

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 to ISEC 2024!



Photos: AEE INTEC

We warmly welcome you to ISEC 2024 in Graz.

Building on the success of ISEC 2022, which focused on innovative ideas in renewable energy systems and resource efficiency, ISEC 2024 is set to take a deeper dive into the critical question of achieving energy sovereignty within the defined time horizon prescribed by climate change. The urgency for immediate and decisive global action, as outlined in the UN Agenda 2030 and the European „Green Deal,“ requires collaborative efforts and innovative solutions in electrification, sector coupling, energy storage systems, circular economy practices, and the complete phase-out of fossil fuels.

ISEC 2024 aims to inspire pioneering concepts and facilitate collaboration between researchers, industry professionals, and policymakers. With a focus on developing and emerging countries, we strive to address the global implications of the energy transition and promote sustainable practices internationally. Our collaborations with esteemed organizations such as UNIDO promise to make ISEC 2024 a scientific platform of excellence.

We wish you an enjoyable visit to the city of Graz, inspiring and forward-looking keynote speeches and lectures, and the establishment of new linkages and friendships.

Christian Fink and Christoph Brunner

Conference Chairs



Photo: Cajetan Perwein/BMK

The 3rd International Sustainable Energy Conference will again provide a strong forum for innovative renewable heating and cooling solutions in integrated urban and industrial energy systems. As Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology I am happy to invite you to Graz for the opening of this year's ISEC conference on 10 April 2024 and wish you two exciting days of intensive professional exchange.

Leonore Gewessler

Minister, Federal Ministry Republic of Austria for Climate Action, Environment, Energy, Mobility, Innovation and Technology, AT

Program Overview

Welcome Reception, Tuesday 09 April 2024

06:15 pm	<p>Welcome Governor Christopher Drexler, Province of Styria, AT Welcome - Prof. Dr. Hans Schnitzer, Chair AEE INTEC Board, AT</p> <p>Venue: The Burg in Graz, Hofgasse 15, 8010 Graz</p>
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Program Overview

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



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 – **Miriam Herticska**, Councillor of the 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.





Photo: Delft University

Prof. Dr. Andrea Ramírez Ramírez
Delft University of Technology, NL

Defossilizing Petrochemical Clusters under a Regional Perspective: Evolution or Revolution

Prof. 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 Ramírez 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.



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: Wien Energie / Ian Ehm

Linda Kirchberger
Wien Energie, AT

Phasing out Fossil Fuels in the City of Vienna - More Than Just a Plan

Linda Kirchberger studied Applied Geophysics at the University of Leoben and has 20 years of experience in the oil & gas industry. Most recently, she headed the Exploration & Production Technology Center & Laboratory as well as the New Technologies department at OMV. In August 2022, she took on the Business Unit Asset Decarbonization & New Technologies at Wien Energie (WE) and is responsible for the decarbonization of district heating through geothermal energy, large heat pumps and seasonal storage, building up green hydrogen projects along the entire value chain and manages the overall R&D activities at Wien Energie. Also, Linda is one of the two managing directors of Wiener Wasserstoff GmbH since 1 March 2023.



Photo: Sappi

Heidi Siekkinen
Sappi Europe, AT

Decarbonization in the Pulp and Paper Industry: Shaping the Future

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 / Galerie A, B, C

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
Clovis Zapata, UNIDO, BR
Rodrigo Sobral Rollemberg, Ministry of Development, Industry, Commerce and Services (MDIC), BR

KEY-NOTES - Hall 1 / Galerie A, B, C

Defossilizing Petrochemical Clusters under a Regional Perspective: Evolution or Revolution?
Prof. Dr. Andrea Ramírez Ramírez, Delft University of Technology, NL
 How to Mobilize Investors for Energy Transition: 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 / Galerie A, B, C	Hall 2 / Saal 10	Hall 3 / Saal 11a, 11b	Hall 4 / Saal 12a
	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: Guei Guillaume Fulbert Kouhie , ECREEE, CV Godfrey Marambe , EACREEE, KE
11:15 am	Decreasing the Return Temperature in District Heating Networks Dr. Gaétan Chardon , ENGIE, FR	Survey of Industrial Excess 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	Walk-Through Energy Audit of Hot Water System – A Case Study of the University of Botswana Indoor Sports Centre Prof. Dr. Kevin Nwaigwe , University of Botswana, BW
	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	Design and Economic Analysis of a Solar Thermal Pre-Cooling System for Agro-Produce Cold Chain in Lesotho Mpho Yengane , Energy Research Centre at National University of Lesotho, LS
	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. Dr. Onur Taylan , ODTÜ-GÜNAM, TR	Enhancing Climate Resilience and Energy Flexibility of Buildings and Energy Systems Prof. Dr. Vahid Nik , Lund University, SE	Increasing the Participation of Women in the RHC Sector Karen Gibson , So Solar, BW & Selma Festus , SACREEE, NA
	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	Life Cycle Assessment of Thermosyphon and PV Hot Water Systems in Namibia Harald Kicker , JKU Linz, AT & Joseph TK Shigwedha , Nust, NA
	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 Michael Friedmann , 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	An Outlook on the Adoption of Renewable Energy Solutions at South African Beverage Manufacturers Francois Rozon , Stellenbosch University, SA
12:45 pm	Lunch Break			

Wednesday, 10 April 2024

	Hall 1 / Galerie A, B, C	Hall 2 / Saal 10	Hall 3 / Saal 11a, 11b	Hall 4 / Saal 12a
	Heat Pumping Technologies and System Integration Session Chair: Michael Aumer , BMK, AT	Policies for Phase-Out Fossil Fuels and Carbon Management Session Chair: Dr. 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 Solution, 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 Solution, IT
	Heat Recovery from a Decentralized Source-Separated Wastewater Treatment Plant: A Model-Based Study Shuoguang Yang , Wetsus, NL	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 , Energieinstitut JKU, AT	Forging the Future: Innovations in Sustainable Steelmaking Michael Zarl , K1-MET, AT	Renewable Heating and Cooling Solutions for Individual Buildings Dr. Caroline Haglund Stignor , RISE, SE
	Analysis of Different High Temperature Heat Pumping-Cycles for Industrial Applications Gerald Zotter , ECOPT Technology, AT	REA: Resource Exergy Analysis - A Key to Climate Sustainability Dr. Andrej Jentsch , AGFW, DE	Hydrogen Core Network in Germany Simona Rens , Bayernets, 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	Towards a Certification Standard for European Climate Neutral Residential Buildings Jörg Ortjohann , Stiftung Energieeffizienz, DE	The German Gas Distribution Transformation Plan (GTP) 2023 Dr. Volker Bartsch , DVGW, DE	Bridging Research and Action with EU Support Moderated by Dominik Rutz , WIP Renewable Energies, DE Panellists: Piero de Bonis , DG RTD, European Commission, BE Dr. Caroline Haglund Stignor , RISE, SE Dr. Walter Haslinger , BEST, AT Dr. Christian Holter , SOLID, AT Gerhard Stryi-Hipp , Fraunhofer ISE, DE
03:15 pm	Coffee Break			
WORKSHOPS				
	Hall 1 / Galerie A, B, C	Hall 2 / Saal 10	Hall 3 / Saal 11a, 11b	Hall 4 / Saal 12a
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 (Enterprise Europe Network) in parallel to the BRAU UNION Happy Hour			
07:00 pm	Conference Dinner – Venue: Old University, Hofgasse 14, 8010 Graz Moderated by Prof. Dr. Reinhold W. Lang , Vice Chair AEE INTEC Board, AT Welcome Miriam Herlicska , Councillor of the 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**, Green Tech Valley Cluster, AT
 Policy brief - European and National Strategy of Energy Transition Programs:
Piero de Bonis, DG RTD, European Commission, BE
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
Linda Kirchberger, Wien Energie, AT
 Decarbonization in the Pulp and Paper Industry: Shaping the Future
Heidi Siekkinen, Sappi Europe, AT

10:40 am Coffee Break

PARALLEL SESSIONS

	Hall 1 / Galerie A, B, C	Hall 2 / Saal 10	Hall 3 / Saal 11a, 11b	Hall 4 / Saal 12a
	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	Charting the Course for Industrial Deep Decarbonization: Strategies and Initiatives 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 Industries Elvira Lutter , Climate- and Energy Fund, AT
	Thermochemical Heat Storage by High Performance Salt Ammoniates Prof. Dr. Peter Weinberger , Vienna University of Technology, AT	Transforming District Heating: 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 Dr. Jeremy 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 , Joanneum Research, AT	How Brazil Implements the Industrial Deep Decarbonization Initiative in Support of a Just and Equitable Transition Gustavo Fontenele , Ministry of Development, Industry, Commerce and Services (MDIC), BR
	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 Assoz. Prof. Dr. Fabian Ochs , University of Innsbruck, AT	
12:30 pm	Lunch Break			

Thursday, 11 April 2024

	Hall 1 / Galerie A, B, C	Hall 2 / Saal 10	Hall 3 / Saal 11a, 11b	Hall 4 / Saal 12a
	<p>Large Scale Solar Applications in Industry and District Heating</p> <p>Session Chair: Christine Promok, BMK, AT</p>	<p>Spatial Energy Planning for Energy Transition</p> <p>Session Chair: Prof. Dr. Reinhard Haas, Vienna University of Technology, AT</p>	<p>Emerging Energy Technologies and System Integration</p> <p>Session Chair: Dr. Ludo Diels, VITO, BE</p>	<p>Solutions for Energy Efficiency</p> <p>Session Chair: Prof. Dr. René Hofmann, Vienna University of Technology, AT</p>
01:30 pm	<p>Solar Heat for Industrial Processes</p> <p>Dr. Andreas Häberle, OST, CH</p>	<p>The Future of Local Heating and Cooling Planning in the EU</p> <p>Marcus Hummel, e-think energy research, AT</p>	<p>Valorisation of Biogas Digestate through Nutrient Recovery by Means of Membrane Distillation</p> <p>Christian Platzer, AEE INTEC, AT</p>	<p>Improving Energy Efficiency of Carbon Capture Processes with Heat Pumps</p> <p>Dr. Veronika Wilk, AIT, AT</p>
	<p>Operating Experience of the Largest Ground-Mounted Solar Plant in Austria Feeding into DH Mürzzuschlag</p> <p>Hannes Poier, SOLID, AT</p>	<p>Establishing Spatial Energy Planning for Austria's Energy Transition</p> <p>Franz Mauthner, AEE INTEC, AT</p>	<p>Using Hydrogen to Decarbonize the Brick and Tile Industry</p> <p>Stefan Wallat, VDEh-Betriebsforschungs- institut, DE</p>	<p>Use of Waste Heat Potentials and Flexibility Elements to Speed Up Decarbonization in Austrian Thermal Spas</p> <p>Carina Seidnitzer-Gallien, AEE INTEC, AT & Roman Stelzer, Forschung Burgenland, AT</p>
	<p>Sunpeek - Open-Source Software for ISO 24194 Performance Assessment and Monitoring of Large Solar Thermal Plants</p> <p>Philip Ohnewein, AEE INTEC, AT</p>	<p>Spatial Agent-Based Modelling and Simulation to Evaluate on Public Policies for Energy Transition</p> <p>Georg Weinberger, Paris-Lodron University University of Salzburg, AT</p>	<p>Reverse Power Plants: Combined Heat and Power with Negative Emissions</p> <p>Marcel Huber, SYNCRAFT Engineering, AT</p>	<p>Heating and Cooling with Renewable Energy from Wastewater - A Large Scale Case Study in Vienna</p> <p>Flora Prenner, Rabmer GreenTech GmbH, AT</p>
	<p>Integration of Solar Thermal Process Heat</p> <p>Navina Konz, German Aerospace Center, DE</p>	<p>Integrated Sustainability Assessment of a Residential Heat Pump System</p> <p>Marie Fischer, Fraunhofer ISE, DE</p>	<p>Thermochemical Reactions to Enable Adaptive Building Insulation and Thermal Component Activation</p> <p>Jonina Felbinger, DLR, DE</p>	<p>Decarbonisation of Drying and Cooking Processes: Industrial Cases</p> <p>Léo Pasquier, Alice, FR</p>
	<p>Solar Cogeneration of Industrial Heat and Power by a Concentrating Hybrid Collector</p> <p>Alois Resch, University of Applied Sciences Upper Austria, AT</p>	<p>Urban Overheating: Innovative Interventions in Güssing</p> <p>Dr. Richard Zweiler, Güssing Energy Technologies GmbH, AT</p>	<p>Solar Reactor for Solar Fuel Production - Optimization via Process Intensification</p> <p>Prof. Dr. Sixto Malato Rodriguez, Plataforma Solar de Almería-CIEMAT, ES & Sarah Meitz, AEE INTEC, AT</p>	<p>Eddy - Enhanced Drying: From Drying Kinetic Experiments to a Digital Twin of the Drying Process</p> <p>Michael Lauermann, AIT, AT</p>
03:00 pm	Coffee Break			
	Hall 1 / Galerie A, B, C			
03:15 pm	<p>Closing Session</p> <p>Best Poster Award Ceremony Moderated by Prof. Dr. Elimar Frank, OST, CH Chair of the Poster Award Committee</p> <p>Highlights, Feedback and Outlook ISEC 2026 Moderated by Conference Chairs of ISEC Christoph Brunner and Christian Fink, AEE INTEC, AT</p>			
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.



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 - Hall 5 / Saal 12b

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 Ayrón, Hochschule Ansbach, DE

Maximizing Energy Storage Density and Stability of Salt in Porous Matrix Composites
Prof. Dr. Majid Bahrami, Simon Fraser University, CA

Evaluating the Potential for Solar District Heating with Pit Thermal Energy Storage in Sweden
Prof. Dr. Chris Bales, Dalarna University, SE

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

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James Bererton, Stantec Consulting, CA

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Harald Blazek, StepsAhead Energiesysteme, AT

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Léo Bonal, V-research GmbH, AT

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Marco Calderoni, R2M Solution, IT

Evaluation of a Local Heating Network supplied by a Pyrolysis Plant
Matthieu Chaigneau, Fraunhofer ISE, DE

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Dr. Rosa Christodoulaki, CRES, GR

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Giulia Conforto, e-think energy research, AT

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

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Prof. Dr. Jorge Costa, ISEC Lisboa, PT

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Thomas Cowley, University of Sheffield, UK

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Raphael Drexel, FH Technikum Vienna, AT

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Dr. Hagar Elarga, SINTEF Energy Research, NO

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Bärbel Epp, solrico, DE

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

Uniform Modeling of Heat Production Costs in Single-Family and Multi-Family Houses
Dr. Stephan Fischer, University of Stuttgart, DE

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

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

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

Greenlab Designer Lite - A Tool to Assist the Energy Symbiosis Design of Industrial Parks
Prof. Dr. Ma Zheng Grace, University of Southern Denmark, DK

H2REAL – Building a Hydrogen Valley
Sascha Grimm, Wien Energie, AT

Energy storage in historical buildings using AI applications
Dr. Abolfazl Hayati, University of Gävle, SE

Photovoltaic and Solar-Thermal Use Case Application Comparison with Witness Simulation and DCF Analysis
FH-Prof. Dr. Bernhard Heiden, Carinthia University of Applied Sciences, AT

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Sebastian Herkel, Fraunhofer ISE, DE

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Dr. Bernd Humpl, VTU Engineering, AT

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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

Increasing Flexibility in District Heating Systems – Elements and Solutions from the ThermaFLEX Project
Joachim Kelz, AEE INTEC, AT

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Dr. Florian Kerscher, Technical University of Munich, DE

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

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Harald Kicker, JKU, AT

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Bram Kieskamp, University of Twente, NL

Energy with Spirit Database. User-Generated Content to Support Energy Transition
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Techno-economic comparison of different solar-heat systems at South African beverage plants
Prof. Dr. Johannes Koke, Hochschule Osnabrück, DE

Scenario-Based Comparison of Sustainable Heating and Cooling Systems for Piglet Production Systems
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Dr. Florine Leighton, AEE INTEC, AT

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Dr. Ingo Leusbrock, AEE INTEC, AT

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

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

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

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Nicolas Oliver Marx, AIT, AT

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Margherita Matzer, WIVA P&G, AT

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Bernhard Mayr, AIT, AT

Optimization Model Design for Hybrid Coal-Solar Heat for Process System
Samson Mhlanga, National University of Science and Technology, ZW

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, Energieinstitut JKU, AT

Solar Thermal Technology and Government working together to cut Costs and Emissions and Boost Skills
Khothatso Mphekeke, SANEDI, ZA

Energy Production, Efficiency and Flexibility for Positive Energy Districts: A Review
Dr. Gireesh Nair, Umea University, SE

IPEnergy - A Framework to Support Small and Medium-Sized Enterprises in Investment-Related Projects
Dr. Christian Nebenführ, FH Technikum Wien, AT

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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

Investment and Operational Optimization of Power-to-Fuel Plants at Closed Coal Power Plant Sites
Akram Nouman, Montanuniversität Leoben, AT

Towards a Certification Standard for European Climate Neutral Residential Buildings
Jörg Ortjohann, Stiftung Energieeffizienz, DE

Solar Cooling for the Sunbelt Regions – Highlights from Task 65 Activities
Manuel Ostheimer, University of Innsbruck, AT

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

Optimization of Mechanical Recycling in the Circular Economy of Plastics for Energy Sustainability
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 open BIM use Cases for HVAC system Checks and Dynamic Simulations
Anita Preisler, e7 energy innovation & engineering, AT

Methodology for 5th Generation District Heating and Cooling Network Simulation
Dr. Charlie Prétot, CEAT - LITEN, FR

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

Spatial Energy Planning – Steering Transition of Regional Energy Systems
Alexander Rehbogen, SIR, AT

Solar Cogeneration of Industrial Heat and Power by a Concentrating Hybrid Collector
Alois Resch, University of Applied Sciences Upper Austria, AT

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How can 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

Hydrogen Core Network in Germany

Simona Rens, Bayernets, DE

A Comprehensive Modeling Toolkit for Large-Scale Thermal Energy Storage Systems

Michael Reisenbichler-Sommerhofer, AEE INTEC, AT

The Sunbeltchiller – A Solarthermal Cooling System for The Sunbelt

Dr. Manuel Riepl, ZAE, DE

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

Intermittent Operation of District Heating Networks in Summer Months: A Showcase

Dr. Tobias Schrag, Technische Hochschule Ingolstadt, DE

Economic Role of Energy Storage Technologies in Austria

Carina Seidnitzer-Gallien, AEE INTEC, AT

Integration of Absorption Technologies in District Heating and Cooling Systems for Enhanced Economic and Ecological Impact

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

The PIT Thermal Energy Storage as central Component in Flexible and Green Energy Systems

Jonas Ilum Sorensen, Aalborg CSP, DK

A Vehicle2Grid Infrastructure supporting the Local Distribution Grid based on Standardized Communication, Flexibility Prediction and Simulation

Georg Supper, Wirtschaftsagentur Burgenland Forschungs- und Innovations GmbH, AT

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

Role of Seasonal Thermal Energy Storage Coupled with Heat Pumps in Achieving the Energy Autarky of Districts

Alice Tosatto, University of Innsbruck, AT

Thermo-Economic Analysis of Cold-Water Draw-Down System at a Military Base in Botswana

Prof. Dr. Oboetswe Seraga Motsamai, University of Botswana, BW

Techno-Economic Analysis of the Heating System Robustness

Elisa Venturi, University of Innsbruck, AT

Integration of Charching Points in Renewable Energy Communities in Austria

Josef Walch, Fachhochschule Wiener Neustadt, AT

Sustainability and Resilience Nexus in a Local Context with Low Self- Sufficiency

Elin Sofia Wallin, RISE, SE

Solar Energy Alternatives for Coal Boiler Steam Production

Wally Weber, BLACKDOT Energy, SA

Heat Recovery from a Decentralized Source-Separated Wastewater Treatment Plant: A Model-Based Study

Shuoguang Yang, Wetsus, NL

Stakeholder Recommendations and Research Focus Areas of the District Heating Alliance Austria

Dr. Richard Zweiler, Güssing Energy Technologies, AT

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