ISEC

3rd INTERNATIONAL SUSTAINABLE ENERGY CONFERENCE 2024

10 – 11 April 2024

Messecongress Graz
Austria

Conference for Renewable Heating
and Cooling in Integrated Urban
and Industrial Energy Systems

Conference Program

Welcome Reception / Program Overview

07:00 pm	**Welcome Reception** Welcome Governor **Christopher Drexler,** Province of Styria, AT Welcome - **Prof. Dr. Hans Schnitzer,** Chair AEE INTEC Board, AT & **Werner Weiß,** Member AEE INTEC Board, AT Venue: The Burg in Graz, Hofgasse 15, 8010 Graz

Program Overview

<table>
<tr><th></th><th>Tuesday,
09 April 2024</th><th colspan="4">Wednesday, 10 April 2024</th><th></th><th colspan="4">Thursday, 11 April 2024</th></tr>
<tr><td>08:30 am</td><td></td><td colspan="4">Get Together - Networking Coffee</td><td>08:30 am</td><td colspan="4">Get Together - Networking Coffee</td></tr>
<tr><td>09:00 am</td><td rowspan="11">Side Events</td><td colspan="4">Welcome Session</td><td rowspan="2">09:00 am</td><td colspan="4">Plenary Session</td></tr>
<tr><td></td><td colspan="4">Key-Notes</td><td colspan="4">Key-Notes</td></tr>
<tr><td>11:00 am</td><td colspan="4">Coffee Break</td><td>10:40 am</td><td colspan="4">Coffee Break</td></tr>
<tr><td>11:15 am</td><td>Future District Heating and Cooling</td><td>Solutions for Climate Neutral Industrial Production</td><td>Energy Flexibility through Sector Coupling</td><td>Solar Thermal and Energy Efficiency for Sub-Saharan Africa´s Industry and Commerce</td><td>11:00 am</td><td>Promising Heat Storage Technologies</td><td>Innovations in Green Heating & Cooling: Advance, Applications, and Achievements</td><td>Positive Energy Buildings and Districts</td><td>Industrial Deep Decarbo-nization - A Global Initiative</td></tr>
<tr><td>12:45 pm</td><td colspan="4">Lunch Break</td><td>12:30 pm</td><td colspan="4">Lunch Break</td></tr>
<tr><td>01:45 pm</td><td>Heat Pumping Technologies and System Integration</td><td>Policies for Phase-Out Fossil Fuels and Carbon Management</td><td>Hydrogen - A Key Factor to a Sustainable Economic System</td><td>How to Fully Decarbonise the Heating and Cooling Sector in Europe?</td><td>01:45 pm</td><td>Large Scale Solar Applications in Industry and District Heating</td><td>Spatial Energy Planning for Energy Transition</td><td>Emerging Energy Technologies and System Integration</td><td>Solutions for Energy Efficiency</td></tr>
<tr><td>03:15 pm</td><td colspan="4">Coffee Break</td><td>03:00 pm</td><td colspan="4">Coffee Break</td></tr>
<tr><td>03:30 pm</td><td>Exploring the Sectoral Hubs4Circularity Potential in EU Regions</td><td>BuildUpSpeed - Speeding up Industrialized Building Renovation by Introducing the Local Pop-Up Factory Concept</td><td>Flexibility and Load Management for Energy Grids: The hidden Potential of Buildings</td><td>Sustainable Fuels for the Shipping and Transportation Sector</td><td>03:20 pm</td><td colspan="4">Closing Session</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>04:00 pm</td><td colspan="4">End of Conference</td></tr>
<tr><td>05:15 pm</td><td colspan="4" rowspan="2">Business Speed Dating –
Happy Hour</td><td rowspan="3"></td><td colspan="4" rowspan="3"></td></tr>
<tr><td>06:00 pm</td></tr>
<tr><td>07:00 pm</td><td rowspan="2">Welcome Reception - The Burg in Graz</td><td colspan="4">Conference Dinner – Old University</td></tr>
<tr><td>08:00 pm</td><td colspan="4">Dinner Speech</td><td colspan="5"></td></tr>
</table>

Photo: Miriam Raneburger

Conference Dinner, Wednesday 10 April 2024

07:00 pm	Session Chair: **Prof. Dr. Reinhold W. Lang,** Vice Chair AEE INTEC Board, AT Welcome – City of Graz, AT **Dinner Speech** A Net Zero World: Role of the Insurance Industry in Supporting the Energy Transition **Dr. Tobias Grimm,** Munich RE, DE Venue: Old University, Hofgasse 14, 8010 Graz

Dinner Speech, Wednesday 10 April 2024

Photo: Munich RE

Dr. Tobias Grimm
Munich RE, DE

A Net Zero World: Role of the Insurance Industry in Supporting the Energy Transition

Dr. Tobias Grimm is Head of Climate Advisory and Natcat Data with Munich Re's Climate Change Solutions Department. His team is responsible for developing climate related business solutions including data services and advisory.

He has a long-track record as Senior Expert for natural hazards, climate change and renewable energies. From 2020 until 2023, he helped to launch a climate banking project and built up a Greentech sales pipeline for Munich Re of Australia. Over many years, he has been Deputy Head of Chief Climate Scientist for the Munich Re Group and contributed a lot to Munich Re's positioning on climate change.

Key-Note Speaker

Photo: Delft University

Dr. Andrea Ramírez Ramírez

Delft University of Technology, NL

Defosilizing Petrochemical Clusters under a Regional Perspective: Evolution or Revolution

Dr. Andrea Ramírez Ramírez is professor of Low Carbon Systems and Technologies and head of the department of chemical engineering at Delft University of Technology. She holds a bachelor's in chemical engineering, a master's in human ecology, and a PhD in the field of industrial energy efficiency. Her research focuses on the evaluation of novel low-carbon technologies and the design of methodologies and tools to assess their potential contribution to sustainable industrial systems. Prof Ramirez has (co)authored over 120 publications. She is a fellow of the Dutch Academy of Engineering, ambassador of the Energy transition route for the Dutch National Research Agenda (NWA), and member of the scientific advisory group of the Science Based Target Initiative (SBTi).

Photo: Neofaktur eG

Vanessa Hensel

DIAS, DE

How to mobilize Investors for Energy Transition: What do Companies need to know to attract Capital

Vanessa Hensel´s ambition is to drive energy transition by mobilizing institutional investors. As a former investment and fund manager, serial entrepreneur in Deep Tech and partner in a start-up rethinking leadership, her focus is on scaling and financing clean tech start-ups as well as decarbonization projects within infrastructure & industry transition. With DIAS – Decarbonization Investment Acceleration Services – she has set up an ecosystem of experts within finance, industry and sciences not only providing market & technical intelligence for institutional, growth and venture capital investors, but also initiating financial innovation.

Photo: Öko-Institut

Dr. Veit Bürger

Öko-Institut, DE

Implementing the Energy Transition - Trends, Challenges and Necessities from the Perspective of Climate Targets

Dr. Veit Bürger is the Head of the Energy and Climate Division at the Öko-Institut in Freiburg, Germany. He is a recognized expert in energy policy and energy economics. Veit's research focuses on the transformation of the heating sector, particularly in relation to the development and evaluation of the policy framework. Veit is currently involved in projects related to municipal heat planning, district heating transformation, heat pump market expansion, and gas phase-out regulation on behalf of several federal ministries. He has been lecturing on energy policy at the University of Freiburg since 2017.

Key-Note Speaker

Photo: Architype

Ann-Marie Fallon
Architype, UK

Regenerative Design Approaches: The Role of Whole Life Carbon Assessment Applied in School Buildings in the UK

Ann-Marie Fallon is one of the UK's leading experts on Passivhaus design and has shared her experience at UK and international Passivhaus Trust conferences. Ann Marie is leading an Architype team to develop an innovative process to create compatible workflows for Passivhaus and BIM implementation; streamlining the delivery of certified projects. She has a sound working knowledge of specialist thermal bridging and hygrothermal software as well as whole building energy modelling software. In addition to her work at Architype, Ann-Marie has always had an interest in giving back to architectural education. She is a part-time teaching fellow at the University of Bath, and also visiting part 3 External Examiner for the Technical University of Dublin and The Bartlett School of Architecture UCL London.

Photo: stefanjoham

Karl Gruber
Wien Energie, AT

Phasing out Fossil Fuels in the City of Vienna - More than just a Plan

Karl Gruber, Managing Director Wien Energie, graduated from the Technical University of Graz and majored in mechanical engineering and business administration. Already before and during his studies he worked in the design and technical construction of water turbines at Voith Hydropower. After his graduation, Karl Gruber worked as a consultant in the energy sector, among others for the World Bank and several energy companies. From 2011 onwards, he worked for Wien Energy, one of the two largest Austrian Utility Companies, first as the head of the hydropower department and from 2016 onwards as the managing director in charge of the divisions asset development & management, asset decarbonization, asset operation & service, human resources, IT and the legal department. Karl Gruber is married with three children and a passionate yachtsman.

Photo: Sappi

Heidi Siekkinen
Sappi Europe, AT

Decarbonization of Energy Production of Pulp and Paper Mills

Heidi Siekkinen manages a pre-feasibility study to decarbonize and modernize the steam and power production at several pulp and paper mills of Sappi Europe. The study also explores disposal and utilization options for bark, wood and sludge residue streams. Her background is in construction within the wind, energy and pulp industries before joining Sappi in the position of Project Manager, Energy & Utilities Technologies. She holds MSc degrees in mechanical engineering and biochemistry.

Wednesday, 10 April 2024

08:30 am	**Get Together - Networking Coffee**			
WELCOME SESSION - HALL 1				
09:00 am	Session Chair: **Stefan Lenglinger,** ORF, AT **Christoph Brunner,** Conference Chair, AEE INTEC, AT **Christian Fink,** Conference Chair, AEE INTEC, AT **Leonore Gewessler,** Minister, Federal Ministry Republic of Austria for Climate Action, Environment, Energy, Mobility, Innovation and Technology, AT **Bernd Vogl,** Climate and Energy Fund, AT **Christian Purrer,** Energie Steiermark, AT **Gerd Müller,** UNIDO (t.b.c.), AT			
KEY-NOTES - Hall 1				
	Defosilizing Petrochemical Clusters under a Regional Perspective: Evolution or Revolution? **Prof. Dr. Andrea Ramírez Ramírez,** Delft University of Technology, NL How to mobilize Investors for EnergyTransition: What do Companies need to know to attract Capital **Vanessa Hensel,** Decarbonization Investment Acceleration Services, DE Implementing the Energy Transition - Trends, Challenges and Necessities from the Perspective of Climate Targets **Dr. Veit Bürger,** Öko-Institut, DE			
11:00 am	**Coffee Break**			
PARALLEL SESSIONS				
	HALL 1	HALL 2	HALL 3	HALL 4
	Future District Heating and Cooling Session Chair: **Dr. Heiko Huther,** AGFW, DE	**Solutions for Climate Neutral Industrial Production** Session Chair: **Prof. Dr. Andrzej Stankiewicz,** Warsaw University of Technology, PL	**Energy Flexibility through Sector Coupling** Session Chair: **Prof. Dr. Alexandra Troi,** EURAC, IT	**Solar Thermal and Energy Efficiency for Sub-Saharan Africa's Industry and Commerce** Session Chair: **Martin Lugmayr,** UNIDO, AT Statements: **Francis Sempore,** ECREEE, CV **Yunus Alokore,** EACREEE, UG
11:15 am	Decreasing the Return Temperature in District Heating Networks **Dr. Gaétan Chardon,** ENGIE, FR	Survey of Industrial Waste Heat Potentials in Austria **Dr. Andreas Hammer,** Montanuniversität Leoben, AT	The Integration of Solar Energy by Flexible Sector Coupling **Dr. Andreas Hauer,** ZAE Bayern, DE	An Outlook on the Adoption of Renewable Energy Solutions at South African Beverage Manufacturers **Francois Rozon,** Stellenbosch University, SA
	Developing High-Efficient Biomass-Based District Heating Systems for Renewable Heat Supply **Dr. Stefan Retschitzegger,** AEE INTEC, AT	Renewable Gasfield – Lessons Learned from Commissioning towards Stable Operation **Dr. Bernhard Mayr,** EnviCare, AT	Investigation of the Flexibility Potential by Decoupling Building Mass and Room Temperature **David Schmitt,** Technische Hochschule Ingolstadt, DE	Walk-Through Energy Audit of Hot Water System – A Case Study of the University of Botswana Indoor Sports Centre **Prof. Kevin Nwaigwe,** University of Botswana, BW
	Planning Tools for Decentralized Heat Supply: Modeling the Effects of Volatile Renewable Energies **Vera Boss,** TU Dresden, DE	Comparative Analysis of Solar Tower and Parabolic Trough Collectors for Solar Heat in Steel Industry: A Case Study **Prof. Onur Taylan,** ODTÜ-GÜNAM, TR	Enhancing Climate Resilience and Energy Flexibility of Buildings and Energy Systems **Prof. Vahid Nik,** Lund University, SE	Solar Energy Alternatives for Coal Boiler Steam Production **Wally Weber,** BLACKDOT Energy, SA
	Analysis of Different Climate-Neutral Heat Supply Concepts for a District Heating System near Munich with Deep Geothermal Heat as the Primary Heat Source **Dr. Harald Drück,** University of Stuttgart, DE	IT-Framework for Digital Energy Twin/Shadow applications **Dr. Wolfgang Weiß,** AEE INTEC, AT	Dimensioning Method for PVT Collectors as Heat Source of Heat Pumps for Residential Buildings **Krishna Timilsina,** Institute for Solar Energy Research Hamelin, DE	Design and Economic Analysis of a Solar Thermal Pre-Cooling System for Agro-Produce Cold Chain in Lesotho **Mpho Yengane,** Energy Reseach Centre at National University of Lesotho, LS
	Analysis of Industrial 5GDHC System in Ingolstadt as a Step towards CO_2-neutral Industry **Simon Müller,** Technische Hochschule Ingolstadt, DE	Tackle the Beast – How to Assess Scope 3 Emissions **Dr. Lukas Höber,** ICT Impact, AT	Steps To CO_2- Neutral City Districts – Learnings from Post City Gardens Linz **Dr. Martina Majcen,** AEE INTEC, AT & **Dr. Tobias Weiß,** AEE INTEC, AT	Life Cycle Assessment of Thermosyphon and PV Hot Water Systems in Namibia **Harald Kicker,** JKU Linz, AT & **Joseph TK Shigwedha,** Nust, NA
12:45 pm	**Lunch Break**			

Wednesday, 10 April 2024

	Heat Pumping Technologies and System Integration Session Chair: **Michael Aumer,** BMK, AT	**Policies for Phase-Out Fossil Fuels and Carbon Management** Session Chair: **Sonja Sheikh,** ACR, AT	**Hydrogen - A Key Factor to a Sustainable Economic System (Host: WIVA P&G)** Session Chair: **Prof. Dr. Horst Steinmüller,** WIVA P&G, AT	**How to Fully Decarbonise the Heating and Cooling Sector in Europe? (Host: RHC ETIP)** Session Chair: **Andrej Misech,** EUREC, BE & Marco Calderoni, R2M Solutions, IT
01:45 pm	Sustainable Heat Supply for Greenhouses with Heat Pumps **Matthieu Chaigneau,** Fraunhofer ISE, DE	The Impact of Heating & Cooling End Use Energy Efficiency on Energy Supply **Dr. Lukas Kranzl,** TU Vienna, AT	Hydrogen Valleys in Austria **Margherita Matzer,** WIVA P&G, AT	Thinking the Heating and Cooling Sector and the Power Sector Together: Sector Coupling **Marco Calderoni,** R2M Solutions, IT
	Modularity towards Sustainability: A new Approach of Modular Heat Pump and Latent Heat Storage System **Dr. Abdulraham Dahash,** AIT, AT	Heating the Future: Overcoming Challenges and Gaining Stakeholder Support for District Heating Transformation **Benjamin Köhler,** Oeko-Institut, DE	H2REAL – Building a Hydrogen Valley **Sascha Grimm,** Wien Energie, AT	Innovative Concepts for Heating and Cooling in Cities and districts: **Dr. Ralf-Roman Schmidt,** AIT, AT
	Energetic Potential of Parallel Operation of Two Heat Sources in a Dual-Source Heat Pump **Tobias Reum,** Technische Hochschule Ingolstadt, DE	CCU and CCS Perspectives for Austria **Valerie Rodin,** JKU, AT	Forging the Future: Innovations in Sustainable Steelmaking **Michael Zarl,** K1-MET, AT	Heating and Cooling Solutions for Individual Buildings t.b.c.
	Analysis of Different High Temperature Heat Pumping-Cycles for Industrial Applications **Gerald Zotter,** ECOP Technology, AT	REA: Resource Exergy Analysis - A Key to Climate Sustainability **Dr. Andrej Jentsch,** AGFW, DE	The German Gas Distribution Transformation Plan (GTP) 2023 **Dr. Volker Bartsch,** DVGW, DE	The Challenge of Decarbonizing Heat Demands of Industries **Wolfgang Gruber-Glatzl,** AEE INTEC, AT
	Model-Based Control of Absorption Heat Pumping Devices – General Approach and Exemplary Application to Solar Cooling Systems **Dr. Sandra Staudt,** BEST, AT	Complexity of Life Cycle Assessments for CO_2 Technologies **Prof. Volker Sick,** University of Michigan, US	Hydrogen Core Network in Germany **Simona Rens,** Bayernets, DE	Bridging Research and Action with EU Support Moderation: **Dominik Rutz,** WIP Renewable Energies, DE Panellists: **Piero de Bonis,** DG RTD, European Commission, BR (t.b.c.) **Caroline Haglund Stignor,** RISE, SE **Walter Haslinger,** BEST, AT
03.15 pm	**Coffee Break**			
	WORKSHOPS			
03:30 pm	Exploring the Sectoral Hubs4Circularity Potential in EU Regions Session Chair: **Angels Orduna Cao,** SPIRE, BE	BuildUPspeed - Speeding up Industrialized Building Renovation by Introducing the Local Pop-Up Factory Concept Session Chair: **Dr. Cornelia Ninaus,** AEE INTEC, AT & **Mohamed Elagiry,** DEMO, NL	Flexibility and Load Management for Energy Grids: The hidden Potential of Buildings Session Chair: **Dr. Ingo Leusbrock** & **Christoph Rohringer,** AEE INTEC, AT	Sustainable Fuels for the Shipping and Transportation Sector Session Chair: **Thomas Timmel,** Biobase, AT
05:00 pm	**B2B Speed Dating – organized by EEN in parallel to the BrauUnion Happy Hour**			
07:00 pm	**Conference Dinner** – Venue: **Old University**, Hofgasse 14, 8010 Graz Moderation: **Prof. Dr. Reinhold W. Lang,** Vice Chair AEE INTEC Board, AT **Welcome - City of Graz,** AT **Dinner Speech** A Net Zero World: Role of the Insurance Industry in Supporting the Energy Transition **Dr. Tobias Grimm,** Munich RE, DE			

Thursday, 11 April 2024

08:30 am	**Get Together - Networking Coffee**			
	PLENARY SESSION - HALL 1			
09:00 am	Session Chair: **Bernhard Puttinger,** GreenTechValley, AT Pollicy brief - European and National Strategy of Energy Transition Programs: **Piero de Bonis,** DG RTD, European Commission, BE (t.b.c.) **Volker Schaffler,** BMK, Department III/3 - Energy and Environment Technologies, AT **Michael Aumer,** BMK, Department VI/6 - Energy Efficiency and Heating, AT			
	KEY-NOTES - HALL 1			
	Regenerative Design Approaches: The Role of Whole Life Carbon Assessment Applied in School Buildings in the UK **Ann-Marie Fallon,** Architype, UK Phasing Out Fossil Fuels in the City of Vienna - More Than Just a Plan **Karl Gruber,** Wien Energie, AT Decarbonization of Energy Production of Pulp and Paper Mills **Heidi Siekkinen,** Sappi, AT			
10:40 am	**Coffee Break**			
	PARALLEL SESSIONS			
	HALL 1	HALL 2	HALL 3	HALL 4
	Promising Heat Storage Technologies Session Chair: **Dr. Wim van Helden,** AEE INTEC, AT	**Innovations in Green Heating & Cooling: Advances, Applications and Achievements (Host: Green Energy Lab)** Session Chair: **Dr. Christian Kurz,** Green Energy Lab, AT	**Positive Energy Buildings and Districts** Session Chair: **Prof. Dr. Christina Hopfe,** Graz University of Technology, AT	**Industrial Deep Decarbonization - A Global Initiative** Session Chair: **Rana Ghoneim,** UNIDO, AT
11:00 am	A Novel Modular Sorber Reactor for Low-Grade Thermal Energy Storage **Salman Hassanabadi,** Simon Fraser University, CA	Spatial Energy Planning – Steering Transition of Regional Energy Systems **Alexander Rehbogen,** SIR, AT	BuildingTwin - Open Platform for Monitoring, Evaluation and Optimization of Building Operation **Dr. Andreas Riffnaller-Schiefer,** AEE INTEC, AT	Mission Innovation - Net Zero Industry **Elvira Lutter,** Climate- und Energiefund, AT
	Thermochemical Heat Storage by High Performance Salt Ammoniates **Prof. Peter Weinberger,** Vienna University of Technology, AT	Efficiency, Competitiveness, Resilience – The DeRiskDH Concept in a nutshell **Bernhard Mayr,** AIT, AT	Users' Impact on Buildings' Energy Performance Gap **Dr. Christiane Berger,** Aalborg University, DK	Austrian Initiative New Energy for Industry (NEFI): Showcasing Solutions for Climate-Neutrality in Industry **Prof. Dr. Thomas Kienberger,** Montanuniversität Leoben, AT
	Testing and Analysis of a Dual-Tube Latent Heat Storage System **Jonas Tombrink,** DLR, DE	Increasing Flexibility in District Heating Systems – Elements and Solutions **Joachim Kelz,** AEE INTEC, AT	A Case Study of Nine Post-Hydrocarbon Ready Homes **Jerry Harrall,** Harrall, UK	Innovation and FOAKs of A.SPIRE Projects **Dr. Ludo Diels,** VITO, BE
	Potential and Challenges of Large Thermal Energy Storages **Geoffroy Gauthier,** Planenergie, DK	Integration of Absorption Technologies in District Heating and Cooling Systems for Enhanced Economic and Ecological Impact **Carina Seidnitzer-Gallien,** AEE INTEC, AT	Cost Optimal Analysis of PEBs: Status Quo and Future Perspectives **Clemens Mayer,** Johanneum Research, AT	
	Large-Scale Underground Thermal Energy Storages – An Insight into Material and Component Development and Transition into Practice **Thomas Riegler,** AEE INTEC, AT		Towards Positive Energy Districts - District Innsbruck Campagne **Dr. Fabian Ochs,** University of Innsbruck, AT	
12:30 pm	**Lunch Break**			

Thursday, 11 April 2024

	HALL 1	HALL 2	HALL 3	HALL 4
	Large Scale Solar Applications in Industry and District Heating Session Chair: **Christine Promok,** BMK, AT	**Spatial Energy Planning for Energy Transition** Session Chair: **Prof. Dr. Reinhard Haas,** Vienna University of Technology, AT	**Emerging Energy Technologies and System Integration** Session Chair: **Dr. Ludo Diels,** VITO, BE	**Solutions for Energy Efficiency** Session Chair: **Prof. Dr. René Hofmann,** Vienna University of Technology, AT
01:30 pm	Solar Heat for Industrial Processes **Dr. Andreas Häberle,** OST, CH	The Future of Local Heating and Cooling Planning in the EU **Marcus Hummel,** e-think energy research, AT	Valorisation of Biogas Digestate through Nutrient Recovery by Means of Membrane Distillation **Christian Platzer,** AEE INTEC, AT	Improving Energy Efficiency of Carbon Capture Processes with Heat Pumps **Dr. Veronika Wilk,** AIT, AT
	Operating Experience of the Largest Ground-Mounted Solar Plant in Austria Feeding into DH Mürzzuschlag **Hannes Poier,** SOLID, AT	Establishing Spatial Energy Planning for Austria's Energy Transition **Franz Mauthner,** AEE INTEC, AT	Using Hydrogen to Decarbonize the Brick and Tile Industry **Stefan Wallat,** VDEh-Betriebsforschungs-institut, DE	Use of Waste Heat Potentials and Flexibility Elements to Speed Up Decarbonization in Austrian Thermal Spas **Carina Seidnitzer-Gallien,** AEE INTEC, AT & **Roman Stelzer,** Forschung Burgenland, AT
	Sunpeek - Open-Source Software for ISO 24194 Performance Assessment and Monitoring of Large Solar Thermal Plants **Philip Ohnewein,** AEE INTEC, AT	Spatial Agent-Based Modelling and Simulation to Evaluate on Public Policies for Energy Transition **Georg Weinberger,** Paris-Lodron University University of Salzburg, AT	Reverse Power Plants: Combined Heat and Power with Negative Emissions **Marcel Huber,** SYNCRAFT Engineering, AT	Heating and Cooling with Renewable Energy from Wastewater – A Large Scale Case Study in Vienna **Flora Prenner,** Rabmer GreenTech GmbH, AT
	Integration of Solar Thermal Process Heat **Navina Konz,** German Aerospace Center, DE	Integrated Sustainability Assessment of Residential Heating Systems **Marie Fischer,** Fraunhofer ISE, DE	Thermochemical Reactions to Enable Adaptive Building Insulation and Thermal Component Activation **Jonina Felbinger,** DLR, DE	Decarbonisation of Drying and Cooking Processes: Industrial Cases **Léo Pasquier,** Allice, FR
	Renewable Heat for Food and Beverage Drying Processes – Focus on the Lactosol Project in Verdun **Lucie Nebut,** newheat, FR	Urban Overheating: Innovative Interventions in Güssing **Dr. Richard Zeiler,** Güssing Energy Technologies GmbH, AT	Solar Reactor for Solar Fuel Production – Optimization via Process Intensification **Prof. Dr. Sixto Malato Rodriguez,** Plataforma Solar de Almería-CIEMAT, ES **Sarah Meitz,** AEE INTEC, AT	Eddy – Enhanced Drying: From Drying Kinetic Experiments to a Digital Twin of the Drying Process **Michal Rezucha,** AIT, AT
03:00 pm	**Coffee Break**			
03:15 pm	**Closing Session** **Best Poster Award Ceremony** Moderated by **Prof. Dr. Elimar Frank,** OST, CH Chair of the Poster Award Committee **Highlights, Feedback and Outlook ISEC 2026** Moderated by Conference Chairs of ISEC **Christoph Brunner** and **Christian Fink,** AEE INTEC, AT			
04:00 pm	**End of Conference**			

Workshop 1

Exploring the Sectoral H4Cs Potential in EU Regions

The Hubs4Circularity (H4C) aim at setting a new model of real circularity across Europe that allows to make the closing of resource streams (energy or materials) from different sources (industry or municipalities) a systematic reality. The potential of the H4Cs is different depending on the characteristics of the areas where the Process Industries are based. In some cases, H4Cs are being developed in areas with a relevant concentration of process industries. In other cases, as in Eastern Europe or depending on the sector (e.g. aluminium, minerals), the landscape may be more scattered and the potential to close the loops will be focused on value chains.
This session will explore cases that will bring knowledge to identify the potential of H4Cs in different industrial areas and regions in Europe.

Workshop 2

BuildUPspeed - Speeding up Industrialized Building Renovation by Introducing the Local Pop-Up Factory Concept

The EU project “BuildUPspeed” aims to expedite both the scale and depth of deep renovations within the EU building stock, aligning with, and bolstering the EU renovation wave. By championing and implementing industrialized renovation solutions, the project leverages the collective expertise of partners from the Netherlands, France, Spain, Italy, and Austria. These collaborations seek to conceive concepts that propel the renovation wave throughout Europe.
As an integral component of this project, a hands-on approach is developed to hasten the adoption of industrialized solutions on-site, particularly for large-scale projects such as district or building renovations. This approach is encapsulated in developing and implementing the Local Pop-up Factory concept.
In this workshop, participants will gain insights into the Local Pop-up Factory concept. The session will explore its potential and its diverse applications across Europe, contributing to the broader discussion on advancing innovative and efficient solutions for the renovation wave.

© Zuyd/SuperLocal

Workshop 3

Photo: metamorworks/shutterstock

Flexibility and Load Management for Energy Grids: The Hidden Potential of Buildings

Delve into the role of buildings in reshaping our thermal and electric energy grids at our workshop, „Flexibility and Load Management for Energy Grids: Exploring Building Potential.“ In response to increasing energy demands and environmental concerns, this session investigates practical approaches to enhance grid flexibility and manage loads by integrating buildings as active elements in our energy systems. Participants will examine current research and real-world applications, exploring how buildings can transition from passive consumers to active contributors within the energy ecosystem. Engage with experts sharing insights on utilizing building infrastructure for demand response, energy storage, and decentralized energy generation. Understand the capabilities and necessities of advanced control systems, and new business models in enabling buildings to fulfill their potential.

The workshop will include case studies illustrating successful implementations, emphasizing the economic and environmental advantages of utilizing building flexibility. Seize this opportunity to connect with leading researchers from the IEA EBC Annex 84 and ES Task 43, industry professionals, and policymakers shaping the future of energy grids.

Workshop 4

Sustainable Fuels for the Shipping and Transportation Sector

Join us for an inspiring workshop on how to introduce sustainable fuels on a large scale in the shipping sector and similar applications like industries and heavy-duty transportation. Key technology providers will share their plans for the future, and the two European research projects Fuelsome and Synergetics will showcase pathways for the generation, storage, and distribution of ammonia, methanol, methane, and hydrogen.

Explore solutions for ocean vessels, compare them with smaller applications on lakes and rivers, and delve into crucial aspects of fuel pathways from source to ship. Discover the newest developments in technology and learn more about the missing links for a full deployment of the required infrastructure. Join the discussion on the future of sustainable fuels in the shipping and transportation sector.

Photo: Frederick DoerschemiStock

Poster Session

3-Levers Of Emission Control-Modeling Framework: Modeling GHG Emissions
Lalla Hasnae ALAOUI, Technical University of Vienna, AT

Design and Comparative Analysis of a Renewable Energy Based Rural District Heating System
Shrey Ayron, Hochschule Ansbach, DE

Decarbonizing Process Heat Supply in the Austrian Pharmaceutical Industry
Dr. Anton Beck, Austrian Institute of Technology GmbH, AT

Big Solar Thermal Plants - A Possible Game Changer for Heating Grids and Industry
Walter Becke, AEE INTEC, AT

New Developments in Efficient Pit Thermal Energy Storages for District Heating
Magdalena Berberich, Solites Steinbeis Research, DE

Hybrid Geosolar Heating and Cooling
James Bererton, Stantec Consulting, CA

New Developments in High Efficiency Biomass Heating Plants with Absorption Heat Pumps
Harald Blazek, StepsAhead Energiesysteme, AT

Life Cycle Assessment of a Sustainable Cold, Heat and Clean Water System: Sophia Concept
Kanchan Bohara, OST, CH

Predict-IT: Forecasting District Heating Loads with an Open-Source and User-Friendly Neural Network-Powered Platform
Léo Bonal, V-research GmbH, AT

Enabling ICT Environment for Design and Operation of 4th and 5th Generation DHC Grids
Marco Calderoni, R2M Solution, IT

Financing Schemes for Geothermal DHC Networks
Giulia Conforto, e-think energy research, AT

Neural Network to Generate Synthetic Electrical Load Profiles
Dr. Francesca Conselvan, e-think Energy Research, AT

Biomass to Bioenergy in the Province of Huíla, Angola
Prof. Jorge Costa, ISEC Lisboa, PT

Agent-Based Modelling of Policy Interventions on District Heating Adoption in the UK
Thomas Cowley, University of Sheffield, UK

Impact of insulation distribution on performance and specific cost of large-scale thermal energy storage
Abdulraham Dahash, AIT, AT

Flexibility Potential in the Austrian Building Sector
Raphael Drexel, FH Technikum Vienna, AT

Material Integration Study and Modelling of a MgCl2:Alumina Water-Sorption Thermochemical Energy Storage System
Hagar Elarga, SINTEF Energy Research, NO

High Temperature Industrial Heat: Collector and Storage Developments and Outlook
Bärbel Epp, solrico, DE

Enhancing Fault Detection in District Heating Systems: A Machine Learning Approach
Basak Falay, AEE INTEC, AT

Decarbonisation of Public Vehicle Fleet and its Impact on Sector Coupling
Jürgen Fluch, FH Johanneum, AT

A Review on Possibilities and Challenges of Pit Storages in Swedish Solar District Heating Networks
Frej Fogelström, Umea University, SE

Business Models for Circular Building Products
Dr. Anna Fulterer, AEE INTEC, AT

Linking Renewable Energy Projects at Municipal Level with NECP Planning and Reporting
Dr. Susanne Geissler, SERA global GmbH, AT

Increasing the Participation of Women in the RHC Sector
Karen Gibson, So Solar (Pty) Ltd, BW

Maximizing Energy Storage Density and Stability of Salt in Porous Matrix Composites
Dr. Ilya Girnik, Simon Fraser University, CA

Poster Session

Multi-Criteria Pathway Evaluation for Sustainable Fuels in the Maritime Sector
Wolfgang Gruber-Glatzl, AEE INTEC, AT

Flexmodul – A Modular, Flexible Compact Storage System
Franz Hengel, AEE INTEC, AT

Towards a Digital Representation of Building Systems Controls
Sebastian Herkel, Fraunhofer ISE, DE

Optimizing Heat Pump Operation of Residential Buildings using Calibrated R-C and Machine Learning Models
Pablo Hernandez-Cruz, University of the Basque Country, ES

Energy Savings, Environmental Impacts and Monitoring Results of a Pumped Solar Water Heating System
Helvi Ileka, Namibia Energy Institute, NA

Integrated Design and Operational Optimisation for District Heating Networks: Storage and Heat Pumps
Femke Janssen, TNO, NL

Heat Pumps with Refrigerant Water Below the Freezing Point
Manuel Kausche, ZAE, DE

Wind-Powered Heating 2.0 –Space Heating with Excess Power featuring Grid Stabilization
Dr. Matthias Kersken, Fraunhofer ISE, DE

Performance Assessment of Novel Transparent Insulation Materials for Integrated Storage Collectors
Harald Kicker, JKU, AT

Streamlining Kinetic Characterization for Thermochemical Energy Storage Solutions
Bram Kieskamp, University of Twente, NL

Energy with Spirit Database. User-Generated Content to Support Energy Transition
Dr. Bente Knoll, B-NK GmbH Büro für nachhaltige Kompetenz, AT

Techno-economic comparison of different solar-heat systems at South African beverage plants
Prof. Johannes Koke, Hochschule Osnabrück, DE

BTTAB – Broad-Based Testing of Energy-Efficient Demonstration Buildings with Thermally Activated
Paul Lampersberger, e7 GmbH, AT

Renvelope – A Demonstration of Sustainable Serial Renovation
Dr. Florine Leighton, AEE INTEC, AT

Reed 2 Hydrogen: A Sector Coupling Approach using reed and surplus Electricity
Dr. Jürgen Loipersböck, Wirtschaftsagentur Burgenland Forschungs- und Innovations GmbH, AT

Digitalization of Urban Energy Systems – A Use Case Driven Design Approach of a Data Exchange
Lukas Lorenzen, AIT, AT

Productive use of Solar Energy - Techno-Economic Assessment of a Pineapple Drying Pilot in Uganda
Dr. Daniel Neyer, Neyer Brainworks GmbH, AT

Packed-Bed Heat Storage Using Liquid Metals as Heat Transfer Fluids
Dr. Klarissa Niedermeier, Karlsruhe Institute of Technology, AT

Agent Based Modelling Aided Energy Community Design: A Case Study in Austrian Context
Abel Magyari, ABUD Kft., HU

Performance Comparison of three UBEM Tools: A Case Study in Austrian Context
Abel Magyari, ABUD Kft., HU

Integrated Energy Solutions: A Call for Inclusion of Non-Technical Factors
Prof. Ardeshir Mahdavi, Graz University of Technology, AT

Assessment of Best Practice Examples for Data Center Integration in Energy Systems
Nicolas Oliver Marx, AIT, AT

Multifunctional Building Envelope with Thermal Component Activation in Wood
Michael Moltinger, Fachhochschule Salzburg GmbH, AT

Enhancing Solar Water Heating Systems (SWHS) Sustainability and Capacity Building in Bhutan
Rudolf Moschik, AEE INTEC, AT

Reduction of Industrial Steam Systems Temperatures as an Enabling Measure for Decarbonization
Dr. Simon Moser, JKU, AT

Poster Session

Evaluation of the Renewable Energy and Industrial Synergy Potential in the Industrial Zone of Callao/Peru
Josephin Paetzold, AEE INTEC, AT

Optimization of Mechanical Friction Washing in the Circular Economy of Plastics for Energy
Mauricio Pane, AEE INTEC, AT

Novel Polyolefinic Materials for Pit Thermal Energy Storages
Lukas Peham, JKU, AT

Integration of a Redox Flow Battery within a Renewable Energy Community
Robert Pratter, 4ward Energy Research GmbH, AT

Thermally Activated Building Structures as Flexibility Option for the Electricity Market
Guntram Preßmair, e7 energy innovation & engineering, AT

AIA4all-Development of new openBIMU se Cases for HVAC system Checks and Dynamic Simulations
Anita Preisler, e7 energy innovation & engineering, AT

Improving the Energy Efficiency of a Laundry Washing Machine through Drain-Water Waste Heat Recovery
Kago Rabasoma Rabasoma, University of Botswana, BW

How does Non-Intrusive Load Monitoring Contribute to the Assessment of the Smart Readiness Indicator?
Felix Rehmann, Berlin University of Technology, DE

Impact of Building Renovation and Redensification on the Heating Energy Demand of Districts
Patricia Reindl, Fachhochschule Salzburg GmbH, AT

Modeling Toolkit for Optimized Design and Integration of Large-Scale Heat Stores
Michael Reisenbichler-Sommerhofer, AEE INTEC, AT

Life Cycle Assessment of Fifth-Generation District Heating and Cooling Systems
Dr. Behzad Rismanchi, The University of Melbourne, AU

Energy Entitlement in Multi-Owned Buildings: Performance Assessment of Energy Allocation Principles
Dr. Behzad Rismanchi, The University of Melbourne, AU

Replacing Fossil-Fueled Combined Heat and Power Plants with Malta‘s Pumped Heat Energy Storage Technology
Finn Runkel, Malta HW Stromspeicher, DE

Supporting a Fast Implementation of Low-Grade Renewable Energy and Waste Heat for District Heating and Cooling
Dominik Rutz, WIP GmbH & Co Planungs KG, DE

Transformation of Large District Heating and Cooling Systems to Higher Shares of Renewable Energy Sources
Michael Salzmann, AEE INTEC, AT

Economic Role of Energy Storage Technologies in Austria
Carina Seidnitzer-Gallien, AEE INTEC, AT

Monitoring and Evaluation of Thermosyphon and PV Hot Water Systems under the same Operating Conditions
Joseph Shigwedha, Namibia Energy Institute, NA

Renewable Energy Concept for an Industrial Quarter in Transition
Gloria Streib, ZAE Bayern, DE

Evaluation of the Economic Viability of Solar Green Roofs as a Basis for the Introduction of a Solar Green Roof Obligation
Gerhard Stryi-Hipp, Fraunhofer ISE, DE

PV Driven Air Heat Pump using Overheating Effects as Thermal Battery in Single Family Houses
Dr. Alexander Thür, University of Innsbruck, AT

Thermo-Economic Analysis of Cold-Water Draw-Down System at a Military Base in Botswana
Okatoseng Tsametse Masoso, University of Botswana, BW

On Efficient Solar District Heating Systems – Status and Latest Results
Dr. Markus Gölles, BEST, AT

Stakeholder Recommendations and Research Focus Areas of the District Heating Alliance Austria
Dr. Richard Zweiler, Güssing Energy Technologies, AT

Bezahlte Anzeige

#teamgruenewelt

Ihre Karriere als Partner einer

grünen Welt.

Committees

Conference and Scientific Committee:
Dr. Rana Adib, REN 21, FR
Greg Arrowsmith, EUREC, BE
Dr. Ludo Diels, VITO, BE
Dr. Harald Drück, University of Stuttgart, DE
Dr. Iris Filzwieser, ACR, AT
Susanne Formanek, IBO, AT
Prof. Dr. Elimar Frank, OST, CH
Wolfgang Gruber-Glatzl, AEE INTEC, AT
Prof. Dr. Reinhard Haas, Vienna University of Technology, AT
Dr. Andreas Häberle, OST, CH
Dr. Andreas Hauer, ZAE, DE
Dr. Wim van Helden, AEE INTEC, AT
Sebastian Herkel, Fraunhofer ISE, DE
Prof. Dr. René Hofmann, Vienna University of Technology, AT
Prof. Dr. Christina Hopfe, Graz University of Technology, AT
Michael Hübner, BMK, AT
Claudia Hübsch, WKO, AT
Dr. Heiko Huther, AGFW, DE
Prof. Dr. Thomas Kienberger, Montanuniversität Leoben, AT
Prof. Dr. Reinhold W. Lang, JKU, AT
Dr. Ingo Leusbrock, AEE INTEC, AT
Martin Lugmayr, UNIDO, AT
Franz Mauthner, AEE INTEC, AT
Christoph Moser, AEE INTEC, AT
Dr. Cornelia Ninaus, AEE INTEC, AT
Angels Orduna Cao, SPIRE, BE
Prof. Dr. Alexander Passer, Graz University of Technology, AT
Bernhard Puttinger, Green Tech Valley, AT
Thomas Riegler, AEE INTEC, AT
Christoph Rohringer, AEE INTEC, AT
Prof. Dr. Hans Schnitzer, AEE INTEC, AT
Prof. Dr. Andrezj Stankiewicz, Warsaw University of Technology, PL
Jürgen Streitner, WKO, AT
Prof. Dr. Alexandra Troi, EURAC, IT
Dr. Tobias Weiß, AEE INTEC, AT
Werner Weiss, AEE INTEC, AT
Dr. Wolfgang Weiß, AEE INTEC, AT

Conference Secretariat:
Manuela Eberl, AEE INTEC
e-mail: isec@aee.at
www.isec-conference.at

ISEC

3rd INTERNATIONAL SUSTAINABLE ENERGY CONFERENCE 2024

10 – 11 April 2024

Messecongress Graz Austria

Conference for Renewable Heating and Cooling in Integrated Urban and Industrial Energy Systems

Organized by

Co-Organizer

Supported by

In Cooperation with

Gold Sponsor

Bronze Sponsor