FINAL PROGRAMME

Date & time	*Event*	*Room*
Tuesday 26 September 2017		
9.00-11.30 15.30-19.00	Registration (for the whole Conference, and first-day only)	Tutorial/Workshops area (morning), Foyer (afternoon)
9:00-11:00	Tutorial – Increasing the hosting capacity of the grid (part 1). Math Bollen, Luleå University of Technology, Skellefteå, Sweden	Room 1
9:00-11:00	Tutorial – Energy Internet: Concepts and Key Technologies, Yan Zhang, University of Oslo, Norway	Room 2
9:00-11:00	Tutorial – Smart metering architecture to enable and simulate novel services in smart grids. Edoardo Patti, Politecnico di Torino, Italy	Room 3
9:00-11:00	Workshop – Industry prospects for microprocessor based devices and energy storage solutions. Coordinated by Vahid Madani, Pacific Gas & Electric Co., USA – organised in collaboration with *IEEE Italy Section PES Chapter PE31*	Room 4
11:00-11:30	Coffee break	
11:30-13:30	Tutorial – Increasing the hosting capacity of the grid (part 1). Math Bollen, Luleå University of Technology, Skellefteå, Sweden	Room 1
11:30-13:30	Tutorial – Energy Internet: Concepts and Key Technologies, Yan Zhang, University of Oslo, Norway	Room 2
11:30-13:30	Workshop – RESERVE: Enabling 100% Renewables with new grid codes	Room 3
11:30-13:30	Tutorial – IEEE PES Awards. Vahid Madani, Pacific Gas & Electric Co., USA – organised in collaboration with *IEEE Italy Section PES Chapter PE31*	Room 4
11:30-13:30	Workshop – New deals for the consumers: innovations from design to smart operation. Coordinated by Roberto Napoli, Politecnico di Torino, Italy – organised in collaboration with the *Professional Association of the Engineers*	Room 5
13:30-14:30	Lunch	
14:30-16:30	Tutorial – Increasing the hosting capacity of the grid (part 2). Fainan Hassan, Turbo Power Systems, UK	Room 1
14:30-16:30	Tutorial – HVDC Transmission Systems, Neville Watson, University of Canterbury, New Zealand – organised in collaboration with *IEEE Italy Section PES Chapter PE31*	Room 2
14:30-16:30	Tutorial – Introduction to Detection of Non-Technical Losses using Data Analytics, Patrick Glauner, University of Luxembourg	Room 3
14:30-16:30	Workshop – SUCCESS: Securing the electrical network of the future	Room 4
14:30-16:30	Workshop – IEEE PES Careers & Scholarship Plus in Europe: an important opportunity for students of the Electrical Engineering Programs and for relevant Players. Coordinated by Carlo Alberto Nucci, University of Bologna, Italy	Room 5
16:30-17:00	Coffee break	
17:00-19:00	Tutorial – Increasing the hosting capacity of the grid (part 2). Fainan Hassan, Turbo Power Systems, UK	Room 1
17:00-19:00	Tutorial – HVDC Transmission Systems, Neville Watson, University of Canterbury, New Zealand	Room 2
17:00-19:00	Tutorial – Introduction to Detection of Non-Technical Losses using Data Analytics, Patrick Glauner, University of Luxembourg	Room 3
17:00-19:00	Tutorial – IEEE PES Awards (repeat). Vahid Madani, Pacific Gas &	Room 4

	Electric Co., USA – organised in collaboration with *IEEE Italy Section PES Chapter PE31* logo	
17:00-19:00	Workshop – Global real-time superlab: EU-USA transatlantic co-simulation live demo	Energy Center
19:00	End of Tutorials and Workshops	
19:30-21:30	Welcome reception	
Wednesday 27 September 2017		
8:15-18:30	Registration	Foyer
9:00-10:10	Conference Opening	Aula Magna
10:10-10:50	Plenary Speech - Marcelo Masera (Joint Research Centre of the European Commission): Lessons learned from smart grids projects in Europe	Aula Magna
10:50-11:20	Coffee break	
11:20-13:00	Panel Session - Inside EU Project MIGRATE – Power Quality Challenges and Solutions at Very High Shares of Renewables in Transmission	Aula Magna
13:00-14:00	Lunch	
14:00-16:00	**Parallel sessions**	Rooms 1-7
	W11 – Special Session: The Control of Voltage and Frequency in Future Power Systems using the Web of Cells Concept – Contributions from the ELECTRA REX Researcher Mobility Scheme **Chair: Graeme Burt (University of Strathclyde, UK)**	Room 1
	1273 Development of a Planning Tool for Network Ancillary Services Using Customer-Owned Solar and Battery Storage *Antonio Del Giudice, Adrian Wills, Andrew Mears*	
	1300 Adaptive Frequency Containment and Balance Restoration Controls in a Distribution Network *Evangelos Rikos, Mattia Cabiati, Carlo Tornelli*	
	1307 Experimental Validation of BDI Agents for Distributed Control of Electric Power Grids *Diego Issicaba, Alexander M. Prostejovsky, Mauro Augusto da Rosa, Henrik W. Bindner*	
	1328 A Case Study of an Adaptive Protection Scheme for the Web-of-Cells Concept *Maria Valov, Julia Merino*	
	1411 Multi-Goal Optimization of Competing Aggregators using a Web-of-Cells Approach *Pamela MacDougall, Bob Ran, George Huitema, Geert Deconinck*	
	1272 Development of Measurement-Based Load Models for the Dynamic Simulation of Distribution Grids *Eleftherios Kontis, Mazheruddin Syed, Efren Guillo-Sansano, Theofilos Papadopoulos, Andreas Chrysochos, Grigoris Papagiannis, Graeme Burt*	
	W12 - Distribution System Models and Power Flow Calculations **Chair: Luis (Nando) Ochoa**	Room 2
	1379 Algorithms of Renumbering Nodes in Distribution Systems for Fast Computation of Power Flow *Ryosuke Akiyoshi, Nobuyuki Yamaguchi*	
	1184 Linear Power-Flow Models in Multiphase Distribution Networks *Andrey Bernstein, Emiliano Dall'Anese*	
	1120 Improved Radial Load Flow for the Smart Distribution Grid *Esther Romero-Ramos, Angel Luís Trigo-García, José Antonio Romero-Romero*	
	1289 On the Impact of Load Modelling on Distribution Network Studies *Benoît Bletterie, Aadil Latif, Paul Zehetbauer, Sergio Martínez Villanueva, Esther Romero-Ramos, Herwig Renner*	
	1371 Probabilistic Modeling of Smart Residential Energy Systems *J. M. Lujano-Rojas, G. J. Osório, R. Dufo-López, J.L. Bernal-Agustín, Miadreza Shafie-khah, João Catalão*	
	1245 Dynamic Equivalent Modelling of Active Distribution Networks for TSO-DSO Interactions *Federico Silvestro, Francesco Conte, Fabio D'Agostino, Stefano Massucco, Giovanni Palombo, Mattia Cabiati, Claudio Bossi*	
	1188 Modeling and Design of Hybrid Distribution Network: Operational and Technical Features *Aysar Musa, Syed Muhammed Rehan, Lorenzo Sabug, Jr., Ferdinanda Ponci, Antonello Monti*	

W13 - Storage System Operation **Chair: Andrea Mammoli**		Room 3
1053	Mitigating Load Forecast Errors for Suppliers by Utilizing Energy Storage at a Substation Level *Xiaohe Yan, Qiuyang Ma, Heather Wyman-Pain, Ran Li, Chenghong Gu, Furong Li*	
1172	Active Operation of Hydrogen Fuelling Stations to Support Renewable Integration *Wei Sun, Gareth Harrison*	
1208	Ancillary Services Provided by BESS in a Scenario Characterized by an Increasing Penetration of Unpredictable Renewables *Morris Brenna, Federica Foiadelli, Michela Longo, Dario Zaninelli*	
1179	Comparative Analysis of Online Estimation Algorithms for Battery Energy Storage Systems *Nikos Michailidis, Napoleon Bezas, George Misyris, Dimitrios Doukas, Antonios Marinopoulos, Dimitris Labridis*	
1336	Optimal Management of an Electric Storage System with Multiple Network Connection Points *Claudio Carlini, Giacomo Viganò, Diana Moneta, Chiara Michelangeli*	
1157	Battery Capacity Estimation for Building-Integrated Photovoltaic System: Design Study of a Southern Norway ZEB House *Mohammed Yassin, Mohan Kolhe, Aimie Azmi*	
1308	Simulation and Optimization of Integration of Hybrid Renewable Energy Sources and Storages for Remote Communities Electrification *Morris Brenna, Michela Longo, Wahiba Yaici, Tamrat Demllie Abegaz*	
W14 - Phasor Measurement Units and Wide Area Control **Chair:** Vahid Madani		Room 4
1147	A White Rabbit Synchronized PMU *Reza Razzaghi, Asja Derviškadić, Mario Paolone*	
1388	Fault-Tolerant PMU Placement using Algebraic Connectivity of Graphs *Mahmoud El Hosainy, Karim Seddik, Ayman Elezabi*	
1305	Assessment of Higher Harmonics Influence to PMU Measurement Accuracy *Mari Löper, Uku Salumäe, Jako Kilter*	
1074	Detection and Mitigation of Cascading Failures in Interconnected Power Systems *Evangelia Xypolytou, Tanja Zseby, Joachim Fabini, Wolfgang Gawlik*	
1385	Evaluation of a Dynamic Phasor PSS using a One-Machine Infinite Bus System *Syunya Kawakami, Nobuyuki Yamaguchi*	
1149	Designing New Proactive Control-Room Strategies to Decrease the Need for Automatic Reserves *Martin Nilsson, Lennart Söder, Robert Eriksson, Mehrdad Ghandari, Göran N. Ericsson*	
1232	Application of Wide-area Controls in Australian Power System *Arash Vahidnia, Gerard Ledwich, Rizah Memisevic, Lasantha Meegahapola*	
W15 - Customer Data and Load Profiles **Chair: Ying-Yi Hong**		Room 5
1339	Deep Learning Versus Traditional Machine Learning Methods for Aggregated Energy Demand Prediction *Nikolaos Paterakis, Elena Mocanu, Madeleine Gibescu, Bart Stappers, Walter van Alst*	
1363	Using Cluster Information to Predict Individual Customer Consumption *Adrian Spataru, Marc Francu*	
1323	Shapelet based Classification of Customer Consumption Patterns *Bogdan-Petru Butunoi, Marc Francu*	
1150	Parametrization of Stochastic Load Profile Modeling Approaches for Smart Grid Simulations *Daniel Gross, Pascal Wiest, Krzysztof Rudion, Alexander Probst*	
1152	Statistical Modelling of Load Profiles Incorporating Correlations using Copula *Raoul Bernards, Johan Morren, Han Slootweg*	
1252	Distribution Grid Topology Validation and Identification by Graph-based Load Profile Analysis *Mark Stefan, Mario Faschang, Stephan Cejka, Konrad Diwold, Alfred Einfalt, Albin Frischenschlager*	
1051	Modeling optimal deployment of smart home devices and battery system using MILP *Milan Vukasovic, Bojan Vukasovic*	
1198	Energy Disaggregation based on Semi-supervised Matrix Factorization using Feedback Information from Consumers *Ayumu Miyasawa, Masako Matsumoto, Yu Fujimoto, Yasuhiro Hayashi*	

	W16 – Power Quality **Chair: Angela Russo**		Room 6
	1052	Consequences of Smart Grids for Power Quality Overview of the Results from CIGRE Joint Working Group C4.24/CIRED *Math Bollen, Sarah Rönnberg, Francisc Zavoda, Roberto Langella, Sasa Djokic, Philip Cuifo, Jan Meyer, Vladimir Cuk*	
	1092	Impact of Residential PV on Harmonic Levels in New Zealand *Jeremy Watson, Neville Watson*	
	1302	Analysis of the Impact on Power Quality During the Recharge of Electric Vehicles and Vehicle-to-Grid Functionality *Daniel Robson Pinto, Vitor Torquato Arioli, Gláucio Roberto, Tessmer Hax, Ricardo Torquato Borges, Wendell William Teixeira*	
	1342	Experimental Evaluation and Classification of LED Lamps for Typical Residential Applications *Xiao Xu, Adam Collin, Sasa Djokic, Roberto Langella, Alfredo Testa, Jiri Drapela*	
	1284	Design Recommendations for Future Household Devices concerning their High Frequency Emission in the Range between 2 kHz and 150 kHz *Thomas Wohlfahrt, Christian Waniek, Johanna Myrzik, Jan Meyer, Peter Schegner*	
	1298	Supraharmonics: Root Causes and Interactions between Multiple Devices and the Low Voltage Grid *Christian Waniek, Thomas Wohlfahrt, Johanna Myrzik, Jan Meyer, Peter Schegner, Matthias Klatt*	
	1020	Analysis of Solar Irradiance Variations as a Source of Flicker Associated with PV Systems *Antti Niemi, Matti Lehtonen, Hossam AbdelHadi*	
	1112	Characterizing Three-Phase Unbalanced Dips through the Ellipse Parameters of the Space Phasor Model *Azam Bagheri, Math H.J Bollen*	
	W17 – Transmission Systems **Chair: Pierluigi Mancarella**		Room 7
	1086	Optimal Transmission Line Switching Incorporating Dynamic Line Ratings *Shang Zhang, Chen-Ching Liu, Xueping Gu, Tao Wang*	
	1103	Methodology for the Determination of Real-Time Dynamic Line Ratings for Secure Operation of Overhead Conductors *Bonface Ngoko, Sugihara Hideharu, Funaki Tsuyoshi*	
	1001	Study on the Mechanism of AC Tie-line Power Fluctuation for a Two-area Interconnected Power System *Weiwei Zhao, Bin Xiao, Zongxin Zhang, Ping Liang*	
	1230	Optimal PV Curtailment using OPF with Transmission-Network Constraints Considering Locations of PV Systems *Taisuke Masuta, Junya Ito, Taku Kondo, Hideharu Sugihara, Nobuyuki Yamaguchi, Hoang Viet Nguyen*	
	1236	Impact on Rotor Angle Stability with High Solar-PV Generation in Power Networks *Enkhtsetseg Munkhchuluun, Lasantha Meegahapola, Arash Vahidnia*	
	1173	Searching for Plausible N-k Contingencies Endangering Voltage Stability *Tilman Weckesser, Thierry Van Cutsem*	
	1175	Determination of Remedial Actions Taking into Account Various Operational Rules *Steffen Schlegel, Dirk Westermann*	
	1358	A Hybrid of Genetic Algorithm and Differential Evolution for the Security Constrained Unit Commitment Problem *Sudarshan Murali, Anupam Trivedi, Dipti Srinivasan*	
16:00-16:30	Coffee break		
16:30-18:30	**Parallel sessions**		Rooms 1-7
	W21 – Reliability **Chair: Carmen Lucia Tancredo Borges**		Room 1
	3016	Evaluation of Reliability Indices Using Monte Carlo Simulation Accounting Time to Switch *Sajjad Asefi, Hossein Afrakhte*	
	1100	Qualitative Comparison of Techniques for Evaluating Performance of Short Term Power System Reliability Management *Evelyn Heylen, Matthias Troffaes, Behzad Kazemtabrizi, Geert Deconinck, Dirk Van Hertem*	
	1174	Optimization Approach for the Allocation of Remote-Controlled Switches in Real-scale Electrical	

	Distribution Systems *Juan C. López, Marcos J. Rider, Ariovaldo V. Garcia, Patricia L. Cavalcante, Luana L. Martins, Luana F. Miranda*
1075	Smart Distribution and Optimisation of the Number and Position of Reclosers to Minimise Equipment Damage *Ewald Erasmus, Raj Naidoo*
1078	Advanced Aging Failure Model for Overhead Conductors *Wilson Vasquez, Dilan Jayaweera, Jesus Jativa*
1347	Reliability Evaluation Framework Considering OHL Emergency Loading and Demand Response *Mohamed Galeela, Konstantinos Kopsidas, Carlos Cruzat, Shuran Liu*
1391	Techno-Economic Assessment of Distribution Network Reliability Services from Microgrids *Eduardo Alejandro Martinez Cesena, Nicholas Good, Angeliki Lydia Antonia Syrri, Pierluigi Mancarella*
1043	Distribution Automation Effects on Reliability during Major Contingencies *Yeliz Yoldas, Ahmet Onen, Irfan Alan, Robert P. Broadwater*
W22 - Voltage and Reactive Power Control in Distribution Systems **Chair: Takeshi Nagata**	Room 2
1123	Swarm Behavior for Distribution Grid Control *Sonja Kolen, Timo Isermann, Stefan Dähling, Antonello Monti*
1320	Coordinated Voltage Control of Distributed PV Inverters for Voltage Regulation in Low Voltage Distribution Networks *Karthikeyan Nainar, Basanta Raj Pokhrel, Jayakrishnan Radhakrishna Pillai, Birgitte Bak-Jensen*
1025	Modified Modal Analysis Approach for Distribution Power Systems *Ahvand Jalali, Mohammad Aldeen*
1055	Identification of Reactive Power Provision Boundaries of a Distribution Grid with DFIGs to a Transmission Grid *Stefan Stankovic, Lennart Söder*
1248	Competitiveness of Reactive Power Compensation using PV Inverter in Distribution System *Oktoviano Gandhi, Carlos David Rodriguez Gallegos, Dipti Srinivasan, Thomas Reindl*
1023	Improvement of RES Hosting Capacity Using a Central Energy Storage System *Poria Hasanpor Divshali, Lennart Söder*
1193	A Comprehensive Solar PV Hosting Capacity in MV and LV Radial Distribution Networks *Bryan Navarro, Maricar Navarro*
1261	Reactive Power Management Analyses based on Generic Distribution Grid Models *Steffen Garske, Christoph Blaufuß, Marcel Sarstedt, Lutz Hofmann*
W23 – Storage Optimisation **Chair: Ozan Erdinc**	Room 3
1356	Probabilistic Storage Modeling and Suboptimal Sizing of Renewable Energy Microgrids *Imane Biyya, Ghassane Aniba, Mohamed Maaroufi*
1057	Dynamic Optimal Power Flow for Dimensioning and Operating Quarter Based Storage in Low Voltage Grids *Nico Meyer-Huebner, Marco Haas, Martin Uhrig, Michael Suriyah, Thomas Leibfried*
1090	Optimal Charging Schedules for Thermal Electric Storage in the Absence of Communication *Muhammad Bashar Anwar, Daniel Burke, Mark O'Malley*
1146	Smart Charging of Community Storage Units Using Markov Chains *Tarek AlSkaif, Wouter Schram, Geert Litjens, Wilfried van Sark*
1166	Embedding Energy Storage for Multi-Energy Microgrid Optimal Operation *Benedetto Aluisio, Maria Dicorato, Giuseppe Forte, Michele Trovato*
1283	Design of a Novel Mode-based Energy Storage Controller for Residential PV Systems *Gonzague Henri, Ning Lu, Carlos Carrejo*
3001	An Evolutionary Optimization Algorithm to Planning the Time of Delivery Schedule and Factor in a Hydroelectric Power Plant with Battery Energy Storage Capability *Paulo Eduardo Malaquias, Sebastião Orlando Nascimento Filho, Rogério Andrade Flauzino, Ivan Nunes da Silva, Danilo Hernani Spatti, Marel Ayres de Araújo*

1070	Battery Storage Services that Minimize Wind Farm Operating Costs: A Case Study *Stephan Balischewski, Christoph Wenge, Ines Hauer, Pio Lombardi, Przemyslaw Komarnicki, Martin Wolter*	
W24 – Power System Protections **Chair: Kimmo Kauhaniemi**		Room 4
1039	Impact of DFIG-Based Wind Farms on Generator Distance Phase Backup Protection *Fei Sun, Yongzheng Zhang, Keaton Wheeler, Sherif Faried, Mohamed Elsamahy*	
1135	Distance Protection with Fault Impedance Compensation for Distribution Network with DG *Konstantin Pandakov, Hans Kristian Høidalen*	
1003	Setting of Relay Protection of Electric Power Systems Using Its Mathematical Models, *Mikhail Andreev, Alexander Gusev, Almaz Sulaymanov, Yury Borovikov*	
1118	Analysis of Line Current Differential Protection Considering Inverter-Interfaced Renewable Energy Power Plants *Yanbin Li, Ke Jia, Tianshu Bi, Renfu Yan, Wei Li, Bohan Liu*	
1108	Reliability Assessment of Communication-based Relay Protection with Multi-state Networks *Ruiwen He, Jianhua Deng, Yifei Wang, Haoliang Yuan*	
1275	Inverse-Time Protection Scheme for Active Distribution Network Based on User-Defined Characteristics *Yahong Li, Hui Ren, Jiaheng Li, Lidong Zhou, Fei Wang*	
W25 - Customer Data and Demand Response **Chair: Matti Lehtonen**		Room 5
1380	Linear Load Model for Robust Power System Analysis *Marko Jereminov, Amritanshu Pandey, Hyun Ah Song, Bryan Hooi, Christos Faloutsos, Larry Pileggi*	
1364	SVD-based Visualization and Approximation For Time Series Data in Smart Energy Systems *Abdolrahman Khoshrou, André Dorsman, Eric Pauwels*	
1278	An Optimal Differential Pricing in Smart Grid Based on Customer Segmentation *Fanlin Meng, Behzad Kazemtabrizi, Xiao-Jun Zeng, Chris Dent*	
1362	Power Systems Data Fusion based on Belief Propagation *Francesco Fusco, Seshu Tirupathi, Robert Gormally*	
1340	Demand Response for Thermostatically Controlled Loads using Belief Propagation *Alexandros Kleidaras, Mirsad Cosovic, Dejan Vukobratovic, Aristides Kiprakis*	
1369	Short-Term Scheduling of Microgrids in the Presence of Demand Response *Saber Talari, Miadreza Shafie-khah, Mahmoud R. Haghifam, Mohsen Yazdaninejad, João Catalão*	
1398	Development of a Novel Multi-Agent System for Residential Voltage Control Using Demand Response based on Customer Behavior *Sima Davarzani, Ioana Pisica, Gareth A. Taylor*	
1412	The Effect of Altruism in Automated Demand Response for Residential Users *Marilena Minou, George Stamoulis, Thanasis Papaioannou*	
W26 - Power Electronics Applications **Chair: Mark Sumner**		Room 6
1029	Quasi-resonant Multilevel Converter for Supercapacitor Energy Storage Systems *Federico Ibanez*	
1143	Simple Diagnostic Technique of Switch Failure Modes of VSI Power Converter *Azam Bagheri, Math H.J Bollen*	
1171	A Structure-Preserving Time-Domain Analysis for Power Electronic-Interfaced Systems *Dewu Shu, Qirong Jiang, Chunpeng Zhang*	
1199	A Novel Topology of DC Distribution Network with Fault Current Limiting Static Synchronous Series Compensator *Zhenliang Wu, Daozhuo Jiang, Dejia Lao, Qunmin Ying, Yi Du*	
1319	Virtual Synchronous Machine Control with Virtual Resistor for Enhanced Short Circuit Capability *Christoph Glöckler, Daniel Duckwitz, Friedrich Welck*	
1331	Design of a Microgrid Transition Controller I: For Smooth Transition Operation Under Normal Conditions *Jing Wang, Bouna M. Cisse, Derek Brown*	
1401	Bidirectional Quasi Y-source inverter Control for Electrical Vehicles *Emad Shehata*	
3005	An active power management in LV distribution network by using the multi-terminal power	

		electronic devices *Tomas Hornik, Ian McDonald, David Charlton, Steve Mitchell, Fainan Hassan, Nigel Jakeman, Ian Johnson, Tony Lakin, Peter Lang*	
	W27 – Forecasting **Chair: Taisuke Masuta**		Room 7
	1210	Feature Extraction of Numerical Weather Prediction Results Toward Reliable Wind Power Prediction *Kazutoshi Higashiyama, Yu Fujimoto, Yasuhiro Hayashi*	
	1064	The Role of Principal Component Analysis in Neural-based Wind Power Forecasting *Fabrizio De Caro, Alfredo Vaccaro, Domenico Villacci*	
	1044	Short-Term Load Forecasting using A Long Short-Term Memory Network *Chang Liu, Zhijian Jin, Jie Gu, Caiming Qiu*	
	1145	Short-term Industrial Load Forecasting: A Case Study in an Italian Factory *Antonio Bracale, Guido Carpinelli, Pasquale De Falco, Tao Hong*	
	1063	Medium-Term Electricity Demand Forecasting Based on MARS *Engin Ilseven, Murat Gol*	
	1375	Short-term Forecast of Automatic Frequency Restoration Reserve from a Renewable Energy Based Virtual Power Plant *Simon Camal, Andreas Liebelt, Andrea Michiorri, Georges Kariniotakis*	
	1018	A Machine Learning Based Demand Charge Management Solution *Ali Hooshmand, Ramin Moslemi, Ratnesh Sharma*	
18:30	End of sessions – free evening		
Thursday 28 September 2017			
8:15-18:30	Registration		Foyer
8:45-9:30	Plenary Speech - Lilia Consiglio (e-distribuzione, Italy): Automatic fault selection and self-healing techniques on Medium Voltage networks: first results from e-distribuzione large pilot experience of the new "Smart Fault Selection algorithms"		Aula Magna
9:30-10:50	Panel Session - Defining Planning and Operation Guidelines for Future Smart Distribution Grids – The SmartGuide Project		Aula Magna
10:50-11:20	Coffee break		
11:20-13:00	Panel Session - IEEE EPPI Working Group on Energy: Challenges for Energy Policy in Europe: a technologists' approach		Aula Magna
13:00-14:00	Lunch		
14:00-16:00	**Parallel sessions**		Rooms 1-8
	T11 - Special Session: Innovative Planning Strategies to Enable Renewable-based Smart Grids **Chair: Ali Arefi, Murdoch University, Australia**		Room 1
	3003	Roadmap for Developing a Distribution System Platform *Jason Taylor, Mark McGranaghan, Dave Crudele*	
	1010	Regulating Grid Voltage with PV using Modified Consensus *Aminmohammad Saberian, Gerard Ledwich, Hossein Sagha, Houman Pezeshki, Geoffrey Walker*	
	1061	Optimal Capacity Planning of Solar PV Inverters for Distribution System with Reactive-power Transaction *Jian-Tang Liao, Chien-Hsuan Liu, Hong-Tzer Yang*	
	1165	A Monte-Carlo Based Procedure for Optimal Sizing of Integrated Electric Vehicle Supply Infrastructure *Benedetto Aluisio, Maria Dicorato, Giuseppe Forte, Michele Trovato*	
	1126	Risk-Averse Joint Capacity Evaluation of PV Generation and Electric Vehicle Charging Stations in Distribution Networks *Huimiao Chen, Zechun Hu, Yinghao Jia, Zuo-Jun Max Shen*	
	T12 - Distribution System Automation **Chair: Andrea Mazza**		Room 2
	1231	A Gap Analysis between Logical Nodes and Functions of Distribution Automation Systems *Tetsuo Otani, Noriyuki Senke, Eiji Ohba, Shigeo Yamamoto, Hideo Nomura, Hideki Wada*	

1073	Principles of Power Management in a Smart Microgrid Based on Std. IEC 61850 *Omid Palizban, Kimmo Kauhaniemi*	
1240	Faulty Section Location Scheme for Distribution Grid with Inverter Interfaced Distributed Generation *Yingchao Li, Guibin Zou, Jingjing Yang, Huibin Sui*	
1054	Wavefront-based Protection for Active Distribution Grids *Nadezhda Davydova, Gabriela Hug*	
1164	Combining Fault Location Estimates for a Multi-Tapped Distribution Line *Hayder Jahanger, Mark Sumner, David Thomas*	
1049	Locating High-Impedance Fault in a Smart Distribution System Using Wavelet Entropy and Hybrid Self-Organizing Mapping Network *Ying-Yi Hong, Wei-Shun Huang, Yung-Ruei Chang, Yih-Der Lee, Der-Chuan Ouyang*	
1257	Traveling Wave Based Autoreclosure Scheme for Multi-Terminal Lines *Neethu George, OD Naidu*	
1081	Determination of the future actuator demand of adaptive Smart low voltage Grids *Philippe Steinbusch, Jan Meese, Roman Uhlig, Jan Mehlich, Marcus Stötzel, Markus Zdrallek, Wolfram Heldmaier, Stefan Blanaru, Wolfgang Friedrich, Uwe Schlüter*	
T13 - Electric Vehicle Charging and Aggregate Models **Chair: Valentin A. Boicea**		Room 3
1138	Spatial Load Forecasting of Electric Vehicle Charging using GIS and Diffusion Theory *Fabian Heymann, Carlos Alberto Pereira, Filipe Joel Soares, Vladimiro Miranda*	
1065	Minimization of Queuing Time of Electric Vehicles at a Fast Charging Station *Farhan Malik, Matti Lehtonen*	
1036	Autonomous Electric Vehicle Fleet Charging in Cities: Optimal Utility Estimates and Monte Carlo Simulations *Joakim Munkhammar, Mahmoud Shepero*	
1341	Coordinated Charging of Electric Vehicles Connected to a Net-Metered PV Parking Lot *Alyona Ivanova, Julian Alberto Fernandez, Curran Crawford, Ned Djilali*	
1279	Stochastic Characterization of V2G Parking Areas for the Provision of Ancillary Services *Giuseppe Graber, Francesco Lamberti, Vito Calderaro, Vincenzo Galdi, Antonio Piccolo*	
1370	Seasonal Impacts on the Storage Capacity of EV Parking Lots *Sitki Guner, Aydogan Ozdemir*	
1221	Modelling the Aggregated Dynamic Response of Electric Vehicles *Charalampos Ziras, Junjie Hu, Shi You, Henrik W. Bindner*	
1242	The Temporal-spatial Stochastic Model of Plug-in Hybrid Electric Vehicles *He Jiang, Hui Ren, Chenjun Sun, David Watts*	
T14 - Cyber-physical Systems and State Estimation **Chair: Enrico Pons**		Room 4
1132	Centralized Versus Distributed State Estimation for Hybrid AC/HVDC Grid *Pontus Grahn, Viktor Briggner, Linus Johansson, Davood Babazadeh, Lars Nordström*	
1163	Intelligent Architecture for Enhanced Observability for Active Distribution System *Basanta Raj Pokhrel, Karthikeyan Nainar, Birgitte Bak-Jensen, Jayakrishnan Radhakrishna Pillai*	
1056	Spatial-Temporal State Estimation using CMCGD Applied to Distribution Networks *Mehdi Shafiei, Ali Arefi, Ghavameddin Nourbakhsh, Gerard Ledwich*	
1311	Agent Based Distributed Control of Islanded Microgrid – Real-Time Cyber-Physical Implementation *Tung Lam Nguyen,Quoc Tuan Tran, Raphael Caire, Catalin Gavriluta, Van Hoa Nguyen*	
1200	A Cyber Attack Resilient Control for Distributed Energy Resources *Sasan Gholami, Sajeeb Saha, Mohammad Aldeen*	
1094	Measurement Re-Ordering Attacks on Power System State Estimation *Ammara Gul, Stephen D. Wolthusen*	
1326	STRIDE-based Threat Modeling for Cyber-Physical Systems *Rafiullah Khan, Kieran McLaughlin, David Laverty, Sakir Sezer*	
3008	The Art of Defending Critical Infrastructures *Peter Eder-Neuhauser, Tanja Zseby*	

T15 - Power System Simulation **Chair: Ettore Bompard**		Room 5
1022	Methodology for Validation of Electric Power System Simulation Tools *Aleksey Suvorov, Mikhail Andreev, Nikolay Ruban, Ruslan Ufa*	
1040	Embedding Spatial Decomposition in Parareal in Time Power System Simulation *Nan Duan, Aleksandar Dimitrovski, Srdjan Simunovic, Kai Sun, Junjian Qi, Jianhui Wang*	
1059	Using Power-Hardware-in-the-Loop Experiments together with Co-simulation for the Holistic Validation of Cyber-Physical Energy Systems *Van Hoa Nguyen, Yvon Besanger, Quoc Tuan Tran, Cedric Boudinnet, Tung Lam Nguyen, Ron Brandl, Thomas I. Strasser*	
1338	Application of a MW-Scale Motor-Generator Set to Establish Power-Hardware-in-the-Loop Capability *Qiteng Hong, Ibrahim Abdulhadi, Andrew Roscoe, Campbell Booth*	
1386	Practical Approach of a Simulation System Using Different Model Basis *Teng Jiang, Benjamin Schönfeld, Steffen Schlegel, Dirk Westermann, Christoph Brosinsky, Benjamin Fischer, Steffen Prinz, Steffen Nicolai*	
1306	Integration of Bottom-up Statistical Models of Loads on a Residential Feeder with the GridLAB-D Distribution System Simulator, and Applications *Victor Ayon, Matthew Robinson, Andrea Mammoli, Andrew Fisher, Jason Fuller*	
1084	Identifying Low-Order Frequency-Dependent Transmission Line Model Parameters *Niclas Johannesson, Tetiana Bogodorova, Luigi Vanfretti*	
1387	Studies on Stabilizing a Massive PV Penetrated Power System using VSG *Shingo Sakaeda, Asano Mitsutoshi, Shigeyuki Sugimoto, Suresh Chand Verma, Ryosuke Uda, Kenichi Kuroda*	
T16 - Grid Converter Control **Chair: Sherif Faried**		Room 6
1121	Current-Limiting Droop Controller with Fault-Ride-Through Capability for Grid-Tied Inverters *Alexandros Paspatis, George Konstantopoulos, Martin Mayfield, Vassilis Nikolaidis*	
1404	A Comparison of PI and Fuzzy Logic Control Schemes for Field Oriented Permanent Magnet Synchronous Generator Wind Turbines *Ahmed Al-Toma, Gareth Taylor, Maysam Abbod, Ioana Pisica*	
1218	Double Synchronous Controller for Integration of Large-Scale Renewable Energy Sources into a Low-Inertia Power Grid *Edris Pouresmaeil, Majid Mehrasa, Radu Godina, Ionel Vechiu, Rubén L. Rodríguez, João P. S. Catalão*	
1219	Synchronous Active Proportional Resonant-Based Control Technique for High Penetration of Distributed Generation Units into Power Grids *Majid Mehrasa, Edris Pouresmaeil, Radu Godina, Ionel Vechiu, Rubén L. Rodríguez, João P. S. Catalão*	
1392	Development of a Voltage-dependent Stabilizer for a Converter Dominated Distribution Grid *Teng Jiang, Michael Schärfenberg, Steffen Schlegel, Dirk Westermann*	
1372	Comparison of Two Control Strategies in an Autonomous Hybrid Microgrid *Ebrahim Rokrok, Miadreza Shafie-khah, João Catalão*	
1317	Study on Power Exchange Node and Its Application *Dejia Lao, Daozhuo Jiang, Zhenliang Wu, Tianqi Yu, Shuai Huang*	
1128	Decentralized Stochastic Control of Microgrids to Improve System Frequency Stability *Pietro Ferraro, Emanuele Crisostomi, Marco Raugi, Federico Milano*	
T17 - Energy System Optimisation **Chair: Florian Steinke**		Room 7
1378	Economic Analysis of Nuclear Power Plant's Operation Modes in Power System with High Wind Integration *Wenkai Gao, Yong Wang, Wenwen Liu, Ying Ding, Changhui Ma, Zhe Jiang*	
1382	Assessing the Impact of Wind Variability on the Long-Term Operation of a Hydro-Dominated System *Jose Lenin Morillo Carrillo, Juan Fernando Perez Bernal, Luckny Zéphyr, Lindsay Anderson, Angela Cadena*	
1114	Generalization of the Lambda-Method for Decentralized Economic Dispatch Considering Reactive Resources *Pedro P. Vergara, Hamid R. Shaker, Bo Norregaard Jørgensen, Luiz C. P. da Silva*	
1359	Optimal Sizing and Siting of Distributed Generation and EV Charging Stations in Distribution	

		Systems *Ozan Erdinc, Akin Tascikaraoglu, Nikolaos Paterakis, Ilker Dursun, Murat Can Sinim, João Catalão*	
	1167	Multi-Commodity Support in Profile Steering *Martijn H. H. Schoot Uiterkamp, Gerwin Hoogsteen, Marco E. T. Gerards, Johann L. Hurink, Gerard J. M. Smit*	
	1277	A Study of Operation Strategy of Small Scale Heat Storage Devices in Residential Distribution Feeders *Mostafa Bakhtvar, Carlos Andrade Cabrera, Giuseppina Buttitta, Olivier Neu, Andrew Keane*	
	1292	Demand Side Management in the Smart Grid: an Efficiency and Fairness Tradeoff *Paulin Jacquot, Olivier Beaude, Stéphane Gaubert, Nadia Oudjane*	
	1091	Dynamic Tariff Design for a Robust Smart Grid Concept: An Analysis of Global vs. Local Incentives *Oliver Lutz, Vicente Olavarria, Raphael Hollinger, Christof Wittwer, Barbara Koch*	
	T18 - Electricity Markets **Chair: Julian Barquin**		Room 8
	1156	Impact of a Coal Power Plant Closure on a Multi-region Wholesale Electricity Market *Amin Masoumzadeh, Ehsan Nekouei, Tansu Alpcan*	
	1067	An Exact Solution to the Market Clearing Problem with Uniform Purchase Price *Iacopo Savelli, Antonio Giannitrapani, Simone Paoletti, Antonio Vicino*	
	1134	Optimal Bidding for Risk-Averse Hybrid Power Station Producers in Insular Power Systems: An MPEC Approach *Anastasios Bakirtzis, Andreas Ntomaris*	
	1080	Market Integration Vs Temporal Granularity: How to Provide Needed Flexibility Resources? *Olivier Borne, Yannick Perez, Marc Petit*	
	1176	Flexibility Service Market for Active Congestion Management of Distribution Networks using Flexible Energy Resources of Microgrids *Elvira Amicarelli, Tuan Quoc Tran, Seddik Bacha*	
	1035	Peer-To-Peer Market Clearing Framework for DERs Using Knapsack Approximation Algorithm *Mohsen Khorasany, Yateendra Mishra, Gerard Ledwich*	
	1216	Estimation of Frequency Support Market Indices using Monte Carlo Simulation for Wind Power Generation *Ayman Attya, Jose Luis Dominguez-Garcia, Olimpo Anaya-Lara*	
16:00-16:30	Coffee break		
16:30-18:30	**Parallel sessions**		Rooms 1-7
	T21 - Distributed Generation **Chair: Radu Porumb**		Room 1
	1217	A Probabilistic Approach to the Evaluation of Energy Availability of Fixed and Variable Speed Wind Turbines *Carmen Borges, Chanan Singh, Maynara Aredes*	
	1222	Irradiance Forecasting for Microgrid Energy Management *Emilien Duverger, Frédérik Thiery, Dorian Gachon, Thierry Talbert, Carolina Penin, Philippe Alexandre*	
	1243	Assessment of Storage and Photovoltaic Short-term Forecast Contribution to Off-grid Microgrid Operation *Thai Phuong Do, Franck Bourry, Xavier Le Pivert*	
	3009	Development of an Advection Model for Solar Forecasting based on Ground Data *Shinichi Inage, Yoko Kojima*	
	1102	Data-Driven Characterisation of Solar PV Panel Performance *Sue Ann Chen, Arun Vishwanath, Saket Sathe*	
	1124	Impact of Photovoltaic Self-consumption on Power Losses and Voltage Levels of MV Distribution Networks *Javier Garcia-Villalobos, Pablo Eguia, Esther Torres, Agurtzane Etxegarai*	
	1390	Smart Microgrid Monitoring: Evaluation of Key Performance Indicators for a PV Plant Connected to a LV Microgrid *Stefano Bracco, Michela Longo, Federico Delfino, Federica Foiadelli*	
	1394	Network Code on Requirements for Generators – a Discussion. Resynchronizing with paradigm shifts *Mihai Sanduleac, Lucian Toma, Gianfranco Chicco, Mihaela Albu*	

T22 - Distribution System Reconfiguration and Planning **Chair: Gerard Ledwich**		Room 2
1260	An Integrated Optimization Approach for Multi-Voltage Level Network Expansion Planning *Dennis Klein, Lars Hackstein, Sebastian Stütz, Christian Rehtanz*	
1098	Expansion Planning of Active Power Supply Systems *Konstantin Suslov, Elena Stashkevich, Ilia Shushpanov, Nikolai Voropai, Pham Trung Son*	
1409	Stochastic Approach for Power Generation Optimal Sizing and Scheduling on Ships *Alessandro Boveri, Paola Gualeni, Diego Neroni, Federico Silvestro*	
1008	A Relax and Reduce Sequential Decomposition Rolling Horizon Algorithm to Value Dynamic Network Reconfiguration in Smart Distribution Grid *Florin Capitanescu*	
1227	Optimal Reconfiguration and DG Allocation in Active Distribution Networks Using a Probabilistic Approach *Mina Naguib, Waild Omran, Hossam Talaat*	
1158	Application of a logistical Optimization Method to optimize existing Low-Voltage Grids *Gerrit Schlömer, Lutz Hofmann*	
1168	Distribution Feeder Hosting Capacity Analysis *Alison O'Connell, Jeff Smith, Andrew Keane*	
1282	The long-term Effect of Incentives on the Development of DGPV Considering the Interaction among DGPVs' Investors and Distribution System *Chenjun Sun, Hui Ren, David Watts, Zengqiang Mi, Jialin Zhou, Kangping Li*	
T23 - Electric Vehicles: Grid Integration and Economics **Chair: Anastasios Bakirtzis**		Room 3
1024	Multi-objective optimization for smart EV charging *Nuno Rodrigues, Tristan Kuijpers*	
1027	Marketing Potential of EV's Charging Flexibility Using a Distribution Grid Automation System *Roman Uhlig, Marcus Stötzel, Markus Zdrallek, Sebastian Harnisch*	
1366	Investigation of Smart Distribution Network Response to Operation Performance of Plug-in Hybrid Electric Vehicles *Jamshid Aghaei, Ehsan Bagheri, Alireza Heidari, Gerardo J. Osório, Miadreza Shafie-khah, Juan M. Lujano-Rojas, João Catalão*	
1405	Demand Response Capability of V2G Based Electric Vehicles in Distribution Networks *Yu Liu, Shan Gao, Xin Zhao, Song Han, Haiqian Wang, Qun Zhang*	
1246	Static Volume-Based and Control-Based Contracts for Coordinating Vehicle-to-Grid Supply in a Microgrid *Esther H. Park Lee, Zofia Lukszo, Paulien Herder*	
1066	Identification of Conflicts between Transmission and Distribution System Operators when Acquiring Ancillary Services from Electric Vehicles *Antonio Zecchino, Katarina Knezović, Mattia Marinelli*	
1397	Stochastic Market Clearing Model with Probabilistic Participation of Wind and Electric Vehicles *Nilufar Neyestani, Filipe J. Soares, Jose P. Iria*	
1291	Data-Driven Planning of Plug-in Hybrid Electric Taxi Charging Stations in Urban Environments: A Case in the Central Area of Beijing *Huimiao Chen, Yinghao Jia, Zechun Hu, Guanglei Wu, Zuo-Jun Max Shen*	
T24 - Frequency Oscillations and Inertia **Chair: Stefano Massucco**		Room 4
1099	Impact of Fast Primary Regulation and Synthetic Inertia on Grid Frequency Control *Silvia Canevese, Adriano Iaria, Marco Rapizza*	
1290	Impact of Energy Storage Systems on the Stability of Low Inertia Power Systems *Atia Adrees, Jovica Milanovic*	
1012	Electricity Consumption Contribution to Power System Inertia - Case Electric Vehicles and Thermostatically Controlled Loads in Finland *Antti Alahäivälä, Matti Lehtonen*	
1111	Economic Value of Inertia in Low-Carbon Power Systems *Luis Badesa, Fei Teng, Goran Strbac*	
1349	Impact Studies of the Effect of Large-scale Wind Integration in the Mexican Power Grid *Rafael Castellanos, Miguel Ramirez, Guillermo Calderon, Arturo Messina*	
1116	GA-Optimized Fuzzy Logic Self-Tuning PID Controller in Multi-Source and Multi-Area Power	

	Systems for Load Frequency Control *Davar Mirabbasi, Sajjad Ahmadi, Adel Akbari Majd*
1177	Impact of Frequency Estimation for VSC-based Devices with Primary Frequency Control *Álvaro Ortega Manjavacas, Federico Milano*
1247	Coordinated Tuning of Synchronous Generator Controllers for Power Oscillation Damping *Amer Mešanović, Ulrich Münz, Rolf Findeisen*
T25 - ICT for Smart Grids **Chair: Mikhail Simonov**	Room 5
1299	Smart Grid Communication Comparison *Bo Petersen, Henrik Bindner, Bjarne Poulsen, Shi You*
1144	Choosing Communication Technologies for Distributed Energy Management in the Smart Grid *Daniel Hölker, Daniel Brettschneider, Ralf Toenjes, Michael Sonnenschein*
1271	Impact of Transport Layer Protocols on Reliable Information Access in Smart Grids *Kamal Shahid, Aamir Saeed, Thomas le Fevre Kristensen, Rasmus L. Olsen*
1113	Big Data from Smart Grids *Azam Bagheri, Math H.J Bollen, Irene Y.H. Gu*
1251	Prosumer Centric Innovation System and how it is influenced by Multi-Regime Interactions: Exploratory Interviews *Jussi Valta, Kirsi Kotilainen, Saku J. Mäkinen, Pertti Järventausta*
1169	On the Design of an Energy and User Aware Study Room *Fulvio Corno, Luigi De Russis, Juan Pablo Saenz*
1205	Determining Occupancy From a WiFi Router's Electric Power Consumption in an Office Environment *Tin Petrovic, Kazuya Echigo, Hiroyuki Morikawa*
T26 – HVDC Systems **Chair: Neville Watson**	Room 6
1192	Fast Frequency Support Control in the GB Power System using VSC-HVDC Technology *Luis Orellana Montaño, Víctor Matilla Togores, Sheng Wang, Oluwole Daniel Adeuyi, Carlos E. Ugalde Loo*
1322	Effective Damping Support through VSC-HVDC Links with Short-Term Overload Capability *Inmaculada Martinez Sanz, Paul Judge, Claudia Spallarossa, Balarko Chaudhuri, Tim Green, Goran Strbac*
1324	On the Design and Placement of a Supplementary Damping Controller in an Embedded VSC-MTDC Network *Omar Kotb, Mehrdad Ghandhari, Javier Renedo, Luis Rouco, Robert Eriksson*
1239	Protection Scheme for MMC-HVDC DC Lines Based on Boundary Current Signals *Cheng Lv, Nengling Tai, Xiaodong Zheng, Kaiwen Zha*
1249	On Implementation of Primary Frequency Control in MMC-HVDC Transmission Systems *Yannick Rink, Lukas Held, Simon Wenig, Michael Suriyah, Thomas Leibfried*
1009	Multilevel Converter Topologies Evaluation for Superconducting DC Transmission Systems *Dimitrios Doukas, Sofia Kalpatsinidou, Dimitris Labridis*
T27 - Energy Management **Chair: Lucian Toma**	Room 7
1131	Electrical Energy Network Efficiencies Evaluation as Milestones for Smart Grids Development: Italy's case study *Carlos Enrique Gomez Camacho, Giancarmine Muto, Bernardo Ruggeri*
3000	The Prosumer Role in the Global Decarbonization *Massimo Pompili, Francesco Muzi, Luigi Calcara, Zagdkhorol Bayasgalan, Silvia Sangiovanni*
1288	A Holistic Study of Energy Network Hybridization in a Northern European City *Tobias Jacobs, Sebastien Nicolas, Tae-Gil Noh, Anett Schuelke, Daniel Schwabeneder, Daniele Basciotti, Sawsan Henein, Olatz Terreros, Edmund Widl, Hans Auer*
1047	Development of a Water Heater Population Control for the Demand-side Frequency Control *Zeyad Assi Obaid, Liana M. Cipcigan, Saif Sabah Sami, Mazin T. Muhssin*
1105	Using Reinforcement Learning for Demand Response of Domestic Hot Water Buffers: a Real-Life Demonstation *Oscar De Somer, Ana Soares, Tristan Kuijpers, Koen Vossen, Koen Vanthournout, Fred Spiessens*
1381	Smart Management System of Customer's Battery and Heat Pump Water Heater, considering the Japanese New Rule for Curtailment of PV Output

		Eitaro Omine, Hiroyuki Hatta, Naoyuki Takahashi, Tsuyoshi Ueno
	1212	Mini-grid Policy Directions for Decentralized Smart Energy Models in Sub-Saharan Africa *Joan Nkiriki, Taha Selim Ustun*
	1360	Smart Railway Station Energy Management Considering Regenerative Braking and ESS *Ibrahim Sengor, Hasan Can Kilickiran, Huseyin Akdemir, Bedri Kekezoglu, Ozan Erdinc, João Catalão*
18:30	End of sessions	
19:45	Buses for Gala Dinner	
20:30	Gala Dinner – Automobile Museum Torino	
24:00	Buses from the Gala Dinner site	

Friday 29 September 2017

8:15-17.00	Registration		Foyer
8:50-9:30	Plenary Speech – Jianhui Wang (Argonne National Laboratory, and Southern Methodist University, USA): Grid Modernization: Challenges, Opportunities, and Solutions		Aula Magna
9:30-10:10	Plenary Speech – Pierluigi Mancarella (University of Melbourne, Australia, and The University of Manchester, UK): Reliability and resilience in low-carbon, low-inertia power systems: challenges, opportunities, and role of smart grid technologies		Aula Magna
10:10-10:50	Plenary Speech – Paolo Perani (ANIE Energia, Italy): Industry contribution and readiness to cope with the current challenges in electrical grids: Technologies and Systems		Aula Magna
10:50-11:20	Coffee break		
11:20-13:00	Panel Session – Understanding system resilience in critical infrastructures		Aula Magna
13:00-14:00	Lunch		
14:00-16:00	**Parallel sessions**		Rooms 1-7
	F11 - Special Session: Smart Metering **Chair: Gianluca Zanetto, TW TeamWare, Italy**		Room 1
	1178	Feasibility Study of OFDM-MFSK Modulation Scheme for Smart Metering Technology *Ghaith Al-Juboori, Angela Doufexi, Andrew Nix*	
	1125	Agent-based Protection of Event-based Smart Meters *Mikhail Simonov, Gianluca Zanetto*	
	1181	An MPC-based Protocol for Secure and Privacy-Preserving Smart Metering *Mustafa A. Mustafa, Sara Cleemput, Abdelrahaman Aly, Aysajan Abidin*	
	1253	An Innovative Cost-Effective Smart Meter with embedded Non Intrusive Load Monitoring *Matteo Nardello, Maurizio Rossi, Davide Brunelli*	
	F12 - Distribution Transformers and Voltage Control **Chair: Grigoris Papagiannis**		Room 2
	1361	An Autonomous Voltage Control for Distribution Power System using Pole-Transformer *Takeshi Nagata, Shinya Kuris, Hikaru Kamigaichi*	
	1238	Method for Determining Voltage Control Parameters of Low-Voltage Regulator Using Forecast Interval of Photovoltaic Output *Masaya Kobayashi, Hiroshi Kikusato, Jun Yoshinaga, Yu Fujimoto, Nao Kumekawa, Shinji Wakao, Yasuhiro Hayashi, Noriyuki Motegi, Yusuke Yamashita*	
	1183	Impacts of Tap Stagger on Currents of Power Transformers *Dongmiao Wang, Linwei Chen, Haiyu Li, Zhongdong Wang, Victoria Turnham*	
	1402	Influence and Optimal Use of OLTC in Wind Power Plants for Reactive Power Capability Requirement Compliance *Sanna Uski*	
	1315	Distributed Automation Solution and Voltage Control in MV and LV Distribution Networks *Hannu Reponen, Anna Kulmala, Ville Tuominen, Sami Repo*	
	1046	Results of the Laboratory Tests of a novel Regulator for meshed Low-Voltage Networks *Stefan Lang, Haiyan Ma, Wolfram H. Wellssow*	
	1255	Photovoltaic Hosting Capacity of Feeders with Reactive Power Control and Tap Changers	

	Oguzhan Ceylan, Sumit Paudyal, Bishnu P. Bhattarai, Kurt Myers	
F13 - Storage Planning and Economics **Chair: Rogério Andrade Flauzino**		Room 3
1229	Interruption Reduction in Secondary Substations using Battery Energy Storage Systems *Arun Narayanan, Tero Kaipia, Jarmo Partanen*	
1266	Feasibility of a Battery Storage System for a Renewable Energy Park Operating with Price Arbitrage *Adam Daggett, Meysam Qadrdan, Nick Jenkins*	
1083	Environmental Impacts of different Battery Technologies in Renewable Hybrid Micro-Grids *Manuel Baumann, Carolina Marcelino, Jens Peters, Marcel Weil, Paulo Almeida, Elizabeth Wanner*	
1393	Optimal Dimensioning and Operation of a Grid-Supporting Energy Storage System *Ouafa Laribi, Pascal Wiest, Krzysztof Rudion*	
1026	Probabilistic Optimal Storage Allocation and Operation to Ensure Voltage Stability Margin *Ahvand Jalali, Mohammad Aldeen*	
1408	Planning of Energy Storage Systems in Unbalanced Microgrids *Fabio Mottola, Daniela Proto, Angela Russo, Pietro Varilone*	
1329	Cost Ratio Analysis Evaluating the Potential of an Ice Storage Unit in a Multi-Energy Microgrid *Stefan Bschorer, Maren Kuschke, Kai Strunz*	
1373	Market integration of renewables and multi-service storage applications *Nuno Pinho da Silva, Ricardo Pastor, João Esteves, Rui Pestana*	
F14 - Energy System Services **Chair: Filippo Spertino**		Room 4
1186	Modular Modeling Concept and Multi-Domain Simulation for Smart Cities *Ivelina Stoyanova, Erdem Gümrükcü, Antonello Monti*	
1368	The Role of Power-to-Transport via Hydrogen and Natural Gas Vehicles in Decarbonising the Power and Transportation sector *Stephen Clegg, Lingxi Zhang, Pierluigi Mancarella*	
1130	Provision of Ancillary Services in Future Low-carbon UK Electricity System *Fei Teng, Marko Aunedi, Goran Strbac, Vincenzo Trovato, Anes Dallagi*	
1136	Security-Constrained Dynamic Curtailment Method for Renewable Energy Sources in Grid Planning *Pascal Wiest, Daniel Groß, Krzysztof Rudion, Alexander Probst*	
1294	A Load Management Algorithm for PCC Interface Breaker *Francesco Adinolfi, Stefano Massucco, Matteo Saviozzi, Federico Silvestro, Antonio Fidigatti, Fabio Monachesi, Enrico Ragaini*	
3019	The Virtual Storage Plant: aggregation and optimization tools for the advanced monitoring and control of a multi-technology Battery Energy Storage System *Maura Musio, Rosario Maria Polito, Marco Pietrucci, Ester Mocci, Giorgio Maria Giannuzzi, Luca Ortolano, Cristiano Martarelli, Francesco Palone, Roberto Cantoni*	
1376	Fourier Transform Based Procedure for Investigations on the Grid Frequency Signal *Francesco Arrigo, Marco Merlo, Ferdinando Parma*	
F15 - Integrated Energy Systems **Chair: Nobuyuki Yamaguchi**		Room 5
1088	Comparative Study of Integrated Energy System Modelling *Konstantinos Katsavounis, Peng Hou, Weihao Hu, Zhe Chen*	
1089	Optimized Control of a Residential Heat Pump *Konstantinos Katsavounis, Peng Hou, Weihao Hu, Zhe Chen*	
1133	Analysis of Water Booster Pressure Systems as Dispatchable Loads in Smart-Grids *Cesar Diaz, Fredy Ruiz, Diego Patino*	
1069	Assessment of Available Thermal Capacity of District Heating Systems for Increased Medium- and Short-Term Flexibility of Multi-Modal Power Systems *Jonas Hinker, Stefan Kippelt, Johanna Myrzik, Nicolas Witte, Angelika Heinzel*	
1191	Multi-Period Power Management Optimization for Operating Isolated Hybrid Microgrids *Marc Galceran-Feixas, Mònica Aragüés-Peñalba, Eduard Bullich-Massagué, Josep-Andreu Vidal-Clos, Oriol Gomis-Bellmunt*	
1256	Auxiliary Service Utilization of CHP Generation in Hybrid Electric Power and Natural Gas Systems *Yu Liu, Shan Gao, Xin Zhao, Hucheng Li, Liang Chen, Xiaodong Yuan, Wei Guo*	

	F16 - Predictive Control **Chair: Sasa Djokic**		Room 6
	1396	Predictive Control of Demand and Storage for Residential Prosumers *Sergio Bruno, Giovanni Giannoccaro, Massimo La Scala*	
	1154	Constrained Model Predictive Control for Operation of a Building-Integrated Microgrid *Kritchai Witheephanich, Samira Roshany-Yamchi, Alan McGibney, Susan Rea*	
	1345	Distributed Model Predictive Control for Building Energy Systems in Distribution Grids *Michael Kramer, Akhila Jambagi, Vicky Cheng*	
	1250	A Comprehensive MPC based Energy Management Framework for Isolated Microgrids *Yan Zhang, Fanlin Meng, Rui Wang*	
	1259	Storage System Control for Fault Protections of Single Phase Loads in Inverter-Dominated Grids *Paolo Azzaroli, Matteo Corti, Samuele Grillo, Luigi Piegari, Enrico Tironi*	
	1048	Optimal Peer to Peer Market Operation for Microgrids with Hybrid Energy Storage System using Distributed Model Predictive Control *Felix Garcia-Torres, Carlos Bordons, Miguel Angel Ridao*	
	1021	The Swiss Potential of Model Predictive Control for Building Energy Systems *Paul Stadler, Luc Girardin, François Maréchal*	
	F17 – Microgrids **Chair: Quoc Tuan Tran**		Room 7
	1019	Design of Power Conditioning System for Microgrid Island Operations with Seamless Mode Transition *Sewan Heo, Wan-Ki Park, Ilwoo Lee*	
	1045	Improved Primary Regulation for Minimum Energy Losses in Islanded Microgrids *E. Riva Sanseverino, G. Zizzo, M.L. Di Silvestre, S. Favuzza, Q.T.T. Tran, T.N. Pham, T. T. H. Kieu*	
	1101	Dynamic Droop Control in Microgrid for Stability Enhancement Considering RES Variation *Awan Uji Krismanto, Nadarajah Mithulananthan, Lomi Abraham*	
	1142	Islanding Detection using Mathematical Morphology for Distributed Generation *Aneesa Farhan, K Shanti Swarup*	
	1182	A Port-Hamiltonian Approach to Secondary Voltage Control of Microgrids *Mahya Adibi, Jacob van der Woude, Dimitri Jeltsema*	
	1285	Adaptive Islanding Detection and Diagnosis Using Wide Area Monitoring *Mark Rafferty, Xueqin (Amy) Liu, David Laverty, Lei Xie, Sean McLoone*	
	1346	Fair Control of Distributed PV Plants in Low Voltage Grids *Numa Gueissaz, Konstantina Christakou, Jean-Yves Le Boudec, Mario Paolone*	
	3017	Agent-Based Model for Distributed Optimization of Microgrids Operation *Riccardo Remo Appino, Kim Daniel Listmann, Gianfranco Chicco*	
16:00	Coffee break		
16:00-16:30	Conference Closure		Room 1
16:30	End of the Conference		