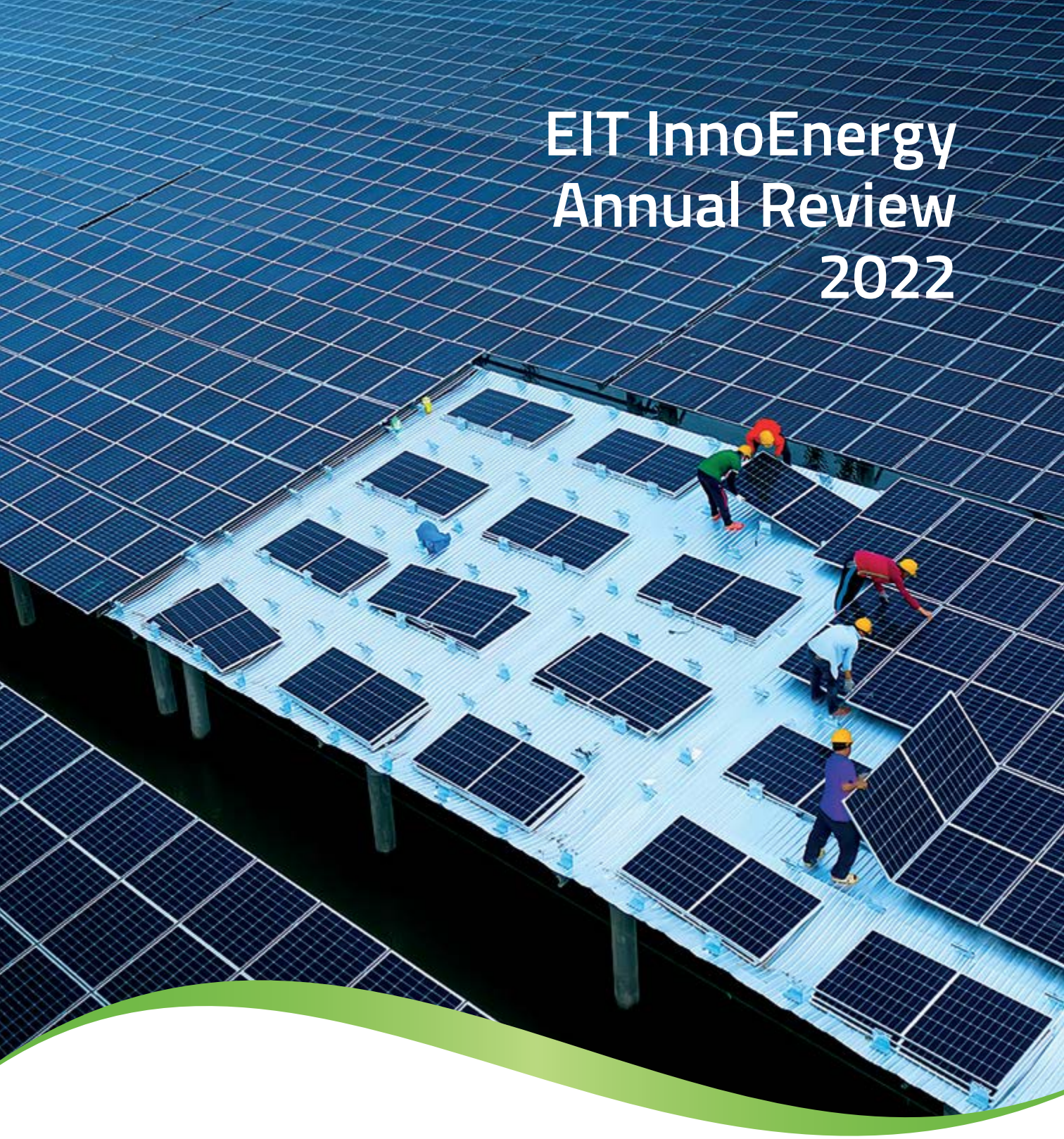
EIT InnoEnergy Annual Review 2022



eit InnoEnergy

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Cover: TBB.2022 photo contest
Photo by: Le Thanh Ngon

Co-funded by the
European Union

EIT InnoEnergy Annual Review 2022

Contents

We are on a mission and we are delivering

> Our 2022 portfolio includes more than **200** companies which have the potential to save **2.1G** tonnes of CO2e accumulatively by 2030 and generate **€110** billion in revenue.

EIT InnoEnergy is proud to have spent twelve years in the vanguard of the energy transition, supporting more than 500 industry relevant innovations. From these, our 2022 equity portfolio includes more than 200 companies which have the potential to save 2.1G tonnes of CO2e accumulatively by 2030 and generate €110 billion in revenue.

Acknowledged internationally for our contribution, we were privileged to be recognised by PitchBook as a global top investor in their 2022 Annual Global League Tables. In addition, Financial Times backed publication, Sifted, ranked EIT InnoEnergy as one of Europe's most active deeptech investors. And as of this year, seven of our Masters School Alumni have been recognised in the prestigious Forbes 30 Under 30 listing. What is even more gratifying is our international cohort of Alumni making a real impact, many of whom work for big names including Siemens, Engie, Total Energies, Schneider Electric, Northvolt, ABB, Tesla, Vattenfall and Volvo.

EIT InnoEnergy's impact is owed to its ecosystem. Spread across Europe and the USA, it consists of more than 1,600 alumni and 1,200 industry stakeholders, including 29 Shareholders and more than 100 VC partners. In June we were fortunate to welcome two new team members to the company. Marcin Wasilewski, former Vice President of ABB and one of Poland's leading energy industry executives, joined us as the new CEO of EIT InnoEnergy Central Europe. Additionally, we were pleased to welcome Former Swedish Energy Minster, Ibrahim Baylan, as our new Strategic Advisor.

Strong leadership, expert knowledge and industry connections contribute to our success, solidifying our reputation. As a result, as of 2022 the European Commission has mandated EIT InnoEnergy to lead three strategic European initiatives. The first, launched in 2017, is the European Battery Alliance (EBA). Leveraging off its success, we then launched the European Green Hydrogen Acceleration Center (EGHAC) in 2021. Adding to our portfolio, in December 2022 we launched the European Solar Photovoltaic Industry Alliance. This alliance has 120 members across 17 countries who are working together to re-industrialise the European solar PV industry, with an aim to create 400,000 direct and indirect jobs.

DIEGO PAVÍA
CEO, EIT InnoEnergy

Continuing our international expansion, 2022 saw us grow our presence in the US by leading a consortium in New York State to bring affordable, zero-emission micro-mobility to underserved communities. We also partnered with the Southeast Michigan Community Alliance to train 700 people in advanced vehicle technologies. This work will support the InnoEnergy Skills Institute, launching in 2023 to equip the global workforce with the knowledge and expertise needed to decarbonise the economy.

In our quest to progress and accelerate the energy transition, we are continually welcoming new partnerships. As such, in September 2022 we announced a new initiative with Santander Asset Management. Together we will address Europe's energy security and price crisis by enabling the funneling of venture capital into Europe's most promising climate tech start-ups. This announcement followed an agreement in April 2022 with Banco Santander, the world's leading provider of renewable energy project finance, to help accelerate the development of our portfolio companies.

Over the last 12 years we have built an engine. Thanks to our expansive ecosystem, InnoEnergy is generating impactful sustainable energy innovations, many of which are decarbonising hard to abate industries, and all of which are contributing to ESG and SDG objectives. Each year at The Business Booster, we bring these technologies straight into the hands of investors, industry and policymakers. In September 2022 we came together in Lisbon where 150 entrepreneurs pitched their technologies to event delegates, who also heard from more than 40 speakers, including former NASA astronaut Ron Garan. The event looked at how we can win the race to net-zero through balancing the exploitation of existing technologies and exploration of new ones. Our 10th event was our most impressive yet, boasting 3,100 B2B meetings in just two days. Now we are looking forward to welcoming you in Amsterdam, where we will come together at The Business Booster 2023 to discuss "The new Green Economy: balancing profit and purpose".

Until then, I would like to give my thanks to all those working with EIT InnoEnergy - we are on a mission, and thanks to each of you, we are delivering.

TBB.2022 photo contest
Photo by: Lê Vinh

01

Meet EIT InnoEnergy

EIT InnoEnergy operates at the centre of the energy transition and is the leading innovation engine in sustainable energy, bringing the technology and skills required to accelerate the Green Deal and Europe's decarbonisation goals.

1.1 Catalysing and accelerating the energy transition

EIT InnoEnergy operates at the centre of the energy transition and is the leading innovation engine in sustainable energy, bringing the technology and skills required to accelerate decarbonisation goals.

We build connections worldwide, bringing together innovators and industry, entrepreneurs and investors, graduates and employers.

HOW WE DO IT

Our bespoke support to accelerate sustainable energy innovation, knows no borders or boundaries:

- Industry is linked with innovation and alumni, providing commercially attractive technologies spanning the energy value chain, and top talent to enhance innovation.
- Start-ups, scale-ups, and innovators receive tailormade support to boost and de-risk business cases and speed up time to market.
- Students have access to six master's programmes at 16 top technical universities and business schools.

OUR IMPACT

As a result, in just twelve years we have built the largest sustainable energy innovation ecosystem in the world:

- Our portfolio companies are on track to generate €110 billion in revenue and save 2.1G tonnes of CO_2e annually by 2030.
- €9.7 billion investment has been raised by more than 200 portfolio companies.
- 90% of our startups already work with global brand names including ABB, BMW, EDF, Engie, Tata Steel and Vattenfall, Gulp, Enel, Schneider, Acciona, Repsol, EDP, Shell, DTEK, IKEA and Veolia.
- We have 1,600 alumni from 90+ countries who are shaping the future of sustainable energy. In the most recent cohort, 30% were women.

DECARBONISING EUROPE AND BEYOND

We are also spearheading the way to a decarbonised Europe by 2050 through the leadership of three industrial value chains: European Battery Alliance, European Green Hydrogen Acceleration Centre and European Solar Initiative. These value chains bring together the knowledge and experience required to support large industrial projects, which directly impact the energy trilemma: reducing the cost of energy, limiting greenhouse emissions and increasing availability and security. Ultimately, these actions play a fundamental role in realising our goal of a carbon neutral Europe by 2050.

OUR ECOSYSTEM

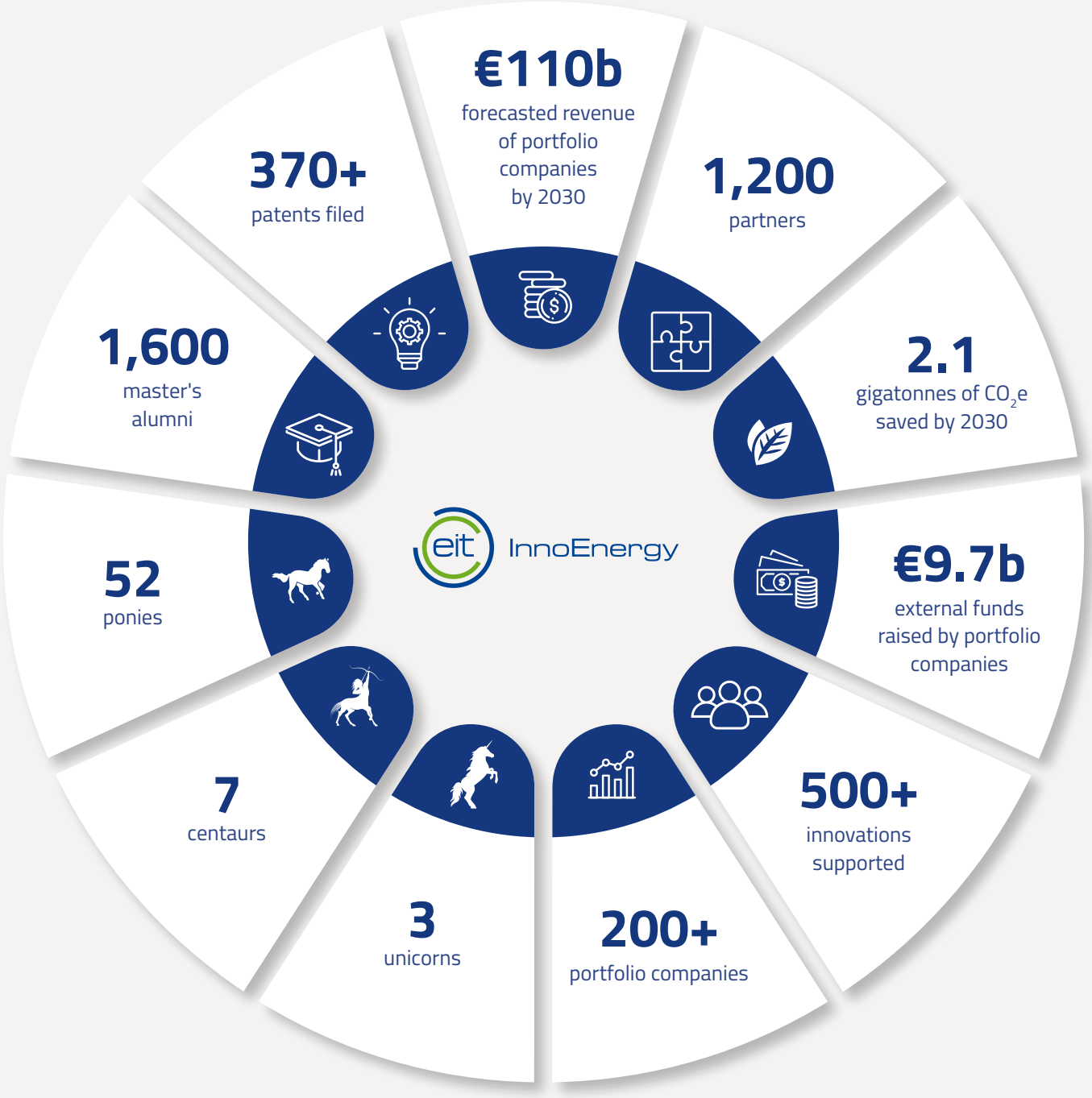
All this is made possible by leveraging our trusted ecosystem of 1,200 partners and 29 shareholders. Together we bring a constant pipeline of sustainable energy innovation to market. Established in 2010 we have offices and hubs across Europe and in Boston, US.

MAKING AN IMPACT IN SUSTAINABLE ENERGY

PitchBook
#1
Energy investor 2022

sifted / FT
Top10
Active deeptech investor 2022

Startup Genome
#1
VC investor in Europe 2021



*Unicorns: companies valued +€1B. Centaurs: companies valued €100-999M. Ponies: companies valued €10-99M.

1.2 EIT InnoEnergy **ranked most active investor** in the energy sector in 2022

PitchBook, the highly respected financial data and software company that provides thousands of global business professionals with comprehensive data on the private and public markets, announced in February 2022 that it had ranked EIT InnoEnergy as the most active investor in the energy sector worldwide in its 2022 Annual Global League Tables.

EIT InnoEnergy was selected in recognition of its role in supporting over 500 climatetech start-ups since 2010. Its current equity portfolio of more than 200 companies, is estimated to potentially generate €110 billion in revenue and reduce the world's annual carbon footprint by 2.1G tons by 2030. These include major disruptive innovations from ocean wave technologies to those that deliver AI-driven energy saving, and balancing off the grid.

Pitchfork's yearly report ranks the most active investors by geography, US regions, Europe regions, AUM, deal type, sector, and exits.. In this report, EIT InnoEnergy was ranked as "venture capital firm" in seven tables: Most active in energy sector (#1 Position), Transportation (#2 Position), Commercial products and services (#17 Position) and different positions as most active investor by regions in Europe (#16 Position), The Nordics, Central and Eastern EU and DACH region.

This recognition by PitchBook was the second EIT InnoEnergy had received in early 2023. In January 2023, EIT InnoEnergy was ranked by Sifted as one of Europe's most active deeptech investors.

ELENA BOU
Co-Founder & Innovation Director of EIT InnoEnergy

Being recognised year after year as a top investor in the energy sector is a testament to the strength of our investment model – supporting start-ups through value-added services and access to our unique innovation ecosystem to de-risk the business case and shorten time to market.

PitchBook
#1
Energy investor 2022

sifted
Top10
Active deeptech investor 2022

Startup Genome
#1
VC Investors in Europe 2021

1.3 From start-up to unicorn: **The value transformation journey**

Unicorns – aptly named because of their rarity – are companies that have achieved billion dollar status either through initial public offering or acquisition. While there are a handful of examples of companies achieving unicorn status in just a few months, for most, reaching a billion dollar valuation is years, sometimes even decades, in the making. However, in just over ten years, here at EIT InnoEnergy we have supported not one but three companies – Northvolt, Freyer and Vulkan – from our 500-strong portfolio of climate and energy tech innovations, to reach the heady heights of a $1 billion dollar valuation. Not only that, we've been instrumental in creating a commercially viable, endlessly innovative, and a highly competitive industry that will deliver sustainable energy innovations with a global impact for many decades to come. So, what makes our approach to value transformation so successful?

Most venture capital investors have a specific strategy when it comes to deciding which start-ups to back – be it a focus on a geography, a technology trend or a partner's specific expertise. Our strategy focuses very neatly on making investments that will catalyse and accelerate the energy transition. It's a strategy so successful that we have ranked as the most active venture capitalist in energy in PitchBook's 2022 Annual Global League Tables – ahead of industry giants such as Equinor Ventures.

Yet, while it is often the dollars invested that typically get the most media airtime, there are several other determining factors as to whether a start-up will firstly achieve scale-up status and then set itself up to grow into a unicorn. Nearly all (87%) of venture capitalists will offer their portfolio companies strategic guidance and connections to customers (69%) as a means to support growth and add value according to a Harvard Business Review survey. We are no different in that respect. However, what sets us apart is the dynamic, diverse and vibrant community that we continually curate and align around our vision – to accelerate sustainable energy innovation.

northvolt **Product page**

NORTHVOLT: LARGE SCALE BATTERY FACTORY

Northvolt is building the first large-scale battery manufacturing factory in Europe. Based in Sweden, the main production site will include active material preparation, cell assembly, recycling and auxiliaries.

VULCAN ENERGY ZERO CARBON LITHIUM™ **Product page**

VULCAN: ZERO CARBON LITHIUM

Vulcan Energy is aiming to decarbonise the transition to electric mobility, through its world-first Zero Carbon Lithium™ Project for electric vehicle batteries, and its renewable energy business.

FREYR Clean battery solutions **Website**

FREYR: CLEAN BATTERY SOLUTIONS

FREYR offers a clean Nordic solution to the rapidly growing global demand for high-density and cost-competitive battery cells for stationary energy storage (ESS), electric mobility, and marine applications.

1.4 EIT InnoEnergy **Executive Board**

DIEGO PAVÍA
Chief Executive Officer

Diego has headed multicultural working groups globally in the field of energy at SchlumbergerSema. He was also the CEO of Atos Origin. Since 2010, as CEO of EIT InnoEnergy, the company has become the global leader in sustainable energy innovation.

BART DE BEER
Chief Financial Officer

Bart has extensive experience working with multinationals, including Reed Elsevier and Cisco, where he held senior financial roles. Before joining EIT InnoEnergy in 2011, Bart was the Chief Financial Officer of an international printing company.

JACOB RUITER
CEO InnoEnergy Benelux

Jacob has held positions in a variety of energy-related companies. As Director of the Country Manager Energy Advisory of Benelux at DNV GL, he was responsible for energy and renewables activities in Benelux, Africa and Middle East. He has also held roles for Essent, Schlumberger and Grant Prideco.

MARCIN WASILEWSKI
CEO InnoEnergy CE

Marcin has been involved in the energy industry for 15 years. Since 2018 at ABB, he managed the energy and heavy industry sectors in Poland, the Czech Republic and Hungary. Previously, at PKN ORLEN, he was responsible for creating the energy segment. He has been a member of the Polish Committee of the World Energy Council since 2018.

CHRISTIAN MÜLLER
CEO InnoEnergy DACH Region

Christian held several management functions at Hoechst AG, acquired by Siemens AG in 2000, where he was involved in the commercialisation of technologies and services, and the creation of new businesses. He also managed the global Centre of Excellence for Chemical industry at ABB and joined EIT InnoEnergy in 2013.

ELENA BOU
Innovation Director

Elena Bou co-founded EIT InnoEnergy in 2010. Since 2011, she has been the Innovation Director, leading the development of creating and accelerating new ventures and investment processes in sustainable energy. Elena is also Associate Professor at ESADE Business School.

FRANK GIELEN
Education Director

Frank has extensive experience in R&D, raising venture capital, and university-industry collaborative research and spin-off creation. He has held technical and management roles including AT&T Bell Labs, Alcatel, Tellium and iMinds. He is also a Professor at the University of Ghent.

KARINE VERNIER
CEO InnoEnergy France

Karine brings 20 years of experience in the global energy industry, having successfully led numerous programmes in the clean energy sector, including with ENGIE and GRTgaz. She founded two companies in the natural gas and digital sector and has managed a third company in the clean fuel sector. She joined EIT InnoEnergy in 2021.

MIKEL LASA
CEO InnoEnergy Iberia

Mikel has extensive experience in bridging research, business and education within the renewable energy sector. He was head of wind turbine technology at Apia XXI, and head of analysis and design of wind turbines at the Spanish National Centre for Renewable Energy. He has also worked for Robert Bosch and Valeo. He joined EIT InnoEnergy in 2010.

KENNETH JOHANSSON
CEO InnoEnergy Scandinavia

Kenneth has worked for 20+ years in various executive management positions in high-tech manufacturing industry areas such as telecommunication, power conversion and renewable energies.

1.5 **Marcin Wasilewski,** new CEO of EIT InnoEnergy Central Europe

One of Poland's leading energy industry executives, Marcin Wasilewski, joined the EIT InnoEnergy team in June 2022 to lead the company's operations in the Central European region. Wasilewski, who recently worked as Vice President of ABB, formally took up the position of CEO at EIT InnoEnergy Central Europe and Executive Board member at EIT InnoEnergy headquarters.

> **MARCIN WASILEWSKI**
> CEO of EIT InnoEnergy Central Europe
>
> Green transformation brings exciting challenges. Regulatory changes proposed in Fit for 55 or REPowerEU are driving innovation. EIT InnoEnergy is at the heart of these innovations.

Marcin has been involved in the energy industry for 15 years. Since 2018, at ABB, he has managed the power and heavy industry sectors in Poland, the Czech Republic and Hungary. Prior to ABB, at PKN ORLEN, Marcin was responsible for creating the power generation segment. He also served as Chairman of the Supervisory Board of Anwil and President of Baltic Power, a company implementing an offshore project. Since 2018, he has been a member of the Polish Committee of the World Energy Council.

Diego Pavia, CEO of EIT InnoEnergy, stated: "I am pleased that Marcin has joined our leadership team. His experience in managing energy projects in companies that are market leaders will help us develop business in Central European markets. Marcin knows the energy industry well and will anticipate the impact of regulations on current and future energy business on a different scale. Our portfolio companies are already mature businesses embarking on the commercialisation phase looking for clients and investors."

1.6 Former Swedish Energy Minster, **Ibrahim Baylan,** joins EIT InnoEnergy

After leaving frontline politics, in June 2022, former Swedish Minister of Energy, Ibrahim Baylan, swiftly announced he had taken on some significant new energy-related assignments. After confirming he had taken a seat on the battery company Ingrid Capacity's board, it was then revealed that he is stepping in as a strategic advisor at EIT InnoEnergy.

As well as being an early investor in the large green projects H2 Green Steel and Northvolt, EIT InnoEnergy's Swedish portfolio includes the wave energy developer, Minesto, the technology company, C-Green Technology and the wave power company, Corpower Ocean.

Commenting on Ibrahim Baylan's appointment, Kenneth Johansson, CEO of EIT InnoEnergy's operations in the Nordics, stated: "In order for our portfolio companies to grow and prosper, knowledge of both the industry and business development is required. It includes important aspects of public regulations, politics and social acceptance that we also need to work actively with. That's where Ibrahim's background fits in."

Kenneth added that Ibrahim's background will help to determine targets for EIT InnoEnergy's future investments. "We are working to get new European industries to grow. Nothing will change there. We choose which small companies we believe can make a difference and invest early to instil confidence in existing industry and financiers to also invest."

IBRAHIM BAYLAN
Strategic Advisor of EIT InnoEnergy

I am very happy to be able to participate and help these companies. Not least considering everything that is happening in Europe. We have some challenges here at home, but it's a breeze compared to what it looks like in some countries in terms of energy supply.

1.7 EIT InnoEnergy **Supervisory Board**

HERVÉ BERNARD
Chairman of the Board, Independent

Mr. Bernard serves as Chairperson of the Board of Governors of the Joint Research Centre of the European Commission. Previously he was the Administrateur Général Adjoint at The French Alternative Energies and Atomic Energy Commission (CEA) and received France's Legion of Honour.

KARL-FRIEDRICH ZIEGAHN
Vice Chairman of the Board, Independent

Mr. Ziegahn was recognised for his long career at the Karlsruhe Institute of Technology by being appointed a KIT Distinguished Fellow in 2020. Prior to that he was the Energy and Environment Programme Lead at Forschungszentrum Karlsruhe GmbH.

DANIEL DOBBENI
Board Member, Independent

Mr. Dobbeni is Managing Director of ETHAN SPRL-BVBA and prior to that served as President of 50Hertz Transmission GmbH, President of the European Network of Transmissions System Operator for Electricity and CEO of ELIA.

MARCIN KOROLEC
Board Member, Independent

Mr. Korolec is the former Polish Minister of Environment and served as the President of COP19. He is on the European Investment Bank's Climate and Environment Advisory Council, is a Member of Meva Energy's Supervisory Board and Vice President of Transport & Environment's Board.

BLANCA LOSADA
Board Member, Independent

Ms. Losada is President of FORTIA ENERGIA and Vice-President of the Social Council at Universidad Politécnica de Madrid. She served as CTO and CEO of Gas Natural Fenosa Engineering and Chairwoman of the Board and Chief Executive Officer of Union Fenosa Distribucion.

AXEL WEISHEIT
Board Member, Independent

Mr. Weisheit is a Director at the Baden-Württembergische Bank (BW-Bank) and Chairman of the Board of Trustees of the KIT Foundation at the Karlsruhe Institute of Technology.

MAUD OLOFSSON
Board Member, Independent

Ms. Olofsson is the current President of the Swedish Tourist association and former Minister of Enterprise and Energy and Deputy Prime Minister of Sweden.

STEFAN ÖSTLUND
Board Member,
KTH Royal Institute of Technology

Mr. Östlund is a Professor and the Vice President of Global Relations at KTH Royal Institute of Technology.

JOSÉ SANTOS VICTOR
Observatory Member,
Instituto Superior Técnico

Mr. Santos Victor is a Professor at the Instituto Superior Técnico (IST) and the President of the Institute for Systems and Robotics in Lisbon.

COLETTE LEWINER
Board Member,
Independent

Ms. Lewiner is the former Chairperson and CEO of SGN-Réseau Eurisys and a Director of EDF since 2014.

STANISŁAW TOKARSKI
Board Member,
Independent

Mr. Tokarski serves as an Expert at the Academy of Science and Technology (AGH) in Poland and is the former Vice President of Tauran S.A.

ANNE-MARIE RAKHORST
Board Member

Ms Rakhorst is an entrepreneur, investor and publicist in the field of sustainability. She founded Search, a consultancy and engineering firm and duurzaamheid.nl, a platform accelerating sustainable change. In 2000 she was named Business Woman of the Year.

LLUIS BATET
Board Member

Mr Batet is a skilled researcher in the field of nuclear energy. He has worked at the Technical University of Catalonia (UPC). From 2011 he took on the role of Director of the Master's degree in Nuclear Engineering.

TBB.2021 photo contest
"Sustainable energy in the production sectors"
Photo by: Yevhen Samuchenko

02

Building global connections

Our trusted ecosystem of 1,200 partners and 29 shareholders.

2.1 New partnership with **Santander** to launch climate tech investment vehicle and advisory services

At The Business Booster 2022 in Lisbon, Portugal, Santander Asset Management (Santander AM) and EIT InnoEnergy announced a collaboration to accelerate the energy transition and address Europe's energy security and price crisis by funnelling venture capital into the Europe's most promising climate tech start-ups from EIT InnoEnergy's portfolio.

BORJA DIAZ-LLANOS
Head of Alternative Investments of Santander Asset Management

Innovation is critical to helping achieve net zero by 2050. With this initiative we aim to provide additional capital to many of the start-ups with the greatest emissions.

The new climate tech fund will provide private banking and institutional investors with the means to invest in early-stage companies making a tangible impact on the energy trilemma – making energy affordable, available and sustainable. The investees will primarily be drawn from EIT InnoEnergy's existing portfolio of companies spanning sectors as diverse as the circular economy, renewable energies, energy storage and efficiency, transport and mobility, smart buildings, cities and grid, and hydrogen.

Santander AM will be the portfolio manager of the fund. Banco Santander is expected to be an anchor investor, and EIT InnoEnergy is expected to co-invest in the new rounds of the start-ups and will continue bringing them added value services to de-risk and accelerate the business cases, leveraging its trusted innovation ecosystem.

This announcement follows an agreement in April 2022 between EIT InnoEnergy and Banco Santander, the world's leading provider of renewable energy project finance, to help accelerate the development of the EIT InnoEnergy portfolio of start-ups by encouraging investment, reducing the industry skills gap, and driving the development of creative solutions to support sustainable innovations.

Santander offers the full suite of financial services required by such companies. The bank has identified six technologies in which it aims to become a world-class advisor and financier to drive the energy transition, including green hydrogen, energy storage, clean fuels and renewable energy. It

also has proven corporate and retail banking expertise in the industrial and energy sectors, having mobilised €69 billion in green assets between 2019 and the first quarter of2022.

EIT InnoEnergy, which has three unicorns within its portfolio, has an aggregated need for €160 billion in extra financing over the next five years. In fact, four of the 300 companies in EIT InnoEnergy's portfolio have already worked successfully with Santander to accelerate their business cases by attracting strategic investors and obtaining financial resources for accelerated growth.

José M. Linares, senior executive vice-president Banco Santander and global head of Santander Corporate & Investment Banking (Santander CIB), stated: "We are delighted to collaborate with EIT InnoEnergy. Supporting innovation is critical if we are to meet our collective net zero targets, and Santander CIB is committed to playing our part. We've equipped ourselves to understand the technologies that will help us transition to net zero in order to deliver the advisory and capital markets solutions that energy transition companies need to grow and become industry leaders."

ELENA BOU
Innovation Director of EIT InnoEnergy

This new fund will complement and strengthen our existing innovation ecosystem and it will facilitate the rapid allocation of capital to accelerate time to market for game-changing climate tech innovations.

2.2 Consortium in **New York State** brings affordable, zero-emission micro-mobility to underserved communities

The New York State Energy Research and Development Authority (NYSERDA) awarded a partner consortium led by EIT InnoEnergy the opportunity to bring affordable and clean micro-mobility to five Rivertown communities in Westchester County, New York State.

Project MOVER – which stands for Moving Onto Vast E-micro-mobility Replication - aims to reduce household transportation costs and enhance connections to well-paid jobs, services and opportunities outside the immediate community. In November 2022, Project MOVER announced as part of its $85 million New York Clean Transportation Prizes Programme Electric Mobility Challenge that the EIT InnoEnergy-led consortium had secured a three-year grant of $7 million.

Under the initiative, the partners will deploy over 1,000 e-bikes, infrastructure and gear in a way that removes typical barriers the communities face with using shared micro-mobility offerings – such as the need to own a smartphone or a credit card. Starting in the Village of Ossining, the implementation will later be expanded to nearby Rivertown communities of the Town of Ossining, Croton-on-Hudson, Tarrytown, and Dobbs Ferry and aims to serve as a blueprint for communities across the state.

The project's focus on the needs of the community throughout the development of their plan ensures novel technologies can serve as tools for economic growth in underserved communities whilst also reducing emissions to fight climate change.

RIKA LEVIN
Mayor of Ossining, New York State

While Project MOVER will help us to decrease our greenhouse gas emissions and traffic congestion, I cannot stress enough how important it will be in our ongoing battle towards a more equitable community.

2.3 Joining forces with **Siemens Energy** to rapidly commercialise cleantech innovations

In October 2022, EIT InnoEnergy announced a partnership with Siemens Energy to commercialise and scale cleantech innovations. As part of the agreement, the companies will look for opportunities within EIT InnoEnergy's start-up portfolio to consider for Siemens Energy's venture clienting programme.

Focused on driving the energy transition, Siemens Energy has identified three vital focus areas – low or zero emission power generation, energy transport and storage and reduction of CO2 emissions in industrial processes. Its innovation strategy is directed along strategic fields to develop solutions that will deliver transformational growth and help against climate change.

Siemens Energy Ventures support this innovation strategy with programs to fast-track sustainable energy innovations to address critical needs of customers and deliver commercial value aligned to the strategic fields. While its venture building supports innovations from inside the company, the venture clienting programme gives selected external start-ups the opportunity for commercial pilots – with the goal of a rollout at scale thereafter. On top of that, Siemens Energy Ventures provides strategic investment to early and growth-stage start-ups.

VINOD PHILIP
Executive Board Member, Global Functions of Siemens Energy

To enable a just, fair and fast energy transition, partnerships, such as this one with EIT InnoEnergy, are key and an important part of our innovation strategy.

2.4 Launch of **BASQUEVOLT** to produce 10GWh of solid-state batteries by 2027

BASQUEVOLT, the Basque solid-state battery initiative, announced in the summer of 2022 that they will begin production of battery cells in 2027 with the aim of reaching a capacity of 10GWh. This is the main objective of BASQUEVOLT, in which the Basque Government, Iberdrola, CIE Automotive, Enagás, EIT InnoEnergy, and CIC energiGUNE all feature as founding shareholders.

Specifically, BASQUEVOLT aims to develop – in a sustainable way – the best materials and battery cells to enable the mass deployment of electric transport, stationary energy storage (including hybridisation with hydrogen-gas systems), and advanced portable devices.

The experience of the companies that form the initial group of investors ensures that BASQUEVOLT is in a highly competitive position in the battery race, where there are important opportunities for collaboration and which is key to making progress in the energy transition.

BASQUEVOLT plans to launch the first production line within four years, supported by an investment of more than €700 million, which will be able to generate more than 800 direct jobs.

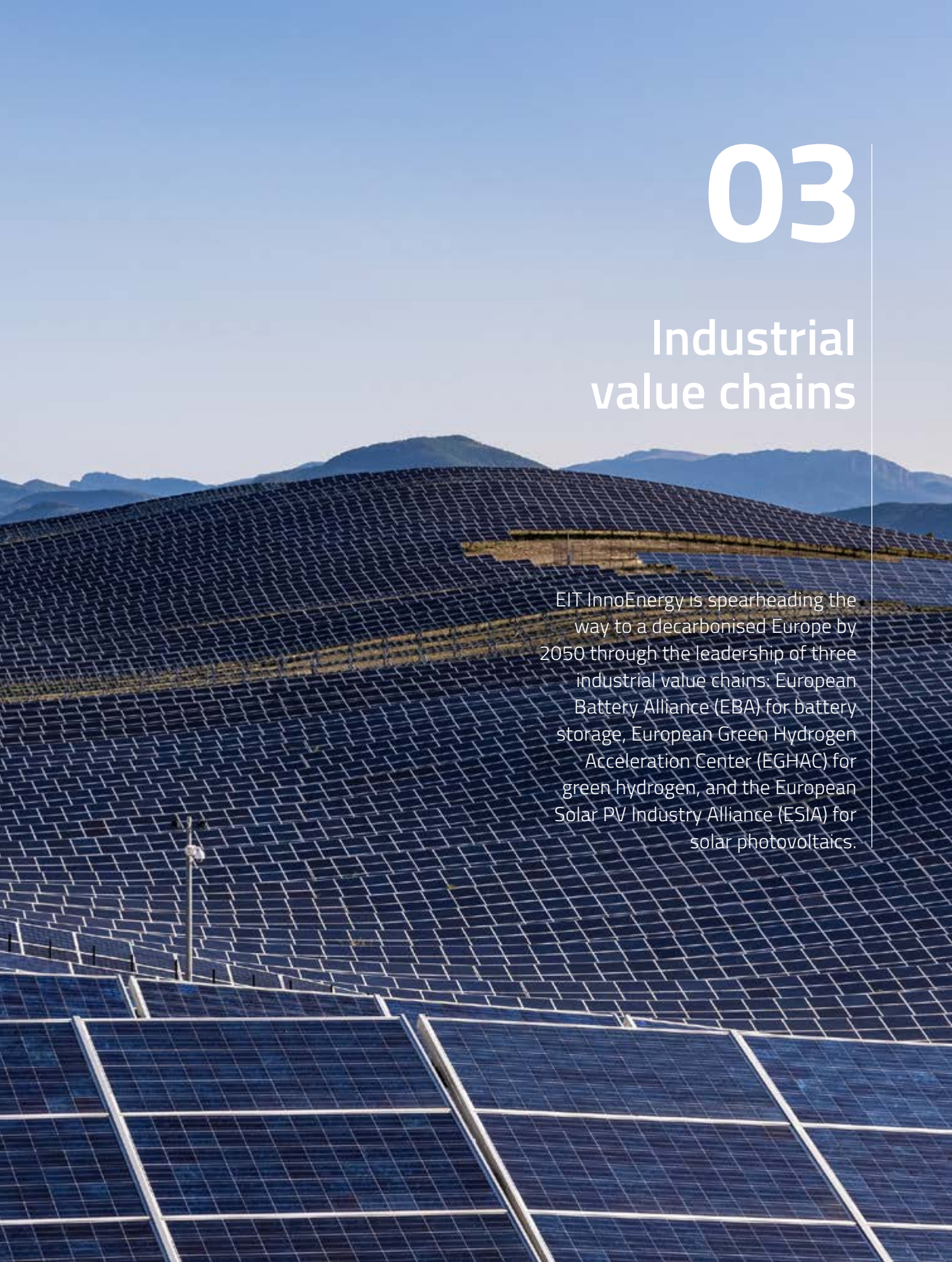
The consortium is aware that liquid electrolyte lithium batteries are reaching a state of maturity, and that the next technological breakthrough required to really unlock the true potential of energy storage must come from the solid state. The new technology will greatly exceed the energy density of current storage solutions. Thanks to its technological expertise, BASQUEVOLT aims to become the European leader in solid-state batteries.

NURIA GISBERT TREJO
General Manager of CIC EnergiGUNE

Europe is very strong when it comes to power electronics and applications, but cells and materials should also be manufactured in Europe so we reinforce the battery value chain.

TBB.2020 photo contest
Photo by: Eric Griess

TBB.2021 photo contest
"Les Mees solar farm"
Photo by: Lando Hass



03

Industrial value chains

EIT InnoEnergy is spearheading the way to a decarbonised Europe by 2050 through the leadership of three industrial value chains: European Battery Alliance (EBA) for battery storage, European Green Hydrogen Acceleration Center (EGHAC) for green hydrogen, and the European Solar PV Industry Alliance (ESIA) for solar photovoltaics.

3. Decarbonising Europe through industrial **value chains**

EIT InnoEnergy is spearheading the decarbonisation of Europe by leading industrial value chains in three strategic sectors: battery storage, green hydrogen and solar photovoltaics.

These industrial initiatives play a fundamental role in progressing the European Commissions' updated industrial strategy, which forges a pathway for industry to become more sustainable, digital, competitive and resilient. The development of these industrial strands are being driven through three EIT InnoEnergy-supported initiatives – the European Battery Alliance; the European Green Hydrogen Acceleration Center; and the European Solar PV Alliance.

DEVELOPING EUROPE'S BATTERY INDUSTRY

In Europe, the future of energy is electric. However, in the massive migration from fossil to electric, the availability of capable batteries is a major issue. The need for efficient batteries – for transport, power and industrial applications – is growing fast and at an increasing pace.

The European Commission launched the European Battery Alliance in October 2017 to address the industrial challenge to be at the forefront of an annual market value estimated at €250 billion from 2025 onwards. For Europe, the establishment of a complete domestic battery value chain is imperative for a clean energy transition and a competitive industry.

The industrial development programme of the European Battery Alliance, the EBA250, is managed by EIT InnoEnergy. Today, EBA250 is a project-driven community which brings together more than 800 industrial and innovation actors, from mining to recycling, with our common objective to build a strong and competitive European battery industry.

As Ursula Von Der Leyen, President of the European Commission, has stated: "Batteries are strategic but we still rely on batteries that are entirely or partly made abroad. We decided to join forces with Member States and the private sector. And so, the EBA was born. Soon the most innovative batteries will be made in Europe."

DEVELOPING HYDROGEN INITIATIVES TO DECARBONISE HARD-TO-ABATE INDUSTRIAL VALUE CHAINS

Through the European Green Hydrogen Acceleration Center (EHGAC), the intention is to create industrial players which we help to de-risk and accelerate their green hydrogen, ammonia, methanol and aviation fuel projects. We do this through early-stage investment and acceleration services which we deliver in collaboration with our ecosystem. The EGHAC is all about new company building

THIERRY BRETON
European Commissioner for Internal Market

The real industrial revolution is starting now – provided we make the right investments in key technologies and set the right framework conditions.

400 GWh
domestic EU cell production per year across the entire value chain by 2025

EUROPEAN BATTERY ALLIANCE
EBA250

€250bn/year
new market potential by 2025

1,200 TWh
of EU final energy based on green H_2 by 2025

EGHAC
European Green Hydrogen Acceleration Center

€100bn/year
new market potential by 2025

30GW
annual solar PV manufacturing capacity by 2025

ESIA
European Solar PV Industry Alliance

€40bn/year
front-loaded investment in PV production capacity required

in a few designated value chains: steel, chemicals, fertiliser, aviation, maritime shipping These companies will kick start the uptake of green hydrogen and can be replicated across Europe to increase the impact on greenhouse gas reduction and the creation of jobs.

In addition, we support green hydrogen projects and start-ups by assessing their business case, perform a team assessment and finally introduce them to a tailor-made advisory committee with the objective to become an active investor and to accelerate and de-risk these projects as well.

A huge milestone in 2022 for EGHAC has been the launch of GravitHy, a future market leader in green steel. The fully sustainable iron and steel company will support the growing demand for zero carbon steel, whilst contributing to Europe's "Fit for 55" package ambitions to decarbonise hard-to-abate industries. GravitHy, which plans to mobilise 2,2B€ worth of investment at commissioning, will build its first plant in the area of Fos sur Mer, Southern France.

SHINING A LIGHT ON THE EUROPEAN SOLAR PV INDUSTRY ALLIANCE

Launched by the European Commission and led by EIT InnoEnergy, the European Solar PV Industry Alliance (ESIA) facilitates innovation-led expansion of a resilient industrial solar value chain in the EU, in particular in the PV manufacturing sector. ESIA supports the growth of a European industry that is developing and commercialising breakthrough technologies along the whole value chain, leading to more innovative, efficient, circular and sustainable products, and making the EU's climate and energy objectives more attainable.

Scaling up the production of solar PV panels and value chain components in Europe will contribute to the EU's competitiveness and job creation and complement import diversification strategies to better protect against risks of supply disruption. ESIA aims to create the right conditions for investment in large-scale PV manufacturing capacity in Europe, across the solar PV value chain, by de-risking and accelerating industrial projects, by supporting the diversification efforts and by further promoting the competitive technological advantages.

ESIA and its members are contributing to the massive, rapid deployment of renewable energy in Europe and the EU solar energy strategy, which aims to install over 320 GW of solar PV by 2025, more than doubling the 2020 output, and almost 600 GW by 2030.

By supporting large industrial projects through these three initiatives, EIT InnoEnergy is directly impacting the energy trilemma: reducing the cost of energy, limiting greenhouse emissions and increasing availability and security – all of which ultimately play a fundamental role in realising the goal of a carbon neutral Europe by 2050.

BUILDING A EUROPEAN BATTERY INDUSTRY

400 GWh
domestic EU cell production
per year across the entire value chain by 2025

€250bn/year
new market potential
by 2025

A EUROPEAN VALUE CHAIN

Our goal:
Build a strong pan-European battery industry to capture a new market worth €250b/year/ year in 2025.

A UNIQUE OPEN ECOSYSTEM

An independent meeting place:
More than 800 members throughout the value chain have joined EBA250. The members come from the industrial, academic and financial worlds, from mining to recycling.

PROJECT-DRIVEN

Our actions' DNA:
Competitiveness, sustainability, significant impact, objective focus, urgency, concrete, project-driven, sharing, investment.

EUROPEAN BATTERY ALLIANCE | EBA250

eba250.com

3.1.1 Developing a domestic battery **raw materials** supply chain in Europe

Europe can proudly and accurately call itself a climate leader in a number of spheres and the 'Fit for 55' package is the latest boost to Europe's green ambitions. In June 2022, the EU Council voted to increase CO_2 reduction targets for new cars and new vans (55% instead of 50% for cars and 50% for vans by 2030), and also stood firm on the ICE ban in 2035. Consequently, recent forecasts point to an 80% market share for electric vehicles (EVs) in Europe by 2030.

The battery industry is responding to these projections. In just a few years, the European Battery Alliance (EBA), managed by EIT InnoEnergy, has turned Europe into a hotspot for investments along the entire battery value chain a great achievement.

Northvolt, Europe's 'first homegrown gigafactory' and an EIT InnoEnergy investee, only began construction in 2019 and recently completed its first delivery to a major car manufacturer. Our estimates suggest it will be joined by a further 40 additional gigafactories by 2035.

The recent war in Ukraine, however, has shown the fragility of global supply chains and the risks of relying purely on imports. Russia accounted for 7.2% of the global supply of nickel in 2021 – an important element in battery manufacturing.

And imports make it difficult for European battery makers to guarantee that the materials they use have been strictly responsibly sourced. These imports from distant origin countries also add significant shipping-related emissions.

Though complete self-sufficiency is unrealistic, developing our own domestic resources and strengthening our domestic battery materials supply chain will reduce risk.

Some of the most important materials for today's battery compositions are lithium, manganese, graphite, nickel, and cobalt. Fortunately, there are sources for all within Europe's own borders.

The EU has several promising lithium projects under development, the most important element for current battery technologies. In Germany, Vulcan Energy has pioneered a new lithium extraction technique. And there are currently about ten potentially viable lithium projects under development in Europe from Finland in the north, through Germany, Austria, and Czechia in central Europe, to Spain and Portugal in the south.

ILKA VON DALWIGK
Policy Manager
of EIT InnoEnergy

We can make Europe a true leader in battery technology and the energy transition.

A positive example of producing valuable raw materials from a secondary source is the Chvaletice Manganese Project in Czechia – part financed and supported by EIT InnoEnergy. The innovative project is reprocessing the tailings of a previously decommissioned mine to create a source of high-quality manganese. As for nickel, there are resources to be found in the Nordics, including the EU's largest nickel mine operated by Terrafame in Finland. Cobalt is often co-located with nickel, and a recent study identified 104 such deposits for cobalt exploration, including 79 in Norway, Finland, and Sweden.

Graphite is another important ingredient for battery production, being the key material for anodes. There are two promising projects that intend to mine graphite and produce battery anode material, one in Norway and another one in Sweden.

Lack of public acceptance, though, can be a particularly challenging bottleneck for securing EU production of raw materials. Only in December 2021, thousands of Serbian protestors took to the streets of Belgrade to push back against Rio Tinto's planned Jadar lithium project and Zijin Mining's Čukaru Peki copper and gold mine, citing concern for nature. Improving the social, ethical, and environmental sustainability of the raw materials sector will be necessary to develop a battery supply chain in Europe.

One major challenge to developing raw materials in the EU is finance, including a lack of public funding. Here, Europe needs to develop an upgraded toolbox to support and de-risk investments in raw and processed battery materials.

One way to ease the pressure on the European battery raw materials supply chain, however, is to use materials more efficiently or change the materials the batteries use. Semi-solid or solid-state batteries, as developed by the Spanish Basquevolt initiative, will enable more energy dense batteries, while the Swedish company, Altris, is developing batteries with a chemistry based on sodium. And the COBRA (CObalt-free Batteries for FutuRe Automotive Applications) project is using Horizon 2020 funds to research and develop a next generation of cobalt-free batteries.

Another development is already bearing fruit – recycling and recovering battery materials, in line with the EU's emphasis on the circular economy.

There are multiple ways to approach battery recycling. First, the batteries themselves can be reused for other applications. For example, Enel Group has employed 90 used Nissan Leaf batteries in an energy storage facility in Melilla, Spain, finding a 'second life' use for the batteries themselves. Then, there is the option to recover and recycle the component materials. This is a multi-stage process which is attracting major interest from around Europe.

Perhaps the biggest hurdle to come, however, is that of public perception of developing mines. We must emphasise the benefits of a strengthened European mining sector. Direct and indirect employment should be a powerful argument at a time of global economic uncertainty, especially for communities that once relied on mining.

Making the case – uncompromising on environmental and social standards but unambiguous about mining's potential to help Europe -is essential to unlocking a European battery raw material supply chain. If we can combine that with a strong recycling industry and research and development into novel battery chemistries, then we can make Europe a true leader in battery technology and the energy transition.

3.1.2 **European Commission** grants EIT InnoEnergy €10 million to bridge EU skills gap across battery value chain

The European Commission is set to grant EIT InnoEnergy €10 million in funding towards the InnoEnergy Skills Institute (formerly known as the EBA Academy) following the signing of a Letter of Intent between the European Institute of Innovation & Technology (EIT) and EIT InnoEnergy. The InnoEnergy Skills Institute is a flagship programme designed to reskill and upskill the workforce.

The news is the latest marker in the European Commission's commitment to continued investment into progressive sustainability that ensure Europe maintains its leading role in driving the energy transition as e-mobility dramatically increases in scale. This is underlined by growing projects across the European battery value chain requiring approximately 800,000 workers to be trained, upskilled, or reskilled by 2025 to meet demand.

The InnoEnergy Skills Institute provides an education and training ecosystem for businesses, convening the knowledge and experience of EIT InnoEnergy's researchers, entrepreneurs, businesses, thought leaders, and key players from 18 different countries into a single, comprehensive learning service offering. The grant will accelerate its expansion and outreach to provide scalable access to learning and development, from augmented reality programmes and online educational materials, to in-person bespoke workshops.

The signing of the Letter of Intent for the grant between Diego Pavia, CEO of EIT InnoEnergy and Martin Kern, Director of the EIT, took place in the presence of Maroš Šefčovič, European Commission Vice-President for Interinstitutional Relations and Foresight; Nicolas Schmit, European Commissioner for Jobs and Social Rights; and Thierry Breton, European Commissioner for Internal Market.

Three EU Member States, notably France, Spain, and Hungary, have already expressed their intention to collaboratively roll out the InnoEnergy Skills Institute's high-quality training programmes.

MAROŠ ŠEFČOVIČ
Vice-President of the European Commission for Interinstitutional Relations

By 2030, we should be manufacturing enough batteries each year to power some 11 million electric cars, moving full steam ahead towards strategic autonomy in this crucial sector. But maintaining this European battery success story depends on our ability to face the most pressing challenges – critical raw materials and skills – head on, with a more systematic approach needed.

3.1.3 **Global partnerships** to upskill and grow the e-mobility and battery ecosystems

From developing initiatives and alliances to bridging the skills gap, EIT InnoEnergy spent 2022 working with companies, and educational and technical institutes in its efforts to power the green transition. Detailed below are some of the exciting activities that EIT InnoEnergy was involved in during the year.

THE AUTOMOTIVE SKILLS ALLIANCE AND INNOENERGY SKILLS INSTITUTE

The Automotive Skills Alliance (ASA) and the InnoEnergy Skills Institute signed a Memorandum of Understanding in November 2022 to form a strategic partnership to upskill and provide additional training to the current mobility and battery industry to meet the demands of the growing sector.

The partnership will create a single pan-European framework to enable upskilling and reskilling for the automotive labour force across the entire mobility sector and battery value chain. It will provide an independent platform to facilitate contacts between industry, education providers, regions, policy makers, and other relevant stakeholders to speed up the green and digital transition.

ROMANIA COMMITS TO THE TRAINING OF 20,000 WORKERS

Earlier in the year, Romania's Ministry of Economy and the Ministry of Education signed a Memorandum of Understanding with EIT InnoEnergy to accelerate Romania's involvement in the European battery value chain through several initiatives coordinated by EIT InnoEnergy.

Romania and EIT InnoEnergy announced in June 2022 that they will work together to develop and implement a national battery strategy, perfectly aligned to the needs and opportunities of the European value chain. It will establish and activate the Romanian battery ecosystem, promoting its accelerated development. To overcome the existing skills gap in the battery sector, the MoU outlines a commitment to create a new training and education network that will upskill or retrain around 20,000 people in this field over the next four years.

EV JOBS ACADEMY WILL TRAIN 700 STUDENTS IN MICHIGAN

EIT InnoEnergy's collaborations are not just restricted to Europe, demonstrated by its partnership with the Southeast Michigan Community Alliance (SEMCA) to establish and expand training programmes for the Michigan Electric Vehicles Jobs Academy (EV Jobs Academy) for a five-year period. The EV Jobs Academy

OANA PENU
Director of the InnoEnergy Skills Institute

Industries central to the energy transition will see a dramatic uplift in the need for new skills and expertise to drive progress. In fact, in the battery workforce alone, more than 700 new job types will come into play as required skillsets highly diversify. So, it is not a surprise that 71% of CEOs already cite skills shortages as their most significant business challenge. We're dedicated to supporting green innovations of the future and ensuring there is a trained workforce to achieve climate goals.

is an employer-led collaborative that aims to secure a highly skilled talent pipeline by strengthening the relationship between education and the automotive industry.

Under the programme announced in January 2022, the EV Jobs Academy will initially train approximately 700 individuals in advanced vehicle technologies such as connected, autonomous, lightweight, hybrid, electric, and alternative fuel. Its goal is to catalogue and respond to advanced occupational skills needs of the automotive mobility and electrification industry, align education and training programmes with the most critical workforce needs, and facilitate recruitment, placement, and retention solutions to fill talent gaps.

EIT INNOENERGY AND ATEC ESTABLISH TRAINING PARTNERSHIP IN PORTUGAL

Meanwhile, EIT InnoEnergy and ATEC announced in June 2022 that they will work together to develop the training offering available to the battery sector in the Portuguese market through the InnoEnergy Skills Institute. The two entities signed a cooperation agreement to support workers' requalification in the battery sector by offering training to develop the necessary skills in the battery value chain in Portugal.

The European Battery Alliance, through the InnoEnergy Skills Institute, aims to educate and train human capital for the energy transition, with a special focus on the battery value chain in Europe. The InnoEnergy Skills Institute covers the entire battery value chain, from raw materials to applications and recycling, with more than 30 different learning packages. ATEC, with its extensive experience in training assets, will develop the InnoEnergy Skills Institute's battery training offering for the Portuguese market.

AMZ SAXONY IS THE FIRST GERMAN PARTNER FOR THE INNOENERGY SKILLS INSTITUTE

Since 1999, the network of automotive suppliers in Saxony - AMZ - has been contributing to the development of Saxony as an automotive manufacturing location. With the support of EIT InnoEnergy, in April 2022, AMZ became the first German partner and provider for the digital and hybrid education offerings of the InnoEnergy Skills Institute.

Following the announcement, AMZ will offer various InnoEnergy Skills Institute learning modules via its learning platform. The goal is to transfer as much knowledge as possible in the short-term on topics including energy storage, the different battery technologies, battery management and their integration into energy grids, providing the training for the specialists of tomorrow. Possessing an in-depth understanding of the battery value chain will be fundamentally important to the future of the

JOÃO CARLOS COSTA
General Director of ATEC Training Academy

This partnership allows us to provide the national market with a high-quality training offer, in a fast-growing sector, giving continuity to the several initiatives with which ATEC has been collaborating at a national and European level.

German and Saxon automotive industry.

TÜV SÜD AND EIT INNOENERGY TO COMBAT GERMAN BATTERY SKILLS SHORTAGE

According to a forecast by the National Platform for the Future of Mobility, there will be a shortage of around 65,000 skilled workers in the country for battery-related jobs by 2030 if countermeasures are not taken in time. To meet this challenge, TÜV SÜD Akademie, one of the leading providers of vocational training and continuing education in German-speaking countries, confirmed in October 2022 that it will include numerous training contents of the InnoEnergy Skills Institute in its course programme, market and conduct them.

The InnoEnergy Skills Institute learning platform covers the entire range of topics across the battery value chain. In cooperation with national education partners such as the TÜV SÜD Academy, hundreds of thousands of specialists are to be qualified by 2025.

SKILLS INSTITUTE SUPPORTS POLAND'S ENERGY STORAGE SECTOR

The Polish Alternative Fuels Association (PSPA) and EIT InnoEnergy confirmed in April 2022 that they had joined forces to establish the InnoEnergy Skills Institute in Poland, which will provide training for future

MACIEJ MAZUR
Managing Director of the Polish Alternative Fuels Association

If Poland wants to maintain its leading position in this key area for new mobility it must have qualified personnel. PSPA became involved in the InnoEnergy Skills Institute to meet the expectations of potential investors. We believe that this is an initiative that will contribute to strengthening the domestic value chain of the battery sector.

PER STROMHAUG
Regional Economic Competitiveness Officer for New Energy New York

This agreement will provide an excellent boost to upskilling local members of the battery manufacturing workforce, realising our ambition to grow a competitive battery development and manufacturing ecosystem.

JÖRG SCHEMAT
Management spokesman of TÜV SÜD Akademie

EIT InnoEnergy has built up enormous battery expertise over many years and poured it into high-quality educational content. And we have excellent levers and established formats to bring this to the broader learning community.

experts in the battery sector. The programme is aimed at upgrading the skills of employees working in the energy storage industry and related fields.

PSPA's involvement in the project is intended to attract potential investors and contribute to strengthening the domestic value chain of the battery sector. The programme was developed to provide a comprehensive educational service offering, combining the substantive knowledge and practical experience of researchers, entrepreneurs, companies, thought leaders, and key players from many countries.

EIT INNOENERGY PARTNERS WITH NENY TO UPSKILL THE BATTERY MANUFACTURING AND SUPPLY CHAIN WORKFORCE IN UPSTATE NEW YORK

EIT InnoEnergy announced in February 2023 details of a US$1.29 million three-year deal to support New Energy New York (NENY) to upskill the battery manufacturing and supply chain workforce in Upstate New York.

With the North American electric vehicle battery market set to reach US$23 billion in value by 2027, NENY - an initiative led by Binghamton University, State University of New York, and comprising a coalition of academic, non-profit, and government organisations in collaboration with industry - aims at growing a competitive battery development and manufacturing ecosystem in Upstate New York, including a well-trained workforce.

Through the partnership, NENY will use the InnoEnergy Skills Institute, which is aimed at training current and prospective members of the battery workforce and includes curriculum, train-the-trainer services, a learning management system, and insights into delivery methods.

SUSTAINABLE MOBILITY SOLUTIONS AND EIT INNOENERGY ENTER TRAINING PARTNERSHIP

In another important move to deliver world-class training in battery technology Sustainable Mobility Solutions, the innovation unit of SAE International, announced in February 2022 a partnership with EIT InnoEnergy. The joint programme, titled 'The SAE/InnoEnergy Battery Institute', consists of 32 courses and is one of the most complete online and blended learning resources for all things battery related.

The complete programme includes more than 400 hours of training and covers the entire battery lifecycle including raw materials, cell manufacturing, battery packs, applications/ integration, and recycling.

> **MICHAEL PARAS**
> Manager of product and business development and strategic partnerships of Sustainable Mobility Solutions
>
> The InnoEnergy Skills Institute consists of courses that provide essential and advanced understanding of every aspect of this field. It is a must for OEMs, suppliers, those who are entering the world of EVs and those who want to retrain to participate in it.

EUROPEAN GREEN HYDROGEN ACCELERATION CENTER

1,200 TWh
of EU final energy based on green H2 by 2025

€100bn/year
new market potential by 2025

500,000
extra jobs

By 2025 the EGHAC wants to build a €100 billion a year green hydrogen economy. This will create up to 500,000 direct and indirect jobs accross the complete value chain. The ambition for yearly demand for useful green hydrogen based energy will be 1200TwH.

EGHAC
European Green Hydrogen Acceleration Center

eghac.com

3.2.1 European Commission partners with **European Green Hydrogen Acceleration Center** to accelerate and de-risk green hydrogen projects

In its REPowerEU Communication on 8 March 2022, the European Commission underlined the strategic importance of green hydrogen by doubling the EU's green hydrogen production target previously set out in the European Hydrogen Strategy to over 10 million tonnes of domestic production.

Meeting this ambition depends on innovative hydrogen projects reaching commercial scale earlier and with bigger impact. In this context, the European Commission's DG Grow started a partnership with EIT InnoEnergy's European Green Hydrogen Acceleration Center. Selected projects have benefited from targeted de-risking and acceleration services and have been brought in touch with investors.

The way to materialize synergies The European Clean Hydrogen Alliance (ECHA) was set up in July 2020 to support the large-scale deployment of clean hydrogen technologies by 2030. The alliance aims to promote investments and stimulate clean hydrogen production and use. The European Commission and EIT InnoEnergy had an initial webinar on April 7th and a 2nd one on the 20th of April. The webinar introduced EIT InnoEnergy's European Green Hydrogen Acceleration Center and its support activities to project holders, the partnership put in place with the European Commission, the services offered and the project selection process. Promoters that had a project in the European Clean Hydrogen Alliance pipeline could start the process by answering a questionnaire looking at basic project information and seven key criteria (e.g. colour of H2, SOP date, size etc.).

The team at EIT InnoEnergy's European Green Hydrogen Acceleration Center has assessed the information and conducted due diligence on the selected projects. Selected projects will be eligible for possible investment by EIT InnoEnergy and when selected for detailed curation along key business dimensions (such as access to market, sales and growth, supply chain and industrialization, value chain and project ecosystem, technology enhancement, governance strategy, regulation, access to human capital, access to finance). Furthermore these projects have been introduced to a wider audience of financial players. Given the success of the 2022 edition the cooperation is extended for 2023 and open for all hydrogen related projects and technology innovations.

MARGRETHE VESTAGER
Executive Vice President of the European Commission

Hydrogen has a huge potential going forward. It is an indispensable component for the diversification of energy sources and the green transition.

3.2.2 New investment in **pHYnix,** the European renewable hydrogen production, promotion and distribution company

EIT InnoEnergy and Groupe IDEC revealed in May 2022 that they have taken a stake in pHYnix, the first commercial-scale green hydrogen production facility in Spain and one of the largest electrolysis projects in Europe, pHYnix believes it will strengthen its position in the European green hydrogen market by bringing in these two new and relevant investors.

EIT InnoEnergy's support for the project is being provided by European Green Hydrogen Acceleration Center (EGHAC), aided by Breakthrough Energy. The EGHAC focuses on decarbonising hard to abate industries (steel, fertilisers, chemicals, and heavy mobility) by setting up green hydrogen industrial players as well as supporting relevant projects.

The second investor, GROUPE IDEC, is a major player in all segments of the real estate market (development, promotion, investment, energy, engineering), carries out 700,000 m² of projects each year in France and abroad and has a land bank of nearly 1,000 hectares. The company places the energy transition at the heart of its development strategy by federating a number of innovative start-ups linked to green energy.

In addition to the capital increase, EIT InnoEnergy and pHYnix have entered into a strategic collaboration agreement in areas such as building key supply chain partnerships, support with business development and ensuring access to financing.

JEAN-PIERRE RICHE
President of pHYnix

This investment is a boost to our business plan and will enable pHYnix to support the territorial deployment of renewable hydrogen through sustainable real estate projects and major logistics platforms.


H2 HYDROGEN POWER
CLEAN ENERGY OF THE FUTURE
H2 HYDROGEN POWER
CLEAN ENERGY OF THE FUTURE

EUROPEAN SOLAR PV INDUSTRY ALLIANCE

30GW
annual solar PV manufacturing capacity by 2025

€40bn/year
front-loaded investment in PV production capacity required

ESIA
European Solar PV Industry Alliance

solaralliance.eu

3.3.1 **European Solar PV Industry Alliance** launched and co-led by EIT InnoEnergy

In December 2022, the European Commission launched the European Solar PV Industry Alliance (ESIA) and appointed EIT InnoEnergy to lead the delivery of the group's strategic action plan.

EIT InnoEnergy was appointed by the European Commission as the Secretariat to the ESIA and is joined by SolarPower Europe and the European Solar Manufacturing Council on the alliance's steering committee. At the launch event, the ESIA statement from leaders of the European PV industry committed to working jointly to accelerate and de-risk investments across the solar PV value chain.

To deliver the EU Solar Strategy objectives, EIT InnoEnergy will lead the Alliance in its ambitions to re-develop, de-risk and accelerate the PV industry in Europe across all segments of the value chain to create its competitive position in the context of booming demand for solar PV in Europe and globally.

The targets set by the Alliance, together with the European Commission, are to develop an industry to supply an annual capacity of 30 GW by 2025, adding 60 billion Euros of new GDP every year in Europe and creating more than 400,000 new jobs (direct and indirect).

To achieve these ambitions, the Alliance will follow a seven-pronged strategic action plan covering the key conditions for investments in PV manufacturing capacities in Europe:

- Identify manufacturing scale up bottlenecks and provide recommendations
- Facilitate access to finance, including establishing commercialisation pathways for solar PV manufacturing
- Provide framework for cooperation actions for development and uptake
- International partnerships and global supply chain resilience
- Supporting the solar PV research and innovation base
- Promoting circularity and sustainability measures
- Upskilling and nurturing of skills through partnerships and training programmes

KADRI SIMSON
European Commissioner for Energy

The only way is up for the industry; technologies will continue to grow as demand for solar energy increases. That represents an opportunity on the supply side, and the EU has the perfect ingredients to seize it.

The first priority actions of the ESIA include:

1. Mobilising public and private finance for European solar PV manufacturing projects to scale up capacity, making best use of all existing and new European financing instruments, notably: the Innovation Fund clean technology manufacturing window in the current large-scale call, the REPowerEU chapter in the national recovery and resilience plans, the EIB contribution to expanding the EU's clean energy technology manufacturing capacity in the context of REPowerEU.

2. Ensuring a sustainable level playing field and stimulating demand for competitive, efficient and sustainable PV products and systems.

3. Working on the swift implementation of ecodesign requirements for PV systems and products and on public procurement actions.

4. Anticipating the skills requirements of this new industry with the start of the European Solar PV Industry Alliance Academy.

As the Secretariat of the Alliance, EIT InnoEnergy will facilitate business and industrial cooperation across the solar PV value-chain, lead the implementation of the strategic industrial action plan, manage membership, gather and disseminate market intelligence, manage communications and run the Alliance's 'Business and Investment Platform'.

SolarPower Europe and the European Solar Manufacturing Council will join EIT InnoEnergy on the Alliance's steering committee as recognition of their role as key industry stakeholders. Together, the steering committee will oversee the delivery of the Alliance's work and the European Solar PV Forum, a large, annual public event that will facilitate high-level policy and political discussions.

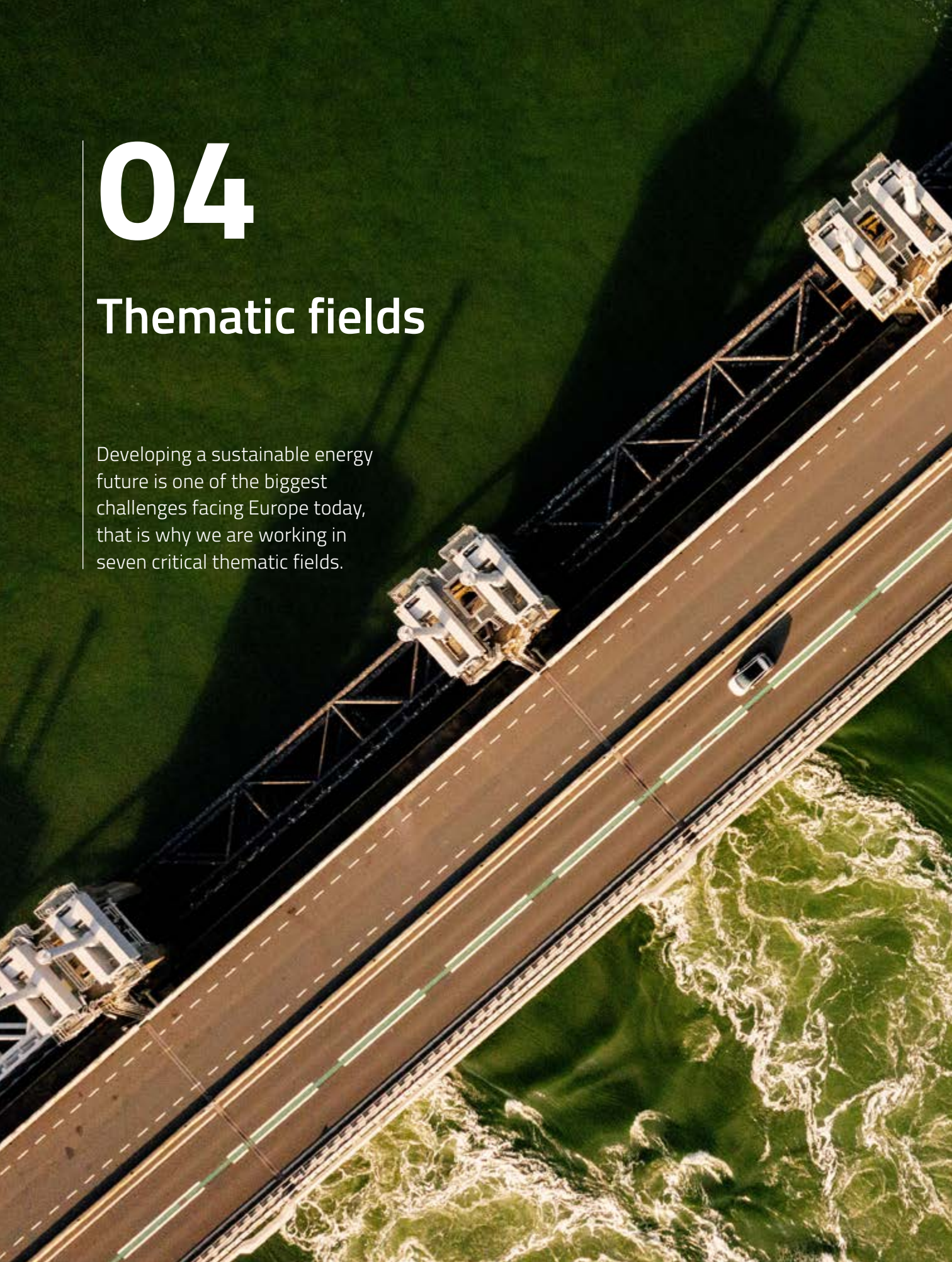
TBB.2019 photo contest
"Road to Sustainability"
Photo by: Mario Bejagan Cardenas

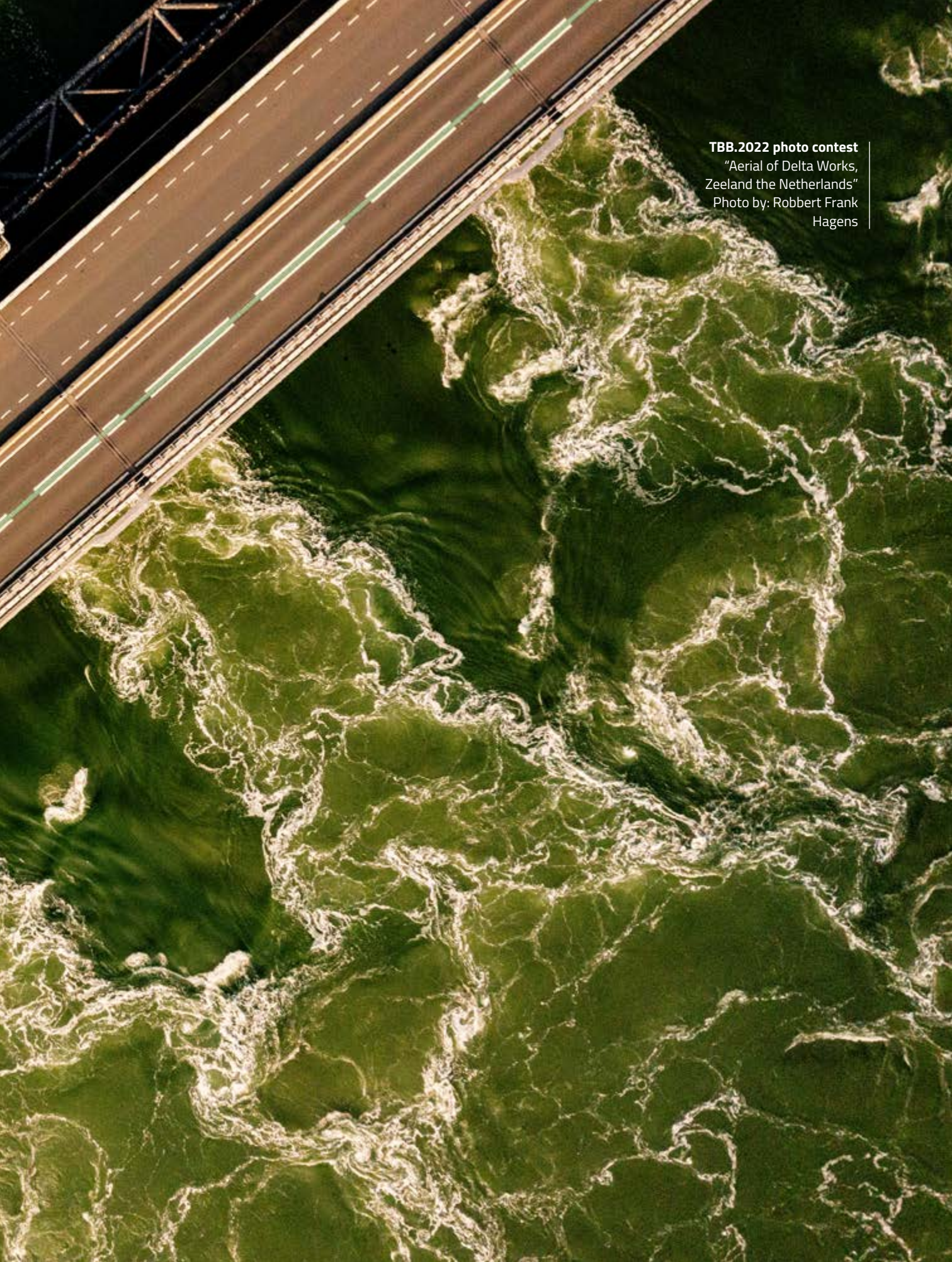
TBB.2018 photo contest
"Solar Sunset"
Photo by: Joan Sullivan

04

Thematic fields

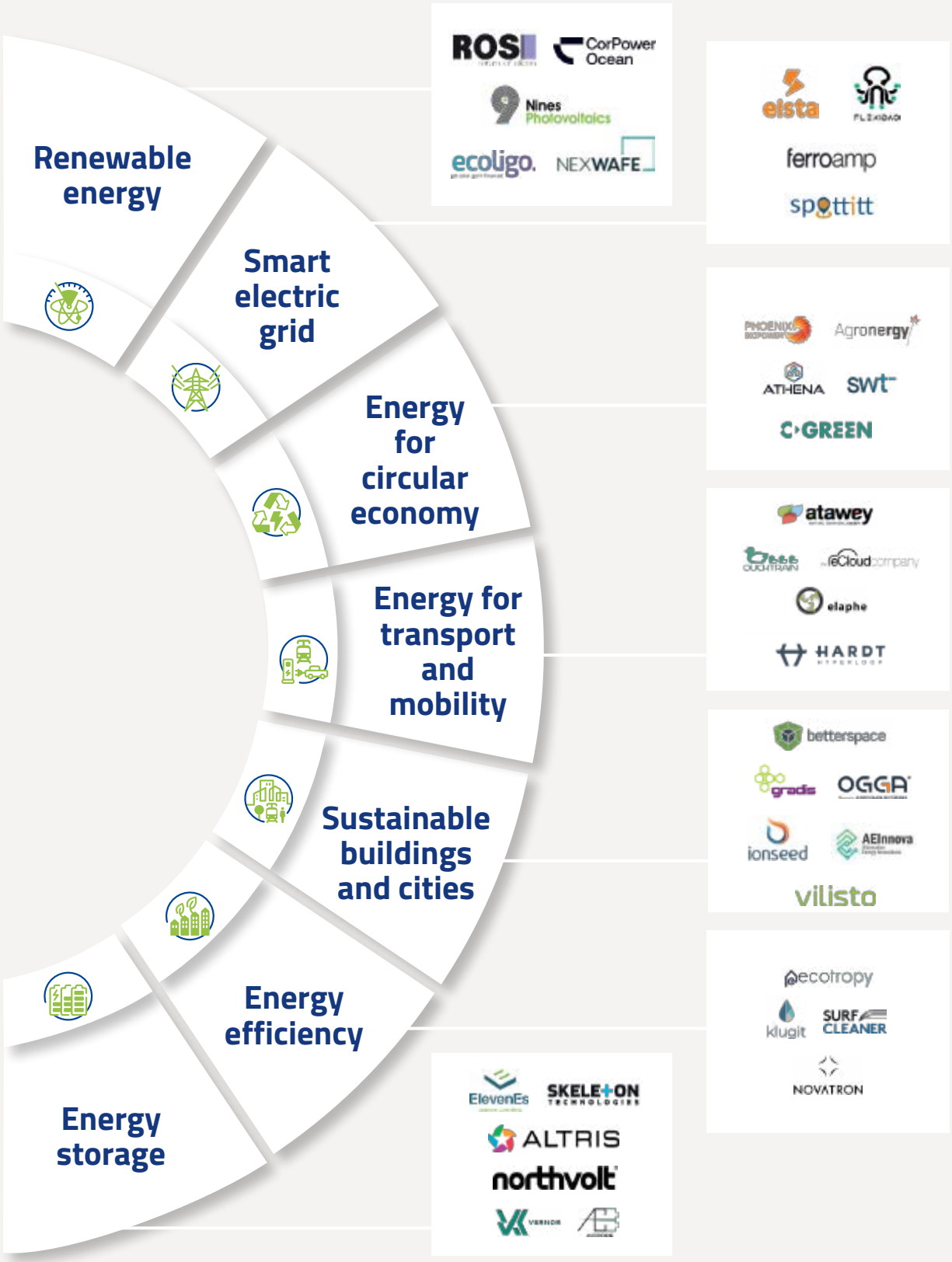
Developing a sustainable energy future is one of the biggest challenges facing Europe today, that is why we are working in seven critical thematic fields.





TBB.2022 photo contest
"Aerial of Delta Works, Zeeland the Netherlands"
Photo by: Robbert Frank Hagens

EXAMPLES OF PORTFOLIO COMPANIES IN THEMATIC FIELDS



4.1 Renewable energy

Renewable energy sources play an essential role in reducing dependence on fossil fuels and creating energy autonomy. We are encouraging innovation that:

- improves the production, penetration and profitability of renewable energy, continues to develop all forms of solar technology,
- improves reliability, accuracy and integration of onshore and offshore wind,
- increases performance, lifespan and scalability of wave power.

Javier Sanz
Thematic Field Leader, Renewable Energy

Scope of the investment field for EIT InnoEnergy

Improves the production, penetration and profitability of renewable energy

Onshore and offshore wind

Wave powered technology

Solar technology

THEMATIC FIELD SUCCESS CASE

CorPower Ocean

CHALLENGE

Commercially available wave energy resource constitutes ~500GW, which covers about 10% of global electricity consumption. Wave energy is a balancing source that enables a high penetration of wind and solar at the lowest electricity system cost.

SOLUTION

CorPower Wave Energy Converter (WEC) can produce five times more electricity per tonne of the device (>10MWh/ tonne) than any other known wave technology. It combines storm survivability with strongly amplified power capture in regular sea conditions. Obtaining large amounts of electricity from a small device significantly reduces capital expenses (CAPEX). The compact lightweight devices are also less costly to transport, install and service, bringing down operating expenses (OPEX).

€65M Funds raised	**355** Jobs created
2.8M MWh Clean energy generated	**2.6M** Emissions avoided tCO_2e

PATRICK MOLLER
CEO of CorPower

EIT InnoEnergy supported CorPower Ocean from first idea to becoming a leading player in the marine energy with commercial scale product demonstration. Their wide range of added value services such as industrialisation, IP, access to talent, access to market and finance, helps accelerate market adoption of a new cutting-edge renewable technology.

4.2 Smart electric grid

The electricity grid is increasingly becoming a critical part of the transition to a sustainable energy system. Increased use, intermittent generation sources, and new regulations put strain on the system. Therefore, we are encouraging new solutions that:

- enable the hosting of new services, technologies and business models,
- enable information, communication and analytic capabilities on a large scale,
- support enhanced cyber-security and critical infrastructure protection.

Johan Söderbom
Thematic Field Leader, Energy Storage & Smart Grids

Scope of the investment field for EIT InnoEnergy

Smart electric grid infrastructure systems and services

Utility-level integration and scaling

Grid edge technology and energy sharing solutions

Power system cyber security and infrastructure protection

THEMATIC FIELD SUCCESS CASE

TOK|wise

CHALLENGE

Energy management platforms face challenges in sustaining renewable growth in extreme market dynamics. Acute price volatility, increased cost and imbalance in the mix require new capabilities in approaching energy markets. Integration of storage batteries is also an evolving need.

SOLUTION

TokWise is an innovative solution aimed at maximising the return of a renewable portfolio. It helps energy producers shift from capacity focus to obtain the highest margin per MWh. Combining big data and advanced analytics, TokWise offers an SaaS solution that integrates physical assets on the energy markets with automated data management and improved forecasting. Commercial optimisation enhances energy trading by calculating the optimal position on the spot market to secure the highest return.

2.7M
Emissions avoided tCO_2e

45
Jobs created

1,500
RES Power Plants

1.2 TWh
Managed by our platform

KRASIMIR KOLEV
CEO of Tokwise

EIT InnoEnergy is a key partner in our journey. We are privileged to be part of the biggest pan-european network for sustainable energy and to get exposure to market leading experts, companies and investors that support our mission.

4.3 Energy for circular economy

The Energy for Circular Economy thematic field focuses on conversion processes and complete conversion routes from fossil, biogenic and waste resources to final energy carriers and chemicals.

The thematic field scope outline for the Energy for Circular Economy:

- feedstock sourcing technologies,
- energy conversion technologies,
- smart grids for energy carriers – logistics, transportation and distribution,
- smart heat grids,
- air quality and sustainability of conventional energy sources,
- decommissioning technologies.

Marcin Lewenstein
Thematic Field Leader,
Energy for Circular Economy

Scope of the investment field for EIT InnoEnergy

Substitutes for fossil derived products and energy carriers

Valorisation of waste streams

Application of circularity to bioeconomy

Sustainable & dispatchable heat

Carbon capture and utilisation

THEMATIC FIELD SUCCESS CASE

C-GREEN

CHALLENGE

Waste-water treatment plants worldwide produce sewage waste with residue sludge difficult to dewater containing bacteria, pharmaceuticals, phosphorous, toxins and heavy metals. Disposal costs are high and environmental targets not reached.

SOLUTION

A compact, robust and efficient process solution based on hydrothermal carbonisation allowing separation of phosphorous (for further use in fertilising applications) and heavy metals from sludge, degeneration of toxins, deactivation of pharmaceuticals and transformation of the remaining sludge into bio-coal. It enables waste-water treatment plants to reduce their operating and capital cost, while meeting the environmental target for sludge management.

495	450TWh	238.2M
Jobs created	Clean energy generated	Emissions avoided tCO_2e

MICHAEL SJÖBERG
CEO of C-GREEN

We are proud to have InnoEnergy as our largest shareholder. They have been a key strategic partner from the start, opening doors and providing access to their strong business networks all over the world,

4.4 Energy for transport and mobility

The transport and mobility sector is responsible for about 1/3 of Europe's energy consumption and about 1/4 of overall greenhouse gas emissions. As such, this thematic area plays a significant role in the transition of the energy system of the EU. The need for a transition to an energy efficient and clean transport and mobility sector is also recognised in latest communications of the EU commission, for example in the winter package for accelerating clean energy innovation in the mobility-package for example. Points of interest for EIT InnoEnergy are currently:

- autonomous driving technology,
- zero-emission drivetrain,
- innovative transport concepts,
- energy provision infrastructure,
- mode-shifting new mobility services.

Jennifer Dungs
Thematic Field Leader, Energy for Transport and Mobility

Scope of the investment field for EIT InnoEnergy

- Zero emission drivetrain
- Energy provision infrastructure
- Autonomous driving technology
- Mode shifting new mobility services
- Innovative transport conceptsscaling

THEMATIC FIELD SUCCESS CASE

elaphe
Propulsion Technologies

CHALLENGE

The propulsion architectures within current electric vehicles do not exploit the versatility and potential of electric motors.

SOLUTION

Elaphe Propulsion Solution offers a superior design in a direct driven in-wheel motor placed inside the rim of a vehicle. Recent developments in electromagnetic research enables the use of direct driven electric motors for passenger vehicle operation, ensuring adoption in the largest segment of the automotive industry. A larger design space, a lower centre of gravity, and the reduction of required parts for any vehicle has cost reduction potential.

380
Jobs created

€41.15M
Revenue generated

GORAZD LAMPIČ
CEO of Elaphe

I am grateful for all the support Elaphe is receiving in bringing our in-wheel architecture to the mass market. EIT InnoEnergy is connecting Elaphe to relevant people and entities within and beyond their network.

4.5 Sustainable buildings and cities

Forty per cent of the world's energy is consumed in the built environment. Energy efficient buildings and cities are key to sustainable development. We are fostering innovation that:

- Enables energy-positive homes and commercial buildings,
- encourages energy-saving behaviours at home and at work,
- supports a smart and sustainable transport system.

Lucienne Krosse
Thematic Field Leader,
Energy Efficiency & Sustainable Cities and Buildings

Scope of the investment field for EIT InnoEnergy

- Enabling burden free refurbishment
- Improving quality of life
- Affordable, energy positive buildings
- Supports a smart and sustainable transport system
- Encourages energy saving behaviors
- Enables livable, accessible, and affordable sustainable cities

THEMATIC FIELD SUCCESS CASE

ZELEROS

CHALLENGE

Transport accounts for 1/3 of global GHGs. For intercity transport, high-speed rail can't travel at the expected speed and aviation can't reach the sustainability and energy efficiency targets to reach net-zero in a reasonable timeframe.Hyperloop offers a sustainable solution to this need.

SOLUTION

The Zeleros hyperloop transport system can move passengers and cargo at speeds up to 1000 km/h with 0 direct emissions, connecting global cities and logistic hubs in a matter of minutes. The system drastically reduces energy consumption and journey times, with increased capacity and service availability. An European Hyperloop Transport Network could minimise short-haul flights saving millions of tonnes of CO_2 emissions per year with a multi-billion revenue opportunity.

€12M	1.3M	300M/ 5M	18,000
Funds raised	Emissions avoided tCO_2e	Passengers/ Tons of cargo	Kms of hyperloop routes implemented

DAVID PISTONI
CEO of Zeleros

Zeleros is leading the development of key technologies for mobility decarbonization, thanks to the close collaboration with a strong ecosystem, as EIT InnoEnergy.

4.6 Energy efficiency

Reducing consumption at home and at work is still the most cost-effective way to reduce carbon emissions and improve energy security and competitiveness. We are encouraging innovation in two areas that together account for more than 50 per cent of the EU's energy consumption, and at least 33 per cent of its CO_2 emissions:

- energy efficiency in buildings,
- energy efficiency in industry.

Lucienne Krosse
Thematic Field Leader,
Energy Efficiency & Sustainable Cities and Buildings

Scope of the investment field for EIT InnoEnergy

Affordable and low-carbon technologies for electrification

Predictive maintenance and advanced energy management systems

Digitalisation for process ntelligence and energy efficiency optimisation

Energy efficiency improvements, resource efficiency and efficient watertreatment

THEMATIC FIELD SUCCESS CASE

ecop

CHALLENGE

Process heat has a significant cost due to legislation and soaring gas prices. Few sustainable solutions are available in the 100-200°C range. There is an urgent need for heat pumps that remain efficient up to150°C, are cost-effective, reliable and do not use fluorinated greenhouse gases (F-gases).

SOLUTION

Ecop has developed a new heat pump that is extremely cost-effective and energy efficient. The same appliance has a broad area of application, from -20 °C to 150 °C. It requires no lubrication and all parts are low maintenance, as they are rotating, standard and industrial. The Ecop rotation heat pump can be used simultaneously in one machine to generate heat and cold, and also serves as a flywheel accumulator. No F-gases or flammable refrigerants are used.

€12M
Funds raised

€262M
Energy savings

4.8M
Emissions avoided tCO_2e

BERNHARD ADLER
CEO of ECOP

We benefited greatly from the active InnoEnergy's support and the network, specifically in the search for sales partners and in communication, but also through strategic inputs and the exchange in the circle of investors.

4.7 Energy storage

The way we generate, transmit and distribute power is changing. Energy storage has a vital role to play in the transition to a sustainable energy system. We are encouraging innovation in large and small-scale storage that will:

- Hhelp integrate renewable energy into the electricity grid,
- enable a more distributed and responsive distribution system,
- support business opportunities for new actors in the energy system.
- air quality and sustainability of conventional energy sources,
- decommissioning technologies.

Johan Söderbom
Thematic Field Leader,
Energy Storage
& Smart Grids

Scope of the investment field for EIT InnoEnergy

Lithium ion sustainable battery value chain

Innovative battery and energy storage technologies

Lithium ion battery recycling and re-use

Alternative energy storage business models

THEMATIC FIELD SUCCESS CASE

elestor

CHALLENGE

Given the unpredictability of renewable energy sources such as sun and wind, grid owners are looking for cost-effective means of storing electricity. This is essential to solve issues such as instability and overload of the electricity grid.

SOLUTION

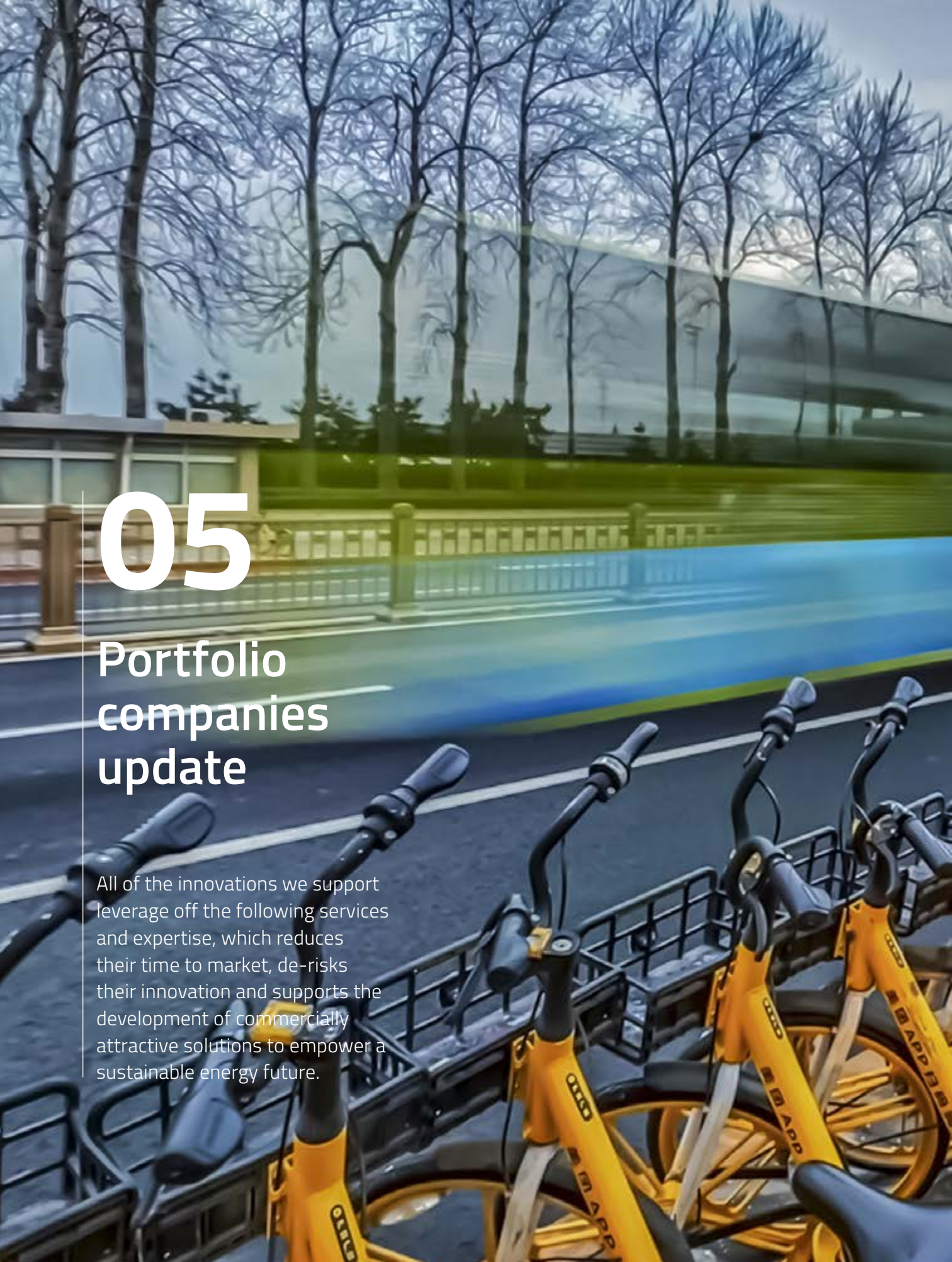
Elestor electricity storage systems are based on hydrogen bromine flow battery technology. Originally developed by NASA, Elestor has further engineered the concept to enable its use in a wide variety of grid and industrial applications.

€30M
Funds raised

4.1M
Emissions avoided tCO_2e

GUIDO DALESSI
CEO of Elestor

Elestor has developed flow batteries with an extensive lifespan that can store electricity safely and at a fraction of the cost of traditional batteries.



05

Portfolio companies update

All of the innovations we support leverage off the following services and expertise, which reduces their time to market, de-risks their innovation and supports the development of commercially attractive solutions to empower a sustainable energy future.

TBB.2022 photo contest
Photo by: Xu Zhang

5.1 Value-added services to mobilise innovation

All of the innovations we support leverage off the following services and expertise, which reduces their time to market, de-risks their innovation and supports the development of commercially attractive solutions to empower a sustainable energy future. On the following pages you will read about some of 2021's most promising innovations and their successes.

MARKET INTELLIGENCE

We work closely with policy makers and regulators to understand markets and regulation. This gives our innovators the capability to expand geographically and take advantage of support such as accreditations and certifications to comply with local standards.

TECHNOLOGY ENHANCEMENT

To transform a technology into a marketable product or service we assess its potential, patentability, identify and track possible competitors, and ensure IP is protected. We go on to support with prototype enhancement, product development and pilots and provide access to expertise and R&D infrastructure

SUPPLY CHAIN AND INDUSTRIALISATION

Our trusted ecosystem provides innovators, investors and industry with access to key players and commercially viable technologies, spanning the entire supply chain. This expertise helps to industrialise the innovations we support, providing industry with a wide spectrum of sustainable energy solutions.

We bring together knowledge and experience wherever it is located. Through our global network we reduce time to market, de-risk innovation and create commercially attractive solutions to empower a sustainable energy future.

CUSTOMERS AND GROWTH

We open-up markets and cross borders to identify needs and connect innovators to commercial opportunities. Time to market can be essential to survival, therefore we help you shorten the journey from lab to launch. What's more, our shareholders are among the top players within the energy industry, and quite often support as a first customer or early adopter.

GOVERNANCE STRATEGY

Our experts provide guidance on the strategic direction of the businesses we support. This includes helping companies define their priorities; coaching and advising on technical and business matters; managing stakeholders; and identifying synergies and opportunities for collaboration.

SOCIAL ACCEPTANCE AND CITIZEN ENGAGEMENT

We promote societal acceptance and citizen engagement to disrupt the way we experience energy. We generate inspiration that leads to societal awareness and an understanding of the impact an individual can make. This ultimately leads to changes in regulation, the uptake of more sustainable energy solutions and an acceleration of the energy transition.

REGULATION

Our team of experts play a pivotal role in the decisions that affect the future of the energy industry. They have their finger on the pulse when policies are in the making – enabling us to provide insights on new regulations which may impact the innovations we support and identify opportunities for sustainable economic development.

ACCESS TO HUMAN CAPITAL

The makers and shapers of the energy world as we know it today have been people. Therefore, we spur innovation by linking innovators and industry with students and alumni who possess the skills, entrepreneurial ability, commercial awareness and agility needed to drive the energy transition.

ACCESS TO FINANCE

Because our goal is to ensure all innovations deliver a commercially viable product, we don't 'fund and run'. We offer a flexible funding model to suit the changing needs of the products we support. This can then go on to act as a catalyst for further funding from a variety of public and private bodies.

SUSTAINABLE DEVELOPMENT GOALS

No poverty. Economic growth must be inclusive to provide sustainable jobs and promote equality.

Zero hunger. The food and agriculture sector offers key solutions for development, and is central for hunger and poverty eradication.

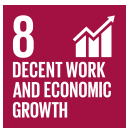
Good health and well-being. Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development.

Quality education. Obtaining a quality education is the foundation to improving people's lives and sustainable development.

Gender equality. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

Clean water and sanitation. Clean, accessible water for all is an essential part of the world we want to live in.

Affordable and clean energy. Energy is central to nearly every major challenge and opportunity.



Decent work and economic growth. Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs.

Industry, innovation, and infrastructure. Investments in infrastructure are crucial to achieving sustainable development.

Reduced inequalities. To reduce inequalities, policies should be universal in principle, paying attention to the needs of disadvantaged and marginalised populations.

Sustainable cities and communities. There needs to be a future in which cities provide opportunities for all, with access to basic services, energy, housing, transportation and more.

Responsible consumption and production. We need to decouple economic growth from environmental degradation, increase resource efficiency, promote sustainable lifestyles.

Climate action. Climate change is a global challenge that affects everyone, everywhere.

Life below water. Careful management of this essential global resource is a key feature of a sustainable future.

Life on land. Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.

Peace, justice and strong institutions. Access to justice for all, and building effective, accountable institutions at all levels.

Partnerships. Revitalise the global partnership for sustainable development.

At EIT InnoEnergy we follow the Environmental Social and Governance (ESG) principles for responsible investments. Moreover, the European Green Deal is at the core of our strategy. In this context, one important related element is the contribution we make to the Sustainable Development Goals (SDGs) established by the United Nations.

As part of EIT InnoEnergy's commitment to making a positive impact on the energy sector, the environment, the economy and society, we assess the contribution the companies in our portfolio make to SDGs. Given that SDG 7 and 13 have a direct link to EIT InnoEnergy's strategic goals of reducing CO_2 emissions, increasing the security of energy supply, and the lowering of costs along the value chain, it is no surprise that 95% of the innovations we support contribute to SDGs 7, 8, 9, 11, 12 and 13.

For EIT InnoEnergy, this is not just a classification: SDGs are at the core of our investment process and provide a means to measure impact. They are real goals that help measure social and environmental impact and are essential to the future wellbeing and prosperity of our world.

5.2 Equity portfolio welcomes **17 new companies in 2022**

"Considering the economic headwinds in 2022 and the 24% drop in funding seen across European tech in general compared to the year before, having strengthened our portfolio with 17 new innovative companies has been a great achievement. Even more relevant has been our support to 26 rounds of our existing portfolio in 2022. Contrary to the developments in the market there were no down rounds in the EIT InnoEnergy portfolio. This illustrates the impact of our value-add investment proposition. It is what makes us unique, and the effects become obvious in bearish markets we are in today," said Alexander Goos, Head of Asset Management of EIT InnoEnergy.

> EIT InnoEnergy actively invests in its ability to de-risk the ambitions of the assets in its portfolio and thereby helps the entrepreneurs achieve their targets bigger, sooner and safer.

BASQUEVOLT **Product page**

BASQUEVOLT
The safest and most competitive solid-state battery

coat-it **Product page**

COAT-IT
An innovative company, whose plating additives improve the protective and mechanical properties of metallic coatings.

EMPYRIO **Product page**

EMPYRIO
Compact mono-incinerator for sewage sludge and other organic waste utilization.

GravitHy **Product page**

GRAVITHY
A sustainable iron and steel company.

MINE STORAGE **Product page**

MINE STORAGE
Develops and operates fast-response and medium to large scale power storage in underground mines.

NEVOMO **Product page**

NEVOMO
The future of transportation, from magrail to hyperloop.

NOVATRON

Product page

NOVATRON
Nuclear fusion reactors for large-scale fossil free energy production.

pHYnix

Product page

PHYNIX
Decarbonising business with green hydrogen in a simple and competitive way.

PRIME

Website

PRIME BATTERY TECHNOLOGIES
Enables the energy transition by providing the most affordable energy storage solutions.

PURE BATTERY

Product page

PURE BATTERY TECHNOLOGIES
PBT's SAL and CL technologies are a breakthrough in the clean energy evolution.

SeaQurrent

Website

SEAQURRENT
The next generation tidal energy plants based on the principle of kiting.

Silbat

Product page

SILBAT
Long duration electricity storage in melting silicon.

Soof

Website

SOOF
Customer acquisition platform for solar panel installers and engineering companies.

suena

Product page

SUENA
Empowering energy storage and renewables with AI.

VOLTARO

Product page

VOLTARO
The easiest way to commercial onsite solar – the digital one-stop shop connecting owners, tenants and installers.

TBB.2018 photo contest
"Chasing the light"
Photo by: Friederike Brandenburg

5.3 Three successful exits from **EIT InnoEnergy** in 2022

During 2022, three companies - EOLOS, Foreseeti and SunRoof - exited from the EIT InnoEnergy portfolio following successful collaborations, during which time all significantly grew their market offerings and financial value. EIT InnoEnergy had provided each with a range of value-added management services for growth, in the areas of organisation, talent, industrialisation, internationalisation, financial management and alliances.

In December 2022, leading Spanish private equity firm, Nazca Capital, acquired a stake in the start-up Eolos Floating Lidar Solutions (EOLOS), including the 100% stake owned by EIT InnoEnergy. In a relationship of over a decade, EIT InnoEnergy's support helped EOLOS to become one of the top two companies in the world in offshore wind measurement, with a turnover of close to €10 million.

In March 2022, EIT InnoEnergy confirmed its largest ever company exit with the sale to undisclosed investor of its 100% interest in the Swedish cyber security company, Foreseeti. With support from EIT InnoEnergy, Foreseeti empowered companies – particularly in the energy sector – to manage their cyber security in a proactive and business minded way.

Also in 2022, EIT InnoEnergy exited from SunRoof following a successful relationship in developing the company at an early stage. The company attracted new investment partners in 2022 to provide further funding and support. SunRoof is a manufacturer of innovative solar roof tiles embedded with photovoltaic cells, as well as energy management technologies.

RAJAI AGHABI
Founder & Chief Executive Officer of EOLOS

The support we have received from EIT InnoEnergy has enabled us to turn an idea with market potential into a successful company with global operations.

5.4 EIT InnoEnergy portfolio **companies recognised** with awards in 2022

A number of EIT InnoEnergy-backed companies were rewarded for their green technologies when they picked up awards from three prestigious organisations.

Three EIT InnoEnergy innovators secured a first place at the 2022 EIT Awards which took place at the EIT Summit held in Brussels. The EIT Awards aim to promote innovation in the fields of climate, energy, digitalisation, food, health, manufacturing, raw materials, and urban mobility. Each of this year's winners received a prize of €50,000.

ecop took the Innovators Award for its rotation heat pump, a highly innovative clean technology that combines the advantages of heat pump technology with a centrifuge. Vilisto received the Venture Award for its self-learning thermostat for non-residential buildings that only heats rooms when needed, improving efficiency and reducing CO2 emissions. And ACT Blade Ltd came away with the Public Award for the lightest, most controllable and sustainable wind turbine blade on the market.

When consulting firm, PwC - in collaboration with start-up conference, Wolves Summit - launched the first ever Central and Eastern Europe (CEE) edition of its Net Zero Future50 in October 2022, we were proud to announce that our portfolio companies, EcoBean and Bin-e, were two of 50 climate tech start-ups profiled in the report that looks at the state of climate tech in the region. According to PwC, the highlighted companies are the next generation of climate tech start-ups that have the potential to help bend the emissions curve.

MARIYA GABRIEL
European Commissioner for Innovation, Research, Culture, Education and Youth

This year's winners have demonstrated that there are promising solutions emerging from across Europe which are set to transform society and position our continent as a global leader.

EcoBean is building the world's first biorefinery that will fully process coffee waste into raw materials. Bin-e has developed an AI-based smart waste bin, designed for public places, enabling them to simplify recycling.

And, finally, two of EIT InnoEnergy's portfolio companies each picked up awards and a prize of $100,000 at the world renowned Ocean Exchange Awards ceremony – now in its 11th year - in Fort Lauderdale, Florida last November. Ocean Exchange is a global ecosystem whose mission is to accelerate the adoption of innovative solutions for healthy oceans and the sustainable blue economy.

BeePlanet Factory, Spain – which engages in energy storage based on second-life batteries, smart charging infrastructure and renewables control software - was the recipient of the Wallenius Wilhelmsen 2022 Orcelle Award. The 2022 Transportation Hub Award went to C2C-NewCap, Portugal. C2C-NewCap has developed a breakthrough eco-friendly energy storage system and engine cranking capability for heavy-commercial vehicles. The technology reduces waste production by extending the lifetime of batteries and fossil fuel consumption by limiting idling and does not use critical raw materials.

MILLICENT PITTS
Chief Executive Officer and Executive Director of Ocean Exchange

This award competition was the largest and most competitive in our organisation's history. With a record number of nominations and impressive global reach, the award winners reflected the international scope of an event that is tackling critical worldwide issues.

5.5 **Altris** secures €9.6 million in Series A funding

Swedish sodium-ion battery company, Altris AB, raised €9.6 million in January 2022 in a Series A funding round which included partners, Molindo Energy, Northvolt and EIT InnoEnergy. The round was completed with new investors and existing investors continuing their participation.

Shortly afterwards, Altris signed a deal with Sandvik Materials Technology AB to house the company's first industrial-scale manufacturing facility in Sandviken, Sweden. The new facility, named 'Ferrum', will have the capacity to produce 2,000 metric tonnes annually of Altris' ground-breaking cathode material, Fennac – enabling one GWh of sustainable sodium-ion batteries to enter the market annually.

Altris specialises in producing a highly sustainable cathode material for rechargeable sodium-ion batteries which is made from entirely sustainable, low-cost materials that are available in abundance - without any cobalt, nickel or copper. Altris also uses an innovative and patented manufacturing method for Fennac that is low-cost and more environmentally friendly than alternatives.

The company sells Fennac to battery-cell producers, who can use existing lithium-ion manufacturing processes and equipment to produce Fennac-based batteries. This simple transition enables a smooth adaptation and rapid scale-up of sodium-ion battery production and swift market introduction. Altris supports cell manufacturers in this transition with samples and material expertise to develop Fennac-based batteries and in-house competence in sodium-ion battery manufacturing.

MARTIN ANDERLIND
CEO of Altris

With EIT InnoEnergy's continued support we have taken sodium ion battery development yet another large step closer to mass market use.

altris.se

Product page

5.6 Investment of €7.6 million for **The Batteries** to produce safe super-batteries

The Batteries, a company supported by EIT InnoEnergy, has developed a breakthrough technology for the low-cost production of thin-film batteries. In June 2022 the company announced it had secured its first tranche of series A funding to support the commercialisation of its technology.

The funding, from the existing investor, Aper Ventures fund, as well as January Ciszewski and JR Holding, UAB Electronics System, and EIT InnoEnergy, will be used to build a production line at the Rzeszów factory in Poland, to produce safe and ecological batteries on a global scale. The company also wants to increase the team of engineers responsible for developing further the innovative solid-state technology.

The Batteries is the first company to develop its unique technology for the low-cost production of safe and environmentally friendly solid-state batteries for mass applications in the internet of things (IoT) market, including industrial sensors, smartwatches, portable medical devices, drones or smartphones. Thin film solid state batteries (TFBs) will replace traditional lithium-ion batteries thanks to their significantly reduced charging time for devices, their work efficiency and extended lifespan.

Charging a smartphone will take just 15 minutes and the battery will last twice as long. It will make electronic devices of mass usage more economical and, importantly, this new type of new batteries will no longer explode.

THE BATTERIES

JACEK BŁOŃSKI
Managing Partner of Aper Ventures

The Batteries creates a product with an extensive application, and its market potential is vast. The founders have proven that their patented manufacturing technology can produce safe batteries that are – depending on the industry – up to 10-200 times cheaper than other solid-state battery companies. We believe that each electronics user will have such a battery in their device in the next few years – now, they are still too expensive to use every day.

thebatteries.tech

Product page

5.7 REYM Rotterdam and **C-Green** partner to generate biofuel from industrial wet waste

Swedish cleantech company C-Green and REYM, the leading Dutch industrial cleaning and waste management company, announced in February 2022 that they are launching a unique collaboration to reduce climate impact by taking industrial wet waste – known as sludge – and turning it into biofuel. REYM and C-Green will explore the feasibility of building a C-Green OxyPower HTC™ plant for converting this sludge into biofuel at REYM's facility in Rotterdam.

The global production of sludge – reaching almost six billion tons annually - is a major contributor to greenhouse gas emissions. C-Green's process transforms sludge into a dry, sterile, biobased, carbon-enriched product that can be used as biofuel or as soil improvement. Compared to traditional sludge management, up to 80 percent of greenhouse gas emissions can be avoided using C-Green's technology. C-Green has partnered with EIT InnoEnergy to help achieve the European Green Deal goal of becoming the world's first climate-neutral continent by 2050.

The City of Rotterdam recently awarded the project a grant of €56,000 as part of its Smart Energy Systems (SES) programme, which supports innovations contributing to a cleaner, smarter and more efficient energy system. REYM and C-Green's joint project was selected for its innovative, circular approach to re-using wet waste. iTanks, the largest innovative industrial network in the Netherlands, will have a key role in implementing the project.

C-GREEN

FRED MULLER
Branch Manager of REYM Rotterdam

C-Green's technology is entirely in line with our vision to integrate sustainable solutions into our sludge management services and reduce climate impact. With this cooperation, we will contribute to the development of climate-smart, sustainable sludge handling worldwide.

c-green.se

Product page

5.8 **CorPower Ocean** unveils commercial-scale products to unleash utility-scale wave farms

In June 2022, CorPower Ocean unveiled the CorPower C4, its first commercial scale Wave Energy Converter (WEC) and CorPack clusters, providing the building blocks for utility-scale wave farms. This comes as the wave energy developer prepares to deliver its flagship HiWave-5 Project in northern Portugal, with ocean deployment planned for early 2023. The new CorPower C4 device will ultimately form part of a four-system wave array, off the coast of Aguçadoura, Portugal, creating one of the world's first grid-connected wave farms.

To date, CorPower Ocean has been financially supported by EIT InnoEnergy, the European Commission, the Swedish Energy Agency, AICEP Global (Norte2020), Wave Energy Scotland, CoreSpring New Technology, ALMI Invest Greentech, SEB Greentech VC and additional private investors.

The CorPower C4, with 300kW power rating, represents the world's most compact wave energy system in relation to power output. With a strong and lightweight structure, it can be produced rapidly in large volumes. The technology is designed and delivered as CorPack clusters of 10-20MW rating, forming the building blocks of future large-scale wave farms.

CorPack wave farms will have minimal visual impact and can deliver up to three times as much power per ocean footprint compared to a typical offshore wind farm. With CorPack offering 'plug and play' compatibility with offshore wind infrastructure, the modular architecture is expected to play a key role supporting hybrid wind-wave farms, providing a pathway to 24/7 Carbon Free Energy.

CorPower Ocean

PATRIK MÖLLER
Co-founder and CEO of CorPower Ocean

We are on track to deliver certified and warrantied waveform energy converter products to the market by 2024/25, unleashing the full potential of 'utility-scale' wave farms.

corpowerocean.com

Product page

5.9 **Ecobean** secures funding to limit coffee industry carbon footprint

Ecobean, a Warsaw-based start-up has developed a patented technology to process waste coffee grounds into sustainable materials such as coffee oil, antioxidants, lactic acid, protein-rich additives and coffee lignin. These are direct alternatives to products used widely today by various industries including food, cosmetics, manufacturing and pharmaceutical.

In December 2022 the company closed an investment round with EIT InnoEnergy, CofounderZone, CIECH Ventures and Angel Investors from COBIN Angels. Investment is a key milestone on the company's path to building its Ecobean Technology Center and will help in attracting and accessing talent and paving the way for further global expansion.

As it works to develop a leadership position in the circular economy within the coffee industry, Ecobean operates closely with market leaders such as AmRest, an operator of such brands as Starbucks in Central Europe, a leading multi-brand restaurant entrepreneur in Europe. Through this cooperation, Ecobean is responsible for spent coffee grounds collection as well as the development of tailor-made applications.

Coffee is the second most valuable commodity traded globally and its waste is a rich source of compounds which require greater reuse. Ecobean is working hard to address this global problem with its scalable, deep-tech solution that in the coming years will decrease the coffee industry's carbon footprint and create significant economic value.

MARCIN KOZIOROWSKI
CEO of Ecobean

We are the most technologically advanced company in the sector, with a proven logistic solution to fully process spent coffee grounds and transform them into materials needed by various industries.

ecobean.pl

Product page

5.10 **Ecop** and EIT InnoEnergy partner to launch novel industrial heat pump

Austrian company, Ecop Technologies, with support and funding of €3.9 million from EIT InnoEnergy, announced in June 2022 the launch of its rotary heat pump, which can provide regenerative heat with a temperature of up to 150 degrees Celsius.

Process heat has a significant cost due to legislation and high gas prices. Few sustainable solutions are available in the 100-200°C range. There is an urgent need from industry for heat pumps that remain efficient up to150°C, are cost-effective, reliable and do not use fluorinated greenhouse gases (F-gases).

But Ecop has met this challenge with the development of its new heat pump that is both extremely cost-effective and energy efficient. It has a broad area of application, from -20 °C to 150 °C, requires no lubrication and all parts are low maintenance, as they are rotating, standard and industrial. The Ecop rotation heat pump can be used simultaneously in one machine to generate heat and cold, and also serves as a flywheel accumulator. No F-gases or flammable refrigerants are used.

With its innovation, Ecop will be able to advance into areas that were previously unattainable for heat pumps in industrial use. This makes the rotary heat pump the ideal solution for a whole range of the most demanding, CO2-intensive and expensive manufacturing processes. This results in huge market potential for Ecop in Europe and beyond.

BERNHARD ADLER
CEO of ecop Technologies

We are all pleased to have won one of the world's leading cleantech investors, EIT InnoEnergy, to support us in our broad-based market entry.

ecop.at

Product page

5.11 In-wheel motor maker, **Elaphe,** partners with solar EV companies

Elaphe Propulsion Technologies, a manufacturer of in-wheel motors, announced in October 2022 that it has teamed up with Aptera Motors, a start-up building an ultra-efficient solar electric vehicle (sEV).

Aptera says in-wheel motors offer numerous advantages over other propulsion systems, including enhanced aerodynamics, lighter overall vehicle weight and improved handling, all of which result in better mileage and safety.

In combination with Aptera's low-drag aerodynamics and lightweight construction, Elaphe's compact, high-torque in-wheel motors can reduce energy usage to less than 100 watt-hours per mile, four times lower than the average EV. Elaphe's in-wheel motors have already been used in the smart fortwo, BMW X6 SUV, Audi R8, and 40 other vehicle platforms, including public transportation. Aptera's goal is to build lightweight and aerodynamic vehicles powered by the sun that can handle most daily driving needs, completely off the grid and plans to begin production in 2023.

In a similar move, Elaphe announced in June 2022 the successful results from its partnership with Lightyear, a developer of scalable, grid-independent sEVs. Together, the two companies have developed the most efficient production powertrain in the world, by pushing Elaphe's proprietary electromagnetic layout to the extremes to achieve world-class efficiencies. Lightyear 1 is insolvent, that car's production was stopped. Lightyear is trying to bring to market its Lightyear 2.

GORAZD LAMPIC
CEO of Elaphe

We at Elaphe are excited to have the opportunity to tap into our platform and work with visionaries at Aptera on accelerating their movement.

in-wheel.com

Product page

5.12 Electricity storage company, **Elestor,** secures €30 million in funding from consortium led by Equinor Ventures

The consortium also includes the venture capital arm of the world's leading independent tank storage company, Royal Vopak; Dutch impact investor, Invest-NL (as co-lead investor); and Somerset Capital Partners; as well as existing shareholders, EIT InnoEnergy and Enfuro Ventures.

Elestor, which has been ranked as one of the 10 most innovative companies in the Netherlands*, is now ready to implement an ultra-rapid growth strategy that will accelerate the commercialisation of its proven hydrogen bromine flow battery technology, up to a gigawatt-scale production facility, which is a truly unprecedented development.

Elestor has developed flow batteries using hydrogen and bromine as active materials, both available in virtually unlimited quantities. In addition, as the battery generates hydrogen during the charging process, the concept introduces several new and unique possibilities for integration with hydrogen infrastructures and electrolysers. As such, the Elestor technology bridges the two worlds of energy storage - with batteries and in the form of hydrogen.

The technology makes it possible to store renewable energy produced by wind farms or by solar power plants in a way that is both cost-effective and efficient - as well as robust and scalable.

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13 CLIMATE ACTION

*According to The Amsterdam Centre for Business Innovation at the University of Amsterdam

elestor

GUIDO DALESSI
CEO of Elestor

The investment proves that we have earned the trust and support of this diverse group of highly respected investors.... We are ready to deliver exactly the kind of renewable electricity storage solutions the world is crying out for right now - long duration energy storage, or LDES.

elestor.nl

Product page

5.13 **ElevenEs** showcases the largest LFP battery cell in Europe

ElevenEs, a pioneer in Lithium Iron Phosphate (LFP) cathode battery technology - and supported by EIT InnoEnergy - completed a two-year development program in 2022 to produce a prototype of the largest battery cell in Europe. It is expected that customer deliveries will commence in the first quarter of 2023.

The company made the first public display of its EDGE battery cell at The Business Booster in Lisbon, Portugal, in September 2022. This event is EIT InnoEnergy's annual international networking forum that last year showcased over 150 leading sustainable energy technologies from around the world.

According to Bloomberg NEF in 2022, LFP technology will reach 40% of the global battery market share. It is characterised by greater safety, lower cost, and increased sustainability over traditional NMC or NCA batteries as it does not require nickel and cobalt in its manufacture.

In addition to its proven safety features in electric vehicles, LFP batteries last twice as long as the most common competing technologies. In recent months, leading automotive manufacturers including Tesla, Volkswagen, BMW, Mercedes and Ford have already introduced LFP cells to their fleets.

By making widely accessible and cost-effective energy storage solutions, ElevenEs is providing batteries for electric cars and mass transport that will make a sustainable future an inclusive and inevitable process.

NEMANJA MIKAĆ
CEO of ElevenEs

ElevenEs will offer to the market three distinct EDGE battery cell sizes, which will be competitive against all presently available mass-produced batteries in the global market.

elevenes.com

Product page

5.14 **Energy Floors** helps **Coldplay** boost sustainability on its world tour

EIT InnoEnergy portfolio company, Energy Floors, revealed in July 2022 that it is helping Coldplay boost its sustainability initiatives utilising fan power at its concerts. Energy Floors is supplying the floors in the Music of The Spheres World Tour (MOTSWT) Energy Centres. The Kinetic Dance Floor generates renewable energy from the movement of the public and the energy generated is instantly converted into electricity.

The Energy Centres consist of 44 sustainable kinetic dancefloor tiles assembled in a circle for fans to dance on to generate energy. The Centres also include 15 stationary bikes for fans to cycle on to create energy. The floor tiles are custom made, consisting of a top layer of recycled plastics to resist wear-and-tear during the four-year world tour.

The MOTSWT required a solution that would boost Coldplay's sustainability message and connect the band with its fanbase. The tour aims to reduce greenhouse gas emissions by 50 percent compared to the band's last tour. In addition to harvesting kinetic energy, Energy Floors also gathers data about the amount of energy produced. It is also monitoring the total amount of energy produced throughout the tour. This monitoring not only creates transparency with the public, but also serves to raise awareness and knowledge that can be used for creating smarter and more sustainable future events.

ENERGY FLOORS

CHRIS MARTIN
Lead Singer of Coldplay

When I say, 'I need you to jump up and down,' I'll literally need you to jump up and down. Because if you don't, then the lights will go out.

energy-floors.com

Product page

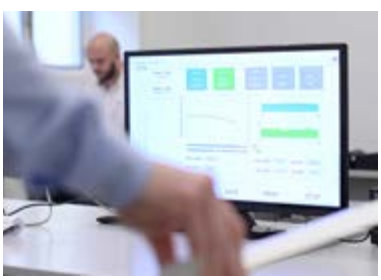
5.15 Blade monitoring start-up **Fibersail** raises €5 million to develop its business to reduce the cost of wind energy

EIT InnoEnergy-supported wind turbine blade monitoring start-up, Fibersail, closed a €5 million investment round in April 2022, led by FORWARD.one, along with Rockstart, EIT InnoEnergy, and Caixa Capital among others. Former LM Wind Power CEO, Marc de Jong, is also stepping up as an investor and becomes a member of the Fibersail board. This investment round will allow Fibersail to focus on scaling the team and its customer pipeline.

Fibersail has developed a shape-sensing system, based on fibre optic technology, to measure the deformation of blades during operations. Its simple process of installation enables the turbine to prevent excessive loads through the control system. Unidentified loads on blades lead to underperformance of 2-10 percent and increase risk of failure, elevating maintenance costs by as much as 10 percent.

By using its proprietary shape sensing technology, Fibersail is focused on the shape of the blade rather than root strain, enabling manufacturers and operators to design and operate better performing wind turbines. The Fibersail technology enables this by precisely controlling and monitoring the behaviour of its blades.

Fibersail has reached an important milestone by demonstrating the ability to monitor and control blade performance and fatigue cycles throughout the asset's lifetime - and will accelerate its journey to disrupt how wind turbines are monitored and controlled today.



FIBERSAIL
Shaping the structures of tomorrow

PEDRO PINTO
Co-founder and CEO of Fibersail

Together with our strong team of deep- and greentech investors, we are disrupting the way these wind turbines are controlled and maintained.

fibersail.com

Product page

5.16 **FlexiDAO** secures investment from industry leaders for its electricity and carbon tracking software

FlexiDAO, a leading software provider for 24/7 electricity and carbon tracking – and supported by EIT InnoEnergy – announced in July 2022 that it had completed a USD 6.5 million funding round led by SET Ventures, with investment from Google and the Microsoft Climate Innovation Fund, alongside existing investor EIT InnoEnergy.

Based in Amsterdam and Barcelona, FlexiDAO enables companies and governments to operate on round-the-clock carbon-free energy, by certifying and tracing their electricity and its true carbon content.

The investment will drive rapid scaling of the company's first-of-its-kind software platform worldwide, focused on the US and Europe. Google and Microsoft are not only investing but are also customers of FlexiDAO, already using the technology to support their targets of 100 percent, 24/7, carbon-free electricity by 2030.

Presently, few companies know if the "green" electricity they already buy is truly carbon-free, every hour and in every location, as having a 100 percent renewable energy contract does not guarantee carbon-free energy. But FlexiDAO´s software platform uses blockchain technology to certify and trace electricity from production to consumption, always enabling credible and verifiable claims on its carbon footprint. This enables customers to understand the origin and carbon footprint of the energy they consume across their operations and take action to procure cleaner electricity and drive decarbonisation of their operations, making 24/7 carbon-free energy a reality.

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FLEXIDAO

24/7 CFE Academy by FLEXIDAO

SIMONE ACCORNERO
CEO of FlexiDAO

If we don't act now by pushing breakthrough technologies that decarbonise every electron, every hour of every day, we will never meet decarbonisation targets.

flexidao.com

Product page

5.17 **GDI** Leads Silicon Anode Manufacturing and Supply Chain Alliance and Secures USD13.3 million in funding

GDI, an EIT InnoEnergy-supported manufacturer of 100% silicon anodes, signed a memorandum of understanding (MoU) at The Business Booster event in September 2022 with AGC Glass Europe (AGC) - a world leader in flat glass for the automotive, solar, and high-tech industries - and Carl Schlenk AG (Schlenk) - a German-based leading international manufacturer of metal powders, pigments and foils for a wide variety of industries - to lead an advanced silicon anode alliance.

Over the next decade, AGC and Schlenk will work in close collaboration with GDI and provide technology, raw materials, know-how and services required for the alliance to grow production of GDI's 100% silicon anode to industrial scale, with the goal of achieving 100 MWh in 2024, one GWh of anode production capacity in 2026 and 10GWh capacity in 2028. It is important that Europe has its own manufacturing facilities in response to the risk of dependency on battery raw materials sourced from China.

Also in September, GDI completed a major Series A funding round – securing USD 13.3 million - with EIT InnoEnergy and Helios Climate Ventures. It has now commenced pilot production in Europe as electrification and the energy transition create increased global demand for Li-ion batteries that have higher energy density, faster charging, and are safe.

ROBERT ANSTEY
Founder and CEO of GDI

I'm extremely excited about what this alliance will accomplish. By combining GDI's 100% silicon anode technology with Schlenk's leading high strength foil production, and AGC's best in class production equipment, we can bring a vertically integrated anode to the EU battery market.

gdinrg.com

Product page

5.18 New industrial consortium, **GravitHy,** aims for market leadership in green iron and steel

A company composed of EIT InnoEnergy, Engie New Ventures, Plug, FORVIA, GROUPE IDEC through GROUPE IDEC INVEST INNOVATION and Primetals Technologies, in June 2022 launched GravitHy – tipped to be a future market leader in green iron. The sustainable iron company will support the growing demand for zero carbon steel, whilst contributing to Europe's "Fit for 55" package ambitions to decarbonise hard-to-abate industries.

The project, with an investment budget of €2.2 billion at commissioning, will build its first plant in Fos sur Mer, Southern France, with construction commencing in 2024. The plant is expected to be operational by 2027, subject to regulatory approvals. GravitHy has an annual production target of two million tons of direct reduced iron (DRI) and aims to create over 3,000 direct and indirect jobs for the region.

The steel sector is responsible for eight percent of global energy demand and seven percent of energy sector CO_2 emissions (including process emissions) annually - one of the largest carbon-emitting industries. GravitHy supports the emissions reduction of this industry by generating and using green and low-carbon hydrogen to produce DRI. The DRI will be used either on-site as a feedstock for green steel or traded globally under the form of hot-briquetted iron (HBI). This directly contributes to the decarbonisation of the hard-to-abate value chain of steelmaking and supports the EU's ambition of carbon neutrality by 2050.

JOSÉ NOLDIN
CEO of GravitHy

The roadmap for the mining and metallurgy sector proposed by the French government sets the ambition of reducing CO_2 emissions by 35% by 2030 from the integrated steel industry compared to 2015 emissions. Achieving this goal requires the rapid scaling up of innovative, lower-emission solutions. GravitHy will play a central role in achieving these goals.

gravithy.eu

Product page

5.19 Posco signs letter of intent with **Hardt Hyperloop** to realise the future of transportation

Signalling its official entrance into the hyperloop business for next-generation transportation, POSCO International Corporation (P-INT'L) signed a letter of intent (LOI) with EIT InnoEnergy-supported Hardt Hyperloop, a leading global presence in hyperloop technology. The partnership was inked at an LOI Signing Ceremony in Songdo, South Korea in early November 2022.

Under the LOI, P-INT'L and Hardt agreed to supply POSCO steel products for the European Hyperloop Center (EHC) test centre. Both companies will also cooperate in hyperloop business sales and marketing, as well as integrating their business partnership, including P-INT'L's investment in Hardt.

Hyperloop is a new mode of high-speed transport in which autonomous vehicles travel through low-pressure tubes. Meeting the growing demand for sustainable and affordable high-speed transportation of freight and people, it has lower costs compared to high-speed rail – both in construction and operations. In addition, it is eco-friendly and highly efficient in energy consumption, particularly as compared to air and road transport, as hyperloop is 10 times more energy efficient.

Hardt Hyperloop started in 2017, when four of its co-founders were the winners of the SpaceX Hyperloop Pod Competition, hosted by Elon Musk. Following its subsequent successes, Hardt plays a key role in the hyperloop industry's standardisation in Europe with its core technologies in magnetic levitation, propulsion, and lane-switching, among others.

HARDT HYPERLOOP

TIM HOUTER
Co-founder of Hardt Hyperloop

We are thrilled that POSCO's trust in our collaboration since 2020 has led to this point. POSCO's investment, as well as the cooperation in sales and marketing, is a tremendous step for us in making the hyperloop dream come true.

hardt.global

Product page

5.20 EIT InnoEnergy invests in **Mine Storage** – a grid-scale energy storage company

Swedish company, Mine Storage, which develops and operates a portfolio of grid-scale energy storage in underground mines, announced in April 2022, that it had received an investment from EIT InnoEnergy, to assist the company in accelerating its expansion in both Sweden and internationally. Mine Storage will receive a cash equity investment and added-value services to further develop business, markets, and operations.

Mine storage as a technology is the underground version of pumped storage hydropower, relying on the same basic principle of moving water between two reservoirs. It too can store large quantities of energy and is highly suitable to support the grid. The main difference is that the lower water reservoir is below ground in a closed mine. This makes it much more scalable than traditional pumped storage hydropower, with an estimated one million abandoned mines across the globe.

Mine Storage will contribute to a sustainable future of fossil-free energy production by developing environmentally friendly energy storage plants that will store energy and help balance the grid. Mine Storage manages the whole project development and operations process. The experienced team qualifies and secures the rights to attractive sites, builds profitable business cases, secures the financial structures, and designs, constructs, and operates the plants - providing cost-effective grid-scale storage capacity for decades to come.

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MINESTORAGE

THOMAS JOHANSSON
Co-founder and CEO of Mine Storage

It is an honour to have EIT InnoEnergy as an investor and we see opportunities for accelerated business development through our collaboration.

minestorage.com

Product page

5.21 **NitroCapt** raises €2.8 million to develop a pilot plant for fossil-free production of nitrogen fertilisers

Swedish company, NitroCapt, has invented a novel chemical process, SUNIFIX®, for the production of climate-neutral nitrogen fertilisers in order to contribute to both agricultural sustainability and productivity. In February 2022, the company announced that it had received public and private funding of almost €3 million to build its first pilot plant.

The production of nitrogen fertilisers causes 2.5 percent of the global fossil-related greenhouse gas emissions. Until now, no one has developed a cost-effective, emission-free process that can compete with conventional production. But NitroCapt is accelerating the development of its chemical process, SUNIFIX®, and aims at setting a new standard for large-scale fossil-free production of nitrogen fertilisers.

NitroCapt has just received funding of approx. €1.8 million from LRF Ventures, Almi Invest GreenTech, EIT InnoEnergy and additional investors, for the development of its first pilot plant. Completed by another €1 million in grants, the company will now invest this funding over the next two years to build the pilot facility in Germany.

Synthetic fertilisers are crucial to managing the global food supply chain, supply chain, which makes the transition to climate-neutral agriculture a great challenge. To this end, NitroCapt's groundbreaking innovative technology could well be the solution to bring climate-neutral nitrogen fertilisers within reaching distance.

NitroCapt

GUSTAF FORSBERG
CEO of NitroCapt

It's incredibly exciting that we, together with our visionary investors, get the possibility to develop a solution to a big global challenge for agriculture and the climate.

nitrocapt.com

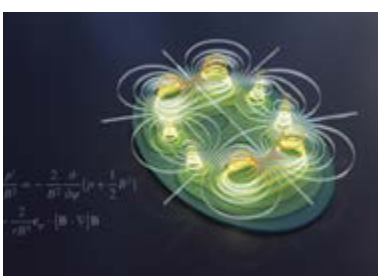
Product page

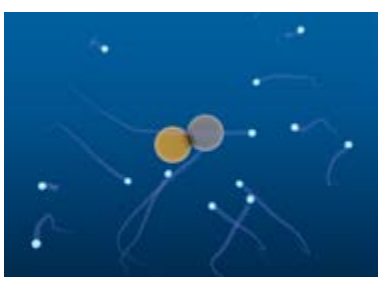
5.22 **Novatron Fusion Group** secures investment for unique fusion power technology

EIT InnoEnergy announced at the end of 2022 that it has invested in the groundbreaking start-up Novatron Fusion Group AB to support the development and commercialisation of fusion. The company will collaborate with KTH Royal Institute of Technology on the feasibility of a technology breakthrough to take fusion forward as a future global large-scale, commercially viable green energy source.

The partnership will build a new test facility to validate Novatron Fusion Group's unique approach to plasma confinement and conduct research and education in the area. The goal is to demonstrate within the coming year that stable plasma can be achieved – a fundamental prerequisite for achieving stable and continuous fusion. Long-term, the vision is to have a commercial fusion design before 2040 that contributes net-power to the energy grid.

Novatron Fusion Group aims to make commercial development and construction of fusion energy power plants economically viable at a fraction of the cost of current methods, providing access to large-scale clean, safe, sustainable, and stable energy production for the benefit of all, supporting Europe's Green Deal targets.





NOVATRON

PETER ROOS
CEO of Novatron Fusion Group

Fusion power has long been suggested as the technology breakthrough needed to support reaching with the global shift to net zero goals. However, it has also struggled to be proven technically and commercially viable. We believe our innovation is the key to unlocking the large-scale production of energy through fusion.

novatronfusion.com

Product page

5.23 **NÜWIEL** and EIT InnoEnergy join forces to accelerate urban mobility transition

NÜWIEL, the Hamburg-based pioneer in efficient, emission-free urban mobility, announced in August 2022 a partnership with EIT InnoEnergy. Under the agreement, NÜWIEL will receive funding and comprehensive support to rapidly scale its business, as well as access to EIT InnoEnergy's international partner ecosystem.

NÜWIEL was founded in 2016 and combines two words "neu" (German: new) and "wiel" (Dutch: wheel). The company's mission is to empower anyone to move anything in a sustainable, safe and practical way. The result is the eTrailer.

Available as either a bicycle trailer or a hand cart, NÜWIEL's eTrailers can easily transport loads up to 1,200 kg. They automatically brake and accelerate thanks to patented sensor technology. Top speeds are 25 km/h for the bicycle version and 6 km/h for the hand cart version. Current customers include IKEA, UPS and the Belgian Post Office. NÜWIEL's trailers are already being used in Germany, Belgium, Ireland, Denmark and Luxembourg, in cities including Hamburg, Munich, Frankfurt, Dublin and Copenhagen.

NÜWIEL plans to more than double series production of its eTrailer in 2022-23 and to launch it on the Austrian, French, Belgian and Dutch markets. It has plans to enter the end-customer segment and is working on various projects relating to this segment, including an intuitive booking app.

NATALIA TOMIYAMA
Co-founder of NÜWIEL

We are delighted to have EIT InnoEnergy as a strategic partner and investor on board. Its know-how and resources will greatly assist us in achieving our ambitious growth targets.

nuwiel.com

Product page

5.24 Partnership with **Prime Batteries Technology** to scale up battery and storage production

Prime Batteries Technology, a breakthrough developer, manufacturer and distributor of lithium-ion batteries and bespoke storage systems, in November 2022 signed an investment agreement with EIT InnoEnergy. The investment formalises our relationship as a shareholder in Prime Batteries Technology that will support the company in achieving its ambition to scale up annual production output to 8GWh, attracting and accessing talent, and paving the way for it to become one of the success stories of the European battery value chain.

Prime Batteries Technology has long-standing experience in producing battery and tailor-made storage solutions across a range of industries including automotive, marine, industrial and material handling, and energy storage. The company's in-depth understanding of customer needs, married with its broad coverage of value chain solutions, has seen successful partnerships with large DSOs, EPCs and renewable energy producers across Europe.

With the value of the global battery market due to double in the next four years as demand grows rapidly for lithium-ion batteries – and in Europe, this demand outstrips production – dynamic growth and strengthening of the continent's supply chain is vital. It is on its way to become the second-largest battery producer after China by 2025. This investment is an example of expertise and resource collaboration that enables rapid capacity scaling by key players in the market.

VICENTIU CIOBANU
CEO of Prime Batteries Technology

Due to growing demand, we need to increase our production capacity. Our ambition is to scale up our yearly production output to 2GWh by 2024 and to 8GWh by 2026. We will do this by further developing our smart factory that at the same time enables us to make batteries at a significantly lower cost.

primebatteries.com

Website

5.25 **Pure Battery Technologies** secures funding to develop eco-friendly battery materials

In June 2022, Australian start-up, Pure Battery Technologies (PBT), secured a seven digit investment from EIT InnoEnergy and will also be able to tap into it's green tech community network to connect to potential customers and investors.

Additionally, the European Investment Bank (EIB), backed by the InvestEU programme, is granting a €36.7 million loan to Königswarter & Ebell, the fully-owned German subsidiary of PBT. The EIB financing comes in the form of a venture debt loan, supported by the InvestEU Green Transition programme, which is the successor of the Energy Demonstration Projects Facility, under Innovfin.

PBT has developed an environmentally superior processing technology for the production of EV battery cathode material and its funding will allow the company to ramp up commercial mass production operations in Germany. PBT's plant in Hagen aims to produce 10,000 tonnes of precursor cathode-active material (pCAM) - a core ingredient of batteries - by the end of 2023. This is enough to make batteries for around 120,000 EVs annually. PBT is aiming for global production of 250,000 tonnes by 2027.

PBT's technology refines both raw material (intermediates such as MHP) and black mass, thereby closing the recycling loop and making the end products truly environmentally friendly. As a global provider, PBT will enable battery cell makers to obtain flexible, clean and cost-effective battery materials while improving their environmental credentials.

PURE BATTERY

BJÖRN ZIKARSKY
CEO of PBT Group

We're incredibly proud to have this strategic partnership with EIT InnoEnergy and it's a real seal of approval for us. Our common aim is to manufacture the most sustainable and powerful batteries in Europe.

purebatterytech.com

Product page

5.26 French photovoltaic recycling startup, **Rosi,** raises €7.4 million to accelerate its development

ROSI Solar announced that it had raised €7.4 million in new capital from the Japanese group, ITOCHU Corporation, the European Innovation Council and its shareholder, EIT InnoEnergy. The fundraising will allow ROSI to finance its first industrial site for recycling photovoltaic (PV) panels in France, prepare its expansion in Europe and internationally, and strengthen its research, development and innovation activities.

ROSI Solar offers innovative solutions for the recycling and revalorization of raw materials in the PV industry. Its technologies allow the recovery of ultra-pure silicon and other metals which are currently lost during the production of PV cells and at the end-of-life of solar panels.

ROSI has been developing disruptive technologies to separate and purify high-purity, high-value PV raw materials since 2017. It is the first company worldwide to establish an industrial PV panel recycling line capable of recovering high-purity silicon, silver and copper and reintegrating them into advanced industrial uses.

In 2023, ROSI will set up its first industrial line, located in Saint-Honoré, in Isère, France, capable of recycling 3,000 tonnes of PV panels. It will be operational in the first quarter of 2023, employing 20 staff initially and around fifty long-term. The fundraising will enable ROSI Solar to remain at the forefront of technologies for the recycling of materials from the photovoltaic industry.

YUN LUO
CEO of Rosi

Silicon is considered a critical material by the European Commission. Its recovery will enable the photovoltaic and semiconductor industries, that buy our silicon, to establish industrial autonomy.

rosi-solar.com

Product page

5.27 **SeaQurrent** successfully closes €4.8 million funding round with investment consortium

Dutch tidal energy company, SeaQurrent®, announced in November 2022 that it had received an investment of over €4.8 million from EIT InnoEnergy, PMH Investments, Invest-NL, the FOM and NOM, along with other shareholders, to develop an innovative sustainable tidal energy convertor, the TidalKite™. From 2016 and after various scale model tests at MARIN and in the Wadden Sea, SeaQurrent is now working towards a demonstration of the fourth model of the TidalKite at Ameland.

A multi-wing underwater kite – measuring nine by twelve metres – generates enough electricity to supply an equivalent of 700 Dutch households with energy for a year. A TidalKite power plant will consist of a series of underwater kites. Each underwater kite is anchored to a monopile in the seabed with a high-tech cable, and floats underwater across the current.

The traction force generated by the TidalKite drives a hydro motor, which in turn drives a generator, reliably generating green electricity for the grid every day of the year, reducing the need for storage for other renewable sources. Moreover, the environmental impact is minimal and there is also no horizon pollution.

EIT InnoEnergy is convinced that tidal energy will become an important part of the European energy mix and that TidalKite can make a distinctive and important contribution to this.

YOURI WENTZEL
CEO of SeaQurrent

We are proud to announce that we have successfully completed this latest financing round. This investment enables us to further shape the development of our distinctive technology and of pilot projects.

seaqurrent.com

Website

5.28 **Skeleton** partners with Shell and invests €220 million to build the world's largest supercondensator factory in Germany

EIT InnoEnergy portfolio company, Skeleton Technologies, announced in October the launch of its SuperBattery and the unveiling of Shell as a partner. Skeleton is joining a Shell-led consortium to offer electrification solutions for mining sites. SuperBattery is an innovative technology combining the characteristics of supercapacitors and batteries. SuperBattery has been developed to serve the needs of several sectors and is currently being used and/or tested in hybrid and fuel cell EVs, buses, trucks, and charging infrastructure.

For the mining sector, decarbonization largely relies upon electrification and renewables, which are the best way to reduce operational emissions. Electrification of heavy-duty applications is both a necessity and a major challenge for the mining industry.

The company also announced in September an investment of €220m euros to build a new factory - slated to be the sector's largest in Europe - planned by Siemens, for supercapacitors near Leipzig, Germany, with production to begin in 2024.This follows the news in May 2022 that Skeleton Technologies, had entered into a commercial agreement with ZPUE - the largest manufacturer of electrical devices for electrical power distribution utilities in Poland - to provide energy storage solutions to the Polish market. Skeleton will be supplying supply supercapacitors for rail wayside storage at 200 MW per year from 2023 to 2025.

SKELE+ON TECHNOLOGIES

MICHAEL KELLNER
Parliamentary State Secretary for Economic Affairs and Climate Action of Germany

Skeleton's use of their own patented, curved graphene material strengthens the European energy storage ecosystem and value chain as it is a technology developed in Europe to manufacture energy storage products in Europe.

skeletontech.com

Product page

5.29 **Swobbee,** raises €6 million to bring micromobility battery swapping to Europe

Swobbee, a Berlin-based startup that is working to commercialise battery swapping for micromobility vehicles, in March 2022 announced that it had raised a €6 million in Series A funding from EIT InnoEnergy and one of its existing investors.

The start-up EIT will rely on both the funds and InnoEnergy's network in the European green tech space to build out its battery swapping station network across Germany and into further European countries. Companies offering battery swapping services for e-scooters have already built significant businesses across Asia - particularly in China and Taiwan.

Since its founding in 2017, Swobbee has focused on businesses that operate small electric vehicle fleets -utilising, for example, e-bikes, cargo bikes and kick scooters – particularly in the field of sharing, logistics and delivery. However, the goal for 2022 and beyond is not only to expand its fleet customers, but also to reach average consumers with personal vehicles.

While its network presently only covers around 50 locations in Germany, its plan is to either deploy stations on its own or through partnerships with gas stations, utilities companies or the retail market. Each station has a footprint of under one square metre, which makes it easy to install in city centre locations where swapping will be most needed.

THOMAS DUSCHA
CEO and Co-Founder of Swobbee

We are piloting together with the European Union a B2C model where we would like to discover if swappable batteries or battery-sharing services could be a thing for European customers.

swobbee.de

Product page

5.30 **Verkor** raises more than €250 million in additional financing for its Innovation Centre

French industrial company, Verkor, which is working to accelerate the production capacity of low-carbon batteries in southern Europe with the support of, among others, EIT InnoEnergy, announced in November 2022 that it had raised €250 million from investors to fund its Vector Innovation Centre (VIC) and battery gigafactory, in Grenoble.

Investors in the funding round included Societe Generale, Siemens and the European Investment Bank - which provided €49 million. The VIC is among many European initiatives to build a homegrown electric vehicle (EV) battery industry to compete against Asian manufacturers.

The 15,000 m^2 VIC comprises an R&D lab for designing high-performance batteries, an intelligent pilot line with a capacity of 150 MWh/year and a battery training centre, all due for completion in 2023. The VIC will also prepare for the series production of battery cells in a new factory in Dunkerque, on the Channel coast, from 2025.

Together with over a dozen specialists in technologies and industries of the future, including the European Battery Alliance (EBA) - which is supported by EIT InnoEnergy - and Grenoble INP - UGA, in September 2022 Verkor announced the launch of its 'École de la Batterie'. Training programmes - for all qualification levels from technical training certificates to PhDs - will take place in the Auvergne Rhône-Alpes region at various training centres and consortium members sites.

BENOIT LEMAIGNAN
CEO of Verkor

This announcement further cements the efforts undertaken over the last two years to build the future of electric mobility in Europe. I welcome the support of our institutional and industrial partners to make our project a reality. I know we can continue to count on them for the next milestone of our development.

verkor.com

Product page

5.31 City of Hamburg plans to reduce heat energy consumption in public buildings with **Vilisto**

Authorities a new project in the city of Hamburg announced in October 2022 a new for its district heating system that could save up to 30 percent of the usual energy consumption of its public buildings implementing smart and self-learning thermostats from EIT InnoEnergy portfolio company vilisto – around 15 gigawatt hours of heating energy. Its solution - smart and adaptive thermostats. Hamburg's officials are hoping this innovation can become a role model for energy efficiency for other cities.

The project will be implemented in a large proportion of the city's building stock. To achieve this, the Berlin-based company, myWarm, will carry out hydraulic balancing of around 10,000 radiators in 50 large public buildings. At the same time, Hamburg will be the first major German city to install smart thermostats on a large scale, with the units coming from EIT InnoEnergy-supported company, vilisto. Hamburg's city government is working together with the public and commercial real estate agent, Sprinkenhof GmbH, to make these changes.

While some public buildings need to maintain high temperatures, they remain unoccupied during 80 percent of the week - on weekends, after work hours or on home office days. With the introduction of smart thermostats, the interior temperature can be maintained without the input of a building's residents. Buildings that have already received the new tools include the Hamburg City Hall, the Altona and the Hamburg planetarium.

vilisto
einfach Wohlfühlklima

DR. ANDREAS DRESSEL
Finance Senator of the city of Hamburg

In addition to long-term projects in line with our urban climate plan, the upcoming cold season now also calls for immediate measures with a short-term impact. The project now underway is enormously promising and can make an important contribution to saving energy.

vilisto.de

Product page

5.32 **Woon Duurzaam** receives €2.2 million in financing to support homeowners' energy transition

EIT InnoEnergy-supported Woon Duurzaam, which advises homeowners on how to transition from gas to green energy sources, received €2.2 million in July 2022 in a second investment round. The funding came from new investors, Oneplanetcrowd, and ROM InWest, as well as from existing shareholders, EIT InnoEnergy and DOEN Participaties.

Following this investment, Amsterdam-based Woon Duurzaam will be able to further develop and automate its one-stop shop platform for home improvement. As a result, the company will be able to scale-up its operations to help many more homeowners realise the energy transition of their home - from sustainable alternatives such as heat pumps and solar panels, to optimal insulation and ventilation systems with heat recovery. All this is well coordinated by Woon Duurzaam's fully integrated approach – taking advantage of the contribution of knowledge and skills from a range of supporting experts.

With the financing raised - and processes automated to meet the growing demand - the number of gas-free and energy-neutral homes will quickly grow to thousands of homes per year.

With high energy prices in the Netherlands and the urgency to become more sustainable to achieve the country's climate objectives, the demand for sustainable housing has increased dramatically. Woon Duurzaam offers private homeowners tailor-made sustainability measures for their homes to support them during the entire transition.

RENSE VAN DIJK
Co-founder of Woon Duurzaam

With the investment raised, Woon Duurzaam can prepare its platform and organization for the future by improving and automating processes. As a result, we are creating an organization that is ready for upscaling, so that we can help even more home-owners make their homes more sustainable.

woonduurzaam.nl

Product page

TBB.2020 photo contest
Photo by: Gary Cummins


TB
Martin

06

Events

The Business Booster is EIT InnoEnergy's annual two-day international networking event that showcases 150+ sustainable energy technologies under one roof.

6.1 **The Business Booster 2022:** The race to net-zero – balancing exploitation and exploration

MALIN CARLSTRÖM
Senior Vice President, ABB Technology Ventures

I encounter some of the most interesting tech companies in Europe and they are chosen by EIT InnoEnergy which is a very important quality stamp.

In September 2022, EIT InnoEnergy's trusted sustainable energy innovation ecosystem met in Lisbon for two days of innovations, pitching, insightful sessions, networking, major announcements and more at The Business Booster (TBB). The 10th TBB saw 150 sustainable energy innovations under one roof meet with industry, investors, and policymakers. Over 1,200 attendees and 3,000 B2B meetings are testament to its success and why it has become the largest innovation event in sustainable energy.

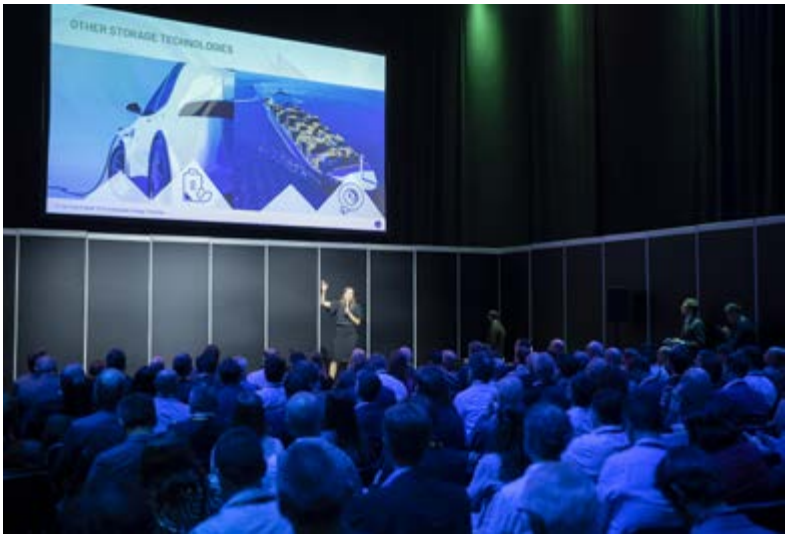
Over two days, more than 40 inspiring speakers presented and we were also honoured to welcome two European Commission keynote addresses: Vice President Maroš Šefčovič via a video welcome address and Director General of Internal Market, Industry, Entrepreneurship and SMEs, Kerstin Jorna, on stage. Our keynote speaker, former NASA astronaut Ron Garan, presented his inspiring views from space and reminded us that climate change has no boundaries.

The event looked at how we can win the race to net-zero through balancing the exploitation of existing technologies and exploration of new ones. During two roundtable discussions, participants heard from the innovators, entrepreneurs and researchers working on existing and future technologies.

Finally, the 150 EIT InnoEnergy portfolio start-ups in attendance pitched their solutions to investors, industry and policymakers and those voted best by the audience moved onto the pitching finals which closed out the event.

SUSTAINABLE 10 YEARS OF TBB. ENERGY INNOVATION

tbb.innoenergy.com



TBB.

CONGRATULATIONS TO THE WINNERS:

1st place – **GDI**

2nd place – **ROSI Solar**

3rd place – **ecop**

TEMA BENHALIMA--BOUVILLE
Managing Director Global Incubation, ENGIE

It's always exciting to have this choice of topics, start-ups and technologies all in one place.

2013	2014	2015	2016	2017
250 attendees **37** start-ups **10** countries	**330** attendees **139** start-ups **8** countries	**500** attendees **104** start-ups **19** countries The Business Booster gains the nickname TBB.	**500** attendees **150** start-ups **32** countries First *Open innovation village* at TBB.	**715** attendees **150** start-ups *Product demonstration area* premiered
Barcelona	**Barcelona**	**Berlin**	**Barcelona**	**Amsterdam**
	Find your ideal technology partner	Creating the future of sustainable energy today	The innovation engine for Europe's energy ndustry	Accelerating the clean energy transition

2018	2019	2020	2021	2022
Copenhagen	**Paris**	**TBB.Connect**	**Berlin**	**Lisbon**
800 attendees **150** start-ups **40** countries **1,000+** B2B meetings	**1,200** attendees **150** start-ups **44** countries **2,100+** B2B meetings	**1,200** attendees **150** start-ups **2,100+** B2B meetings TBB went virtual for the first time	**1,000+** attendees **150** start-ups **2,500+** B2B meetings	**150** start-ups **600** minutes of pitching **3,100+** B2B meetings **98%** recommendation rate
The future is now	Humanising the energy transition	Your meeting point for the trusted sustainable energy ecosystem	The new industrial revolution	The race to net-zero

2023 Amsterdam

6.2 300 EIT InnoEnergy students joined by 35 companies in Stockholm for **Master School Connect**

In May 2022, EIT InnoEnergy brought its extensive ecosystem together at Master School Connect in Sweden for an exhilarating two-day event connecting over 300 students from across Europe with experts, industry, and alumni. The event had many interactive activities, including team building and exploration of the city of Stockholm, along with workshops on career development and entrepreneurship.

Students attended inspiring sessions with EIT InnoEnergy executives and were able to question the leading experts during a panel discussion on building a carbon-free future through storage. There was also an interview session with Diego Pavia and Elena Bou from EIT InnoEnergy regarding how it supports entrepreneurial ideas from its alumni.

A highlight was the grand finale of the Battle of Green Talent, where participating student teams were pitching creative ideas to important investors in the hope of bringing to life their innovations for sustainable energy. These events spark the students' interest in thinking creatively and encourage them to transform ideas into tangible and profitable solutions.

Attendees watched as each team shared their vision, with one team ending up as overall winner in the final pitch - NaturaWatt. Their idea, to generate hydrogen from wastewater using a new technology, won the grand prize of €10,000. Another winner - in the investor category - was Jin Hyung Cho from Said Business School, Oxford University. As well as securing €10,000, he also won an all-expenses-paid trip to EIT InnoEnergy's flagship event, The Business Booster, in Lisbon.

Master School Connect was also home to a marketplace event, with companies from across the energy industry spectrum. It allowed students to network with 35 industry leaders – all an integral part of the EIT InnoEnergy ecosystem – including ABB, Palau Project, N-SIDE, Battery Associates, Valmet, Hymeth, Vattenfall, Northvolt, Galp, Fibersail and Schneider Electric.

Students were able to make valuable connections for internships, thesis opportunities and jobs – as well as meet with 20 successful alumni in attendance who are already

MANUEL ANDRADE
Head of Open Innovation of GALP

We intend to be closer to startups and academia to create solutions that help us thrive through the Energy Transition. The Battle for Green Talent is precisely the kind of initiative that can help us do that.

bringing their green business dreams to reality.

EIT InnoEnergy strives to connect students with its ecosystem so that they can explore various career opportunities while studying. Francesco de Marco, a Master's in Energy Storage year-1 student, sums up the value of the event. "It was great to connect with the major companies, but also to discover many innovative start-ups within the renewable energy sector."

Master's in Nuclear Energy year-2 student, Juan Franco Canepa, added: "It's an amazing opportunity to understand the different industries where our knowledge can be useful. It was also prime networking, as all companies are top tier in their respective fields."

07

Education

We need an informed, engaged and ambitious workforce to join the sustainable energy revolution and achieve a sustainable European energy industry.

TBB.2022 photo contest
"Energy efficiency for the people"
Photo by: Danilo Victoriano Jr.

7.1 Students' mini-grid project brings new sustainable technologies to **the Philippines**

Eight EIT InnoEnergy Master School students announced in April 2022 that they have taken on a challenging mini-grid project in the Philippines for their integrated Project of the Year (iPoY). The "Yuzu Project" team is collaborating with Okra Solar, AEIC, and Element Renewables ILAW to design and implement a mini-grid upgrade that introduces new sustainable technologies into the energy mix.

In 2018, Okra Solar and partners installed clean electricity (solar PV) in the small fishing village of San Isidro for the first time. However, cloudy days bring grid blackouts – so there's a real need to hybridise the grid by adding a secondary source of sustainable electricity. Based on the weather conditions, the team chose wind turbines.

This project isn't about one mini-grid or one remote location in need of reliable electricity. The best way to support the deployment of mini-grids in developing regions is to create open-source documentation, where everyone can access the project details, progress, and milestones – and learn from the team's journey.

The team is now preparing the next steps of procuring the wind turbines, completing an on-site visit and creating workshops for the local community. Whether in the Philippines or elsewhere, the team hopes that each student can take their learned knowledge from the EIT InnoEnergy Master School programme onwards to contribute to the energy transition so that they can benefit as many people as possible worldwide.

NATASHA WITTO
EIT InnoEnergy Master School student

The best way to support the deployment of mini-grids in developing regions is to create open-source documentation, where everyone can access the project details, progress, and milestones – and learn from our journey.

7.2 Renewable Energy alumni nominated as **Young Global Changers** with **Climatize**

William Wiseman and Alba Forns - MSc in Renewable Energy alumni and co-founders of the financial technology start-up, Climatize - were nominated as Young Global Changers by the Global Solutions Initiative and were selected as one of 10 projects from 550 applicants to pitch their company at the World Policy Forum held in Berlin, Germany in March 2022.

One of the key words of the event was the term "recoupling", which stands for connecting economic progress with social and environmental wellbeing. Climatize supports recoupling by enabling people to invest in clean energy projects from as little as their spare change. It recognises that the climate narrative needs to change from sacrifice to opportunity by allowing everyone to benefit from the energy transition.

By carefully selecting the projects the company invests in, Climatize ensures a positive impact for both the environment and the community - creating local jobs, lowering power costs, and building wealth by focusing on underserved communities.

Will and Alba learned about transformative approaches to the climate crisis, sustainable coffee, learning platforms providing access to information and inclusive ways to extend the life of crops using solar energy. Most important was taking on-board one message: We all share a common goal – to make the world a better place.

> **ALBA FORNS**
> EIT InnoEnergy alumni and co-founder of Climatize
>
> Clean energy investments need to grow substantially to ensure that the green transition is both effective and fair.

7.3 **NaturaWatt** wins second edition of **Battle of Green Talent**

The 2022 Battle of Green Talent, EIT InnoEnergy's online entrepreneurship competition aiming to bring business ideas for a sustainable energy future to life, was won this year by NaturaWatt. Team NaturaWatt, selected as best entrepreneurial team of the 2022, focuses on generating hydrogen from wastewater using a new innovative technology. The team picked up a €10,000 cheque and can now also enjoy the use of EIT InnoEnergy's Student Incubation Services.

The Battle of Green Talent takes participants on a journey through a virtual entrepreneurial ecosystem. It is an online entrepreneurship competition, with the goal of developing innovative sustainable energy ideas. During the six-month competition process, EIT InnoEnergy students and alumni transform their bright ideas into promising businesses, surrounded by talents, virtual investors, and advisors.

EIT InnoEnergy is excited to announce that the third edition of Battle of Green Talent is taking place in 2023 and already began accepting nominations from students in October 2022. After two successful editions in which 500 enthused students from over 15 different schools created over 45 venture start-ups, EIT InnoEnergy is looking forward to the third edition of the competition in which it aims to involve and engage even more students and professionals to build and evaluate a range of exciting green, innovative business ideas.

FABIA MIORELLI
EIT InnoEnergy Master School alumna

Only through strong ties between academia, industry, and governments will it be possible to devise meaningful strategies to build a more sustainable world – whether as scientists, policymakers, or business leaders, we all have an important role to play.

7.4 EIT InnoEnergy Alumnus awarded **2022 Sigvard Eklund** nuclear prize

EIT InnoEnergy Master's in Nuclear Energy alumnus, Georgios Zagoraios, was the proud recipient of the prestigious Sigvard Eklund's prize in 2022 for his Master's thesis 'Synthesis of uranium nitride fuel from UF4 stock'. In the opinion of the evaluation committee, the thesis is a manifest of excellent experimental skills and thorough theoretical understanding. The achievement of producing actual, and novel, nuclear fuel in laboratory scale is beyond the expectations of a master thesis.

The Sigvard Eklund prize was established by the Swedish Center for Nuclear Technology (SKC) to recognise and reward outstanding academic work of one talented student per academic level at Swedish universities. An independent jury considers the motivation for nomination, the scientific merit and the overall quality of all submitted theses in deciding whom to award.

In addition to the honour and recognition, the winner is rewarded with SEK 50,000 for the best doctoral thesis, SEK 35,000 for the best master's thesis or SEK 25,000 for the best bachelor's thesis.

Zagoraios' goal is to continue his career as a researcher in academia, in a role that promotes nuclear energy as one of the most sustainable energy sources worldwide. His vision aims to provide innovative ideas and solutions to a broad spectrum of problems that will improve the sustainability of nuclear energy.

GEORGIOS ZAGORAIOS
EIT InnoEnergy Master's in Nuclear Energy alumnus

This award made me proud of my effort over the last months and filled me with more strength and confidence to proceed to my future steps.

7.5 **EIT InnoEnergy Master School** alumnae blaze the trail for women-run start-ups!

EIT InnoEnergy Master School has many fantastic examples of women graduates who embody leadership and entrepreneurship, pushing the glass ceiling. For example, three strong, entrepreneurial alumnae continue to lead the charge in their chosen fields – and shine a light for others to follow.

The Verdantips team of three dynamic women met in Stockholm during their MSc in Energy for Smart Cities programme, where they learned that combating climate change requires government, corporate, and individual action.

MACKENZIE BANKER
Co-founder & CEO of Verdantips

As we began to change our lifestyle to minimise our environmental impact, we realised how inconvenient it can be. Where can I find organic produce? Or restaurants which aren't using plastic take-out containers? Which local clothing brands are using recycled materials? So, we created a platform that facilitates eco-living and conscious consumption by aggregating businesses, products, and activities that are better for the environment into one place.

LAURA LARINGE
Co-founder & Operations Director of ReLi

We've been very supported by EIT InnoEnergy and been provided with an excellent technical education in top universities that also taught me about business and entrepreneurship. This opportunity helped me understand my career goals and interests and brought me to where I am today.

With a mission to reduce the waste of batteries from electric vehicles while providing more accessible and reliable energy storage solutions to homeowners, Laura co-founded ReLi with two other students while studying at EIT InnoEnergy for her MSc in Smart Electrical Networks and Systems programme. Their idea went on to win the first edition of the Battle of Green Talent, a start-up competition by EIT InnoEnergy that gave them access to incubation services. In essence, ReLi makes more sustainable and affordable energy storage solutions for residential buildings with solar panels by refurbishing batteries from electric vehicles.

ALBA FORNS
Chief Strategist, Chief Climate Officer & Co-Founder of Climatize

We need to keep pushing and fighting for more gender and culturally diverse representation in the workplace, and I've seen a huge improvement! I have met amazing women who are out there right now disrupting the energy sector.

A project that began in Alba's first year of the MSc in Renewable Energy (entering the ESADE eWorks accelerator programme in 2020) has evolved into Climatize – a climate FinTech mobile app specialising in connecting climate-concerned individuals to impact investment opportunities. Climatize invests the spare change from consumers' everyday purchases into crowdfunding climate tech projects so they can earn money while protecting the environment. Of her time studying, Alba says: *"Both EIT InnoEnergy and ESADE - the Barcelona Pedralbes Business School - have been very supportive and provided invaluable connections within the industry. It's empowering to make fighting climate change easier than ever before – and being able to align my values with my job means the world to me."*

7.6 Master's in Energy for Smart Cities introduces a redesigned **I&E Journey with UnternehmerTUM**

EIT InnoEnergy Master's in Energy for Smart Cities students joining the programme in 2023 will find exciting, newly-designed modules added to the Innovation & Entrepreneurship (I&E) Journey - a parallel track followed during their master's programme. It will also be supported by UnternehmerTUM (UTUM), the Munich-based non-profit organisation, and one of the leading centres for innovation and business creation in Europe.

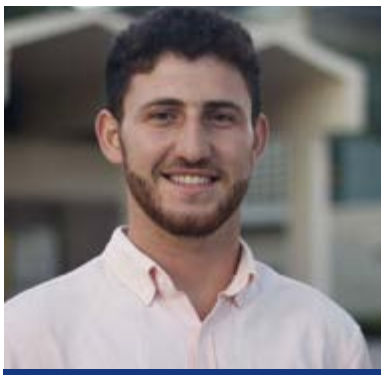
This highly successful and powerful MBA-level training includes courses and activities that take students to select European innovation hotspots and provides them with crucial tools and skills to prepare and inspire them to bring their ideas to the energy sector. The students take a tailor-made journey during a face-to-face Winter School in a European city and a face-to-face Summer School in Munich, with an online spring seminar in between.

During the Summer School 'Innovator's Journey' workshop in Munich, the students will participate in a blended training programme designed by The Academy for Innovators at UTUM. Having access to its academy will be an amazing and stimulating experience for the EIT InnoEnergy students and allow them to connect to UTUM's vast innovation and entrepreneurship ecosystem – and being right in the mix with these entrepreneurs as they test out new ideas and launch their businesses. That atmosphere is positively infectious.

ALBERTO GONZALEZ
Innovation and Entrepreneurship Education Manager of EIT InnoEnergy

Young engineers, entrepreneurs and future business leaders need a mindset that 'everything is possible'. This mindset will keep evolving existing technologies – and creating new ideas that will shape the future of sustainable energy.

7.7 From master's student to company delegate at **TBB.2022** before graduation!



Emet Zeitz, a recent graduate of the Master's in Sustainable Energy Systems, attended The Business Booster (TBB) in September 2022 in Lisbon from a new angle… as a company delegate! The EIT InnoEnergy flagship event brought together high-level keynote speakers and 1,200 industry delegates, including over 150 EIT InnoEnergy-supported innovations.

Emet's journey began with an internship at Net Zero Insights (a company that operates the most comprehensive climate tech start-up database) during his studies at EIT InnoEnergy Master School. The internship turned into a full-time job before he had even graduated – giving him a clear career fast-track. He then attended The Business Booster as a business developer, representing the company at Europe's most relevant energy industry event.

Emet's career at Net Zero Insights has given him precisely the type of position he was looking for. "They were offering an internship to be a climate tech analyst, and during the interview process we found a great topic to write a master thesis on, so I took the internship. However, after a few months as an intern, I was offered a full-time position – more focused on growing the business for this early-stage start-up – a role I was eager to take. After all, one of my goals when entering the EIT InnoEnergy programme was to find an opportunity like this – work that I enjoy and can be passionate about every day!"

EMET ZEITZ
EIT InnoEnergy Master School alumnus in Sustainable Energy Systems

EIT InnoEnergy's reputation attracts start-ups, investors, policymakers, and consultants from all over the world to TBB and creates a great space to connect with many people in a short time. I used the conference B2B meeting tool to schedule 27 successful meetings with different investors across two days.

08

Diversity

Diversity, inclusion and equality are core EIT InnoEnergy values.

TBB.2022 photo contest
"Circular energy"
Photo by: Klaus Vartzbed

8.1 **Many journeys, one welcome**

Diversity, inclusion and equality of opportunity are core EIT InnoEnergy values. We are committed to extending the same warm welcome to everyone, whatever their personal journey. We strive to ensure every voice is heard.

We value the contribution that different viewpoints make to our business of innovation. Having a variety of perspectives at all levels also equips us to meet the needs of the diverse communities we serve.

We extend our commitment across the career cycle. We recruit people from diverse backgrounds—for example, as of 2022, we employed 39 nationalities, with a 50/50 gender split. We then ensure that every member of our team is involved and valued, and receives equal recognition and opportunities for advancement.

In all areas of the employee experience -including recruitment, compensation and career development - and in all dealings with customers and communities, EIT InnoEnergy values merit regardless of age, social status, race, colour, disability, ethnic/social origin or national minority membership, or any other opinion, economic status, religion or spiritual belief.

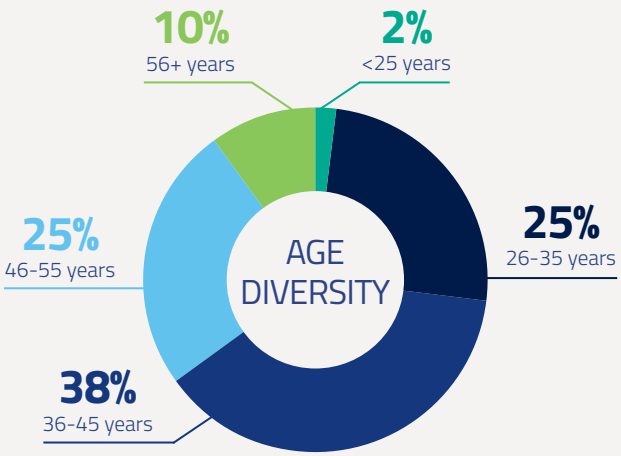
An example of our commitment is to increase the participation of women in a variety of roles and levels across the company. We will also ensure that:

- The Supervisory Board will have at least 30% women representation by the end of 2024.
- At least 25% of graduates from our Master of Science programmes will be women by 2024.
- No less than 10% of supported start-ups will have at least one women co-founder, CEO, CFO or CTO by the end of 2023.

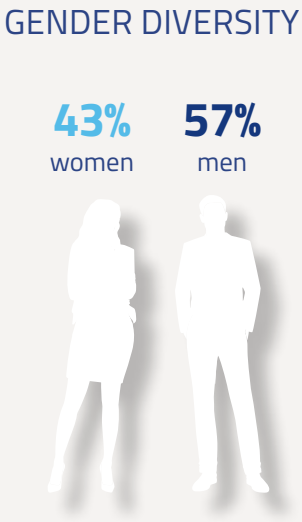
MIKE RUIGROK
Senior HR Manager of EIT InnoEnergy

At EIT InnoEnergy, Diversity, Equality and Inclusion (DEI) is not simply about setting targets and quotas. It aims to equip our unique organisation with a variety of viewpoints and perspectives, so we can better understand and meet the needs of our diverse customers.

DIVERSITY IS NOT AN EVENT, IT IS IN OUR DNA, IT IS WHAT WE DO



GENDER DIVERSITY



NATIONALITY OF OUR EMPLOYEES

Argentina, Australia, Austria, Belgium, Bosnia and Herzegovina, Cameroon, Costa Rica, Croatia, Egypt, France, Georgia, Germany, Great Britain, Greece, Hungary, India, Indonesia, Israel, Italy, Libya, North Macedonia, Mexico, Netherlands, Norway, Peru, Poland, Portugal, Romania, Spain, Sweden, Türkiye, Ukraine, USA, Venezuela, Vietnam

8.2 Unlocking Potential to Drive Innovation: **Powering Skills through Diversity**

Skilling, reskilling and upskilling are essential components of any dynamic workforce. Skilling refers to the process of acquiring new skills, while reskilling involves developing skills in a different field or domain. Upskilling, on the other hand, focuses on enhancing existing capabilities to keep pace with technological advancements. These processes are critical for employees to remain competitive, adapt to changing job requirements, and pursue new opportunities.

Embracing diversity in skilling, reskilling and upskilling helps to broaden perspectives and promote innovative thinking. When individuals from diverse backgrounds participate in these programmes, they bring unique insights, experiences, and problem-solving capabilities. It also stimulates creativity and encourages the development of fresh ideas and solutions.

Diversity is crucial in ensuring inclusive access to skilling, reskilling, and upskilling opportunities for all. By recognising and addressing barriers that different groups face - such as gender, ethnicity, socio-economic status and age - organisations and educational institutions can ensure equal access and provide tailored support. This inclusive approach helps bridge the skills gap and enables individuals from all backgrounds to acquire the necessary competencies in a rapidly changing job market.

Diversity brings a healthy mix of perspectives and experiences – and these can help create the numerous tools required by today's workforce to meet the evolving needs of industry. By developing greater skillsets, staff are better prepared to recognise emerging changes and trends in the workplace, as well as acquiring skills that withstand the test of time.

Another benefit of diversity is that it cultivates collaboration and co-creation. When individuals from differing backgrounds come together to learn and share knowledge, they foster an environment of mutual understanding, respect and cooperation. Collaborative learning environments encourage the exchange of ideas, enable cross-pollination

OANA PENU
Director of the InnoEnergy Skills Institute

In the rapidly evolving landscape of work and technology, diversity plays a crucial role in skilling, reskilling, and upskilling. Recognising and embracing diversity in these contexts not only ensures equal access to opportunities but also fosters innovation, adaptability, and resilience and contributes to individual and collective growth.

of skills and facilitate the development of innovative solutions to complex challenges.

What is more, diversity can be a catalyst for innovation. When skilling, reskilling, and upskilling initiatives embrace diversity, they tap into a wider range of perspectives, insights and experiences. This diversity of thought sparks creativity, challenges conventional wisdom and drives breakthrough innovations. By creating inclusive environments that value diverse contributions, organisations can unlock the full potential of their workforce and foster this culture of innovation.

In summary, diversity in skilling, reskilling, and upskilling is not just an ethical imperative but also an essential driver of success in the rapidly evolving world of work. By embracing diversity, organisations and educational institutions can broaden perspectives, ensure inclusive access, foster adaptive skillsets, promote collaboration and drive innovation. As we navigate the challenges and opportunities presented by technological advancements, it is crucial to recognise the power of diversity in unleashing individual potential and collectively shaping a future-ready workforce.

EQUAL by 30
Equal Pay, Equal Leadership, Equal Opportunities

Equal by 30 is a public commitment by public and private sector organisations to work towards equal pay, equal leadership and equal opportunities for women in the clean energy sector by 2030. EIT InnoEnergy joined Equal by 30 in March 2022.

EIT InnoEnergy is proud to endorse the principles of Equal by 30, then take the concrete action needed to accelerate the participation of women in the clean energy sector, and close the gender gap.

8.3 EIT InnoEnergy continues student support with **Energy Impact Scholarships**

In 2022, as in previous years, EIT InnoEnergy offered a range of scholarships/fee waivers for top applicants based on a combination of academic skills (such as past performance, quality of previous education and university), professional background, affinity with innovation and entrepreneurship, amongst others.

For intake 2023, we are granting ten full-fee waivers, worth €18,000 a year – along with a number of partial-fee and regional-fee waivers - to candidates with outstanding profiles that contribute to the power of our student body. Candidates are selected based on the following criteria:

- Candidates who enrich the diversity of our programmes (criteria include background, nationality, social contribution, gender identity and sexual orientation).
- Candidates from EIT RIS (regional innovation scheme) countries.
- Candidates with proven entrepreneurial experience (such as having set up their own venture).

The awarded candidates for the ten full-fee waiver Energy Impact Scholarships are selected based on the admission ranking amongst an average of 1,500 applications each year. These scholarships are not linked to any specific master's programme.

Recipients of an EIT InnoEnergy full-fee waiver are expected to contribute to the Master School by sharing their experiences during their studies through blogs, vlogs, social media activities and/or ambassadorship work to be agreed upon with EIT InnoEnergy upon enrolment.

8.4 Double accolade as EIT InnoEnergy Master School graduate, Fabia Miorelli, makes two **Forbes Under 30 lists**

FABIA MIORELLI
EIT InnoEnergy Master School alumna

Being a woman in a male-dominated field can sometimes be a hurdle, so focus on your goals and who you want to become. I have always sought out a role model throughout my career, as I believe you cannot become what you cannot see.

It was twice the honour in 2022 for EIT InnoEnergy Master School graduate, Fabia Miorelli, when she was named on two separate Forbes "under 30" lists. She made the "100 under 30 in Italy" list for contributing to innovation and entrepreneurship in the field of energy, as well as the distinguished "30 under 30 in Europe" in the Industry and Manufacturing category, which identifies those creating the products, methods, and materials of tomorrow.

Her current role as a PhD candidate at the German Aerospace Centre (DLR) in the Energy Systems Analysis department helps her bring a fresh perspective to these topics, with her research focused on assessing the impact of different futuristic electric vehicle and mobility concepts on future energy systems.

Passionate about renewable energy integration and decarbonisation strategies, Fabia says: "I'm interested in investigating the scientific, technological, and economic opportunities to achieve the UN's Sustainable Development Goals, particularly those related to decarbonisation of the transport sector. Only through strong ties between academia, industry, and governments will it be possible to devise meaningful strategies to build a more sustainable world. Whether as scientists, policymakers, or business leaders, we all have an important role to play."

As the first female EIT InnoEnergy Master School graduate on the coveted Forbes list, Fabia is a true inspiration to others.

TBB 2022 photo contest
Photo by: Klienne Eco

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EIT InnoEnergy
Kennispoort 6th floor
John F. Kennedylaan 2
5612 AB Eindhoven
The Netherlands
info@innoenergy.com

EIT InnoEnergy Benelux
Kennispoort 6th floor
John F. Kennedylaan 2
5612 AB Eindhoven
The Netherlands
benelux@innoenergy.com

EIT InnoEnergy France
1-3 Allée du Nanomètre
38000 Grenoble, France
france@innoenergy.com

EIT InnoEnergy Germany
Albert-Nestler-Strasse 21
76131 Karlsruhe, Germany
germany@innoenergy.com

EIT InnoEnergy Iberia
Edifici Nexus II Oficina 0A
Jordi Girona, 29
08034 Barcelona, Spain
iberia@innoenergy.com

EIT InnoEnergy Central Europe
Mogilska43 Cowork
ul. Mogilska 43
31–545 Kraków, Poland
central.europe@innoenergy.com

EIT InnoEnergy Scandinavia
Torsgatan 11, 8th floor
111 23 Stockholm, Sweden
scandinavia@innoenergy.com

EIT InnoEnergy USA
444 Somerville Ave
Somerville, Massachusetts
02143 United States
usa@innoenergy.com

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www.innoenergy.com