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

Alireza Etemad: A Multi-Scale Analytical Framework for Assessing Flexibility, Feasibility, and Performance of Decentralised 4th-Generation District Heating Systems

Andrea Franzoso: Multi-Agent Deep Reinforcement Learning for Optimized Operation of Industrial Energy Systems

Anna Dell'Isola: Upgrade of a Virtual 5th Generation District Heating and Cooling Network through Optimal Control

Anna Cadenbach: Influence of sector coupling on a district heating system in a German town: thermal simulation and comparison of different supply scenarios

Asger Ulf Jensen: Improved District Heating Network Hydraulics for Enhanced Energy Distribution and Excess Heat Recovery

Avril Bullock: Achieving 4th-generation heat network performance by converting an existing UK communal heating system from a 4-pipe to a 2-pipe network

Bart Homan: Exploring options for optimizing the energy consumption, production and storage of the Ecofactorij business park using HIL simulation

Casper Hvilsted Nørgaard: A Regional Approach to Offshore Wind: The Key to a Cheaper & More Resilient European Power System

Charlie Prétot: Innovative architectures of thermal source networks

Charlie Davies: Developing a heat loss key performance indicator for district heat networks

Dabrel Prits: A Data-Driven Framework for Assessing Building Readiness for Low-Temperature District Heating

Dennis Lottis: Simulation Study on Optimizing Substations: Challenges and Solutions in the Transition to Fourth Generation District Heating Systems

Eoin O Broin: Heat Recovery from Wastewater Treatment Plants to Supply Existing Buildings with Low-Carbon Heat via District Heating

Esther Borkowski: Enhancing Model Accuracy in Grid-Integrated Building Control: A Semi-Systematic Literature Review of Hybrid Modelling Approaches

Femke Janssen: Roll-Out Strategy Optimization for District Heating Networks

Hasibuzzaman Mahmud: An automated framework to select the most profitable consumers for district heating network connections

Ina Herrmann: Analysis of peak load reduction with configuration of district heating controllers and a newly developed optimization box

Jan Eric Thorsen: Reducing district heating return termperatures by cascading concepts

Jerik Catal: Optimized Buildings for Decarbonized District Heating: A Measures Catalogue for Reducing Temperatures, Enhancing Flexibility, and Cutting Costs

Jonathan Chambers: 5th Generation District Heating and Cooling with TESSA – pilot project in a UNESCO world heritage site

Joseph Shanley: Equipment Condition and Resilience Requirements of UK Heat Networks

Julian Plautz: Thermohydraulic Modeling and Simulation of a District Heating Network for the Optimization of Building Refurbishment Strategies

Lucrezia Manservigi: Diagnosis of faults in district heating network components

Milad Morid Zadeh: Smart waste heat recovery in a Danish supermarket refrigeration system

Morten Karstoft Rasmussen: End-user installation monitoring, diagnosing, and optimization at a very large scale

Naomi Adam: Environmental Trade-Offs in Collective Heating Systems: A Life Cycle Perspective on Cluster Size

Nermina Abdurahmanovic: Simulation-based validation of an AI-supported operation strategy for sector-coupled district heating system

Nina Dungworth: Practical considerations and results of optimising residential heat networks, focusing on consumer connection retrofit works.

Nirav Patel: A techno-economic feasibility study of 5th generation district heating and cooling in Vienna

Nyasha Grecu: The role of geothermal energy in decarbonizing district heating under future uncertainty: a techno economic analysis for an Austrian case study

Philipp Gradl: Return-flow and bi-generation upgrades: Real-world results from an Austrian district heating network

Rahul Mohandasan Karuvingal: Advanced Modeling of District Heating Networks and Analysis using uesgraphs v2.0.0 Tool: A Case Study from a German Living Lab Project

Sajedeh Roustaei: Data-driven approach for diagnosing inefficiencies and optimizing district heating networks

Shiyan Chang: Decarbonization of district heating in China

Simon Müller: Optimizing the Operation of a Thermal Source Network Based on a Digital Twin Using Matlab/Simscape

Simran Chaggar: A data driven approach within retrofit design to reduce emitter upgrades for commercial buildings connecting to low-temperature heat networks.

Stanislav Chicherin: Design and Integration of 5th Generation District Heating and Cooling Systems: Economic Viability, Technical Methodologies, and Urban Applicability

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Sven Werner: Thermal lengths in district heating systems

Sylvester Ofili: Feasibility Analysis of Geothermal Energy Integration in Ultra-Low Temperature District Heating Networks

Theda Zoschke: Demonstration of model predictive control for optimal power dispatch in a district heating network with decentralized producers

Tom Burton: An Overview of proposed Technical Assurance Requirements for Existing Heat Networks in the UK

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

Alexander Meisinger: Financing energy partnerships beyond Europe through H2Global: A case study on the way to a German-African energy transition

Fabio Bozzolo Lueckel: Deployment of hydrogen in energy systems: finding the right policies to foster a nascent industry.

Falk Birett: Mapping the Gap: Analyzing the Status and Future Prospects of Power-to-X Deployment in Germany

Hans Gelten: Power-to-Methanol: Techno-Economic Analysis of a regional, decentral case-study

Haoshui Yu: Exploring optimal Power-to-Methanol configuration with SOEC-based technologies

Hossein Nami: Grid Capacity-Aware Investment Roadmap for Sector-Coupled Industrial Clusters

Julian Straus: Modelling details matter – Representation of electrolysis in energy system models

Karl Vilén: Impacts of Capacity Pricing Mechanisms and Motivation Tariffs in District Heating

Leon Schumm: Green Steel: Integrated Modeling of Global Value and Supply Chain Configurations and Trade

Mehdi Savaghebi: Unlocking Frequency Ancillary Services Potential in Eco-Industrial Clusters

Meng Yuan: European Energy Independence: Trade-offs in Domestic Production vs. Renewable Fuel Import

Ramin Ghiami Sardroud: Detailed energy and techno-economic comparison of three CO2-to-methanol integration pathways: Novel direct CO2 capture and electrolysis

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

Abdulrahman Dahash: Techno-economic advantages of coupling large-scale seasonal thermal energy storage with heat pumps in district heating systems

Davide Rizzi: High-Temperature, Large-Scale Heat Pumps: The Key to Decarbonizing Energy Systems

Diego Alejandro Prieto Melo: From Shine to Decline: Analysis of Power Loss Rate of Photovoltaic Systems in Germany

Francesco Neirotti: From waste to value: Circular Thermal systems and heat pumps driving industrial energy efficiency and decarbonization

Jakob Nymann Rud: Transition to an Electrified and Low Temperature Heat Supply in Copenhagen

Meisam Sadi: Carbon dioxide-based district energy systems in heating and cooling applications

Pauli Hiltunen: District heating providing flexibility for the North European electricity system

Rasmus Frost Lund: 200 MW air source heat pumps for district heating: Challenges in large-scale application

Electrification of transport, heating and industry

Andra Blumberga: Unintended long-term consequences of short-term climate and energy policy decisions: the case of diffusion of electric vehicles

Antonia Golab: Density and speed of public charging infrastructure rollout: Accelerating the electrification of the passenger car stock at the federal state level

Arven Syla: What is the interplay between smart charging, V2G and distributed charging infrastructure as flexibility options in the Swiss energy system?

Delight Ezeh: Techno-economic assessment of flexible electrification systems for heat decarbonization in hard-to-abate industries

Endeshaw Bekele: Optimal Strategies for a Zero-Emission Transport Sector in 100% Renewable Energy Cities

Marko Starčević: The Role of Electric Vehicles as Flexible Consumers in Energy Communities

Michael Krüger: Systematic Evaluation of Brayton Battery Concepts for Multi-Purpose Energy Applications

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

Arttu Häkkinen: Bayesian LSTM for indoor temperature modeling

Astrid Leitner: Real-World Implementation of Residential Energy Management Systems: Balancing Thermal and Electrical Energy

Blanca L. Foliaco Romero: Comparative Analysis of Transcritical CO2 and R410 Heat Pumps for Electrical Ferries: Simulation and Control Optimization

Constantin Völzel: 5GDHC networks in urban settlements - Barriers and technological prerequisites for applications in existing buildings

Ece Özer: Bi-Level Optimization for Designing Subsidy Schemes for Staged Energy Retrofits in Residential Buildings

Francesco Ghionda: From Waste to Worth: Integrating a Double-Effect Heat Pump in a Pharmaceutical Industry for Process Cooling & District Heating

Jiyuan Cui: Optimizing the operation of an integrated energy system for a small district using a two-level control strategy

Jonas Hoppe: Renovation paths of single-family-houses and their impact on the heat transition in German districts

Jaap Neven: Evaluating Model Predictive Control Performance with Various Combinations of Building RC-Models and State Observers

Karl Walther: The advantages of integrated versus non-integrated optimal control for district energy systems and buildings: Insights from four case studies

Lars Hellemo: Striving for realism in analyses of building retrofit potential for the green energy system transition with agent-based modelling

Leif Holm Tambjerg: Renewable and Affordable Industrial Process Heat supplied from District Heating

Lieve Helsen: A system of systems approach to decarbonize heating and cooling in the built environment

Lukas Kranzl: Implementing the EPBD: the impact of policy settings on energy savings and heating system mix

Michal Majchrzyk: Improving system efficiency using low temperature and latent waste heat

Rachel Parziale: Monitoring the heat and electricity requirements in 4 northern German heat pump districts

Robert Puknat: Optimizing residential energy systems in low-energy houses in timber-frame construction using Smart EMS for dynamic electricity pricing

Valentin Kaisermayer: Smart System Integration of Waste Heat Recovery, Heat Pumps and PV to Unlock the Energy Potential of Thermal Baths

Xin Bin: Cost-Effective Retrofit of Heat Exchanger Networks in Dairy Industry: Integrating CIP Scheduling and Multiple Utility Sources

GIS for energy systems, heat planning and district heating

Alejandro Zabala Figueroa: GIS-based data-driven simulation of load profiles in industrial and urban areas

Alina Kerschbaum: Spatially-Explicit Technical Potential of Onshore Wind Energy in Germany: A Regulatory and Geographical Assessment

Anton Achhammer: The impact of hydrogen underground storage on fair partnerships: A GIS-based integration of salt caverns into PyPSA-Earth

Giulia Spirito: HeatNODE, a cost-optimized model for the creation of the Italian Atlas of potential district heating networks to recover industrial waste heat.

Marina Georgati: A spatial assessment of the district heating potential in Europe

Steffen Nielsen: High Resolution Spatial Mapping of Biogas Potentials and Site Selection – A Danish case study

Ulrike Jordan: Potential of wastewater, rivers and residual material as heat sources for district heating in the German federal state of Hesse

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

Alessandro Mati: Fueling sustainable aviation: prospects for electrofuels and policy frameworks

Frede Hvelplund: Fundamental policy changes in a transition from around 50% to around 100% Renewable Energy.

George Pickens: Structuring a technical assessment to support regulation of minimum heat network standards

Hironao Matsubara: Progress of Regional Decarbonization in Japan and Challenges to Realization

Kristina Lygnerud: The impact of social sustainability on district heating competitiveness

Pascal Fröhlich: Historical Cost-Optimised Expansion of Renewable Energy Sources

Ruta Vanaga: Integrated Approach for Sustainable Urban Energy Transition: Citizen Engagement, System Dynamics Modeling, and Immersive VR Decision-Making Tools

Aadit Malla: Assessing the Potential for Biomass Reduction Through Targeted Retrofitting of District Heating Systems in Austria

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Integrated energy systems and smart grids

Isabelle Best: Dynamic supply temperature optimization of a complex nested district heating network

Jacobus van Rooyen: Operational strategy optimization under dynamic electricity prices; utilizing tank storages and high temperature seasonal storages

Jihong Hang: Developing strategies for the electrification of Oil and Gas Industry in China

Jinze Li: Hybrid Renewable Energy Integration for Oil and Gas Power Supply: Optimization and Feasibility in China

Kristina Haaskjold: Hydrogen at sea: Evaluating offshore production for Europe's future demand

Marius Güths: Optimization of energy flows with differing optimization goals on quarter level

Matthias Brandes: Model-Predictive Power Control in Small-Scale Hydraulically Coupled District Heating Systems

Oddgeir Gudmundsson: Revealing the Hidden Potential of Energy Efficiency in DH Networks

Savvas Panagi: Grey-Box Modeling Methodologies for Integrating Building Thermal Dynamics into Power System Studies and Planning Tools

Seyed Shahabaldin Tohidi: Analysis of flexibility characterization using flexibility function in residential buildings

Steen Schelle Jensen: Potential of real-time end to end optimization of the full district heating system from heat source to distribution and demand

Yousef Pourjamal: Impact of solar photovoltaics on the energy-industry transition in the Nordics

Planning and organisational challenges for smart energy systems and district heating

Abdulraheem Salaymeh: Techno-Spatial Evaluation of the Practical Usability of Industrial Waste Heat in Urban Heating Systems

Andreas Müller: The potential of local heat networks in the city of Vienna

Anna Lackner: Decarbonization Pathway Optimization and Risk Assessment for District Heating applied to a Polish Case Study

Benedetto Nastasi: Renewable District Cooling by leveraging renewable energy sources via advanced energy storage systems

Bent Ole Gram Mortensen: Price caps as part of the green transition

Clara Büttner: Open source tools and data for cross-sectoral grid planning on all voltage levels

Connie Ocando: Empowering the DHC Sector: Focus on Education and Skills

Daniel Møller Sneum: Financing district heating investments

Daniel Zinsmeister: Transforming the Heating Sector: A Techno-economic Analysis of Munich's Local Heat Transition Planning

Dietrich Schmidt: Perspectives on the digitalization of the district heating systems

Eike Schuler: Do common multi-stage energy planning models underestimate regrets in the face of long-term uncertainties?

Enric Gonzalez Gonzalo: Key findings on organizational and planning challenges across different actors on PEDs

Eric Schulze Berge: Peripheral integration of medium voltage network structures within the framework of automated greenfield power network planning

Fabian Ochs: Design Workflow for Optimized Heat Pump Systems for Positive Energy Districts

Giulia Anna Maria Castorino: Energy and economic analysis of technologies suitable for energy transition in the hospital sector

Iná Maia Novak: Applying Monte Carlo to assess district heating decarbonisation strategy risks: first insights of the Vienna case study

Jacob Estevam Schmiedt: Data for Optimizing Heat Supply Systems in Existing Districts

Jakub Skórczynski: Cyber Resilience Act and NIS2: Two legislative initiatives on cybersecurity that might change the way we work with smart energy systems

Jan Markowski: Intelligent energy management in compressed air energy systems on the base of inverse problem solving

Jelena Ziemele: Achieving Carbon Neutrality in District Heating: Lessons Learned from the Climate City Contract of the City of Riga

Johan Granberg: Electricity grids in Energy Islands - A Future scenario analysis with cyber security implications

Jonathan Hachez: Methodology to develop an investment plan for heating and cooling systems under climate uncertainty

Kai Droste: Determining the potential of very shallow geothermal collectors in Germany

Katharina Esterl: Importance of integrating models within a broader systematic perspective when planning local energy systems

Lars Goray: F|Heat – An Open Software Ecosystem for Municipal Heat Planning

Laura Kuper: Economic Risk Assessment of District Heating Network Topologies: A Scenario-Based Analysis of Consumer Connection Rate Uncertainties

Lennart Trentmann: Combining High Temporal and Spatial Resolution of District Heating Network Design – A Iterative Approach of DHN and Supply Structure Design

Planning and organisational challenges for smart energy systems and district heating (continued)

Lisa Hjerrild: Regulative challenges of energy communities

Marja Heikkinen: Energy system modelling of urban infrastructures and energy storage – quantifying the impacts of policy (in)coherence

Marta Cavaleiro: Bridging the skills and competence gap in District Heating & Cooling: the DHC Academy Alliance

Oskay Ozen: A Qualitative Investigation of German Manufacturing Companies' Efforts to Incorporate Sustainability Into Production Site Transformations

Ryoga Ono: Strategic planning for installation of district heating systems in Japan: Opportunities and Challenges

Saltanat Kuntuarova: Game-theoretic modeling of energy-sharing communities within integrated district heating and electricity systems

Théodore Fontenaille: Rural Heating Networks: A Processual Approach for Overcoming Challenges and Identify Levers

Thuvaraahen Nagendiram: Strategic Heat Planning for Decarbonisation: Insights from Denmark and Implications for China's Clean Heating Development

Tim Mandel: Who pays, who benefits? Multi-stakeholder cost-benefit analysis for strategic heat planning in three German neighbourhoods

Verena Alton: Early-stage techno-economic assessment of DHC networks and individual systems - The FAST-DHC web-tool and its application to a UK case study

Viktoria Illyés: Adopting low-temperature heating and cooling networks in the core of sector-coupling energy communities: a multidisciplinary task

Wiebke Gerth: Automated planning of multiple-supply heating networks within the framework of greenfield planning

Renewable energy sources and waste heat sources including PtX for district heating

Alisson Julio: From Carbon Neutrality to Negative Emissions: Evaluating the Impact of CCUS on Energy Systems and Power-to-X supply

Christian Schützenhofer: Excess heat availability from a net zero emissions industry: sector-specific potentials considering widespread electrification and carbon capture

Dagnija Blumberga: Gaseous Bioresources Towards Climate Neutrality

Hrvoje Dorotić: Participation of district heating systems in balancing power markets via power-to-heat technologies

Rikke C. Pedersen: A techno-economic analysis of infrastructure for CCS: Can biogas facilities benefit from a shared CO2 conditioning system?

Sander Dijk Balancing the energy system: a system-integrated approach to enlarge biomethane feed-in capacity into the gas infrastructure and reduce fossil fuels

Smart energy system analyses, tools and methodologies

Abdul Azzam: A Model Predictive Control Framework for Integrated Thermal and Electric Systems in Multi-Energy Grids

Alejo Silvarrey Barruffa: IIsim: an source to source compiler of industrial process simulation models

Aleksandra Banasik: Experimental Investigation of a PCM Storage Unit with Process Visualization

Allan Iraqi: A generic substation heating power forecasting approach using machine learning

Anders N. Andersen: The role of Non-Asset Traders in the European Day-ahead and Intraday electricity markets

Anna Billerbeck: Modelling climate-neutral district heating in energy system models – insights from an expert survey

Antti Solonen: Demand Side Response in large scale: the Virtual Heat Storage concept

Ari Laitala: Investment case of city scale wind power

Axel Johansson: Exploring the Possibilities of Using Day-Ahead Environmental Impact Forecasts for Electricity Generation

Benjamin Kwaku Nimako: Novel Multi-Criteria Decision Analysis Based on Performance Indicators for Urban Energy System Planning

Bernd Riederer: Smart control of hydrogen-based multi-energy systems

Bram van der Heijde: Energy flexibility from smart district heating and cooling control in smart energy systems: An updated review

Budareld Mbumba: Challenges and prospects of electricity access in Angola

Carlos Santos Silva: Using ENERGYPLAN to model energy systems with high spatial resolution: the case study of mainland Portugal electrical system

Christoph Komanns: Evaluating Peak Shaving Potential with Open-Source Software

Christopher Graf: Optimal domestic hot water and space heating system architecture for flexible heat pump operation in residential buildings

Costanza Saletti: RECoS – An open-source tool for multi-energy system analysis

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Smart energy system analyses, tools and methodologies (continued)

Dana Orsolits: Coupling Power System and Gas Grids Through Dynamic Hydrogen Injection: Enhancing Flexibility in Smart Energy Systems

Diamantis Almpantis: Smart Control Strategies for direct coupled PV-PEM Hydrogen Systems: Real-Time Optimization with Machine Learning Support

Dmitry Romanov: Applicability of pygfunction for modelling deep coaxial borehole heat exchangers

Dominik Stecher: Fault Detection and Classification in District Heating Substations using Supervised Machine Learning – Case Study and User Experience

Enno Wiebrow: Enhancing Flow-Based Market Coupling with Uncertainty and Forecast Integration for Renewable Energies

Erik Ahlgren: Modeling long-term sectoral integration in urban energy transitions

Ethan St. Catherine: Heat Network Metering and Monitoring Standard: Regulating metering systems within UK heat networks

Finn Weiland: Energy supply concepts based on shallow geothermal energy for existing urban districts

Gabriele Fambri: Deep reinforcement learning to explore multi-energy systems: a methodological approach

Gerrid Brockmann: Analysis of District Heating Network Configurations for a Suburban Region: a Senstivity Study about the Heat Demand Density and Supply Temperature

Ingeborg Treu Røe: Smart integration of renewable energy technologies in heat- and power-intensive industries in Europe

Ivan Sukhanov: Adaptive demand-based logic for the Heat pump using supervised machine learning algorithms

Jack M. Kristensen: Harnessing AI and IoT to Unlock Household Electricity Flexibility for a Smarter Energy Future

Jan Trosdorff: Global deep learning model for high temporal and spatial resolution heat demand forecasting using real world monitoring and open data

Jana Reiter: Dynamic Modelling and assessment of Alternative Fuel Supply Chains: Hydrogen, Ammonia, and Methanol Pathways for Maritime Applications

Jonathan Sejdija: A Probabilistic Framework for Analyzing Uncertainty in Industrial Energy Supply and PPA Portfolios

Jonne van Dreven: Generalising Fault Signatures for Robust District Heating Substation Monitoring

Leszek Pająk: Utilization of a deep geothermal borehole heat exchanger HOCLOOP solution in cooperation with existing coal-fired district heating

Lorenzo Mario Pastore: On the role of hydrogen in 100% renewable energy systems: an assessment of applications, costs and infrastructure in Italy by 2050

Marius Reich: Precomputed ML Surrogates for Energy System Design: Methodology and In-Depth Evaluation

Martina Capone: A Simulation-Optimization Framework to Support the Transition of District Heating Systems

Mathieu Patin: Benchmarking Control Strategies for Multi-Stack Electrolyser Systems under Renewable Energy Variability

Matteo Giacomo Prina: Evaluating Machine Learning Robustness as an EnergyPLAN Surrogate Model for Uncertainty Analysis

Matthias Posch: Effect of hot air welding parameters on the ageing behaviour of polyethylene liners

Michael Krause: The impact of heat pumps on the electricity load: Evaluation of large sets of operational data including the simulation of future situations

Michel Noussan: Evaluation of the hourly GHG intensity profiles of high-temperature heat pumps in industrial applications

Mikkel Bue Lykkegaard: Data Compression for Time Series Modelling: A Case Study of Smart Grid Demand Forecasting

Mirko Morini: Predictive controller for optimal hydrogen generation and injection into the natural gas network

Nicholas Tedjosantoso: Tensor-Based Modeling Framework for District Heating Pipes

Niklas Denter: Modelling battery waste heat recovery for sector-coupled power-heat systems in district heating planning

Nils Zimmerling: Monitoring of district heating concrete ducts by measuring thermal parameters

Ona Vassallo: From combustion to conversion: Impact of heating demand decrease on district heating systems

Paula Oberfeier: The role of reversible heat pumps in decarbonizing the heating sector under rising temperatures

Philipp Herpich: Charting the EU Energy System Towards 2060 – Model results of the EU-EnVis-2060 scenarios

Reza Mokhtari: Price-aware building thermal control using deep reinforcement learning: Simulation and experiment

Ruben van den Berg: Driving decarbonization: evaluation of a case study of green hydrogen-based transport in Nieuwegein, the Netherlands

Smart energy system analyses, tools and methodologies (continued)

Selim Mimaroglu: Disaggregating Electric Heating in Commercial Buildings with Deep Learning: U.S. Challenges and Opportunities

Théo Balanza: The role of flexibility in a sector-coupled European energy system

Tim Aidan Graulich: Can surrogate modeling improve linking between sectoral energy system models?

Tuomas Vanhanen: Comparison of carbon neutrality strategies on the peak power demand of a Nordic city

Wojciech Kostowski: Beyond conventional cooling - investigation of the impact of RHVT implementation into the Linde refrigeration cycle

Yassine El Alali: Comparison of community-based and individualized energy scenarios in the urban energy transition using multi-objective optimization

Zhaoming Yang: New generation natural gas pipeline system: for smart and resilient future

Smart energy infrastructure and storage options

Benedict Brosius: Optimal real-time operation of smart energy systems with seasonal storage under uncertainty

Curtis Meister: Data-Driven Surrogate Models of Seasonal Thermal Energy Storage for MPC Applications – A Case Study on the Dronninglund Pit Storage

Jānis Narbuts: Optimization of Thermal Energy Storage in Building Facades Using Phase Change Materials and Accumulation Tanks

Martin Sollich: Optimal Heat Storage Sizing for District Heating Networks to Maximize Electricity Revenue from Combined Heat and Power Units

Mirjam Särnbratt: Grid operators' perspectives on battery energy storage as an alternative to grid expansion: opportunities and barriers to deployment

Muhammad Talha Siddique: A Simplified Energy Balance Model to Estimate Thermal Energy Storage Potential in Swimming Pool Facilities

Paul Volk: Renewable district heating systems in rural areas considering seasonal storage & decreasing use of biomass

Ralf-Roman Schmidt: Risk Assessment for Seasonal Thermal Energy Storage in District Heating Networks

Shariq Akbar: Optimal integration of seasonal thermal energy storage within a thermal source network - The planning phase

Thomas Haupt: Home Energy Management Systems (HEMS): Market Overview – Germany compared to Europe

Special session on Nordic Hydrogen Valleys

Anne Neumann: Analyzing Regulatory Instruments for Emerging European Hydrogen Markets

Frederik Dahl Nielsen: Nordic Hydrogen Hubs: A Multi-Model Framework for Regional Integration towards 2040

Frederik Fristed: Hydrogen and CO2 infrastructures for Nordic maritime decarbonisation: a self-sufficiency perspective

Johannes Giehl: Power-to-X for Green Fuels: Techno-Economic Optimization of Energy Hubs Under Different Power Supply and Carbon Pricing Scenarios

Maria Grahn: Under what circumstances can hydrogen become a cost-effective fuel choice for a future global fleet of heavy-duty trucks

Marie Münster: Exploring the competition between e-fuels and negative emissions for decarbonizing international transport in the Nordics

Rasmus Bramstoft: Nordic and European hydrogen production in an uncertain future

Special session on Energy communities and positive energy districts

Annette Steingrube: Practical implications of the positive Energy District concept

Jelena Nikolic: Energy Cooperatives legal framework: Differences and similarities in Denmark, the Netherlands, and Norway

Mario Mihetec: Energy Communities and Smart Systems: Catalysts for a Rapid Renewable Energy Transition

Martijn Gerritsen: Varieties of PEDs: Positive Energy Districts as building blocks for strategic energy planning at the local level

Minh Thu Nguyen: Inclusive communication ecology for smart energy systems: Case studies from Positive Energy Districts across Europe

Peter Sorknæs: North and South, what is the difference: Energy communities across the Europe

Special session on Power-to-heat and thermal energy storage for faster and more affordable decarbonization

Hanne Kauko: Reducing grid impact of zero-emission passenger ports through power-to-heat and thermal energy storage

Lill Mari Engan: Impact of Seasonal Thermal Energy Storage on the Power System at Different Latitudes

Sebastian Zwickl-Bernhard: Defining Flexibility: A Key Performance Indicator Framework for District Energy Systems under Uncertainty

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Special session on Power-to-heat and thermal energy storage for faster and more affordable decarbonization (continued)

Stian Backe: Quantitative Impact of Flexible Thermal Energy Resources in Future European Energy System Pathways

Sverre Stefanussen Foslie: Decarbonizing industrial process heat demands using hybrid solar thermal and photovoltaic systems in combination with thermal energy storages.

Till Holmes: The role of thermal energy storage in providing flexibility for the decarbonization of industrial process heat and district heating

Whitney Trainor-Guitton: Underground Thermal Energy Storage for Space Cooling: Reducing Electricity Grid Costs and Stress from National to District Scale

Special session on Energy transition and decarbonisation in the district heating sector

Andrea Menapace: Unlocking Waste Heat Potential for District Heating Systems

Jacek Kalina: What can we do in Bucharest? The issues of decarbonising large district heating systems.

Łukasz Jendryasek: Modernization of a Cogeneration-Based DH Network: Low-Temperature Heat Recovery and Dual Heat Pump Integration in Opole Poland.

Marcel Barzantny: Cracking the code of PTES – the impact of atypical geological conditions on seasonal heat storage performance in Opole

Mariusz Tańczuk: Integration of distributed waste heat sources into second-generation district heating systems – technical and economic challenge.

Per Alex Sørensen: Know-how package and toolkit for transition of DHC systems using low temperature sources and heat pumps

Vilūnė Lapinskienė: Decarbonizing the Vilnius District Heating System: Modernization of the Heat Source in Naujoji Vilnia

Special session on Medium-duration thermal energy storage – Technologies, capacities and challenges - A Joint Workshop by IEA-ES Tasks 42, 44, 45

Adriano Sciacovelli: Carnot Batteries: Technological capabilities, challenges and emerging trends from IEA-ES task 44

Alice Tosatto: Optimizing large-scale Thermal Energy Storage Envelope Design for Enhanced Energy and Exergy Efficiency in District Heating Systems

Annelies Vandersickel: Beyond Grid Flexibility: Power-to-Heat and Carnot Batteries for Zero-Carbon Industrial Heat and Power Supply

Gerald Englmair: Latent thermal energy storage for data center application

Jianhua Fan: Water pit thermal energy storage for district heating system

Ming Chen: Potentials of molten salt for medium duration thermal energy storage

Special session on Medium-duration thermal energy storage – System perspectives - A Joint Workshop by IEA-ES Tasks 42, 44, 45

Frederick Stender: Effects of different uses of molten salt storages in the national energy system – A case study on Denmark

Michael Bayer: Cascading of sTES for optimal operation of DHC networks – Case study on a cooling dominated grid

Morten Herget Christensen: Heat pump and e-boiler hybrid systems for charging of thermal energy storages – Techo-economic analysis of district heating and industry applications

Niels van der Veer: Cost-effective and low-carbon heat supply using medium duration molten salt energy storage in the industry

Silvia Trevisan: Heat integrated Carnot Batteries for Decarbonized Industries – System Opportunities Mapping

Wim van Helden: Accelerating the Role of Large Thermal Energy Storages as Elements for Medium and Long Duration Flexibility