



YOUR SOLUTIONS FOR THE ENERGY SYSTEM OF THE FUTURE



CONNECT FOUR: THE WHOLE OF THE NEW ENERGY WORLD IN ONE PLACE

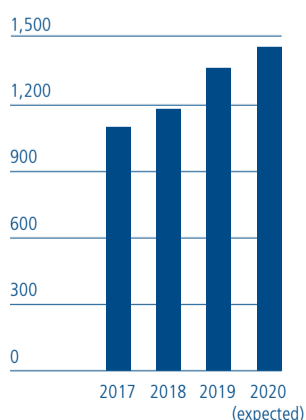
The global boom in renewable energies is now unstoppable. The growth and innovative power of the industry is reflected in the success of The smarter E Europe. The continent's largest platform for the energy industry has grown enormously in the last two years – a trend which is set to continue in 2020. In 2019, almost 50,000 people from 162 countries visited the four exhibitions of The smarter E Europe: Intersolar Europe, ees Europe, Power2Drive Europe and EM-Power. Next

year's event is on track to be a double record-breaker, with more than 50,000 visitors, as well as 1,450 exhibitors presenting their latest products and services for the new energy world across 110,000 sqm of exhibition space. The exhibitors at this year's EM-Power showed particular innovative spirit. An impressive 41 percent of all start-ups who registered for The smarter E Start-up Arena were EM-Power exhibitors. These young businesses are making digitalization, decentralization

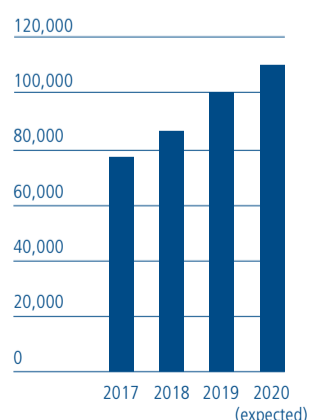
and sector coupling a reality with their trailblazing ideas. All in all, 177 businesses exhibited at the 2019 event with products and solutions for a decentralized and renewable energy supply, energy management and building automation as well as energy services and contracting. EM-Power also counted an impressive proportion of industry professionals (94 percent) among its 13,957 visitors. Visitor satisfaction was exceptionally high at 96 percent.

GROWTH OF THE SMARTER E EUROPE

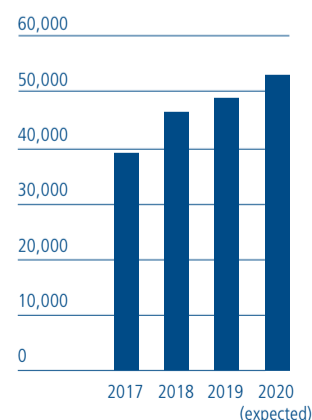
Exhibitor Numbers 2017–2020



Exhibition Area (gross) 2017–2020



Visitor Numbers 2017–2020



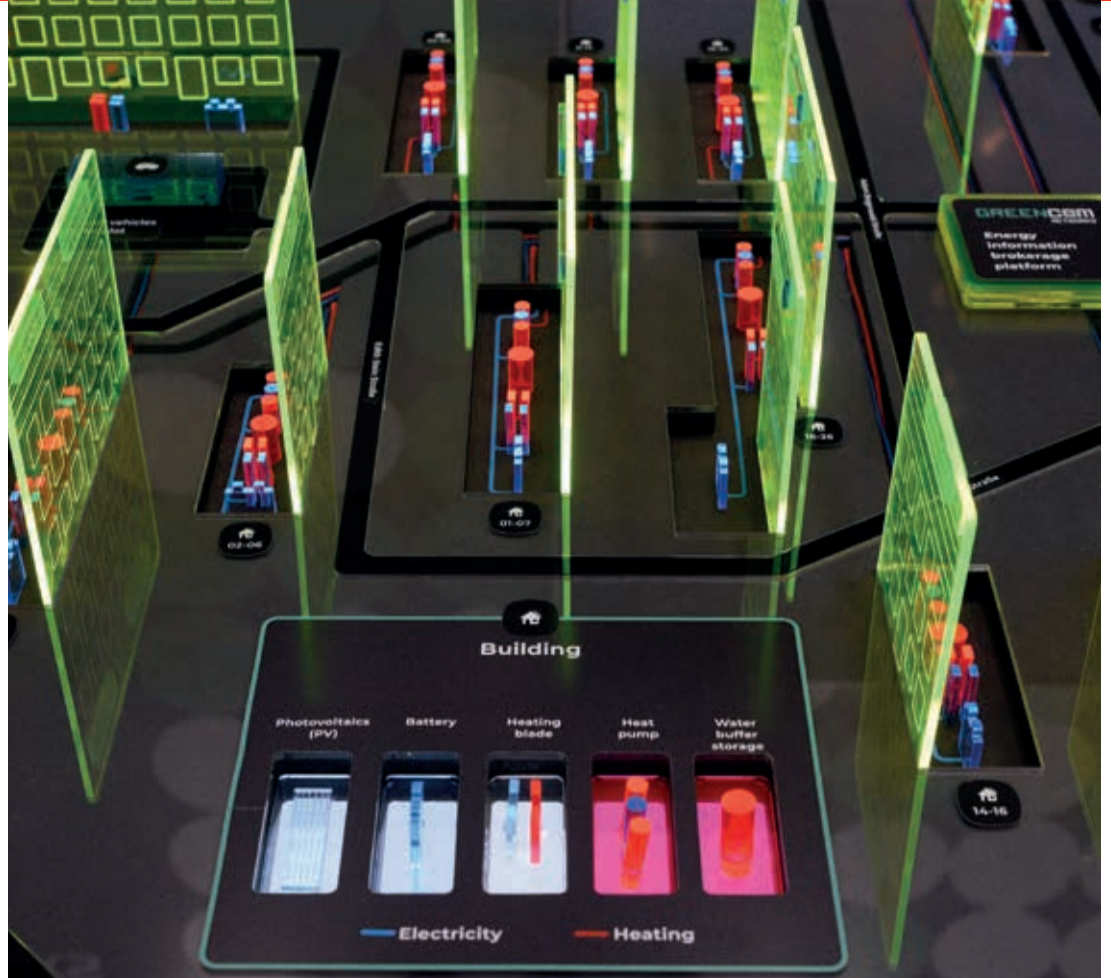
The cumulative figures for the years up to 2017 are for the exhibitions Intersolar and ees Europe, from 2018 for The smarter E Europe.

SMART METERING IS ALMOST READY FOR TAKE-OFF

The German Federal Office for Information Security (BSI) certified the second smart meter gateway (SMGW) at the end of September 2019. The Bonn-based office says it is confident that more manufacturers will be able to meet the required standards and that the mandatory rollout will be able to start before the end of the year. It also notes that seven more SMGW manufacturers are currently in the process of certification.

No energy transition without smart meters

Independently of this development, growing numbers of metering point operators have been starting to install smart metering systems for their customers since late 2018. Innovative projects which aim to increase energy efficiency through improved energy management, to ease the burden on the power grids, or simply to make power consumption more transparent are only possible with smart metering. The Research Center for Energy Economics (FfE) in Bavaria is currently installing smart meters for its end customers in two separate projects. One aims to take excess electricity from renewable sources and store it as heat using heat pumps and electricity storage systems. For the other project, the researchers have developed a digital platform where grid operators, households and businesses can trade in FLEX options. These include electricity from private PV installations, battery storage systems or electric vehicles as well



as a range of other power generators. Trading in this way prevents grid congestion. The start-up Fresh Energy analyzes its customers' smart meter data using complex algorithms, pattern recognition and machine learning. This helps to determine the power consumption of individual appliances by taking into account each device's consumption behavior.

Smart Meter joint booth

The different applications and the overall potential of smart metering and energy controlling are enormous. The next EM-Power will once again feature a joint booth offering an exclusive setting where companies can present their solutions for smart metering, the operation of metering points, energy monitoring and energy controlling as well as energy management systems.

→ EM-POWER FORUM: LEARN FROM THE EXPERTS!



Innovative energy and efficiency technologies, exciting best practice case studies, and practical research projects – all this and more awaits you at the EM-Power Forum. Running on all three days of the exhibition, the Forum offers presentations and discussions in a number of subject areas tailored to the needs of professional energy customers as well as energy, building and facility managers, not to mention planners and consultants working in industry and real estate. Topics will include how digitalization and smart meters can optimize energy demand, how businesses and neighborhoods can become carbon neutral, how a decentralized energy supply is possible with cogeneration and sector coupling, and how small wind turbines, photovoltaics and storage systems can work together.

Date June 17–19, 2020
Venue Hall C4, Booth C4.650
Participation Exhibition ticket required

START-UP ARENA: THE SHOWCASE FOR NEWCOMERS TO THE NEW ENERGY WORLD

The founders of green start-ups are creative, dynamic and passionate about what they do. While large companies in the renewable energy industry often have limited scope for innovation, start-ups seize the opportunity to work on promising new projects for the future. All they're missing is an easy way to share their ideas with a large audience. The start-up platform at The smarter E Europe offers them the perfect solution. A booth in the Start-up Arena is available to any company which meets three criteria – it must have been founded no longer than 5 years ago, have a maximum of 50 members of staff working on the project, and have a maximum annual turnover of 5 million euros. But space is limited, so interested start-ups need to move quickly!

Networking made easy

Joining the Start-up Arena has a whole range of advantages – exhibitors will benefit from extensive free networking opportunities and can boost their visibility at events including Business Speed Dating, the exhibitor evening and the founders' breakfast. This is the perfect place to forge valuable relationships with national and international energy experts. All start-ups can also apply for a 10-minute speaking slot in the Start-up Arena. A new highlight this year is the opportunity for these young exhibitors to enter themselves for the coveted The smarter E AWARD free of charge. Taking part is more than worth it – last year's winners included two start-ups, mondas and Raycatch, who won the judges over with their pioneering spirit and innovative power. Entries open on January 1, 2020.

→ www.TheSmarterE.de/en/start-ups



➔ BEST PRACTICE CASE STUDY FROM AWARD WINNER AXIOTHERM



A prize-winning solution – storing energy in discs and rods

The residents of the retirement home in the small village of Selfkant-Millen, near Germany's border with the Netherlands, are at the forefront of the energy transition – whether they know it or not. The building's plant room houses an award-winning heat storage tank using Power-to-Heat which proves that sector coupling is possible even in smaller buildings without any great effort or expense. A kraftBoxx with a volume of 800 l works together with a PV installation, two inverter heat pumps, a fresh water station and a smart control system to supply the home's eight units with heat and hot water. Excess PV power heats up the storage system via an electrothermal station. In summer, the storage system is also used to cool the building – an ideal solution, as older people are particularly affected by hot weather. The highly efficient thermal energy storage system uses latent heat storage elements with a phase change material (PCM) contained in innovative capsules specially developed by Axiotherm. These come in the shape of rods or discs depending on the size of the storage system. The modular and scalable kraftBoxx offers up to four times more storage capacity than conventional applications – without taking up any more space. The storage system has become so successful, partly thanks to The smarter E AWARD, that the company is now developing a spin-off to help opening up additional markets.

THINK YOU HAVE A PRIZEWORTHY IDEA? ENTER NOW!

The renewable energy market is booming – for a reason. Innovations in sector coupling and digitalization are driving the modernization of our energy infrastructure worldwide. The smarter E AWARD aims to honor these innovators on a very public platform. On June 17, 2020, the award will once again be presented to companies whose ideas and technologies are contributing to an intelligent, sustainable and affordable energy supply. Innovations can be submitted until March 31, 2020. And taking part is more than worth it. The 20 finalists of The smarter E AWARD 2019 included two EM-Power exhibitors – and both ended up among the winners!

The start-up mondas is now mentioned in the same sentence as major names such as Siemens and BayWa r.e., its fellow winners in the category Outstanding Projects. Among other topics, this category honors completed projects in the field of energy management. The Smart Renewable Energy category is also perfect for future-oriented players, SMEs and start-ups, who want to shine a spotlight on their innovations in the area of sector coupling and digitalization. This year's winner Axiotherm was a perfect example. With its Power-to-Heat solution kraftBoxx, Axiotherm won over the high-caliber panel of judges completely. Like mondas, Axiotherm is still reaping the benefits of the award today – it's an unbeatable advertisement for companies.

➔ www.TheSmarterE-award.com



INTERVIEW WITH CHRISTIAN NEUMANN, MANAGING DIRECTOR OF MONDAS

Each year, many new start-ups enjoy the benefits of exhibiting their innovations at EM-Power. One excellent example is mondas GmbH from Freiburg, which won The smarter E AWARD with its very first entry. Managing Director Christian Neumann shared his thoughts with us:



How was your experience as an exhibitor at EM-Power?

Overall we're very satisfied with the exhibition. We did a lot of valuable networking. The three exhibition days were a huge success for us.

What does it mean to you as a start-up to win The smarter E AWARD?

We are delighted with our Outstanding Projects award from The smarter E – it's a real honor, especially for a start-up from Freiburg.

What solutions does mondas offer?

Our product is a web platform for energy plant monitoring. Of course, there are many products which offer this. What makes us different is that we are flexible and scalable at the same time.

How does your IoT system platform work?

Once we've entered the parameters for a given plant, the system can visualize any number of similar plants. We can then create complex analyses tailored to users' needs. This helps them to optimize maintenance, reduce the associated costs and ultimately streamline their operations, resulting in greater customer satisfaction.

What's your impression of EM-Power?

All in all, we think EM-Power is taking a pioneering approach. The energy transition will be decentralized and digital. We are seeing growing numbers of decentralized installations which operate far below their optimum level, which is an area where our software services could really make a difference.



POWER (AND HEAT) TO THE PEOPLE

Cogeneration, or combined heat and power (CHP), has the potential to play a central role in the energy transition and solve a great many problems. CHP plants generate electricity and heat even at times when no wind or sun energy is available. As a result, they help boost grid stability and supply security.

Innovative projects aiming at energy autonomy are increasingly based on CHP in conjunction with a fuel cell when all other energy sources have been exhausted. The prefabricated house company WeberHaus has fitted a single-family home with one of these systems using an energy center from HPS Home Power Solutions as part of a pilot project. The fuel cell is fed with hydrogen

produced by an electrolyzer using excess PV power. A bigger pilot project is taking place in Dubai with a hydrogen-powered CHP plant supplied by 2G Energy. An electrolysis plant will generate hydrogen in an enormous solar farm. Tests are looking at how the hydrogen can be stored and converted back into electricity or used for transportation and other industrial applications.

As a key element in the energy transition and sector coupling, CHP plants are one central topic at EM-Power. The exhibition is offering a Cogeneration/ Sector Coupling joint booth to enable small and medium-sized businesses in the CHP sector to take part. This booth will offer visitors a compact overview of important information.

EM-POWER NEWSLETTER

Did you like the example projects in the exhibition newspaper? You'll find more in the EM-Power Newsletter for professional energy customers and prosumers. The newsletter is published every two weeks in German and once a month in English. It contains best practice case studies, reports on the latest research projects for an efficient energy supply, and other important industry news. You can subscribe for free under → www.EM-Power.eu/en → News & Press → News → Newsletter.

CARBON-NEUTRAL BUSINESS: CLIMATE CONSERVATION BECOMES A COMPETITIVE ADVANTAGE

Coca-Cola is doing it, IKEA and Lidl are doing it, and so are Sony, Schneider Electric and Deutsche Telekom – they're all among the 672 companies from around the world who are taking part in the Science Based Targets Initiative. All of these companies have set themselves a science-based climate target in line with the Paris Agreement to limit global heating to 1.5°C or well under 2°C. By implementing measures to reduce their carbon emissions, these companies are not just protecting the climate – they're

also making a profit. For example, 55 percent of managers are reporting competitive advantages as a result of their commitment to the climate; 52 percent are finding that investors have greater trust in them; and 63 percent say that they are driving innovation as a result of their climate targets. There is a broad spectrum of possible climate conservation measures. In early 2019, IKEA opened a new London outlet which is its most sustainable branch to date, according to its own data. The building is equipped

with photovoltaics, geothermal energy and rainwater utilization technology. The Swedish furniture giant wants to cut its carbon footprint by 80 percent by 2030, compared to 2016 levels, including by switching over to renewable and recycled raw materials for its entire product portfolio. The wholesaler Metro also wants to become more climate-friendly and has significantly expanded the charging facilities for electric vehicles at its Düsseldorf headquarters, for example. Schneider Electric is aiming to reduce its direct emissions to zero by 2030. The company is using its own IoT-capable energy management platform to help it reach this goal. It already has 13 carbon-neutral buildings in Europe, North America and China.

Learn from the experts at EM-Power

The smarter E Europe wants to support these businesses in their efforts to cut CO₂ emissions. While Intersolar Europe, ees Europe and Power2Drive Europe showcase the potential building blocks for energy solutions, EM-Power is where everything comes together. It combines efficient energy technologies, smart control systems, and technologies for improving energy efficiency in a single streamlined offering tailored to construction and industry. The EM-Power Forum will be dedicating a whole session of presentations to the issue of corporate renewable sourcing and carbon-neutral business. This focus also makes EM-Power an attractive event for trade visitors to the parallel exhibition automatica. After all, our energy supply forms part of the smart, digitally connected systems of Industry 4.0.



© E-Tankstelle – IKEA