Tuesday 13 September 2022 at 09:00-11:00

09:00-11:00 Sector integration in urban areas - 1st plenary session chaired by Associate Professor Iva Ridjan Skov

09:00-09:15 Professor Henrik Lund: Opening speech

Plenary keynotes:
09:15-09:30 Jesper Møller Larsen, Manager of District Energy Systems: Using the right energy, right in Aalborg – taking the common energy solutions to the next (green) level
09:30-09:45 David Dupont-Mouritzen, Project Director: Power-to-X as a key for the green transition
09:45-10:00 Samir Abboud, CEO: Industrializing geothermal energy for urban district heating
10:00-10:30 Questions and debate
10:30-11:00 Professor Sven Werner: The four generations of district cooling - a categorization of the development in district cooling from origin to future prospect

Wednesday 14 September 2022 at 13:30-15:30

13:30-15:30 European energy security and the war in Ukraine - 2nd plenary session chaired by Professor Poul Alberg Østergaard

Plenary Keynotes:
13:30-13:45 Professor Brian Vad Mathiesen: Energy Efficiency First - REPower EU 2030 and 100% renewable energy in 2050 for Europe
13:45-14:00 Connie Hedegaard, former EU Commissioner and Minister for Environment, Climate and Energy: Energy targets in the EU’s Fit for 55: Are our systems fit for implementation?
14:00-14:15 Professor, Dr. Andreas Löschel: Title of presentation to be confirmed
14:15-15:00 Questions and debate
15:00-15:20 Best Presentation Award Ceremony by Professor Poul Alberg Østergaard
15:20-15:30 Closing by Professor Henrik Lund and CEO Glenda Napier
Andra Blumberga: The Profile of a “Hard-to-Reach” Energy Consumers of the Baltic and Nordic States in the Process of Energy Transition
Casey Cole: Digitalising heat network commissioning - using apps to bridge the skills gap
Rémi Delage: Cluster analysis of Japanese households based on energy consumption mix
Hermann Edtmayer: Analysing the thermal energy demand of development scenarios of a city district
Elisa Guelpa: Reducing supply temperature in existing large scale district heating
Emil Gustavsson: Model predictive control for heating systems when using demand tariffs
Joseph Jebamalai: Design of district heating networks using a ring network and storage configuration – A case study using Comsof Heat
Rasmus Magni Johansson: Municipal energy system modelling – a practical comparison of optimisation and simulation approaches
Britta Kleineretz: Holistic comparison on existing guidelines for the development of heat transformation guidelines
Aadit Malla: Validation approaches under GDPR constraints for bottom-up building stock energy data: Case Vienna
Philipp Mascherbauer: Validation of modeling smart energy management systems in reduced order models with building simulation models
Alessandro Mafi: Assessment of paper industry decarbonization potential via hydrogen based technologies in a multi energy system scenario : a case study
David Maya-Drysdale: Scenarios for a decarbonised Europe: What is the role of energy efficiency?
Gideon Mbiydzenyuy: Toward the application of Data Analytics for Fault Detection in District Heating Substations
Peter Nageler: IDA Districts: a QGIS plugin for automated thermal model generation and dynamic district simulation
Martin Neumayer: Fault and anomaly detection in district heating substations: A survey focused on methodology and data sets
Matteo Giacomo Prina: Evaluating near-optimal scenarios with EnergyPLAN to support policy makers
Michael Reisendichler: Novel modeling toolkit for optimized design and integration of large-scale underground hot-water thermal energy storages in future energy systems
Akos Revesz: Heat decarbonisation opportunities in urban neighborhoods – Building retrofit and low carbon energy supply assessment
Maximilian Roth: Optimal component dimensioning and operational optimization of a mobile-hybrid energy supply system with defined system topology using MILP
Shivangi Sachar: Wind energy potential assessment for the city of Nottingham using Weibull distribution estimation
Robbe Salenbien: Showcasing the potential of non-linear topology optimization of District Heating Networks – District level and upwards
Malte Schäfer: Life cycle oriented decision support for companies to reduce electricity-related greenhouse emissions
Shubham Shubham: Feasibility study of different vertical axis wind turbines for wind conditions in the city of Nottingham
Peter Sorknæs: The benefits of 4th generation district heating and energy efficient datacentres
Jan Stock: Modelling of an Existing District Heating Network at Different Supply Temperatures with a New Integrated Waste Heat Source
Henrik Stærmose: Flexibility Heat Grid Bornholm
Jakob Zinck Thellufsen: From energy modelling to energy planning – the consequence of different types of system analysis
Anna Vannahme: Central and decentral operation strategies to optimize existing district heating networks
Anna Vocke: The impact of increased information content on electricity load forecasting
Yannick Wack: Approaches to non-linear topology optimization of District Heating Networks – A benchmark
Daniel Zinsmeister: A prosumer-based sector-coupled district heating and cooling laboratory architecture
8th International Conference on Smart Energy Systems

**Smart energy infrastructure and storage options**

**Kamil Kwiatkowski**: Heat pumps with triple heat storage levels for district heating system with 90% of energy from renewable sources – a feasibility study with TRNSYS

**Richard van Leeuwen**: Business case scenario analysis for hydrogen conversion, storage and consumption within energy hubs

**Mattia Pasqui**: Renewable Energy Communities: techno-economic assessment focusing on heat pump load shifting

**Thomas Riegler**: Structural challenges and innovative concepts for large-scale underground thermal energy storage

**Thomas Schmidt**: Technical and economical optimisation of district heating networks with decentralised buffer storage tanks

**Vittorio Verda**: Efficient Heat Pump integration in existing large district heating networks

**Integrated energy systems and smart grids**

**Tansu Galimova**: Impact of international transportation options on cost of green e-hydrogen supply: Global cost of hydrogen and consequences for Germany and Finland

**Leif Gustavsson**: A sustainable replacement for diesel trucking: Comparing battery electric and biofuel trucks

**Rasmus Lund**: Is storage needed in sector coupling?

**Ana Catarina Marques**: Driving success towards zero carbon energy targets for UK’s Local Authorities

**Emanuela Marzi**: Assessment of Power-to-Gas integration for energy system flexibility accounting for forecast uncertainties

**Hironao Matsubara**: Control and utilization of surplus electricity for the high share of variable renewable energy in Japan

**Benedetto Nastasi**: Power To Hydrogen for Energy Flexible Communities

**Hiroaki Onodera**: Renewable Energy Systems Considering Profitability of PtG and PtL - a Case Study of Japan


**Els van der Roest**: Heat utilization from hydrogen production – an example of local energy system integration

**Costanza Saletti**: Implementation and testing of a multi-level smart control strategy for the integrated energy system of a hospital

**Christian Schützenhofer**: IEA DHC Annex TS7: Industry-DHC Symbiosis: A systemic approach for highly integrated industrial and thermal energy systems

**Yudha Irmansyah Siregar**: Assessment of transport electrification and district cooling towards smart energy systems in hot climate countries

**Ivan Munoz**: Determination of the technical-economic potential for the development of district heating projects in each commune of Chile

**Bernd Möller**: Synergies between geographically distributed energy efficiency potentials

**Somadutta Sahoo**: Detailed energy system modeling of a district heating network on a provincial level – a study of Groningen Province in the northern Netherlands

**Helmut Böhnisch**: Estimating the trench length and linear heat density for municipal heat planning – a comparison of different methods

**Martijn Clarijis**: WarmingUP Design Toolkit for Future-proof Heat Networks

**Mostafa Fallahnejad**: Overview of district heating potentials in EU-27 countries under evolving DH market shares and ambitious heat demand reduction scenario

**Patxi Hernandez**: City zoning for heating and cooling: Methodology for prioritization of solutions at building or district scale

**Andreas Weiß**: Assessment of Resulting Loads and Constraints Applying Clustering Approaches for Determination of Representative Distribution Grids

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

**Helmut Böhnisch**: Estimating the trench length and linear heat density for municipal heat planning – a comparison of different methods

**Martijn Clarijis**: WarmingUP Design Toolkit for Future-proof Heat Networks

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

Luca Casamassima: Comparing transition strategies towards lower technical, economic and life-cycle analyses

Martin Crane: Scope for hybrid PV to improve GSHP CoPs and reduce ground loop size

Krystian Gjoka: Fifth generation district heating and cooling: opportunities and implementation challenges in a mild climate

Oddgeir Gudmundsson: Cooling as an integrated part of 4th generation district heating

ASM Mominul Hasan: Virtual net-metering and citizen investment for boosting energy transition in the cities of emerging economies: A case study on Bangladesh

Bernhard Mayr: Evaluation of Gas Demand in Space Heating and Hot Water Preparation at NUTS 3 Level regarding the Dependence on Russian Natural Gas

Ali Moallemi: Xplorion: An Innovative Sustainable Building Supplied by Low and Ultra-Low Temperature District Heating System

Ieva Pakere: Multi-source district heating system optimisation trough technical, economic and life-cycle analyses

Flemming Bligaard Pedersen: Cost-effective Solar Powerplant delivering flexible electricity and district heating on demand

Hannes Poier: Demonstration of large scale solar district heating integration with storages and biomass - synergies and challenges

Luis Sánchez-Garcia: Viability of district heating networks in temperate climates: Benefits and barriers of ultra-low cold and warm temperature networks

Uffe Schleiss: How to effectively convert gas area into district heating

Daniel Möller Smeun: Switching from natural gas to district heating: Measured impacts on household energy use

Jelena Ziemele: Impacts of global warming and building renovation on the heating energy demand and district heating capacity: Case of the city of Riga

Renewable energy sources and waste heat sources for district heating

Dagnija Blumberga: Harmonisation of waste heat in district heating

Ali Kök: The distance between industrial sites and district heating grids as a driver of the economic viability of waste heat integration

Henrique Lageiro: Heat Recovery Opportunities from Electrical Substations

Kurt Lepiksaar: Utilisation of Sewage Water Heat in District Heating and the Impact on the Water Treatment Process

Ingo Leusbrock: How to combine district heating and waste water treatment plants? A demonstration example from Gleisdorf, Austria

Kristina Lygnerud: Metro waste heat recovery - lessons from London and Berlin

Nicolas Marx: Decarbonizing the heating supply via regional district heating networks – Best Practice Analysis and Status-Quo for a case study in Tyrol (Austria)

Johannes Pelda: Identifying locations for optimal heat extraction from city waste water

Stefan Reuter: Methodology for identifying and evaluating (future) waste heat potentials and techno-economic feasibility of their utilisation

Dmitry Romanov: Analysis of Enhanced Geothermal System Development Scenarios for District Heating and Cooling of the Göttingen University Campus

Abdulaheem Salaymeh: Analysis to determine the potential of waste water heat to supply urban areas

Special Session:
IEA DHC Annex TS4 and IEA EBC Annex 84

Dietrich Schmidt: Digitalisation in district heating supply – with data to optimised systems and new business opportunities

Michele Tunzi: Digitalization of Demand side as the enabler for the transition towards 4th Generation district heating (4GDH)

Pakdad Pourbozorgi Langroudi: A Combi-Model for Failure Prediction of the Pre-Insulated Pipes in District Heating/Cooling Networks

Jakob Fester: Algorithms for assessing the condition of district heating service pipes exploiting GIS data, data from smart meters and soil temperature measurements

Ralf-Roman Schmidt: The AIT DigitalEnergyTestbed: An open test environment for digitalization solutions for integrated district heating networks

Anna Marszal-Pomianowska: IEA EBC Annex 84: Demand Management of Buildings in Thermal Networks

Anna Kallert: IEA EBC Annex 84: Demand Management of Buildings in Thermal Networks – Case Studies including DH and DC Systems

Tijs Van Oevelen: Testing a smart controller for district heating systems : Results from an Italian case study in the TEMPO project

Konstantin Filonenko: Evaluation of district heating operation using flexibility function and Functional Mockup Interface