

Anas Algarej: Evaluating Tools for Integrating District Cooling into Wider Energy Models

Markus Auer: Optimising District Heating Substation Bypass Flow Control: a Practical Approach Combining Simulation- and Case-Study

Edison Guevara Bastidas: Prioritisation of faults in district heating substations: towards predictive maintenance and optimised operation

Maarten Blommaert: Balancing Centralized and Decentralized Heat Pump Solutions for Heating Networks Using Design Optimization

August Brækken: Integrated port energy systems for decarbonized maritime industry

Miguel Chang: Assessing operationally robust long-term capacity expansion plans – A model coupling approach

Amin Darbandi: Machine Learning for Prediction of Heat Demand and Applying Reinforcement Learning to Schedule Energy Hubs

Jonne van Dreven: Optimizing Fault Detection and Diagnosis in District Heating: The Impact of Data Source and Sampling Frequency

Julia Eicke: Simplified representation of buildings in district heating network models – a data driven approach

Paula Ferreira: Energy Demand Forecasting for Developing Economies in Sub-Saharan Africa

Aoife Foley: From Contentious to Consensus - Expert Consultation and Perspectives on the Net Zero Energy Transition Applied to Northern Ireland

Michael Frank: Algorithm-Supported Operation and Investment Planning of Decentralized Energy Infrastructure at Production Sites

Lilli Frison: Comparison of different transformer based neural network architectures for load forecasting in district heating networks under changing conditions

Enrico Ghidoni: Improved parameter estimation of the multi-variable energy signature of buildings using physical knowledge - An applied case study

Chris Hermans: Gaussian Process Based Fault Detection in District Heating Substations

Stefan Holler: Building Supply Temperature Cadastre (BSTC) for analysing low-temperature feasibility of residential buildings

Laura Kuper: Heating network topology design by price-collecting Steiner trees

Saltanat Kuntuarova: Operational Flexibility of Integrated Power and District Heating Systems: Modeling of Heat Flow Directions

Ali Kök: Modelling Uncertainties in District Heating Supply Modelling

Henrique Lagoeiro: FAST DHC project: initial findings on the development of a decision support tool for the techno-economic evaluation of low-temperature DHC networks

Jinze Li: Optimization and techno-economic analysis of a hybrid renewable energy system for covering energy and water needs in remote island

Alena Lohrmann: Go with the flow: a new approach to leveled cost estimation to account for water use in power generation

Dennis Lottis: Benchmarking optimization problem formulations for Model Predictive Control of District Heating systems with a Software-in-the-Loop approach

Andrew Lyden: Exploring sector-coupled flexibility in energy markets with locational pricing

Gideon Mbiydzonyuy: Practical Considerations for Bi-directional Long Short-Term Memory Anomaly Detection in District Heating Networks

Mohammad Kiani Moghaddam: A double-layer many-objective stochastic optimization model to handle many uncertainties in the operation of smart energy systems

Ryoga Ono: The analysis of a woody biomass-to-X model based on high-resolution dataset by 1,741 municipalities in Japan

Marius Reich: Harnessing Machine Learning for Rapid Optimization: Integration of Time Series Data into Prior Approximation of Energy System Simulations

Lukas Richter: Synergizing Investment and Cooperation: An Agent-Based Modelling Framework for Optimized Energy Distribution in Cellular-Structured Systems

Jonathan Riofrio: Towards Sustainable Energy Transition: Guidelines for Wind Energy Expansion and Power-to-X Integration in Small Island States

Daniel Rohde: Dynamic Energy System Optimization: A unique methodology for simultaneous sizing and optimal operation

Ralf-Roman Schmidt: A techno-economic and investment risk analysis of ambient and waste heat supply technologies considering future uncertainty for a case study in Poland

Martin Sollich: Integrating short-term storage in optimal heating network design to reduce back-up capacity and increase renewable heat supply

Dominik Stecher: Data Set & Fault Signature Generation for District Heating with Generative and Transformative Neural Networks

Jan Stock: Construction of large district heating networks based on open-source data and demonstration of possible transformation measures

Umberto Tesio: Operation optimization of a Multi Energy System with a District Heating Network

Gerhard Totschnig: Optimal supply portfolio in a decarbonised district heating system - results of a model-based investigation for two case studies

Nora Yusma Mohamed Yusop: Optimal Decarbonisation Pathways for Malaysia's Energy System: Mapping a Long-Term Transition to Net Zero Emissions by 2050

Tuomas Vanhanen: Energy System Modeling of Sector Coupling in a Sustainable City: A Policy Scenarios Approach

Vittorio Verda: Integration of large-scale heat pumps in high temperature district heating systems

Volodymyr Voloshchuk: Digital twin-based smart heating system with a condensing boiler

Marie Therese Warnecke: Retrieving Building Energy Efficiency Information from Real Estate Listings via Web Scraping

Samanta Alena Weber: Feature Engineering for Machine Learning to predict heat networks on the end-user level

ONLINE PROGRAMME SESSION PRESENTATIONS – ACCESSIBLE FROM 6 TO 13 SEPTEMBER 2024

Planning and organisational challenges for smart energy systems and district heating

Nermina Abdurahmanovic: Enhancing Energy Efficiency through User Engagement and Behaviour Change: A review on gamification approaches and serious games in energy systems

Andra Blumberga: Overcoming sociotechnical challenges: How to model the probability of investing in climate-friendly energy technologies

Stine Bülow: Decision Making under Uncertainty in Coupled Multi-Energy Systems

Max Guddat: The Municipal Heat Planning Toolbox - Conceptual Approaches to Heat Planning, Based on Danish Practical Experience

Gareth Jones: Upcoming changes to heat network regulation in the UK – overview of the Heat Network Technical Assurance Scheme

Alwina Kaiser: Bridging the Implementation Gaps: A Multi-Criteria Decision Support Approach for Enhancing Municipal Heat Supply and Social Acceptance

Nina Kicherer: Three heat marketplaces for the cost-efficient integration of renewable heating plants into district heating systems

Hironao Matsubara: Challenges in Planning and Implementing Decarbonized Advanced Areas in Japan

Bent Ole Gram Mortensen: Framework for Energy Data Spaces - Let's share energy data for a greener future

Gianmarco Preso: Scenario analysis for efficient transition of a district heating network – Case study in Göttingen

Adithya Ramachandran: Unveiling Consumer Behavior in District Heating Network: A Contrastive Learning Approach to Clustering

Vedant Sinha: Industrial Load Flexibility in California: Challenges and Opportunities to Unlocking Cost And Carbon Savings

Smart energy infrastructure and storage options

Hamza Abid: Techno-economic analysis of offshore energy hubs: Enabling Europe's energy transition

Ali Pour Ahmadiyan: Simulation and optimization of high temperature waste heat storage and recovery through a city scale borehole storage field

Michael Bayer: Methodological Development of a Reduced-Order Data-Driven Model from Detailed Numerical Simulations for Seasonal Thermal Energy Storage (STES)

Fabian Borst: Managing Complexity in Industrial Heating and Cooling Systems: A Local Energy Market Framework for Transactive Control with Technical Constraints

William Delgado-Diaz: Hybrid seasonal heat storage systems using phase change materials: Economic and Environmental Optimization

Jes Donneborg: Energy on Demand - A Renewable Sector-Coupling Energy Park

Daniel Friedrich: Short Borehole Thermal Energy Storage cycles charged with otherwise curtailed wind energy

Geoffroy Gauthier: Large Thermal Energy Storages (LTES) are a key element of the future energy system

Jonathan Hachez: Building load profile synthesis: a stochastic approach to model building energy consumption timeseries

Martin Hartvig: Pathway 2.0: Sector coupling is a driver for offshore shore hubs and spokes

Kristina Haaskjold: Value of energy storages in ancillary and energy markets in the Norwegian low-carbon energy transition towards 2050

Richard van Leeuwen: Development and implementation of a Smart Energy System for local energy communities to improve sustainability and decrease electricity grid loads

Simon Nießen: Hydrogen as a key technology in modern energy systems

Henning Rahlf: Analysis of bidirectional EV charging infrastructures within industrial DC grids

Julio Vaillant Rebollar: Operational assessment of Large-Scale Ground Source Heat Pump and Borehole Thermal Energy Storage System

Dmitry Romanov: Techno-economic analysis of utilization of waste heat from a data center combined with a borehole thermal energy storage

Dietrich Schmidt: Digitalization of district heating systems – Transforming heat networks for a sustainable future

Martin Stroleny: Innovations in District Heating and Cooling: ground-breaking projects reshaping the DHC landscape

Sreenath Sukumaran: Enhancing the Sustainability of District Cooling Networks Through Integration of Snow Storage Systems: A Case Study of Tallinn, Estonia

Geographical Information Systems (GIS) for energy systems, heat planning and district heating

Ruihong Chen: GIS-based landscape scenicness estimation using machine learning for visual impact assessment of wind projects deployment in Europe

Stanislav Chicherin: Improving design of the 5th generation district heating and cooling systems (5GDHC) systems: a robust GIS-driven approach

Britta Kleinertz: Spatial prioritization of heat supply systems – experience from literature and practise combined in a practical guideline

Franz Mauthner: Agent-based simulation of energy transition pathways in urban environments

Bernd Möller: Assessment of thermal infrastructure needs in fast-growing urban areas of the Global South

Johannes Pelda: MEMHIS 2.0 - Spatial identification and evaluation of the temporal availability and economic assessment of waste heat sources

Urban Persson: Data categories and selection criteria for an evaluation of the potential for solar district heating with pit thermal energy storage in Sweden

Alexander Rehbogen: Spatial Energy Planning for Heat Transition - Steering Transition by Information

Abdulraheem Salaymeh: Assessing Thermal Potential of German Waterbodies for District Heating: Integrating Ecological and Legal Considerations in a GIS-driven approach

Eva Wiechers: German and Danish Case Studies undertaken on the Citiwatts platform replacing the Hotmaps platform

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CCUS and PtX technologies and the production and use of electrofuels in future energy systems

Anders Borup: Depending on your neighbor - Sector coupling challenges of the future

Christine Brandstätt: Incentives for pipeline decommissioning and repurposing in regulated grids

Alexandros Flamos: Bidirectional soft-linking of open-source energy models to evaluate the feasibility of transition pathways to carbon neutrality in the power sector

Lissy Langer: Conditions on electricity purchasing: More (emission reduction) bang for your buck?

Marie Münster: Why do we see differences in results when modeling hydrogen in integrated energy systems?

Hossein Nami: Optimizing Regional Electrolysis Capacity

Anne Neumann: Regulatory framework for hydrogen hubs: Taking stock and looking ahead

Thomas Helmer Pedersen: Direct Air capture cost reduction and market development via process intensification. Establishing the DAC insetting concept

Kirill Resnikow: Modelling Electrolyser Systems – The research project BOOST

Leon Schumm: Offtaker regulation: Impacts on New Zealand hydrogen export ambitions

Lars Schwarzer: Carbon management in a volatile energy system – DTI's research in flexible carbon capture, utilization, and storage

Jens Weibezahn: Fueling the Future: Optimizing Power-to-X Production in Renewable Energy Hubs through Flexible Operating Units

Henrik Wenzel: Local Energy Parks in Northern Fun

Meng Yuan: Beyond Borders: Alternative Renewable Energy Export Strategies

Renewable energy sources and waste heat sources including PtX for DH

Giorgos Aspetakis: Air-Based PVT Integrated Building Energy Systems: Analysis and Optimization of configurations

Anna Billerbeck: Increasing the spatial resolution of climate-neutral district heating supply in European energy system models

Sina Dibos: Impact Analysis of Electrolyzer Waste Heat on Low Temperature District Heating and Cooling Networks

Hanne Kauko: Electrolysis waste heat utilization towards district heating – a case study for Norway

Leander Kimmer: Decarbonising district heating with hydrogen: A comparison of business and economic optimums

Dan Staunton: How large-scale ASHP deployed on DH networks can decarbonise challenging urban environments

Institutional and organisational change for smart energy systems and radical technological change

Søren Djørup: A Framework for Heating Technology Characterisation and its Relevance to Energy Policy Design

Lisa Hjerrild: Experiences with economic compensation to neighbors of large-scale renewable energy farms

Kristina Lygnerud: Increased district energy competitiveness through social sustainability

Bernhard Mayr: Introducing the concept of an integrated decision-making framework for sustainable heating (and cooling) technologies

Lucy Sherburn: Establishing Key Performance Indicators for heat networks for use within the UK's Heat Network Technical Assurance Scheme

Daniel Møller Sneum: Making district heating bankable: District heating as an asset class

Sino-Danish Special session

Zanyu Yang: Intermittent and Fluctuating Waste Heat Characteristics in Steel Plants: Recovery Optimization Study

Guo Siyue: Waste heat recovery for urban heating in northern China

John Tang Jensen: Heat source pricing - District Heating Networks

Lipeng Zhang: Insights from Danish Heating Metering and Billing: Implications for China's Clean Heating Development

Zhaoyang Liu: Aligning Heat Demand with Sources Based on Heat Intensity: A Heat Roadmap for China

Special session: Annex TS5

Ingo Leusbrock: Transformation of large district heating and cooling systems to higher shares of renewable energy sources

Alice Dénarié: Decentral integration of renewables in existing district heating networks - results and lessons learned from IEA DHC Annex TS5

Mohammad Saeid Atabaki: A systematic approach to analyze methodologies for renewables-based district heating potential assessments – A categorization and literature review

Giulia Spirito: A GIS-based tool to optimally plan and operate renewables-based DH systems

Frederik Feike: Modeling heat loads and return temperatures of buildings connected to a district heating network using a neural network

Poul Thøis Madsen: The involvement of stakeholders when decarbonizing larger existing DHC plants. A guide for politicians, planners, and operators of DHC plants

ONLINE PROGRAMME SESSION PRESENTATIONS – ACCESSIBLE FROM 6 TO 13 SEPTEMBER 2024

Integrated energy systems and smart grids

Faraedoon Ahmed: The complementary role of interconnector and demand side unit in facilitating grid transition towards achieving 80% RES in the I-SEM system by 2030

Abdul Azzam: Development and Evaluation of different control strategies for a holistic operational analysis in district energy systems

Christian Møller Jensen: Delay compensated peak shaving in district heating zones by automatic setpoint scheduling

Valentin Kaisermayer: A Distributed Demand Response Approach for Heating Networks

Nicholas Long: Ambient loop network and capacity expansion modeling case study in the USA and Austria

Nils Namockel: Wholesale electricity market modeling with distribution grid constraints

Nicola Cesare Di Nunzio: District cooling system: energy, economic and environmental analysis of a case study in Tunisia

Tijs Van Oevelen: Peak load reduction in a district heating network by means of demand response and supply temperature control: Evaluation of test results

Dabrel Prits: Demand side management (DSM) key performance indicators as a value driver for large scale DSM implementation in district heating networks

Faran Ahmed Qureshi: Comparing and evaluating different predictive control configurations in a district heating network – Simulation study

Costanza Saletti: Coordination of multi-energy prosumers with demand side management

Nicolas Vasset: Optimal control for gas distribution networks with flexibility and biomethane injection targets

Energy savings in the electricity sector, buildings, transport and industry

Naomi Adam: Co-design of Thermal Systems in a Collective Low-Carbon District

Philipp Althaus: Intelligent control using flexible controller architecture for improved energy efficiency of room heating: Design and evaluation in a living lab

John M Counsell : Comparison of the Thermal Experience & Controllability of Gas Boilers and Air Source Heat Pumps

Wen Liu: The impacts of behavioral variables on heat demand in the built environment and on the economic consequences of energy efficiency measures investment

Mazarine Roquet: Decarbonation of an Existing Building Asset Energy Supply: A Case Study on Low Temperature Thermal Network

Vassilis Stavrakas: Advancing integrated and smart renovation packages for efficient, sustainable, and inclusive energy use: Modelling of real-life residential buildings

Components and systems for district heating, energy efficiency, electrification and electrofuels

Simran Chaggar: Assessing the suitability of existing buildings to operate at lower temperatures via in field temperature lowering testing

Maya Neyhousser: Adaptive Control for Decentralized Feed-in of Solar Heat into District Heating Networks Based on Reinforcement Learning

Sadia Ferdous Snigdha: AI based heat pump controller for power grid resilience enhancement

Anna Volkova: Decarbonisation options of district heating peak loads

Johannes Nicolás Wildfeuer: Continuous commissioning of hot water installations using a digital twin

Poul Alberg Østergaard: District heating in Denmark – Dynamically reshaping the composition of heat supply

Electrification of transport, heating and industry

Wellington Alves: A Data-Driven Exploration of End-of-Life Scenarios for Lithium-ion Batteries in Electric Vehicles

Torstein Balle: Analyzing the Impact of Wind Power Forecasts on the operation of Thermal Energy Storage in heat pump based Residential Heating Systems

Christopher Graf : Domestic Hot Water Systems in existing residential buildings: A Comparative Simulation Study on Efficiency and Hygiene Challenges

Oddgeir Gudmundsson: Economic comparison of hydronic based heating and multi-split A2A heat pumps – using a case study

Peiyao Guo: Equilibrium Analysis of Coupled Energy Sharing Community and Transportation Network: A Game-theoretic Approach

Julian Hermann: A surrogate model for residential heat pump COP estimation in the context of energy system optimisations

Noémie Jeannin: Using electric vehicle as flexibility asset for photovoltaic electricity production: A geographical approach

Antoine Laterre: Comparing Carnot batteries and chemical batteries for residential heat and electricity management: a prospective life-cycle assessment

Mirko Morini: Trends in smart energy in airports

Lucas Verleyen: The battery – A blessing or a curse for Positive Energy Districts?

Special session: IEA Annex 84

Anna Cadenbach: Novel Concepts and Technologies for Demand Side Management in Thermal Networks – A review of selected Case Studies

Anna Marszał-Pomianowska: Demand Response application – A survey with district heating professionals

Yangzhe Chen: Flexibility potential analysis with quantifiable KPI assessment for energy sector coupling leveraging advanced thermal storage solutions

Zeng Peng: Critical Review of Digital Infrastructures on the Interoperability between Buildings and 4th Generation District Heating System

ONLINE PROGRAMME SESSION PRESENTATIONS – ACCESSIBLE FROM 6 TO 13 SEPTEMBER 2024

4th Generation District Heating concepts, future district heating production and systems

Jake Adamson: Optimising thermal storage volume to reduce the electric peaking plant capacity

Jens Møller Andersen: Comparison of direct and indirect district heating systems in Denmark

Orestis Angelidis : A Scottish Case Study: Can 5th Generation District Heating and Cooling Facilitate Holistic Decarbonisation in Clyde Gateway?

Carolin Ayasse: Heating System Optimization considering Technology, Temperature, and Retrofit Flexibility Model-endogenously

Dagnija Blumberga: Multi-energy Hub Forwards to Decarbonisation

Gerrid Brockmann: Economic and ecological investigation of a heating network in the suburban area Leeste in Germany

Tom Burton: Heat Network Optimisation Guidance: Standardising the approach to improving the performance of legacy systems

Martina Capone: Enhancing District Heating Transition through the Integration of Groundwater Heat Pumps

Luca Casamassima: Comparative study of LTDH distribution systems in urban heating: a cost-effectiveness and sustainability analysis

Afraz Mehmood Chaudhry: A framework for optimizing prosumer-based thermal networks in urban communities: robust design approach with uncertain energy markets

Johan Dalgren: Circulation flows in District Heating Systems – A comparison between necessary, demanded and real flows

Denis Divkovic: Optimising heat planning: Cost effective refurbishment for enabling low carbon district heating

Nina Dungworth: Impact of technical assurance on reducing heat network capital cost by addressing oversizing in design

Mieczysław Dzierzgowski: Sustainable district heating in Łomża - on the road to decarbonisation

Enric Gonzalez Gonzalo: Heat Roadmap Europe: Key findings across five EU countries comparing district heating options compared to EU27

Aya Heggy: Decarbonising the UK's Heat Networks: A Framework for Archetype-Based Strategies and Case Study Analysis

Mu Huang: Energy performance assessment of heat pump systems in three existing multi-family buildings in Europe based on field measurement

Lars Krusborg Jakobsen: Intelligent heat management and distribution are crucial in a district heating network

Femke Janssen: Integral Heating and Cooling Optimization; Design and Operation

Lars Skytte Jørgensen: *Title to be confirmed*

David Kodz: Grid Stabilization with Mega Heat Pumps

Thomas Licklederer: Controlling the Interaction of Prosumers in Smart Thermal Grids – Experimental Investigation of Different Approaches

Aadit Malla: Assessing the Economic Viability of Thermal Source Networks: The Role of Temperature Sensitivities

Giulia Manco: Design optimization for solar thermal prosumers in district heating networks

Ana Catarina Marques: A district heating network with heat recovery from waste water treatment plant

Nicolas Oliver Marx: Techno-Economic Feasibility of District and Individual Heating & Cooling Solutions – A Preliminary Assessment of Selected Case Studies

Brian Vad Mathiesen: Heat Roadmap Europe: Electrification versus low temperature district heating for heating buildings

Daniel Muschick: Implementation results from an optimization-based, predictive supervisory controller for a district heating network in Austria

Simon Müller: Modern benchmark of adaptive thermal source network at industrial site – The Incampus

Ieva Pakere: District heating resilience under high energy price shocks

Nirav Patel: Optimizing District Heating Supply for Positive Energy Districts

Els van der Roest: Collective or individual heating solutions - the case of Utrecht (NL)

Michela Romagnosi: A modelling tool for dynamic simulations of a 5th generation district heating and cooling system applied to Italian case studies

Kobus van Rooyen: Integrated Design and Operational Optimisation for District Heating Networks: Seasonal Subsurface Storage and Heat pumps

Christina Rosan: How Can District-Wide Heat Pumps be used to meet Climate and Equity Goals in U.S. Cities? Translating Lessons from Europe

Annette Steingrube: The potential role of island heating networks in decarbonizing heating supply of districts. A case study for the district of Freiburg Waldsee

Jan Eric Thorsen : Aftercooling concept for 4th generation district heating substations

Ulrich Trabert: Optimised Operation of Industrial Prosumers in District Heating Systems

Carles Ribas Tugores: Enabling Return Temperature Reduction in Austrian District Heating System: Absorption Heat Exchanger Integration and Impact Analysis

Michele Tunzi: Enhancing Temperature Optimization and Economy in a Danish District Heating Network through Domestic Hot Water Substation Renovation

Jelena Ziemele: Synergies between heat production, distribution, and consumption for decarbonizing strategy of urban district heating system

Theda Zoschke: Survey of optimal dispatch methods of decentralised production units in district heating networks: A technical review

DHC+ Special session: Digital transition for the district heating sector

Matteo Pozzi: Fostering Digitalisation to enhance DHC Systems: progresses and perspectives by the DHC+ platform

Steen Schelle Jensen: Leveraging End-User Engagement for Enhanced District Heating Systems

Ard de Reus: Real-time dynamic pressure and temperature control of a District Cooling system

Luca Scapino: A Real-Case Study on Dynamic Operational Optimization of Thermal Energy Storage with an end-to-end Live Digital Twin