ISEC

INTERNATIONAL SUSTAINABLE ENERGY CONFERENCE 2018

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Official Event of the Austrian Presidency of the Council of the European Union

Renewable Heating and Cooling in Integrated Urban and Industrial Energy Systems

3 – 5 October 2018
Congress Graz
Austria

Conference Program

Preface

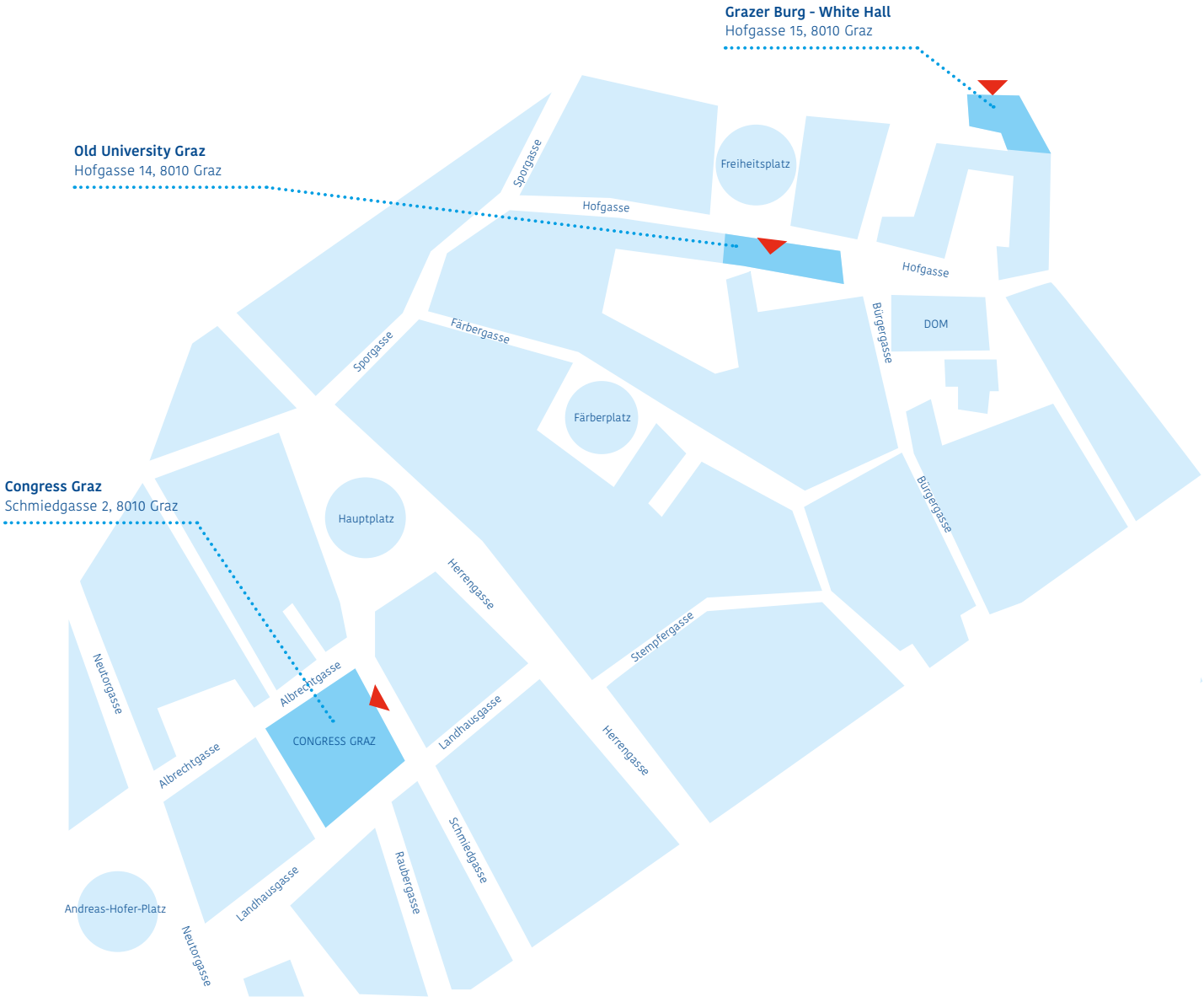
In order to implement the agreement on global warming reached at the UN climate change conference in Paris, in December 2015, an almost complete phasing out of fossil energy supply is required by 2050. This presents enormous challenges for society, but also offers a lot of opportunities for research and industry to make a global contribution to this change.

The International Sustainable Energy Conference - ISEC 2018, organized by AEE INTEC, sees itself as a promoter of innovative ideas in the areas of renewable energy systems and resource efficiency, and is intended to be a forum for research, industry and energy policy. With this ISEC 2018 intends to contribute to the challenges as described above.

The organizing committee warmly welcomes you to ISEC 2018 in Graz. A special welcome to the international delegates who join us from across the globe – your presence and contributions to the conference enriches our gathering and ensures that ISEC 2018 is a meeting point for the international exchange of ideas.
We are also very pleased that this conference is one of the official events of the Austrian EU Presidency as it shows the importance of the conference topics.
We wish you an enjoyable visit to the city of Graz, inspiring and forward-looking keynote speeches and lectures as well as the establishment of new linkages with researchers, representatives from industry and energy policy.

Werner Weiss
Conference Chair

Venue



Conference fees

ISEC 2018 - conference fee	Standard fee Regular	Standard fee Early Bird (until 30 July)	Reduced fee Regular	Reduced fee Early Bird (until 30 July)
3 days	570,-	500,-	530,-	480,-
2 days	460,-	400,-	420,-	380,-
Single days	340,-	300,-	320,-	290,-
Student per day (limited number)	80,-			
Conference dinner 4 October 2018	Included; accompanying person EUR 50,-			

Please register at our conference management system
www.conftool.com/isec2018

Committees

Conference and Review Committee

Dr. Elisabeth Berger, VÖK, Austria
Prof. Dr. Thore Berntsson, Chalmers University, Sweden
Prof. Dr. Reinhard Haas, EEG TU Vienna, Austria
Dr. Andreas Hauer, ZAE, Germany
Dr. Andreas Häberle, SPF, Switzerland
Prof. Dr. Hans Martin Henning, Fraunhofer ISE, Germany
Michael Hübner, BMVIT, Austria
Prof. Dr. Reinhold W. Lang, JKU Linz, Austria
Christine Lins, Austria
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Paola Mazzucchelli, EUREC, Belgium
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Prof. Dr. Hans Schnitzer, AEE INTEC, Austria
Dr. Stephan Schwarzer, WKO, Austria
Prof. Dr. Andrzej Stankiewicz, University Delft, Netherlands
Prof. Dr. Horst Steinmüller, Linz University, Austria
Dr. Alexandra Troi, EURAC, Italy

Organizing Committee

Christoph Brunner, AEE INTEC
Christian Fink, AEE INTEC
Dr. Karl Höfler, AEE INTEC
Paola Mazzucchelli, EUREC

Conference secretariat

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Program at a glance

	Wednesday 3 October 2018		Thursday 4 October 2018				Friday 5 October 2018			
08:00 am			Registration							
08:30 am	Registration						Networking coffee			
09:00 am			Welcome Session & Key-notes				Key-notes			
09:30 am	Technical tour 1	Technical tour 2								
10:00 am										
10:20 am			Coffee break				Coffee break			
10:50 am			Innovations for the decarbonization of buildings and districts	Spatial energy planning with focus on renewable energies	Energy efficiency, process intensification	Renewable cooling in a future energy system	Future role of buildings for the flexibility and stability of thermal and electric grids	Urban district heating and cooling technologies	Energy and resource recovery from waste water treatment plants sources	Geothermal technologies
11:05 am										
11:20 am										
11:35 am										
11:50 am										
12:15 pm			Lunch break				Lunch break			
01:30 pm			Solar thermal systems and legal framework for feed-in	Urban district heating and cooling technologies	Renewables in Industrial Processes	Introduction to RHC-ETIP's goals and activities	Building retrofit and HVAC system control	Hybridization of energy sectors	Heat and cold storages	Price reduction of solar thermal systems – results of IEA SHC Task 54
01:45 pm										
02:00 pm										
02:15 pm										
02:30 pm										
03:00 pm			Coffee break				Coffee break			
03:30 pm			Poster Session	Poster Session	Poster Session	Poster Session	Closing session			
04:00 pm										
04:30 pm			Coffee break							
04:45 pm			Workshop 1: District heating – energy hub of the future or energy sectors' unwanted stepchild?	Workshop 2: Decarbonizing the industry – a wishful thought?	Workshop 3: Next generation nZEBs - Demonstration buildings and life cycle perspectives	Workshop 4: Partnership opportunities in the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC)				
05:00 pm										
05:30 pm										
06:00 pm										
06.30 pm										
07:00 pm	Welcome reception									
07:30 pm			Conference dinner							

Program

Wednesday, 3 October 2018

08:30 am	**Registration** at Grazer Congress, Schmiedgasse 2, 8010 Graz
09:30 am	**Technical Tours**
07:00 pm	**Welcome Reception** White Hall of "Burg", Hofgasse 15, 8010 Graz

Technical Tours

Tour 1 – Main focus on sustainable buildings and new districts

Smart City Wagner Biro & Science Tower - The planned and partially implemented Smart City Mitte - whose centre is the „Science Tower" - will be a district with the highest quality of life and uses the latest technologies for the implementation of an energy-efficient and resource-efficient urban district development.

MED Campus - The high requirements of sustainability in terms of economy, functionality, added value and ecology were excellently implemented on more than 40,000 m² GFA for teaching, ie. lecture theaters and seminar rooms, offices and laboratories.

Liebenauer Main Road – Renovation with multifunctional façade elements

Primary school Mariagrün - Austria's first elementary school in passive house (AA +) quality in this size. This school is a pioneer in school construction - learning rooms are designed in the „cluster" system.

Tour 2 – Main focus on industry, waste heat recovery and disctrict heating

Roto Frank - Roto Frank AG produces turn-tilt hardware systems for windows and balcony doors and offers roof windows, solar panels and attic stairs. Roughly 4,500 people work in a total 17 production plants and over 40 sales offices of the Roto Frank AG. The main focus of the factory in Kalsdorf near Graz is the production of hardware systems for windows and balcony doors.
In Kalsdorf AEE INTEC is operating a pilot plant of membrane distillation for recovery chemicals as well process water. With this innovative separation technology appr. 60% of chemicals and 90% of water can be recovered.

HELIOS project in Graz-Neufeldweg - Multifunctional use of a 2.500m³ heat storage connected to the district heating network of Graz. CHP plant based on repository gas, 2.000m² ground mounted solar thermal collector field and a power to heat installation.

Waste heat based heat pump project of the steel mill **Marienhütte in Graz**: Two large scale heat pumps with a thermal power of 11,5MW feed in a low temperature district heating network (68°C) as well as in the main district heating network of Graz (with up to 95°C).

Welcome Reception

Welcome by **Prof. Dr. Hans Schnitzer**, Director of the board, AEE INTEC, AT
Welcome by **Governor Hermann Schützenhöfer**, Province of Styria, AT

Venue

White Hall of „Burg", Hofgasse 15, 8010 Graz

Thursday, 4 October 2018

	STEIERMARK HALL
08:00 am	**Registration**
	WELCOME SESSION
09:00 am	Session Chair: **Prof. Dr. Reinhold W. Lang,** JKU Linz, AT **Werner Weiss**, Managing Director, AEE INTEC, AT **Josef Plank**, Secretary General, Federal Ministry for Sustainability and Tourism, AT **Michael Paula**, Federal Ministry for Transport, Innovation and Technology, AT **Theresia Vogel**, Director, Austrian Climate and Energy Fund, AT
	KEY-NOTES
09:30 am	The European energy future **Dominique Ristori**, Director General, DG Energy, European Commission, BE (inquired) Design of future energy systems towards 100 % renewables **Prof. Dr. Hans-Martin Henning**, Director, Fraunhofer ISE, DE
10:20 am	**Coffee break**
	PARALLEL SESSIONS

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
	Innovations for the decarbonization of buildings and districts Session Chair: **Anita Preisler** teamgmi Ingenieurbüro, AT	**Spatial energy planning with focus on renewable energies** Session Chair: **Theodor Zillner** BMVIT, AT	**Energy efficiency, process intensification** Session Chair: **Prof. Dr. Andrzej Stankiewicz** University Delft, NL	**Renewable cooling in a future energy system** Session Chair: **Prof. Dr. Horst Steinmüller** Linz University, AT
10:50 am	LCC analysis of a Swedish net zero energy building – including co-benefits **Björn Berggren** Skanska Sverige AB, SE	Method for integrated strategic heating and cooling planning on regional level – the case of Brasov **Richard Büchele** Technical University Vienna, AT	Decarbonizing industry: Extending the scope of mitigation options **Dr. Andrea Herbst** ISI Karlsruhe, DE	Solid oxide fuel cell combined cooling heat and power using renewable fuels for a sustainable and highly efficient energy supply **Michael Seidl** AVL, AT
11:05 am	Creation of hybrid simulation model **Werner Lerch** Graz University of Technology, AT	Digital approach for spatial energy planning – best practice in Switzerland **Gabriel Ruiz** Navitas Consilium SA, CH	Oscillatory flow bioreactor for continuous bio-processing with low temperature heat supply **Dr. Bettina Muster** AEE INTEC, AT	Façade-integrated decentralized cooling system - evaluation in an outdoor test facility **Dr. Daniel Brandl** Graz University of Technology, AT
11:20 am	Vitality - design rules for building integrated photovoltaics in the early project development stage **Tim Selke** AIT Austrian Institute of Technology, AT	How combined spatial energy planning, simulation and stakeholder integration lead to sustainable district heating systems **Dr. Ingo Leusbrock** AEE INTEC, AT	Energy efficiency and flexibility for urban industrial production sites through integration of ground source heat pumps (GSHP) **Ivan Bogdanov** Fraunhofer IPA, DE	Performance investigation of a desiccant assisted solar and geothermal air conditioning system during winter and summer **Peter Niemann** University of Technology Hamburg-Harburg, DE
11:35 am	Urban building energy modeling – methodology and scenario case study „Schallmoos“ **Peter Nageler** University of Technology Graz, AT	Grid based energy system setup optimisation with rivus in dedicated regions **Fabian Hofsäß** Research Studios Austria, AT	Heat integration in a dairy factory considering thermal energy storages – a comparison of two different approaches **Anton Beck** Austrian Institute of Technology, AT	New generation solar cooling and heating – Experiences for successful design and operation **Daniel Neyer** UIBK, AT
11:50 am	Evaluation of business models for the large-scale implementation of nearly zero-energy buildings in Europe **Benjamin Köhler** Fraunhofer ISE, DE	Smart City micro- quarters **Jens Leibold** IBO, AT	Recovery of valuable substances like gold and palladium by treatment of liquids from the printed-circuit-board industry with membrane distillation **Christian Platzer** AEE INTEC, AT	How heat and cold storages benefit from economy of scale **Flemming Ulbjerg** Ramboll, DK
12:15 pm	**Lunch break**			

Thursday, 4 October 2018

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
	Solar thermal systems and legal framework for feed-in Session Chair: **Bernhard Puttinger** Green Tech Cluster Styria, AT	**Urban district heating and cooling technologies** Session Chair: **Dr. Michael Fuchs** Federal Ministry for Sustainability and Tourism, AT	**Renewables in Industrial Processes** Session Chair: **Prof. Dr. Hans Schnitzer** AEE INTEC, AT	**Introduction to RHC-ETIP's * goals and activities** Session Chair: **Paola Mazzucchelli** EUREC, BE
01:30 pm	Big solar – from the first idea to an European dimension **Dr. Christian Holter** SOLID, AT	Potential study of demand side management in district heating and cooling networks with decentralized heat pumps **Simone Buffa** EURAC Research / Free University of Bolzano, IT	Particle solar tower for high temperature process heat **Dr. Lars Amsbeck** DLR, DE	The RHC-ETIP's role in supporting the RHC-sector at EU level **Gerhard Stryi-Hipp** Fraunhofer ISE, DE
01:45 pm	Concentrated solar power combined with flat solar panels in Denmark **Jes Donneborg** Aalborg CSP, DK	Technical and potential analysis of thermal cooling districts in Colombia **Carlos Mario Ceballos Marín** Universidad Nacional de Colombia, CO	Biomass drying as a promising solution for efficient biomass boilers **Dr. Bahador Bakhtiari** NRCan-CanmetENERGY, CA	New EU Renewable Energy Directive **Eva Hoos** DG ENER- TBC, BE
02:00 pm	Potential of large-scale application of solar thermal technologies in south African hospitals **Angelo Ian Buckley** Stellenbosch University, ZA	Small heating grids for communities in Balkan countries **Christian Doczekal** Güssing Energy Technologies, AT	Green automotive industry - facing challenges and opportunities of solar heat on the way towards „green" production **Jürgen Fluch** AEE INTEC, AT	Presentation on the technology roadmap for RHC-technologies **Panels' representatives**
02:15 pm	A comparative study of solar water heater and photovoltaic water heater in Windhoek **Senior Shimhanda** Namibia Energy Institute, NA	Feasibilityof heat pumps supplying district heating systems - case study for Austria & Denmark **Wiebke Meesenburg** Technical University of Denmark, DK	Concentrating solar thermal technologies for industrial process heat applications in India **Dr. Anil Misra** UNIDO, IN	Moderated discussion on "Conditions for RHC-technologies to be made available to meet EU goals" **Paola Mazzucchelli** EUREC, BE
02:30 pm	Legal analysis of heat feed-in Austrian district heating networks **Marie Holzleitner** Institute for Energy at JKU Linz, AT	District heating by heat recovery from the brewing process of the brewery Puntigam **Gerald Koglbauer** KELAG Wärme, AT	Experimental assessment of solar process heat potential of German plastic injection moulders **Florian Schlosser** University Kassel, DE	* European Technology and Innovation Platform on Renewable Heating and Cooling
03:00 pm	**Coffee break**			
	POSTER SESSION			
03:30 pm - 04:30 pm	Session Chair: **David Venus** AEE INTEC, AT	Session Chair: **Judith Buchmaier** AEE INTEC, AT	Session Chair: **Rebekka Köll** AEE INTEC, AT	Session Chair: **Anna Grubbauer** AEE INTEC, AT
	Low temperature and cold district heating and cooling systems - transition, implementation, planning, long-term evaluation **Dr. Ingo Leusbrock** AEE INTEC, AT	Modeling and simulation of a solar thermal storage collector **Thomas Aigenbauer** FH OÖ - ASiC, AT	Europe's largest full-solar heated industrial plant **Rainer Troppmann** GASOKOL, AT	Development of an all-in-one solar thermal collectors and systems testing facility for water heating, room heating and industrial applications **Ronnie Phuthego** Botswana Institute for Technology Research and Innovation – BITRI, BW
	An assessment of challenges, opportunities and model for the implementation of solar thermal technology roadmap for Botswana and impact on co_2 reduction **Prof. Dr. Andrew Obok Opok** University of Botswana, BW	Waste heat recovery below 80°c with thermomagnetic motors **Dr. Michael Maschek** Delft University of Technology, NL	Policy implications, macroeconomic and systemic effects of the transition to 100% renewables in industry **Dr. Simon Moser** Institute for Energy at JKU Linz, AT	Solar electrical thermal energy supply - SETE process **Prof. Dr. Richard Krotil** FH Burgenland, AT
	Evaluation of CES-MED program: Objectives, achievements and recommendations **Adel Mourtada** Lebanese University, LB	Window of the future **Joe Kao** Physee, NL	Towards GIGA-scale thermal energy storage for renewable districts in Austria **Dr. Wim van Helden** AEE INTEC, AT	Sonnenhaus 4.0: Solar self-sufficient buildings in cities **Roger Hackstock** Austria Solar, AT

Thursday, 4 October 2018

POSTER SESSION

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
03:30 pm - 04:30 pm	Delivering high-quality energy efficiency projects with ICP Europe **Andreas Lindinger** denkstatt, AT	HOTSPOTS - holistic thermo graphic screening of urban physical objects at transient scales **Dr. Karl Höfler** AEE INTEC, AT	Reduction of co_2-emissions within the gas sector by implementation of energy efficiency measures and renewable process heat **Dr. Bastian Schmitt** University of Kassel, DE	Controlling of a distributed solar district heating plant in Denmark **Jes Donneborg** Aalborg CSP A/S, DK
	Innovative financing and evaluation of energy efficiency and renewable energies in industry **Jürgen Fluch** AEE INTEC, AT	Direct conversation of waste heat from a solid-fuel stove into electric energy using a high temperature thermoelectric generator compared to BI2TE3 thermoelectric generator **Momir Tabakovic** FH Technikum Vienna, AT	Evaluation of energy consumption and environmental impact of long term hot water thermal storage considering stratification and convective behavior **Milan Rashevski** Institute for Zero Energy Buildings, BG	Development of optimized control strategies for large-scale solar thermal plants with absorption heat pumps and seasonal pit storage **Christoph Moser** AEE INTEC, AT
	Transparent costing in smart thermal networks – a thermo economic approach **Stefano Coss** Dr. IMT Atlantique, FR	Heat supply from waste-water treatment plants - a methodological approach for integrated sustainability assessment **Dr. Florian Kretschmer** University of Natural Resources and Life Sciences, Vienna, AT	The EU heating and cooling transition: what are the perspectives of the industry sector towards 2050 **Tobias Fleiter** Fraunhofer ISI, DE	Intelligent controlling of power driven solid biomass CHP plants in flexible district heating with a seasonal heat storage and a power-to-heat component **Katharina Johanna Koch** Technical University Munich, DE
	Hydraulic simulations of low temperature networks **Artem Sotnikov** Lucerne University of Applied Sciences and Arts, CH	Experimental study of Colombian coffee parchment pellets combustion **Carlos Mario Ceballos Marín** Universidad Nacional de Colombia, CO	Cost-effective solutions for thermal regeneration of seasonal borehole heat exchangers in urban residential settlements **Paul Lampersberger** e7 Energie Markt Analyse, AT	Impact of grid costs on district heating potential **Mostafa Fallahnejad** Technical University Vienna, AT
	A bottom-up methodology for buildings energy demand calculation to support grid based energy systems in urban areas **Fabian Hofsäß** Research Studios Austria, AT	Final renovated social housing to PH standard with district heating, co2 emissions of future energy systems **Søren Riis Dietz** Bjerg architekture, DK	Optimization of a seasonal thermal energy storage system for space heating in cold climate zones **Dr. Behzad Rismanchi** The University of Melbourne, AU	Approaches towards low energy resilient neighborhoods - case studies **Dr. Anna Fulterer** AEE INTEC, AT
	Optimized method to predict energy in a micro grid **Dr. Luc Dufour** HES-SO Valais, FR	ENERFUND – mapping the energy efficiency of buildings to assist in decarbonizing the European building stock **Dr. Susanne Geissler** SERA Energy & Resources, AT	Synthesis and characterization of carboxylic esters as novel phase change materials (PCM) for latent heat storage (LHS) applications **Rebecca Ravotti** Lucerne University of Applied Sciences and Arts, CH	A spatial decision support tool to estimate the thermal energy demand of the building stock at the regional scale **Valentina D'Alonzo** University of Trento, IT
	Market options for the integration of heat pumps in rural district heating grids in Austria **Johanna Spreitzhofer** AIT - Austrian Institute of Technology, AT	Business model for sustainable heat supply contracting of quarters **Gerhard Bayer** Austrian Society for Environment and Technology, AT	Low-temperature latent heat storage based on salt hydrates **Christoph Rathgeber** ZAE Bayern, DE	Advanced shallow geothermal energy production - an introduction to the project geothermal - model region Fürstenfeld **Nikolaus Petschacher** Institute of Applied Geosciences Technical University Graz, AT
	Performance of solar thermal - PV hybrid system **Anadola John-Jerome Tsiu** National University of Lesotho, LS	An analysis of heat pumps for industrial applications **Alexander Arnitz** Graz University of Technology, AT	Modeling and validation of the ice growth in an ice storage system **Stefanie Paulini** Hof University of Applied Sciences, DE	Gis based analysis of potential forest residues for energy in Alentejo, Portugal **Paulo Mesquita** Universidade de Évora, PT

Thursday, 4 October 2018

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
03:30 pm - 04:30 pm	Design of a hybrid vapor absorption milk chiller (solar and biogas) for small scale dairy farms in Zimbabwe **Blessed Sarema** National University of Science and Technology, ZW	Experimental evaluation of a hybrid system for low-temperature water heating industrial process **Carlos Mario Ceballos Marín** Universidad Nacional de Colombia, CO	How efficient is a closed sorption thermal energy storage (TES) system based on sodium hydroxide? **Dr. Mihaela Dudita** SPF Institute for Solar Technology, CH	Energy planning at national and community level is the key to integrate cost effective renewable energy **Anders Dyrelund** Ramboll, DK
	Integrated PVT solar system **Dr. Ilija Nasov** Camel Solar doo, MK	Decarbonisation by recycle and reuse facade components **Dr. Ferdinand Oswald** Graz University of Technology, AT	Study of hybrid dry cooling systems for STE plants based on latent storage **Dr. Rocío Bayón** CIEMAT, ES	Potential assessment for the use of near surface geothermal energy in the alpine region **Magdalena Bottig** Geologische Bundesanstalt, AT
	Energy recipes for reduced household energy consumption and peak shaving **Dr. Francesco Reda** VTT, FI	Multi-active- façade – closer to a zero emission building **Stefan Sattler** Austrian Society for Environment and Technology, AT	A detailed 3-d model of a large-scale underground thermal energy storage with consideration of groundwater conditions **Abdulrahman Dahash** University of Innsbruck, AT	An European heat density map **Dr. Andreas Müller** Technical University Vienna, AT
	Exploring solar thermal integration opportunities for the tourism and hospitality sector in Zimbabwe **Blessed Sarema** National University of Science and Technology, ZW	Solar system with glazed PVT collectors for multifamily building **Prof. Dr. Tomas Matuska** Czech Technical University Prague, CZ	An open sorption heat storage application **Dr. Bernhard Zettl** FH Wels, AT	Spatial correlation of heating supply and demand – GIS mapping for energy planning **Tomislav Novosel** University of Zagreb, HR
	Upgrading the performance of district heating networks in Europe the upgrade dh project **Dominik Rutz** WIP Renewable Energies, DE	Thermal analysis for the development of a solar thermal activated facade element **Helmut Schober** Graz University of Technology, AT	Combined short- and long-term heat storage with sodium acetate trihydrate for solar heat supply in buildings **Gerald Englmair** Technical University of Denmark - DTU, DK	Large-scale heat pumps – the key technology in efficient urban heating and cooling **Anders Dyrelund** Ramboll, DK
	Household energy consumption: A study of micro renewable energy systems in Ireland **Michael Chesser** Dublin Institute of Technology, IE	Analytical study on a heat pump for 4th generation district heating **Minwoo Lee** Korea University, KR	Break the dependency on fossil fuels in industrial processes with an industrial heat pump that can provide clean energy production up to 160°c **Mattias Nilsson** Viking Heat Engines Germany, DE	On design process for integrating renewables into existing district heating systems **Carles Ribas Tugores** AEE INTEC, AT
04:30 pm	**Coffee break**			

THEMATIC WORKSHOPS

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
04:45 pm	**WS 1: District heating – energy hub of the future or energy sectors' unwanted stepchild?** **Panelists:** **Dr. Heiko Huther,** AGFW, DE **Dr. Rusbeh Rezania,** Wien Energie, AT **Eva Hoos,** DG ENER- TBC, BE	**WS 2: Decarbonizing the industry – a wishful thought?** **Panelists:** **Dr. Winfried Braumann,** REENAG, AT **Prof. Dr. Andrzej Stankiewicz,** University Delft, NL **Prof. Dr. Simon Harvey,** Chalmers University of Technology, SE **Dr. Ute Collier,** IEA, FR **Dr. Gerald Koglbauer,** KELAG Energie & Wärme, AT **Heinz Moitzi,** AT&S, AT	**WS 3: Next generation nZEBs - Demonstration buildings and life cycle perspectives** **Panelists:** **Tobias Weiss,** AEE INTEC, AT **Jens Glöggler,** ATP Sustain, DE **Dr. Roberta Pernetti,** EURAC, IT **Christian de Nacquard,** Bouygues Construction, FR **Benjamin Köhler,** Fraunhofer ISE, DE	**WS 4: Partnership opportunities in the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC)** **Panelists:** **Martin Lugmayr,** UNIDO, AT **Solomone Fifita,** PCREEE, TO **Gary Jackson,** CCREEE, BB **Ashraf Kraidy,** RCREEEE, EG **Mahama Kappiah,** ECREEE, CV **Kudakwashe Ndhlukula,** SACREEE, NA **Michael Ahimbisibwe,** EACREEE, UG
07:30 pm	**Conference Dinner**			
	Venue: Old University, Hofgasse 14, 8010 Graz Welcome by **Werner Weiss**, Conference Chair, AEE INTEC, Welcome by the city of Graz Dinner speech: **Beyond Growth** - Economics as if the planet mattered **Prof. Dr. Mark T. Brown**, Department of Environmental Engineering Sciences, University of Florida, Gainesville, USA Best Poster Award presented by **Nigel Cotton**, European Copper Institute, BE			

Friday, 5 October 2018

	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
08:30 am	**Networking coffee**			
KEY-NOTES				
	Session Chair: **Christoph Brunner,** AEE INTEC, AT			
09:00 am	Research needs for the decarbonization of Europa's Industry – SPIRE's perspectives **Dr. Christoph Sievering,** Head of Energy Policy at Covestro, DE			
09:25 am	Renewable energy is the answer... but what was the question? Do planners design for people's needs? **Dr. Wolfgang Kessling,** TRANSSOLAR Energietechnik, DE			
10:00 am	Renewable heat policies - delivering clean heat solutions for the energy transition **Dr. Ute Collier,** IEA Paris, FR			
10:20 am	**Coffee break**			
PARALLEL SESSIONS				
	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
	Future role of buildings for the flexibility and stability of thermal and electric grids Session Chair: **Elvira Lutter** Austrian Climate and Energy Fund, AT	**Urban district heating and cooling technologies** Session Chair: **Dr. Elisabeth Berger** VÖK, AT	**Energy and resource recovery from waste water treatment plants sources** Session Chair: **Prof. Dr. Thore Berntsson** Chalmers University, SE	**Geothermal technologies** Session Chair: **Javier Urchueguia,** University of Valencia, ES
10:50 am	Energy flexibility in buildings: a main driver in the future energy systems **Armin Knotzer & Tobias Weiss** AEE INTEC, AT	Utilization of heat from sewage for district heating system in urban areas **Dr. Rusbeh Rezania** Wien Energie, AT	Energy from municipal wastewater: An overview of best practices in Europe **Boris Lesjean** Veolia Germany, DE	An introduction to the RHC-ETIP and geothermal panel **Javier Urchueguia** University of Valencia, ES
11:05 am	Opportunities and barriers for asset managers integrating energy flexibility **Dr. Erwin Mlecnik** Delft University of Technology, NL	Advanced simulation and control methods for operation, planning and control of district heating systems **Keith o´Donovan** AEE INTEC, AT	Ratocat project: Rational design of highly effective photo catalysts with atomic-level control **Prof. Dr. Sixto Malato** CIEMAT, ES	A new effort to address shallow geothermal energy supply in the built environment: H2020 project GEOIVCIVIC **Luc Pockelé** RED S.r.l., RO
11:20 am	Integration of renewable energy into the energy system – the virtual battery **Søren Møller Thomsen** Ramboll, DK	A novel district heating solution based on absorption heat exchanger (AHE) for different types of cogeneration plants **Tianle Hu** Tsinghua University, CN	Municipal wastewater treatment systems and their future role in an efficient and sustainable energy systems **Kerstin Schopf** Montanuniversity Leoben, AT	Interactions between soil and geothermal helical heat exchangers: An overview of ITER project outcomes **Eloisa di Sipio** FAU University, DE
11:35 am	High solar fraction by thermally activated components **Thomas Ramschak** AEE INTEC, AT	Solar thermal energy integration on a power plant site in Vienna **Dr. Sebastian Schramm** GREENoneTEC, AT	Emerging technologies at waste water treatment plants for nutrient recovery and energy network integration **Wolfgang Glatzl** AEE INTEC, AT	SuSpire project **Inigo Arrizabalaga** TELUR, ES
11:50 am	A new control strategy for the exploitation of solar energy **Dr. Matthias Gladt** Technical University Vienna, AT	Pressure reduction in hydraulic systems **Dr. Tobias Sommer** Lucerne University of Applied Sciences and Arts, CH	Neckarpark Stuttgart: District heat from waste water **Micha Illner** Fraunhofer IBP, DE	
12:15 pm	**Lunch break**			

Friday, 5 October 2018

PARALLEL SESSIONS				
	STEIERMARK HALL	HALL 1	HALL 2	HALL 3
	Building retrofit and HVAC system control Session Chair: **Dr. Alexandra Troi** EURAC, IT	**Hybridization of energy sectors** Session Chair: **Prof. Dr. Reinhard Haas** EEG Technical University Vienna, AT	**Heat and cold storages** Session Chair: **Dr. Wim van Helden** AEE INTEC, AT	**Price reduction of solar thermal systems – results of IEA SHC Task 54** Session Chair: **Christine Lins** AT
01:30 pm	Building retrofit using façade-integrated energy supply systems **Dagmar Jähnig** AEE INTEC, AT	Decarbonisation of the space heating and hot water sector: Pathways, challenges and requirements for sector coupling **Dr. Lukas Kranzl** Technical University Vienna, AT	The future role of thermal energy storage – flexible sector coupling and thermal transition **Dr. Andreas Hauer** ZAE Bayern, DE	Introduction to the IEA SHC Task 54 „Price reduction of solar thermal systems“ **Dr. Daniel Mugnier** TECSOL, FR
01:45 pm	Deep renovation of a MFH with decentral compact heat pumps **Dr. Fabian Ochs** UIBK, AT	The potential of small wind turbine integration in residential buildings complementing PV and heat pump operation **Marcus Brennenstuhl** HFT Stuttgart, DE	PCM storage for industry **Thomas Aigenbauer** FH Wels, AT	Calculating the heat costs for reference solar thermal systems using the levelised cost of heat (LCoH) method **Dr. Francois Veynandt** AEE INTEC, AT
02:00 pm	Multi-building energy renovation for social housing **Giulia Rinaldi** Bax&Company, ES	Large heat storage tank technologies in hybrid energy systems **Christian Hofer** Bilfinger VAM Anlagentechnik, AT	Investigation of the cycling stability of sorbent composites for sorption thermal energy storage applications **Dr. Elpida Piperopoulos** University of Messina, IT	Improvements developed during the IEA SHC Task 54 a) New materials **Prof. Dr. Gernot Wallner** JKU IPMT, AT & **Robert Buchinger** Sunlumo, AT b) Technical improvements **Dr. Alexander Thür** UIBK, AT c) Non-technical improvements and learning curve issues **Dr. Daniel Mugnier** TECSOL, FR
02:15 pm	Quality control for HVAC systems in residential buildings with IOT-based FDD **Stella Joos** Fraunhofer ISE, DE	Integration of a latent heat storage unit in a cogeneration plant **Maike Johnson** German Aerospace Center, DE	Sorption collector – performance increase of closed adsorption storages **Rebekka Köll** AEE INTEC, AT	Impact of the improvements developed during IEA SHC Task 54 on the levelised cost of heat (LCoH) **Dr. Karl-Anders Weiß** Fraunhofer ISE, DE
02:30 pm	Pear – energy efficient automation and control of buildings **Anita Preisler** teamgmi Ingenieurbüro, AT	Optimizing efficiency of biomass fired organic rankine cycle with concentrated solar power: A combined heat and power case in Denmark **Jes Donneborg** Aalborg CSP A/S, DK	Humidified air injection for zeolite boiler in thermochemical energy storage and transport system utilizing unused heat from sugar mill **Shoma Fujii** Waseda University, JP	
03:00 pm	**Coffee break**			
03:15 pm	**Closing session**			
04:00 pm	**End of conference**			

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