The ees Europe Conference takes place in parallel to the following conferences:
WE WOULD LIKE TO THANK THE SPONSOR

TESVOLT
THE ENERGY STORAGE EXPERTS

PARTNERS
conexio  EUROBAT  Fraunhofer
NAATBatt  ISE
ZVEI: Die Elektromobilität

ORGANIZER
SOLAR PROMOTION
CONTENTS

2 Sponsors, Supporters & Partners
4 Conference Overview – all Conferences
6 Conference Chairman & Committee
7 Conference Proceedings & Quick Facts
8 Conference Opening
10 Conference Program Tuesday, June 19th
13 Conference BBQ „MIDSUMMER CELEBRATION”
14 Conference Program Wednesday, June 20th
18 Side Event
20 ees Europe Exhibition
### CONFERENCE PROGRAM – TUESDAY, JUNE 19, 2018

- **9:30am–11:00am**
  - Conference Opening – ROOM 14 B
  - New Energy World – Game Changers and Rising Stars

- **11:30am–1:00pm**
  - Trends and Driving Forces – “Markets Unleashed”
  - Boost Your PV Performance Using Retrofitting and Repowering
  - Off-Grid, On Track – Why the Business Model Matters

- **2:30pm–4:00pm**
  - Markets: Europe’s Sunny Renaissance
  - PV Power Plants: Taking Operation & Maintenance to the Next Level
  - Off-Grid: Innovative Solutions

- **4:30pm–6:00pm**
  - The Four to Watch Out for – Boom Markets for Solar
  - Game-Changing Approaches for Agricultural PV
  - Off-Grid Projects that Make a Difference

- **6:00pm–9:00pm**
  - Conference BBQ “Midsummer Celebration”

### CONFERENCE PROGRAM – WEDNESDAY, JUNE 20, 2018

- **9:00am–10:30am**
  - Investing in Europe’s PV Future
  - Floating PV – the Next Big Thing?
  - Latest News on Cell & Module Tech Pioneers

- **11:00am–12:30pm**
  - Comeback Time for Major Players – What Impact for Solar?
  - Cost-Cutting.Tech Breakthroughs for Residential Systems
  - Latest Manufacturing News from the Lab

- **2:00pm–3:30pm**
  - Towards a Global Standard for Solar Project Financing
  - Cost vs. Performance: Component Choices for Commercial Systems
  - Made in Europe – Leveraging Quality and Innovation in Production

- **4:00pm–5:30pm**
  - 
  - 
  - 
# CONFERENCE PROGRAM – TUESDAY, JUNE 19, 2018

- **Conference Opening** – **ROOM 14 B**
  - New Energy World – Game Changers and Rising Stars

<table>
<thead>
<tr>
<th>Session</th>
<th>Room 13 A</th>
<th>Room 13 B</th>
<th>Room 4</th>
<th>Room 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Projects: Already Energizing the Financial and Insurance Sector?</td>
<td>Battery System Design</td>
<td>Overview of European Renewable E-Mobility</td>
<td>Sector Coupling – How is it Emerging?</td>
<td></td>
</tr>
<tr>
<td>Conference BBQ “Midsummer Celebration”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# CONFERENCE PROGRAM – WEDNESDAY, JUNE 20, 2018

<table>
<thead>
<tr>
<th>Session</th>
<th>Room 13 A</th>
<th>Room 13 B</th>
<th>Room 4</th>
<th>Room 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Life Projects</td>
<td></td>
<td></td>
<td>Energy Sharing and Green Energy Sourcing</td>
<td></td>
</tr>
<tr>
<td>Electrifying the Non-Automotive Transport Sector</td>
<td>Battery System Innovation</td>
<td>Charging Infrastructure Technology</td>
<td>How Digital Infrastructure Enables New Energy Realities</td>
<td>Data Protection and Cybersecurity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMITTEE CHAIRMAN 2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dr. Matthias Vetter  
Head of Department Electrical Energy Storage EES, Fraunhofer Institute for Solar Energy Systems ISE, Germany

| COMMITTEE MEMBERS 2018 |

Dr. Joachim Döhner  
Vice President Technology Solutions Kuka Industries and Spokesman VDMA Battery Production, Germany

Dr. Holger Hesse  
Stationary Energy Storage (Head of Research Group), Institute for Electrical Energy Storage Technology, TUM Technical University of Munich, Germany

Kai-Philipp Kairies  
Director Technical Consulting, ISEA – Institut für Stromrichtertechnik und Elektrische Antriebe, RWTH Aachen, Germany

Dr. Falko Schappacher  
Managing Director, MEET – Müster Electrochemical Energy Technology, Germany

Rene Schroeder  
EUROBAT – Association of European Automotive and Industrial Battery Manufacturer, Belgium

Sam Wilkinson  
Associate Director, Solar & Storage IHS Markit, USA

James J. Greenberger  
Executive Director, NAATBatt International, USA

Alexander Hirnet  
Technical Director, VARTA Storage, Germany

Nina Munzke  
Team Leader, Stationary Storage Systems, Karlsruhe Institute of Technology (KIT), Germany

Gabriele Schmiedel  
Vice President Hydrogen Solutions, Siemens AG, Germany

Felix Von Borck  
Executive Managing Director, Akasol GmbH, Germany
4 CONFERENCES – 1 TICKET

Your participation fee for ees Europe also allows you to attend the expert presentations at the parallel events Intersolar Europe, Power2Drive Europe and The smarter E Europe, so that you can stay on top of developments in this complex industry. The Intersolar Europe Conference answers the questions: Who is driving photovoltaics beyond borders? Which economic, technology and political parameters and trends are decisive? At the Power2Drive Europe Conference, you will learn about how renewable energies, energy storage and e-mobility depend on each other. The smarter E Europe Conference experts will explain what digital solutions for an intelligent energy system look like.

CONFERENCE QUICK FACTS

Dates June 19–20, 2018
Hours 9:00am–6:00pm
Venue ICM – Internationales Congress Center München
Messe München 81823 Munich, Germany
Speakers 200 expected
Attendees 1,700 expected

PRICING

<table>
<thead>
<tr>
<th>PRICING</th>
<th>On-Site (June 18–22, 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Conference Ticket</td>
<td>€ 1,200</td>
</tr>
<tr>
<td>Conference Day Ticket</td>
<td>€ 810</td>
</tr>
</tbody>
</table>

CONTRACTED

www.TheSmarterE.de → Tickets

Dear Conference Attendee,

All presentations of the ees Europe Conference (also Intersolar Europe Conference, The smarter E Conference, Power2Drive Conference) for which we have obtained the respective permission from the speakers, will be uploaded to our conference system during the conference.

Please visit the ees Europe website → www.ees-europe.com/Proceedings. Please enter the barcode number as printed on your conference badge to access the conference proceedings. Access is only granted to Intersolar Europe, ees Europe, The smarter E Europe and Power2Drive Europe Conference delegates. Please note that Side-Event and Workshop presentations are not included.
Energy markets all over the world are undergoing fundamental change. Energy suppliers, automobile manufacturers and new players are jostling for space in this budding industry, bringing with them a range of innovative technologies and concepts. The game changers and rising stars of the industry, their ground-breaking solutions for photovoltaics, energy storage, electric mobility and charging infrastructure as well as our ever-growing digital possibilities facilitate the new energy world. The numbers of cross-sector cooperations are growing rapidly, and as PV plant operators come together with providers of charging points or energy storage systems, new business models are developing with an eye to the efficient use of the clean power available.

Focusing on the intelligent and digital combination of the generation, storage, distribution and use of renewable energy, the four conferences bring together international stakeholders in the energy future from across the world’s most influential markets. At the joint Conference Opening, hear from world-renowned experts about trends in global energy markets, and the fast-paced transition to distributed and renewable energy sources. The Opening will give answers to what our energy supply chains will look like in the future, how the electricity, heating and mobility sectors are likely to converge, and what opportunities this will create for electricity trading and marketing. Join the crowd of game changers and rising stars of our new energy world and learn how you can help set the direction of this change!

“There is now a new orthodoxy in energy and climate: in the world of 2040, one third of power will come from wind and solar, one third of vehicles will be electric, and the economy will be one third more energy-efficient than today.”

Michael Liebreich
Founder, Bloomberg
New Energy Finance
NEW ENERGY WORLD – GAME CHANGERS AND RISING STARS

9:30am  Welcome and Moderation
Dr. Melinda Crane, Chief Correspondent, Deutsche Welle, Germany

9:40am  Keynote: New Energy World – Global Trends
Michael Liebreich, Founder, Bloomberg New Energy Finance, UK

11:00am  Statements and Discussion
- Francisco Carranza, Managing Director, Renault-Nissan Energy Services, UK
- Erwin Smole, Co-Founder, Grid Singularity GmbH, Germany
- Prof. Dr. Michael Weinhold, CTO Energy Management Division, Siemens AG, Germany
- Dr. Christian Westermeier, President, SolarPower Europe, Belgium
TUESDAY, JUNE 19, 2018

INTERNATIONAL MARKETS

11:30am Welcome and Introduction
Julian Jansen, Senior Analyst, IHS Markit, UK

11:35am An Airbus for Batteries?
State of Play of EU Initiative on Batteries for Transport and Energy Storage
Francesco Gattiglio, EU Affairs Manager, EUROBAT Association of European
Automotive and Industrial Battery Manufacturers, Belgium

11:50am Maximising Revenue Streams for Behind-the-Meter
Energy Storage Systems in the UK through Virtual Power Plant Integration
Rob Samuelson, Business Development Director, Bryt Energy Storage Ltd., UK

12:05pm Czech Republic – ESS Market Outlook to 2020
Jaroslav Dorda, Analyst & CEO, Solarni Novinky, Czech Republic

12:20pm Synergy: Commercialization of Energy Storage Industry Impelled by Electric Vehicles
Jianduo Li, General Manager, Global Mainstream Dynamic Energy Technology Ltd., China

12:35pm Maturing Markets – What We Can Learn from the
Development of the US Energy Storage Market
Semih Oztreves, Business Development Manager, Greensmith Energy, USA

12:50pm Q&A

STORAGE PROJECTS:
ALREADY ENERGIZING THE FINANCIAL AND INSURANCE SECTOR?

2:30pm Welcome and Introduction
Dr. Matthias Vetter, Head of Department PV Off-Grid Solutions and Battery
System Technology, Division Electrical Energy Systems EES, Fraunhofer Institute for Solar Energy Systems ISE, Germany

2:35pm Insurance as Business Enabler – Risk Transfer Solutions for the Energy Storage Industry
Dr. Sebastian Scholz, Senior Business Development Manager, Munich RE, Germany

2:55pm Financing Storage Projects – A Perspective from Deutsche Bank
Felix Holz, Vice President, Deutsche Bank AG, Germany

3:15pm Large Scale PV & Storage Plants in Mexico:
How the Regulatory Framework Impacts Economics
Joscha Rosenbusch, Principal Advisor, Large Scale Solar Energy Program in Mexico,
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Germany

3:35pm Renewable Hybrids & Energy Storage Business Leader
Vish Iyer, Head Business Development – Hybrid and Energy Storage Business,
Sterling & Wilson Private Limited, India

3:55pm Q&A
New business models are emerging in the storage market. For example, energy suppliers are combining local decentralized heat/power-generation units and PV systems with decentralized district storage systems. This allows producers to deposit energy they do not need themselves into an account and withdraw it later as needed. In addition, grid operators can digitally network individual battery storage systems to create a decentralized large-scale storage system that alleviates shortfalls in supply. In this session, companies present methods for using energy storage to generate profits.
TUESDAY, JUNE 19, 2018

MATERIAL INNOVATION & PRODUCTION AUTOMATION

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30am</td>
<td>Welcome and Introduction</td>
<td>Dr. Joachim Döhner, Vice President Technology Solutions Kuka Industries and Spokesman, VDMA Battery Production, Germany</td>
</tr>
<tr>
<td>11:35am</td>
<td>Implications of Silicon Alloy Anodes in Lithium-Ion Batteries</td>
<td>Moritz Teuber, Department head of modeling, Analytics and Lifetime Forecast, RWTH Aachen, Germany</td>
</tr>
<tr>
<td>11:55am</td>
<td>Integrated Production of High Power Lithium Ion Cells and Batteries</td>
<td>Michael Deutmeyer, Managing Director, EAS Germany GmbH, Germany</td>
</tr>
<tr>
<td>12:15pm</td>
<td>Production Cost Forecast of Lithium-ion Battery Cells</td>
<td>Olivier Nowak, Senior Consultant, IHS Markit, United Kingdom</td>
</tr>
<tr>
<td>12:35pm</td>
<td>Electrode Slitting – Just Another Process Step</td>
<td>Dr. André Mecklenburg, CEO, Kampf LSF GmbH &amp; Co. KG, Germany</td>
</tr>
</tbody>
</table>

Research and industry are working to develop cost effective, durable battery components. The focus is on new materials that exhibit not only higher energy and power density, but also longer battery life and improved safety. Research centers on new types of anode, cathode and electrolyte materials. Along with progress in this area, the session presents information about systems technology and manufacturing concepts for producing capacitors and battery cells.

BATTERY SYSTEM DESIGN

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30pm</td>
<td>Welcome and Introduction</td>
<td>Kai-Philipp Kairies, Director Technical Consulting, ISEA – Institut für Stromrichtertechnik und Elektrische Antriebe, RWTH Aachen, Germany</td>
</tr>
<tr>
<td>2:35pm</td>
<td>Cascaded H-Bridge Multilevel Inverter for Stationary Battery Energy Storage Systems</td>
<td>Prof. Dr. Hans-Georg Herzog, Professor, Technische Universität München, Germany</td>
</tr>
<tr>
<td>2:55pm</td>
<td>Nanostructured LiMn2O4 as a Very High Power and Long Cycle Lifetime Cathode Material for Future Lithium Ion Batteries</td>
<td>Dr. Benjamin Lesel, Chief Technology Officer, NanoDian, Inc., USA</td>
</tr>
<tr>
<td>3:15pm</td>
<td>Battery System Design for Automotive Series Production</td>
<td>Felix Von Borck, CEO, Akasol GmbH, Germany</td>
</tr>
<tr>
<td>3:35pm</td>
<td>Key Parameters to Optimize Stationary Storage Systems</td>
<td>Julia Badeda, Director Business Development Stationary Storage Systems, Batterieingenieure GmbH, Germany</td>
</tr>
<tr>
<td>3:55pm</td>
<td>Q&amp;A</td>
<td></td>
</tr>
</tbody>
</table>

Battery storage systems are designed for specific applications. The electrical, thermal, mechanical and software technical system design spans from cell selection and cooling systems to electrical connections and cell contacts to safety measures. The speakers will present various systems approaches, explain the use of battery inverters and the potential of multi-level converter technology, and discuss the difference between high- and low-voltage battery systems.
### RESIDENTIAL/BEHIND THE METER

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30pm</td>
<td>Welcome and Introduction</td>
</tr>
<tr>
<td></td>
<td>Nina Munzke, Team Leader System Control and Analysis, Karlsruhe Institute of Technology (KIT), Germany</td>
</tr>
<tr>
<td>4:35pm</td>
<td>The Solar Home Battery Market in Germany</td>
</tr>
<tr>
<td></td>
<td>David Wedepohl, Managing Director International Affairs, BSW – German Solar Association, Germany</td>
</tr>
<tr>
<td>4:55pm</td>
<td>PV Battery Systems: Prices, Design Choices and Purchase Motivation</td>
</tr>
<tr>
<td></td>
<td>Jan Figgener, Research Assistant, RWTH Aachen University, Institute for Power Electronics and Electrical Drives, Germany</td>
</tr>
<tr>
<td>5:15pm</td>
<td>Optimal Management Energy Storing Assets, for Resiliency Improvement, Opex Reduction and Revenue Stacking in Business and Safety Critical Micro-Grids</td>
</tr>
<tr>
<td></td>
<td>Cristopher Campbell, VP, Critical Energy Business Development, Vertiv, USA</td>
</tr>
<tr>
<td>5:35pm</td>
<td>A Clean Switch to Clean Energy – Hydrogen Valley</td>
</tr>
<tr>
<td></td>
<td>Rohit Prasad, Sales and Business Development, Proton Motor Fuel Cell GmbH, Germany</td>
</tr>
<tr>
<td>5:55pm</td>
<td>Q&amp;A</td>
</tr>
</tbody>
</table>

The demand for solar storage systems is rising sharply each year. Already 75,000 solar storage systems in Germany are making reasonably priced solar power available around the clock and reducing grid expansion related to the energy transition. At the same time, prices for solar energy storage devices suitable for household and commercial use have dropped by half in the past four years, according to recent statistics from the German Solar Association. This session will take a look at the latest figures on market and price development in domestic storage systems.

---

### CONFERENCE BBQ „MIDSUMMER CELEBRATION“

Intersolar, ees, The smarter E and Power2Drive Europe Conferences are joining forces with the European Solar Association SolarPower Europe to organise the 3rd edition of the award-winning networking event Midsummer Celebration on Tuesday 19th of June 2018 during Conference Barbecue. This will be the official warm-up of The smarter E Europe, giving you a chance to meet and greet with over 500 industry stakeholders in a relaxed atmosphere. Kick-off the exhibition and celebrate the arrival of the summer with drinks, good food and many more surprises!
In order to store energy reliably and highly efficiently, battery systems must meet a range of quality and safety requirements. To avoid system malfunctions and prevent accidents, it is important to pay attention to safety criteria when planning, installing and operating storage systems – and this goes for dismantling and disposal as well. Experts explain how to ensure the performance, safety and reliability of battery systems, and discuss existing certification programs.

Technical details and business case models for stationary energy storage systems (ESS) will be discussed in the session entitled „Real Life Projects“. World leading experts from industry will pitch-talk on technical and economical details of the companies’ lighthouse projects. These short presentations are followed by a panel discussion round on future developments of cell manufacturing and system engineering, ESS technology and energy market innovations, as well as profitability of future ESS applications.
ELECTRIFYING THE NON-AUTOMOTIVE TRANSPORT SECTOR

2:00pm  Welcome and Introduction
Dr. Matthias Vetter, Head of Department PV Off-Grid Solutions and Battery System Technology, Division Electrical Energy Systems EES, Fraunhofer Institute for Solar Energy Systems ISE, Germany

2:05pm  Battery Electric Trains
Florian Ringbeck, Section Storage System Technology and Vehicle Integration, RWTH Aachen University, Institute for Power Electronics and Electrical Drives, Germany

2:25pm  Technical Evaluation of PV-ESS Power System for Tramcar in Freiburg
Lluis Millet, Project Engineer, Applied Storage Systems, Fraunhofer Institute for Solar Energy Systems ISE, Germany

2:45pm  Electrification and Hybridization of Ships
Dr. Peter Riegger, Research and Technology, Rolls-Royce Power Systems AG, Germany

3:05pm  Future of Electric Flight
Olaf Otto, Head of Strategy and Business Development eAircraft, Siemens AG, Germany

3:25pm  Q&A

Time  2:00pm–3:30pm
Room  13 A

Electric modes of transportation are not only found on the road – they can also go airborne, roll along the rails or float on the water. In this session, experts discuss the electrification of air, sea and rail transport. They will present high-performance battery systems for use in combination with electric motors, hybrid electric drives or fuel cells to power aircraft, ships and streetcars, making air, rail and water-based transportation emission free.
Excess electrical energy, for example from photovoltaic installations, can be transformed and stored as other forms of energy. The market comprises a wide spectrum of storage technologies, ranging from power-to-heat and charge management for electric vehicles and pumped-storage systems to seasonal storage using electrolysis and methanation (power-to-gas). Charge your Power-To-X storage memory bank at this session. The speakers will explain the various technologies using concrete examples.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00am</td>
<td>Welcome and Introduction</td>
<td>Dr. Falko Schappacher, Technical Commercial Management, MEET – Münster Electrochemical Energy Technology, Germany</td>
</tr>
<tr>
<td>9:05am</td>
<td>Residential Scale Power-to-Heat: A Missing Link to Integrated Energy Systems</td>
<td>Dr. Gerhard Rimpler, Managing Director, my-PV GmbH, Austria</td>
</tr>
<tr>
<td>9:25am</td>
<td>True Long Duration Energy Storage</td>
<td>Matthew Barnett, Business Development Director, Mercom Capital Group, LLC., UK</td>
</tr>
<tr>
<td>10:05am</td>
<td>Sector Coupling</td>
<td>Calum McConnell, Managing Director, ITM Power GmbH, Germany</td>
</tr>
<tr>
<td>10:25am</td>
<td>Large-scale Hydrogen Supply to Refueling Stations via Liquid Organic Hydrogen Carriers (LOHC)</td>
<td>Cornelius von der Heydt, Chief Commercial Officer, Hydrogenious Technologies GmbH, Germany</td>
</tr>
</tbody>
</table>

**POWER-TO-X**

*Time  9:00am–10:30am  
Room 13 B*
Lithium-ion batteries generally demonstrate higher efficiency and higher cyclical life expectancy in comparison to lead batteries. Thanks to their good charge acceptance, they are suitable for load profiles with a large dynamic range. Depending on the electrode material and electrolyte used, the cell types possess different properties and operating characteristics. This session features information about innovations in system design and lithium-ion battery management.

**BATTERY SYSTEM INNOVATION**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker Name</th>
<th>Organization/Position</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00</td>
<td>Welcome and Introduction</td>
<td>Felix von Borck, CEO, Akasol GmbH, Germany</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>11:05</td>
<td>Dichromate Flow Batteries: A Breakthrough Grid-Level Energy Storage Technology Offering High Energy and Power Densities at Exceptionally Low Cost</td>
<td>Dr. David Finkelstein, Engineering Project Manager, Grenoble INP, France</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>11:25</td>
<td>HE3DA Lithium Battery Technology Platform – Energy Blocks</td>
<td>Dr. Jan Prochazka, President, HE3DA s.r.o., Czech Republic</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>11:45</td>
<td>Why Customizing Lithium Ion Cells?</td>
<td>Stefan Permien, CTO, Custom Cells Itzehoe GmbH, Germany</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>12:05</td>
<td>How to Produce (More) Sustainable Batteries?</td>
<td>Dr. Benjamin Reuter, Consultant, thinkstep AG, Germany</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>12:25</td>
<td>Q&amp;A</td>
<td></td>
<td>Room 13 B</td>
<td></td>
</tr>
</tbody>
</table>

**SUPPLY CHAIN – IS THERE A RISK OF SHORTAGES?**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker Name</th>
<th>Organization/Position</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00</td>
<td>Welcome and Introduction</td>
<td>Sam Wilkinson, Senior Research Manager, IHS Markit, United Kingdom</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>2:05</td>
<td>Grown Up Market, Grown Up Problems – Challenges for Battery Storage</td>
<td>Florian Mayr, Partner, Apricum – The Cleantech Advisory, Germany</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>2:25</td>
<td>The Vital Role of Battery Raw Materials in the Development of the Electric Vehicle and Energy Storage Market</td>
<td>Vincent Ledoux-Pedaille, Associate Director, Lithium and Battery Materials Research, IHS Markit, UK</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>3:05</td>
<td>Beyond Lithium – Alternative Materials for Stationary Storage</td>
<td>Michael Peither, CO-Founder and Chief Technical Officer, VoltStorage GmbH, Germany</td>
<td>Room 13 B</td>
<td></td>
</tr>
<tr>
<td>3:25</td>
<td>Q&amp;A</td>
<td></td>
<td>Room 13 B</td>
<td></td>
</tr>
</tbody>
</table>

Global demand for energy storage systems is rising enormously due to the growth in renewable energies and e-mobility. In some areas, the availability of raw materials for battery production is already a matter of debate. This session will explore which materials should be viewed with criticism and how they can be replaced. It also addresses the questions of how the supply of cells for battery manufacturers and system integrators can be secured and whether the industry will in fact face a cell shortage.
WEDNESDAY, JUNE 20, 2018

SIDE-EVENT: BATTERY SAFETY TUTORIAL

Time  9:00am–12:15pm
Room  21 A

Participation:
€375
Register online or on-site.
(includes exhibition ticket)

Organizer

www.intersolar.de/en/tickets
International Exhibition Series for Batteries and Energy Storage Systems

JULY 10–12, 2018, SAN FRANCISCO, USA
NORTH AMERICA’S ULTIMATE HOT SPOT FOR ENERGY STORAGE SOLUTIONS
www.ees-northamerica.com

AUGUST 28–30, 2018, SÃO PAULO, BRAZIL
THE MAJOR PLATFORM FOR STORAGE TECHNOLOGIES RESHAPING LATAM’S ENERGY SECTOR
www.ees-southamerica.com

OCTOBER 24, 2018, STRASBOURG, FRANCE
www.ees-summit.com/FRANCE

DECEMBER 11–13, 2018, BANGALORE, INDIA
THE LEADING STORAGE EXHIBITION TO SECURE INDIA’S ENERGY SUPPLY
www.ees-india.in

MARCH 5–7, 2019, DUBAI, UAE
EES@MIDDLE EAST ELECTRICITY: MENA’S MOST COMPREHENSIVE ENERGY STORAGE EVENT
www.ees-mena.com

APRIL 4–5, 2019, MUMBAI, INDIA
THE LEADING STORAGE EXHIBITION TO SECURE INDIA’S ENERGY SUPPLY
www.ees-india.in

MAY 15–17, 2019, MUNICH, GERMANY
EUROPE’S LARGEST EXHIBITION FOR BATTERIES AND ENERGY STORAGE SYSTEMS
www.ees-europe.com
Discover innovative battery technologies and future-oriented solutions for storing renewable energies at ees Europe!

Europe’s largest, most international and most visited exhibition for batteries and energy storage systems is the industry platform for suppliers, manufacturers, distributors and professional users of stationary energy storage solutions and battery systems. In 2018, more than 450 suppliers of energy storage technology and energy storage systems will be represented at ees Europe and the parallel exhibitions held under the umbrella of The smarter E Europe in Munich.

EXHIBITION QUICK FACTS

<table>
<thead>
<tr>
<th>Dates</th>
<th>June 20–22, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>9:00am–6:00pm</td>
</tr>
<tr>
<td></td>
<td>9:00am–6:00pm</td>
</tr>
<tr>
<td></td>
<td>9:00am–5:00pm</td>
</tr>
<tr>
<td>Venue</td>
<td>Messe München</td>
</tr>
<tr>
<td></td>
<td>81823 Munich, Germany</td>
</tr>
<tr>
<td>Halls</td>
<td>B1 and C1</td>
</tr>
<tr>
<td>Exhibitors</td>
<td>250+ ees exhibitors in halls B1 and C1</td>
</tr>
<tr>
<td></td>
<td>450 suppliers of products and solutions for energy storage technologies and energy storage systems, grid infrastructure, and solutions for the integration of renewable energy</td>
</tr>
<tr>
<td></td>
<td>1,200+ exhibitors in total at The smarter E Europe</td>
</tr>
<tr>
<td>Exhibition space</td>
<td>18,000 sqm (86,000 sqm The smarter E Europe)</td>
</tr>
<tr>
<td>Visitors</td>
<td>50,000+</td>
</tr>
<tr>
<td>Total Attendance</td>
<td>65,000+</td>
</tr>
</tbody>
</table>
EXHIBITION SITE PLAN OF THE SMARTER E EUROPE 2018

EXHIBITION HALLS OF THE SMARTER E EUROPE 2018

1. The smarter E Forum (including trade press booth)
2. Intersolar Forum (including trade press booth)
3. ees & Power2Drive Forum (including trade press booth)
4. Compact Energy Forum (including trade press booth)
5. Meeting point pv Guided Tours
6. Special exhibit Diversity of E-Mobility
7. Joint booth Hydrogen, Fuel Cells & Power-to-Gas
8. Joint booth + Battery Production Forum
9,10. BMWi joint booths „Innovation – Made in Germany”
With four parallel energy exhibitions, The smarter E Europe is the innovation hub for empowering new energy solutions. It takes a comprehensive approach to the topics of the new energy world by presenting cross-sector energy solutions and technologies. Thanks to two renowned and two new energy exhibitions, The smarter E Europe creates opportunities to address all the key areas along the value chain. Focusing on the generation, storage, distribution and use of energy and the ways in which these aspects interact and can be intelligently combined, The smarter E Europe brings together international stakeholders in the energy future from across the world’s most influential markets.

The smarter E Europe takes place from June 20–22, 2018 at Messe München, bringing together the following events:
- Intersolar Europe – The world’s leading exhibition for the solar industry
- ees Europe – Europe’s largest and most-visited exhibition for batteries and energy storage systems
- Power2Drive Europe – The international exhibition for charging infrastructure and e-mobility
- EM-Power – The exhibition for intelligent energy use in industry and buildings

In addition to sector coupling and decentralization, digitalization is a central element of the new energy world. The growing demand for integrated and intelligently connected solutions means that companies are increasingly relying on these types of systems and services. The smarter E Europe responds to this development, presenting solutions and technologies for an intelligent, sustainable and cost-effective energy supply.
CONGRATULATIONS TO ALL AWARD WINNERS 2018!

Be part of the AWARD Ceremony and celebrate the Intersolar AWARD, ees AWARD and The smarter E AWARD winners 2018.

Wednesday, June 20, 2018, 5:00pm
The smarter E Forum, Hall B2, Booth B2.570
SAVE THE DATE

THE INNOVATION HUB FOR
EMPOWERING NEW ENERGY SOLUTIONS
MESSE MÜNCHEN, GERMANY

MAY 15–17 2019
www.TheSmarterE.de

Join forces at THE SMARTER E EUROPE, where 50,000 energy experts and enthusiasts from 165 nations meet 1,300 exhibiting market leaders, global players, and energy pioneers.