

Conference Agenda

14th INREC 2025

Date: Tuesday, 26/Aug/2025

9:00am - 9:15am	Registration: Registration Location: R12 S00 H12 (Glaspavillon)		
9:15am - 9:30am	Welcome & Introduction: Welcome & Introduction Location: R12 S00 H12 (Glaspavillon)		
9:30am - 10:30am	Keynote 1: Prof. Marie Münster, Danmarks Tekniske Universitet (DTU): Sector coupling as a means of ensuring flexibility in future energy systems Location: R12 S00 H12 (Glaspavillon)		
10:30am - 12:00pm	1.1: Session 1.1 Uncertainties in Energy Markets Location: R11 T03 C20 Chair: Christoph Weber 10:30am - 11:00am Leveraging Spatially Explicit Data for Accurate Renewable Energy Forecasting in France <u>Eloi Lindas</u> ^{1,2} , Yannig Goude ³ , Philippe Ciais ² 1: Atos Inno'Lab; 2: Laboratoire des Sciences du Climat & de l'Environnement; 3: EDF R&D Lab	2.1: Session 2.1 Modeling Climate Risk and Investment Strategies in the Energy Transition Location: R11 T03 C05 Chair: Kateryna Chekriy 10:30am - 11:00am Financial scenario analysis model of the energy transition – the case of Poland <u>Bartosz Sobik</u> ^{1,2} 1: SGH Warsaw School of Economics; 2: Hitachi Energy Research	3.1: Session 3.1 Energy System Modelling Location: R11 T03 C82 Chair: Florian Ziel 10:30am - 11:00am From Data to Decision: Systematic Integration of prospective Life Cycle Assessment (pLCA) in Energy System Modelling for Offshore Wind Expansion <u>Alicia Benitez</u> ^{1,2} , Christina Wulf ¹ , <u>Prof. Jutta Geldermann</u> ² 1: Forschungszentrum Jülich, Germany; 2: Business Administration and Production Management, University of Duisburg-Essen
	11:00am - 11:30am A probabilistic merit order: a data-driven fundamental model for electricity price forecasting <u>Paul Ghelasi</u> , Florian Ziel University of Duisburg-Essen, Germany	11:00am - 11:30am Too hot to handle? Assessing climate risk exposure of renewable power plant investments in future power systems <u>Silke Johanndeiter</u> , Paul Pütz, Leonie Plaga, Valentin Bertsch Ruhr University Bochum, Germany	11:00am - 11:30am Representing the Solar Rebound Effect in an Energy System Model – Impacts on European Transformation Pathways <u>Mensur Delic</u> , Michael Bucksteeg FernUniversität Hagen, Germany
	11:30am - 12:00pm Flexibility of German gas-fired generation: evidence from clustering empirical operation <u>Chiara Fusar Bassini</u> ^{1,2,3} , Alice Lixuan Xu ¹ , Jorge Sánchez Canales ¹ , Lion Hirth ¹ , Lynn Helena Kaack ^{1,2} 1: Centre for Sustainability, Hertie School, Berlin, Germany; 2: Data Science Lab, Hertie School, Berlin, Germany; 3: Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, Cambridge, US	11:30am - 12:00pm Agent-based modeling of investment decisions under uncertainty <u>Leonard Willeke</u> , Johannes Kochems, Kristina Nienhaus German Aerospace Center (DLR), Germany	11:30am - 12:00pm Disentangling the Effects of Metering and Tariff Configurations on Household Flexibility in Energy Systems <u>Marco Breder</u> Universität Duisburg-Essen, Germany
12:00pm - 1:00pm	Lunch Day 1: Lunch Day 1 Location: R12 S00 H12 (Glaspavillon)		
1:00pm - 2:00pm	1.2: Session 1.2 Electricity Price Forecasting: Ensemble Modelling Location: R11 T03 C20 Chair: Florian Ziel 1:00pm - 1:30pm Forecasting Belgian imbalance prices using machine learning: A structured approach <u>Arnaud Verstraeten</u> , Maria Margarida Mascarenhas, Hussain Syed Kazmi	2.2: Session 2.2 Investment Planning in Power Systems Location: R11 T03 C05 Chair: Rüdiger Kiesel 1:00pm - 1:30pm Equilibrium Power Market Investments - Investigating equilibria of capacity payments <u>Amir Ashour Novirdoust</u> , Hendrik Diers, Pia Willers	3.2: Session 3.2 Behavior and Policy in the Energy Transition Location: R11 T03 C82 Chair: Christoph Weber 1:00pm - 1:30pm The German balancing energy market reform: Analyzing effects on prices, liquidity and competition

	KU Leuven, Belgium	Institute of Energy Economics at the University of Cologne (EWI), Germany	Michaele Diehl¹, Merit Dressler¹, Michael Bucksteeg^{1,2} 1: Institute of Energy Economics at the University of Cologne; 2: FernUniversität in Hagen
	1:30pm - 2:00pm Assessing flexibility option potential by combining electricity price forecasting and agent-based electricity market modelling Felix Nitsch , Christoph Schimeczek German Aerospace Center (DLR), Institute of Networked Energy Systems	1:30pm - 2:00pm A user-centered decision-making tool for high level planning and impact assessment of wind farms in Europe Luis Ramirez Camargo¹ , Thomas Schauppenlehner ² , Christian Mikovits ² , Giuseppe Giorgi ³ , Andrea N. Hahmann ⁴ , Neil N. Davis ⁴ , Rebecca Hueting ⁵ , Lien Bakelants ⁶ 1: Copernicus Institute of Sustainable Development, Utrecht University, Netherlands.; 2: University of Natural Resources and Life Sciences, Vienna (BOKU), Austria; 3: Marine Offshore Renewable Energy Lab, Politecnico di Torino, Italy; 4: Dept. of Wind and Energy Systems, Technical University of Denmark; 5: DeepBlue, Italy; 6: Nazka Mapps, Belgium	1:30pm - 2:00pm Here Comes the Sun: Investigating Facets of the Solar Rebound Effect in Photovoltaic Households Stefan Poier¹, Michael Bucksteeg^{1,2} 1: FernUniversität in Hagen, Germany; 2: Institute of Energy Economics (EWI), University of Cologne, Germany
2:00pm - 2:30pm	Coffee Break (1): Coffee Break (1) Location: R11 T03 C75		
2:30pm - 3:30pm	1.3: Session 1.3 Day-Ahead Electricity Price Forecasting Location: R11 T03 C20 Chair: Florian Ziel 2:30pm - 3:00pm Forecasting day-ahead electricity prices with temporal hierarchies Arkadiusz Lipiecki¹ , Nikolaos Kourentzes ² , Rafał Weron ¹ 1: Wrocław University of Science and Technology, Poland; 2: University of Skövde, Sweden	2.3: Session 2.3 Batteries in Electricity Markets Location: R11 T03 C05 Chair: Rüdiger Kiesel 2:30pm - 3:00pm Assessing the Profitability of Large-Scale Batteries in the UK Electricity Market Nina Lange¹, Stefan Ropke² 1: University of Copenhagen, Denmark; 2: Technical University of Denmark	3.3: Session 3.3 Hydrogen Systems and Markets Location: R11 T03 C82 Chair: Christoph Weber 2:30pm - 3:00pm Regional Investment Planning of Sector-Coupling Technologies Using Benders Decomposition Daniel Brunsch, Hendrik Kramer, Christoph Weber Universität Duisburg-Essen, Germany
	3:00pm - 3:30pm Day-Ahead Electricity Price Forecasting in the Integrated Single Electricity Market George Foster, Xueqin LIU Queen's University Belfast, United Kingdom	3:00pm - 3:30pm Multiple-split probabilistic forecasting: applications to battery trading strategies Tomasz Weron, Katarzyna Maciejowska Wrocław University of Science and Technology, Poland	3:00pm - 3:30pm The Global Hydrogen Market: Understanding the Interdependencies between its Techno-Economic System and the Market Environment Arnd Hofmann, Cornelia Klüter, Marco Sebastian Breder, Christoph Weber House of Energy Markets and Finance, Universität Duisburg-Essen, Germany
4:45pm - 5:45pm	Social Event: Social Event: guided tours at Zollverein		
6:00pm - 9:45pm	Conference Dinner: Conference Dinner at Casino Zollverein		

Date: Wednesday, 27/Aug/2025

9:15am - 10:15am	<p>1.4: Session 1.4 Energy Forecasting: Weather Impact Location: R11 T03 C20 Chair: Florian Ziel</p> <p>9:15am - 9:45am</p> <p>Strategies to improve federated forecasts of day-ahead PV power production <u>Viktor Walter¹</u>, <u>Andreas Wagner^{1,2}</u> 1: Karlsruhe University of Applied Sciences, Germany; 2: Fraunhofer Institute of Industrial Mathematics (ITWM)</p>	<p>2.4: Session 2.4 Challenges in Energy Market Design Location: R11 T03 C05 Chair: Rüdiger Kiesel</p> <p>9:15am - 9:45am</p> <p>Holistic Exploration of Near-Optimal Design Spaces of MILP Industrial Energy Systems with Economies of Scale <u>Alwin Haese</u>, <u>Hendrik Schricker</u>, <u>Niklas von der Assen</u> Institute of Technical Thermodynamics, RWTH Aachen University, Germany</p>	<p>3.4: Session 3.3 Redispatch and Market Design Location: R11 T03 C82 Chair: Christoph Weber</p> <p>9:15am - 9:45am</p> <p>Analyzing and Forecasting Redispatch Volumes in Germany: Insights into Market-Based Redispatch Mechanisms <u>Teodora Dobos</u>, <u>Martin Bichler</u> Technical University of Munich, Germany</p>
10:15am - 10:30am	<p>9:45am - 10:15am</p> <p>Probabilistic Electricity Price Forecasting Using Weather-Based Scenarios in the German Continuous Intraday Market <u>Andrzej Ryszard Puć</u>, <u>Joanna Janczura</u> Wroclaw University of Science and Technology, Poland</p>	<p>9:45am - 10:15am</p> <p>Market Design and Cost Recovery: Impacts of a Bidding Zone Reconfiguration in the German Power System <u>Tim Schubert</u>, <u>Gunter Grimm</u>, <u>Anke Weidlich</u>, <u>Mirko Schäfer</u> Albert-Ludwigs-Universität Freiburg, Institute for Sustainable Systems Engineering - INATECH</p>	<p>9:45am - 10:15am</p> <p>Dynamic grid fees as a signal of transmission network congestion – what is the potential in reducing redispatch costs in a zonal market? <u>Gunter Grimm</u>, <u>Rebecca Hofmann</u>, <u>Mirko Schäfer</u>, <u>Anke Weidlich</u> INATECH - University of Freiburg, Germany</p>
10:30am - 10:30am	<p>10:15am - 10:30am</p> <p>Coffee Break (2): Coffee Break (2) Location: R11 T03 C75</p>		
10:30am - 11:30am	<p>10:30am - 11:30am</p> <p>Keynote 2: Dr. Christian Pape, Head of Global Portfolio and Modelling at RWE Supply & Trading GmbH: Impulse on Short- and Long-term Valuation of Flexibilities - Practical examples of BESS investment in Germany Location: R12 S00 H12 (Glas pavillon)</p>		
11:30am - 1:00pm	<p>11:30am - 1:00pm</p> <p>1.5: Electricity Price Forecasting: Interpretable Machine Learning Location: R11 T03 C20 Chair: Florian Ziel</p> <p>11:30am - 12:00pm</p> <p>Electricity Price Forecasting with eXtreme Gradient Boosted Decision Trees <u>Kaja Bilińska</u>, <u>Arkadiusz Lipiecki</u>, <u>Rafał Weron</u> Wroclaw University of Science and Technology, Poland</p>	<p>2.5: Session 2.5 Electricity Markets – Pricing, Risk, and Valuation Location: R11 T03 C05 Chair: Rüdiger Kiesel</p> <p>11:30am - 12:00pm</p> <p>Dynamic electricity pricing and time-of-use network charges for private households – Are mixed signals favorable? <u>Hendrik Kramer</u> University Duisburg-Essen, Germany</p>	<p>3.5: Session 3.5 Drivers of Electricity Prices Location: R11 T03 C82 Chair: Christoph Weber</p> <p>11:30am - 12:00pm</p> <p>Drivers of Cross-Border Electricity Flows in Europe: Evidence from a Gravity Model <u>Justyna Borowiec-Kapek</u>, <u>Monika Papież</u> Krakow University of Economics, Poland</p>
12:00pm - 12:30pm	<p>12:00pm - 12:30pm</p> <p>Electricity Price Forecasting: Bridging Linear Models and Neural Networks <u>Btissame EL MAHTOUT</u>, <u>Florian Ziel</u> Duisburg-Essen University, Germany</p>	<p>12:00pm - 12:30pm</p> <p>Semi-static hedging of Volumetric Risk in Energy Markets - An application to Green PPAs and Quanto Options <u>Konstantinos Chatziandreou</u>, <u>Sven Karbach</u> University of Amsterdam, Netherlands, The</p>	<p>12:00pm - 12:30pm</p> <p>Spatial Effects In European Electricity Price Forecasting <u>Sultan Mahmud Chomon</u>, <u>Florian Ziel</u> University of Duisburg-Essen, Germany</p>
12:30pm - 1:00pm	<p>12:30pm - 1:00pm</p> <p>NBMLSS: probabilistic forecasting of electricity prices via Neural Basis Models for Location Scale and Shape <u>Alessandro Brusafferri</u>, <u>Danial Ramin</u>, <u>Andrea Ballarino</u> National Research Council, Italy</p>	<p>12:30pm - 1:00pm</p> <p>The real cost of electricity: accounting for water use in power generation under uncertainty <u>Alena Lohrmann¹</u>, <u>Russell McKenna^{1,2}</u> 1: ETH Zürich, Switzerland; 2: Paul Scherrer Institut, Switzerland</p>	<p>12:30pm - 1:00pm</p> <p>Forecasting Electricity Spot Market Merit-Order Curves with Functional Time Series Modeling <u>Guillaume Koechlin¹</u>, <u>Filippo Bovera²</u>, <u>Piercesare Secchi¹</u> 1: MOX, Department of Mathematics, Politecnico di Milano, Milan, Italy; 2: Department of Energy, Politecnico di Milano, Milan, Italy</p>

1:00pm -	Lunch Day 2: Lunch Day 2 Location: R12 S00 H12 (Glaspavillon)		
2:00pm			
2:00pm -	Keynote 3: Prof. Jethro Browell, University of Glasgow: Forecasting the wind: From necessity to added value Location: R12 S00 H12 (Glaspavillon)		
3:00pm			
3:00pm -	Coffee Break (3): Coffee Break (3) Location: R11 T03 C75		
3:15pm			
3:15pm -	1.6: Session 1.6 Electricity Price and Load Forecasting Location: R11 T03 C20 Chair: Florian Ziel	2.6: Session 2.6 Technology Assessment and Environmental Sustainability Location: R11 T03 C05 Chair: Rüdiger Kiesel	3.6: Session 3.6 Technological and Analytical Advances in Energy Systems Location: R11 T03 C82 Chair: Christoph Weber
5:15pm	3:15pm - 3:45pm Extreme Electricity Price Spike Forecasting for Risk Management via Excursion Metric Projections <u>Abhinav Das¹</u> , <u>Stephan Schlüter²</u> 1: Ulm University, Germany; 2: University of Applied Sciences, Ulm	3:15pm - 3:45pm Assessment of Economic and Environmental Sustainability for Innovative Valorization of Slag from Waste Treatment <u>Prof. Dr. Jutta Geldermann¹</u> , <u>Leon Zacharopoulos¹</u> , <u>Prof. Dr. Rüdiger Deike²</u> , <u>Dr. Ida Adhiwiguna³</u> 1: Chair of Business Administration and Production Management, University of Duisburg-Essen, Germany; 2: Chair of Metallurgy—Institute for Technologies of Metals, University of Duisburg-Essen, Germany; 3: Pt. Zenith Allmart Precisindo, East Java, Indonesia	3:15pm - 3:45pm Overview of Public Data and Models for Combined Heat and Power Generation in Germany <u>Jie Xu</u> , <u>Dennis Schneider</u> , <u>Philipp Castro</u> , <u>Maïke Spilger</u> , <u>Christoph Weber</u> University of Duisburg-Essen, Germany
	3:45pm - 4:15pm Enhancing electricity price forecasting accuracy: A novel filtering strategy for improved out-of-sample predictions <u>Andrea Cerasa</u> , <u>Alessandro Zani</u> European Commission - Joint Research Centre (JRC)	3:45pm - 4:15pm Incorporating Forward-Looking Data in Probabilistic Analysis of Net-Zero Commitments <u>Kateryna Chekriy</u> , <u>Rüdiger Kiesel</u> University of Duisburg-Essen, Germany	3:45pm - 4:15pm The Impact of Insurance Sector Development on CO2 Emissions: Evidence from G7 Countries Using the Panel NARDL Approach <u>Maïssa Dorbez</u> , <u>Manel Kacem</u> , <u>Mouna Mrad</u> Higher Institute of commercial studies (IHEC), Tunisia
	4:15pm - 4:45pm Short-term probabilistic energy load forecasting with GAMLSS framework <u>Katarzyna Cheć</u> , <u>Bartosz Uniejewski</u> , <u>Rafał Weron</u> Wrocław University of Science and Technology, Poland		4:15pm - 4:45pm Energy Sharing in the Commercial Sector with a Focus on SMEs in Germany <u>Sven Müller</u> Technische Hochschule Aschaffenburg, Germany
	4:45pm - 5:15pm Comparative analysis of the electricity prices in France and Germany, 2015-2024 <u>Kallia Charron^{1,2}</u> 1: EDF, France; 2: Université Paris Nanterre		