



Frankfurt am Main, Germany

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Innovation Award EnergyDecentral: Winners 2026

EnergyDecentral 2026: 10 to 13 November in Hanover, Germany – Around 250 registered exhibitors from decentralized energy sector – Held in parallel with EuroTier 2026 – DLG Innovation Commission awards two Gold Medals and six Silver Medals

DLG (German Agricultural Society) has announced the winners of the Innovation Award EnergyDecentral 2026. The award recognizes pioneering developments in decentralized energy production. The exhibiting companies receiving the prestigious awards exemplify the industry's commitment to advancing practical solutions for renewable energy generation. Presented every two years by an independent expert commission, the competition is open to all registered exhibitors at EnergyDecentral 2026.

This year, 17 eligible innovations were evaluated by an independent expert jury appointed by the DLG (German Agricultural Society), organizer of the EnergyDecentral and EuroTier trade fairs. The expert jury awarded two Gold Medals and six Silver Medals. To participate innovations must be world premieres at EnergyDecentral, the leading exhibition for decentralized energy supply, held in parallel with EuroTier, the leading trade fair for livestock production. Both exhibitions are held from 10 to 13 November 2026 in Hanover, Germany. Some 250 exhibitors are from the energy sector among the 2,100 exhibitors across both trade fairs.

A Gold Medal is awarded to a product featuring a fundamentally new concept where functionality has significantly changed, enabling a new process or substantially improving an existing one.

The key criteria for a Gold Medal include:

- Practical relevance
- Benefits for farm and labor management
- Improvements to environmental and energy performance
- Contributions to easier and safer working conditions

A **Silver Medal** is awarded to an innovation that significantly advances an existing product and is expected to result in substantial functional and procedural improvements, although the requirements for a Gold Medal are not fully met.

Key Silver Medal criteria include:

- Economic importance for practical application
- Benefits for labor productivity and work quality
- Improved operational reliability

Positive effects on environmental and energy performance

Award-winning products must be fully functional at the time of exhibition and must be commercially available no later than EnergyDecentral 2028.

Gold Medal Winners

Innovation: MethaLoop

Company: Malmberg Bioerdgastech GmbH

Stand: Hall 25, Stand F04

One of the major challenges in biogas production is minimizing methane slip, meaning unintended methane emissions from the plant. In addition to technical failures, the processes themselves are increasingly coming under scrutiny. Methane has a significantly higher global warming potential than CO₂ and acts as a powerful climate driver, particularly shortly after release.

Several countries with stringent air-quality regulations have already introduced methane-slip limits of 0.2 percent. Existing biogas upgrading systems have generally been unable to achieve these levels. Consequently, methane contained in exhaust air has traditionally required post-treatment using regenerative thermal oxidation (RTO) systems, leading to high investment and operating costs.

With its newly developed MethaLoop membrane recovery process, Malmberg Bioerdgastech GmbH introduces a solution that reduces methane losses from water scrubber upgrading systems from approximately 1 percent to below 0.2 percent, even in large biogas facilities.

For the first time, this enables compliance with German regulations such as the Technical Instructions on Air Quality Control (TA Luft) and the Gas Network Access Ordinance (GasNZV). Beyond substantially reducing methane emissions, the system increases methane yield and eliminates the need for expensive thermal oxidation treatment.

Depending on plant size, the technology can significantly improve profitability.

MethaLoop is integrated into new AQUAERA systems and can also be retrofitted to existing water scrubber installations.

The MethaLoop process therefore represents a significant advancement in biogas upgrading, delivering major environmental and economic benefits.

Short Description

Methane slip from biogas plants has a substantial climate impact and has previously required costly thermal post-treatment of exhaust air. Malmberg's new MethaLoop membrane recovery process reduces methane losses in water scrubbers from around 1 percent to below 0.2 percent. This enables compliance with legal requirements, increases methane recovery, eliminates expensive RTO treatment and improves both environmental performance and profitability.

Innovation: OASU

Company: ATFO GmbH

Stand: Hall 25, Stand I03

Maintaining stable biological degradation processes in biogas plants requires regular monitoring of chemical and physical parameters. Important indicators include pH values, total organic acids, volatile fatty acids and bicarbonate levels.

Until now, these measurements have largely been performed manually through sample collection and laboratory analysis, involving significant delays, high labor requirements and considerable expense. As a result, the fermentation process often remained a "black box," with operating decisions relying more on experience than predictive analysis.

ATFO GmbH's newly developed OASU acid sensor unit is the first system capable of automatically measuring acetic acid and propionic acid concentrations in raw biogas using gas chromatography. Measurements can be performed once or multiple times per day.

Using the ratio of these acids (PEV), a model-based analytical system detects process conditions at an early stage and provides recommendations for yield-enhancing plant operation.

The OASU employs a unique measurement principle without direct contact with the medium or fermenter liquid. It establishes, for the first time, a clear relationship between the propionic/acetic acid ratio and methane production several days later.

Compared with conventional sampling and laboratory analysis, operators gain a significant time advantage, enabling statistical process control and proactive management of fermentation conditions. This allows operation close to maximum biogas output without risking process instability. No comparable technology currently exists on the market.

By providing automated, predictive process monitoring with significantly more frequent measurements and no need for specialist sampling personnel, OASU offers the potential for higher and more stable yields, increased reliability and measurable additional revenue.

Short Description

ATFO's OASU acid sensor unit enables the first fully automated measurement of acetic and propionic acids in raw biogas. By analyzing the acid ratio, the system detects process conditions early, predicts methane production and provides recommendations for plant control. This increases yields, operational reliability and profitability while reducing labor requirements.

Silver Medal Winners

Innovation: SBHKW 2500 Storage CHP Plant

Company: Biogas Service Tarmstedt GmbH

Stand: Hall 25, Stand J08

Biogas and biomethane plants were originally designed for continuous operation. The gas produced is converted into electricity and heat in a combined heat and power (CHP) unit, with the electricity being fed directly into the grid. Plant operation has traditionally been driven primarily by gas production rather than by the requirements of electricity and heat markets. However, the expansion of photovoltaic and wind energy has significantly changed energy markets, increasing the demand for flexibly available renewable generating capacity capable of supporting baseload power supply. Biogas plants can provide this flexibility, but until now it has generally been achieved, at comparatively high cost, through additional heat technology, upgraded gas storage facilities, higher CHP capacities, and supplementary grid connection and infrastructure investments.

The SBHKW 2500 Storage CHP Unit creates a new approach to the use of biogas and biomethane. Developed jointly by Biogas Service Tarmstedt GmbH, patent holder and developer Christian Cordes, and engineering consultancy Christoph Wordelmann, the system is able to supply renewable energy not only when it is generated, but also when required by the market, the electricity grid or critical infrastructure.

By combining constant CHP output with integrated electrical energy storage, the SBHKW is able to decouple electricity generation from electricity marketing while continuing to utilize the heat produced.

This makes it possible to provide renewable energy according to market demand and in compliance with the requirements of Germany's Renewable Energy Sources Act (EEG) and Combined Heat and Power Act (KWKG). At the same time, investment costs are lower and profitability is improved through the ability to take advantage of fluctuations in electricity prices.

Through the intelligent integration of CHP generation and energy storage into a single system, the SBHKW represents a significant advancement in both the functionality and operational concept of electricity generation from biogas.

Short Description

The SBHKW 2500 Storage CHP Unit combines constant CHP output with integrated electricity storage to provide demand-oriented electricity generation from biogas and biomethane. By decoupling power generation from power marketing, the system increases flexibility and profitability, reduces investment costs, and improves the ability to provide reliable renewable baseload power.

Innovation: PoS Management for Biomethane and Bio-LNG

Company: agriportance GmbH

Stand: Hall 25, Stand H17

In the biomethane and bio-LNG value chain, the creation and management of sustainability certificates (Proofs of Sustainability, PoS) has traditionally been handled entirely manually. Incoming documents, often containing large amounts of data, had to be reviewed, transferred and archived by hand, resulting in a time-consuming and error-prone process. As a result, operators frequently lacked a centralized overview of their PoS portfolio, which could create significant challenges during audits.

The new PoS Management Module for Biomethane and Bio-LNG from agriportance GmbH automates the entire lifecycle of these sustainability certificates for the first time. From automatic data extraction from incoming PoS documents to rule-based validation, conversion into Bio-LNG PoS certificates and the creation of audit-ready mass balances, the system replaces manual PDF processing with a fully traceable digital data record.

The module also covers additional processes such as PoS retirement and the generation of Proofs of Compliance (PoC). Outgoing Bio-LNG certificates can be generated automatically as PDF documents based on company templates and sent directly to customers from within the system. For audit purposes, every certificate is incorporated into a centralized mass balance system that can be filtered by period, customer and feedstock and exported to Excel.

The module provides operators of biomethane and bio-LNG facilities with a verifiable database instead of scattered PDFs and spreadsheets, significantly simplifying compliance with regulatory requirements. As such, it represents a substantial advancement in data management and documentation processes.

Short Description

The PoS Management Module from agriportance GmbH is the first solution to automate the entire lifecycle of sustainability certificates for biomethane and bio-LNG. It digitally captures, validates, processes and documents PoS certificates, generates audit-ready mass balances and reduces errors. As a result, compliance, transparency and efficiency are significantly improved throughout the certification process.

Innovation: Wood Energy Roof

Company: Rudolf Hörmann GmbH & Co. KG

Stand: Hall 15, Stand F11

In agricultural building construction, roofs made from sandwich roof panels with retrofitted rooftop photovoltaic systems are considered the industry standard. However, these sandwich elements are increasingly being criticized because of the high energy consumption required for their manufacture. In addition, separating the steel outer layers from the foam core is difficult, creating challenges for dismantling and recycling. Building-integrated photovoltaic systems typically require in-roof PV elements to be mounted on battens and counter-battens, resulting in additional materials and installation steps.

With its Wood Energy Roof, Rudolf Hörmann GmbH & Co. KG introduces the first economically viable in-roof photovoltaic system for large-scale agricultural buildings. The system combines a load-bearing solid timber roof structure with photovoltaic power generation in an integrated roofing solution.

Because the substructure is mounted directly onto the solid timber roof deck, conventional battens and traditional roof coverings made of sheet metal or tiles are no longer required. This significantly reduces both material usage and installation effort. The core of the innovation is a specially developed support structure consisting of folded main and cross profiles that create a rainproof in-roof system with a two-stage drainage concept. Rainwater is directed in a controlled manner via the module surfaces and the profile structure towards the eaves.

The system uses framed standard photovoltaic modules that can be easily replaced if damaged. For the first time, the carbon storage function of a solid timber roof is combined with renewable energy generation in a practical and cost-efficient roofing solution.

In addition, the Wood Energy Roof opens up possibilities for utilizing the warm air accumulating beneath the PV modules, for example for hay drying applications.

By combining timber construction and renewable energy generation in a single roofing concept, the Wood Energy Roof represents a significant advancement for agricultural buildings and livestock facilities.

Short Description

The Wood Energy Roof from Rudolf Hörmann GmbH & Co. KG is the first system to combine a load-bearing solid timber roof structure with an economically viable in-roof photovoltaic solution for large agricultural buildings. Its specially developed support structure integrates timber construction and solar power generation while reducing material requirements and installation effort. The design also provides a rainproof in-roof system using standard framed photovoltaic modules.

Innovation: Guntamatic Powerchip Biochar

Company: Guntamatic Heiztechnik GmbH

Stand: Hall 11, Stand B52

Climate change is presenting agriculture with increasing challenges, including longer periods of drought, more frequent heavy rainfall events and changing nutrient availability. In arable farming, the use of biochar can help maintain essential soil functions by improving the soil's capacity to retain water and nutrients, thereby enhancing long-term soil fertility. In addition, biochar enables carbon to be sequestered in the soil, contributing to climate protection efforts.

The Guntamatic Powerchip Biochar, developed by GUNTAMATIC Heiztechnik GmbH, is the first woodchip heating system in the 50 to 100 kW output range to integrate a controlled pyrolysis process. This makes it the first woodchip boiler capable of producing high-quality biochar as a by-product of heat generation.

The technology enables a significantly negative carbon balance to be achieved locally, without reliance on large-scale infrastructure or industrial facilities. The biochar produced can be integrated directly into agricultural systems, for example for soil improvement or slurry enhancement. In this way, the system combines renewable heat generation with climate protection, resource efficiency and regional value creation.

By combining proven, production-ready technologies in a new way, the Guntamatic Powerchip Biochar links the energetic use of wood with additional climate-protection measures and represents a significant improvement to existing processes.

Short Description

The Guntamatic Powerchip Biochar is the first woodchip heating system in the 50 to 100 kW range to integrate controlled pyrolysis. By producing high-quality biochar alongside renewable heat, the system

combines climate protection, regional value creation and resource efficiency. The resulting biochar can improve soil quality, sequester carbon over the long term and contribute to a negative carbon balance.

Innovation: STORION-LC-TB150 Ultra

Company: Alpha ESS Deutschland GmbH

Stand: Hall 25, Stand M11

Commercial and industrial battery energy storage systems already use liquid cooling to dissipate the heat generated during charging and discharging cycles. However, inverters and the computing components they contain are typically excluded from the liquid cooling circuit and rely instead on conventional air cooling.

With the STORION-LC-TB150 Ultra, Alpha ESS Deutschland GmbH has extended liquid cooling to both the battery system and the electronic control components for the first time. This enables system output to increase from 125 kW to 150 kW, while extending service life from the industry-standard 8,000 cycles to approximately 12,000 cycles. In addition, the TB150 Ultra operates significantly more quietly than comparable systems using conventional air cooling.

Further advantages are provided by an active pressure-relief system featuring an explosion-protected fan. In the event of a fire, the fan is designed to safely manage pressure relief without damaging the system, while enabling the controlled release of gases and overpressure.

The STORION-LC-TB150 Ultra is the first commercial and industrial battery storage system to offer comprehensive liquid cooling for both batteries and electronic components. It therefore represents a significant advancement of a technology previously found primarily in large-scale applications.

Short Description

The STORION-LC-TB150 Ultra from Alpha ESS is the first commercial and industrial battery storage system to extend liquid cooling to both batteries and electronic components. This increases system output and service life while reducing noise levels. An active pressure-relief system further enhances safety in the event of a fire.

Innovation: Biotaktix SubstratScan

Company: Biotaktix GmbH

Stand: Hall 25, Stand D13

Nutrient contents in slurry and digestate are generally determined either from standard reference values or through laboratory analyses. Reference values are often highly generalized and do not adequately reflect differences between farms, batches, or seasonal feeding changes. Laboratory analyses, on the other hand, can be affected by sampling and handling errors. Although NIR sensors can continuously analyze organic fertilizers, they are mainly used during field application. A fully integrated approach linking nutrient analysis with incoming material registration, weighing and downstream processes at biogas plants has not yet been established across the industry.

The SubstratScan developed by Biotaktix GmbH is the first system to combine continuous NIR analysis of slurry and digestate with vehicle weighing systems and the company's ERP software. Measurements of dry matter content and nutrient levels are automatically assigned to the corresponding weighbridge record and become immediately available for evaluation, invoicing, reporting and nutrient accounting without manual data transfer.

This dataset can be used to apply contract-specific billing formulas based on quantity, dry matter content or analytical values. It also enables the creation of credit notes or electronic invoices for transfer to DATEV accounting software, as well as regulatory reporting and nutrient balances, all without repeated data entry.

Biotaktix supplies the sensor, a customer-specific pipe adapter, the evaluation unit and full software integration as a ready-to-use complete system. As a result, manual sampling is no longer required, workplace safety is improved, and data quality, process reliability, transparency and profitability are significantly enhanced.

By integrating NIR nutrient analysis, weighing data and ERP software into a single solution for the first time, SubstratScan represents a substantial advancement in the management of biogas plant processes.

Short Description

The SubstratScan from Biotaktix GmbH is the first system to combine continuous NIR nutrient analysis with vehicle weighing systems and ERP software. Measurement data are automatically linked to weighbridge records and used for invoicing, reporting and nutrient accounting. This improves data quality, transparency, workplace safety and profitability in biogas plant operations.

The first system combining continuous NIR nutrient analysis with truck scales and ERP software. Measurement data are automatically linked to weighing records and used for invoicing, reporting and nutrient balances, improving data quality, transparency, safety and profitability in biogas operations.

Aktuelle Informationen zur EnergyDecentral 2024:

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DLG. Progress and sustainability in the agriculture and food industry

The DLG (German Agricultural Society), founded in 1885 by Max Eyth, stands for productivity and sustainability in innovation-driven improvements in agriculture and the food chain. The aim of the DLG is to promote progress through the transfer of knowledge - especially with regard to technology and quality control. Non-profit, politically independent and with an international network, the DLG has more than 30,000 members worldwide.

As one of the leading organizations in its sector, the DLG not only organizes trade fairs and events in the fields of agriculture and food technology but also tests food, agricultural technology and equipment. With its competence centers for agriculture and food, its demonstration farm where practical trials take place along with its numerous publications, the DLG continually promotes independent knowledge transfer. In addition, the DLG works on numerous national and international committees of experts to develop solutions for the challenges facing agriculture and the food industry.

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