Energy Solutions Catalogue

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European renewable energy solutions from SMEs for industry, communal authorities, and cities

Enterprise Europe Network (EEN)

EEN Energy Task Force - Sector Group Renewable Energy

High energy prices and energy security issues across Europe have resulted in industries, cities, municipalities and small to medium-sized enterprises (SMEs) coming under pressure to reduce energy consumption, to become more energy efficient, and to adopt innovative renewable energy technologies.

Solutions to address these challenges already exist and are available on-the-market thanks to the enormous innovation capability and responsiveness of European SMEs within the Renewable Energy sector.

Members of the “EEN Energy Task Force” and energy experts within Enterprise Europe Network (EEN) Renewable Energy Sector Group offer this **collection of technical and service solutions** from innovative SMEs across Europe. These solutions can help solve the challenges of energy costs, energy security, and renewable energy transition.

120 intelligent solutions are shared within this catalogue. You are welcome to make use of it and share it further amongst colleagues, enterprises, public institutions and stakeholder networks.

In addition to the technical and service solutions presented, **additional information is available herein on EU funding and policies** that support the implementation of energy saving measures and renewable technologies.

If you have any questions, please contact the persons indicated at the bottom of the profiles in the catalogue, or your local Enterprise Europe Network advisor: https://een.ec.europa.eu/local-contact-points

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Energy solutions in the following categories

Renewable Power & Heat Generation: Profiles offering clean energy from solar, wind, hydro, biomass, and osmotic sources

Energy Storage & Management: Profiles offering battery, thermal, hydrogen, and modular storage systems

Smart Buildings & Industrial Efficiency: Profiles offering heat recovery, digital twins, and smart thermostats

Digital Infrastructure & Smart Cities: Profiles offering lighting, water, and air quality management for cities

Clean Mobility & Transport: Profiles include dual-fuel retrofits, solar EV chargers, and modular e-mobility hubs

Circular & Waste-to-Energy Solutions: Profiles focused on recycling, regeneration, and waste heat recovery

Community Energy & Localised Solutions: Profiles supporting energy communities, smart cities, and decentralised systems

Renewable Power & Heat Generation

This category includes decentralised and grid-integrated solutions for clean electricity and heat.

Technologies range from innovative solar and dual-use infrastructure, to hybrid micro wind-solar units and osmotic energy systems.

Innovations focus on modularity, resilience to environmental conditions, and integration with existing infrastructure.

These solutions align with the EU Solar Strategy and REPowerEU, which aim to double solar capacity and diversify renewable sources.

A foldable solar power plant for industrial and commercial premises

Summary:

A young company from Switzerland provides an answer to how renewable energy can be produced without harming nature and the landscape. Using a patented foldable solar plant, large infrastructure areas are opened up to produce solar power. In this way, sewage treatment plants, truck stands and parking spaces are used twice without restricting their primary use. Using open sewage treatment basins for solar power production in this way is unique in the world.

Technical and economic benefits for parking and logistics areas:

- Cheaper construction thanks to 50% less material used than with fixed PV constructions
- Use of the entire area incl. roadways for solar power production
- Traffic-free routes for trucks and lorries thanks to greater height and fewer supports
- No loss of parking space thanks to wide distances between supports
- Self-generated electricity, e.g. for electric vehicles, and independence from the grid
- In summer, the shade cools the vehicles and the asphalt surface (less maintenance)

Technical and economic benefits for wastewater treatment plants:

- Sewage treatment plants can become energy self-sufficient when combined (e.g. CHP)
- Always free access from above for maintenance and logistics
- The shade reduces algae growth in the basins and protects employees from UV & heat

Contact: Ernst-Jan van Hattum, Innosuisse, ernst-jan.vanhattum@innosuisse.ch

Hybrid modular streetlight serving as a public charging point

Summary:

An Italian company has developed a hybrid modular smart pole/streetlight that uses sun and wind and does not need to be grid-connected, with remote control and a high level of customisation. With a total power output of almost 2kW and storage of up to 10kWh it's a small power generator able to provide 24-48-220V power to different devices. The company is seeking for commercial agreements with technical assistance and joint venture agreements to enter new foreign markets.

Advantages compared to the existing solutions:

- Cost reduction: 20%;
- Performance increase: 40%.

Other advantages:

- Self-contained and energy self -sufficiency, with the use of dual renewable sources sun and wind;
- The pole is free from positioning limits, is a safe and reliable container for all the electronics and can be customised and configured upon needs;
- A high level of customisation with interoperability between sensors, IoT devices, security cameras, emergency calls, 5G connection devices, LED lights and presence sensors, drone charger, e-bike charger, plus others;
- Remote control and monitoring of the energy use via a web dashboard;
- Modular system to which bigger turbines and solar panels can be added to increase power output.

Contact: Marianna Mucci, m.mucci@pie.camcom.it

Hybrid micro power plants for sustainable energy generation based on wind and solar

Summary:

The plug & play micro power plants generate green electricity locally from the combination of high-performance wind dual turbines and solar panels mounted on a flexible wooden structure, which can be easily installed on rooftops of homes and commercial buildings and allow the generation of clean green energy in summer and winter, day and night, also in bad weather conditions. The Swiss company is looking for commercial agreements with technical expertise.

Advantages compared to the existing solutions:

- With only 4 square meter footprint, they provide the highest power per m_2.

Other advantages:

- Wind and sun together can generate energy 365 days/nights a year;
- Vertical Axis Wind Turbines (VAWT) do not have to adjust to the wind direction and have higher efficiency in turbulent winds than Horizontal Axis Wind Turbines (HAWT);
- The wooden support structure makes a positive contribution to CO_2;
- Power supply can be guaranteed in remote locations, avoiding transport of diesel etc.;
- When combining wind and solar power, fewer storage batteries are needed to achieve the same level of self-sufficiency, resulting in less critical material needed.

Contact: Ernst-Jan van Hattum, ernst-jan.vanhattum@innosuisse.ch

Methane generating reactor waste-to-energy and wastewater treatment technology

Summary:

An Australasian company with an office in Italy has 20 years of experience in designing and building biogas and biomethane plants with waste-to-energy and wastewater treatment technologies. The company has developed new efficient, sustainable and economically viable solutions applicable to the waste-to-energy and wastewater treatment value chain.

Advantages compared to the existing solutions:

- The in-ground digester results in a cost reduction of 33% over conventional CSTR systems.

Other advantages:

- A highly engineered in-ground anaerobic digester with the ability to receive very high strength and very high volumes of industrial waste and wastewater;
- The high-volume digester allows long retention times that permit secondary breakdown of residual organic compounds;
- Other innovations include the premixing of anaerobic sludge with incoming waste and the sequential automated distribution of organic load throughout the digester sludge blanket;
- Very low operating and maintenance costs;
- Highly resilient against shock hydraulic and organic loadings;
- Pesticides have been proven to be completely decomposed with the digester;
- Aromatic hydrocarbons, aromatic alcohols, and polyester type hazardous liquid wastes are received and digested by the CGR.

Contact: Marco Gorini, marco.gorini@venetoinnovazione.it

Low-cost high performance solar thermal device

Summary:

A Spanish project has developed a new solar thermal device which uses solar energy to supply manageable heat (150C - 400C) to industrial processes. It consists of a rotatory solar collector, and a thermal storage system, both integrated and connected to the industrial process. Its special features include modularity, compactness and low cost, means it is suitable for many applications. In addition, an enhanced version of the solution can supply high quality solar energy at high latitudes where other solutions fail.

Advantages compared to the existing solutions:

- Around 650 €/kW;
- Levelized cost of manageable heat: 50 €/MWh.

Other advantages:

- Compactness;
- Modularity;
- Large reduction in the materials needed: 30% in glass, 30% in steel, 70% in concrete;
- High performance even at high latitude (higher than 45o N) where other solar concentration technologies fail.

Contact: Mercedes Lecea, mercedes.lecea@madrimasd.org

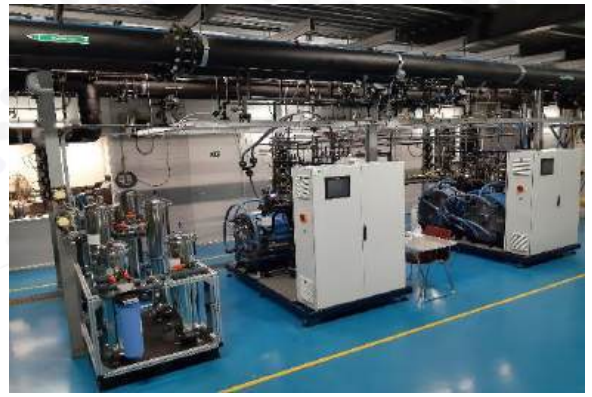
Sustainable osmotic energy from freshwater and seawater

Summary:

Osmotic Energy is a form of sustainable energy production. The 'fuel' consists of fresh and salt water. Freshwater is led along with seawater through a membrane stack in a housing, the so-called RED stack. Salt and fresh water are mixed in a controlled manner in the stack and this process generates electrical energy. The energy obtained in this way is often referred to as Blue Energy or Osmotic Energy. Typical locations would be at river entrances, or at barriers between freshwater and the sea.

Advantages compared to the existing solutions:

- Sustainable, clean energy without CO_2 emissions;
- Available 24/7/365;
- Complements irregular wind or solar energy;
- Decreases storage costs due to 100% continuous generation;
- No significant environmental nor ecological impact;
- Going down the cost curve, the cost will go down from 11 €ct/kWh in 2030 to 6 €ct/kWh in 2050 adding up to 10% to the global energy demand as a base load.



Other advantages:

- Can be applied in industrial applications to reduce energy consumption in processes that have both salt and freshwater available, such as desalination plants in combination with wastewater treatment plants.

Contact: Rixt Sinnema, r.sinnema@waterallliance.nll

Submerged micro-hydro kinetic turbine

Summary:

An innovative SME based in Lombardy, Italy, offers a hydro micro-turbine (1 to 200 kW) specifically suitable for applications on rivers and canals. It allows to operate hydro power plants with near zero environmental impact, adaptability to the watercourse characteristics and high productivity.

Technical and economic advantages:

- LCOE (Levelized Cost of Energy) in a range between 40 and 80 €/MWh
- Each plant can deliver from 1 to 200 kW. Several plants located in series along the watercourse enable delivery of hundreds of kWh
- Discounted payback between 7 and 13 years; the life cycle of the plant is 30 years

Other benefits:

- Adaptability to almost all watercourses in their different shapes and sizes
- No civil works; no noise as turbines work under water
- No impact on waterway animals and plant life conservation; no water pollution / near zero environmental impact

Additional info: https://een.ec.europa.eu/partnering-opportunities/innovative-submerged-micro-hydro-kinetic-turbine-clean-power-generation

Contact: Angelo Gatto, IT-Finlombarda, angelo.gatto@finlombarda.it

Next-Gen Solar Roof Technology for Sustainable Cities

Summary:

A Danish company has developed a new patented solar roof technology for the built environment. The solar roof technology is already tested and applied across 450 installations in Denmark and Germany. The Danish company offers commercial agreement to interested partners such as housing associations, commercial buildings, utility companies and municipalities.

Advantages compared to the existing solutions:

- Cost reduction: 100% compared to traditional roofing materials;
- Performance increase: 50% compared to traditional on roof systems.

Other advantages:

- Complete roofing solution incl. flashings, etc.;
- Attractive Return on Investment with high Internal Rate of Return (IRR);
- No fire hazard as opposed to traditional PV systems;
- SMART system integration with batteries and smart meters;
- Available in 2 colour options, Black and Tile Red.

Contact: Jesper Vestergård Hansen, jvh@southdenmark.be

Custom integrated solar facade for new buildings and retrofit

Summary:

Custom solar facade solutions for new build & retrofit. Full architectural design freedom, including colours and finish to panel shape. These high-quality cladding systems are designed for the circular economy, and provide a resilient, low-maintenance and low risk path to net-zero.

Advantages compared to the existing solutions:

- Custom cladding systems integrate solar power into building façades;
- Maximise usable area of urban buildings for energy generation;
- Long lifespan across generations;
- Serve as an architectural showcase of environmental commitment;
- Performance increase (%): 100%, compared to conventional, non-PV façade cladding materials;
- Return-on-Investment (%): Positive ROI over façade lifespan.

Other advantages:

- Light weight, low maintenance and sustainable;
- Unparalleled design freedom;
- Cost-effective and positive ROI;
- Freeing-up of roof space for other uses.

Contact: Jesper Vestergård Hansen, jvh@southdenmark.be

A photovoltaic controller, part of an innovative solar water heating system

Summary:

A Bulgarian company offers a photovoltaic controller that is central to an innovative and cost-effective solar water heating system. The system presents a new way for households and businesses to heat water by utilising PV panels directly connected to existing water heaters through this intelligent controller allowing for optimized energy management.

Technical and economic advantages:

- The solution is approximately 20% cheaper than comparable solar collector systems, with a 1.5 kWp power system sufficient for most household needs;
- The solution guarantees up to 70% reduction in water heating costs;
- Designed to last over 25 years, with high resistance to extreme weather conditions.

Other Benefits:

- The installation very simple, requiring only electrical cables, not impacted by overheating or freezing;
- Seamless integration with existing water heater systems, no need for separate water tanks or extensive plumbing modifications together with minimal maintenance requirements;
- Smart control and monitoring capabilities, and higher efficiency – substantial reduction in the water heating costs as well as in the carbon emissions, in comparison with traditional solar thermal systems;
- Suitable for both residential and commercial applications, with systems capable of heating water tanks up to 300 liters.

Contact: Mina Denkova, RES Cluster, minadenkova@res-cluster.com

Portable solar power: plug & play deployable structure for emergency situations

Summary:

A Spanish company has developed a system of deployable solar panel structures, based on aerospace technology. Easy to use, and no prior installation or maintenance required, makes this an ideal energy production solution for emergency situations, such as natural disasters, and in rural areas, where existing energy grids are not working or present. The structure can be placed where fixed solar energy systems can't. It is a portable solar power station, being assembled and disassembled in less than 5 minutes.

Advantages compared to the existing solutions:

- Cost reduction: 40/50%;
- In less than 5 minutes of installation it becomes a working photovoltaic station providing energy in crisis situations or at places with lack of grid;
- Greater performance: according to solar hours;
- Available on the market, demonstrations possible.

Other advantages:

- Portable solar system that is easy to transport and assemble;
- Possibility to connect to the electrical network;
- Does not require maintenance, plug and play;
- Reduce carbon footprint.

Contact: Mercedes Lecea, mercedes.lecea@madrimasd.org

Zero emission off-grid generators for events, emergency and construction sectors

Summary:

The French company designs and manufactures battery-powered off-grid generator solutions as an alternative to polluting and noisy gas-powered generators. Designed for film shoots, events, construction sites and emergency power, the generators are ultra-mobile and robust, with high energy density.

Advantages compared to the existing solutions:

After 5 years >13 tons of CO_2 emissions avoided (compared to a gas-powered generator), which equates to:

- 14 flights Paris-NY;
- 60 000 km by car;
- 19 years of electric home heating;
- More than 10 000 € saved.

Other advantages:

- Can be plugged in with portable flexible solar panels;
- Can be recharged at any car charging station (with adaptor);
- Fully mobile and silent generators that can be custom made for larger projects.

Contact: Margaux Sommier, msommier@risingsud.fr

Pontoon hydrokinetic power plants on slow river courses boosted by gravity

Summary:

A Bulgarian innovative company has developed a hybrid paddle wheel that uses gravity to boost rotation with fixed radial overwater cantilevers ending in elongated movable paddles cantilevered on simple hinge mechanisms. The mechanism maintains the paddles, instead of radially, always in vertical positions above and below the water. Possible partners are hydro power companies, utilities, water management consortia and local communities and municipalities.

Advantages compared to the existing solutions:

- The blades are immersed at about 45% of the wheel radius, instead of 12% for the familiar water wheels, which allows them to work in a 3.5 times deeper water layer, which increases their efficiency to about 45%;
- The overall efficiency of electricity production is about 40% - about 3 times cheaper than 5 MW wind turbines and 4 times cheaper than photovoltaic parks;
- The paddles enter the water vertically downwards with their narrowest side and therefore the drag in the water is minimal;
- The shaft of the hybrid wheel and all components of the pontoon hydroelectric power plant are above the water;
- The revolutions of the hybrid wheels are many times higher than those of known water wheels at the same load in comparable water conditions.

Contact: Svetoslava Pavlova, een@chambersz.com

Modular Floating Energy platforms for marine zone recharging and power

Summary:

Configurable modular system for generating, storing and transferring energy in marine zones. Provides nearshore and offshore recharging and power for ports and harbours who require independent power for electric vessels, autonomous vehicles, digital communications, navigation and marine systems. Easy to transport and assemble at point of use, it enhances operational efficiency, reduces costs, and supports maritime infrastructure development.

Technical and economic advantages:

- Modular and scalable ‘design-for-lifecycle’ reduces manufacturing, transport, assembly and infrastructure costs
- Enables independence from the grid, reducing energy transmission costs
- Extends operational range, increasing the use of electric vessels, autonomous and remotely operated vehicles

Other benefits:

- Promotes the use of electric vessels, contributing to reduced emissions and compliance with environmental systems
- Provides infrastructure for smart ports, supporting digital communications and data systems
- Easy to transport using standard shipping containers, reducing transport time & costs

Contact: Jane Warren, Innovate UK Business Growth, jane.warren@iukbg.ukri.org

Transforming Air into Water, thanks to Sunlight

Summary:

A French company has developed a hydro-panel using the “adsorbtion” technology and is transforming Air into Water thanks to Sunlight, in complete autonomy and sustainably. Panels can easily be installed and maintained. One panel produces one litre per day in the set weather conditions. Panels are installed in series of 10, and possibly up to thousands of units. The company offers three types of panels producing:
1. Quality fresh water, 2. Precision irrigation water and 3. Sterile and demineralized water for the food and non-food industries.

Technical and economic advantages:

- Better water quality: no micro-plastic, no PFAS, no germ, unlike plastic bottled water and tap water;
- Lower cost per litre (12 cents € vs. plastic bottled water 25 cents € and vs. sterile water liter 35 cents €);
- No impact: no electricity and no water from the grid – no plastic – no pollution – no wasting of water;
- No dependency on any conventional source of water;
- Passive and robust solution – 20 years life span.

Additional info: https://een.ec.europa.eu/partnering-opportunities/french-start-air-water-technology-looking-investorsfund-managers-finance

Contact: Jérôme Caposiena, CCI, j.caposiena@ain.cci.fr

Converting waste heat into electricity - Organic Rankine Cycle

Summary:

A French high-tech company that are experts in the design of micro-turbomachinery for the ecological transition, and more particularly compact heat to power modules (Organic Rankine Cycle), offers the most advanced and reliable solutions available on the market: their ORC machines can generate up to 180 kW of electricity from residual energy sources at temperatures as low as 75°C.

Advantages compared to the existing solutions:

- Patented turbine technology makes it possible to exploit heat sources even at low temperatures;
- Compact, standardised and highly reliable products;
- Seamless plug-and-play solution secures the price of energy over a long-term period;
- An in-house test bench guarantees the performance of the modules before they leave the workshops.

Other advantages:

- A system designed to operate continuously for 20 years ensuring an ultra - competitive Cost of Energy;
- Quick payback (< 3years);
- Possibility to finance the global project (CAPEX and OPEX) through power purchase agreement starting from 100€/MWh.

Heat recovery on Geothermal well – 3 x 100kW ORC - China

Heat recovery on Incinerator– 180kW ORC - France

Contact: Margaux Sommier, msommier@risingsud.fr

Energy and Cost-Efficient Power Generation from Deceleration

Summary:

A Tyrolean start-up offers its energy converting technology to transform wasted mechanical energy into clean electric energy. The innovative system can be embedded in various environments, e.g. at road speed limits, where it generates electricity from the deceleration energy that would otherwise be lost. The system amortizes both energetically and economically in a short time. They are specifically looking for investors and strategic partners in the road and port sector.

Advantages compared to the existing solutions:

- Two known approaches to energy harvesting: piezoelectric effects and dynamo principles;
- Both suffer from low energy efficiency and poor economic feasibility;
- New system uses a patented permanent magnetic bearing system instead;
- Ensures high efficiency and long durability;
- First use case: converts mechanical road energy (weight & vertical forces of passing vehicles);
- Produces clean electric energy from surplus vehicle energy

Other advantages:

- Local use: Energy can be consumed on-site or nearby, independent of the grid;
- Efficient design: Permanent magnetic suspension & induction → no friction, long life;
- Fast payback: Quick return in both energy and cost.

Additional Info: https://een.ec.europa.eu/partnering-opportunities/road-energy-system-converting-traffic-clean-electricity-looking-partners

Contact: Viktoria Fink, viktoria.fink@standort-tirol.at

High-efficiency energy systems for clean power generation and long-term storage

Summary:

A German company, develops carbon-negative, reversible power plants using solid oxide cell technology. Their system doubles electricity output from biogas and separates pure CO_2 for storage, enabling negative emissions. It also produces green hydrogen or methane. Ideal for biogas operators, utilities, and industries needing clean energy and long-term storage.

Technical and economic advantages:

- Higher Efficiency: Electricity generation with electrical efficiencies of up to 80%;
- Reversible: Produces green hydrogen or methane from electricity (Power-to-Gas);
- Carbon Capture: Enables negative CO_2 emissions for the first time.

Other benefits:

- Grid Balancing: Stabilizes the grid by adapting to supply and demand;
- Energy Storage: Enables long-duration renewable energy storage;
- CO_2 Capture: Most cost-efficient solution for carbon capture.

Contact: Sonja Angloher-Reichelt, Bayern Innovativ, angloher@bayern-innovativ.de

High efficiency electrolysers for low-cost green hydrogen

Summary:

A UK electrolyser OEM, producing PEM electrolyser stacks and complete plug and play green hydrogen production systems. The company's patented technology allows the use of ultra-thin membranes, enabling extremely efficient performance at commercially relevant hydrogen pressures (> 30 bar). This enables low-cost green hydrogen production. The company is seeking commercial partners in industries that require hydrogen at very high volume (> 4 tonnes per day) e.g. ammonia producers, the steel industry, or methanol producers.

Advantages compared to the existing solutions:

- Ultra-thin membranes enable very high performance, driving the operational costs of green hydrogen production down;
- Cost-effective design and manufacture results in low capital cost;
- In combination, the Levelised Cost of Hydrogen (LCOH) is very low.

Other advantages:

- Flexible hydrogen electrolyser solutions, from complete systems to individual electrolyser stacks;
- Support services to companies wishing to build their own electrolyser systems;
- Ideal for companies that need or currently use hydrogen onsite or buy in hydrogen from the market;
- Also suitable for Renewable Energy companies, that want to move from selling 'green electrons' to selling 'green molecules'.

Contact: Angelo Spencer-Smith Angelo.Spencer-Smith@iukbg.ukri.org

Modular green-hydrogen electrolysis plants

Summary:

An innovative SME based in Lombardy, Italy, offers turnkey water-electrolysis plants in sizes from 50 kW to 1 MW, supplied ready-to-run in skid or container format to allow production on premises. The stacks can be alkaline (AWE), proton-exchange (PEM) or anion-exchange (AEM).

Technical and economic advantages:

- Commissioning time reduced by 30–40% thanks to pre-assembled skid or container units;
- Up to 20% savings on installation costs due to minimal civil works required;
- Predictable operating costs enabled by IoT-based predictive maintenance.

Other benefits

- Technological flexibility with AWE, PEM or AEM stack options available;
- Turnkey solution with full support from design to certification;
- Scalable and customizable to meet the specific needs of industrial clients

Additional info: https://een.ec.europa.eu/partnering-opportunities/italian-sme-offers-modular-green-hydrogen-electrolysis-plants-50-kw-1-mw

Contact: Angelo Gatto, IT-Finlombarda, angelo.gatto@finlombarda.it

Innovative hydrogen solutions for energy strategy transformation

Summary:

Bulgarian OEM specializing in alkaline electrolysers and metal hydride storage offers customized, turnkey hydrogen solutions at kW to MW scale. Proprietary technologies ensure high efficiency, scalability, and full integration, serving industries, mobility, and research. With 90+ systems delivered EU-wide, offerings also help clients enhance combustion processes, saving up to 30% energy costs.

Advantages compared to the existing solutions:

- Modular solutions tailor-made for any application;
- Plug & play seamless integration;
- Up to 30% verified energy bill savings (based on real data from 90+ EU-wide projects).

Other advantages:

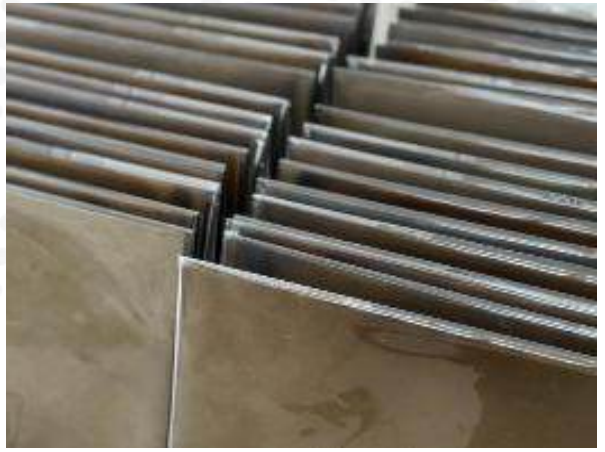
- Delivery within 50 weeks backed by a 2-year guarantee;
- High-efficiency and reliable design for long-term use with a comprehensive service package;
- Payback period of 2–5 years with an operational lifetime of 15 years.

Contact: Denitsa Marinova, Cluster Mechatronics and Automation (Bulgaria), cma@cluster-mechatronics-automation.com

Platinum free catalysed electrodes for cost-effective hydrogen production from water electrolysis

Summary:

A UK based deep-tech company have developed platinum-free catalysed electrodes for hydrogen production via water electrolysis. Using electrochemically activated stainless-steel, they lower costs and boost durability. They serve OEMs, electrolyser manufacturers, other hydrogen producers and academia.



Technical and economic advantages:

- >50% CapEx reduction compared to platinum-group metal (PGM) -based electrodes, due to the use of low-cost, abundant stainless steel;
- 2–5x longer lifespan under fluctuating renewable loads, thanks to integrated catalyst-electrode structure;
- Up to 95% performance parity with leading PGM electrodes in alkaline electrolysers, at a fraction of the material cost.

Other benefits:

- Simplified manufacturing. Unique electrochemical activation eliminates the need for separate coating steps, reducing complexity, cost and production time;
- “Self-repairing” when subjected to fluctuating loads, increasing lifespan significantly;
- Sustainable materials - made from abundant materials, avoiding reliance on conflict-prone or limited-resource metals.

Contact: Jayne Bradford, Innovate UK Business Growth, jayne.bradford@iukbg.ukri.org

Sustainable, local and competitive heat production for large heat consumers

Summary:

French renewable heat supplier dedicated to large heat consumers: industrial sites and district heating networks. This SME is today among the leaders in Europe and in the world offering large-scale solar thermal plants, heat recovery solutions, but also other decarbonised heat supply technologies (e.g., heat pumps) under a design-build-finance-operate scheme.

Technical and economic advantages:

- Integrated heat production systems, with a full maintenance and servicing solution over time with guaranteed performance;
- Renewable heat « at the meter » bearing the full costs of studies, implementation, and operation (third-party investment);
- Already 40MW in operation and 200MW in development in different EU countries.

Other Benefits:

- Tailor-made solutions, based on your site's thermal energy demand and local climate data;
- Preserve your investment capacity with 0 CAPEX;
- Reduce your energy bill and your dependency on volatile fossil energy markets;
- Strong decrease of your CO_2 emissions to reach your sustainability long-term ambitions.

Contact: Bertille Madéore, ADI, b.madeore@adi-na.fr


Picture: IMAGESinAIR Productions

Agri-PV Solutions for Resilient Farming

Summary:

The Swiss company is an agrivoltaic solution provider, bringing to market new agrivoltaic systems. With a single infrastructure, the agrivoltaic system enables both agricultural and electricity production on the same land. More than just a voltaic installation the system is an agronomic tool for growers. The agrovoltaic systems contributes to building a more resilient agriculture in the face of climate hazards.

Techno economical advantages

- Water savings between 20% and 50%;
- Decarbonisation of the agricultural production: replacing plastic tunnels by an agrivoltaic cover enables electricity production with a carbon footprint below 25g CO_2-eq/kWh;
- Produce ~1GWh/hectare/year of renewable electricity while protecting crops from climatic hazards (heat waves, frost, hail, sunburns), without additional land take..

Other benefits

- Micro-climatic control of the crops' environment;
- Low impact on landscape as a sustainable substitution to conventional crop protection systems (plastic tunnels);
- An agricultural tool for the producer that also provides a diversification of revenue;
- Valorisation of «energy positive» products by the buyers;
- Improved Working Conditions - Provides shade, creating a cooler environment that protects workers from direct sun exposure.

Contact: Ernst-Jan van Hattum, ernst-jan.vanhattum@innosuisse.ch

Autonomous agricultural robots powered by clean renewable energy via solar panels

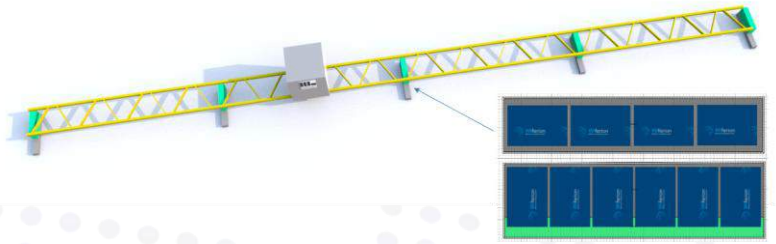
Summary:

An Italian company has developed a clean energy hardware and software architecture suitable for agriculture and outdoor robots. The robot is powered by rechargeable batteries with wireless induction recharge, avoiding the need for cables. Therefore, the solution allows the robot to be independent from the electrical grid, move freely and safely in the field, adopting energy efficient operation strategies and therefore maximising autonomy.

Advantages compared to the existing solutions:

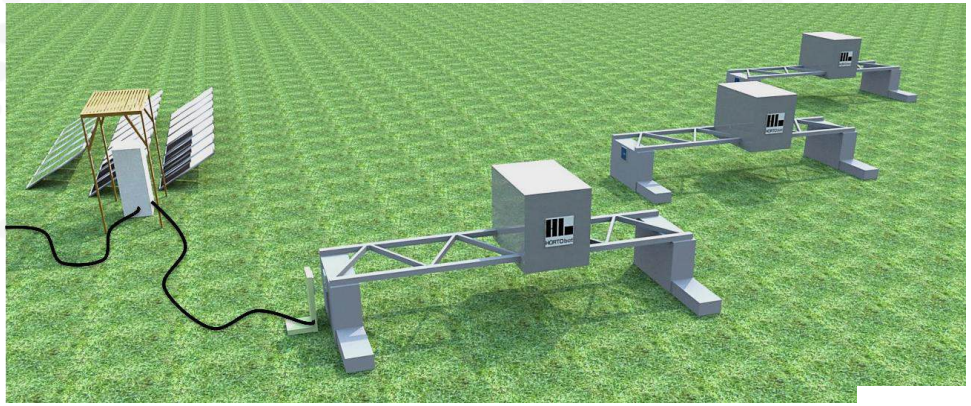
The solution brings the following advantages compared to cabled robots powered from non-renewable energy:

- Be powered by rechargeable batteries from a renewable energy source;
- Wireless charging;
- Cutting operational costs by 70%, primarily by reducing energy bills;
- The ability to move autonomously and safely in the field, increasing the area covered per robot.



Other advantages:

- The robot can operate up to 8 consecutive hours on a field of 1000mq;
- Integration with weather forecast;
- Charging station can be moved in a convenient place.



Contact: Federico Molino, f.molino@pie.camcom.it

Energy Storage & Management

These solutions span battery, thermal, and hydrogen-based storage, including second-life EV batteries, solid-state hydrogen, and PCM-based thermal systems.

Many solutions integrate intelligent EMS platforms for load shifting, peak shaving, and energy market participation.

These innovations support the EU Energy Storage Strategy and Critical Raw Materials Act, addressing grid flexibility and supply chain resilience.

Industrial Decarbonisation through Thermal Battery Solutions

Summary:

A Spanish start-up focuses on the decarbonisation of industrial processes using heat. The technology is based on a thermal energy storage battery which allows the generation of heat from renewable energy sources when energy prices are low, to store it and dispatch it when needed, being able to feed industrial processes up to 250-300ºC. The compact design of high energy density capacity helps to replace fossil fuels, ensures energy supply, and reduces costs as well as carbon footprint.

Advantages compared to the existing solutions:

- 5 to 15% reduction in Scope 1 carbon footprint;
- Lower cost (<100€/kWh) when compared with electrochemical batteries, with a technological price around 60 €/kWh but a market price, for the whole installation, around 300€/kWh;
- Higher equipment lifespan (in the range of 20 years) when compared with electrochemical batteries (5-10 years);
- More mature technology when compared with other potential solutions such as hydrogen;
- It doesn't require the use of scarce chemical elements (i.e. Lithium);
- It is a more cost-effective solution to provide heat supply than storing power for heat applications, since theoretical efficiencies of electricity-to-thermal energy storage-to-heat are in the range of 97% (around 50% of global energy demand in form of heat).

Additional info: The company has received several grants, including Next Generation EU fundings, as well as funding from regional government of Navarra.

Contact: Idoia Franco Juarros, ifranco@ain.es

High-Performance Second-Life Li-Ion Solutions

Summary:

Spanish company develops and implements technological solutions to give li-ion batteries a second life. At the end of their lifespan in an electric vehicle, batteries maintain a large storage capacity (70%-80%) and still offer high performance, thus, are perfectly functional for other uses such as:

• Medium and large-scale energy storage (80kWh-4MWh) for industrial systems and network optimisation;

• Small-scale energy storage (6kWh-12kWh) for self-consumption in public and private buildings.

Advantages compared to the existing solutions:

- Sustainability: Reduction of CO_2 emissions and greater energy efficiency;
- Cost reduction: 30% reduction of energy costs;
- Payback: 5-6 years;
- Integration with any type of energy source. Monitoring of the full installation and optimisation of energy costs;
- An Energy Management System, allowing the monitoring and control of the full installation, with or without photovoltaic production;
- Standardised industrial process to characterise battery modules and battery packs for electric vehicles.

Contact: Idoia Franco Juarros, ifranco@ain.es

Next-generation energy storage system based on sodium-ion cell technology

Summary:

This Austrian start-up merges cutting-edge sodium-ion cell technology with automotive engineering expertise to create next-generation energy storage systems for both residential and commercial use. Their flagship product, is a sodium-ion-based home battery that is free from lithium, cobalt, and nickel—making it safer, more sustainable and easier to recycle.

Advantages compared to the existing solutions:

- Maximum Safety: No risk of fire or explosion, no toxic gas emissions, ideal for residential use and sensitive environments;
- A Sustainable Solution: Free from lithium, cobalt, and nickel. Uses sodium-ion cells, which are more abundant and environmentally friendly and are easier to recycle than conventional batteries;
- Long Lifespan: Up to 10,000 full charge cycles, significantly outperforming many lithium-ion alternatives;
- Temperature Resilience: Operates reliably even in extreme cold (down to -20°C),making it also suitable for alpine and northern climates;
- European Sourcing & Supply Chain Independence: All key components are sourced from within Europe which reduces reliance on critical raw materials from politically unstable regions, strengthens regional supply chains and aligns with EU strategic autonomy goals.

Contact: Michael Kerschbaumer, SFG, michael.kerschbaumer@sfg.at

Unleash renewable energy potential with a green hydrogen storage system

Summary:

An Italian innovative start-up founded in 2021, located in Genoa, focuses on unleashing the Renewable Energy potential, by means of a green hydrogen storage system.

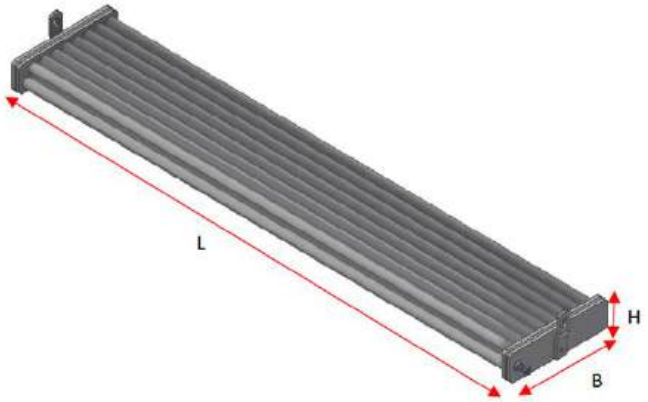
The company deals with the design and technical development of systems, materials, and plants for hydrogen storage using materials to store this energy carrier even in the solid state, in hydrides of various kind.

Advantages compared to the existing solutions:

The main product is an energy storage system, in the form of hydrogen, based on hydrides; this way the energy carrier H2 is accumulated in solid state. The solid-state storage represents an innovative solution, as it allows increasing the volumetric energy density, using special storage systems with high technological value, because they allow decreasing the operating pressure of the system, the associated risks, and the overall energy consumption of the storage step.

Other advantages:

- Safety;
- Low pressure;
- High density storage;
- Recyclable.



Storage capacity	H2 capacity (nominal)	kg	0,6
	Energy stored	kWh_{th}	20
Charge	Pressure	bar	20-35
	Temperature/Temperatura	°C	15-25
	H2 Flow max	kg/h	0,4
	Thermal Power required	kW_{th}	1,5
Discharge	Pressure	bar	1.5 - 30
	Temperature	°C	40
	H2 Flow	kg/h	0,4
	Thermal Power required	kW_{th}	1,5
Dimensions	(L x B x H) - mm		1500 x295x75
Weight	kg		75
External temperature	°C		-20 to 50

Contact: Raffaella Bruzzone, raffaella.bruzzone@ge.camcom.it

A hydrogen-based energy solution for environmentally friendly energy management in stationary and mobile applications

Summary:

A Spanish company has developed an efficient energy management system from renewable sources through hydrogen for stationary and mobility applications.

Advantages compared to the existing solutions:

Energy management based on green hydrogen, these solutions are prepared for the delivery of electricity in alternating current, 400 VAC, 3P, and can be used for both stationary and mobility applications.
The solution aims to enable energy to become an asset, and offers:

- Energy security triple redundancy safety: renewables, batteries, and hydrogen;
- Economic security: energy price is known by the customer, avoiding market fluctuations;
- New clean and decentralized produced fuel;
- Sustainability: 100% green energy, an asset for the customer´s value proposal on their businesses.

Other advantages:

- Modular;
- Scalable;
- More profitable than a conventional battery when more than 20 hours of energy autonomy are necessary;
- Simple to install;
- Mobile, easily transferred to different locations.

Contact: Carlos Encinas, carlosem@ficyt.es

Compact Energy Storage for heating transition

Summary:

A Swiss company enables simple integration of sustainable heat pump systems into buildings. Replacing compact gas heaters often requires more space and major renovations. The company solves this with compact, modular, and efficient storage solutions using Phase Change Materials (PCM).

Technical and economic advantages:

- Up to 4 times more compact than existing solutions;
- 13 kWh of thermal storage or 400l Hot Water equivalent on 0.2 m2 footprint;
- Doubling heating autarky in PV/Heat pump systems.

Other Benefits

- Modular design to combine multiple units;
- Cubic shape to fit every corner;
- Top connectors for easy installation;
- Hygienic flow heater principle.

Contact: Ernst-Jan van Hattum, Innosuisse, ernst-jan.vanhattum@innosuisse.ch

24 kWh of heating and Domestic Hot Water (DHW) storage based on Phase Change Materials.

Specialist in development, construction & operation of large battery storage systems

Summary:

This German company specializes in the development, construction and operation of large (>2 MWh) battery storage systems, enabling an optimized, demand-oriented and renewable energy supply. The business has 4 areas of expertise: engineering and consulting, project development, system integration, and O&M. It is seeking cooperation with European suppliers of battery storage system components.

Technical and economic advantages:

- Grid stabilization through primary control reserve
- Cost benefits through energy trading
- Lower power price due to peak shaving
- Lower procurement costs through solar power storage

Other benefits:

- Inhouse software solutions
- Lowest carbon footprint by Zero-, 1st- or 2nd-Use battery modules
- Inhouse operation & maintenance for your project
- Made in Europe with components mainly from Europe

Additional info: https://een.ec.europa.eu/partnering-opportunities/suppliers-sought-germany-based-specialist-development-construction-and

Contact: Jana Barth, EEN Sachsen, barth@zts.de

A photovoltaic modular storage system for energy autonomy

Summary:

An Italian SME has developed a photovoltaic (PV) modular storage system (MSS) designed for achieving energy autonomy. This MSS operates independently from the grid, exclusively charging its batteries using PV-generated electricity. It prioritises PV energy for consumption and switches to the grid only when battery levels are depleted. Notably, it boasts unrestricted current withdrawal capacity from the batteries. The SME is looking for partners to collaborate via commercial agreement with technical assistance, EPC contractor, energy managers, distributors.

Advantages compared to the existing solutions:

- Lower price: 1500€ /kWp;
- No needs of electricity grid;
- Payback time: 3 YEARS;
- For any type of batteries: AGM, GEL, Free Acid, Deep Cycle, etc.

Other advantages:

- The MSS is equipped with automatic desulphation function (i.e. removal of the lead sulfates from the electrodes) for each single battery only when it is necessary;
- Reporting every day the batteries in optimal conditions.

Contact: Martina Caliano, martina.caliano@enea.it

Modular energy optimiser for high-power applications serving peak-shaving, energy recuperation or grid-stabilisation

Summary:

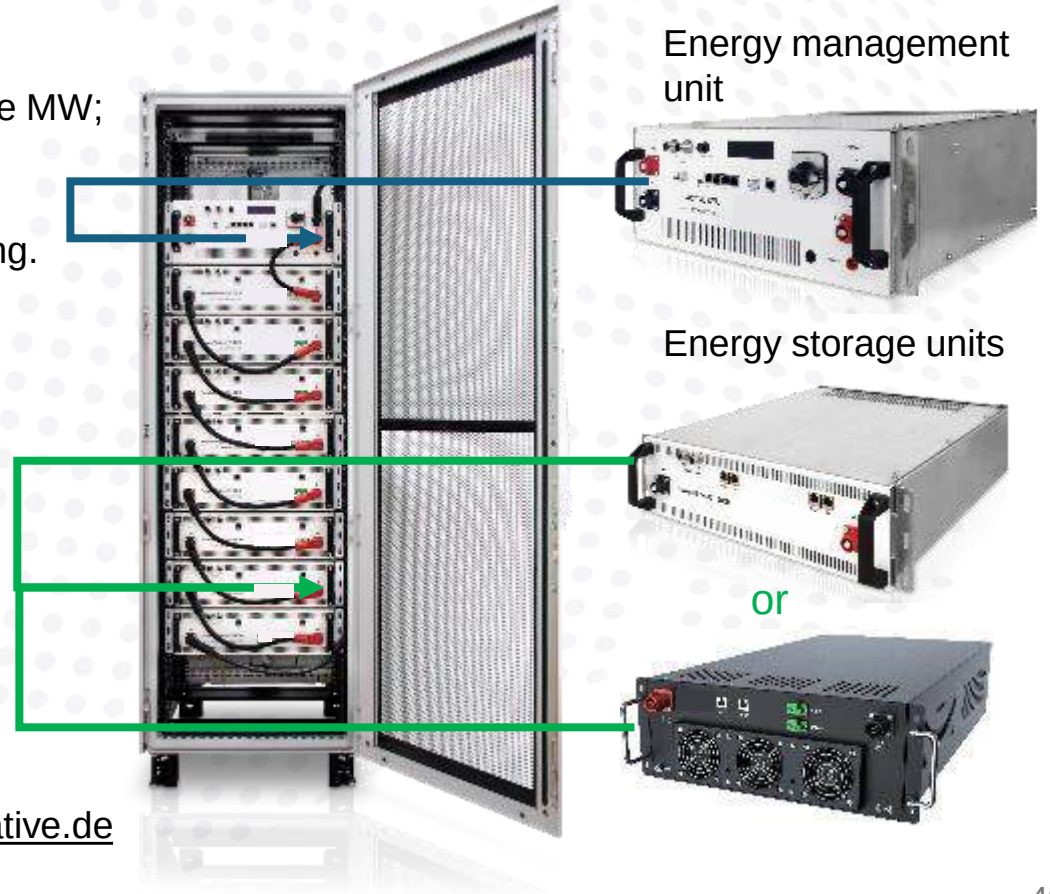
A southern German company has developed a modular energy storage system based on its mature EDLC and LTO technologies. The systems meet individual high-power, peak-shaving or energy-recuperation requirements and are deployable in industrial, port, scientific and testing-laboratory applications, also connectable to existing Li-batteries.

Technical and economic benefits:

- Variable slide-in system for pragmatic Plug & Play up to 1200 VDC and multiple MW;
- Deployable in wide temperature range (- 40°C to + 65°C) for millions of cycles;
- Reduction up to 95% of the unnecessary grid connection costs due to oversizing.

Other Advantages:

- Configurable modularized system for every cutting-edge application;
- Integrated intelligent dynamic cell balancing, string and power management;
- Integrated pre-charging and service discharging functions;
- Suitable for both passive and active connections to DC-link;
- Suitable for both stationary and mobile applications;
- Well-established and longtime-tested safety functions.



Contact: Sonja Angloher-Reichelt, Bayern Innovativ, angloher@bayern-innovative.de

Flexible Storage Solutions for Renewable Energy and Industry

Summary:

The German company is a developer, project planner, and operator of energy management and storage systems and offers almost unlimited scalable storage solutions from 0.5 MWh. The entire chain from project planning to economically optimised operation and marketing of their performance is covered from a single source. The portfolio is aimed at users from the renewable energy environment, the energy sector, industry or clean-tech investors.

Advantages compared to the existing solutions:

- Scalable & flexible storage solutions;
- In-house developed intelligent energy management system (iEMS);
- Short implementation periods;
- Long usability & service life;
- Large-scale storage for industry & commercial;
- Grid storage for renewable energies;
- Multi use-cases, frequency control reserve & trading;
- High standards and certifications (IEC-standards, ISO9001);
- Battery system competence - in-house.

Contact: Sonja Angloher-Reichelt, angloher@bayern-innovativ.de

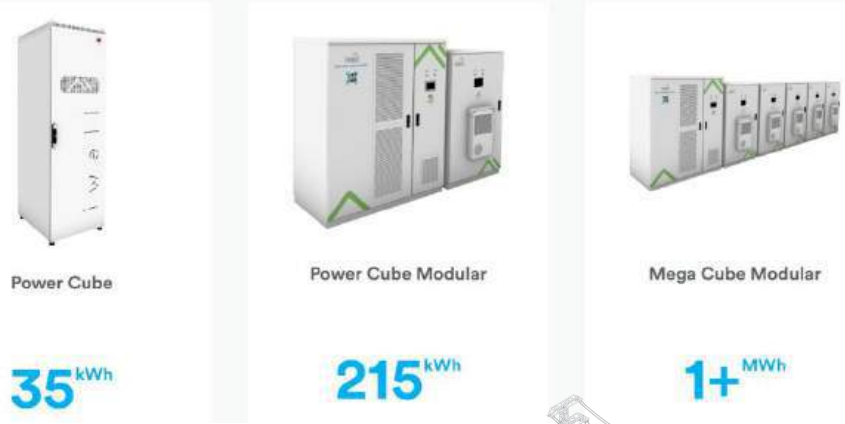
Modular energy storage & management system for control over market energy demands & prices

Summary:

A Dutch SME has developed an innovative and modular energy storage system. Their technology is based on stacking multiple battery packs in (mobile) containers, or in fixed on-site storage, combined with an energy management system. The technology makes it possible to generate, store and use energy when you want it. This provides clean energy when you need it, avoiding restrictions from grid congestion, intelligent smart energy management, and access to energy flexibility markets with the possibility to earn revenues.

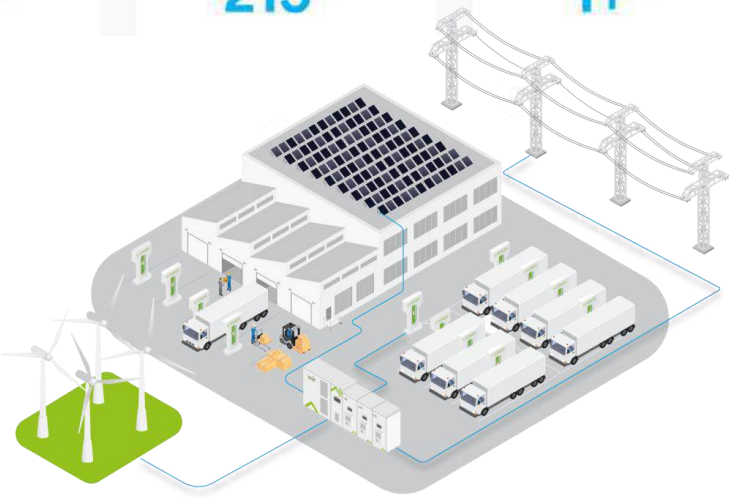
Advantages compared to the existing solutions:

- Companies can save up to 70% in their energy costs;
- Companies can achieve up to 75% in energy self-sufficiency;
- The system stores renewable energy from sun and wind and delivers it when needed.



Other advantages:

- The SME provides companies with “energy cubes” and an energy management system (EMS);
- It is a turn-key solution where only square meters are needed;
- If there is a surplus of green energy available, this energy can be stored for usage when there is a shortage of energy capacity in the local grid;
- The storage capacity supports local grid capacity when there is a surplus of green energy and so can act as a grid balancer offering “peak shaving” and energy flexibility benefits.



Contact: Ruben van der Horst, ruben.vanderhorst@romutrechtregion.nl

Smart Buildings & Industrial Efficiency

This section features technologies for AI-driven HVAC optimisation, ISO 50001-compliant EMS, and predictive maintenance tools.

Solutions include heat recovery, digital twins, and smart thermostats.

These support the Energy Performance of Buildings Directive (EPBD) and the Renovation Wave, targeting 55% emissions reduction by 2030.

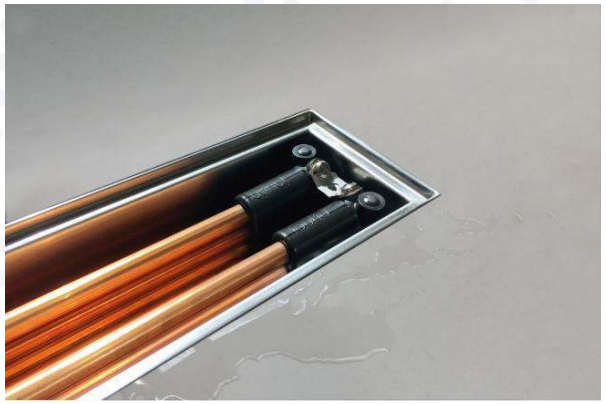
A highly efficient heat exchanger technology that recycles up to 50% of heat energy from wastewater

Summary:

A Swiss company has developed a linear and double walled safety heat exchanger that is fully integrated in linear drains or shower trays and can be installed in private showers as in public wet rooms. The scalable technology is drinking water certified by European institutions and combines aspects like high efficiency, easy to install and clean and a nice design.

Advantages compared to the existing solutions:

- Best in class efficiency, up to 50% savings;
- Payback time in public buildings after 0.5 year;
- Payback time in domestic buildings between 3-5 years;
- Double walled construction of the heat exchanger incl. an acoustic leakage alert;
- Drinking water certified (KIWA, DVGW, SVGW, WRAS);
- Easy to install and easy to clean;
- Replaceable heat exchanger without any special tools needed;
- Scalable technology up to OEMs needs;
- Already 10’000+ installations in Switzerland and the Netherlands.



Other advantages:

- Fewer peak loads thanks to drain water heat recycling.

Contact: Ernst-Jan van Hattum, ernst-jan.vanhattum@innosuisse.ch

Tap water solution product that saves 50% of your hot water energy consumption

Summary:

A Swedish company has developed a product that provides instant hot tap water. The product works by drawing water out of the pipe when a tap is turned off, returning it to the tank or heat exchanger, leaving an empty pipe. The instant a tap is opened, water is delivered directly to the tap. This happens so quickly that the effect is instant hot or cold water.

Advantages compared to the existing solutions:

- Saves 50% of your hot water energy consumption;
- The pipes will be empty 99% of the time;
- The product provides instant hot water, you never need to waste 50% of your hot water by waiting for the hot water to arrive to the taps from where the hot water gets heated. Or you don't get any hot water wasted by letting it cool down in the pipes between where it get heated and where it is tapped out for usage.

Other advantages:

- The pipes do not have to be insulated, so the pipes take up very little space in the shaft;
- An empty pipe can neither freeze or leak;
- Minimize the risk of legionella disease.

Contact: Lars-Ake Isaksson, lars-ake.isaksson@ltubusiness.se

Digital heating management solution for non-residential buildings saves up to 32% heating costs

Summary:

A German company helps companies and municipalities to save up to 32% of heating energy and CO_2 emissions in their non-residential buildings by installing self-learning radiator thermostats and using an online platform which enables efficient heat consumption monitoring in real time. While the thermostats control the room temperatures are fully automated and demand-based, the connected web portal allows for a central and efficient management of the property portfolio.

Advantages compared to the existing solutions:

- Savings of up to 32% heating costs & CO_2 emissions;
- Helps solve the free-rider-problem (people do not turn down conventional thermostats if they are not personally paying the heating costs);
- Low-hanging fruit that allows for quick wins in terms of substantial energy savings.

Other advantages:

- Intelligent self-learning system;
- Demand-based & fully automated individual room control;
- Low-investment measure with short payback period (1-5 years);
- Thanks to wireless radio transmission, retrofittable without structural measures;
- Also available with vandalism protection on request, particularly useful in public buildings and educational institutions.

Contact: Lothar Hartmann, hartmann@tutech.de

Circular, Energy-Efficient Air Curtains

Summary:

A Dutch company has developed circular and cost-effective air curtains that create an invisible door at entrances of buildings or spaces. With its precisely adjusted air velocity and capacity, they give protection throughout the opening and provide the most efficient separation with the lowest possible energy consumption, regardless of whether it is the heat or the cold that you want to keep inside. Commercial agreement is offered to retail, industry, utility companies and municipalities.

Advantages compared to the existing solutions:

Based on a standard door with electric heat exchanger:

- Cost reduction: between 60-80%;
- Performance increase: 50-80%;
- Cost/watt EUR/watt: electricity +/- €0,25;
- Return-on-investment: 2 years.

Other advantages:

- Easy to install;
- Customer friendly;
- BMS (Building Management System) or weather controlling can enable more savings.

Contact:

Nils Haarman, nils.haarman@rvo.nl

Air-to-air VRF (Variable Refrigerant Flow) heat pump system for heating and cooling large spaces

Summary:

A Dutch climate control specialist offers a Variable Refrigerant Flow (VRF) system, which is specially developed for energy-efficient heating and cooling of large spaces (garages, warehouses, production facilities, etc.). The combination of an air-to-air heat pump (outdoor unit) with a compact air heater / cooler (indoor unit) ensures excellent performance. Thanks to the extensive setting options, the installation can be fully adapted to the use of the building and the wishes of the users.

Advantages compared to the existing solutions:

- Heating: Nominal capacity: 37.5 KW. Power consumption: 9.08 KW. Seasonal Coefficient of Performance (SCOP): 4.05;
- Cooling: Nominal capacity: 33.5 KW. Power consumption: 15.3 KW. Energy Efficiency Ratio (EER) : 2.19.

Other advantages:

- Available with powers of 33 kW and 56 kW;
- Air to air heat pump VRF-system;
- Cooling and heating. Cooling: +17°C – +43°C and Heating: +7°C – +25°C;
- Large temperature range;
- Optional: integrated condensate pump.

Contact: Nils Haarman, nils.haarman@rvo.nl

Building energy management system - solution for smart control and energy monitoring

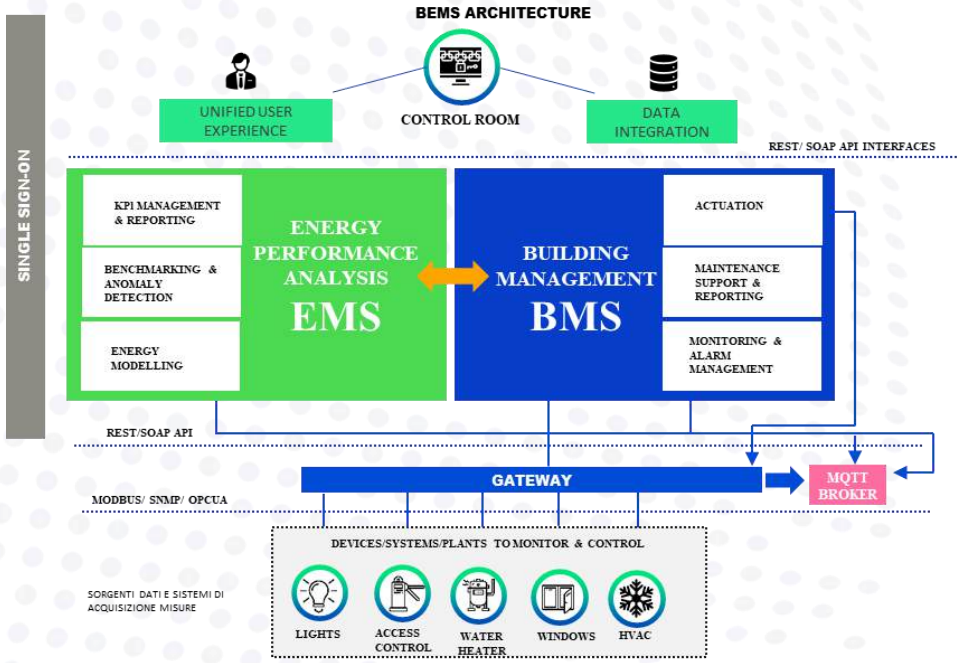
Summary:

The proposed solution is part of the innovative Italian company's suite conceived to homogenise and rationalise the different solutions included in the company's portfolio of green tech solutions. The BEMS (Building Energy Management System) conceived is a modular and multi-context solution, providing support to operators in different areas: for monitoring consumption, for cost analysis and timely verification of billing and for the automation of technological systems, with advanced centralised coordination functions.

Advantages compared to the existing solutions:

The platform's flexibility, versatility and scalability allows it to:

- Not to be invasive but complementary, compared to the technologies already installed;
- Communicate directly with the field equipment, making its complexity transparent;
- Integrate heterogeneous technologies (current and future);
- Create proper customisations according to specific monitoring and analytical requirements;
- Be open to future evolutions of the supervision and remote-control scenario (new subsystems).



Given these features, BEMS application platform allows companies to have an energy cost reduction near to 10% and a ROI between 6-12 months. BEMS is usually customised in the vertical application context, in which it is intended to be integrated for monitoring and remote control.

Contact: Raffaella Bruzzone, raffaella.bruzzone@ge.camcom.it

Remote Monitoring Solutions for energy, water and other parameters

Summary:

A Bulgarian company offers remote monitoring solutions with underlying IoT infrastructure bundled with a functional back-end platform and industry applications that allow businesses to monitor their consumption of electricity, water, pressure, temperature, and other parameters depending on the needs. The company produces proprietary data loggers that support a variety of end devices tested thus providing end-to-end solutions to customers within commercial agreement with technical assistance.

Advantages compared to the existing solutions:

- Cost reduction: Depending on the use case 15-30% optimization of energy/water consumption.

Other advantages:

- The proprietary mobile data loggers include low power models, and a broad number of connectivity options including GPRS, 4G, LoRa Wan, NB IoT and CAT-M1;
- In a broader perspective, the company brings a mix of expertise from all layers of the IoT technology starting from the hardware and firmware, back-end platform, front end applications and in-depth industry knowledge in energy and water monitoring that enable businesses and utilities to optimise consumption and reduce costs, while ensuring a safe and secure operational environment.

Contact: Svetoslava Pavlova, een@chambersz.com

Smart Home Energy Management System

Summary:

Highly innovative home energy management system with powerful and future-proof hardware and software. Optimization of PV self-consumption and power consumption from the grid for large consumers as heat pump, wall box, energy storage. Installation assistant for professional installers. Practical end user app for control and monitoring.

Advantages compared to the existing solutions:

- Energy management: + 15 % self-sufficiency, + 19 % self-consumption, Savings > 11.000 € and 16 t CO_2 eq. over 20 years;
- Dynamic tariffs: Savings of ~ 540 €/year for e-mobility and heat pump;
- Grid integration: Savings up to 90 % of grid charge, integrated control box function with no extra costs for required grid integration devices.

Other advantages:

- Amortization within 1-2 years;
- Available as an OEM solution (Original Equipment Manufacturer);
- After two days in use: Compensation of the GWP of 32.4 kg CO_2 eq.;
- To come: installer portal for remote access and maintenance.

Contact: Sonja Angloher-Reichelt, angloher@bayern-innovativ.de

Smart Energy Consumption Monitoring and Control

Summary:

A Spanish company is able to control, monitor and store information about consumptions, based on measures done by pulse counters for electricity, hot water, gas, etc., and could offer all this information to owners to adapt their uses or actions, or to administrators in order to invoice depending on consumptions.

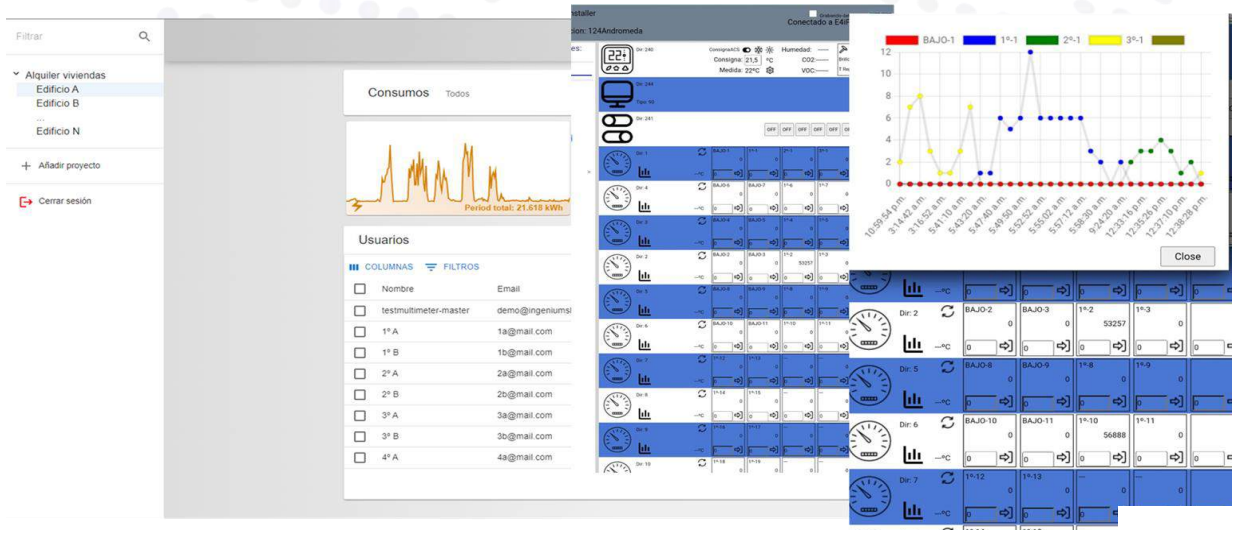
Advantages compared to the existing solutions:

- System capable of viewing consumption of supplies in real time (water, electricity), but also energy (heating/cooling) and DHW;
- Each user will be able to see their consumption, in order to optimize it. The energy manager will have access to the consumption of all homes;
- The consumption reading can be filtered by time periods, which allows the energy manager to apply hourly pricing;
- Possibility of detecting excess consumption, generating alerts for both the user and the energy manager;
- Dump of records to various formats for analysis and management through any billing platform;
- Robust and easy-to-install system (conventional meters are used);
- The manager will also have control over the consumption of the common areas.

Other advantages:

FACILITY MANAGEMENT

- Fully integrable with a smart solution – Automation/Control;
- Centralized domestic hot water, heating or cooling production facilities, optimizing generation and consumption. Less maintenance;
- Potential integration with aero thermal energy or solar panels;
- BREEAM – Sustainable built environment;
- User platform to visualize/download all available information in a friendly interface depending on permissions;
- Notifications system also supported.



Contact: Carlos Encinas, carlosem@ficyt.es

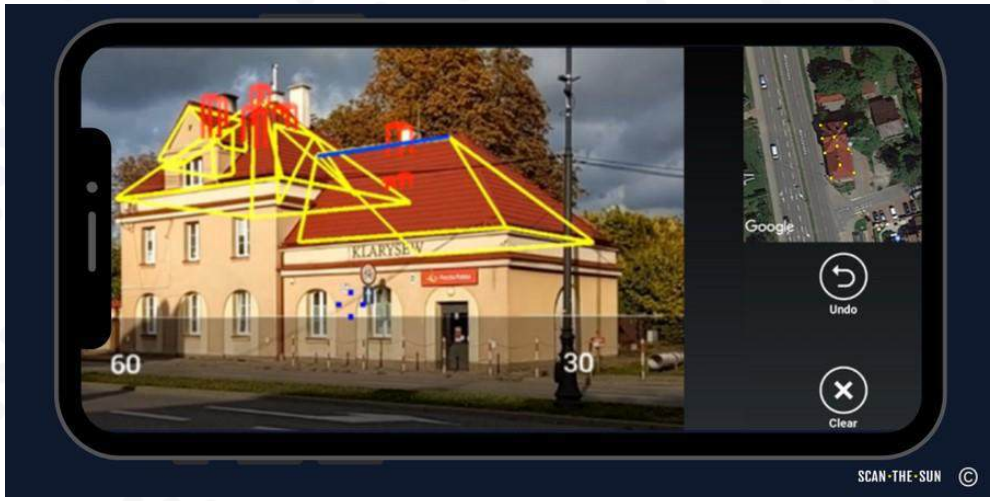
Revolutionary technology in Building Information Modelling to increase solar efficiency

Summary:

A Polish company offers a revolutionary technology in Building Information Modelling to increase solar panels efficiency by up to 35%, developing a blueprint designed in just 1 minute using satellite and on-site data. It is a mobile application that streamlines the design of PV installation and saves time and money. The company is looking for cooperation with intermediaries for software sales but also with energy companies, installation companies and those trading components for green energy.

Advantages compared to the existing solutions:

- Executing Solar PV design - from ground level, utilizing Augmented Reality;
- Highest level of accuracy – as easy as 1,2,3;
- Usage like smartphone camera – even for a non-specialist;
- No more climbing the roof, no more laborious desktop data modelling by hand;
- All in 1 minute on smartphone, right on the location.



Other advantages:

- PV Sales process 3x faster & competition-proof: instant proposal;
- Highest reliability energy yield forecast - during whole year;
- World Urban Forum/UN Habitat Energy Innovation 2022 Winner;
- 20,000+ users in 175 countries.

Additional info: https://een.ec.europa.eu/partnering-opportunities/polish-start-offering-innovative-application-one-minute-app-best

Contact: Justyna Barska, justyna.barska@lfr.lublin.pl

Smart Lighting System for Cost-Effective and Sustainable Buildings

Summary:

Lighting accounts for up to 30% of energy costs in commercial buildings. With the Swiss Scaleup's plug-and-play lighting system, you can reduce costs in no time at all thanks to retrofitting. Leave the automatic regulation of light intensity and duration to this lighting solution, save up to 90% energy and experience the many benefits. Thanks to replacing over 150,000 inefficient light sources until now, the Scaleup has saved energy equivalent to powering 22,000 average households.

Advantages compared to the existing solutions:

- Simple: The network system is easy to install, configure and replace. Via remote access, every light source is monitored and adapted to your requirements at any time;
- Efficient: The light is adjusted locally and precisely to actual requirements using smart algorithms and integrated sensors, thereby saving between 60-80% energy and costs compared to other LED-solutions;
- Data driven: The IoT solution collects real-time data that is easily analysed;
- This means that the comprehensive sensor data can be used to optimize your whole building's operations.

Other advantages:

- Daylight control integrated into each light source;
- Remote configuration and maintenance;
- Energy reports for facilitated ESG reporting;
- Consulting and project management including organizing subsidies, energy calculations, ongoing optimizations.

Contact: Ernst-Jan van Hattum, ernst-jan.vanhattum@innosuisse.ch

AI framework for complex energy systems: analysis, prediction, and optimization

Summary:

Optimization for transformation in industry, districts, charging parks, housing industry, heating networks. Investigation of energy consumption, load profiles, GHG emissions & balancing. Workshops on energy system, efficiency, & renewable energies. Development of a digital twin of the energy system. Integration as a linear twin in BMS & schedule optimization. Web-based system visualization in real time.

Advantages compared to the existing solutions:

- E.g. industry: annual electricity demand of approx. 10 GWh, could save around 4 cents per kWh, a total of €400,000 and 500 t CO_2/year;
- E.g. charging park: electricity costs reduced by 15% through price optimization (electricity purchased from the grid at low prices, max. use of PV electricity);
- E.g. industry: investment €168,000, amortization after less than a year (example with total buffer volume of 62.5 m^3 and a potential mass storage capacity of 5,200 t; buffer storage capacity: 3,500 kWh).

Other advantages:

- Consulting from project start to ongoing operation;
- Integrate systems: from CHP, heat pump, energy storage to charging columns and more.

Contact: Sonja Angloher-Reichelt, angloher@bayern-innovativ.de

Energy optimization through office space sensors: automated, simple, and effective!

Summary:

The company develops and implements energy optimization controls (heating, air conditioned, lightning) in any office or industrial space using simple to use IoT sensors and an adaptive application that monitors and controls usage. From switching off lightning and air-conditioned areas during nights, weekends, or non-usage times (via presence sensors), to sensors adapted to measure and control electricity consumption.

Advantages compared to the existing solutions:

- Extremely easy to implement, the solution adapts to any environment and any need;
- Return-on-Investment (%): Positive ROI measurable;
- Can be implemented in several phases;
- The app is in the cloud, simple to access and use, simple to configure.

Other advantages:

- Available to measure CO_2 levels, and other hazardous gases;
- Sensor-detection of human presence;
- Automated switching of systems on/off;
- Alerts are triggered to your mobile, laptop, or other systems.

Contact: Mercedes Lecea, mercedes.lecea@madrimasd.org

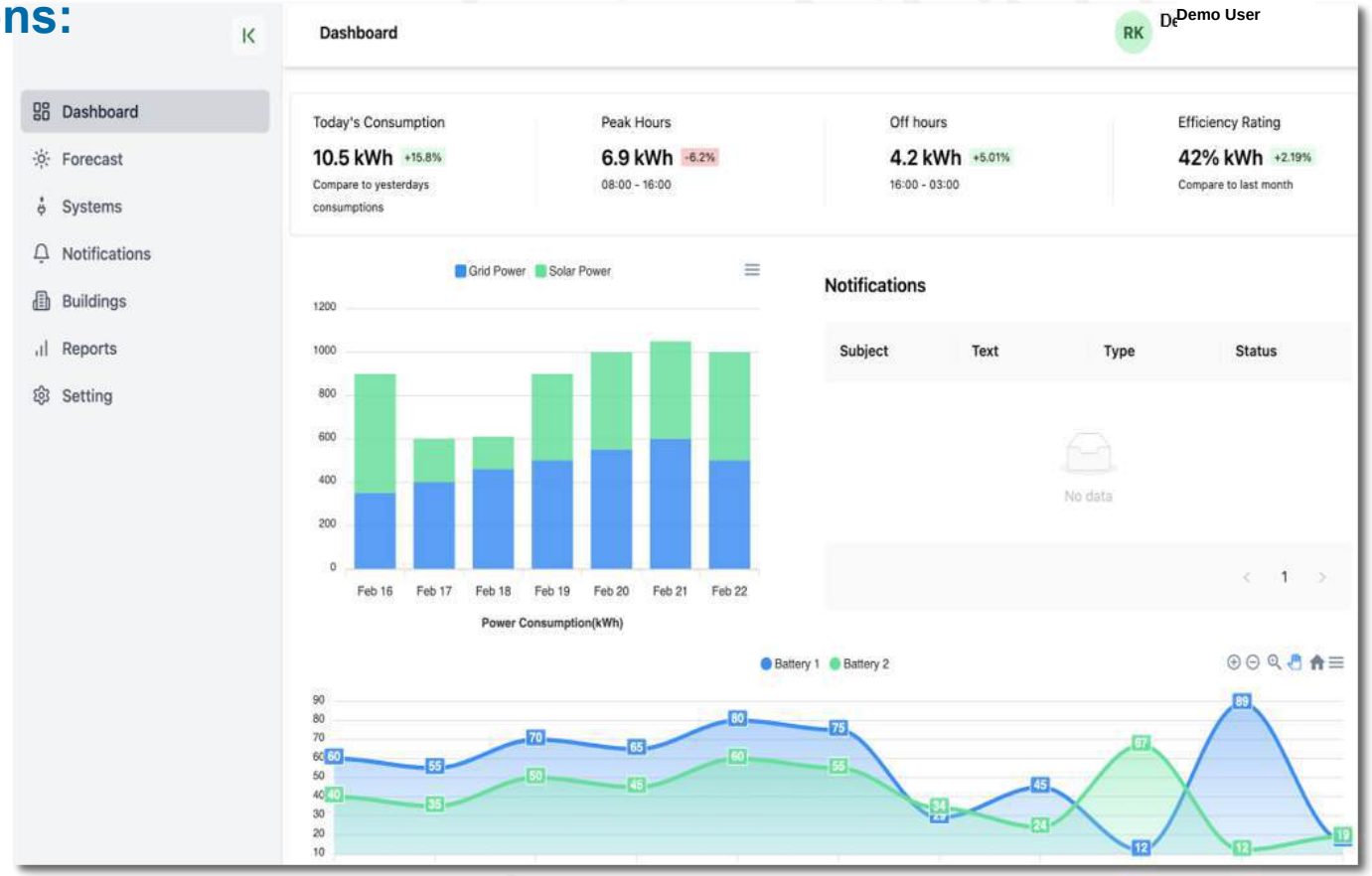
Energy as a Service (EaaS)

Summary:

The German-Greek SME with a focus on development, implementation and operation of smart and integrated energy solutions, transforms the way renewable energy is harnessed and utilized. They do not simply provide solar panels but develop a smart Energy Management System (EMS) allowing the optimization of energy systems within commercial and industrial buildings and maximization of energy efficiency.

Advantages compared to the existing solutions:

- Tailor-made solutions that are designed to suit specific requirements, such as building integrated photovoltaics (BIPV) and Agri-PV;
- A cutting-edge user-friendly digital platform provides complete control over energy production and consumption by monitoring the system's performance in real time.



Other advantages:

- Empower the participation at future energy trends (dynamic tariffs, vehicle to grid);
- Continuous research and development on smart and integrated energy management systems guarantees latest state-of-the-art and maximum efficiency;
- The platform is accessible from any internet-enabled device.

Contact: Sabrina Wodrich, ZENIT GmbH / NRW.Europa, Sabrina.Wodrich@zenit.eu

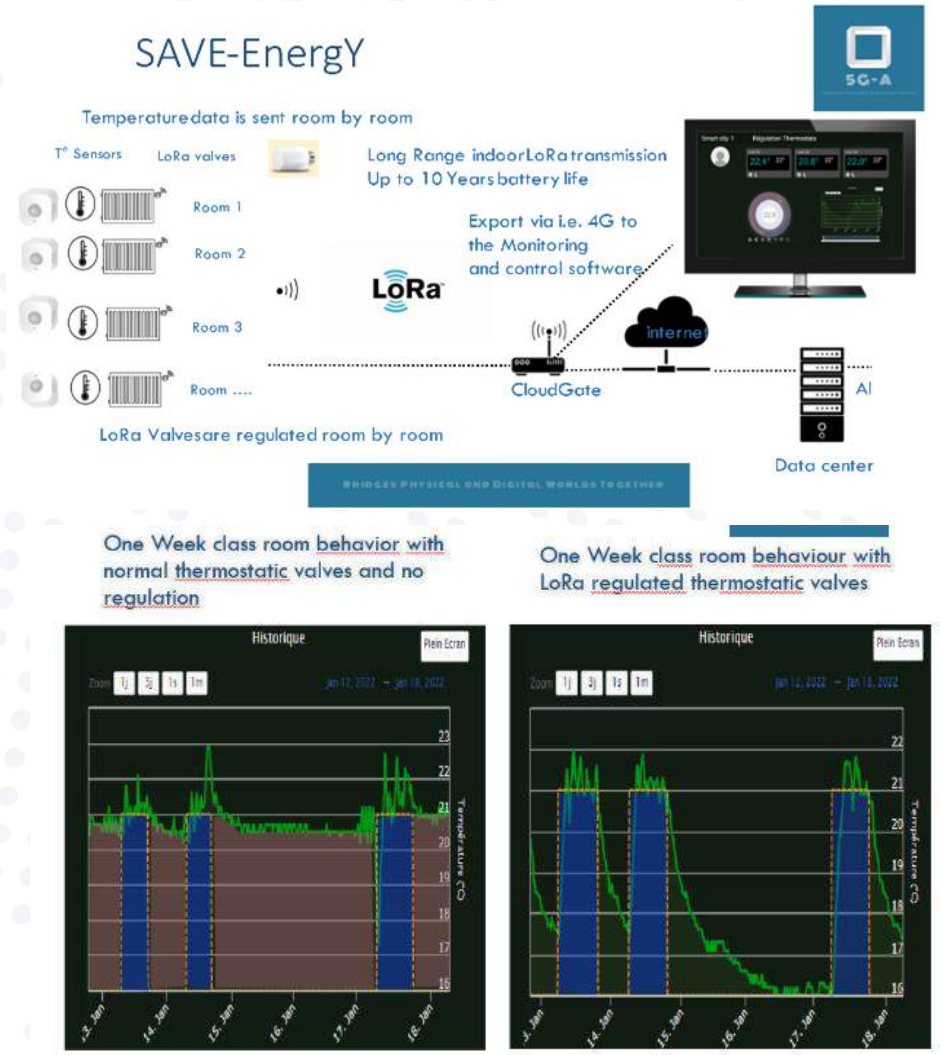
End-to-End Smart Heating Management

Summary:

This end-to-end IoT solution measures pilot controls and optimizes energy consumption related to heating. The technology based on real time monitoring (temperature, current humidity, CO_2, complex internal and external air quality...), pilots wireless thermostatic valves. It can anticipate weekends and holidays with automatic monitoring up to a pre-defined temperature, with no possibility (as an option) to manually force temperature upward.

Advantages compared to the existing solutions:

- 20 to 30% savings on energy bills;
- Ready to use infrastructure: limited deployment and integration costs, the solution is wireless and preconfigured. Installation can be done by a technician;
- No maintenance costs, and limited operations costs through remote service functionality;
- Each room is monitored separately;
- Industry grade proven solution;
- The company has implemented several flagship projects and has concrete use cases of energy saving.



Contact: Amrita Singh, amrita.singh@cc.lu

24/7 AI Facility Manager

Summary:

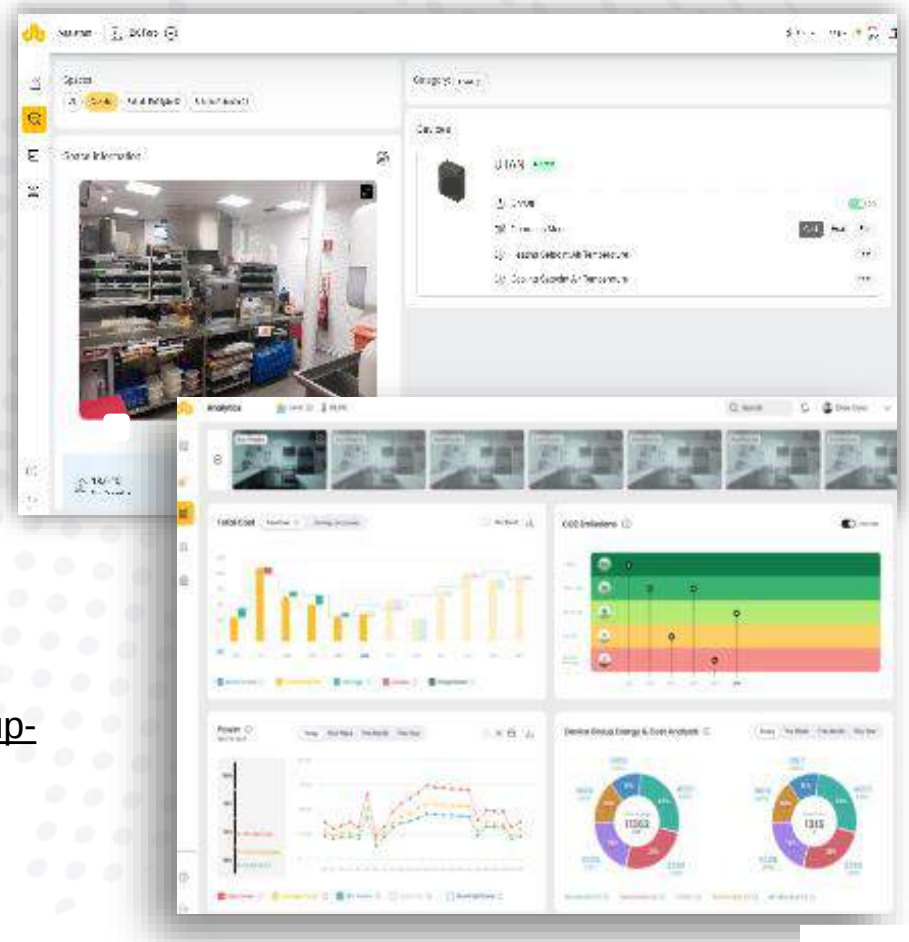
An AI-powered energy solution from Portugal optimizes HVAC systems in real time. Using predictive algorithms, it automates building energy usage while maintaining comfort. Ideal for commercial and service buildings, it benefits facility managers seeking smart and efficient control. Already implemented in buildings across Portugal and the USA.

Technical and economic advantages:

- Energy cost reduction achieves up to 40% savings on energy bills;
- Improves comfort: up to 90% comfort satisfaction rates;
- Reduces equipment downtime: minimizing costly emergency visits by up to 50%.

Other benefits:

- Detects anomalies and anticipates maintenance needs;
- Streamlines operations by automating repetitive tasks;
- Seamless integration with existing systems;
- Centralized dashboard that allows real-time monitoring of overall HVAC performance.



Additional info: https://een.ec.europa.eu/partnering-opportunities/portuguese-startup-uses-artificial-intelligence-optimise-consumption-and-0

Contact: Céu Filipe, AEP, ceu.filipe@aeportugal.pt

Minimal-Invasive Renovation: CEPA Energy Façade for Efficient Low Temperature Heating & Cooling

Summary:

The German company is offering an innovation in the field of minimally invasive thermal and energy-efficient renovation of existing buildings. The CEPA Energy Façade is a prefabricated façade element with an integrated wall heating and cooling system. Installed externally without disturbing occupants, it upgrades both the building envelope and the energy distribution/emission system to new-build standards in a single step.

Technical and economic advantages:

- Energy-efficient low-temperature heating and cooling system applied from the outside;
- Fully recyclable façade construction;
- Up to 60–80% reduction in energy consumption costs;
- 30–40% reduction in replacement investment costs;
- Energy flexibility through thermal activation of the existing wall;
- System testing in accordance with DIN 4102-20, ÖNORM B 3800-5: Fire performance assessment of the complete CEPA façade system under realistic building conditions.

Other benefits:

- Minimally invasive renovation – no tenant relocation required; savings of up to 30% by avoiding removal of outdated heating systems;
- Enhanced thermal comfort 24/7 (heating and cooling);
- High degree of prefabrication shortens installation time by up to 25%;
- Increased acceptance among users and investors.

Contact: Sonja Angloher-Reichelt, Bayern Innovativ, angloher@bayern-innovativ.de

The Plug-and-Play Façade for Energy Efficiency

Summary:

A Spanish company engineered a façade solution for building retrofits and new construction. It features a dual-layer design with ultra-resistant steel composite panels, high-performance thermal insulation, and a ventilated air gap to ensure weather tightness, eliminate thermal bridging, and provide hygrothermal protection. Ideal for architects and builders seeking high-performance, low-maintenance envelope solutions.

Technical and economic advantages:

- Incorporates PIR (polyisocyanurate) insulation (λ=0.021 W/mK) - 67% more thermally efficient than standard mineral wool or EPS insulation, delivering superior U-values with reduced thickness;
- Supports 3,000 kN between nodes (structural capacity);
- Delivers up to 40% energy savings (approx. €360/year/household in heating).

Other Benefits:

- Self-cleaning anti-graffiti surface;
- 100% recyclable materials with minimal environmental impact;
- Pre-assembled components for faster installation.

Contact: Carlos Encinas, Ficyt, carlosem@ficyt.es

Recyclable Covers for Protected & Aesthetic PV Panel

Summary:

An Italian start-up develops and manufactures a special full customisable and recyclable sticker to cover PV panels. The solution allows the integration of solar panels everywhere, also in areas with special regulation to protect the landscape, city centre and historical centre. In addition, it protects the PV panel from external events. The product is already tested in real environments. The company offer commercial agreements to solar panel manufacturers, distributors, installers and energy utilities.

Advantages compared to the existing solutions:

- Solution to integrate any PV panels in a building with a suitable technology to improve solar energy adoption everywhere in line with the EU mandatory by 2029;
- Cost reduction: 5%;
- Performance increase: 15% (in winter season on vertical application).

Other advantages:

- Customisable aesthetics;
- Extended applications also on photovoltaic facades;
- Decarbonisation of the advertising sector, with the creation of new forms of revenue and reduced payback time.

Contact: Paola Tolin, p.tolin@to.camcom.it

Energy & CO_2 Savings Through Intelligent Ice Control

Summary:

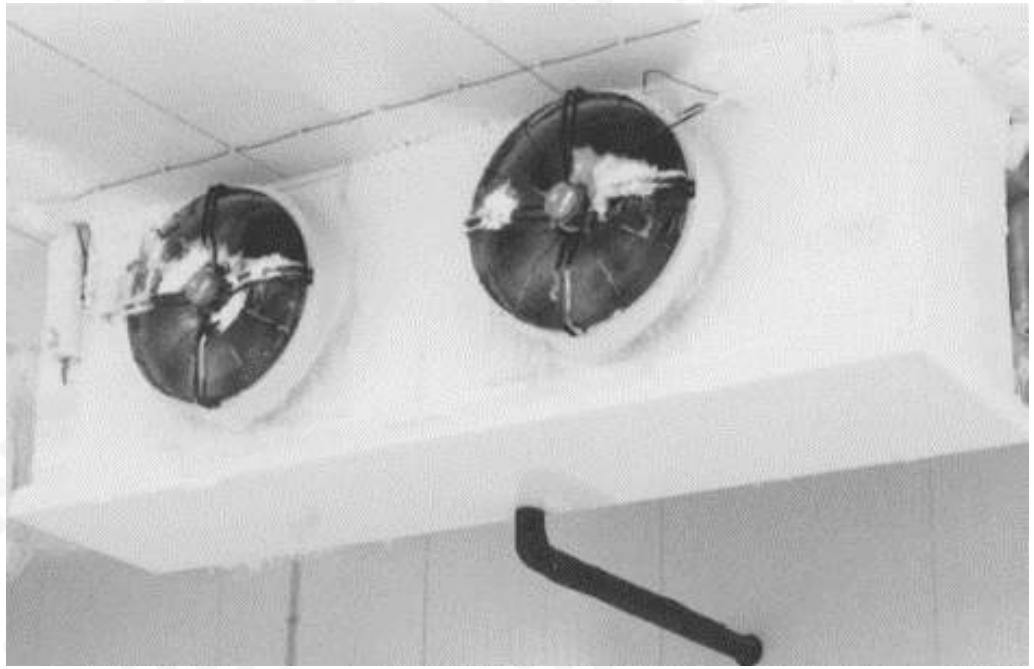
German SME combines ice-sensors and AI-software to significantly reduce its customers' energy and maintenance costs and CO_2 footprint. The solution can be easily retrofitted as an add-on into existing facilities. Partners in e.g. food and beverage industry, companies with large canteens (Universities, Hospitals, big companies) are sought for cooperation.

Technical and economic advantages:

- Less energy costs (up to 40%);
- Less maintenance costs, because of smooth running systems;
- Easy retrofit for any system, no matter how old.

Other benefits:

- Combination with photovoltaic possible;
- Software learns day-by-day and improves energy efficiency continuously;
- Measurable CO_2 footprint;
- Saves working hours – no more de-icing of systems necessary.



Additional info: https://een.ec.europa.eu/partnering-opportunities/sme-developed-intelligent-ice-detection-sensors-which-reduce-energy

Contact: Tim Zebahl, Tutech Innovation GmbH, zebahl@tutech.de

Digital Infrastructure & Smart Cities

This includes Internet of Things (IoT) platforms for lighting, water, and air quality management that enable cities to reduce emissions and operational costs.

These support the EU Digitalisation of Energy Action Plan and Smart Cities Marketplace.

Automated energy management system (EMS) with Open Source ISO 50001 Systems & on-demand service

Summary:

An Italian innovative SME designs, develops, installs, maintains and supports Open Source ISO 50001 Energy Management Systems (Hardware & Software) for the industrial and tertiary sectors. The technology supports; Regulatory Compliance (Energy Audits and ISO 50001 Certification), Cost Engineering (Real-time energy cost per unit), Reduced Energy Consumption (Improve margins on products and services), Reduced Waste (management of surplus energy).

Advantages compared to the existing solutions:

- Cost reduction: minimum 20%;
- Performance increase: minimum 20%.

Other advantages:

- The software is Open Source which supports continuous product / service improvement;
- The solution is highly configurable to support 'Custom Fit' so that the specific requirements of each customer location, energy supply, and interoperable systems, can be met;
- The system works with real-time information which is efficient and effective;
- The system offers an Energy Manager 4.0 platform and is EGE (Expert in Energy Management) certified with on-demand services provided remotely.

Contact: Federico Molino, f.molino@pie.camcom.it

Data-Driven Digital Twin for Smarter Buildings

Summary:

A Dutch company offers a multi-user software platform for data driven building control. The platform creates a real-time digital twin of the building's HVAC (heating, ventilation and air conditioning) systems, collects high frequency data and uses the information to automatically calibrate and improve building controls. The solution is flexible and can be added-on to existing BMS (building management systems) and saves between 15-40% energy, with relatively low start-up costs and fast return on investment.

Advantages compared to the existing solutions:

- Cost Reduction: Savings of between 15% and 40% cost of energy reduction;
- Return on Investment: Between 1-2 years (subject to local energy prices).

Other advantages:

- Easy to use interface for building owners to better control their HVAC installations;
- Building owners have data and insights of the building's HVAC and energy performance;
- Automatic controls add to efficiency of the installation, resulting in savings between 15 and 40%;
- With the high current energy prices, the return on investment is often only between 1-2 years.

Contact: Jannes Kalfsbeek, j.kalfsbeek@newenergycoalition.org

AI Energy Management and Energy Flexibility Market Access

Summary:

UK company with energy automation technology designed for commercial offices, schools, leisure centres, hotels, and small industrial sites. The platform is AI-driven and connects locally to any existing building management system (BMS). The AI-driven system makes real-time energy management decisions based on data calculations from; energy use, energy cost, grid carbon intensity, and grid flexibility demands. The result is automated onsite control to reduce carbon, costs and generate revenue from grid flexibility markets.

Advantages compared to the existing solutions:

- Cost reduction: 10-20+%;
- Return-on-Investment: up to 100% (based on revenue generation from energy flexibility markets).

Other advantages:

- Reduce energy use & cost through optimisation, efficiencies, flexibility;
- Generate new revenues by providing flexibility for local energy networks;
- Enables investment planning for renewable technologies based on real energy data modelling;
- Assess the ROI on future investment in green generation & storage;
- Minimise risk of exceeding maximum capacity allowance by automating energy demand profile;
- Experience of deployment at municipal projects.

Contact: James Snelgrove, Innovate UK Business Growth, James.Snelgrove@iukbg.ukri.org

Cost-Free Climate Efficiency for Buildings

Summary:

A Danish Greentech company has developed and patented a unique energy efficiency solution, saving 30% on energy used for heating in public buildings and private offices. The business model is risk-free, installation and running of the solution is without cost, in return for a part of the savings achieved.

Technical and economic advantages:

- Cost: 20%, and no initial investment required (compared to existing solutions);
- Performance increase: 30% (lower energy consumption compared to normal installation);
- Clamp-on sensors are easy to clamp-on existing cables, pipes, etc.;
- No initial investment required, and a complete risk-free business model.

Other benefits:

- Self-learning: AI based automated analysis and optimization;
- Coherent: the cloud-AI and sensors work as one; over robust data-connections;
- Maintenance-free: Alarms are self-learning, and battery-replacement avoided as the sensors have 15 years of battery life.

Contact: Jesper Vestergaard Hansen, South Denmark EU Office, jvh@southdenmark.eu

Smart Energy Sharing for E-Mobility & Buildings

Summary:

A German company has digitised the distribution of renewable energy on the blockchain. One application is for e-mobility charging in underground car parks in residential buildings by using self-generated solar energy. The energy management system organises energy distribution to the charging infrastructure and the energy consumption of the building by matching with the solar generation. Investments in grid expansion is not needed, and saved CO_2 can be traded via certificates on the ledger.

Advantages compared to the existing solutions:

- Cost reduction: 40%;
- Saving of carbon dioxide: 70%.

Other advantages:

- Decentralisation of renewable energy for e-mobility and buildings (sector coupling);
- Participation of EV drivers and residents for the energy and mobility transition;
- New business opportunities for residential real estate by saving carbon dioxide and trading on the CO_2 emission exchange starting in 2026;
- Scalable system which can include other applications in a smart city (e.g. heat pumps);
- Tariff roaming for public EV charging;
- Machine Learning / AI.

Contact: Simon Horoz, horoz@innovationsagentur-rlp.de

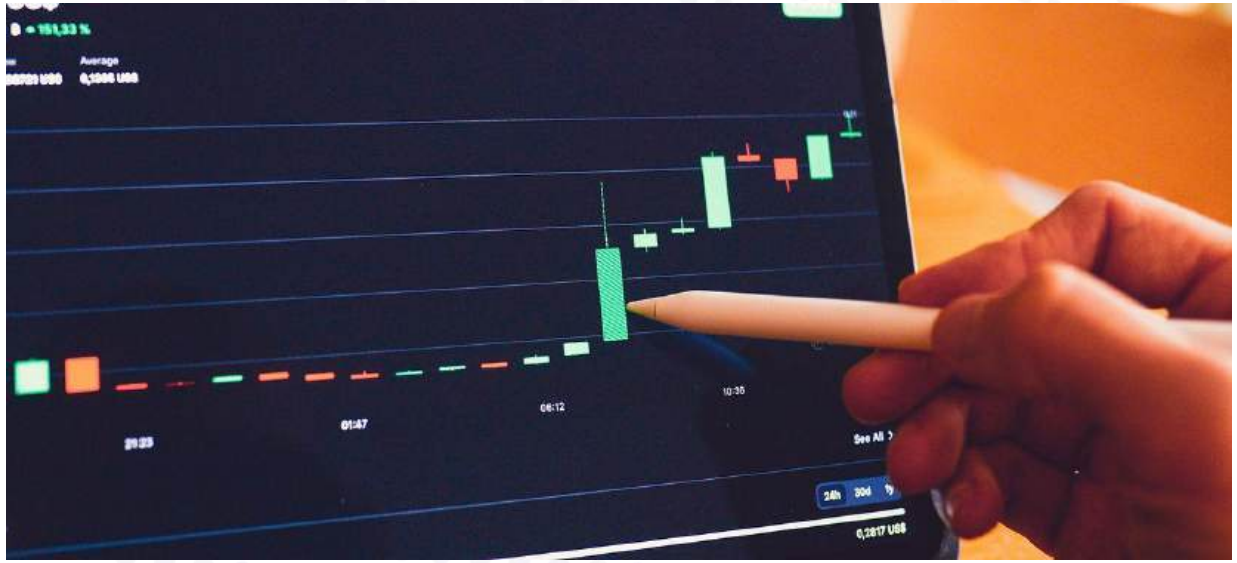
Intelligent Energy Management for Renewables & Storage

Summary:

UK pioneers in energy storage offer energy management technology for on-site renewables and battery storage. Intelligent control and forecasting enable the energy management system to increase efficiency, reduce waste and save costs. The technology has been deployed in green energy projects at UK shipping ports to cut emissions. The UK company offers commercial agreements to interested partners such as ports, marinas, commercial & industrial, and municipalities.

Advantages compared to the existing solutions:

- Performance increase of up to 80% over non-optimised energy management systems;
- Additional CAPEX saving through optimised energy system planning;
- Forecasts for on-site loads and generation;
- Enables use of time-variable energy tariffs to optimise costs;
- Works in a behind-the-meter environment;
- Experience of municipal projects, deployment, and business cases.



Contact: Dee Temple-Multon, Dee.Temple-Multon@iukbg.ukri.org

Real-time, highly integrable Energy Management Systems (EnMS) and on-demand consulting services

Summary:

An Italian innovative SME helps manufacturers reduce and optimize production energy costs through innovative hardware/software solutions and consulting services covering all energy management needs.

Technical and economic advantages:

- Cost reduction: minimum 20%;
- Average ROI: 1 year;
- Interfaces every meter, sensor, PLC on the market;
- Free of license fees.

Other Benefits:

- Custom Fit: highly configurable solution to meet specific customer requirements;
- Cost Engineering: real-time energy consumption cost per production unit;
- Compliant with ISO 50001;
- On-demand services provided by certified energy management experts also remotely.

Contact: Federico Molino, Camera Valdostana delle imprese e delle professioni, f.molino@pie.camcom.it

Digital platform for Renewable Energy Communities (RECs)

Summary:

An Italian company has developed a digital platform for Renewable Energy Communities (RECs), the mission is to empower people to foster active participation into smart energy management. This tool helps citizens adapt to new consumption habits for a sustainable future using technology as a means of aggregation. It is an IoT system that collects data from RECs and, thanks to AI/ML algorithm, sends real-time notifications to coordinate prosumers and consumers for a smart energy consumption.

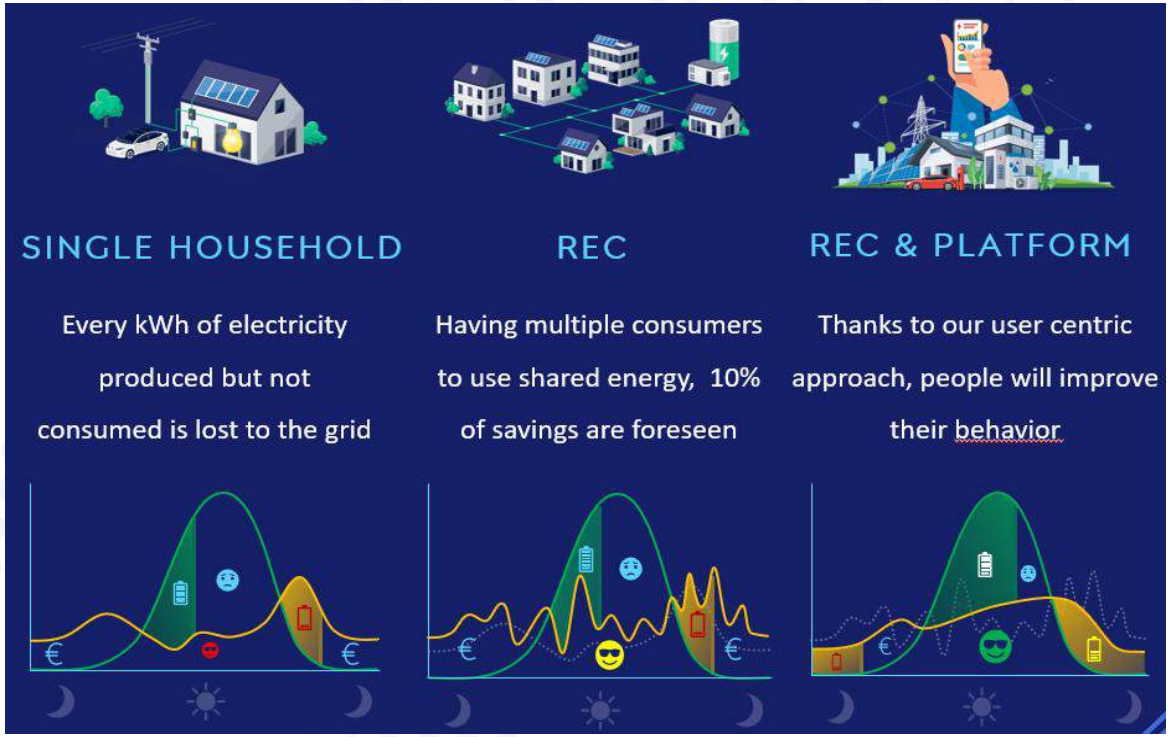
Advantages compared to the existing solutions:

Our solution brings the following advantages compared to other platforms to manage energy flows in RECs:

- It will advise citizens when to use shared energy from solar panels installed in the community and save money and CO_2 production;
- It makes energy consumers' lives easier;
- Reduction of energy bills by 20%;
- New services for local territory;
- No additional cost for installation, users pay a fraction of what they save.

Other advantages:

- Even people who do not own solar panels will be able to monitor their energy consumption of the REC thanks to this digital platform.



Contact: Federico Molino, f.molino@pie.camcom.it

IoT platform for street lighting & smart cities

Summary:

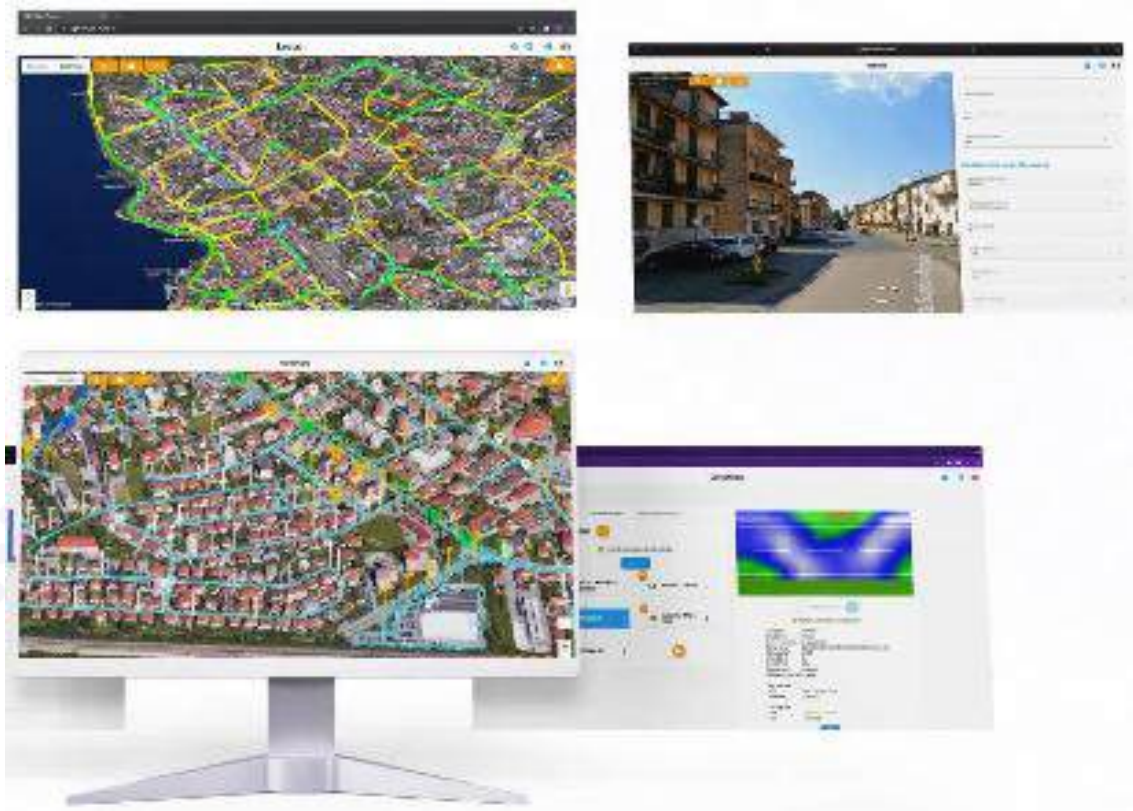
Through a TRL9 digital integrated platform and patented IoT devices, an Italian company helps utility/energy companies, local governments, real estate and other players to improve the energy & operational efficiency and performance of street lighting and buildings. This digital & IoT system collects and processes data & insights, available to customers and policymakers. This solution is offered to companies and municipalities within commercial agreement with technical assistance.

Advantages compared to the existing solutions:

- energy savings up to 50%;
- reduction of operative costs up to 75% & on-site maintenance up to 70%;
- integration on a single platform of every operation needed to manage & remotely control the infrastructure; access to data & insights;
- unlocked resources and productivity up to 75%;

Other advantages:

- integrate additional smart city services thanks to interoperability of the technology;
- highly impact on environmental and social sustainability of cities.



Contact: Angelo Gatto, IT-Finlombarda, angelo.gatto@finlombarda.it

Zero-Energy Lighting with Built-In EV Charging

Summary:

A Dutch SME has developed an integrated solution of public LED lighting (which can be solar-powered) and (grid powered) public charging for Electric Vehicles. By combining EV charging with public LED lighting poles, energy is saved for the lighting as well as a lot of material and installation cost, by this innovative combination. On top of that, the payment for EV charging is by any bank-card (instead of charging pass by subscription). This innovation increases the easy access for EV charging together with (up to) zero energy use for public lighting.

Advantages compared to the existing solutions:

- LED Public Lighting (even possible with Solar panels on the pole itself) saves 50-80% energy and cost to community;
- EV charging at lighting pole provides easy access by location, and (any) bank-card payment increases ease of use of an electric car by improvement of the accessibility to charging points;
- Integration of 2 products saves a lot of materials and better use of public space.

Other advantages:

- LED public lighting saves electric energy up to 50-80%;
- Refurbish, Re-use and Recycling: The technology used in the poles is upgradable. The poles are produced to be 100% recyclable by dismantlement and re-use of the materials;
- Installation in several cities Europe is already completed.

Contact: Ruben van der Horst, ruben.vanderhorst@romutrechtregion.nl

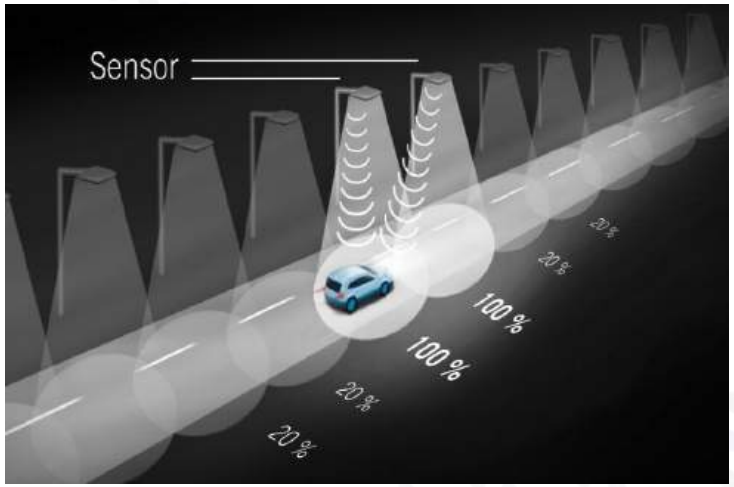
Intelligent Street Lightning for Energy-Smart Cities

Summary:

Street lighting only when needed without sacrifices or a lack of safety. An Austrian enterprise provides a smart solution for making street lighting smart. If a street is empty, the lights are dimmed down to a low level. As soon as moving people or vehicles are detected, the lights are dimmed up. There are more than 1000 sensors installed so far in Austria and Germany. Every luminaire with ZHAGA-socket can be controlled by this solution.

Advantages compared to the existing solutions:

- Light-on-demand based Illumination leads to savings in energy and costs up to 60%;
- Additionally, the lamp lifetime is extended. Those are two crucial advantages for public authorities;



- This solution does not only work with rigid dimming profiles, furthermore it is possible to react to the real traffic by detecting the motion;
- The main application areas are parks, parking spaces, cycle paths, roundabouts and ring roads;
- By equipping a luminaire with a bottom-side ZHAGA-socket it is very simple to install the configurate the radar modules. So, it is possible to monitor energy statistics, remaining lamp lifetime and functionality of the luminaire –even remotely.

Contact: Michael Kerschbaumer, michael.kerschbaumer@sfg.at

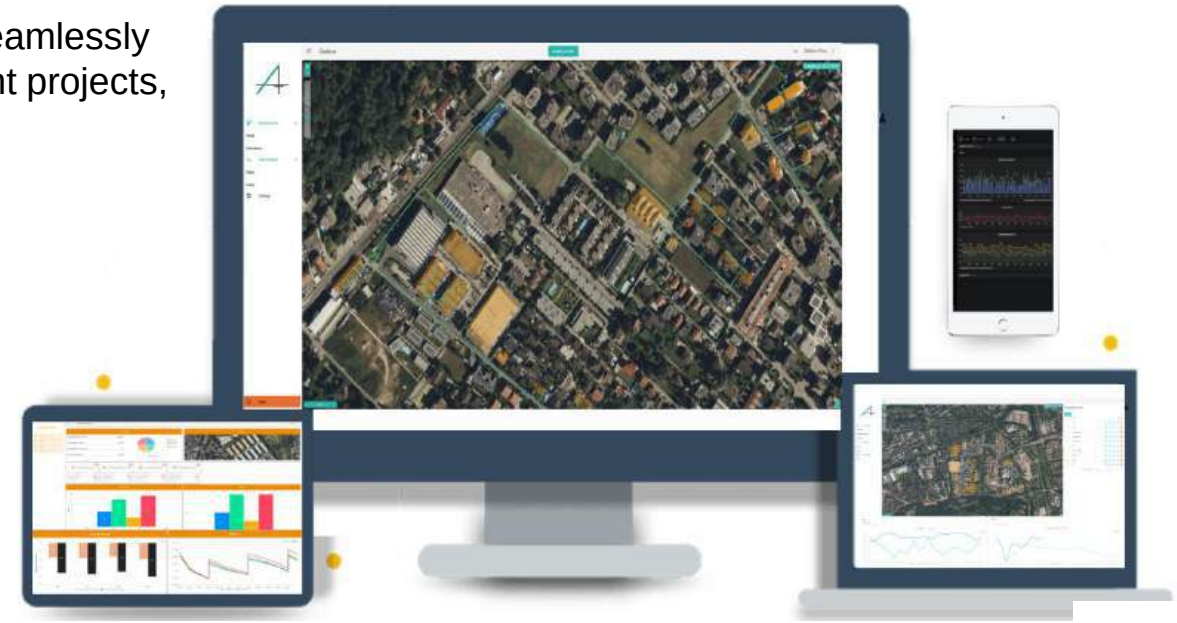
Smart Planning Tools for CO_2-Neutral Heat Networks

Summary:

In order to meet our climate targets, we need to accelerate the building of new heat networks and the decarbonisation of existing ones. The company is a software company specialized in building tools to improve planning and operation of heat networks. With their platform, energy companies can design, plan and improve their installations intuitively in the browser with just a few clicks, which allows for fast deployment of CO_2-neutral communal heat supply.

Advantages compared to the existing solutions:

- Until now, heating grid design and optimisation is a time-consuming and expensive manual task;
- With the platform, engineers have a central data management platform available and can quickly design heat networks, analyse existing ones and detect efficiency improvements;
- Communal data on building demand or waste heat potential can be seamlessly integrated and is directly available on the platform. Within current client projects, benefits include:
  - Cut planning time and costs by min. 30%;
  - Reduce network planning by at least 6 months.
- During network analysis and optimisation, clients:
  - Reduce heat losses by up to 20%;
  - Leading to cost reduction of heat supply of 150-200€/year per household.



Contact: Michael Kerschbaumer, michael.kerschbaumer@sfg.at

A real-time optimisation and control technology to accelerate the energy transition

Summary:

A British company has developed an adaptable, digital solution for the power grid, that provides coordinated real-time control and adaptive optimisation of energy assets. The architecture is suitable for digital substations, demonstrating interoperability with modern, legacy and cloud systems. The company offers commercial agreements to utilities, system operators, energy service companies, and distributed energy resources (DER) vendors and owners.

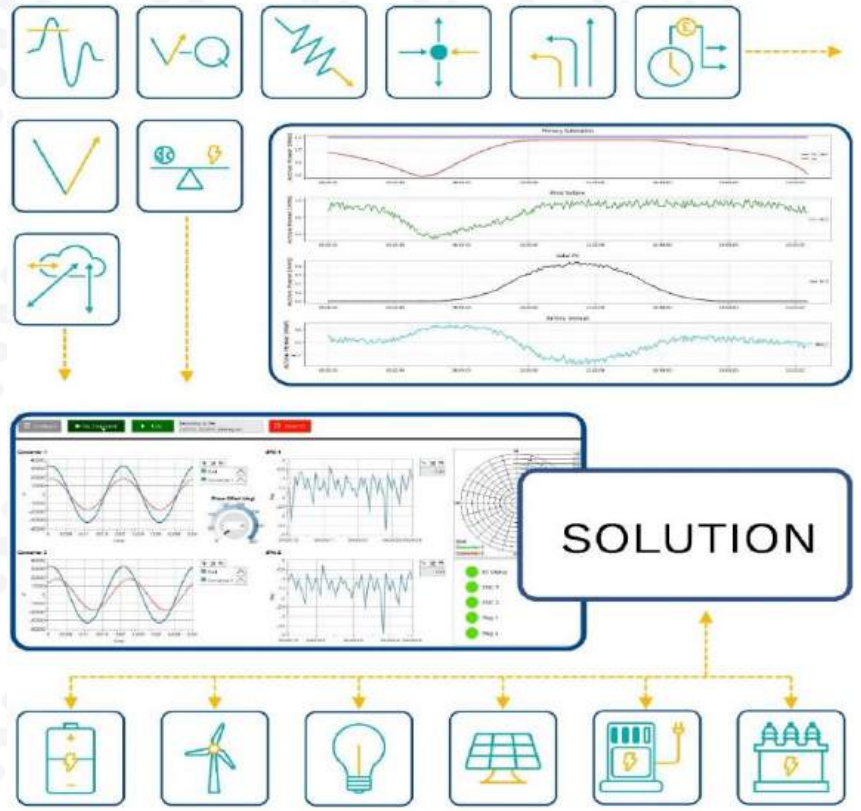
Advantages compared to the existing solutions:

Deployment of the solution to 100 primary substations (average capacity 50 MVA):

- Annual cost reduction due to savings from reinforcements: £100m;
- Annual savings from mitigating disconnections and network unavailability: £20m.

Deployment of the solution to a typical small-scale microgrid:

- Annual cost savings: 25%;
- Annual CO_2 footprint reduction: 11%.



Other advantages:

Reduced OPEX for system operators (decreased network losses, etc.), additional renewable's penetration, realisation of flexibility (enables revenues), while it is the only solution that integrates all types of assets from any manufacturer across the world.

Contact:

Nghia Tran, nghia.tran@iukbg.ukri.org

HYPE (Artificial Intelligence for Hydro Power Management)

Summary:

Industrial IoT (internet of things) platform for the remote control and remote monitoring of hydroelectric plants. The solution is based on cloud technology and aims to guarantee a level of reliability and security comparable to that offered by human control. It achieves this with automated detection of anomalies in the plant via the use of advanced machine learning (ML), and through the adoption of best practices in the IoT field.

Advantages compared to the existing solutions:

- Cost reduction: 15%.

Other advantages:

- Cloud technology supports management costs to be reduced, making the creation of micro-plants more sustainable;
- High-performance and innovative solution for the centralised management of plants located on a large geographical scale;
- Application of AI in order to predict and identify physical events that could affect the functioning of the plant (i.e. debris flows, turbidity and colouration of the water, etc.)

Contact: Federico Molino, f.molino@pie.camcom.it

Flexible Software for Every Stage of Wind Projects

Summary:

Complete wind energy software possesses features including wind resource assessment (WRA) calculations, wind farm modelling and project development at any given stage. Moreover, its compatibility is flexible while working with other software, therefore, allowing users easy access to share and compare information. The software provides solutions to promoters, engineering consultancies, wind resource assessment departments, financial departments etc.

Advantages compared to the existing solutions:

- The unique feature is to have all wind resource assessment steps in one interface, which saves time for yield assessment engineers;
- The software requires no external programs while maintaining the availability to load several file formats, depending on needs;
- Having all the necessary modules on to calculate a site's wind resource, design a wind farm, and estimate Annual Energy Produced (AEP) and all project costs on the same interface, it saves a lot of time for the WRA team;
- It also reduces project's cost, with a lower software price delivering all needed information to energy assessment engineers.

Other advantages:

- Download analysis data (ERA5, MERRA-2, and more) directly;
- Analyse wind data within diverse modules;
- Calculate on- and off-shore wind resource assessments in with both lineal & CFD models;
- Design a site's layout, study the AEP, and features within the micro-siting module;
- Estimate financial aspects of the project.

Contact: María García, maria.garcia@fundecyt-pctex.es

Windfarm SaaS platform for energy yield assessments in minutes

Summary:

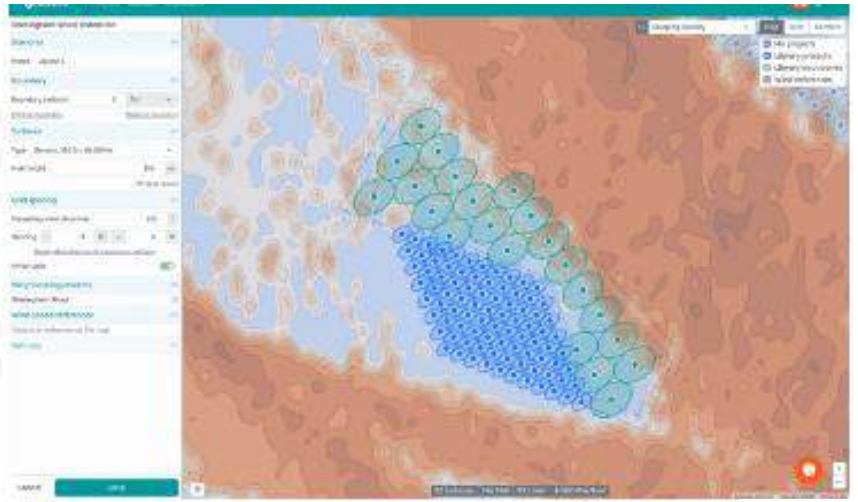
UK company offers SaaS platform which provides bankable accuracy for energy yield assessments in minutes. The platform stands out due to its speed and accuracy in energy yield assessments. It incorporates years of consultancy knowledge with carefully derived automatic presets. Validation studies confirm the system's accuracy and repeatability, ensuring global consistency.

Technical and economic advantages:

- Accurate energy yield assessments in minutes, not weeks;
- One analyst can investigate several sites concurrently, saving cost and time;
- A comprehensive library of indicative power curves for existing turbine types;
- Reduced uncertainties in LCOE (levelized cost of energy) due to extensive validation using public data.

Other benefits:

- Multiple sites and layouts can be analysed even in short bid timescales;
- Easily identify opportunities to de-risk the investment;
- Avoid mast installation offshore saves time and cost.



Additional info: https://een.ec.europa.eu/partnering-opportunities/uk-company-specialising-windfarm-project-analysis-offers-saas-platform

Contact: James Snelgrove, Innovate UK Business Growth, James.Snelgrove@iukbg.ukri.org

Multi-Source Forecasting for Smarter Energy Markets

Summary:

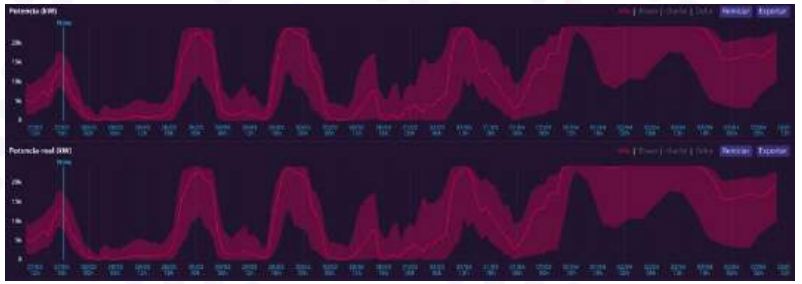
This multisource forecast services platform is focused on giving support and contributing to the decision-making process within the renewable energies industry. Developed by a team of data scientists and meteorologists, it leverages AI to provide with accurate meteorological and energy forecasts to wind farm operators, thus empowering the role of the wind energy in the energy market.

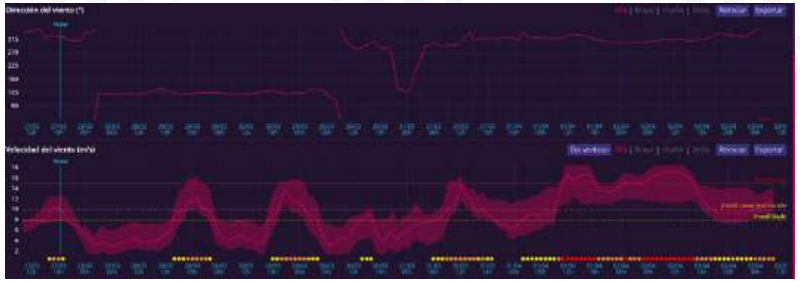
Advantages compared to the existing solutions:

- It presents a high usability (available on web platform and mobile app);
- It is a dynamic tool that is constantly improving (compared to other market's static solutions);
- The tool's predictions present an adequate accuracy (both its predictions for makeup energy offers in the different electricity markets, as well as its meteorological predictions for O&M activities) that can significantly reduce the operative costs of renewable energy plants.

Other advantages:

- Wind power forecasting service for all circumstances (e.g., recently built wind farms without historical data, offshore projects, PV plants, etc.);
- Tailored solutions to the client needs;
- 6 cutting-edge Machine Learning models;
- Confidence intervals to estimate forecast's uncertainties;
- Access to dynamics maps visualizer.





Contact: María García, maria.garcia@fundecyt-pctex.es

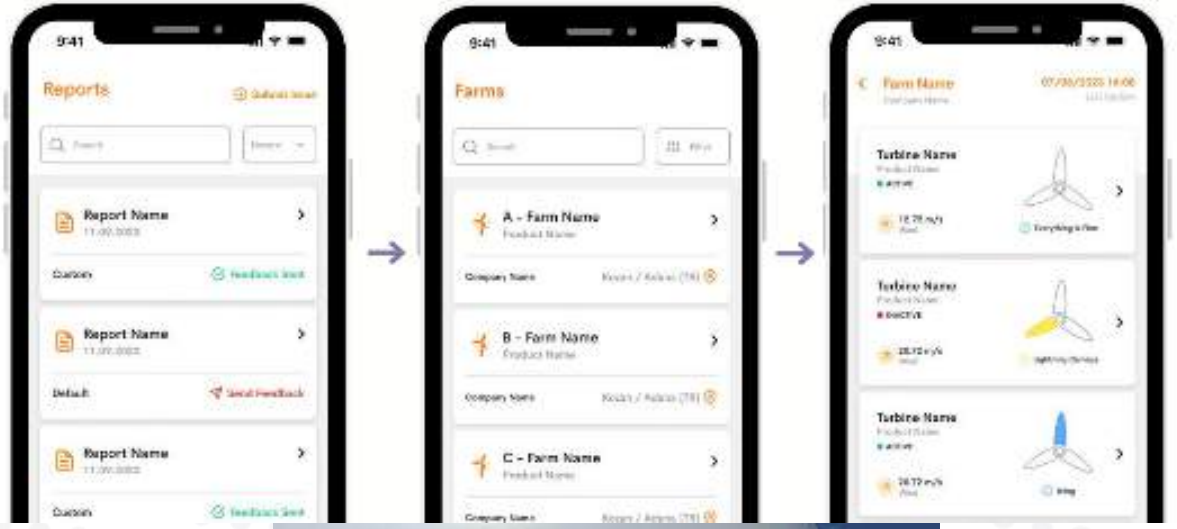
Innovative AI-based health monitoring and preventive maintenance for wind turbine blades

Summary:

A UK-based company offers an AI-powered system for continuous health monitoring of wind turbine blades. This innovative solution detects early-stage damage, helping to reduce maintenance costs by up to 50% and minimize turbine downtime. By utilizing IoT devices and processing acoustic data in real time, the system provides wind farm owners and operators with valuable insights.

Technical and economic advantages:

- Cuts maintenance and repair costs by up to 50% via early damage detection;
- 92% accuracy rate in early stage damage detection;
- Quick 2–3-minute plug-and-play installation;
- Minimises turbine downtime for consistent power generation.



Other benefits:

- Real-time remote monitoring with alerts and weekly reports;
- Durable system for harsh environments;
- User-friendly dashboard to receive daily, weekly and monthly insights;
- Extends asset life and prevents major failures;
- Enables 24/7 monitoring and fast issue response;
- Patented AI tech revolutionising preventive maintenance in wind energy.

Contact: Nghia Tran, Innovate UK Business Growth, Nghia.tran@iukbg.ukri.org

Clean Mobility & Transport

Solutions include dual-fuel retrofits, solar EV chargers, and modular e-mobility hubs.

Innovations will reduce emissions in logistics and urban mobility, supporting the EU Sustainable and Smart Mobility Strategy and Fit for 55 package.

Smart Solar Charging Station for E-Bikes and E-Scooters

Summary:

Slovak SME offers its solar charger for e-mobility to organisations, agents as well as distributors in EU. The solution is a revolutionary solar charger for e-bikes ans e-scooters. It is ideal for urban and non-urban environments, such as bike paths and busy areas with high activity from cyclists and electric scooter users.

Technical and economic advantages:

- Six available power sockets;
- The electricity produced is stored in batteries installed inside the solution;
- The battery system is in 3 levels – 9,6kWh 12VDC / 19,2kWh 48 VDC / 28,8kWh 48VDC;
- Sodium-ion technology (Na^+).

Other Benefits:

- It produces electricity ecologically from photovoltaic panels;
- Can be placed anywhere in direct sunlight, no need for public electricity network;
- Easy and quiet operation - the customer activates a free socket (one of six installed on the north side) for 1 hour or more.

Additional info: https://een.ec.europa.eu/partnering-opportunities/slovak-company-seeks-partners-its-solar-charger-eu-countries-under

Contact: Alena Poláková, Technical University of Košice, alena.polakova@tuke.sk

Integrated Solution for Green Tourism and Citizen Mobility

Summary:

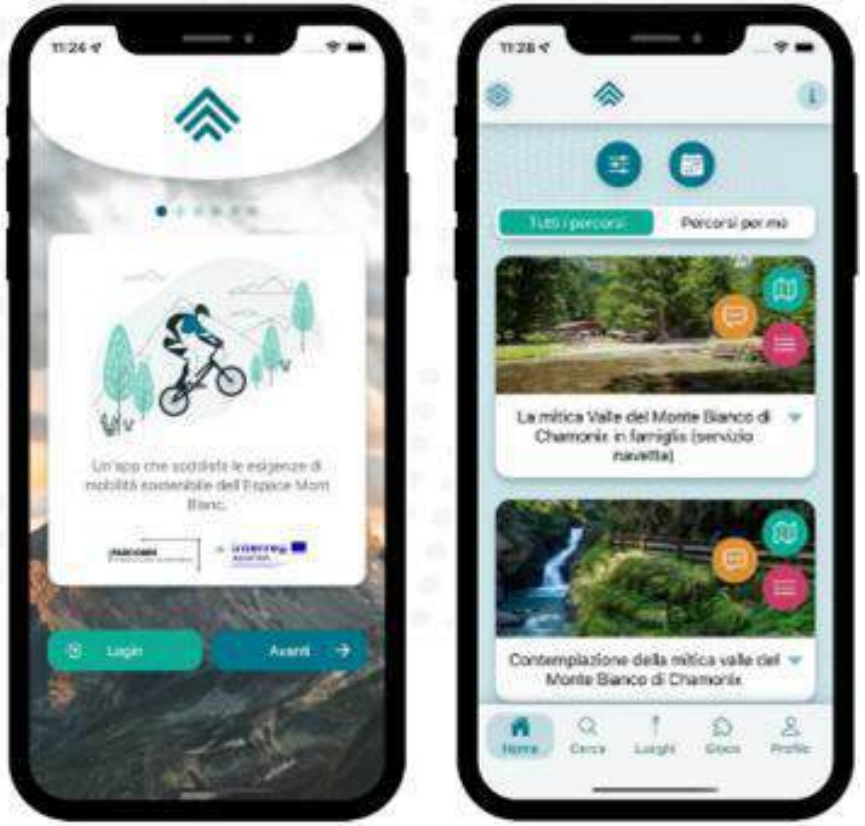
An integrated technological solution to meet the sustainable mobility needs of tourists and citizens and give visibility to sustainable mobility services/operators. It enhances sites of cultural interest through virtual tours and supports decision-makers in planning decisions. It combines green car sharing with stays in accommodation facilities and electric cars in the Mont Blanc region.

Technical and economic advantages:

- Increased use of sustainable vehicles;
- Reduction of own car use;
- Reduction of pollution caused by emissions from road traffic.

Other benefits:

- Visibility of green mobility companies/services;
- Integration of mobility data.



Contact: Federico Molino, Camera Valdostana delle imprese e delle professioni, f.molino@pie.camcom.it

Ecological conversion of conventional cars into hybrid solar vehicles

Summary:

A group of Italian companies has developed some prototypes almost ready for industrialisation (TRL 8/9), transforming conventional motor cars (Diesel, gasoline) into hybrid solar, by adding electric wheel motors in back wheels, a battery, and flexible solar panels. The system is patented in several countries. It allows the re-use of cars often in good conditions, reducing fuel consumption and emissions, both during their use and, further, within a LCA perspective.

Advantages compared to the existing solutions:

- Cost reduction with respect to Hybrid Vehicle or Electric Vehicle: 20-40 %;
- Performance increase: 10 %.

Other advantages:

- Vs Conventional vehicle: Reduction in consumption and emissions(up to 20% in typical urban use);
- Vs Electric Vehicle: lower cost. No problems of limited range and recharging time. CO_2 reduction due to lower consumption related to hybridization and green solar power;
- Vs Hybrid vehicle: lower cost. Partial solar recharge of battery. More sustainable;
- Fuel consumption and emission reduction: up to 20% in urban driving.

Contact: Martina Caliano, martina.caliano@enea.it

Innovative Enzyme Technology for Sustainable Fuels

Summary:

A Bulgarian company has invented a natural enzyme additive suitable for all liquid fuels, which delivers bound atomic oxygen, which is actively involved in the combustion process. These are synthesis products from cells of living organisms in nature which catalyse, break down, move and assemble various molecules into biochemical groups and thus create new biological compounds. They offer commercial agreements to interested partners as transport sector and logistic companies, agricultural, construction, etc.

Advantages compared to the existing solutions:

- Cost reduction: Noticeable economic savings of at least 10% of the fuel input.

Other advantages:

- The improved combustion of the engine power increases in parallel with its detonation resistance;
- The cold start and engine ignition are improved, soot deposition in the DPF filter is reduced;
- Prevents the formation of tar deposits on the EGR valve, thus increasing its life span;
- Reduction of unburned hydrocarbon emissions in exhaust gases by 83 %, thus significantly reducing their toxicity and hence air pollution;
- The level of measured toxic carbon monoxides is reduced by 33 %, nitrogen oxides reduced by 17 % and fine particulate matter is reduced by 15%.

Contact: Svetoslava Pavlova, een@chambersz.com

High-Efficiency LPG Converter for Existing Engines

Summary:

A Hungarian company has developed a new technology for LPG converters that improves fuel consumption in internal combustion engines by 20%. The technology is tested on the market and has delivered impressive results. The solution is 100% compatible with existing engines, and redesign of the drive chain is not necessary. The technology has been independently tested with EURO3-EURO6 engines and there are no significant differences among the results or performance. The company is looking for potential partners interested in distributing the product and commercial agency partnership.

Advantages compared to the existing solutions:

- 20% improvement in fuel consumption.

Other advantages:

- 100% compatible with the actual LPG converters in the engines;
- Independent testing with EURO3-EURO6 engines has verified performance;
- The device is rented to the customers avoiding the investment needs;
- The renting fee is 3-5 times lower vs. the delivered savings.

Contact: Dr. András Kiss, kiss.andras@hbkik.hu

Innovative Dual-Fuel System for Cleaner Transport

Summary:

A UK company has an innovative dual-fuel system technology that allows diesel engines to adopt cheaper, cleaner, and renewable fuels. Their technology is proven within the UK and US for freight and passenger rail, maritime, and trucks, as well as in small scale power generation. Dual-fuel technology extends the life of existing transport vehicles and at the same time addresses cost and carbon emissions by enabling adoption of alternative cleaner fuels.

Advantages compared to the existing solutions:

- Cost reduction: 20+%;
- Emissions Reduction: Up to 90%;
- Return-on-Investment: As little as 6-18 months dependent on application.

Other advantages:

- The dual-fuel system ensures no difference in the performance of the engine;
- The engine can be optimised for power, economy, or emissions;
- The original safety systems within the engine will not be compromised;
- Dual fuel remains one of the few solutions to de-carbonise heavy duty diesels;
- The leading dual fuel company in the UK and expanding new partnerships across Europe.

Contact: David Nettleton, David.Nettleton@iukbg.ukri.org

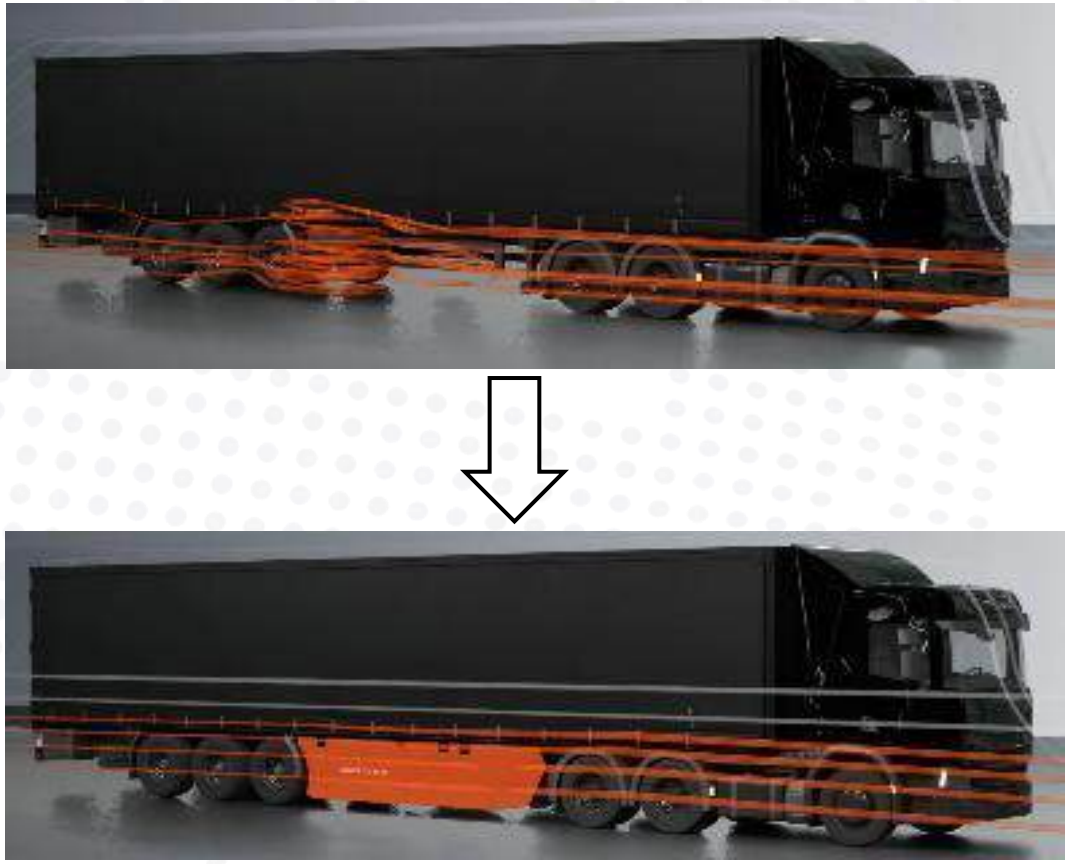
Fuel Saver Skirts: Cost Efficiency for OEMs and Logistics

Summary:

An Austrian SME has developed aerodynamic skirts for semi-trailers that reduce fuel consumption and CO_2 emissions with every kilometer on the road. Their modular underbody system helps OEMs meet EU regulations while lowering costs. Proven with major logistics partners, the solution offers fast ROI and boosts sustainability in freight transport.

Technical and economic advantages:

- Reduces fuel consumption by up to 5%, verified under real-world conditions;
- Saves up to €4,000 per truck per year in fuel costs leading to a payback period of less than 12 months for most fleet operators;
- Cuts CO_2 emissions by up to 6 tons annually per vehicle.



Other Benefits:

- Easy to install: Compatible with standard trailer types; no structural modifications required;
- Scalable: suitable for small fleets and large logistics providers;
- Certified: tested under EU road safety and emissions standards.

Contact: Michael Kerschbaumer, SFG, michael.kerschbaumer@sfg.at

Circular & Waste-to-Energy Solutions

This includes technologies that convert sewage sludge, industrial waste, and flue gases into energy or reusable materials.

These solutions support the EU Circular Economy Action Plan and Industrial Emissions Directive, promoting resource efficiency and decarbonisation.

Regenerating batteries and oils to reduce waste

Summary:

A French SME has developed high-performance regeneration processes for batteries and oils to double their lifespan, combat obsolescence of critical materials, and reduce CO_2 footprint.

Technical and economic advantages:

- Enables customers to save around 50% of the original price, at a quarter of the price of an industrial battery;
- Reduce the production of hazardous industrial waste by 50%;
- Massive reduction GHG emissions, with 50 times fewer CO2 emissions than recycling;
- Increased territorial resilience in safeguarding critical resources;
- Creating new jobs in a local and sustainable circular economy

Other benefits:

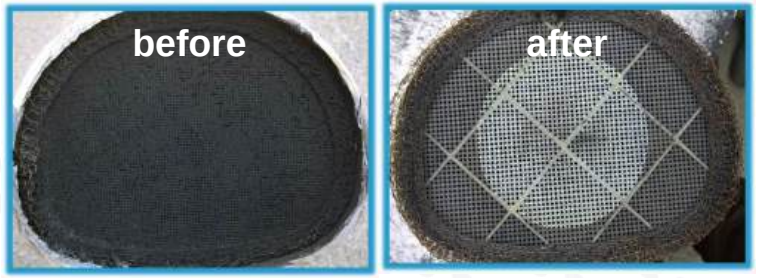
- Batteries: Lead, NiCad, Lithium, NiMH;
- Oils: engine oils, hydraulic oils, industrial oils (hardening, cutting);
- The company is active in 52 countries around the world.

Contact: Margaux Sommier, msommier@risingsud.fr

Revolutionizing Recycling with Oxy-Hydrogen Combustion Technology

Summary:

The technology, developed by the Bulgarian corporation is an innovative one and is a part of its circular solutions for recycling using dust particular filters and catalytic converters of internal combustion engines and industrial installations. The offered recycling solution is based on patented method of combustion of oxy-hydrogen gas mixture.



Advantages compared to the existing solutions:

- The cost of consumables is about 90% lower, compared to the solutions using heating;
- The price of the recycling process is 50 to 80% lower, compared to the price of new items.

Other advantages:

- The treated items are up to 99% recycled;
- The technology does not use any chemicals and is environmentally friendly;
- There are no chemical deposits left after the procedure is done;
- The technology allows for cleaning of the existing filters and converters instead of buying new ones;
- The consumables are only water and electricity.

Contact: Mina Denkova, minadenkova@res-cluster.com

Smart Energy Solutions for Boilers, Ovens, and Combustion Plants

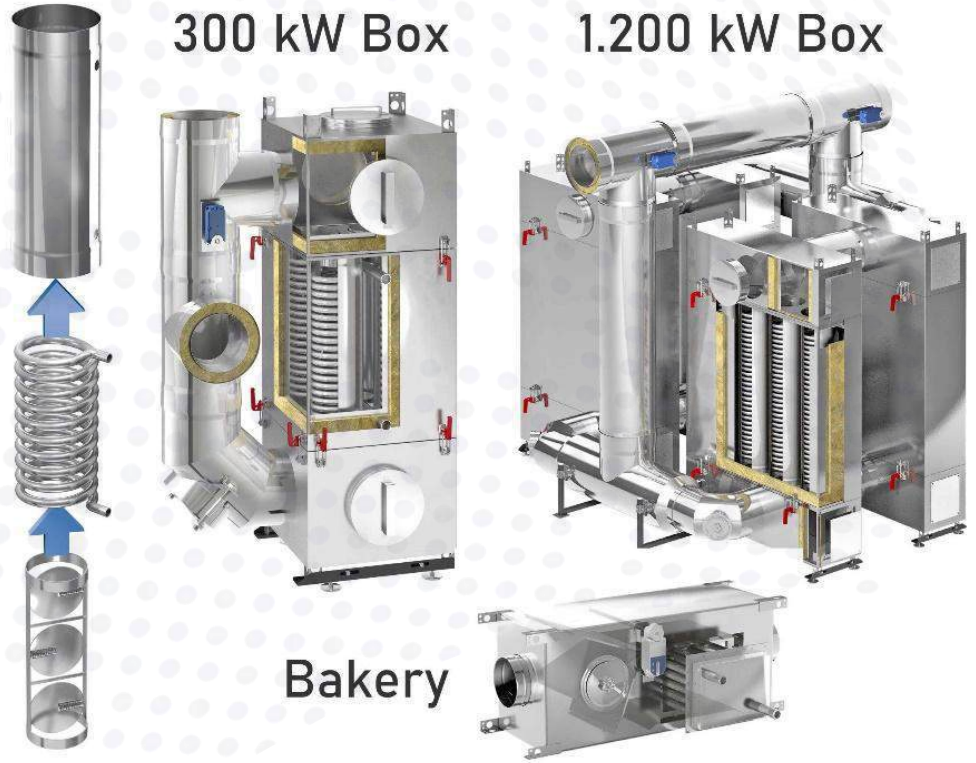
Summary:

A German SME offers gas heat exchangers to recover waste heat from flue gases from incineration units and heating boilers. Firing installations from wood-burning stoves via baking ovens or plants processes using heat fed from wooden or still fossil fuels are examples for heat sources. Areas of sustainable application are biomass combustion plants e. g. operated in heating network or in SMEs such as joineries or garden centres to recycle their own bio-waste, but also in craft businesses and in industry.

Advantages compared to the existing solutions:

The potential of the waste heat in the flue gas of combustion plants is often unused but easy to capture:

- Heat exchangers can recover an additional 5% to 10%;
- Compact design, especially for dusty flue gas, enable sustainably fed biomass fired systems;
- Modular design scalable from 10 kW up to e. g. 1200 kW;
- Patented maintenance-free bimetallic driven guide plates conduct the flue gas for highest efficiencies;
- Corrosion free stainless-steel construction for low maintenance and low flow resistance;
- Vertical, horizontal or oblique mounting with low installation effort;
- Available for both new and retrofit applications with a short payback period;
- One-stop-shop for flue gas treatment can provide additional fine dust filter and chimney solutions.



Contact: Sabrina Wodrich, ZENIT GmbH / NRW.Europa, Sabrina.Wodrich@zenit.eu

High-Efficiency Heat from Wind and Waterpower

Summary:

A UK company has developed an innovative renewable heating technology that integrates with a motive power system. The technology delivers exceptional efficiency when converting input energy into usable heat. A cost-effective space and water heating solution for domestic, industrial and agricultural premises. The technology delivers highly efficient conversion of wind or waterpower directly in to heat without the need for expensive voltage conditioning electronics.

Advantages compared to the existing solutions:

- Delivers heat with zero carbon emissions;
- Independently verified to deliver 99%+ energy conversion efficiency;
- Avoids the use of both combustion processes and electricity;
- Utilises Magnetic fields to convert motive power to heat;
- Large product range for application in small homes to industrial-scale sites;
- Simple, clean renewable heat for a huge variety of uses and fixed or portable solutions;
- Clean, portable and safe delivery of heated fluids;
- Enables renewable energy economics such that install cost and increases in efficiency can render otherwise uneconomic projects viable.

Contact: Andrew Phillips, Andrew.Phillips@iukbg.ukri.org

Boosting Solar Efficiency: Sustainable Cleaning & Coating Solutions

Summary:

A Portuguese company has developed sustainable chemical cleaning and coating solutions for photovoltaic panels, increasing system performance by up to 5%. The products reduce operational costs and water consumption and are suitable for any scale of PV plants such as rooftops or utility-scale installations.

Technical and economic advantages:

- Cost reduction: Reduces maintenance costs by lowering cleaning frequency and water use;
- Performance improvement: Boosts solar panel performance by up to 5% through soiling mitigation coatings and recovers full production on heavily contaminated plants;
- Sustainability and certification: Biodegradable, non-toxic formulations tested and certified by independent laboratories and approved by major PV manufacturers;
- Fast ROI: only a few weeks to a couple of months to recover the investment in the products.

Other benefits:

- Increases panel lifespan by reducing soiling accumulation;
- Resistant to harsh environmental conditions (dust, pollution, extreme weather);
- Easy to apply, reducing labour time and complexity;
- Compatible with different cleaning methods: manual, rotating brushes, robots, and drones.

Additional info: https://een.ec.europa.eu/partnering-opportunities/portuguese-producer-sustainable-photovoltaic-panel-cleaning-solutions

Contact: Céu Filipe, AEP, ceu.filipe@aeportugal.pt

Cost-Efficient 3D Manufacturing with Seamless Line Integration

Summary:

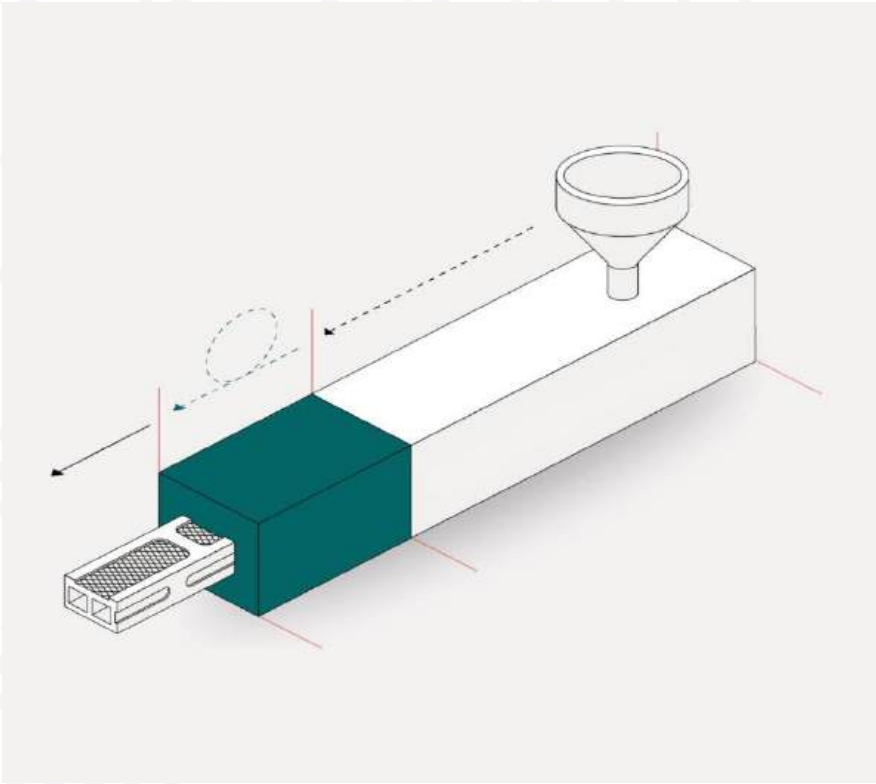
A new Swedish patented 3D manufacturing technology creates complex profiles with varying topologies and cross-sections in one production step. That is, a part with indents, protrusions, channels and other defined geometric features all in one pass without the need for expensive and energy demanding processing. It is validated for aluminium, plastics, rubber, ceramics, composites and bio-composites. The technology requires minimal upfront investment and integrates with existing production lines.

Advantages compared to the existing solutions:

- Cost reduction: 80%.

Other advantages:

- Based on extrusion and 100% compatible with existing extrusion lines;
- Each tool is custom designed and built for the customer application and material;
- Combining the freedom of 3D with the speed of 2D;
- Proved application areas are solar panels, thermal windows, bumper beams, heat exchangers, fuel cell plates, EV battery modules, etc.;
- 14 granted patent families from the US in West to Japan in East.



Contact: Lars-Ake Isaksson, lars-ake.isaksson@ltubusiness.se

Active flue gas condensation with Absorption Heat Pumps (AHPs)

Summary:

Biomass is too valuable to be burned with the efficiencies that are common today! “Active Flue Gas Condensation” - as developed by an Austrian SME - recovers the high amount of latent heat from humid biomass flue gas. Efficiency increases of up to 40% can be shown in existing references in Austria. Cold water produced by the AHP cools down the flue gas condenser, thus recovering large amounts of energy from condensing the water vapour.

Advantages compared to the existing solutions:

- Absorption Heat Pumps (AHP’s) use the heat from biomass combustion as driving energy for the heat pump process;
- The electricity consumption is less than 1% of the delivered energy. The typical efficiency increase for biomass heating plants reaches 25-30%, for biomass cogeneration plants 15-20%;
- Payback for district heating plants between 2-5 MW grid load is usually 5-10 years. For bigger systems, payback can be less than 2 years.

Other advantages:

- Producing 30% more heat from a certain amount of biomass means:
  - A significant reduction of cost!;
  - Reduction of biomass usage and reduction of exhaust gases;
  - The biomass storage on site can supply the consumers 30% longer than before;
  - Condensation removes particles from the flue gas, thus supporting the function of other flue gas filters.

Contact: Michael Kerschbaumer, michael.kerschbaumer@sfg.at

Community Energy & Local Solutions

These solutions enable Renewable Energy Communities (RECs), peer-to-peer trading, and local grid balancing.

These technologies align with the Clean Energy for All Europeans package and Energy System Integration Strategy.

Maximizing Energy Savings through Local Renewable Trading

Summary:

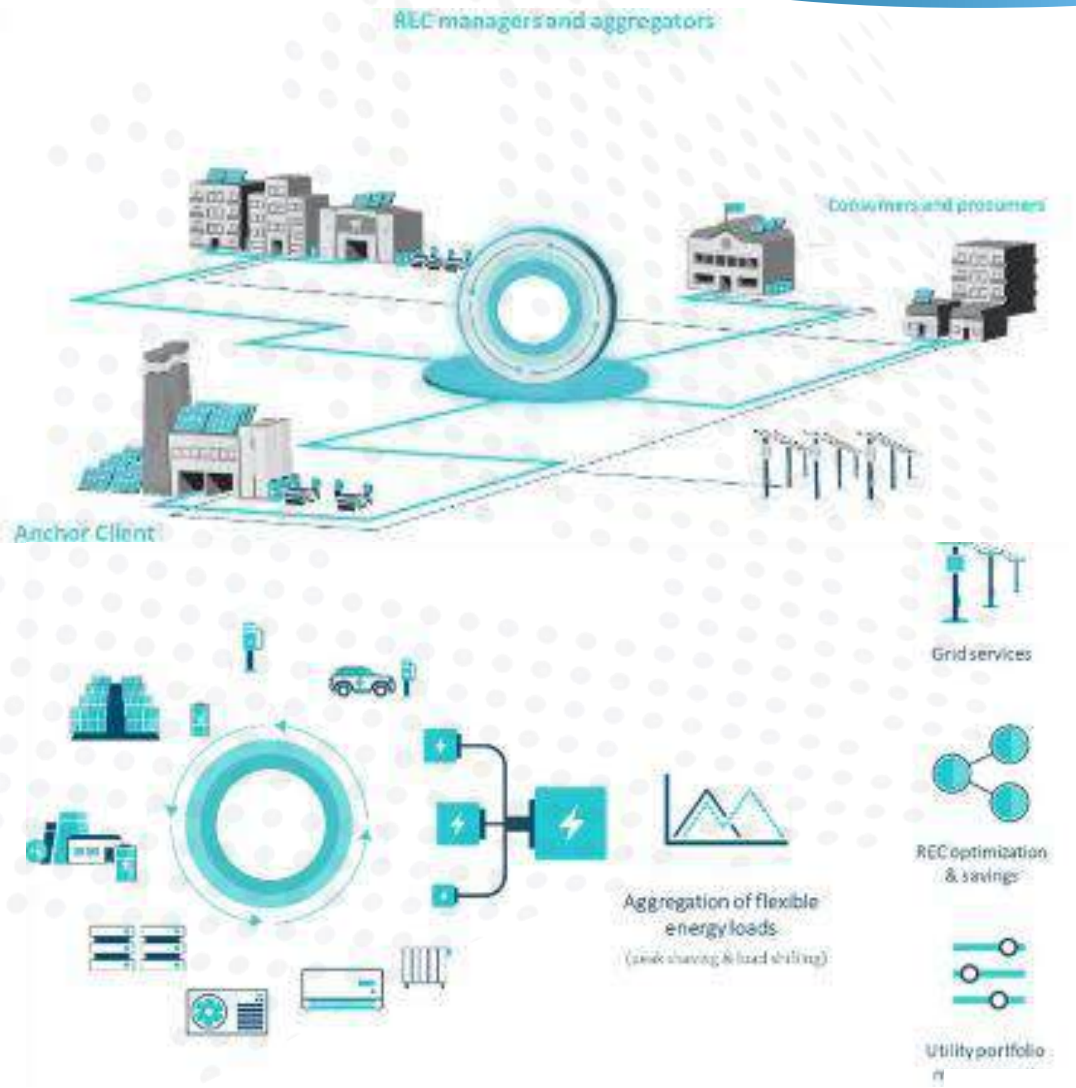
A Portuguese company simplifies local energy markets by removing friction and complexity, supporting the creation, management, and expansion of Renewable Energy Communities (RECs). It provides intelligent systems that help these communities maximize energy cost savings through local energy trading. The solution enables prosumers to take part in advanced demand response programmes, dynamically matching and optimizing local energy generation with consumption, using flexibility as a key driver.

Technical and economic advantages:

- Cost/Watt (EUR/Watt): No initial costs;
- Cost reduction: up to 40%;
- Highly scalable, integrated, flexible and secure platform adapted to different regulatory frameworks.

Other benefits:

- Aggregation of small and medium energy assets and loads, including batteries, electric vehicles (EV) chargers, heaters, boilers, chiller, etc.;
- Holistic management of all aspects of REC;
- Promoting the creation of viable REC as well as local energy markets.



Contact: António Couto, LNEG, antonio.couto@lneg.pt

B2B digital marketplace of green energy

Summary:

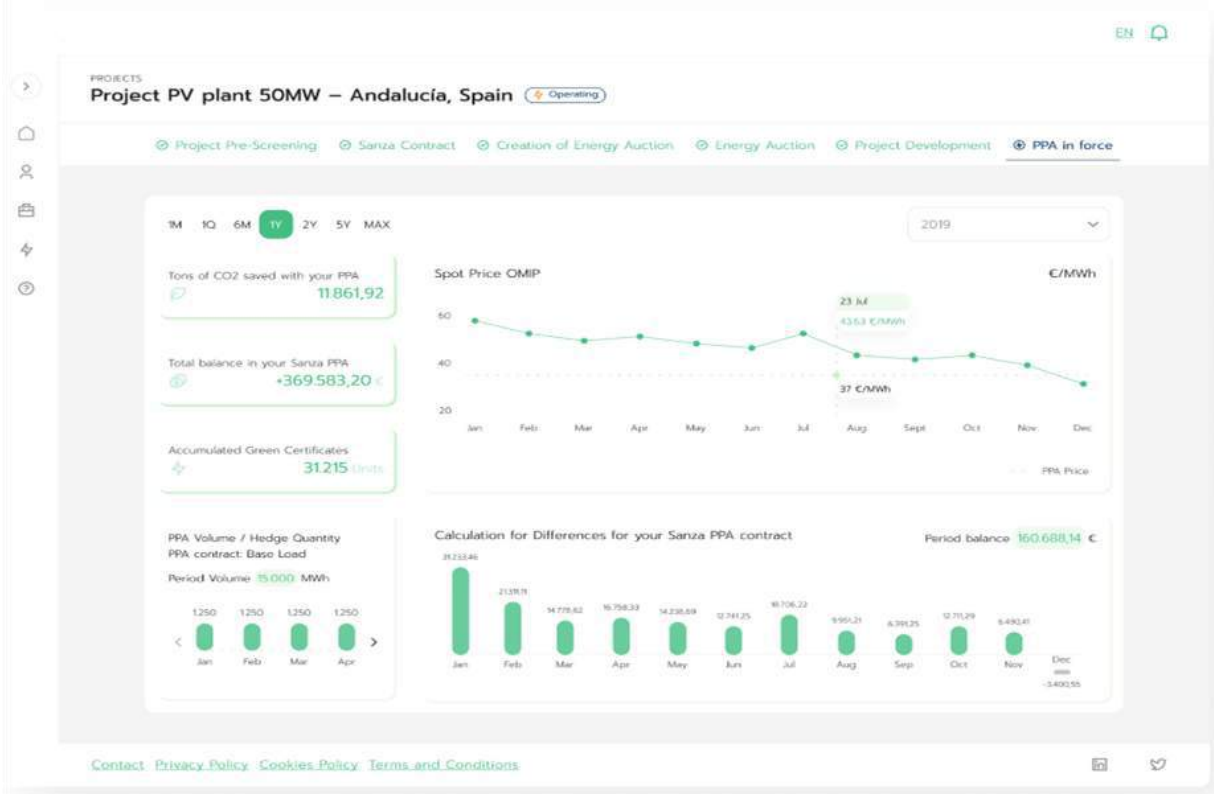
A Spanish company has developed a digital platform powered by multidimensional innovations. It provides an alternative to the electricity market, enabling corporates to procure renewable energy (RE) directly from renewable projects at lower prices through bankable power purchase agreements (PPAs). Tested in pilot projects, the platform is now live, with ongoing improvements. It offers commercial and JV agreements to developers of RE projects and to project financiers. Its target clients are RE suppliers, buyers, and company interested in energy efficiency.

Advantages compared to the existing solutions:

- Savings in contracting costs (can be greater than 50%);
- Less time required to negotiate/close the PPA (3 vs 12 months);
- Savings in energy costs (up to 50% vs market price).

Other advantages:

- Achievement of sustainability goals;
- Cost stabilisation (less exposure to high/volatile energy prices);
- No specialised in-house capabilities required;
- Strong PPAs which allow project owners to get financing to build the generation facilities;
- Alignment with strategic priority of the EU to implement a quick deployment of renewables to cut down our dependence on (imported) fossil fuels and to make energy affordable again.



Contact: Mercedes Lecea, mercedes.lecea@madrimasd.org

AI-Driven IoT Platform for Renewable Energy Communities

Summary:

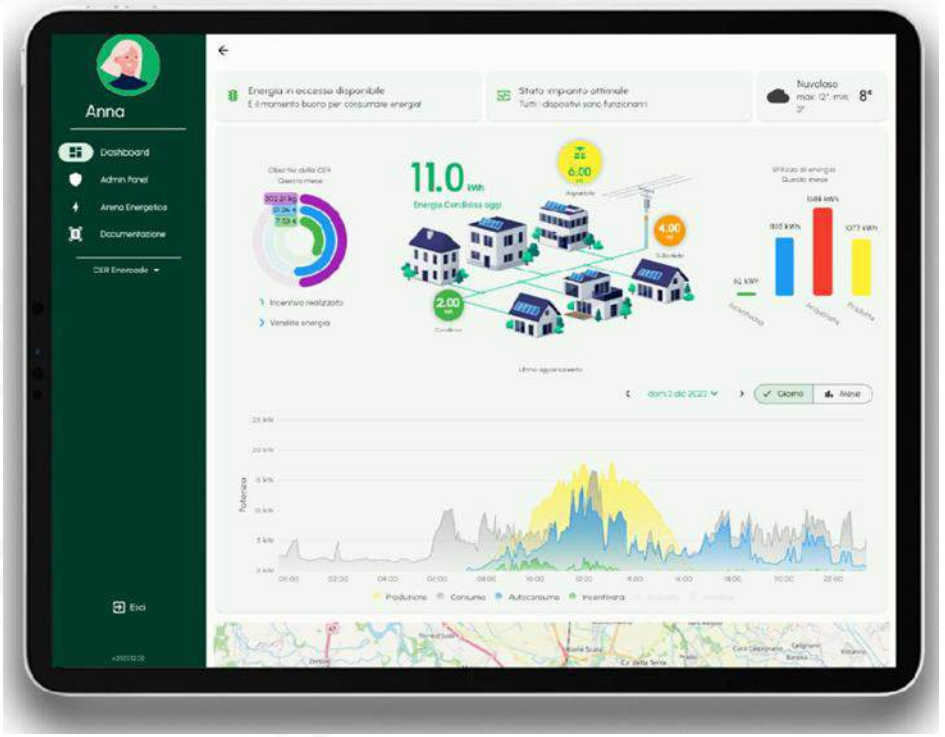
An Italian company has developed a platform for Renewable Energy Communities (RECs). The mission is to empower people to foster active participation into smart energy management. This tool is an IoT system that collects data and using AI/ML algorithms and sends real-time suggestions to citizens to coordinate energy consumption.

Technical and economic advantages:

- It will advise citizens when to use shared energy from solar panels installed in the community to save CO_2 emissions;
- Reduction of energy bills by 20%;
- Even people who do not own solar panels will be able to monitor their energy consumption and REC's thanks to this digital platform.

Other Benefits:

- New services for local territories;
- No additional cost for installation, users pay a fraction of what they save;
- It makes energy consumers' lives easier.



Contact: Federico Molino, Camera Valdostana delle imprese e delle professioni, f.molino@pie.camcom.it

Efficient On-Site Water Purification Technology From Off-Grid Energy

Summary:

The product is a mobile, self-sufficient drinking water treatment system, which treats polluted surface water to create drinking water in a resource-saving manner. The innovative approach of the system lies in the efficient functionality and many of unique selling points. The company is able to carry out production and assembly on site and prefabrication in its own workshop, as well as all production and assembly preparations. Construction, planning and development work can also be carried out in-house.

Advantages compared to the existing solutions:

- Independence from fossil and external energy sources to operate the systems. Hydropower, sun or wind are used;
- Treatment of any contaminated surface water - even brackish water becomes treated drinking water;
- Simple operation, which does not require any technical or manual skills - even children can set up and operate the processing systems;
- Low-maintenance conception of the processing plants.

Contact: Claus Vorstadt, cvorstadt@tti-md.de

Clean Energy Storage for Off-Grid Applications

Summary:

A Slovak company offers a large modular solar power bank. The electricity produced is stored in a battery storage unit, which is then used to power the desired device, which can be various temperature sensors, camera systems, alarms, lamps, illuminated signs, directional signs, various antennas, etc.

Technical and economic advantages:

- The generated electricity is stored in batteries inside the solar power bank. The battery system is at capacity 9.6kWh 12VDC, or 19.2kWh 48VDC;
- Four variants are applicable UNO, DUE, TRE and QUATTRO;
- The module DUE S offers 4.6 kWp of power on a floor plan of only approximately 6.6 m2.

Other benefits:

- Can be placed wherever the sun is shinning, even if a public network is not available there;
- Use clean energy from the sun and contribute to the protection of the environment and the reduction of greenhouse gas emissions;
- Compact minimalist and efficient design: The highest possible perfomance on a small built-up area.

Additional info: https://een.ec.europa.eu/partnering-opportunities/slovak-sme-offers-its-modular-solar-power-bank-power-various-devices

Contact: Alena Poláková, Technical University of Košice, alena.polakova@tuke.sk

Zero-emission mobile energy hubs for emergency grid support and decentralized hydrogen distribution

Summary:

A Dutch developer offers mobile energy hubs combining H2-MEGG's, hydrogen fuel cells, battery storage, and smart-grid integration. Designed for hydrogen logistics, these hubs also serve as backup power for congested or overloaded grid nodes. The emission-free solution supports DSO operations, event power, inland shipping, and construction sites, offering grid flexibility and energy security.

Technical and economic advantages:

- Each MEGC (hydrogen container) provides 4.5–8.1 MWh of clean power, replacing 1,300–2,300 liters of diesel and avoiding up to 6.2 tons of CO_2 emissions'
- Scalable 1+ MW emergency power per hub with real-time grid connectivity'
- Zero-emission operation with an OPEX-based model—no major CAPEX required for grid operators.

Other Benefits:

- Proven, certified fuel cell technology using 100% green hydrogen;
- Dual-use: both hydrogen logistics and emergency power in one integrated solution ;
- Safe, quiet, and easily deployable—no fixed infrastructure needed.

Contact: Ellen Wermink, Horizon Flevoland, ellen@horizonflevoland.nl

Innovative Networked Heat Pump Technology for Tower Blocks and New Builds

Summary:

A British company has pioneered a new way to decarbonise housing at scale: networked heat pumps (NHP). These see individual ground source heat pumps (GSHPs) connected to shared boreholes in the street and are ideally suited to new-build developments and “complex to decarbonise” properties such as tower blocks.

Technical and economic advantages:

- Bill savings – 50% bill savings for properties previously using electric storage heaters;
- High performance – GSHPs have efficiencies of 300-400% compared to 90% for a gas boiler and 100% for electric storage heaters;
- Deploying NHPs at scale could reduce peak grid demand at national and regional level;
- NHPs can deliver 30% overall and 60% upfront cost reductions compared to individual heat pump installations.

Other benefits:

- In addition to providing heating, NHPs can provide properties with passive cooling;
- Entire housing estates and tower blocks can be decarbonised whilst simultaneously reducing bills and allowing residents to retain billing independence.

Contact: Angelo Spencer-Smith, Innovate UK Business Growth, Angelo.Spencer-Smith@iukbg.ukri.org

10–20 kW vertical-axis wind turbines

Summary:

An innovative SME based in Lombardy offers compact 10 kW and 20 kW vertical-axis wind turbines, optionally hybridised with PV and batteries, for on-site power at factories, farms, hotels and mini-grids. It seeks global distributors and EPC partners for commercial agreements, providing technical assistance and modular CE-compliant systems.

Technical and economic advantages:

- Starts producing at wind speed of 2.5 m/s—about 30–40 % lower cut-in speed than average;
- Operates below 45 dB at 20 m, 10–15 dB quieter than comparable turbines;
- Survives winds over 60 m/s, roughly twice the IEC Class II design limit.

Other benefits:

- Handles turbulent, multi-directional winds, suiting urban and industrial sites;
- ≤ 12 m mast is compatible with most aviation and landscape permits, meaning fast deployment;
- Bird-friendly, shadow-flicker-free blades enhance aesthetics and local acceptance.

Additional info: https://een.ec.europa.eu/partnering-opportunities/italian-sme-offers-10-20-kw-vertical-axis-wind-turbines-site-renewable

Contact: Angelo Gatto, IT-Finlombarda, angelo.gatto@finlombarda.it

Cost-effective on-site green hydrogen via solar-powered electrolysers

Summary:

A German start-up replaces delivered hydrogen with cost-effective on-site green hydrogen via solar-powered electrolysers (0.044–2 kg/h), ideal for SME industrial use. Optional integrated waste heat recovery further increases overall system efficiency. Extended systems enable seasonal storage as an “H2-Battery” for energy autonomy – even in remote off-grid locations.

30 kW PEM with 300 bar Storage

Technical and economic advantages:

- Cost reduction and price stability: Hydrogen costs reduced by up to 25% and long-term price stability;
- Security of supply: On-site hydrogen production avoids reliance on external supply chains, ensuring security and flexibility;
- CO_2 savings: ~ 9 kg CO_2e saved per kg H_2 when replacing delivered fossil hydrogen with on-site green hydrogen.

10 kW PEM with 35 bar Storage

Other benefits:

- Regulatory compliance: Enables fulfillment of EU RED II and supports broader climate targets;
- Efficiency gains due to sector coupling: Waste heat recovery increases overall system efficiency and reduces additional energy demand;
- New business models: Opens up opportunities through CO_2 certificates, grid service offerings, and dynamic electricity pricing.

Contact: Sonja Angloher-Reichelt, Bayern Innovativ, angloher@bayern-innovativ.de

Low-Cost Floating Energy Systems with Local Assembly

Summary:

UK company specialising in development and deployment of innovative and modular products which enable low-cost floating renewable energy projects. The products can be used to provide community-owned and off-grid renewable energy platforms which enable local energy generation and storage. The modules are constructed in the UK and transported globally by rail and sea. Modules are then assembled locally at the destination and towed to deployment locations with no requirement for specialist vessels.

Advantages compared to the existing solutions:

- An innovative concept for rapid construction of large floating platforms using modular designs;
- Provision of high-density energy to coastal communities without underwater cables;
- Balancing of local energy grid systems, optimisation of the ‘energy mix’ and peak demand;
- Modular design enables construction in remote areas with limited infrastructure;
- Designed for operation and maintenance by local communities;
- Improved quality of life and new opportunities for commercial enterprises in poor areas.

Contact: Jane Warren, Jane.Warren@iukbg.ukri.org

Did you see a solution of interest?

How to get in contact with a company that could provide a solution you are interested in?

1. Have the solution of your interest on your screen.
2. Copy the title of this solution.
3. Click the email address at the bottom of the solution (email program opens with an email) and paste the title of the solution into the title of the email.
4. Write a brief outline of your request, ask for extra clarification or explain what is the need of your company the solution could possibly address.
5. Please add your contact details and send the email.
6. The EEN Advisor you have sent it to will respond to you directly.

If you have any questions, please contact the person listed at the bottom of the respective profile(s) in the catalogue, or your local Enterprise Europe Network advisor: https://een.ec.europa.eu/local-contact-points

More information on the Enterprise Europe Network - the world's largest support network for small and medium-sized enterprises (SMEs) with international ambitions: https://een.ec.europa.eu/

Information on funding opportunities

This Energy Solutions Catalogue gathers market-ready energy solutions to be implemented by companies in order to save energy and replace fossil fuel-based processes in view of rising energy prices and climate targets. As the required investments, such as in building renovation, energy efficiency retrofits or replacing fossil fuel-based furnaces, tend to be very capital intensive, companies often need financial support in order to finance these actions.

The EU funding programs almost exclusively target Research, Development and Innovation (R&D&I) actions, thus excluding investments in market-ready solutions. While the EU also invests heavily into investment-based programs, most of these programs are actually installed on national or regional level and companies need to apply to regional/national banks to receive the assistance they need.

BUT…

#EENCanHelp

The Network created the **Sustainability Funding Database** as a strictly network-internal tool that EEN advisors can use to navigate and understand funding opportunities available at EU, national and regional level. The advisors may share individual information from the database with their clients, using templates that contain the financial instruments relevant for the individual client and include for each of them a short description of their objectives, eligible investments, form of financial support, eligibility and conditions.

Since the EEN has strong connections to regional and national investment banks, the network can also connect its clients with experts that can provide a deep dive into the respective funding scheme.

Please contact your local EEN advisor for information on national and regional funding programs.

As some funding opportunities can be tapped into on EU level directly, you will find a first overview on the next pages.

If you are interested in R&D&I funding (EU or national/regional level), please also contact your local EEN advisor.

European Energy Efficiency Fund (eeef)

Main purpose of the programme /measure /instrument

Investments in energy efficiency and renewable energy projects

Target applicants

Municipal, local and regional authorities as well as public and private entities acting on behalf of those authorities such as utilities, public transportation providers, social housing associations, energy service companies etc.

Eligible investments

Local infrastructure costs, labor costs, technical expertise, etc…..

Funding mechanism/rate

Loans and debt investments

How to apply

Use the Eligibility Check on the eeef website to see if your project is eligible for funding.

Deadlines

Application is possible at any time

More information: https://www.eeef.lu/eligible-investments.html

2025/2026 Themes & Outlook

Enterprise Europe Network (EEN)

EEN Energy Task Force - Sector Group Renewable Energy

2025/2026 Themes & Outlook

The 2025 catalogue reflects a maturing Renewable Energy solutions landscape, with a strong emphasis on modularity, decentralisation, and digital intelligence. Three key themes have emerged that are influencing the latest innovative solutions included in this catalogue:

Theme 1: Decentralised & Dual-Use Infrastructure

Decentralised, multifunctional energy infrastructure innovations

Theme 2: Hydrogen & Energy Storage Integration

Innovations in hydrogen and advanced energy storage

Theme 3: AI-Driven Energy Efficiency & Predictive Maintenance

Use of Machine Learning and AI to interpret complex energy data and support decision making

Theme 1: Decentralised & Dual-Use Infrastructure

The 2025 Catalogue highlight a growing trend toward decentralised, multifunctional energy infrastructure. Innovations such as foldable solar plants for traffic areas, agrivoltaic systems, and floating marine energy platforms reflect a shift from centralised generation to **distributed, land-efficient solutions**.

This trend aligns with the **EU Solar Strategy** (part of the REPowerEU Plan), which mandates the installation of solar energy on public and commercial buildings by 2027 and on residential buildings by 2029. The strategy encourages dual-use applications such as **agrivoltaics** and **infrastructure-integrated PV**, recognising their role in accelerating deployment while preserving biodiversity and land use.

Municipalities stand to benefit significantly from these innovations. Foldable PV systems over car parks or sewage basins, for example, offer **grid-independent generation**, reduced urban heat island effects, and improved asset utilisation. Agrivoltaic systems not only produce clean energy but also **enhance crop resilience** against climate extremes—an increasingly important consideration for semi-urban and rural councils.

Moreover, these decentralised systems support **energy democracy** by enabling local ownership models and community participation. They also reduce transmission losses and improve resilience against grid disruptions—key priorities under the **EU's Energy System Integration Strategy**, which promotes local energy loops and sector coupling.

The outlook for the next 12–18 months, might include demonstration projects for dual-use infrastructure and regulatory simplification. Municipal energy managers should explore pilot zones for agrivoltaics, solar carports, and floating PV, particularly in underutilised or climate-exposed areas.

Theme 2: Hydrogen & Energy Storage Integration

Hydrogen and advanced energy storage are central to Europe's decarbonisation strategy, and the 2025 Catalogue reflects this momentum. Innovations include platinum-free catalysed electrodes, modular green hydrogen electrolysers, mobile H2 energy hubs, and sodium-ion battery systems. These solutions address both cost and scalability barriers, enabling on-site hydrogen production, seasonal storage, and grid-independent backup power.

This aligns with the EU Hydrogen Strategy and the REPowerEU Plan, which aim to produce 10 million tonnes of renewable hydrogen within the EU by 2030. The strategy prioritises hydrogen for hard-to-decarbonise sectors (e.g. industry, transport, and heating) and supports the development of hydrogen valleys—regional ecosystems integrating production, storage, and use.
The SGRE entries also reflect the EU's push for energy autonomy and critical raw material independence. Sodium-ion batteries, for example, reduce reliance on lithium, cobalt, and nickel—materials flagged in the EU Critical Raw Materials Act.

These batteries are safer, more sustainable, and better suited to cold climates, making them ideal for municipal and residential applications.

Mobile hydrogen hubs and modular electrolysers support grid flexibility, a key objective of the EU Energy Storage Strategy. By enabling decentralised, dispatchable power, they help balance intermittent renewables and reduce grid congestion—especially relevant for municipalities facing grid constraints or planning EV infrastructure.

In the next 12–18 months, municipal energy managers should explore partnerships for pilot deployments, particularly in industrial parks, ports, and off-grid communities.

Theme 3: AI-Driven Energy Efficiency & Predictive Maintenance

Artificial Intelligence (AI) is rapidly transforming energy efficiency strategies across Europe. The 2025 Catalogue showcases its growing role in building management, predictive maintenance, and operational optimisation. Solutions such as AI-powered HVAC control systems, smart EMS platforms, and wind turbine blade monitoring systems demonstrate how AI can deliver **real-time insights**, automate energy usage, and reduce downtime.

These innovations align with the **EU Digitalisation of Energy Action Plan**, which promotes the integration of digital technologies to improve energy system efficiency, flexibility, and resilience. The plan encourages the use of AI, IoT, and big data analytics to support smart buildings, predictive maintenance, and decentralised energy management. It also complements the **Energy Performance of Buildings Directive (EPBD)**, which mandates smart readiness indicators and digital building passports to track and improve energy performance.

Moreover, AI enables **dynamic demand response**, allowing buildings to adjust consumption based on grid signals or renewable availability, as well as unlocking new commercial value due to energy trading. This supports the EU's **Energy System Integration Strategy**, which promotes flexible, consumer-centric energy systems.

In the next 12–18 months, municipal energy managers should expect increased take-up of AI-driven energy solutions and should prioritise pilot projects in smart building retrofits, predictive maintenance, and EMS upgrades to unlock cost savings and regulatory compliance.

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