

PROGRAM

ESE/IRES CONFERENCE – DAY 1

Tuesday, March 13, 2017

✓	🕒 Time	📄 Information & Speaker
	09:00 am – 09:45 am	Arrival of Attendees – Breakfast
	10:00 am – 12:15 am	Opening and Welcome Session
	10:00 am	Welcome Note Hans Werner Reinhard, Messe Düsseldorf
	10:10 am	Welcome Note Prof. Peter Droege, Eurosolar e.V.
	10:20 am	Welcome Note Thomas Speidel, Bundesverband Energiespeicher (BVES)
	10:30 am	Opening IRES Prof. Dirk Uwe Sauer, RWTH Aachen
	10:45 am	Opening ENERGY STORAGE EUROPE Dr. Andreas Hauer, ZAE Bayern
	11:00 am – 12:10 pm	Keynotes
	12:10 pm	Visit of the exhibition
	13:00 pm	Lunch break
	02:00 pm – 03:30 pm	Session 1: State of Energy Storage – From Development to Deployment Chair: Dr. Andreas Hauer, ZAE Bayern
	02:00 pm	Intro Session Chair: Are the pioneering years already over? Different energy storage technologies show different states of development and implementation. Today's situation will be described from various perspectives.
	02:05 pm	World of Energy Storage - Vision from BVES Urban Windelen, Bundesverband Energiespeicher (BVES)
	02:20 pm	The Status of the Energy Storage World - Are the Pioneering Years Over? Florian Mayr, Apricum – The Cleantech Advisory
	02:35 pm	tbc
	02:50 pm	Thierry Lepercq, Engie
	03:05 pm	The State of Energy Storage Bundesministeriums für Wirtschaft und Energie
	03:20 pm	Q&A
	03:30 pm	Coffee break – Visit of the Exhibition

✓	🕒 Time	📄 Information & Speaker
	04:00 pm – 05:15 pm	Session 2: Panel Discussion: Energy Storage or Grid Extension – The Appropriate Question? Chairs: Prof. Dirk Uwe Sauer, RWTH Aachen Dr. Andreas Hauer, ZAE Bayern
		Intro Session Chairs: The electricity grid provides local distribution of energy, while energy storage provides a temporal shift between energy supply and demand. However in specific situations both measures are influencing each other quite strongly. But is it really a question of energy storage or grid extension?
		Thomas Speidel, ads-tec / Bundesverband Energiespeicher (BVES)
		Thierry Lepercq, Engie
		Dr. Martin Keller, National Renewable Energy Laboratory
		Dr. Sunita Satyapal, U.S. Department of Energy, Office of Hydrogen, Fuel Cells & Infrastructure Technologies
	05:00 pm	Q&A
	06:00 pm	BVES Networking Event

PROGRAM

ESE CONFERENCE – DAY 2

Wednesday, March 14, 2018

✓	🕒 Time	👤 Information & Speaker
	08:30 am – 09:00 am	Arrival of Attendees – Breakfast
	09:30 am – 10:45 am	Session 3: “Flexible” Sector Coupling – Definition and Basics Chair: Prof. Christian Doetsch, Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT
	09:30 am	Intro Session Chair: Definition, potential, advantages
	09:35 am	Sector Coupling - a key element of to optimize energy system transformation Prof. Dr. Hans-Martin Henning, Fraunhofer-Institut für Solare Energiesysteme ISE
	09:50 am	The role of Energy Storage Teun Bokhoven, International Energy Agency TCP ECES
	10:05 am	Flexible sector coupling from an energy supplier's perspective Dr. Oliver Weinmann, Vattenfall
	10:20 am	Research funding strategy in the field of energy storage Bundesministeriums für Wirtschaft und Energie
	10:35 am	Q&A
	10:45 am – 11:00 am	Coffee break – Visit of the Exhibition
	11:00 am – 12:30 pm	Session 4: “Flexible” Sector Coupling – Chemicals & Mobility Chair: Dr. Christopher Hebling, Fraunhofer Institute for solar energy systems ISE
	11:00 am	Introduction Session Chair
	11:05 am	Production of chemicals as energy storage
	11:15 am	On-site PEM electrolyzers can do more than just supply the hydrogen for zero emission public transport! Calum McConnell, ITM Power GmbH
	11:25 am	Charging infrastructure - The end of the gas station? Trans-Canada Highway Charging Himanshu Sudan, eCAMION
	11:35 am	Vehicle-to-Grid - Idea still alive? Yvonne Boerakkere, TKI Urban Energy
	11:45 am	Power to Ammonia Gert Jan de Geus, OCI Nitrogen
	11:55 am	Stationary Batteries - A By-Product of the Mobility Sector?
	12:05 pm	Power-to-Gas and Power-to-fuel
	12:15 pm	Q&A
	12:30 pm – 02:00 pm	Lunch break – Visit of the Exhibition

✓	🕒 Time	👤 Information & Speaker
	02:00 pm – 03:30 pm	Session 5: “Flexible” Sector Coupling – Power-to-Heat Chair: Teun Bokhoven, International Energy Agency TCP ECES
	02:00 pm	Introduction Session Chair
	02:05 pm	Power-to-Heat - The Danish Concept Per Alex Sørensen, PlanEnergy
	02:20 pm	Heat Battery Lianda Sjerps-Koomen, TKI Urban Energy
	02:35 pm	Thermal Energy Storage as a Priority Area of Mission Innovation Dr. Wim van Helden, AEE - Institute for Sustainable Technologies
	02:50 pm	Potentials and obstacles for PtH applications - case studies on company and regional level Dr. Armin Kraft, EEB ENERKO
	03:05 pm	Carnot-Batteries: Developments and perspectives of pumped heat electricity storage Prof. Dr. André Thess, DLR
	03:20 pm	Q&A
	03:30 pm – 16:00 pm	Coffee break – Visit of the Exhibition
	04:00 pm – 05:30 pm	Session 6: Energy Storage in Future Buildings, Industrial processes and Power Plants Chair: Dr.-Ing. Peter Schossig, Fraunhofer Institute for solar energy systems ISE
	04:00 pm	Introduction Session Chair: Vision of the future of buildings and industrial processes and the role of energy storage
	04:05 pm	Smart Home - Smart powering instead of managing electricity consumers: Self sufficiency solutions for households including heat pump and e-car Markus Brehler, Caterva GmbH
	04:20 pm	The water battery as a natural power storage Susanne Kleineheismann, Max Bögl Wind AG
	04:35 pm	Battery Energy Storage Solution - Enhancing the operational flexibility of flexible combined cycle industrial gas turbines Uwe Fuchs, Siemens AG
	04:50 pm	More Flexible and Efficient Industrial Processes by Thermal Energy Storage Integration Dr. Antje Seitz, German Aerospace Center - DLR e.V.
	05:05 pm	From Islands to Industry – how Commercial and Industrial Heavy Power Users benefit from Microgrid Solutions Alexander Schönfeldt, Younicos GmbH
	05:20 pm	Q&A
	06:00 pm – 18:30 pm	Departure Shuttle Bus to Dinner/Party
	06:30 pm – 0:00 am	Dinner/Party

PROGRAM



IRES CONFERENCE – DAY 2

Wednesday, March 14, 2018

Time	Information & Speaker			
09:00 am – 10:30 am	Session A1: Thermal Energy Storage From residential to large scale, from basic research to the evaluation of applications - this session offers insight into the diversity of TES	Session A2: Applications and Case Studies (1) The role, the potential and the benefits of various energy technologies in different countries and regions of ap-	Session A3: Batteries (1) Latest developments in the area of battery technologies are presented in this session. Beside this we will have look to the ecological foot print	Session A4: Economics The use of storage systems comes with an investment and several strategies of estimating and returning the value of this technology.
	Abandoned Coal Mines As Seasonal Thermal Energy Storage For Solar Energy Dieter Patteeuw, KU Leuven, Belgium	Grid Services Provided By The Interactions Of Energy Sectors In Multi-Energy Systems: Three International Case Studies Pauline Raux-Defossez, EIFER Research, Germany	Intelligent control of household Li-Ion battery storage systems Nina Munzke, KIT, Germany	Dynamic simulation in urban development: evaluating consumer-centric business models Tomi Thomasson, VTT Research, Finland
	Evaluation of the performance of a novel helicoidal geothermal heat exchanger for greenhouse conditioning under north Tunisian climate Mariem Lazaar, CRTEn, Tunisia	NEFUSTA - The Electrical and Hydrogen Filling Station with Hydrogen and Electricity Storage Jos van der Burgt, DNV GL Netherlands BV, Netherlands	Multi-Use of Stationary Battery Energy Storage Systems with Decentralized Blockchain-Based Auction Markets Cong Nam Truong, Technical University of Munich, Germany	Assessment Tool for the Hybridization of Minigrids - Case Study in Niger Cédric Le Gal, GOPA GmbH, Germany
	Life Cycle Assessment of Thermal Energy Storage Materials, Components and System Concepts Björn Nienborg, Fraunhofer ISE, Germany	New Approaches for the Use of Batteries on Mitigating Restrictions Caused by Delayed Expansion Projects on the Colombian NTS Nicolas Achury, UPME, Colombia	Increased Benefit Of ZnBr Flow Battery With 33kWp PV System And Smart Tariff Structure Paul MacArtain, DkIT, Ireland	Operating Strategies for Provision of Primary Control Reserve by Pooled PV Home Storage Systems Martin Rapierski, RWTH Aachen, Germany
	Synthetic strategies for the enhancement of Mg(OH)₂ thermochemical performances as heat storage material Candida Milone, University of Messina, Italy	Operating Experience of the World's Largest Wind-Diesel Microgrid Power Plant Carsten Dommermuth, MAN Diesel & Turbo SE, Germany	Implementation of Envelopes as a Regulatory Degree of Freedom for Batteries Participating in Fast Frequency Response Raphael Hollinger, Fraunhofer ISE, Germany	Drivers for the Economics of German PV Home Storage Systems - a Raw Model to be used in Other European Countries? Verena Jülch, Fraunhofer ISE, Germany
10:30 am	Coffee break			
11:00 am – 01:00 pm	Session B1: Thermal Energy Storage From residential to large scale, from basic research to the evaluation of applications - this session offers insight into the diversity of TES research projects.	Session B2: Applications and Case Studies (2) The role, the potential and the benefits of various energy storage technologies in different countries and regions of applicability are discussed in this session.	Session B3: Batteries (2) Latest developments in the area of battery technologies are presented in this session. In focus is the optimization of batteries, the life cycle assessment and sustainable use.	German Session 1: Handlungsoptionen Sektorenkopplung (tba) 
	Stratification Efficiency of Thermal Energy Storage Systems – A New KPI based on Dynamic Hardware in the Loop Testing Michel Yves Haller, SPF Institute for Solar Technology, Switzerland	Prognosis-Based Operating Strategies for Smart Homes with Heat-Power-Coupling Georg Angenendt, ISEA RWTH Aachen, Germany	Increasing Data Quality of High Resolution Measurements of Households with Decentralized PV Battery Systems David Haberschus, ISEA RWTH Aachen, Germany	German Session by EnergieAgentur.NRW & EUROSOLAR e.V. (tbd)
	Environmental and Economic Assessment of Seasonal Storage Systems in Domestic Heating Grids using the Example of Medium Deep Borehole Thermal Energy Storage Laura Göllner-Völker, TU Darmstadt, Germany	Diagnosis and prognosis of complex energy storage systems: tools development and feedback on MW installed systems Fathia Karoui, CEA, France	Value Chain And Long Run Marginal Costs Of Flow Batteries Thomas Lüth, KIT, Germany	
	Molten salt chemistry in nitrate salt storage systems: Linking experiments and modeling Veronika Anna Sötz, German Aerospace Center, Germany	Enhancing Synergy Effects Between The Electrification Of Agricultural Machines And Renewable Energy Deployment With Semi-stationary Energy Storage In Rural Grids Michael Stöhr, B.A.U.M. Consult GmbH, Germany	Modular Hybrid Battery Storage System For Peak-shaving And Self-consumption Optimization In Industrial Applications Thilo Bocklisch, TU Dresden, Germany	
	Pumped Thermal Energy Storage (PTES) based on Rankine cycles Dan Bauer, German Aerospace Center, Germany	Options for an Autarkic Operation of a Communal Power Grid Using a Battery and Renewable Energies Eberhard Waffenschmidt, TH-Köln, Germany	Numerical Investigation of Phase Change Material Utilization Options for the Thermal Management of Cylindrical Li-Ion-Batteries Sebastian Gamisch, Fraunhofer ISE, Germany	

IRES CONFERENCE – DAY 2

Wednesday, March 14, 2018

Time	Information & Speaker			
	Multifunctional Polymer Composites With Structural Function And Thermal Energy Storage Functions Giulia Fredi, University of Trento, Italy	Emergency power supply from photovoltaic battery systems in private households in case of a blackout – A scenario analysis Peter Stenzel, FZ Jülich GmbH, Germany	Towards Improved Innovation Processes of Electro-Chemical Energy Storage in Germany Bert Droste-Franke, EA European Academy, Germany	
	TBA	San Severino Marche Smart Grid Pilot within H2020 inteGRIDy project Marco Merlo, Politecnico di Milano, Italy	Valuation of Grid Service Products for Photovoltaic Battery Systems based on High-Resolution Field Measurements Jan Figgenger, ISEA RWTH Aachen University, Germany	
01:00 pm	Coffee break			
02:00 pm – 04:00 pm	IRES Poster Session #1			German Session 2: Speicher- und Ladeinfrastruktur für E-Mobilität (tba) 
04:00 pm – 06:00 pm	Session C1: Sorption Storage The improvement of thermal sorption storages needs studies into new materials and into better understanding of components and systems. Results are presented in this session.	Session C2: Energy System Analysis (1) This session discusses the role of energy storage for a spready, optimized and affordable transition to 100% renewable energy.	Session C3: Flexibility Options An energy system with high shares of RE requires flexibility for balancing the energy system. The conditions for the untainted use of RE are discussed.	German Session 3: Wärmespeicher in der Anwendung (tba) 
	Sorption Collector - Performance Increase of Closed Sorption Storage Systems Rebekka Köll, AEE - Institute for Sustainable Technologies, Austria	Marketability of Seasonal Heat Storage Systems in existing inner-city Building Structures Anna-Elisabeth Wollstein-Lehmkuhl, TU Dresden, Germany	An auspicious combination: Fast-ramping battery energy storage and high-capacity pumped hydro Ralf Bucher, Lahmeyer International GmbH, Germany	German Session by EnergieAgentur.NRW & EUROSOLAR e.V. (tbd)
	Adsorption Storage For Space Heating: Experimental Testing Of A Prototype With LiCl/Vermiculite sorbent Salvatore Vasta, ITAE „Nicola Giordano“, Italy	Metrological And Computational Analysis Of Different Heat Storage Concepts Of A District Heating System With Variable Temperatures Tobias Ramm, Technische Hochschule Ingolstadt, Germany	Renewable Energy Integration for Chemical Parks using Molten-Salt Thermal Energy Storage Freerk Klasing, German Aerospace Center, Germany	
	Liquid Sorption Heat Storage Spiral Finned Tube Heat And Mass Exchanger, Steps Towards Increased Rate Of Absorption Benjamin Fumey, Empa, Switzerland	A Multi-service Approach for Finding the Optimal Energy Storage Mix for Renewable Systems Jannik Haas, IWS/SC SimTech University of Stuttgart, Germany	Synergies of Storage for PV Self-consumption and Consumption Peak Shaving: the Benefits of a Coordinated Approach Wouter Lubert Schram, Utrecht University, The Netherlands	
	Sorption Cold Storage for Thermal Management of the Battery of a Hybrid Vehicle Georg Engel, AEE - Institute for Sustainable Technologies, Austria	Identifying the Potential of Decentralised Energy Storages for Integrating Fluctuating Renewable Energy Sources Dadi Sveinbjörnsson, PlanEnergi, Denmark	Synthesizing Electromobility Charging Profiles using Behavior Simulation Noah Pflugradt, Bern University of Applied Sciences, Switzerland	
	TBA	The Baltic Sea Region: Storage, grid exchange and flexible electricity generation for the transition to a 100% renewable energy system Christian Breyer, Lappeenranta University of Technology, Finland	Use of Electric Vehicles as Energy Storage Devices Jalal Baghdadchi, Alfred University, USA	
	TBA	Simulation Analysis of the Adoption of Thermal Storage Technology for the Dispatch of Wind Energy Curtailment Ilaria Di Fresco, University of Birmingham, England	Analysis of MV/LV-transformer load in a residential area under several EV and PV penetration scenarios: comparing uncontrolled vs. smart charging M.K. Gerritsma, Utrecht University, The Netherlands	
06:00 pm	Networking Event			

PROGRAM

ESE CONFERENCE – DAY 3



Thursday, March 15, 2018

✓	🕒 Time	👤 Information & Speaker
	09:00 am – 09:30 am	Arrival of Attendees – Breakfast
	09:30 am – 11:00	Session 7: The World of Energy Storage – International Markets Chair: Dr. Andreas Hauer, ZAE Bayern
	9:30 am	Introduction Session Chair
	9:40 am	Germany Valeska Gottke, Bundesverband Energiespeicher (BVES)
	9:50 am	Japan
	10:00 am	Australia Steve Blume, Australian Solar Council
	10:10 am	South Korea Dr. Sun-Hwa Yeon, Korea Institute of Energy Research
	10:20 am	USA Mark Higgins, Strategen Consulting LLC
	10:30 am	China
	10:40 am	Canada Patricia Phillips, Energy Storage Canada
	10:50 am	Q&A
	11:00 am – 11:30 am	Coffee break – Visit of the Exhibition
	11:30 am – 13:00 pm	Session 8: Energy Storage Solutions – Best Practice Examples Chair: Urban Windelen, Bundesverband Energiespeicher (BVES)
	11:30 am	Intro Session Chair: Introduction - Energy Storage Solutions in a Nutshell
	11:35 am	Power Booster Dr. Jens Kistner, ads-tec GmbH
	11:45 am	The development of Underground Thermal Energy Storage in Europe Aart Snijders, IFTech International B.V.
	11:55 am	Reducing energy costs and environmental impacts of off-grid mines Dr. Mohit Chhabra, ABB Inc.
	12:05 pm	Wind and Li-ion Energy Storage on the Faroe Islands Michael Lippert, Saft
	12:25 pm	Toronto's Unique Solution to Urban Transmission Congestion Using Advanced Compressed Air Energy Storage Jon Norman, Hydrostor

✓	🕒 Time	👤 Information & Speaker
	12:15 pm	Using embedded renewable generation to stabilise rural distribution networks Julian Gerstner, ABO Wind AG
	12:35 pm	Q&A
	01:00 – 02:00	Lunch break – Visit of the Exhibition
	02:00 pm – 03:30 pm	Session 9: Closing Session Chairs: Prof. Dirk Uwe Sauer, ISEA RWTH Aachen Dr. Andreas Hauer, ZAE Bayern
		IRES Poster Award, Keynotes, Summary and Outlook

ESE/IRES Common Closing Session | 14:00

Visitors of the ESE / IRES-conference can choose from a broad conference program with several intriguing sessions. To guarantee that each visitor receives a full picture of the current developments in research and business, all conference sessions will be summarized in a combined closing. This way, everyone receives a final update on the technological, political, legal, economic and financial status quo of research technology in the year of 2018.

The conference language is English. 
 The lectures will be simultaneously interpreted into German. 

Status January 2018 - subject to change

PROGRAM

IRES CONFERENCE – DAY 3



Wednesday, March 14, 2018

Time	Information & Speaker			
09:00 am – 10:30 am	Session D1: Thermochemical Storage TCS is highly effective and has a good volumetric energy density. The closer look at different projects provides a full insight into the current research status.	Session D2: Energy System Analysis (2) This session discusses the role of energy storage, sector coupling and grids for a comprehensive view on the energy transition towards renewable energy.	Session D3: Power-to-Gas/Power-to-X (1) Long-term and seasonal storage technology with a focus on their applicability, optimization and impact are presented and discussed in this session	To be announced in January 2018
	Thermochemical Energy Storage with CaO/Ca(OH)₂ – Development of a Continuous Fluidized Bed Reactor Moritz Becker, TU Munich, Germany	The role of storage technologies for the transition to a 100% renewable energy system in Europe Michael David Child, Lappeenranta University of Technology, Finland	Review of Power-to-Gas Projects in Europe Christina Wulf, FZ Jülich GmbH, Germany	
	Seasonal Thermal Energy Storage with Aqueous Sodium Hydroxide – Development and Measurements on the Heat and Mass Exchangers Xavier Daguenet-Frick, HSR Hochschule für Technik Rapperswil, Switzerland	Dynamic Simulation and Comparison of Different Configurations for a Coupled Energy System with 100% Renewables Carsten Bode, Hamburg University of Technology, Germany	Results of a techno-economical analysis of two power-to-hydrogen plants: What will it cost? Christopher Voglstätter, Fraunhofer ISE, Germany	
	Performance Analysis Of Thermochemical Energy Storage Device For Solar Thermal Applications Jagrut Nemade, IIT Indore, India	The role of battery energy storage in the future EU electricity system Charlotte Hussy, Ecofys / Navigant, Germany	Coupling of the Energy Networks via Power to Gas - geographical analysis and the role of intermediate CO₂ storage Hannu Karjunen + Johannes Schaffert, Lappeenranta University of Technology + GWI, Finland + Germany	
	A Moving Bed Reactor For Continuous Heat Extraction From Metal Oxides As Thermochemical Energy Storage Nicole Carina Preisner, German Aerospace Center, Germany	Energy Storage for Renewable Energy Integration in India Girish Shivakumar, Customized Energy Solutions, India	TBA	
10:30 am	Coffee break			
11:00 am – 12:30 pm	IRES Poster Session #2			
12:00 pm	Lunch break			
01:00 pm – 02:00 pm	Session E1: Latent Heat Storage Melting or crystallizing materials is another way to store heat. This session takes a look at different ways, their development and effectiveness.	Session E2: Various Storage Options Different perspectives and research projects are presented in this session to show the big variety of energy storage.	Session E3: Power-to-Gas/Power-to-X (2) Long-term and seasonal storage technology with a focus on their applicability, optimization and impact are presented and discussed in this session	To be announced in January 2018
	Development Of PCM Based On The Prediction Of Phase Diagrams Of Salt Hydrate Mixtures Christoph Rathgeber, ZAE Bayern, Germany	Computational Study Of Hydro-pneumatic Accumulator For Storage Energy Using The 3D CFD Simulation Mustapha Malhouni, Mohammadia Engineers School, Morocco	Integration of fluctuating renewable energies on WWTPs to remove micropollutants due ozonisation Michael Schäfer, TU Kaiserslautern, Germany	

IRES CONFERENCE – DAY 3

Wednesday, March 14, 2018

⌚ Time	i Information & Speaker		
	<p>Review Of Thermal Energy Storage Involving Phase Change Materials In Wind-Diesel-Compressed Air Systems Hussein Ibrahim, Research Centre of smart grid and energy systems, Sept-Îles, Canada</p>	<p>Electro-Thermal Analysis of Inductively Heated and Aerated Rod Bundle for Adiabatic Compressed Air Energy Storage Sergej Belik, German Aerospace Center, Germany</p>	<p>Waste heat utilisation of Power to Hydrogen plants for local and district heating Nikolas Knetsch, Fraunhofer ISE, Germany</p>
TBA		<p>Analysis and Test Setup of an Electric Vehicle - Photovoltaic - Home Storage System Configuration Fabian Rücker, ISEA RWTH Aachen, Germany</p>	<p>Thermochemical Energy Storage Based On Hydrated/Quick Lime For Balancing Surplus Electricity And Heat Demand In Domestic Households Kai Martin Risthaus, German Aerospace Center, Germany</p>
2:10 pm	IRES/ESE Common Closing Session		

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Status January 2018 - subject to change