions to propel energy transition.



Manufacturers



Start ups

# Setting the Stage: Recognizing Innovation in Renewable Energy

- The **EUPD Global Innovation Report**© 2025 H1 stands as a testament to the collective progress of the renewable energy industry, documenting innovations that are transforming the solar and energy storage landscape.
- With a focus on both technological advancements and market impact, this report highlights the exceptional efforts of **manufacturers and startups** that are driving sustainability forward.

## Purpose of the Report

- The Global Innovation Report 2025 H1 serves as a vital resource for stakeholders, including installers, manufacturers, EPCs, wholesalers, and investors. By showcasing award-winning innovations endorsed by industry experts and intermediaries, it highlights cutting-edge solutions driving progress in the solar and storage sectors. The report offers actionable insights into emerging technologies, enabling stakeholders to identify opportunities, foster collaborations, and stay ahead in a rapidly evolving energy landscape.

## Origins of the Report

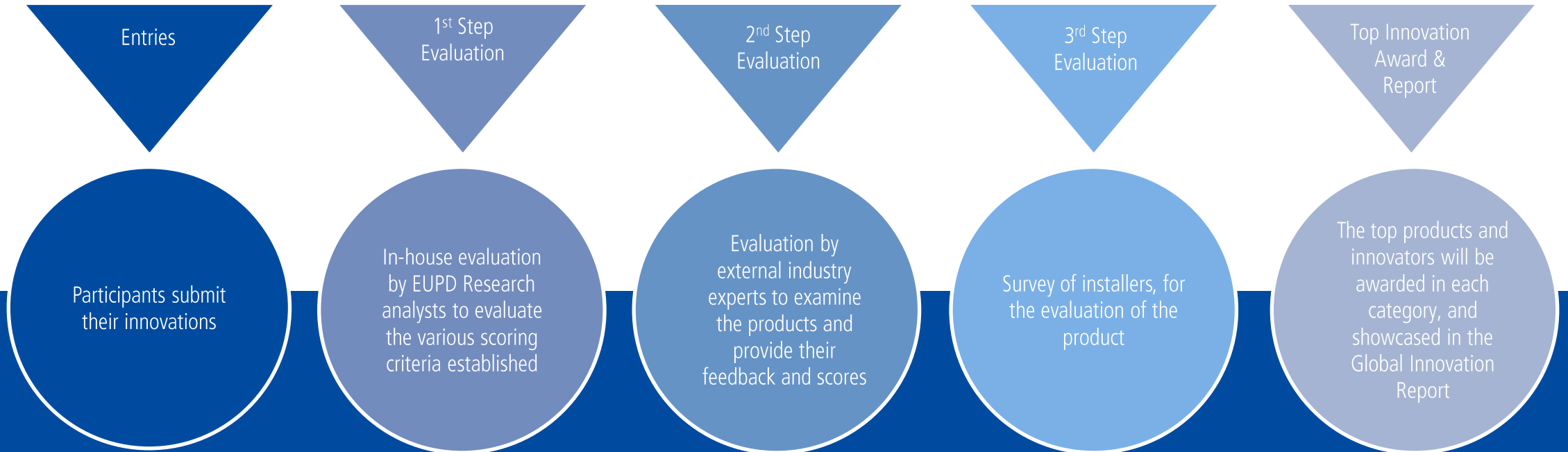
- This report is an extension of the **EUPD Top Innovation Awards**©, a program designed to honor the best in renewable energy innovation.
- By combining insights from a rigorous evaluation process with endorsements from installers and industry experts, the Global Innovation Report provides a platform for showcasing the innovators and innovations that are pushing the technological advancements.

## A Unique Multi-Layered Evaluation Approach

The awards and this report are founded on a multi-faceted evaluation process that includes:

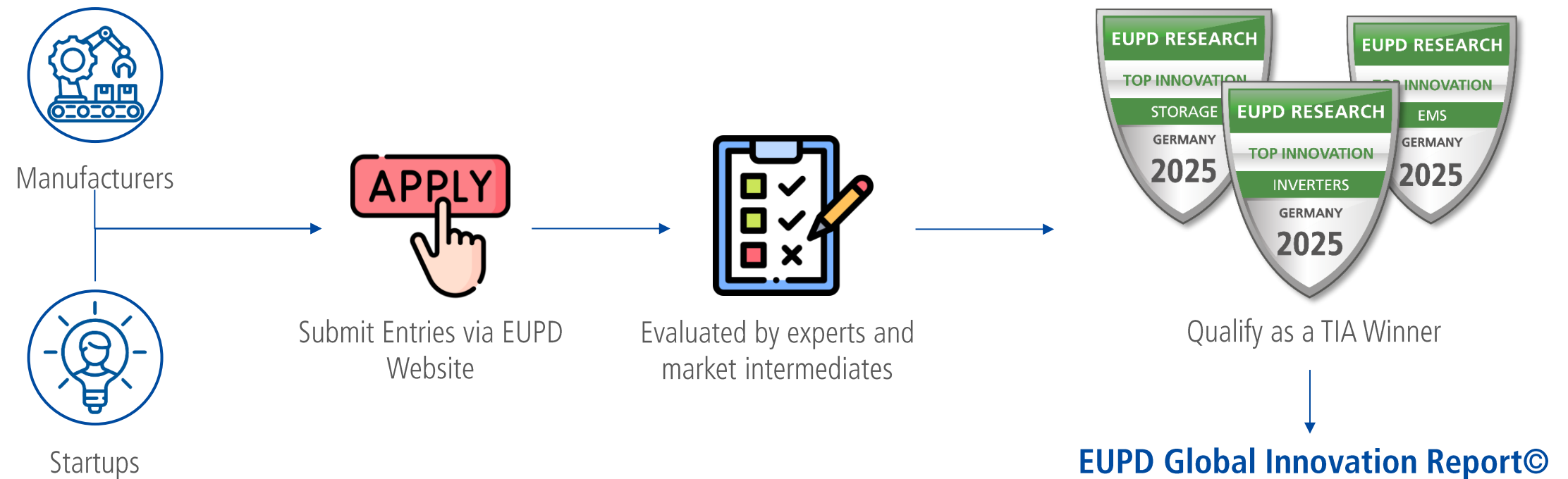
- **Intermediaries Feedback:** Drawing insights from those directly involved in the application and installation of these technologies.
- **Expert Panel Assessments:** Leveraging the expertise of thought leaders and industry specialists.
- **EUPD Research's Internal Review:** Using proprietary methodologies developed over two decades to ensure accuracy and relevance.

# Methodology



# Framework of the Report

- The Global Innovation Report is built on a comprehensive framework that captures the journey of innovation from application to recognition and publication.
- The process ensures that only the most impactful and transformative innovations are featured in the report, supported by multiple layers of evaluation and endorsement.



- Manufacturers and Startups are both eligible as contenders for the awards who are invited to apply using the EUPD official website. The innovations are then evaluated and endorsed by multiple intermediaries and awarded with the **Top Innovation Award©** and featured in the Global Innovation Report©.

# Handover Moments



# Awarded Innovations

# Storage



# SigenStor

Winner: Sigenergy Technology Co., Ltd.

Category: Storage

Regions: Europe, South Africa, Australia



## About Sigenergy Technology:

Sigenergy specializes in developing advanced energy solutions for homes and businesses, offering a product portfolio that includes energy storage systems, solar inverters, and EV chargers. Backed by a world-class R&D team composed of hundreds of top industry experts, the company is committed to continuous innovation with the goal of creating a greener future. With a global sales and service network, Sigenergy strives to be a trusted partner for customers on their journey toward sustainability.

## Contact Info

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# SigenStor

## Description of the Innovation

SigenStor is an advanced, AI-powered 5-in-1 energy storage solution designed for both residential and commercial & industrial (C&I) applications. It seamlessly integrates key components into one modular, scalable system: a solar hybrid inverter, EV DC charger, battery PCS (power conversion system), battery pack, and energy management system (EMS). This highly configurable system delivers exceptional efficiency, flexibility, and future-proof scalability for diverse energy needs.

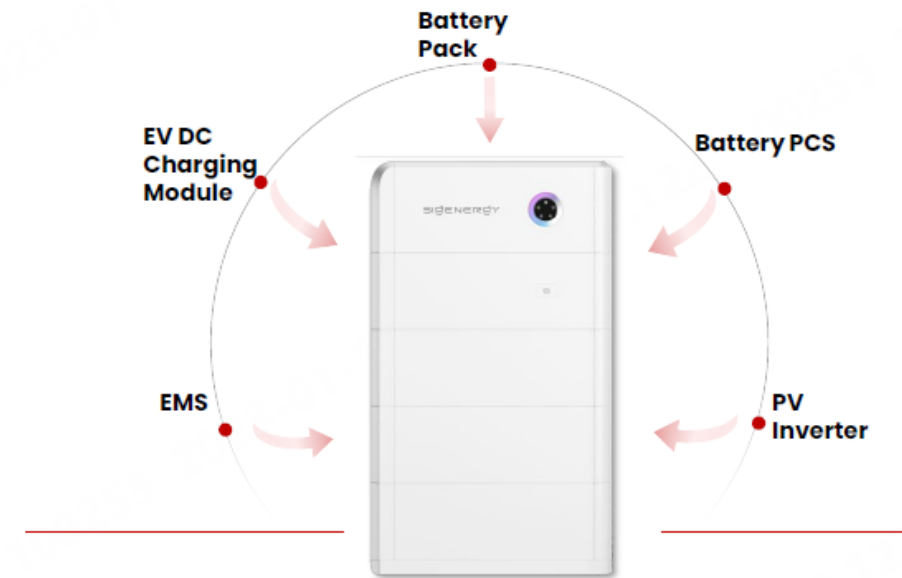
## Disruptive Features

SigenStor's modular design makes it perfect for both residential and small C&I projects, requiring no special wiring or system modifications. It features a safety-focused, ultra-wide voltage booster that raises the battery's voltage from 32V to 800V, with both the inverter and battery sharing the same bus bar.

The integrated DC-coupled charging module enables fast EV charging directly from the PV system and supports bi-directional charging, allowing the EV to feed energy back to the battery, home, or grid. This module was the first listed under the KfW 442 program in Germany, supporting 400V and 800V DC charging.

## 5-in-One

Simple Design, Powerful Function



### Compatible with different scenarios

PV+ Energy Storage system

AC Coupled Storage system

PV + Energy Storage + EV Charging system

Off-grid system

# SigenStor

## Unique Factors

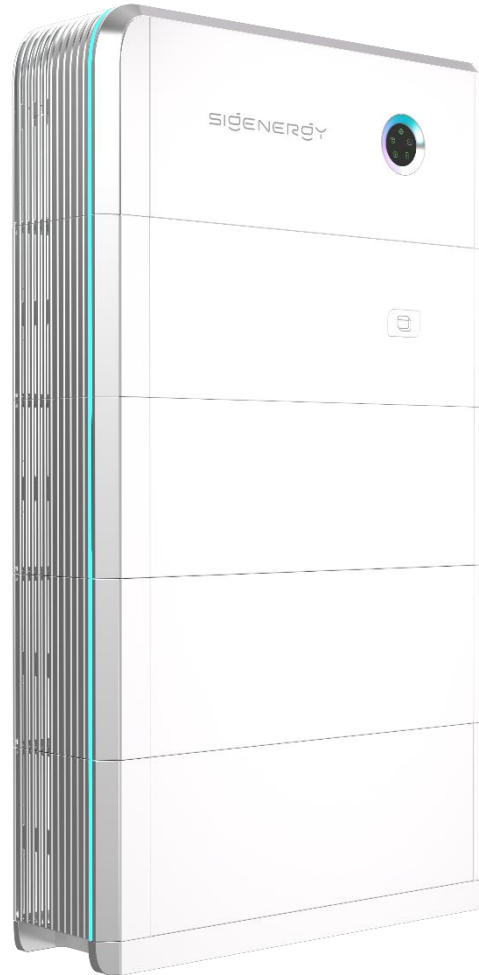
With its modular design, SigenStor suits residential and small C&I projects. It features an ultra-wide voltage booster (32V-800V) and an integrated DC charging module for fast, bi-directional EV charging. The system supports grid power and offers unique DC ground fault protection.

## Environmental Benefits

SigenStor reduces fire risks, extends battery life, and minimizes waste. AI-based energy management ensures efficient use of renewables, while integrated fast EV charging supports green transportation. Its PV-powered manufacturing facilities further enhance sustainability.

## Customer Benefits & Competitive Advantage

SigenStor lowers installation costs, minimizes failures, and offers a long-lasting battery. The mySigen app enables full energy monitoring, TOU mode, and AI-driven automation, delivering a user-friendly, cost-efficient energy solution for the future.



# EcoFlow PowerOcean Plus

Winner: EcoFlow  
Category: Storage  
Regions: Germany



## About EcoFlow:

EcoFlow is a leading provider of environmentally friendly energy solutions committed to powering a changing world. Since its founding in 2017, EcoFlow's vision has been to be THE benchmark for flexible, innovative, reliable and user-friendly energy solutions - whether at home, outdoors or on the move. With a modern production center in China and subsidiaries in the USA, Germany and Japan, EcoFlow has already supplied more than 4.5 million users in 140 markets worldwide.

## Contact Info

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# EcoFlow PowerOcean Plus

## Description of the Innovation

The EcoFlow PowerOcean Plus is a high-performance energy solution designed to optimize solar power utilization. With a 60 kWh storage capacity, 29.9 kW inverter output, and support for complex roof configurations, it integrates seamlessly with a smart Home Energy Management System (HEMS) to enable energy independence and efficient resource management.

## Disruptive Features

The PowerOcean Plus offers industry-leading whole-home backup power, delivering 29.9 kW with a seamless 20ms switchover during outages. Its built-in Current Transformer (CT) eliminates the need for external meters, significantly reducing installation time and complexity, while ensuring uninterrupted energy flow for households.

## Unique Factors

EcoFlow's integrated system combines solar forecasting, dynamic pricing, and energy visualization via an app and web portal. Its 29.9 kW capacity and innovative design save installation time and offer unmatched flexibility. The PowerOcean Plus stands out as a reliable, scalable solution for modern energy needs.



# EcoFlow PowerOcean Plus

## Environmental Benefits

Designed to adapt to complex roof structures, the PowerOcean Plus optimizes every inch of solar energy, reducing reliance on grid power and maximizing clean energy utilization. Its durable LFP batteries, with up to 6,000 cycles, and IP65 protection ensure reliable performance and long-term sustainability. By seamlessly integrating with household loads, including heat pumps and EVs, the system promotes clean energy use in daily life. EcoFlow's extended 15-year warranty further highlights its commitment to environmental and user sustainability.

## Customer Benefits & Competitive Advantage

The PowerOcean Plus provides a seamless and efficient energy management experience with its built-in CT and plug-and-play battery design, reducing installation complexity and time by approximately 50 minutes compared to competitors. For end users, the advanced HEMS enables cost optimization through dynamic tariff access and personalized energy management. With industry-leading technologies and robust performance, the PowerOcean Plus positions itself as a top-tier solution in the residential energy storage market.





# Kehua Full-stack High Safety Management & Control Techniques for Energy Storage

Winner: Xiamen Kehua Digital Energy Tech Co.,Ltd

Category: Storage

Regions: Europe



## About Xiamen Kehua Digital Energy:

Kehua Data Co., Ltd., established in 1988 and publicly listed in 2010 (Stock No. 002335.SZ), is a leading provider of power solutions committed to delivering safe, green, and intelligent energy. With a robust R&D team comprising over 1,000 engineers, the company has developed more than 2,100 patents and contributed to over 220 national and industrial standards. Operating six manufacturing bases covering 416,000 square meters, Kehua boasts an annual production capacity exceeding 40 GW. Kehua's mission is to provide integrated solutions for power protection and energy conservation, striving for a low-carbon digital future with smart energy.

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# Kehua Full-stack High Safety Management & Control Techniques for Energy Storage

## Description of the Innovation

Kehua's Full-stack High Safety Management & Control Techniques bring advanced safety, thermal management, and modular integration to energy storage systems. Features include intelligent fire protection, refined liquid cooling for extended battery life, and a compact, all-in-one design for flexibility and scalability.

## Disruptive Features

- Optimized Energy Use: Efficiently stores and deploys green energy, maximizing utilization and reliability.
- Cost & Emissions Reduction: Enables peak-valley arbitrage and demand management to lower costs and carbon footprints.
- Distributed Energy Integration: Seamlessly integrates with solar and wind systems to enhance energy flexibility and reduce losses.

## Unique Factors

- Multi-Level Safety: Advanced fire protection and insulation mechanisms minimize risks.
- High Integration: Combines six major systems into a compact, cost-efficient design, reducing space and improving reliability.
- Efficient Cooling: Liquid cooling improves battery performance and lifespan, outperforming traditional air cooling systems.



# Kehua Full-stack High Safety Management & Control Techniques for Energy Storage

## Environmental Benefits

- Enhanced Renewable Energy Usage: Promotes clean energy integration and minimizes waste.
- Sustainability: Features like long battery life, recyclable materials, and modular design reduce environmental impact.
- Reliable Operations: Prevents energy waste and environmental risks due to failures, contributing to safer and greener energy systems.

## Customer Benefits & Competitive Advantage

- Economic Benefits: Peak shaving, valley filling, and demand management save electricity costs and boost subsidies.
- Competitive Edge: Exceptional safety, high integration, flexible designs, and strong brand influence position Kehua as a market leader.
- Growth Potential: Strong market demand, innovation-driven progress, and global expansion opportunities ensure continued relevance and success.

# Integrated Charging and Energy Storage Station Project

Winner: Tecloman Energy GmbH

Category: Storage

Regions: Belgium

## TECLOMAN

### About Tecloman Energy:

Tecloman, founded in 2017, is a global provider of comprehensive Battery Energy Storage Systems (BESS) solutions, with dual headquarters in Munich, Germany, and Chengdu, China. Drawing on over 30 years of expertise in the power industry, the company offers R&D, manufacturing, sales, and after-sales support, ensuring high reliability and safety. Tecloman's tailored energy storage solutions cater to utility-scale storage, commercial & industrial projects, data centers, mining, electric vehicles, and mobile energy applications. With a focus on cutting-edge technology, its systems integrate liquid cooling, extreme environment adaptability, and precise temperature control to enhance efficiency and longevity.

With a global presence across Europe, Asia, and Africa, Tecloman contributes to the energy transition by delivering market-specific, high-performance solutions. Its international strategy is supported by a robust supply chain and an expert team that addresses regional energy storage challenges.

### Contact Info

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# Integrated Charging and Energy Storage Station Project

## Description of the Innovation

Tecloman's 1MW/2MWh energy container solution was selected for installation at Gabriëls' 17th fast-charging station, a key part of their expanding EV infrastructure. This fully integrated system combines energy storage and fast charging, designed to meet the increasing demand for efficient and reliable EV charging networks.

## Disruptive Features

The project leverages existing site conditions to integrate energy storage seamlessly with fast-charging stations, creating a self-sustaining energy cycle. By optimizing available space and ensuring efficient energy distribution, this setup enhances charging performance while addressing sustainability challenges. Combining storage with fast-charging solutions positions this system as a benchmark for future charging infrastructure innovations.

## Unique Factors

Tecloman's energy container technology delivers superior energy storage compared to traditional smaller units, featuring 10ms seamless power transition technology. This ensures uninterrupted energy supply, even during unstable weather or grid fluctuations, minimizing downtime and risks. The system's ability to provide reliable power in challenging conditions highlights its resilience and independence.



# Integrated Charging and Energy Storage Station Project

## Environmental Benefits

Containerized energy storage eliminates safety risks associated with conventional fuel stations, such as hazardous materials and explosions. By securely isolating energy within the unit and integrating advanced fire protection systems, the solution ensures a safer and more sustainable alternative. Additionally, its odorless, noiseless operation guarantees smooth power conversion and transmission while promoting clean, green energy infrastructure.

## Customer Benefits & Competitive Advantage

.The integrated storage and charging solution, with optional solar power integration, is a scalable model for urban areas. Equipped with AI-controlled cloud storage, the system ensures optimal energy dispatch, smart distribution, and reduced waste. This holistic approach to energy management addresses traditional challenges like safety risks, transportation inefficiencies, and energy loss, offering unmatched reliability and efficiency.

# Malta Pumped Heat Energy Storage (PHES)

Winner: Malta Inc.

Category: Storage

Regions: Middle East & Africa



## About Malta Inc.:

Malta Inc., named to TIME Magazine's Top GreenTech Companies 2024 for its innovations in energy storage, has developed a groundbreaking thermo-electric energy storage system. The Steam Energy Management and Storage (SEMS) system uses a high-performance heat pump and steam to store thermal energy in molten salt, which can be converted back into power and heat on demand. This solution offers long-duration energy storage—from 8 hours to several days—at grid scale.

Founded on the ideas of a Nobel Prize-winning Stanford professor, Malta's mission is to transition to a decarbonized electric system by integrating existing technologies and supply chains. Incubated at Alphabet's X, the company was spun off as an independent entity in December 2018.

Malta's shareholders include X, Breakthrough Energy Ventures, Alfa Laval, Proman, Piva Capital, Chevron Technology Ventures, Siemens Energy Ventures, and Cox Energy, among others.

## Contact Info

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# Malta Pumped Heat Energy Storage (PHES)

## Description of the Innovation

Malta Inc. has developed a 100 MW long-duration energy storage system that replaces fossil fuel plants with clean, on-demand power. Using molten salt and chilled liquid, it stores electricity as thermal energy for up to eight days and supplies both electricity and industrial heat. Originally incubated at Alphabet's X, Malta leverages proven thermodynamic principles to offer scalable, cost-effective storage solutions.

## Disruptive Features

Malta's PHES technology supports large-scale renewable integration by balancing grid fluctuations and providing critical grid services like reactive power. Unlike conventional batteries, it avoids supply chain constraints, works with existing infrastructure (CSP, CHP, fossil plants), and enables a cost-efficient transition to clean energy.

## Unique Factors

Recognized as a TIME Top GreenTech Company 2024, Malta's system outperforms electrochemical and compressed air storage in both capacity (8+ hours) and power output (100 MW+). Its dual capability to generate power and industrial heat enhances commercial viability, while its ability to integrate with existing plants lowers costs and preserves jobs.



## Malta Key Differentiators



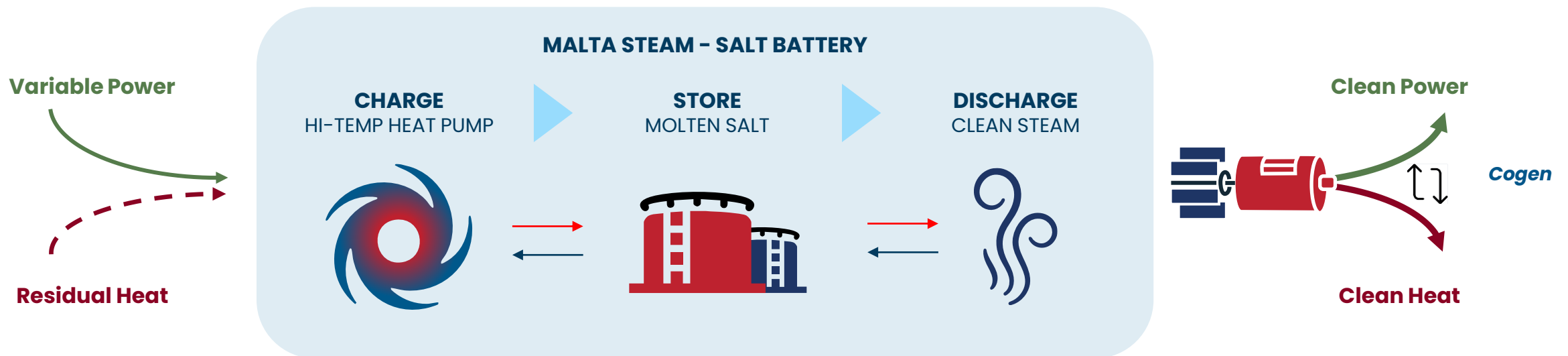
# Malta Pumped Heat Energy Storage (PHES)

## Environmental Benefits

By displacing fossil fuel plants, Malta's storage solution significantly cuts CO<sub>2</sub> emissions. It avoids hazardous chemicals, increases energy efficiency, and has a lifespan of over 25 years, ensuring long-term sustainability.

## Customer Benefits & Competitive Advantage

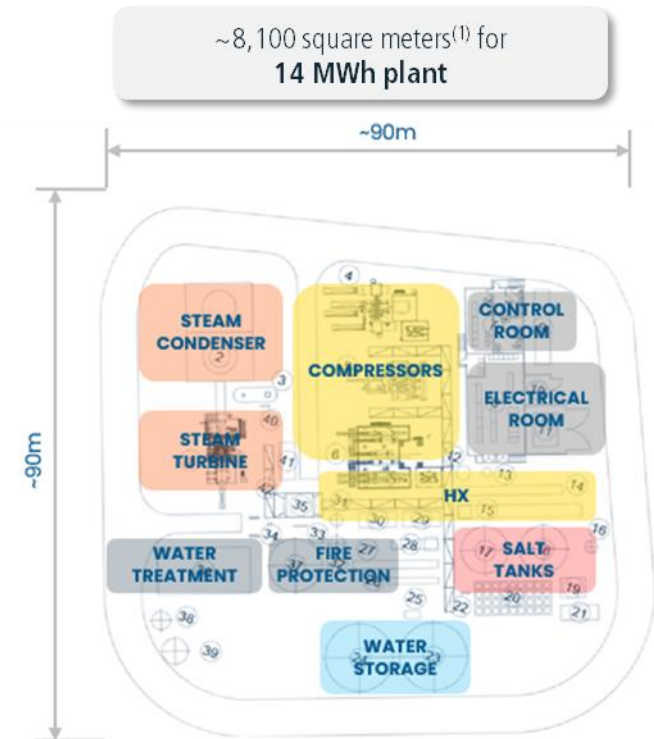
Malta offers reliable, dispatchable clean energy with long storage durations, making it ideal for utilities and industries. Its ability to optimize energy storage, stabilize grids, and reduce costs positions it as a leader in long-duration storage. With applications ranging from standalone plants to co-located renewables, Malta is driving the global energy transition.



# Malta Pumped Heat Energy Storage (PHES) Commercial Demo Project

Malta-D plant will validate the operability and control of the full-scale plant and provide a true commercial demonstration of the technology

14 MWh Power-to-Power Demonstration Plant in Puertollano, Spain – NTP in 2025 COD in 2027



Malta-D Commercial Operation Date (COD): Dec 2027

# One-stop Smart Home Energy Solution

Winner: LumenHaus GmbH  
Category: Storage  
Regions: Germany



## About LumenHaus GmbH:

Lumenhaus is an innovative platform that drives the energy transition through decentralized, community-based, and sustainable energy supply. Partners and customers alike benefit from the advantages of the platform, which enables a sustainable and convenient energy future.

## Contact Info

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# One-stop Smart Home Energy Solution

## Description of the Innovation

LumenHaus integrates photovoltaic modules, batteries, heat pumps, and EV chargers into a single platform, controlled via an app. AI optimizes energy use, reduces costs, and enables Virtual Power Plant (VPP) trading for added income. This direct-to-consumer model eliminates intermediaries, offering smarter and more efficient solutions for sustainable living.

## Disruptive Features

The "Design Your System" tool uses satellite imagery and AI to assess rooftops, calculate solar potential, and create custom energy solutions. Self-learning algorithms refine these models for ongoing optimization, simplifying clean energy adoption and enhancing user experience.

## Unique Factors

An IoT-based ecosystem connects all devices seamlessly, with Lumi AI providing real-time energy insights and cost-saving suggestions. SmartEco Optimizer adjusts energy use dynamically, setting LumenHaus apart with its integrated, intuitive, and efficient energy management.



# One-stop Smart Home Energy Solution

## Environmental Benefits

LumenHaus reduces grid reliance and maximizes renewables through advanced optimization. VPP integration supports energy trading, encouraging green energy adoption and lowering carbon footprints while building sustainable communities.

## Customer Benefits & Competitive Advantage

Users gain full control over energy systems via an intuitive app, saving costs and enhancing energy independence. Installers benefit from streamlined setup and real-time troubleshooting, ensuring LumenHaus stands out as an innovative and practical solution in the green energy market.



# Inverters



# EZHI-Single-phase Hybrid Microinverter for Storage

Winner: Altemergy Power System Europe

Category: Inverters

Regions: Germany, France, Netherlands



## About Altemergy Power System:

APsystems provides advanced solar microinverter technology designed for residential and commercial & industrial (C&I) systems. Its solar solutions integrate highly efficient power inversion with a user-friendly monitoring interface, delivering reliable and intelligent energy management. The company's proprietary system architecture enhances solar energy harvest and ensures maximum output for solar arrays. Committed to continuous innovation, APsystems actively develops new technologies and products to meet the evolving needs of the solar market.

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# EZHI-Single-phase Hybrid Microinverter for Storage

## Description of the Innovation

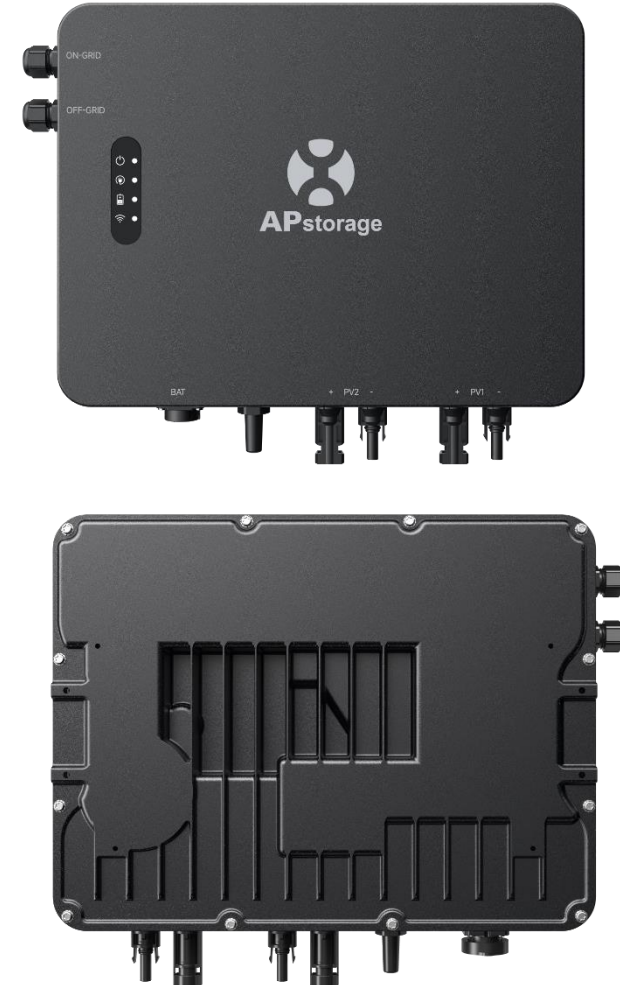
EZHI is a compact energy storage solution for balcony photovoltaic systems, designed to store excess solar energy for future use. It integrates seamlessly with various micro-inverter systems, providing off-grid backup power and portability for diverse energy needs. Easy installation makes it accessible for residential users.

## Disruptive Features

EZHI simplifies solar adoption with high-efficiency GaN technology, off-grid EPS functionality, and modular, DIY-friendly installation. Its portable design supports off-grid use, while compatibility with existing setups ensures flexibility. By maximizing energy self-consumption, it reduces dependency on grid electricity.

## Unique Factors

- GaN Technology: Superior energy conversion efficiency.
- Off-Grid EPS Functionality: Reliable backup power during outages.
- Modular Design: Quick installation without complex wiring.
- Portability: Versatile use for various applications.
- Micro-Inverter Compatibility: Easy integration with existing systems.



# EZHI-Single-phase Hybrid Microinverter for Storage

## Environmental Benefits

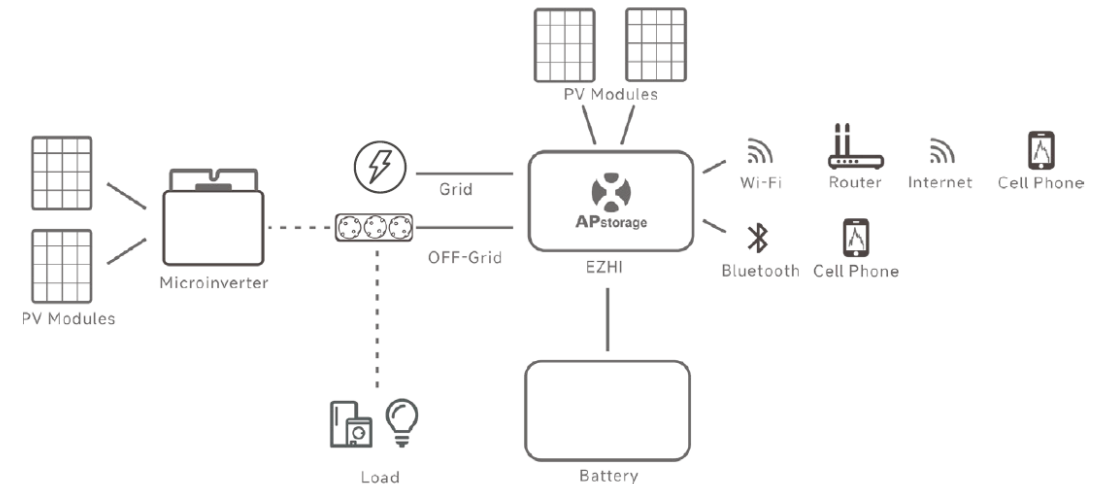
EZHI promotes sustainable living by maximizing solar energy utilization, reducing reliance on grid electricity, and lowering fossil fuel demand. Its GaN technology boosts energy efficiency, while durable components ensure long-term use, minimizing waste. Modular scalability supports personalized energy needs, reducing unnecessary resource use. Additionally, it empowers off-grid living in areas with limited grid access, offering clean energy independence.

## Customer Benefits & Competitive Advantage

EZHI provides:

- Tailored Solutions: Ideal for residential and DIY solar setups.
- Energy Independence: Stores energy for later use, reducing reliance on the grid.
- Versatility: Functions as both a storage system and portable power source.
- Ease of Use: Simple setup and integration with micro-inverter systems.

Its affordability and simplicity align with rising demand for DIY solar solutions, while its adaptability to diverse conditions positions it for growth in developed and emerging markets, supporting sustainable energy transitions globally.



# AUXSOL Inverters

Winner: AUXSOL  
Category: Inverters  
Regions: Germany

## AUXSOL

### About AUXSOL:

AUXSOL, a new energy brand belonging to AUX Group. With a registered capital of USD 44 million, AUXSOL specializes in on-grid inverters, hybrid inverters, battery packs, and energy storage systems. AUX Group was founded in 1986, for many years it ranked China's top 500 enterprises. AUX Group covers several industries: air conditioning, power utilization, power distribution, new energy, and medical service. It has two listed companies (601567.SH, 02080.HK). AUX Group always strictly adheres to the philosophy of "Quality First", so does AUXSOL, which has over 100 employees and has been certified by ISO 9001 & ISO 14001 & ISO 45001.

In line with the development trend of global new energy industry, combining with 30+ years R&D experience of AUX Group, AUX Solar commits to providing a complete system solution for our customers with our high quality, efficient, reliable and user-friendly solar products.

Up till now, AUXSOL has set up two R&D centers in Ningbo and Shenzhen as well as service centers in Pakistan, Brazil, Colombia, Poland, Germany, Bangladesh, and Indonesia, building a marketing service system covering global solar markets. In the future, AUXSOL will improve its industrial layout of new energy with continuous innovation and dedication to solar industry, with the ultimate goal of promoting energy reform worldwide and rendering green energy available to thousands of households.



# AUXSOL Inverters

## Description of the Innovation

AUXSOL's innovative inverter technology is advancing the renewable energy sector by enhancing efficiency and reliability. With two dedicated R&D centers and globally certified products meeting standards like EN 50549-1 and EN IEC 62190D, AUXSOL is at the forefront of sustainable energy solutions, driving progress in the transition to clean energy.

## Disruptive Features

AUXSOL inverters achieve 98.6% efficiency with advanced conversion and monitoring technologies, reducing energy loss and extending equipment lifespan. Their robust design ensures reliability in diverse climatic conditions, making them ideal for commercial and industrial projects. These advancements increase system performance and ROI, promoting more sustainable energy adoption.

## Unique Factors

AUXSOL's inverters integrate seamlessly with their HEMS (Home Energy Management System), offering households a comprehensive renewable energy solution. Key advantages include: Energy Monitoring: Real-time tracking of home device consumption. Energy Optimization: Reduced grid dependence and cost savings. Cost Efficiency: Dynamic electricity pricing, peak shaving, and valley filling. One-Stop Solution: All components are developed and manufactured by AUXSOL, ensuring seamless integration.



# AUXSOL Inverters

## Environmental Benefits

AUXSOL inverters reduce greenhouse gas emissions by increasing solar energy utilization and enabling energy storage during peak demand periods. This promotes broader adoption of clean energy and reduces reliance on fossil fuels.

## Customer Benefits & Competitive Advantage

AUXSOL's products provide significant cost savings by reducing maintenance and operational expenses, delivering long-term ROI. Their stability and flexible design meet the growing global demand for solar energy systems, positioning AUXSOL as a trusted solution for years to come.

## Contact Info

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# KOSTAL Plenticore G3

Winner: Kostal Industrie Elektrik GmbH & Co. KG  
Category: Inverters  
Regions: Germany



## About Kostal Industrie Elektrik GmbH & Co. KG:

KOSTAL Industrie Elektrik, established in 1995 as part of the KOSTAL Group, leverages extensive automotive expertise to serve diverse markets, including drive technology. Headquartered in Hagen, Germany, the company employs over 520 professionals across development, production, and administration. In 2006, it expanded its global reach in photovoltaics by founding the subsidiary KOSTAL Solar Electric GmbH in Freiburg. Operating through three business units—Drives, Electronics, and Photovoltaics—KOSTAL Industrie Elektrik is committed to sustainability, focusing on products that generate renewable energy and promote efficient energy use.

## Contact Info

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# KOSTAL Plenticore G3

## Description of the Innovation

The KOSTAL PLENTICORE G3 is a compact, flexible, and scalable solution designed as a solar, hybrid, or battery inverter. It is the first inverter globally to enable immediate or future power expansion digitally, making it a highly sustainable and adaptive product. This approach aligns with KOSTAL's commitment to renewable energy and sustainable practices, offering users a durable and versatile system tailored to evolving energy needs.

## Disruptive Features

The PLENTICORE G3's modular design simplifies energy system upgrades by enabling digital product expansions without physical hardware changes. The innovative 3x3 principle—three base devices (S/M/L) with three performance variants each—allows 27 configurations, significantly reducing resource consumption and inventory complexity. This adaptability supports long-term sustainability by minimizing device replacement and promoting customer-specific energy solutions.

## Unique Factors

The PLENTICORE G3's standout feature is its ability to activate additional functionality digitally, eliminating the need for new hardware purchases. This capability makes the inverter suitable for scaling energy systems without added environmental impact. Its modular 3x3 configuration approach ensures flexibility, offering personalized solutions for residential and small business customers while minimizing production and logistics footprints.





# KOSTAL Plenticore G3

## Environmental Benefits

The PLENTICORE G3 combines eco-friendly design, durable construction, and modular functionality to reduce resource use and environmental impact. Locally manufactured in Hagen, Germany, it emphasizes sustainable production with short transport routes and minimal packaging. The inverter's repairable design and efficient material usage extend its lifecycle, reducing waste. Integrated monitoring via the KOSTAL Solar App promotes energy efficiency and informed prosumer behavior.

## Customer Benefits & Competitive Advantage

The PLENTICORE G3 offers unparalleled adaptability, switching seamlessly between solar, hybrid, and battery operation to meet changing energy demands. This flexibility caters to a diverse range of users—from residential to industrial customers—ensuring a future-proof investment. Integration with KOSTAL's Solar Portal and Solar App enhances usability and energy optimization, reinforcing the brand's position as a leader in sustainable PV and storage solutions.

# Modules

# SEG-720-BTC-BG

Winner: SEG Solar Inc.  
Category: Modules  
Regions: USA



## About SEG Solar Inc.:

Founded in 2016 and headquartered in Houston, Texas, SEG Solar is a US manufacturer with a fully integrated supply chain that is internationally recognized for producing high-quality solar modules. SEG Solar is dedicated to delivering reliable and cost-effective solar panels globally to utility, commercial, and residential markets. SEG Solar has been honored as a Top Performer by PVEL for three consecutive years, earned a Silver Medal in the EcoVadis CSR rating, and is ranked as one of the Top 10 Solar Panel Brands serving the US market by SolarReviews, and has been awarded the Top Innovation Modules by EUPD.

With a module production capacity of over 6GW, SEG Solar operates several global manufacturing bases strategically located in the USA and Indonesia. This underscores our commitment to strengthening the global photovoltaic industry's supply chain and promoting energy independence. By the end of 2024, SEG Solar had shipped over 6GW of solar modules worldwide.

## Contact Info

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# SEG-720-BTC-BG

## Description of the Innovation

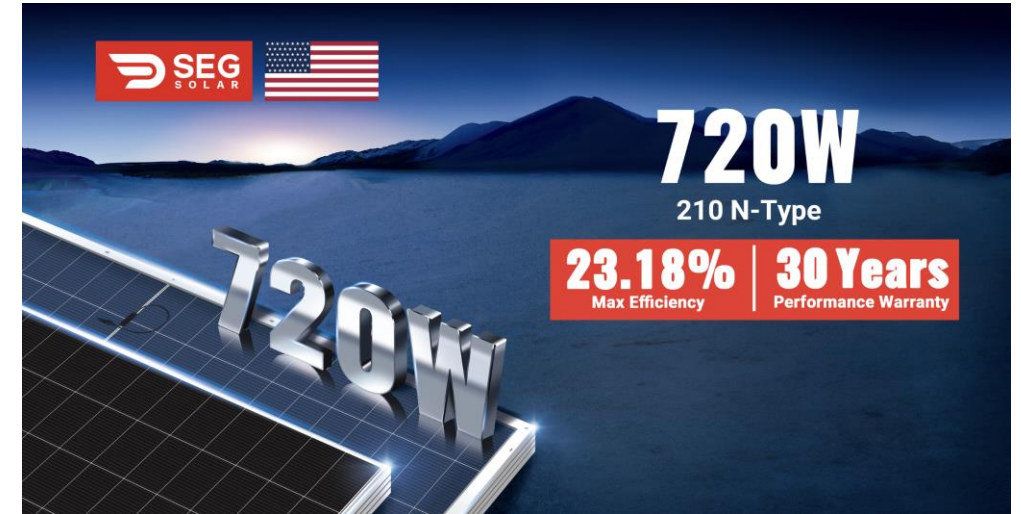
The SEG-720-BTC-BG leverages advanced 210mm N-type cells to deliver an impressive module power of 720Wp. This high-performance product is designed for large-scale ground-mounted power stations, offering significant power output and long-term reliability. It comes with extended product and power warranties, ensuring dependable energy generation while reducing costs for customers.

## Disruptive Features

The SEG-720-BTC-BG stands out with its high efficiency, superior power generation, and exceptional reliability, setting the benchmark for ground-mounted solar modules. By generating more electricity within the same area, it optimizes land use and helps lower energy costs, making it an ideal choice for large-scale installations.

## Unique Factors

Using cutting-edge 210mm N-type cells, this module achieves 720Wp power output with 23.18% efficiency, meeting the demanding requirements of large power stations. Its advanced design ensures higher energy yields, enhancing the overall performance and profitability of solar installations.



## High-Efficiency Cell Technology



# SEG-720-BTC-BG

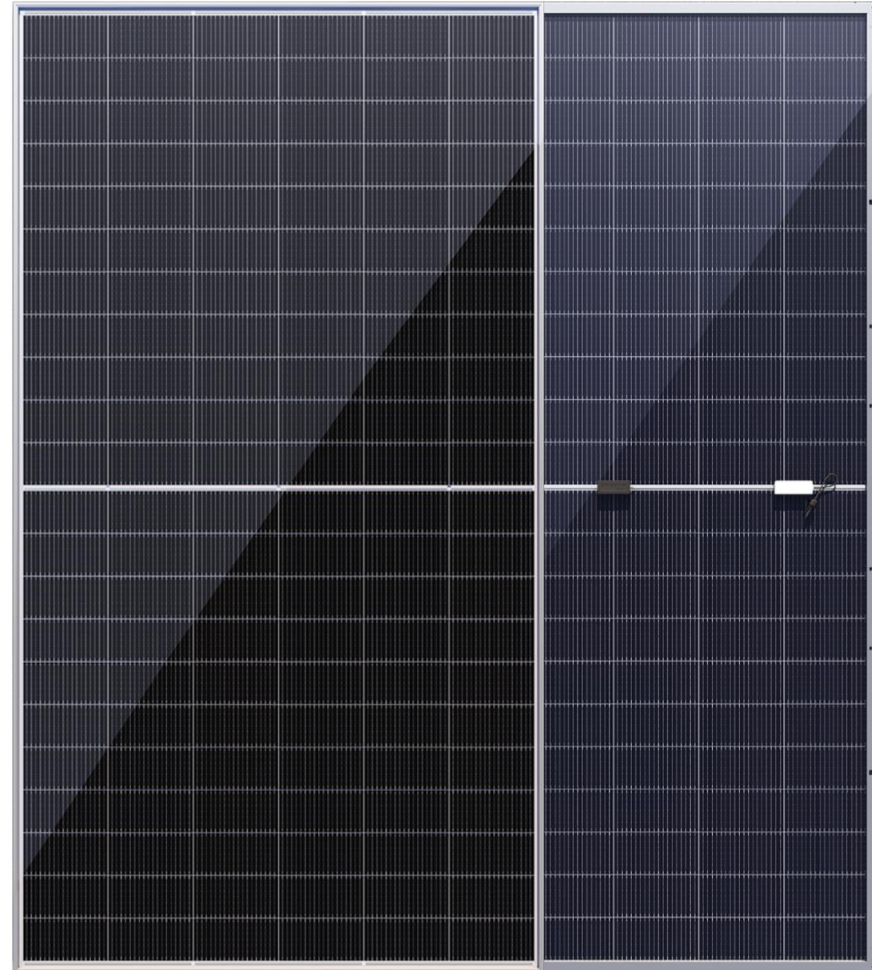
## Environmental Benefits

SEG Solar is committed to reducing its environmental impact and actively participates in environmental protection initiatives.

As a member of PV CYCLE, SEG has always placed a strong emphasis on the recycling and disposal of solar modules at the end of their life cycle, ensuring that they are responsibly managed to minimize environmental harm.

## Customer Benefits & Competitive Advantage

The ALPINE N Series 720Wp module is designed with N-type 210mm high-efficiency cells, offering an impressive conversion efficiency of 23.18% and a low temperature coefficient of  $-0.30\%/^{\circ}\text{C}$ , ensuring reliable performance even in high-temperature environments. Its innovative design, featuring low voltage and high string power, maximizes the reduction of BoS (Balance of System) and LCOE (Levelized Cost of Electricity) costs. This makes the module highly suitable for large-scale ground-mounted power plants, providing customers with reliable returns. With its high power, efficiency, energy yield, and exceptional reliability, the ALPINE N Series 720Wp module is a top choice for maximizing performance and reducing operational costs.



# High Snow Load- Low Degeneration

Winner: Swisswatt One AG  
Category: Modules  
Regions: Switzerland



## About Swisswatt One AG:

SwissWatt One AG is a leading provider of high-performance solar modules, recognized for its outstanding durability, cutting-edge efficiency, and commitment to sustainability. Based in Widnau, Switzerland, the company combines Swiss engineering excellence with advanced global production capabilities to deliver top-tier photovoltaic solutions.

With a strong focus on quality and reliability, SwissWatt One AG ensures that all its modules meet the highest industry standards. Independent testing by the University of Applied Sciences OST has confirmed an impressive load resistance of over 9,000 Pascal, making its products ideal for extreme weather conditions and high snow loads. To guarantee exceptional product quality, SwissWatt One AG maintains strict Swiss quality control throughout the manufacturing process.

## Contact Info

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# High Snow Load- Low Degeneration

## Description of the Innovation

Swisswatt's innovative solar modules are engineered to withstand nearly double the standard snow load due to advanced cell coating, graphene-reinforced aluminum frames, and 4mm glass. These modules deliver superior performance and longevity in harsh weather conditions, including high winds and heavy snowfalls.

## Disruptive Features

Most standard modules support only up to 5400 Pa, limiting solar installations in high-altitude regions like the Alps. Swisswatt's modules overcome this barrier, opening new opportunities for projects in areas with extreme weather conditions.

## Unique Factors

Swisswatt's solution eliminates the need for additional support bars, reducing degeneration rates to just 0.25% compared to the 0.4% found in conventional panels. This is achieved through a combination of special frames, graphene-coated cells, and robust glass, offering unmatched durability and efficiency.





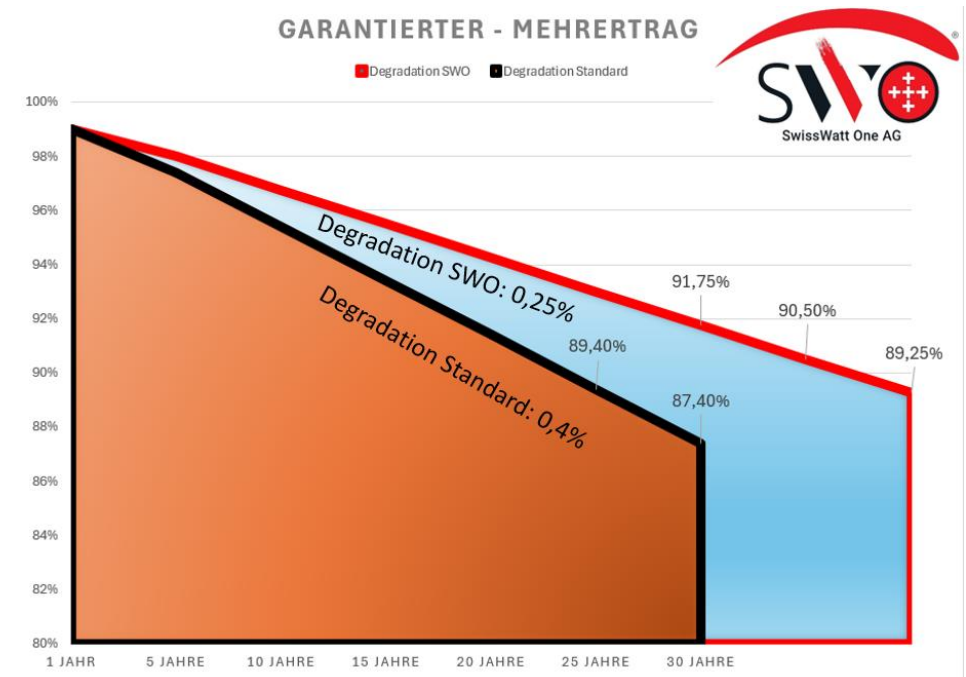
# High Snow Load- Low Degeneration

## Environmental Benefits

Installing solar panels in high altitudes enables remote communities to become energy-independent, reducing reliance on CO2-intensive diesel generators. This approach minimizes environmental disruption by avoiding the need for extensive grid connectivity and underground cabling.

## Customer Benefits & Competitive Advantage

Targeted at regions with high altitudes or heavy snow loads, Swisswatt's product outperforms competitors by eliminating the need for costly structural reinforcements. Its ability to withstand extreme weather ensures reliability and opens up new markets in areas previously deemed unsuitable for solar installations.



EMS

# FEMS - Fenecon Energy Management System

Winner: Fenecon GmbH  
Category: EMS  
Regions: Germany



## About Fenecon GmbH:

FENECON is a leading manufacturer of energy storage solutions, offering systems for private households as well as for businesses, industry, energy providers, and vehicle manufacturers.

The solutions are based on the in-house energy management system FEMS, which is built on OpenEMS, enabling grid-supportive and energy transition-friendly energy management, including intelligent sector coupling of electricity, mobility, and heat.

As an expert in energy storage and energy management, FENECON is one of the strongest innovators in the industry and is committed to a future powered by 100% renewable energy. The company, with over 300 employees, is headquartered in Deggendorf, Bavaria, and manufactures at nearby locations in Iggenbach and Albersdorf.

## Contact Info

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# FEMS - Fenecon Energy Management System

## Description of the Innovation

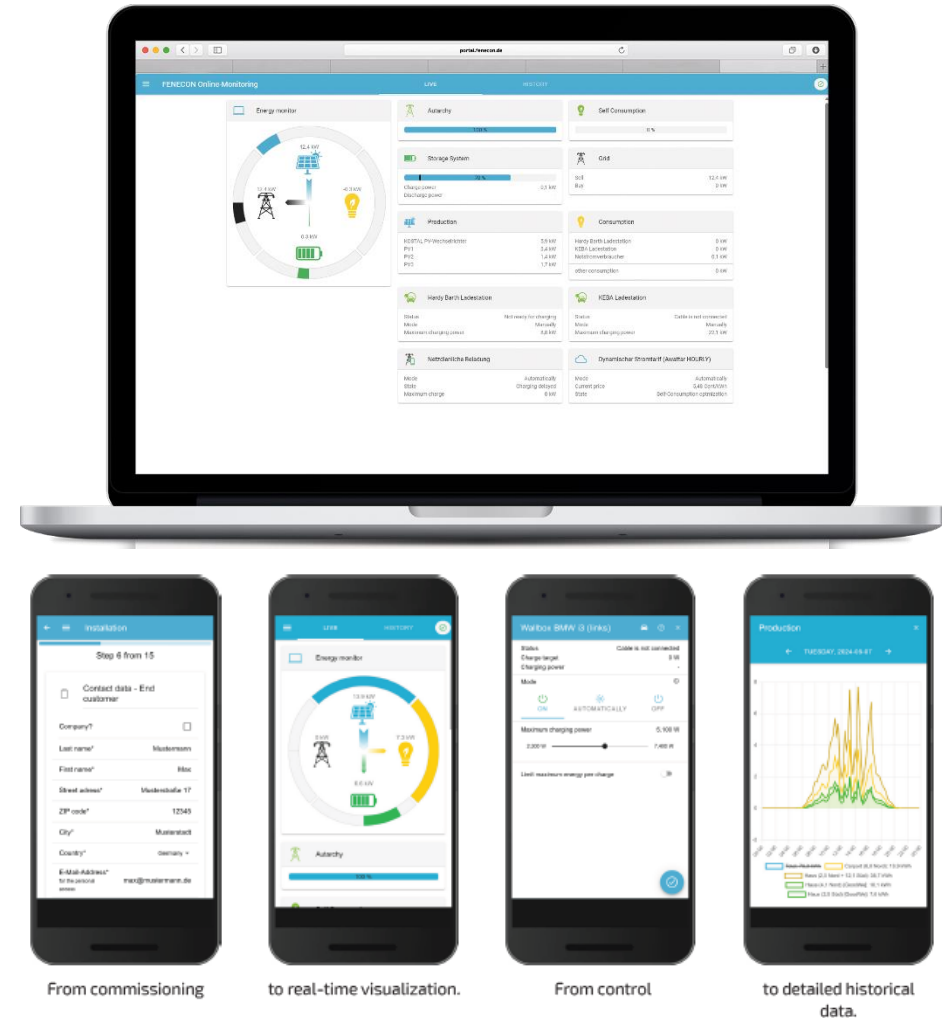
FEMS optimizes energy storage systems by integrating PV systems, EV chargers, heat pumps, and other devices through OpenEMS, the leading standard for multifunctional energy management. The system leverages AI-based time-window forecasting and dynamic electricity tariffs while offering live online monitoring via an intuitive interface. It supports energy management across residential, commercial, and industrial scales.

## Disruptive Features

FEMS challenges traditional proprietary systems by adopting an open-source approach, enabling continuous development by global contributors, including institutes and universities. Its flexibility allows users to avoid hardware vendor lock-ins. By integrating dynamic tariffs and promoting decentralized energy concepts, FEMS drives grid-friendly, cost-efficient energy management.

## Unique Factors

FEMS generates a 24-hour energy flow plan, optimizing cost, efficiency, and grid-friendliness throughout the year. Its open-source model ensures users can adopt vendor-independent solutions without subscription fees. This independence fosters sustainable and customizable energy management, setting FEMS apart from conventional systems.



# FEMS - Fenecon Energy Management System

## Environmental Benefits

The improved FEMS App Grid-Optimized-Charge remains an integral feature of FENECON storage systems, enabling customers to operate their batteries efficiently and in a grid-friendly manner from the start. The app is automatically installed and configured during the user-friendly commissioning process, allowing for functionalities such as 60% PV system curtailment and zero curtailment at the grid connection point when an RCR signal is received. Future system enhancements, referred to as the customer's "Energy Journey," including the integration of charging stations, dynamic electricity tariffs, or a new energy provider, can be easily managed remotely or on-site via the FEMS App Center.

## Customer Benefits & Competitive Advantage

FENECON designs its products for long-term durability and upgradability, ensuring both hardware and software remain adaptable to regulatory changes. The company provides free lifetime updates and develops its software with a strong focus on backward compatibility, allowing continued support for older or discontinued hardware. This is achieved through continuous integration systems with automated unit and integration testing. Even hardware no longer officially supported remains functional due to the open-source availability of FENECON's code. Peripheral integration via local interfaces ensures independence from proprietary manufacturer clouds, guaranteeing stable connectivity for decades. Additionally, digitized processes enable in-depth analysis and remote configuration by installers, significantly reducing maintenance efforts.

# Optimizers

# Utility Scale String Level Optimization

Winner: Solarlytics Inc.  
Category: Optimizers  
Regions: Germany, USA



## About Solarlytics Inc:

Solarlytics is a fully integrated energy solutions provider that helps large-scale solar asset owners maximize their energy production through an innovative IoT hardware and software platform, the BOOST 40K. Our BOOST 40K Platform is a string-level optimizer that immediately improves performance by up to 10% by optimizing voltage levels and maximizing energy production. Its machine-learning capabilities offer actionable insights, allowing asset owners to improve the efficiency of their O&M operations. It is an automated solution that provides string normalization, underperformance analysis, and aging equipment replacement all in one package. Solarlytics works with its customers to ensure their solar sites operate at peak efficiency, delivering reliable power and maximizing returns over the long term. Solarlytics is committed to helping the solar industry optimize performance and maximize power generation.

## Contact Info

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Thomas Mart - Managing Director, Europe

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# Utility Scale String Level Optimization

## Description of the Innovation

Solarlytics' BOOST Platform is an IoT-driven hardware and software solution that optimizes solar energy system performance by addressing voltage collapse, string imbalance, and inverter replacement challenges. Using machine learning and high-resolution diagnostics, BOOST enhances energy production by 3-10%, extends system lifespan, and reduces operational costs, ensuring a more sustainable and efficient solar infrastructure.

## Disruptive Features

BOOST revolutionizes solar energy optimization by enabling real-time corrections for voltage collapse and string imbalances while seamlessly integrating modern inverters. Unlike traditional solutions that require costly hardware replacements, BOOST uses machine learning-powered diagnostics and IoT-enabled monitoring to enhance system performance, maximize energy yield, and reduce maintenance costs.

## Unique Factors

BOOST stands out by combining IoT hardware, cloud-based analytics, and AI-driven diagnostics in a single platform. It corrects inefficiencies in real-time without requiring significant infrastructure modifications, enabling asset owners to extract maximum value from existing installations. This approach improves energy production, lowers operational expenses, and ensures long-term system reliability.



# Utility Scale String Level Optimization

## Environmental Benefits

By increasing energy output without requiring extensive hardware replacements, BOOST minimizes electronic waste and reduces the environmental impact of solar installations. Proactive maintenance and system efficiency improvements further support the transition to a more sustainable and resource-efficient renewable energy sector.

## Customer Benefits & Competitive Advantage

The Solarlytics BOOST platform increases energy generation, reduces downtime, and extends asset lifespans, leading to lower operational costs and higher returns on investment. The platform immediately corrects for DC issues, increasing production. And it uses machine learning to identify specific actionable insights (not just data), allowing asset owners to take action to improve the efficiency of their O&M operations. By seamlessly integrating with every inverter and effectively managing both new and aging modules, BOOST offers asset owners a scalable, cost-effective, and future-proof solution for optimizing their solar assets.

# AI Solutions

# PV power generation forecaster with an error of less than 2%

Winner: Reasonance GmbH  
Category: AI Solutions  
Regions: Germany



## About Reasonance GmbH:

Founded in 2020, Reasonance GmbH began as a specialized provider of ML-Ops and data operations for safety-critical applications. In 2024, the company strategically pivoted to leverage its robust ML-Ops platform as the foundation for new energy optimization products—advanced forecasters and BESS optimizers—which have quickly gained recognition. Since this pivot, Reasonance has received the AI-Champions award from Baden-Württemberg's Ministry of Economics and is now being recognized with the current distinction.

The founding team brings collective expertise from premier technical institutions including Karlsruhe Institute of Technology and Carnegie Mellon University (Pittsburgh, USA), complemented by research experience at Fraunhofer institutes and FZI (Forschungszentrum Informatik). With published research in both fundamental Machine learning and energy-specific applications, the team combines over 20 years of collective experience delivering advanced analytics solutions across energy, manufacturing, industrial automation, and chemical sectors. This unique foundation enables Reasonance to deliver innovative solutions at the intersection of computational intelligence and energy system optimization.

## Contact Info

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# PV power generation forecaster with an error of less than 2%

## Description of the Innovation

Reasonance GmbH's PV power generation forecaster employs advanced analytics to predict solar output from intraday (15-minute intervals) to two-week horizons. The system demonstrates exceptional accuracy, reducing forecast errors to below 2% for day-ahead predictions under optimal conditions—significantly outperforming industry standards. With 15-minute update intervals, the system enhances operational capabilities across energy storage management, market trading, and asset optimization through continuous recalibration and confidence indicators. The technology also detects approximately 90% of system inefficiencies, enabling condition-based maintenance strategies. When integrated with Reasonance's BESS optimizer, it creates additional value through automated trading recommendations and storage optimization.

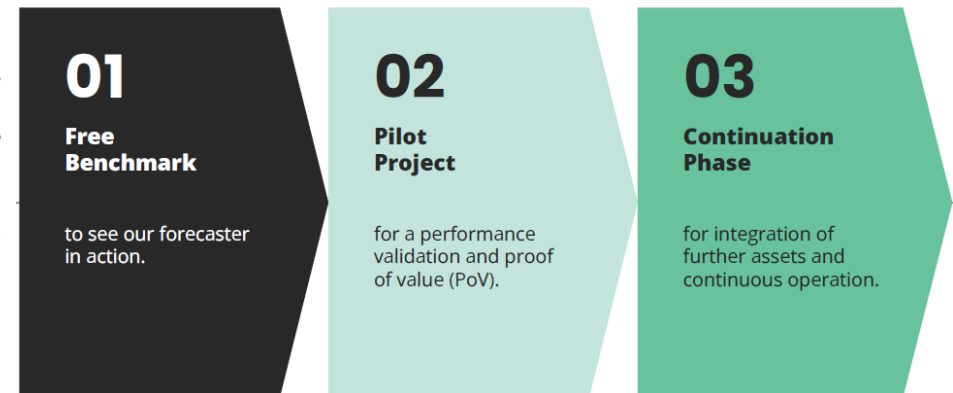
## Disruptive Features

This solution addresses renewable energy's fundamental variability challenge by substantially improving prediction accuracy. The enhanced predictability enables more efficient energy storage utilization and contributes to grid stability by reducing the need for fossil fuel reserves. Market integration benefits are particularly significant, as the system allows operators to participate more effectively in energy markets with demonstrably reduced balancing costs and improved position management.

## Pre-Onboarding Process



## Onboarding Process: From 0 through Proof of Value to Continuation



# PV power generation forecaster with an error of less than 2%

## Unique

The forecaster's distinctive approach integrates computational models with site-specific adaptation algorithms that continuously refine performance. Particularly noteworthy is its accuracy during critical transition periods (sunrise/sunset) where traditional models typically underperform. The solution requires minimal additional infrastructure, operating effectively with existing monitoring systems while enabling predictive maintenance capabilities not previously achievable at this accuracy level.

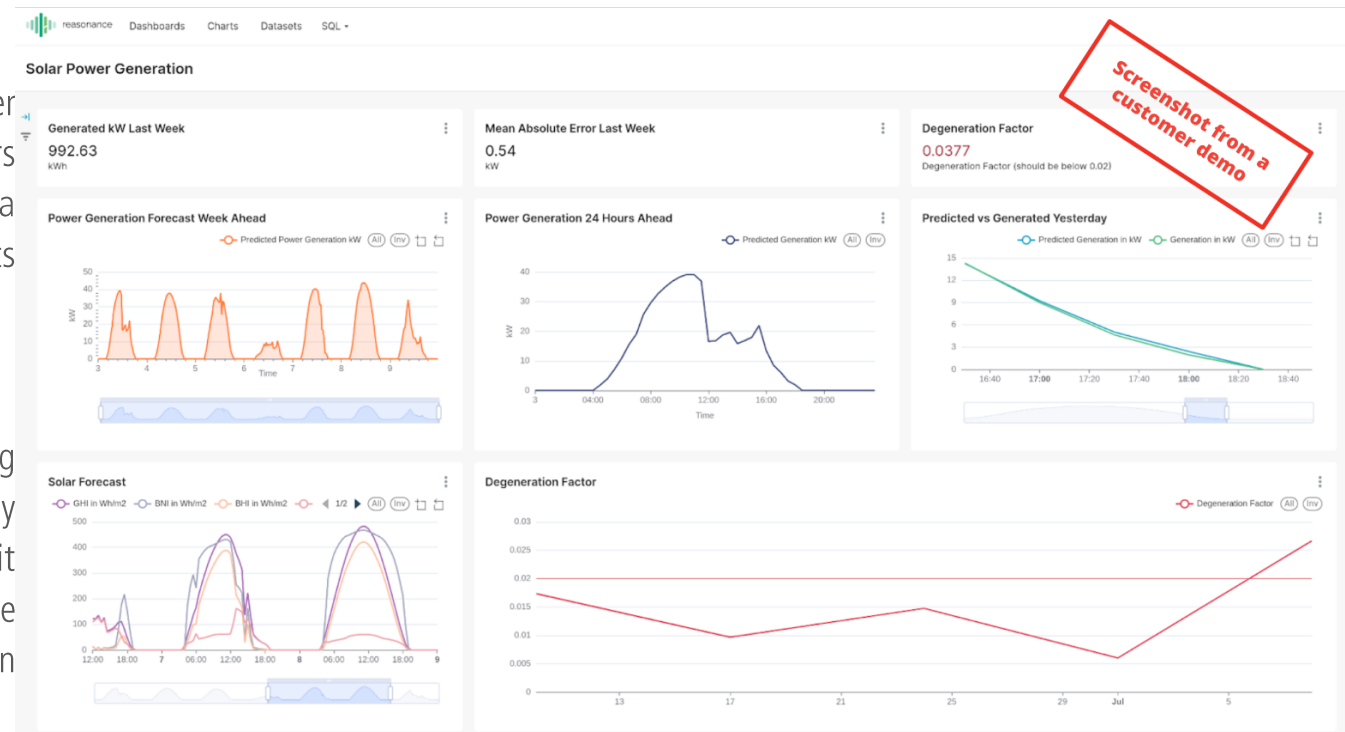
## Factors

## Environmental Benefits

By optimizing solar generation and storage, the forecaster maximizes renewable energy use, reduces waste, and lowers reliance on fossil fuels. Enhanced grid stability supports a faster energy transition, extends PV asset lifespan, and cuts infrastructure costs.

## Customer Benefits & Competitive Advantage

PV operators benefit from a scalable, ready-to-use forecasting system that enhances decision-making and efficiency. By integrating AI, physical modeling, and machine learning, it overcomes forecasting challenges, providing a competitive edge. As demand for reliable renewables rises, this innovation is set to shape the industry's future.



# myLumenHaus App

Winner: LumenHaus GmbH  
Category: AI Solutions  
Regions: Germany



## About LumenHaus GmbH:

Lumenhaus is an innovative platform that drives the energy transition through decentralized, community-based, and sustainable energy supply. Partners and customers alike benefit from the advantages of the platform, which enables a sustainable and convenient energy future.

## Contact Info

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# myLumenHaus App

## Description of the Innovation

The myLumenHaus App is the heart of LumenHaus's integrated home energy system, connecting solar panels, batteries, heat pumps, and EV chargers. Powered by Lumi, the AI assistant, it offers real-time monitoring, energy optimization, solar forecasting, and dynamic pricing adjustments, empowering users to manage energy with ease.

## Disruptive Features

The app integrates seamlessly with devices and learns user patterns to optimize energy efficiency. SmartEco Mode and predictive pricing save costs, while Virtual Power Plant (VPP) integration enables energy trading. OTA updates ensure continuous innovation and long-term value.

## Unique Factors

Built on advanced cloud technology, the app provides real-time analysis, energy-saving automation, and AI-driven recommendations. Lumi's intuitive interface, combined with its predictive insights, sets it apart from conventional energy systems.



# myLumenHaus App

## Environmental Benefits

The app maximizes renewable energy use, reduces waste, and lowers carbon footprints. VPP integration supports clean energy networks, while real-time monitoring promotes sustainable consumption habits.

## Customer Benefits & Competitive Advantage

The app simplifies energy management, reduces costs, and offers predictive features like solar forecasting and tariff optimization. With easy integration, dynamic savings, and energy trading potential, it aligns with global renewable energy trends.

# About EUPD Research

# Company Structure

**EUPD Group**

## Special Fields

- ESG – Smart ESG Framework & Corporate Sustainability
- Energy – Smart Energy & Environmental Sustainability
- Social – Smart Corporate Health & Social Sustainability

## Business Units

**EUPD Dat**

**EUPD Research**

**EUPD Improve**

**EUPD Cert**

## Platform & Affiliates



**EUPD Research**

HOEHNER RESEARCH & CONSULTING GROUP

# EUPD Group Portfolio – Energy



## EUPD Research

### Reports & More

- Electrical Energy Storage Report Europe<sup>©</sup>
- PV InstallerMonitor<sup>©</sup> | EES InstallerMonitor<sup>©</sup>
- EV Charging Stations InstallerMonitor<sup>©</sup>
- Heat Pump InstallerMonitor<sup>©</sup>
- SolarProsumerMonitor<sup>©</sup>
- PV Commercial & Industrial EPCMonitor<sup>©</sup>
- PV Price & Inventory Tracker<sup>©</sup> | EES Price & Inventory Tracker<sup>©</sup>
- Market Leadership Study EU<sup>©</sup>
- Market Leadership Study The United States<sup>©</sup>
- ...

## EUPD Research

## EUPD Improve

### Improvements

- Market Access
  - Leadgeneration & Customer Relationship Management
- Branding
  - Communication, Design, Events, Video
- Advisory
  - Global Energy Transition GET-MATRIX<sup>©</sup>, Mergers & Aquisition, Polticial & Strategic Advisory
- Memberships
  - JF4S, IBESA, STEP

## EUPD Cert

### Certification

- Top Brand PV
- Top Brand PV - EPC & Project Developers
- Top Brand PV Installer Award
- Top Innovation Award
- Customer Satisfaction Seal
- Energy Transition Award
- SolarProsumerAward



# EUPD Group References – Energy (Extract)

**AEG**

**APsystems**  
ALTENERGY POWER

**Enpal.**

**e.on**

**KOSTAL**

**AIKO**

**ENPHASE**

**hoymiles**

**LG**

**krannich**  
global solar distribution

**ASTROENERGY**

**VIESSMANN**

**HUAWEI**

**MENNEKES®**

**E3 DC**  
ENERGY STORAGE

**BYD**

**BayWa r.e.**

**Jinko Solar**

**REC**

**DMEGC SOLAR**

**GROWATT**

**SAMSUNG**

**risen**  
solar technology

**Heckert Solar**  
Die Energiekompetenz

**sonnen**

**IBC SOLAR**

**memodo**

**JA SOLAR**

**SMA**

**LONGI**

**SHARP**

**VARTA**

**Trina solar**

**SUNTECH**

**SUNGROW**  
Clean power for all

**SUNPOWER®**

**qcells**  
EUPD Research  
Completely Clean Energy

**1KOMMA5°**

**SENEC**

**Vaillant**

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# EUPD Research | General Terms and Conditions of Business I

## 1. Scope

1.1 All contracts between EUPD Research Sustainable Management GmbH (hereafter EUPD GmbH) - and the customer shall be subject to the following terms and conditions only. The customer's terms and conditions of business shall not be applicable and shall not put EUPD GmbH under any obligation to comply unless EUPD GmbH explicitly gives written acknowledgment and acceptance of such conditions.

1.2 Offers are aimed exclusively at commercial clients, that is, companies according to Article 14 BGB (German Civil Code). Private customers, that is, customers according to Article 13 BGB, are not permitted to place legally binding orders based on the aforementioned. Interested private customers should contact EUPD GmbH by telephone for information on how to place a non-commercial order. Furthermore, the legal right to return items as stated in consumer protection law does not apply to orders placed by commercial clients but does apply to orders placed by private customers.

## 2. Offer and Ordering Process

2.1 The presentation of the products together with the order form does not constitute a legally binding offer. Offers are subject to the written confirmation of EUPD GmbH. They are designated for the internal use of the customer only.

2.2 The purchaser places a binding offer for the product of choice when all relevant purchase details have been given and the general terms and conditions of business accepted. This will be confirmed immediately by email or fax sent to the address given by the customer. The contract to purchase between the purchaser and EUPD GmbH is valid from when the order is confirmed, or, the products are delivered either by mail or download.

## 3. Scope of Services, Remuneration and Prices

3.1 Services offered include but are not limited to the following:

a. Multi-Client-Services: client-independent studies for an indefinite number of customers.

b. Shared-Services: commissioned study on behalf of a limited number of customers for the exclusive purchase of those customers.

c. Exclusive-Services: assignments carried out on behalf of a single customer who will have the exclusive license to use the product but only for an individually negotiated period of time. This exclusive license will be for a period no longer than 12 months. After a period of no longer than 12 months it will become a non-exclusive license.

3.2 The prices are net prices in Euros. They do not include sales tax/VAT or delivery costs. Sales tax/VAT will be added to the net costs according to the legally defined percentage. The prices valid at the time of ordering are binding.

3.3 Travel expenses incurred for EUPD GmbH workshops either provided in combination with studies or booked separately are not included in the scope of the offer. Prices have to be paid separately by the customer. This does not apply if it is explicitly agreed that the workshop or the resulting travel expenses for the workshop are part of the negotiated contract and thus do not have to be paid separately.

3.4 Should circumstances arise beyond the control of EUPD GmbH which impose a temporary hindrance on the provision of services, then services and delivery appointments agreed on will be extended. Customers will be informed of any such event or other delay immediately

## 4. Terms of Payment and Delivery

4.1 Payment is to be made to the amount and method stated in the contract. Any addition and/ or aberration require the written confirmation of EUPD GmbH in order to be effective

4.2 Payment is generally to be made upon receipt of invoice. The products will be shipped as soon as full payment has been made to the account of EUPD GmbH. The terms and conditions for payment and delivery of Shared-Services and Exclusive-Services are stipulated in the binding offer.

4.3 Delivery costs depend on the quantity of products ordered, their destination as well as type of delivery. There are no delivery costs for products which can be downloaded. The customer accepts that any fees or charges owed for customs or non-EU addresses will not be paid by EUPD GmbH nor is EUPD GmbH liable for them.

4.4 The method of delivery, route and company employed to deliver will be chosen by EUPD GmbH at their sole discretion. Once the purchaser has taken delivery of the item from the delivery service, the purchaser is responsible for the item. The company responsible for delivery is to be made aware of any damage sustained in transit immediately. These damages are also to be reported to EUPD GmbH immediately. Part deliveries are permissible where appropriate.

# EUPD Research | General Terms and Conditions of Business II

4.5 EUPD GmbH retains ownership of all goods and all licensing rights pertaining to the usage of data files as well as intellectual property until payment of invoice has been made in full. Intellectual property rights are lawfully retained by the author.

4.6 The purchaser is only able to offset counter claims if they are acknowledged by law, uncontested, or prior written consent has been granted by EUPD GmbH. Customers are only have the right of retention if counterclaims are based on the same contractual relationship. The customer is prohibited from transferring any claims of payment against EUPD GmbH to a third party.

4.7 The estimated costs for the services provided by EUPD GmbH are based on project calculations and experience. Estimations are optimized and customer-oriented so that lower deviations may not be assumed.

However, it cannot be fully excluded that additional effort maybe required in the completion phase of the project. Should the suggested amount be exceeded, EUPD GmbH will inform the client promptly. Such additional efforts will be calculated on the basis of man-day costs and these may vary according to the qualification of the staff involved.

Upon notification of these additional costs the client may choose whether the project shall continue in accordance with the original cost estimation as stated in the proposal although full completion of the project may no longer be possible or agree to the revised cost estimation thus enabling full completion of the project. Should the client agree to the latter, this shall be subject to a separate written agreement.

## 5. Contract Period and Termination

The contract is entered into upon signature and has a one-year validity. At the end of the initial term, this agreement shall automatically renew for successive one-year periods unless terminated by the client with three months prior notice.

## 6. Copyright and Licenses

6.1 The products and their intellectual property are protected by copyright. It is only possible to purchase a license to use the product and not the product itself or its content. The author/ creator remains the owner of intellectual property.

6.2 The customer is granted a non-transferable and non-exclusive license to use the product and the results and content in the product (with the exception of Exclusive-Services) for personal use only. As far as the customer (for example an agency) exclusively acts as the purchaser for a user mentioned by name within the order, then the right of use applies solely for said user.

6.3 Permission to use the licensed product in the national and international affiliates of the company is subject to the written approval of EUPD GmbH.

6.4 Any use of the product not explicitly permitted under copyright law is prohibited without the prior written consent of EUPD GmbH as the licensor and/or the written consent of the author. This includes but is not limited to copying, distributing, publishing, translating, saving, processing and reproducing the work in databases. Non-compliance will be prosecuted

## 7. Liability

7.1 The products were prepared with the utmost care, using professional methodologies and taking relevant legislation into account with the aim of assuring the best possible accuracy of the studies and their results. The data contained in this product is based on surveys of sample populations, conducted using standard statistical methods to the best of our knowledge. As such the study is subject to a certain statistical error rate and is based exclusively on the facts which were available at the time of the survey. Due to the aforementioned, no guarantee can be given for the accuracy and completeness of the studies and the data made available in them.

7.2 The studies contain specific information, but explicitly do not contain any definite recommendations on investments or actions to be taken. Should the user, having taken the above mentioned into consideration, choose to use the studies to support their decision making process, EUPD GmbH shall not assume liability for the economic success of such investments or actions.

## 8. Jurisdiction

The court of jurisdiction is Bonn. German law will be applied in all legal proceedings.

## 9. Severability Clause

Should any of these terms and conditions, either in full or in part, be invalid or incomplete, it shall not affect the validity of the other terms and conditions. In that case, the terms and conditions, as stated in German law come into effect.

As of October 2022