

Tuesday, 13 March 2018

09:00	Arrival	
10:00	Welcome Note	Hans Werner Reinhard, <i>Managing Director Messe Düsseldorf GmbH</i> Prof. Peter Droege, <i>President EUROSOLAR e.V.</i> Urban Windelen, <i>President of the German Energy Storage Association</i>
10:30	Opening IRES	Prof. Dr. Dirk Uwe Sauer, <i>IREs Chairman</i>
10:45	Opening ESE	Dr. Andreas Hauer, <i>ESE Chairman</i>
11:00	Keynote	Minister Prof. Andreas Pinkwart, <i>Ministry for Economic Affairs, Innovation, Digitalisation and Energy</i>
11:30	Keynote	Energy Storage and Renewable Energies - A Perfect Partnership, Dr. Simone Peter, <i>German Renewable Energy Federation</i>
11:45	Keynotes	Energy Storage - The solution or just one flexibility option?, Thorsten Herdan, <i>Federal Ministry for Economic Affairs and Energy</i>
12:15	Exhibition Tour	
13:00	Lunch	
14:00	Session 1: State of Energy Storage – From Development to Deployment	
14:05	Lecture	Intro Session Chair, <i>Dr. Andreas Hauer, ZAE Bayern</i>
14:20	Lecture	How energy storage applications are finding their role in the energy system, Christoph Hanken, <i>Team Consult G.P.E. GmbH</i>
14:35	Lecture	The status of the Energy Storage World - Are the Pioneering Years Over?, Florian Mayr, <i>Apricum - The Cleantech Advisory</i>
14:50	Lecture	Sector coupling – holistic approaches for a successful energy transition, Prof. Eberhard Umbach, <i>acatech - National Academy of Science and Engineering</i>
15:05	Lecture	Is there a business model for energy storage?, Thierry Lepercq, <i>Engie</i>
15:20	Q&A	Energy Storage - The solution or just one flexibility option?, Thorsten Herdan, <i>Federal Ministry for Economic Affairs and Energy</i>
16:00	Coffee Break	
16:30	Session 2: Panel Discussion: Energy Storage or Grid Extension – The Appropriate Question?	
	Moderation by Prof. Dr. Dirk Uwe Sauer & Dr. Andreas Hauer Thorsten Herdan, <i>Federal Ministry for Economic Affairs and Energy</i> Dr. Martin Keller, <i>National Renewable Energy Laboratory</i> Thierry Lepercq, <i>Engie</i> Dr. Sunita Satyapal, <i>U.S. Department of Energy, Office of Hydrogen, Fuel Cells & Infrastructure Technologies</i> Thomas Speidel, <i>ads-Tec</i> Michael Taylor, <i>IRENA</i>	
17:30	BVES Networking Event	

Wednesday, 14 March 2018

IREs SESSIONS

		IREs SESSIONS			ESE SESSIONS
09:00-10:30	A1 Thermal Energy Storage <small>From residential to large scale, from basic research to the evaluation of applications - this session offers insight into the diversity of TES research projects.</small>	A2 Applications and Case Studies (1) <small>The role, the potential and the benefits of various energy storage technologies in different countries and regions of applicability are discussed in this session.</small>	A3 Batteries (1) <small>Latest developments in the area of battery technologies are presented in this session. Beside this we will have look to the ecological foot print and recycling options for batteries.</small>	A4 Economics <small>The use of storage systems comes with an investment and several strategies of estimating and returning the value of this technology.</small>	Session 3 "Flexible" Sector Coupling - Definition and Basics
	Abandoned Coal Mines As Seasonal Thermal Energy Storage For Solar Energy Dieter Patteuw, KU Leuven, <i>Belgium</i>	Grid Services Provided By The Interactions Of Energy Sectors In Multi-Energy Systems: Three International Case Studies Pauline Raux-Defosse, EIFER Research, <i>Germany</i>	Intelligent control of household Li-ion battery storage systems Bernhard Schwarz, Karlsruhe Institut für Technologie (KIT), <i>Germany</i>	Dynamic simulation in urban development: evaluating consumer-centric business models Tomi Thomasson, VTT Research, <i>Finland</i>	Intro Session Chair : Definition, potential, advantages Christian Doetsch, Fraunhofer UMSICHT
	Process Integration and Technology Assessment of Thermal Energy Storage Systems Duncan Gibb, German Aerospace Center, <i>Germany</i>	NEFUSTA - The Electrical and Hydrogen Filling Station with Hydrogen and Electricity Storage Jos van der Burgt, DNV GL Netherlands BV, <i>Netherlands</i>	Multi-Use of Stationary Battery Energy Storage Systems with Decentralized Blockchain-Based Auction Markets Cong Nam Truong, Technical University of Munich, <i>Germany</i>	Assessment Tool for the Hybridisation of Minigrids - Case Study in Niger Cédric Le Gal, GOPA-International Energy Consultants GmbH, <i>Germany</i>	Sector Coupling - a key element of to optimize energy system transformation Hans-Martin Henning, Fraunhofer ISE
	Life Cycle Assessment of Thermal Energy Storage Materials, Components and System Concepts Björn Nienborg, Fraunhofer ISE, <i>Germany</i>	New Approaches for the Use of Batteries on Mitigating Restrictions Caused by Delayed Expansion Projects on the Colombian NTS Nicolas Achury, UPME, <i>Colombia</i>	Increased Benefit Of ZnBr Flow Battery With 33kWp PV System And Smart Tariff Structure Paul MacCairtain, DKIT, <i>Ireland</i>	Operating Strategies for Provision of Primary Control Reserve by Pooled PV Home Storage Systems Martin Rapierski, RWTH Aachen, <i>Germany</i>	The role of Energy Storage Teun Bokhoven, International Energy Agency TCP ECES
	Synthetic strategies for the enhancement of Mg(OH)2 thermochemical performances as heat storage material Candida Milone, University of Messina, <i>Italy</i>	Operating Experience of the World's Largest Wind-Diesel Microgrid Power Plant Carsten Dommermuth, MAN Diesel & Turbo SE, <i>Germany</i>	Implementation of Envelopes as a Regulatory Degree of Freedom for Batteries Participating in Fast Frequency Response Raphael Hollinger, Fraunhofer ISE, <i>Germany</i>	Drivers for the Economics of German PV Home Storage Systems - a Raw Model to be used in Other European Countries? Verena Jülich, Fraunhofer ISE, <i>Germany</i>	Flexible sector coupling from an energy supplier's perspective Oliver Weinmann, Vattenfall Europe Innovation GmbH Research funding strategy in the field of sector coupling and energy storage Annabel Fürstenau-Brutschy, BMWI

Coffee Break

11:00-13:00	B1 Thermal Energy Storage <small>From residential to large scale, from basic research to the evaluation of applications - this session offers insight into the diversity of TES research projects.</small>	B2 Applications and Case Studies (2) <small>The role, the potential and the benefits of various energy storage technologies in different countries and regions of applicability are discussed in this session.</small>	B3 Batteries (2) <small>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.</small>	German Session 1 Handlungsoptionen Sektorkopplung	Session 4 "Flexible" Sector Coupling – Chemicals & Mobility
	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, <i>Switzerland</i>	Prognosis-Based Operating Strategies for Smart Homes with Heat-Power-Coupling Georg Angenendt, ISEA RWTH Aachen, <i>Germany</i>	Increasing Data Quality of High Resolution Measurements of Households with Decentralized PV Battery Systems David Haberschusz, ISEA RWTH Aachen, <i>Germany</i>	Grußworte Peter Droege, EUROSOLAR e.V. Lothar Schneider, EnergieAgentur.NRW	Intro Session Chair Christopher Hebling, Fraunhofer ISE
	Environmental and Economic Assessment of Seasonal Storage Systems in Domestic Heating Grids using the Example of Medium Deep Borehole Thermal Energy Storage Laura Gölner-Völker, TU Darmstadt, <i>Germany</i>	Diagnosis and prognosis of complex energy storage systems: tools development and feedback on MW installed systems Fathia Karoui, CEA, <i>France</i>	Value Chain And Long Run Marginal Costs Of Flow Batteries Thomas Lüth, KIT, <i>Germany</i>	Aktueller Entwicklungsstand von Lithium-Ionen Batterien Prof. Dirk Uwe Sauer (requested)	Enhancement of Fuel Flexibility of Industrial Gas Turbines by Development of Innovative Combustion Systems Dr. Nurettin Tekin, KAWASAKI Gas Turbine Europe GmbH
	Molten salt chemistry in nitrate salt storage systems: Linking experiments and modeling Veronika Anna Sötz, German Aerospace Center, <i>Germany</i>	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, <i>Germany</i>	Modular Hybrid Battery Storage System For Peak-shaving And Self-consumption Optimization In Industrial Applications Michael Böttiger, TU Dresden, <i>Germany</i>	Aktuelle Stromspeicherentwicklungen jenseits des Lithium-Ionen-Mainstreams Dr. Marcus Budt, Fraunhofer UMSICHT	On-site PEM electrolyzers can do more than just supply the hydrogen for zero emission public transport! Calum McConnell, ITM Power GmbH
	Pumped Thermal Energy Storage (PTES) based on Rankine cycles Dan Bauer, German Aerospace Center, <i>Germany</i>	Options for an Autarkic Operation of a Communal Power Grid Using a Battery and Renewable Energies Eberhard Waffenschmidt, TH-Köln, <i>Germany</i>	Numerical Investigation of Phase Change Material Utilization Options for the Thermal Management of Cylindrical Li-Ion-Batteries Sebastian Gamlisch, Fraunhofer ISE, <i>Germany</i>	Der regulative Rahmen für Speicher und Sektorkopplungsprojekte – aktuelle Entwicklungen und rechtliche „Dauerbrenner“ Dr. Bettina Hennig, von Bredow Valentin Herz	Charging infrastructure - The end of the gas station? Trans-Canada Highway Charging Himanshu Sudan, eCAMION Smart charging, current status and key challenges Yvonne Boerakker, TKI Urban Energy The Power to Ammonia Gert Jan de Geus, OCI Nitrogen Good, better, batteries - it's all about (stationary) storage Stefan Ritter, Coulomb GmbH Roadmap Power to Gas - a key technology for an integrated energy transformation Christiane Golling, dena

Abschlussdiskussion

Lunch Break

German Session 2

14:00-16:00	IREs Poster Session #1 <small>The poster exhibition features grand ideas, research proposals and case studies. During the session the whole conference focus is laid on the posters and the authors are there to present their findings and answer your questions.</small>			Speicher- und Ladeinfrastruktur für E-Mobilität	Session 5 "Flexible" Sector Coupling – Power-to-Heat
				Anforderungen an die zukünftige Ladeinfrastruktur Prof. Hans-Jürgen Pfisterer, KEA Osnabrück	Intro Session Chair Teun Bokhoven, International Energy Agency TCP ECES
				Vernetzte Infrastruktur als Treiber der Elektromobilität Dr. Mark Steffen Walcher, smartlab Innovationsgesellschaft	Power-to-Heat - The Danish Concept Per Alex Sørensen, PlanEnergy
				Herausforderungen und Lösungsansätze bei der Implementierung von Hochleistungs-ladestationen für Elektrofahrzeuge Ralf Martin Müller, Wobben Research and Development	Heat Battery Linda Sjerps-Koomen, TKI Urban Energy
				Abschlussdiskussion	Thermal Energy Storage as a Priority Area of Mission Innovation Wim van Helden, AEE - Institute for Sustainable Technologies Potentials and obstacles for PH applications - case studies on company and regional level Armin Kraft, EEB ENERKO Carnot-Batteries: Developments and perspectives of pumped heat electricity storage André Thess, German Aerospace Center

German Session 3

16:00-18:00	C1 Sorption Storage <small>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.</small>	C2 Energy System Analysis (1) <small>This session discusses the role of energy storage for a spreadly, optimized and affordable transition to 100% renewable energy.</small>	C3 Flexibility Options <small>An energy system with high shares of RE requires flexibility for balancing the energy system. The conditions for the unattended use of RE are discussed.</small>	Wärmespeicher in der Anwendung	Session 6 Energy Storage in Future Buildings, Industrial processes and Power Plants
	Sorption Collector - Performance Increase of Closed Sorption Storage Systems Rebekka Köll, AEE - Institute for Sustainable Technologies, <i>Austria</i>	Marketability of Seasonal Heat Storage Systems in existing inner-city Building Structures Anna-Elisabeth Wollstein-Lehmkuhl, TU Dresden, <i>Germany</i>	An auspicious combination: Fast-ramping battery energy storage and high-capacity pumped hydro Ralf Bucher, Lahmeyer International GmbH, <i>Germany</i>	Thermische Speicher - Technologie und marktverfügbare Anwendungen Dr. Wolfgang Kramer, Fraunhofer ISE	Intro Session Chair Peter Schossig, Fraunhofer ISE
	Adsorption Storage For Space Heating: Experimental Testing Of A Prototype With LiCl/Vermiculite sorbent Salvatore Vasta, ITAE "Nicola Giordano", <i>Italy</i>	Metrological And Computational Analysis Of Different Heat Storage Concepts Of A District Heating System With Variable Temperatures Tobias Ramm, Technische Hochschule Ingolstadt, <i>Germany</i>	Renewable Energy Integration for Chemical Parks using Molten-Salt Thermal Energy Storage Freerk Klasing, German Aerospace Center, <i>Germany</i>	Energiespeicher in einer nahezu CO2-freien Kommune der Zukunft Anette Anthrakidis, Solar-Institut Jülich	Smart Home - Smart powering instead of managing electricity consumers: Self sufficiency solutions for households including heat pump and e-car Markus Brehler, Caterva GmbH
	Liquid Sorption Heat Storage Spiral Finned Tube Heat And Mass Exchanger, Steps Towards Increased Rate Of Absorption Benjamin Fumei, Empa, <i>Switzerland</i>	A Multi-service Approach for Finding the Optimal Energy Storage Mix for Renewable Systems Jannik Haas, IWS/SC SimTech University of Stuttgart, <i>Germany</i>	Synergies of Storage for PV Self-consumption and Consumption Peak Shaving: the Benefits of a Coordinated Approach Wouter Lubert Schram, Utrecht University, <i>The Netherlands</i>	Flüssigsalzspeicher in Stromnetzen – ein Beitrag zur Energiewende Dr. Rainer Faatz, TSK Flagsol	The water battery as a natural power storage Susanne Kleineheismann, Max Bögl Wind AG
	Sorption Cold Storage for Thermal Management of the Battery of a Hybrid Vehicle Georg Engel, AEE - Institute for Sustainable Technologies, <i>Austria</i>	Identifying the Potential of Decentralised Energy Storages for Integrating Fluctuating Renewable Energy Sources Dadi Sveinbjörnsson, PlanEnergi, <i>Denmark</i>	Synthesizing Electromobility Charging Profiles using Behavior Simulation Noah Pflugradt, Bern University of Applied Sciences, <i>Switzerland</i>	Flexibilisierung der Fernwärmeversorgung durch Wärmespeicher Dr. Armin Kraft, ENERKO	Battery Energy Storage Solution - Enhancing the operational flexibility of flexible combined cycle industrial gas turbines Uwe Fuchs, Siemens AG

Abschlussdiskussion

Networking Event

Thursday, 15 March 2018

09:00-10:30	D1 Thermochemical Storage <small>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.</small>	D2 Energy System Analysis (2) <small>This session discusses the role of energy storage, sector coupling and grids for a comprehensive view on the energy transition towards renewable energy.</small>	D3 Power-to-Gas/Power-to-X (1) <small>Long-term and seasonal storage technology with a focus on their applicability, optimization and impact are presented and discussed in this session.</small>	Session 7 The World of Energy Storage – International Markets	
	Thermochemical Energy Storage with CaO/Ca(OH)2 – Development of a Continuous Fluidized Bed Reactor Moritz Becker, TU Munich, <i>Germany</i>	The role of storage technologies for the transition to a 100% renewable energy system in Europe Michael David Child, Lappeenranta University of Technology, <i>Finland</i>	Review of Power-to-Gas Projects in Europe Christina Wulf, FZ Jülich GmbH, <i>Germany</i>	Intro Session Chair Andreas Hauer, ZAE Bayern Germany Valeska Gotтке, Bundesverband Energiespeicher (BVES)	
	Seasonal Thermal Energy Storage with Aqueous Sodium Hydroxide – Development and Measurements on the Heat and Mass Exchangers Mihaela Dudita, HSR Hochschule für Technik Rapperswil, <i>Switzerland</i>	Dynamic Simulation and Comparison of Different Configurations for a Coupled Energy System with 100% Renewables Carsten Bode, Hamburg University of Technology, <i>Germany</i>	Results of a techno-economical analysis of two power-to-hydrogen plants: What will it cost? Christopher Voglstätter, Fraunhofer ISE, <i>Germany</i>	Great Britain Christian Marienberg, British Consulate General Australia Steve Blume, Australian Smart Energy Council	
	Performance Analysis Of Thermochemical Energy Storage Device For Solar Thermal Applications Jagrut Nemade, IIT Indore, <i>India</i>	The role of battery energy storage in the future EU electricity system Charlotte Husy, Ecofys / Navigant, <i>Germany</i>	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, <i>Finland + Germany</i>	South Korea Sun-Hwa Yeon, Korea Institute of Energy Research USA Mark Higgins, Strategen Consulting LLC	
	A Moving Bed Reactor For Continuous Heat Extraction From Metal Oxides As Thermochemical Energy Storage Nicole Carina Preisner, German Aerospace Center, <i>Germany</i>	Energy Storage for Renewable Energy Integration in India Girish Shivakumar, Customized Energy Solutions, <i>India</i>	From Science to Application, accelerating PtG Solutions in Switzerland Marcel Hofer, Paul Scherrer Institut / Forum Energiespeicher Schweiz, <i>Switzerland</i>	China Wu Jiamao, Sungrow-Samsung SDI Energy Storage Supply CO.,LTD Canada Patricia Phillips, Energy Storage Canada	

Coffee Break

11:00-12:00	IREs Poster Session #2 <small>The poster exhibition features grand ideas, research proposals and case studies. During the session the whole conference focus is laid on the posters and the authors are there to present their findings and answer your questions.</small>			Session 8 Energy Storage Solutions – Best Practice Examples	
				Intro Session Chair Urban Windelen, Bundesverband Energiespeicher (BVES)	
				Power Booster Valentin Wenzel, ads-tec GmbH	
				The development of Underground Thermal Energy Storage in Europe Aart Snijders, IFTech International B.V.	
				Session 8 (2) Energy Storage Solutions – Best Practice Examples	

Session 8 (2)

12:00-13:00	E1 Latent Heat Storage <small>Melting or crystallizing materials is another way to store heat. This session takes a look at different ways, their development and effectiveness.</small>	E2 Various Storage Options <small>Different perspectives and research projects are presented in this session to show the big variety of energy storage.</small>	E3 Power-to-Gas/Power-to-X (2) <small>Long-term and seasonal storage technology with a focus on their applicability, optimization and impact are presented and discussed in this session.</small>	Energy Storage Solutions – Best Practice Examples	
	Development Of PCM Based On The Prediction Of Phase Diagrams Of Salt Hydrate Mixtures Christoph Rathgeber, ZAE Bayern, <i>Germany</i>	Computational Study Of Hydrogen Accumulator For Storage Using The 3D Cfd Simulation Mustapha Malhouni, Mohammedia Engineers School, <i>Morocco</i>	Integration of fluctuating renewable energies on WWTPs to remove micropollutants due ozonisation Michael Schäfer, TU Kaiserslautern, <i>Germany</i>	Reducing Energy Costs and Environmental Impacts of Off-Grid Mines Britta Buchholz, ABB Inc	
	Review Of Thermal Energy Storage Involving Heated and Aerated Rod Bundle for Adiabatic Compressed Air Energy Storage Hussein Ibrahim, Research Centre of smart grid and energy systems, Sept-Iles, <i>Canada</i>	Electro-Thermal Analysis of Inductively Heated and Aerated Rod Bundle for Adiabatic Compressed Air Energy Storage Sergej Belik, German Aerospace Center, <i>Germany</i>	Waste heat utilisation of Power to Hydrogen plants for local and district heating Nikolas Knetsch, Fraunhofer ISE, <i>Germany</i>	Wind and Li-Ion Energy Storage on the Faroe Islands Michael Lippert, Saft	
	Experimental Investigation of Macro-Encapsulated Latent Heat Storage Unit Stephan Hühlein, Universität Bayreuth, <i>Germany</i>	Analysis and Test Setup of an Electric Vehicle Photovoltaic - Home Storage System Configuration Fabian Rücker, ISEA RWTH Aachen, <i>Germany</i>	Thermochemical Energy Storage Based On Hydrated/Quick Lime For Balancing Surplus Electricity And Heat Demand In Domestic Households Kai Martin Risthaus, German Aerospace Center, <i>Germany</i>	Toronto's Unique Solution to Urban Transmission Using Advanced Compressed Air Energy Storage Jon Norman, Hydrostor	
		Electrochemical storage systems stationary applications and benefits: some case studies Francesco Iannello, Federazione ANIE, <i>Italy</i>		Using embedded renewable generation to stabilise rural distribution networks Julian Gerstner, ABO Wind AG	

Lunch Break

IREs/ESE Common Closing Session and IRES Poster Award

14:10