

## WEDNESDAY, 16.09.2020

Room

09:00 - 09:30	<b>Testing of equipment</b> Introduction for Session Chairs hosted by Trippus	R1
09:30 - 10:00	<b>Testing of equipment</b> Open Q&A about Zoom usage for all participants hosted by Trippus	
10:00 - 10:30	<b>Welcome session</b> Assoc. Prof. Mohammad Reza Hesamzadeh	R1
10:30 - 11:00	<b>Virtual coffee break</b>	R1
11:00 - 12:30	<b>Keynote session: Electricity Market Design I</b>  Dr. Julia Matevosyan: Storage and Hybrid Resource Integration into ERCOT Market Prof. Juan Rosellon: A simple regulatory incentive mechanism for the electricity industry	R1
12:30 - 13:30	<b>Virtual Lunch break</b>	R1
13:30 - 15:00	<b>Keynote session: Electricity Market Design II</b> Prof. Michael Caramanis: Market Restructuring: Participation of Distribution Connected Resources and Incorporation of Risk in Dynamic Clearing Prices Dr. Darryl Biggar: Optimal dispatch and hedging in a wholesale electricity market, with a discussion of the applications	
15:00 - 15:30	<b>Virtual coffee break</b>	R1
15:30 - 17:00	<b>Paper sessions P11 – P15</b> <b>P11 Electricity Markets I</b> Chair: Jorge Sousa 1327: Learning Bidding Strategies in Local Electricity Markets using a Nature-Inspired Algorithm- Lezama, Fernando (1); Soares, Joao (1); Faia, Ricardo (1); Faria, Pedro (1); Vale, Zita (2) 1228: Investigating the impact of Flow-based market coupling on the Nordic area prices- Viken Kallset, Vegard (1); Hovde Bø, Andreas (1); Resfnæs, Karl (2); Oleinikova, Irina (1); Farahmand, Hossein (1) 1377: A Novel Design for Electricity Markets based on the Cellular Approach- Schinke-Nendza, Aiko; Blumberg, Gerald; Weber, Christoph 1279: Bidding Zones of the European Power System: Benefits of a Multi-Dimensional Approach to the Evaluation of Possible Delineations- Brouhard, Thomas (1,2); Hennebel, Martin (2); Petit, Marc (2); Gisbert, Cyril (1) 1303: Co-movements within European Electricity Markets: telling our history- Ferreira Dias, Marta (1); Reis da Silva, Ricardo (2); Madaleno, Mara (1)	R1-R5 R1
	<b>P12 Balancing I</b> Chair: Lars Herre 1262: Imbalance Pricing Methodology in Belgium: Implications for Industrial Consumers- Baetens, Jens (1); Laveyne, Joannes (1); Van Eetvelde, Greet (2,3); Vandeveld, Lieven (1,4) 1101: Market response for real-time energy balancing with FUZZY logic- Röben, Felix (1,2); Meißner, Anna Christin (2) 1268: Modelling system balancing actions within high renewable energy scenarios- Pennock, Shona; Vanegas Cantarero, Maria; Jeffrey, Henry 1130: Redispatch and balancing: Same but different. Links, conflicts and solutions.- Poplavskaya, Ksenia (1,2); Joos, Marine (3); Krakowski, Vincent (3); Knorr, Kaspar (4); de Vries, Laurens (2)  1192: The impact of varying system flexibility on market prices for electricity and balancing reserves- Kondziella, Hendrik (1); Böttger, Diana (1,2); Bruckner, Thomas (1)	R2
	<b>P13 Demand Response I</b> Chair: Iason Kouveliotis Lysikatos	R3

1328: Rating the Participation of Electricity Consumers in Demand Response Events-  
Silva, Catia; Faria, Pedro; Vale, Zita  
1308: A novel ex-ante tariff scheme for cost recovery of transmission investments  
under elasticity of demand - De Paola, Antonio (1,2); Savelli, Iacopo (3); Morstyn,  
Thomas (4)  
1366: Aggregation of Consumers Participation in the Ramping of a Demand Response  
Event- Abrishambaf, Omid; Faria, Pedro; Vale, Zita  
1334: Primary Frequency Control Ancillary Service in Distribution Network by  
Coordinated Scheduling of Wind Power and Demand Response- khojasteh, Meysam;  
Faria, Pedro; Vale, Zita  
1245: Modeling Methodology to Assess the Impact of Demand Elasticity on the Italian  
Electricity System in a European Context- Jansen, Luca Lena (1,2); Purvins, Arturs (3);  
Buzna, Lubos (1); Antonopoulos, Georgios (3); Zani, Alessandro (2)

#### P14 Electric Vehicles

R4

Chair: Jigneshsinh Sindha

1146: Learnings From the Swiss Second-Hand Car Market for E-Mobility- Sawicki,  
Benjamin (1); Scherer, Marc (2)

1233: Aggregating Load Shift Potentials of Electric Vehicles for Energy System Models-  
Ried, Sabrina (1); Dengiz, Thomas (1); Jochem, Patrick (1,2); Soldner, Sebastian (1)  
1231: Deploying Fast-charging Stations for Electric Vehicles Based on Mobility Flows  
and Local Photovoltaic Production- Mourad, Abood (1); Hennebel, Martin (1); Amrani,  
Ahmed (2); Ben Hamida, Amira (2)  
1141: Billing System Impact on the Deployment of Electric Vehicles- Petrichenko, Lubov  
(1); Sauhats, Antans (1); Petrichenko, Roman (1); Zima-Bočkarjova, Marija (2);  
Borscevskis, Olegs (1)  
1179: Load control of residential real estate to improve circumstances for EV charging-  
Simolin, Toni (1); Järventausta, Pertti (1); Rautiainen, Antti (1); Santikko, Pasi (2);  
Järvensivu, Hannu (2)

#### P15 Innovative approaches in energy markets I

R5

Chair: Dominik Möst

1379: A blockchain based incentive mechanism for increasing collective self-  
consumption in a nonsumer community- Sorrentino, Nicola; Menniti, Daniele;  
Pinnarelli, Anna; Mendicino, Stefano; Vizza, Pasquale; gaetano, Polizzi  
1126: Application of blockchain technology for electricity supplier change- Pemsel,  
Jonas; Warweg, Oliver; Bretschneider, Peter

1244: Biogas plants as actor in Smart Market solutions in South Germany- Mast, Tanja;  
Hümmer, Benedikt; Koller, Maria; Holzhammer, Uwe  
1123: IT systems and infrastructures for a CO2-free energy supply- Sauerbrey, Juliane;  
Warweg, Oliver

17:00 - 18:30

#### Paper sessions P21 - P24

R1-R5

##### P21 Electricity Markets II

R1

Chair: João Tomé Saraiva

1219: Correlation between Generator Trips and Locational Marginal Prices- Alharbi,  
Abdulelah (1,2); You, Shutang (1); Liu, Yilu (1,3)  
1223: Day-ahead Electricity Price Forecasting using Adaptive Combination Method in  
Japanese Spot Market- Omura, Manaka (1); Fujimoto, Yu (1); Ishii, Hideo (1); Hayashi,  
Yasuhiro (1); Sawa, Toshiyuki (2); Sasaki, Hiroto (2); Fukuyama, Naoto (2)  
1161: Design and evaluation of a last-minute electricity market considering local grid  
limitations- Grasenack, Martin (1); Jürgens, Lucas (1); Meißner, Anna Christin (2);  
Knorr, Kaspar (3); Dreher, Alexander (3); Vogt, Mike (3); Giron, Pedro (3)  
1251: Energy-only versus capacity markets: impact of risk-averse investors  
considering hedging opportunities- Tao, Zhenmin (1,2); Moncada, Jorge Andres (1,2);  
Poncelet, Kris (1,2); Delarue, Erik (1,2)

1178: EU electricity market design issues and solutions for increased RES penetration- Crasta, Cletus John (1); Agabus, Hannes (2); Palu, Ivo (3)

## P22 Balancing II

Chair: Ronnie Belmans

1382: Are standard load profiles suitable for modern electricity grid models?- Peters, Dorothee; Völker, Rasmus; Schuldt, Frank; von Maydell, Karsten

1118: Assessment of flexibility in different ancillary services for the power system- Sæle, Hanne (1); Oleinikova, Irina (2); Morch, Andrei (1); Degefa, Merkebu Zenebe (1)

1242: Capacity Subscription Tariffs for Electricity Distribution Networks: Design Choices and Congestion Management- Hennig, Roman J (1); Jonker, Martijn (2); Tindemans, Simon H (1); de Vries, Laurens J (1)

1373: Considering flexibility in network expansion planning: present practices and regulatory conditions- Morch, Andrei (1); Amaro, Nuno (2); Migliavacca, Gianluigi (3)

1261: Cross-border trading via market coupling in South East Europe region- Makrygiorgou, Despoina I.; Andriopoulos, Nikos L.; Dikaiakos, Christos; Papaioannou, George P.

## P23 Demand Response II

Chair: Hossein Farahmand

1121: The Definition of the Demand Response Interface for Next-Generation Smart Meters- Repo, Sirpa; Gröhn, Mikko; Saarinen, Lari; Soronen, Sauli; Aalto, Joni; Kuosmanen, Tuomo

1129: A hierarchical, market-based, non-cooperative game-theoretic approach to projecting flexible demand-side resources: Towards more realistic demand response-integrated, long-term energy planning models- Mohseni, Soheil (1); Brent, Alan C. (1,2); Kelly, Scott (3)

1201: Comparative Assessment of Demand Response Participation in Selected European Balancing Markets- Maioui, Yasmine (1); Mendes, Gonçalo (1); Honkapuro, Samuli (1); Landeck, Jorge (2); O'Callaghan, Tim (3); Chaves, Jessica (4); Krivoglazova, Aleksandra (4); Pinho da Silva, Nuno (5); Souza e Silva, Nuno (5); Klein, Lurian (2)

1197: Flexibility demand and resources in low-carbon energy system- Sihvonen, Ville; Honkapuro, Samuli; Laaksonen, Petteri; Partanen, Jarmo

1370: Consumer-centric Electricity Market: Review of key European projects- IBN SAIF, A. U. N.; K. Khadem, Shafiuzzaman

## P24 Energy Communities I

Chair: Andrej Gubina

1127: Exploiting renewable energy and flexibility potential via local cooperation- Wanapinit, Natapon; Thomsen, Jessica

1235: Assessing the Impacts of Community Energy Systems on the German Electricity Market: An Agent-based Analysis- Sarfarazi, Seyedfarzad (1); Deissenroth, Marc (2); Bertsch, Valentin (3)

1212: Energy Communities: From European Policy to Energy Models- Alaton, Clément (1); Contreras-Ocaña, Jesus Elmer (2); Döring, Thomas (1); de Radiguès, Philippine (1); Tounquet, Frédéric (1)

1353: Transactive local energy market- Andriopoulos, Nikolaos (1); Bachoumis, Athanasios (1); Alefragis, Panayiotis (2); Birbas, Alexios (1)

1193: Joint analysis of the Portuguese and Spanish NECP for 2021-2030- Oliveira, Andre Rodrigues de (1); Collado, José Villar (1); Lopes, João Abel Peças (1); Saraiva, João Paulo Tomé (1); Fonseca, Nuno Soares (1); Doménech, Salvador (2); Campos, Fco. Alberto (2)

## P25 Energy Efficiency

Chair: Dirk Van Hertem

1364: The role of energy efficiency in CO2 mitigation - Economy wide rebound effect in ASEAN countries- Robaina, Margarita; Arshad, Zeeshan

R2

R3

R4

R5

1230: Exploring household's flexibility of smart shifting atomic loads to improve power grid operation and cost efficiency- Fjelldal, Bjørnar; Fodstad, Marte; Rosenlund, Gjert; Sæle, Hanne; Zenebe Degefa, Merkebu  
 1280: Eco-Labeling of Green Energy Tariffs - Analysis of the Influence of Eco-labels on Consumer Behavior- Lehmann, Nico; Beikirch, Philipp  
 1287: Optimal Sizing of a BESS Providing Multiple Services to the System: a Stochastic Approach- Siface, Dario  
 1221: Is the climate neutrality the illusion?- Mielczarski, Wladyslaw

## THURSDAY, 17.09.2020

09:00 - 10:30

### Paper session P31 - P35

#### P31 Electricity Markets III

Chair: Fushuan Wein

1154: Evolutionary Hedging Model for Power Trading to Maximize Daily Profits- Ettlin, Adrian

1318: Graphical Modeling for Analysis of Hourly Electricity Demand and Market Price- Kaneko, Nanae (1); Fujimoto, Yu (2); Hayashi, Yasuhiro (1)

1238: Handling of the Rebound Effect in Independent Aggregator Framework- Broka, Zane;

Baltputnis, Karlis

1183: Impact assessment of costly remedial actions: redispatching vs countertrading- DIOP, Tamsir

1215: Impact on hydropower plant income from trading in reserve capacity markets- Haugen, Mari; Schäffer, Linn Emelie; Mo, Birger; Helseth, Arild

#### P32 Energy Communities II

Chair: Poria Divshali

1134: Fair Energy Sharing in Local Communities: Dynamic Participation of Prosumers- Perger, Theresia

1155: Forming a Local Market using a Virtual Energy Community- Divshali, Poria (1); Kulmala, Anna (1); Järventausta, Pertti (2)

1269: Modeling Cross-border Energy Communities on a Distribution Grid Level- Stroink, Andreas (1); Wawer, Tim (1); Hurink, Johann L. (2)

1180: Local Energy Markets for Energy Communities with Grid Constraints- Rocha, Rogério;

Collado, José; Soares, Tiago; Retorta, Fábio

1300: Motivations for integrating a renewable energy community in Europe: evidence for Spain and Portugal- Soeiro, Susana; Ferreira Dias, Marta

#### P33 Demand response and flexibility I

Chair: Natapon Wanapinit

1236: Flexibility markets to procure system services: CoordiNet project- Madina, Carlos (1); Gómez-Arriola, Inés (1); Santos Múgica, Maider (1); Jimeno, Joseba (1);

Kessels, Kris (2); Chaves, José Pablo (3); Trakas, Dimitris (4); Ruwaida, Yvonne (5)

1119: Flexibility potential at Norwegian households - customer evaluations and system benefits- Sæle, Hanne

R1-R5

R1

R2

R3

1167: Estimating Operational Flexibility from Active Distribution Grids - Savvopoulos, Nikolaos; Hatziairgiou, Nikos  
 1247: Unlocking Flexibility in Multi-Energy Systems: A Literature Review- Kleinschmidt, Verena (1); Hamacher, Thomas (1); Hesamzadeh, Mohammad Reza (2); Perić, Vedran (1)  
 1330: KPI for Managing and Controlling a Demand Response Participation System- de São José, Debora; Faria, Pedro; Silva, Catia; Vale, Zita

#### P34 Electricity Markets IV

R4

Chair: Yashar Ghiassi

1384: Regret analysis of investment decisions under uncertainty in an integrated energy system- Möbius, Thomas; Riepin, legor  
 1270: Solving the riddle of energy transition: Renewable gas for transport and renewable electricity for heating- Shirizadeh, Behrang (1,2)  
 1250: Redispatch patterns of energy market and reserve power plants in Germany- Billault-Chaumartin, Florence; Eising, Manuel; Motte Cortés, Agustín  
 1256: Analyzing Potential Schemes for Regulated Electricity Price Components in Local Energy Markets- Schreck, Sebastian (1,2); Thiem, Sebastian (1); Amthor, Arvid (1); Metzger, Michael (1); Niessen, Stefan (1,2)  
 1289: Domestic heat pumps as a source of primary frequency control reserve- Manner, Pekka (1); Alaperä, Ilari (1); Honkapuro, Samuli (2)

#### P35 Innovative approaches in energy markets I

R5

Chair: Yaser Tohidi

1187: Simulation of Hydro Stations in the Iberian Market using an Agent-Based Model considering several hydro conditions- Sousa, Jose Carlos (1); Tomé Saraiva, João (2)  
 1208: The role of nuclear power in a modelled carbon-free Finnish power system- Koivunen, Tero Johannes; Syri, Sanna; Millar, Robert John  
 1157: Risk-Averse Aggregator of Controllable Loads as Virtual Battery Providing Multiple Services- Herre, Lars  
 1227: Modelling of Environmental Constraints for Market-based Hydropower Optimization Problems – a Review- Schäffer, Linn Emelie (1); Bustos, Ana Adeva (2); Helseth, Arild (2); Bakken, Tor Haakon (1); Korpås, Magnus (1)  
 1111: WEGA and MInGa – Considering regional transmission capacities for global gas market models- Ganz, Kirstin (1); Günther, Maik (2); Kern, Timo (1)

10:30 – 11:00

#### Virtual Coffee break

R1

11:00 – 12:30

#### Keynote session: Electricity Market Analysis I

R1

Prof. Sonja Berlijn: RD&I needed for an European energy system with no net emissions of greenhouse gases in 2050  
 Prof. Mahmoud Fotouhi: Regulatory Incentives for Distribution System Reliability: Principles, Practical Examples, and current trends

12:30 – 13:30

#### Virtual Lunch break

R1

13:30 – 15:00

#### Keynote session: Electricity Market Analysis II

R1

Prof. Ross Baldick: An increased role for the demand side in renewable integration  
 Prof. Nikolaos Hatziairgiou: Participation of Local Energy Communities in Energy Markets

15:00 – 15:30

#### Virtual Coffee break

R1

15:30 – 17:00

#### Paper sessions

R1-R5

#### P41 Electricity Markets V

R1

Chair: Maximilian Borning

1216: Liberalization of the electricity market in Ukraine in 2019 – Lessons learned- Stuchynska, Natalia (1); Röben, Felix (2,3)  
 1260: Investigating Feasibility and Necessity for Mixed-Integer Linear Programming in an Integrated Grid and Power Market Simulation- Hein, Lukas; Borning, Maximilian; Moser, Albert

1224: Load Profile Segmentation for Electricity Market Settlement- Gunsay, Mehmet Murat (1); Bilir, Canser (1); Poyrazoglu, Gokturk (2)

1100: Market Power Assessment in Regional Smart Markets- Zeiselmaier, Andreas; Harper, Ryan; Simon, Köppl; Alexander, Bogensperger

1162: Market Response for Real-Time Energy Balancing: Simulation using Field Test Data- Franz, Julian (1); Röben, Felix (1,2)

### P42 Energy Policy

Chair: Hanne Saele

1205: Improving the performance of solving large scale mixed-integer energy system models by applying the Fix-and-Relax method- Yilmaz, Hasan Ümitcan (1); Mainzer, Kai (2); Keles, Dogan (3)

1380: A proposal of a new time base white certificate evaluation- Sorrentino, Nicola; Menniti, Daniele; Pinnarelli, Anna; Liutic, Claudia; Aura, Caterina; Mendicino, Luca; Mercuri, Michele

1210: Case studies analysis of REMIT regulation- Zani, Alessandro (1); Spisto, Amanda (1); Vitiello, Silvia (1); Grisi, Paolo (2); Siface, Dario (2); Gelmini, Alberto (2); Geracitano, Antonio (2)

1174: Cost-benefit Analysis on a New Access Tariff: Case Study on the Portuguese System- Gomes, Phillipe (1,2); Saraiva, João (2,3); Fidalgo, José (2,3)

1120: Household customers' assessment to capacity based distribution grid tariff- Sæle, Hanne

### P43 Energy Prices and Forecasting

Chair: Mohammad Reza Hesamzadeh

1106: Is Feed in Generation Pressing the Total Generation Cost in Portugal?- Silva, Manuel Alves (1); Sousa, José Carlos (2); Saraiva, João Tomé (1,3)

1234: Market Participation of Distributed Energy Resources for offering Flexibility Services- Natale, Nicola; Pilo, Fabrizio; Pisano, Giuditta; Soma, Gian Giuseppe

1211: Impacts of forecasting errors in centralized and decentralized electricity markets- Pihl, Hjalmar; Brolin, Magnus

1199: Tracing carbon dioxide emissions in the European electricity markets- Schäfer, Mirko (1); Tranberg, Bo (2); Jones, Dave (3); Weidlich, Anke (1)

1105: Combining Machine Learning and Optimization for Efficient Price Forecasting- Helseth, Arild (1); Sveen, Eivind Bekken (2)

### P44 Energy Storage

Chair: Dina Khastieva

1122: Economic feasibility analysis for a residential building in Tallinn with high electricity consumption. A case study with suitable storage for the Estonian climate.- Rikkas, Rebecka

1156: Impact of Imbalance Settlement System Design on Risk-Averse Energy Storage- Herre, Lars

1291: Opening the ancillary service market: new market opportunities for energy storage systems in Italy- Schwidtal, Jan Marc (1); Zeffin, Federico (1); Agostini, Marco (2); Bignucolo, Fabio (1); Lorenzoni, Arturo (1)

1147: Profitability Study of Floating PV and Pumped Storage Hydropower Plant- Petrichenko, Roman (1); Petrichenko, Lubov (1); Slivikas, Aivaras (2); Gudzius, Saulius (2); Sauhats, Antans (1); Zima-Bočkarjova, Marija (3)

1319: The Role of Energy Storage in High-Renewables Electricity Markets- Koltsaklis, Nikolaos E. (1); Panapakidis, Ioannis P. (2); Christoforidis, Georgios C. (1); Parisses, Constantinos E. (1)

1138: How to achieve a complete decarbonization of the Italian energy system by 2050?- Lanati, Fabio; Gaeta, Maria

### P45 RES I

Chair: Farzin Golzar

1342: Impact of Wide-Scale Data Centre Growth on the Operation of Power Systems with Large Shares of Renewables- Lahon, Rinalini; Stanley, Sarah; Devine, Mel; O'Dwyer, Ciara; Flynn, Damian

R2

R3

R4

R5

1150: Techno-economic impact of solar power system integration on a DSO-  
 Nigmatulina, Nelli; Mashlakov, Aleksei; Belonogova, Nadezda; Honkapuro, Samuli  
 1229: Business Model Design for Rural Off-the-Grid Electrification and Digitalization  
 Concept- Dibaba, Henock; Vanadzina, Evgenia; Mendes, Gonçalo; Pinomaa, Antti;  
 Honkapuro, Samuli  
 1198: Continuous-time scheduling of a hydrothermal system with integration of  
 offshore wind power- Øvstebø, Mari Lund (1); Naversen, Christian Øyn (1); Helseth,  
 Arild (2); Farahmand, Hossein (1)  
 1226: Geo-Spatial Analysis of Renewable Energy Potential in the European Union Under  
 Consideration of Social, Environmental and Technical Limitations- Kuprat, Mark  
 Sebastian; Huck, Daniel Edward

17:00 – 18:30

**EEM20 Forecasting Competition**

F1 Winning Models of EEM20 Forecasting Competition

Chair: Jethro Browell

1397 "Probabilistic wind power forecasting combining deep learning architectures" -  
 Eric Looza Arends, Simon J. Watsony, Sukanta Basu, Bedassa Cheneka  
 1396: "Day-ahead Wind Power Predictions at Regional Scales: Post-processing  
 Operational Weather Forecasts with a Hybrid Neural Network" - Sukanta Basu, Simon  
 J. Watsony, Eric Looza Arends, Bedassa Cheneka  
 1395 "Quantile Combination for the EEM20 Wind Power Forecasting Competition" -  
 Jethro Browell, Ciaran Gilbert, Rosemary Tawn, Leo May  
 1394 "Probabilistic Forecasting of Regional Wind Power Generation for the EEM20  
 Competition: a Physics-oriented Machine Learning Approach" - Kevin Bellinguer,  
 Valentin Mahler, Simon Camal, Georges Kariniotakis

R1

R1

**FRIDAY, 18.09.2020**

09:00 – 10:30

**Paper sessions**

P51 Electricity Markets VI

Chair: Lennart Söder

1112: Nordic Balancing Markets: Market Rules and Solutions- Khodadadi, Abolfazl;  
 Herre, Lars; Shinde, Priyanka; Eriksson, Robert; Söder, Lennart; Amelin, Mikael  
 1361: Two-step Approach Simulating the Unit Commitment of Highly Complex Hydraulic  
 Systems in the Future European Power System- Wirtz, Peter; Siemonsmeier, Marius;  
 Schönefeld, Maik; Moser, Albert  
 1253: Modeling flow-based market coupling: Base case, redispatch, and unit  
 commitment matter- Byers, Conleigh; Hug, Gabriela  
 1333: To do or not to do: Prosumers strategic decision to participate in the distributed  
 electricity market- Singh, Kamini; Singh, Anoop  
 1362: System Platform Enabling Peer-to-Peer Electricity Market Model for Off-Grid  
 Microgrids in Rural Africa- Demidov, Iurii (1); Dibaba, Henock (1); Pinomaa, Antti (1);  
 Honkapuro, Samuli (1); Nieminen, Marko (2)

**P52 Innovative approaches in energy markets II**

Chair: José Villar

R1-R5

R1

R2

1166: Peer-to-peer trading under subscribed capacity tariffs – an equilibrium approach- Bjarghov, Sigurd (1); Askeland, Magnus (1,3); Backe, Stian (2)  
1124: LabChain: an Interactive Prototype for Synthetic Peer-to-Peer Trade Research in Experimental Energy Economics- Johanning, Simon (1); Retzlaff, Nancy (1); Lämmel, Philipp (2); Dittwald, Benjamin (2); Bruckner, Thomas (1)  
1276: Power-to-Peer: a blockchain P2P post delivery bilateral local energy market- Mello, João; Villar, José; Bessa, Ricardo; Amorim-Lopes, Mário; Martins, João; Pinto, Miguel  
1354: Taxonomy of Security Threats in Energy Systems- Romanenko, Aleksei (3); Tanjimuddin, Md (2); Raussi, Petra (1); Aro, Matti (1); Tikka, Ville (3); Honkapuro, Samuli (3)  
1164: Peer-to-peer electricity trading and the distribution system operator (DSO) under EU law- Vanhove, Simon

## P53 RES II

Chair: Anna Pinnarelli

1220: Wind power impact on market power on the Finnish electricity market- Hansson, Helena Sofia; Farsaei, Anahita; Syri, Sanna  
1175: Investment decision support for zero subsidy wind and solar – An optimization based simulation approach- Rothenberg, Florian (1,2); Zimmermann, Florian (1); Braun, Sebastian (1); Keles, Dogan (1); Fichtner, Wolf (1)  
1188: The impact of wind power on electricity market competition in the Baltic countries- Coccia, Alessio (1,2); Farsaei, Anahita (1); Syri, Sanna (1)  
1381: Sharing energy management model for renewable community self-consumption- Vizza, Pasquale; Menniti, Daniele; Sorrentino, Nicola; Pinnarelli, Anna; Brusco, Giovanni; Barone, Giuseppe  
1153: Updating renewable energy certificate markets via integration of smart meter data, improved time resolution and spatial optimization- Bogensperger, Alexander; Zeiselmaier, Andreas

## P54 System operation, modelling, balancing and AS

Chair: João P. S. Catalão

1137: Nodal and fixed price coexistence in distribution networks with optimal investment planning and tariff design- Savelli, Iacopo; Morstyn, Thomas; Hepburn, Cameron  
1272: A proposed methodology for modelling the combined load of electric roads and households for long-term grid planning- Berg, Kjersti (1); Hjelkrem, Odd (2); Torsæter, Bendik Nybakk (1)  
1293: The Role of TSO-DSO Coordination in Flexibility Asset Prequalification- Baltputnis, Karlis (1); Repo, Sirpa (2); Mutanen, Antti (3)  
1104: Assessing the Impact of Investments in Distribution Planning- Macedo, Pedro Miguel (1); Fidalgo, José Nuno (1,2); Saraiva, João Tomé (1,2)  
1359: A Dynamic Collusion Analysis Framework Considering Generation and Transmission Systems Maintenance Constraints- Tabatabaei, Mostafa (1); Nazar, Mehrdad Setayesh (1); Shafie-khah, Miadreza (2); Catalao, Joao P. S. (3)

## P55 Innovative Modelling Approaches

Chair: Fushuan Wein

1241: Modeling curtailment in Germany: How the spatial resolution impacts line congestion – Frysztacki, Martha Maria; Brown, Tom  
1386: Maximizing Flexibility in a Power System with Reserve, Renewables, Active Demand and Storage – Mazidi, Peyman (1); Tohidi, Yaser (2); Hesamzadeh, Mohammad Reza (3)  
1368: Eco-innovation and firm performance in European highly energy consumers and polluting sectors – Mara Madaleno, Margarita Robaina, Marta Ferreira Dias, Mónica Meireles  
1388: Hierarchical Balancing in Zonal Markets – Papavasiliou, Anthony (1); Bjorndal, Mette (2); Doorman, Gerard (3); Stevens, Nicolas (4)  
1387: Optimal charging scheduling for battery swapping for peak load management for the grid- Sindha, Jignesh

R3

R4

R5

	<b>Virtual coffee break</b>	R1
<b>10:30 – 11:00</b>	<b>Keynote session: Long Term System &amp; Market Development I</b>	R1
	Prof. Derek W. Bunn: Ensuring Resource Adequacy in the Post Liberalised Electricity Market	
<b>11:00 – 12:30</b>	Prof. Christian von Hirschhausen: Top-down bottom-up modeling of a sustainable energy and electricity system: Conceptual issues and recent applications towards 100% renewables	
	<b>Virtual Lunch break</b>	R1
<b>12:30 – 13:30</b>	<b>Keynote session: Long Term System and Market Development II</b>	R1
<b>13:30 – 15:00</b>	Prof. Ronnie Belmans: The electricity future: bright while uncertain and unclear	
	<b>Virtual coffee break</b>	R1
<b>15:00 – 15:30</b>	<b>Industry Session</b>	R1
<b>15:30 – 17:00</b>	<b>I1 Long Term Market Development – Toward Merchant Renewables</b>	
	Aurora Energy Research, Nord Pool AS	
	<b>Closing &amp; Award Session</b>	R1
<b>17:00 – 17:30</b>	Assoc. Prof. Mohammad Reza Hesamzadeh	
	<i>Prize Ceremony &amp; Announcement of next EEM</i>	