

Tuesday, 13 March 2018				
09:00	Arrival			
10:00	Welcome Note	Hans Werner Reinhard, <i>Managing Director Messe Düsseldorf</i> Prof. Peter Droege, <i>President EUROSOLAR e.V.</i> Thomas Speidel, <i>President of the German Energy Storage Association</i>		
10:15	Opening IRES	Prof. Dr. Dirk Uwe Sauer, <i>IREES Chairman</i>		
10:30	Opening ESE	Dr. Andreas Hauer, <i>ESE Chairman</i>		
10:45	Keynote	To be announced in January 2018		
11:00	Keynote			
12:10	Exhibition Tour			
13:00	Lunch			
14:00	Session 1: State of Energy Storage – From Development to Deployment			
Lecture	Intro Session Chair, Dr. Andreas Hauer, ZAE Bayern			
Lecture	World of Energy Storage - Vision from BVES, Urban Windelen, Bundesverband Energiespeicher (BVES)			
Lecture	The status of the Energy Storage World - Are the Pioneering Years Over?, Florian Mayr, Apricum - The Cleantech Advisory			
Lecture				
15:20	Q&A			
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 Thomas Speidel, ads-Tec Thierry Laperca, Engie Dr. Martin Keller, National Renewable Energy Laboratory Dr. Sunita Satyapal, U.S. Department of Energy, Office of Hydrogen, Fuel Cells & Infrastructure Technologies			
17:30	BVES Networking Event			

Wednesday, 14 March 2018

IREES SESSIONS					ESE SESSIONS
09:00-10:30	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 research projects.	A2 Applications and Case Studies (1) The role, the potential and the benefits of various energy storage technologies in different countries and regions of applicability are discussed in this 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 and recycling options for batteries.	A4 Economics The use of storage systems comes with an investment and several strategies of estimating and returning the value of this technology.	Session 3 "Flexible" Sector Coupling - Definition and Basics
	Abandoned Coal Mines As Seasonal Thermal Energy Storage For Solar Energy	Grid Services Provided By The Interactions Of Energy Sectors In Multi-Energy Systems: Three International Case Studies	Intelligent control of household Li-ion battery storage systems	Dynamic simulation in urban development: evaluating consumer-centric business models	Intro Session Chair : Definition, potential, advantages
	Dieter Patteeuw, KU Leuven, Belgium	Pauline Raux-Defosse, EIFER Research, Germany	Nina Munzke, KIT, Germany	Tomi Thomasson, VTT Research, Finland	Christian Doetsch, Fraunhofer UMSICHT
	Evaluation of the performance of a novel heliocald 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 Burg, 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 Hybridisation of Minigrids - Case Study in Niger Cédric Le Gal, GOPA-International Energy Consultants GmbH, Germany	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, 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, DKT, Ireland	Operating Strategies for Provision of Primary Control Reserve by Pooled PV Home Storage Systems Martin Rapierski, RWTH Aachen, Germany	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, 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 Jülich, Fraunhofer ISE, Germany	TBA	
10:30-11:00	Coffee Break				
11:00-13:00	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.	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.	B3 Batteries (2) Latest developments in the area of battery technologies are presented in this session. In focus is the optimisation of batteries, the life cycle assessment and sustainable use.	German Session 1 Handlungsoptionen Sektorenkopplung	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	Prognosis-Based Operating Strategies for Smart Homes with Heat-Power-Coupling	Increasing Data Quality of High Resolution Measurements of Households with Decentralized PV Battery Systems		Intro Session Chair
	Michel Yves Haller, SPF Institute for Solar Technology, Switzerland	Georg Angenendt, IEA RWTH Aachen, Germany	David Haberschus, IEA RWTH Aachen, Germany		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 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		Production of chemicals as energy storage TBA
	Molten salt chemistry in nitrate salt storage systems: Linking experiments and modeling	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	German Session by EnergieAgentur.NRW & EUROSOLAR e.V. (tdb)	On-site PEM electrolyzers can do more than just supply the hydrogen for zero emission public transport! Calum McConnell, ITM Power GmbH
	Veronika Anna Sözt, 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		Charging infrastructure - The end of the gas station? Trans-Canada Highway Charging Himanshu Sudan, eCAMION
	Pumped Thermal Energy Storage (PTES) based on Rankine cycles Dan Bauer, German Aerospace Center, Germany	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		Vehicle-to-Grid - Idea still alive? Yvonne Boerakker, TKI Urban Energy
	Giulia Fredi, University of Trento, Italy	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, IEA RWTH Aachen University, Germany		Power to Ammonia Gert Jan de Geus, OCI Nitrogen
TBA					
13:00-14:00	Lunch Break				

14:00-16:00	IREES Poster Session #1			German Session 2 Speicher- und Ladeinfrastruktur für E-Mobilität	Session 5 "Flexible" Sector Coupling – Power-to-Heat
				Intro Session Chair	
				Teun Bokhoven, International Energy Agency TCP ECES	Power-to-Heat - The Danish Concept
				Per Alex Sørensen, PlanEnergi	Heat Battery
				Lianda Sjerps-Koomen, TKI Urban Energy	Thermal Energy Storage as a Priority Area of Mission Innovation
				Wim van Helden, AEE - Institute for Sustainable Technologies	Title tbc
				Armin Kraft, EEB ENERKO	Carnot-Batteries: Developments and perspectives of pumped heat electricity storage
				André Thess, German Aerospace Center	

16:00-18:00	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.	C2 Energy System Analysis (1) This session discusses the role of energy storage for a spready, optimized and affordable transition to 100% renewable energy.	C3 Flexibility Options An energy system with high shares of RE requires flexibility for balancing the energy system. The conditions for the unlimited use of RE are discussed.	German Session 3 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	Marketability of Seasonal Heat Storage Systems in existing inner-city Building Structures	An auspicious combination: Fast-ramping pumped energy storage and high-capacity pumped hydro		Intro Session Chair
	Rebekka Köll, AEE - Institute for Sustainable Technologies, Austria	Anna-Elisabeth Wollstein-Lehmkuhl, TU Dresden, Germany	Ralf Bucher, Lahmeyer International GmbH, Germany		Peter Schossig, Fraunhofer ISE
	Adsorption Storage For Space Heating: Experimental Testing Of A Prototype With LiCl/Vermiculite sorbent	Metrological And Computational Analysis Of Different Heat Storage Concepts Of A District Heating System With Variable Temperatures	Renewable Energy Integration for Chemical Parks using Molten-Salt Thermal Energy Storage		Smart Home - Smart powering instead of managing electricity consumers: Self sufficiency solutions for households including heat pump and e-car
	Salvatore Vasta, ITAE "Nicola Giordano", Italy	Tobias Ramm, Technische Hochschule Ingolstadt, Germany	Freerk Klasing, German Aerospace Center, Germany		Markus Brehler, Caterna GmbH
	Liquid Sorption Heat Storage Spiral Finned Tube Heat And Mass Exchanger, Steps Towards Increased Rate Of Absorption	A Multi-service Approach for Finding the Optimal Energy Storage Mix for Renewable Systems	Synergies of Storage for PV Self-consumption and Consumption Peak Shaving: The Benefits of a Coordinated Approach	German Session by EnergieAgentur.NRW & EUROSOLAR e.V. (tdb)	The water battery as a natural power storage Susanne Kleineheimsman, Max Bögl Wind AG
	Benjamin Fumev, Empa, Switzerland	Jannik Haas, IWS/SC SimTech University of Stuttgart, Germany	Wouter Lubert Schram, Utrecht University, The Netherlands		Battery Energy Storage Solution - Enhancing the operational flexibility of flexible combined cycle industrial gas turbines Uwe Fuchs, Siemens AG
	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		More Flexible and Efficient Industrial Processes by Thermal Energy Storage Integration Antje Seitz, German Aerospace Center
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		From Islands to Industry – how Commercial and Industrial Heavy Power Users benefit from Microgrid Solutions Alexander Schönfeldt, Younicos GmbH	
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. Geritsma, Utrecht University, The Netherlands			
18:30	Networking Event				

Thursday, 15 March 2018

09:00-10:30	D1 Thermochemical Storage TES is highly effective and has a good volumetric energy density. The closer look at different ways, their development and effectiveness.	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.	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.	Session 7 The World of Energy Storage – International Markets	
	Thermochemical Energy Storage with CaO/Ca(OH)2 - Development of a Continuous Fluidized Bed Reactor	The role of storage technologies for the transition to a 100% renewable energy system in Europe	Review of Power-to-Gas Projects in Europe	Intro Session Chair	South Korea
	Moritz Becker, TU Munich, Germany	Michael David Child, Lappeenranta University of Technology, Finland	Christina Wulf, FZ Jülich GmbH, Germany	Andreas Hauer, ZAE Bayern	Sun-Hwa Yeon, Korea Institute of Energy Research
	Seasonal Thermal Energy Storage with Aqueous Sodium Hydroxide – Development and Measurements on the Heat and Mass Exchangers Xavier Dagueneit-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	Germany by Valeska Gottke, Bundesverband Energiespeicher (BVES)	USA Mark Higgins, Strategen Consulting LLC
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 Hänttu Karjunen + Johannes Schaffert, Lappeenranta University of Technology + GWI, Finland + Germany	Japan TBD	China TBD	
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	Australia TBD	Canada TBD	
10:30-11:00	Coffee Break				

11:00-12:00	IREES Poster Session #2			Session 8 Energy Storage Solutions – Best Practice Examples	
				Intro Session Chair	
				Urban Windelen, Bundesverband Energiespeicher (BVES)	Power Booster
				Jens Kistner, ads-tec GmbH	Ice-Storage
				TBD	The development of Underground Thermal Energy Storage in Europe
				Aart Snijders, iFTech International B.V.	

12:00-13:00	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.	E2 Various Storage Options Different perspectives and research projects are presented in this session to show the big variety of energy storage.	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.	Session 8 (2) Energy Storage Solutions – Best Practice Examples	
	Development Of PCM Based On The Prediction Of Phase Diagrams Of Salt Hydrate Mixtures	Computational Study Of Hydropneumatic Accumulator For Storage Energy Using The 3D CFD Simulation	Integration of fluctuating renewable energies on WWTPs to remove micropollutants due ozonisation	Reducing Energy Costs and Environmental Impacts of Off-Grid Mines	
	Christoph Rathgeber, ZAE Bayern, Germany	Mustapha Malhouini, Mohammedia Engineers School, Morocco	Michael Schäfer, TU Kaiserslautern, Germany	Mohit Chhabra, ABB Inc	
	Review Of Thermal Energy Storage Involving Phase Change Materials in Wind-Diesel-Compressed Air Systems	Electro-Thermal Analysis of Inductively Heated and Aerated Rod Storage For Adiabatic Compressed Air Energy Storage	Waste heat utilisation of power to Hydrogen plants for local and district heating	Wind and Li-ion Energy Storage on the Faroe Islands	
	Hussein Ibrahim, Research Centre of smart grid and energy systems, Sept-Iles, Canada	Sergej Belik, German Aerospace Center, Germany	Nikolas Knetsch, Fraunhofer ISE, Germany	Michael Lippert, Saft	
TBA	Analysis and Test Setup of an Electric Vehicle Photovoltaic - Home Storage System Configuration Fabian Rucker, IEA RWTH Aachen, Germany	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	Toronto's Unique Solution to Urban Transmission Congestion Using Advanced Compressed Air Energy Storage Jon Norman, Hydrostor		
			Using embedded renewable generation to stabilise rural distribution networks Julian Gerstner, ABO Wind AG		
13:00-14:00	Lunch Break				
14:10	IREES/ESE Common Closing Session and IRES Poster Award				