



Programme

**CIRED workshop 2018 on Microgrids and Local Energy
Communities**

Dated 31 May



CIRED workshop 2018 programme

Thursday 7 June 2018

08:00 – 09:00: Registration

09:00 – 09:10: Introduction by Jan Desmet (Workshop chairman)

09:10 – 09:30: Keynote Speech

“Slovenia’s Future Energy Transition & Challenges”, Klemen Potisek, State Secretary for Energy (Slovenia)

09:30 – 09:50: Keynote Speech

“Introduction of microgrids definitions and motivations”, Nikos Hatziargyriou, HEDNO and NTUA (Greece)

09:50 – 10:10: Keynote Speech

“Governance and regulation of new energy architectures”, Jorge Vasconcelos, NEWES (Portugal)

10:10 – 10:40: Coffee Break

10:40 – 12:10: Oral Session:

[Theme 1: Business models, roles, responsibilities and regulatory aspects](#)

Chair : Dag Eirik Nordgård (SINTEF, Norway)

0054 Concrete design of local flexibility markets using the traffic light approach

Kevin Kotthaus, Wuppertal University (Germany); Jessica Hermanns, Wuppertal University (Germany); Frederik Paulat, Wuppertal University (Germany); Sven Pack, Wuppertal University (Germany); Jan Meese, Wuppertal University (Germany); Nils Neusel-Lange, SPIE SAG GmbH (Germany); Robert Schweiger, E-Werk Schweiger oHG (Germany); Markus Zdrallek, Wuppertal University (Germany); Fritz Schweiger, E-Werk Schweiger oHG (Germany) Torben Braje, SPIE SAG GmbH (Germany)

0139 Great revolution: the business perspective of Energy Internet in China

Yubo Zhai, EDF (China); Yang LI, EDF (China); Xingyan NIU, EDF (China); Guofei CHEN, CMSC company (China)

0188 Implementing the Standardization Framework to Support the Development of Non-Conventional Distribution Networks / Microgrids; Development of Non-Conventional Distribution Networks / Microgrids

Wenpeng Luan, CEPRI (China); Raffael La Fauci, ewz (Switzerland); Xavier Xianjun Yang, EDF (France); Wenyan Ma, CEPRI (China);



0416 *Providing a customer microgrid as a service – A review of a pilot installation*

Vincent Gliniewicz, Vattenfall R&D (Sweden); Annika Larsson, Vattenfall R&D (Sweden); Jonas Wetterstrom, Vattenfall R&D (Sweden)

0523 *Flexibility for DSOs on a local scale: business models and associated regulatory questions raised in the InterFlex project*

Christian Dumbs, Enedis (France); Grégory Jarry, Accenture (France); Didier Laffaille, Commission de régulation de l'énergie (France); Stanislav Hes, CEZ Distribuce (The Czech Republic); Demijan Panic, E.ON (Sweden); Ingmar Leisse, E.ON (Sweden); Julien Bruschi, Enedis (France)

0562 *Cost-Benefit Analysis: Case Studies of Community Microgrids*

Dean Weng, Electric Power Research Institute (EPRI) (The United States of America); Jeffrey Roark, Electric Power Research Institute (EPRI) (The United States of America); Arindam Maitra, Electric Power Research Institute (EPRI) (The United States of America)

12:10 – 13:40: Lunch

13:40 – 14:00: Keynote Speech

“New roles of DSOs”, Joao Torres, EDP Distribuição (Portugal)

14:00 – 15:00: Round Table

[RT1: Business Models & Regulation](#)

Convener : Roberto Zangrandi, EDSO for Smart Grids (Belgium)

Panelists :

- Stanislas d'Herbement, REScoop.eu (Belgium)
- Antoine Jourdain, Enedis (France)
- Luca Lo Schiavo, ARERA (Italy)
- Kerstin Rock, LO3 Energy (USA)
- Ruth Van Caenegem, Eandis (Belgium)

15:00 – 15:30: Coffee Break

15:30 – 16:30: Poster Session focusing on themes 1 and 2 (all posters available)

[Posters theme 1: Business models, roles, responsibilities and regulatory aspects](#)

0029 *Energy Transition enhanced by Sharing Energy Management Systems on local energy districts*, Vera Nunes, EDP Distribuição Energia (Portugal); Jorge Moreira, EDP Distribuição Energia (Portugal) Sonia Cunha, Instituto Superior Técnico (Portugal); Cláudia Sousa, Instituto Superior Técnico (Portugal); Catarina Rolim, Instituto Superior Técnico (Portugal); António Messias, EDP Distribuição Energia (Portugal)

0037 *Evaluating the Economization of Smart Industrial Microgrids in Iranian Power Distribution Companies using the Conceptual Model of Development-oriented Planning (Case Study: Power*



Distribution Company of Mazandaran), Hossein Yousef, Mazandaran Electricity Distribution Company (Islamic Republic Of Iran)

0065 *Identification and evaluation of marketing opportunities for flexibility in local energy communities*, Robert Schmidt, University of Wuppertal (Germany); Evgeny Schnittmann, University of Wuppertal (Germany); Jan Meese, University of Wuppertal (Germany); Tobias Müller, University of Wuppertal (Germany); Markus Zdrallek, University of Wuppertal (Germany); Thomas Armoneit, Stadtwerke Iserlohn GmbH (Germany)

0066 *Optimized Decentralized and Centralized Load Management Techniques in Industrial Microgrids*, Charline Stevanoni, University of Mons (Belgium); François Vallée, University of Mons (Belgium); Zacharie De Grève, University of Mons (Belgium); Olivier Deblecker, University of Mons (Belgium)

0081 *Business model development on parking infrastructure with high shares of electro mobility in smart cities*, Christian Haag, Flexible Elektrische Netze FEN GmbH (Germany); Gonca Gürses-Tran, Flexible Elektrische Netze FEN GmbH (Germany)

0100 *R&I needs and challenges for a future reliable, economic and efficient smart grid system taking into account micro-grids and local energy communities to support the EU Energy transition*, Raphael Rinaldi, Enel Global Infrastructures & Networks (Italy); Ilaria Losa, RSE - Ricerca sul Sistema Energetico (Italy); Isabel Carrilero-Borbujo, SODENA (Spain); Ricardo Prata, EDP – Distribuição Energia (Portugal); Marie MÜNSTERD, TUDenmark; Anna Kulmala, VTT Technical Research Centre of Finland Ltd (Finland); Natalie Samovich, Enercutim (Portugal); Martin Střelec, University of West Bohemia (The Czech Republic); Víctor Bermúdez, Llamusí Red Eléctrica de España (Spain); Rui ALVES, R&D Nester (Portugal); Werner Friedl, AIT Austrian Institute of Technology (Austria)

0123 *Models for the integration of Local Energy Communities in energy markets*, Georgia Asimakopoulou, National Technical University of Athens (Greece); Nikos Hatziargyriou, National Technical University of Athens (Greece)

0134 *Performance indices of partially self-sustaining direct current communities in the given regulatory framework*, Gonca Gürses-Tran, Flexible Elektrische Netze FEN GmbH (Germany); Christian Haag, Flexible Elektrische Netze FEN GmbH (Germany)

0170 *The Need for Charging Reform to Support Community Energy Projects*, Ben Lister, Uniper (United Kingdom)

0183 *Economic and Operational Implications of Demand Charge for Distribution Systems with Renewable Energy*, Chen Fang, Electric Power Research Institute, State Grid Shanghai Municipal Electric Power Company (China); Weibin Cao, State Grid Shanghai Municipal Electric Power Company (China); Duanhong Zhang, Shanghai Jiao Tong University (China); Donghan Feng, Shanghai Jiao Tong University (China); Zeyu Liu, Shanghai Jiao Tong University (China)

0201 *Urban energy community between recommendation and perspective*, Valentin Stefanescu, SDEE Electrica (Romania); George Vlad Badea, Enel (Romania)



0219 *Power trading and pricing among DSO and multi-microgrid in transactive energy market*, Wenxiong Mo, Guangzhou Power Supply Co., Ltd. (China); Lin GAN, Guangzhou Power Supply Co., Ltd. (China); Hang Zhang, Guangzhou Power Supply Co., Ltd. (China); GuoPei WU, Guangzhou Power Supply Co., Ltd. (China); LinHuan LUO, Guangzhou Power Supply Co., Ltd. (China); Zichong Zhang, Guangzhou Power Supply Co., Ltd. (China); Yifei WANG, Guangdong University of Technology (China)

0231 *Energy Local, a business model for local energy communities - concept and outcomes*, Peter Boait, De Montfort University (United Kingdom); Robin Morris, Energy Local CIC (United Kingdom)

0232 *LEGAL CHALLENGES FOR SMART GRID DEPLOYMENT IN THE EUROPEAN UNION*, George Badea, Enel Foundation (Romania); Giuseppe Montesano, Enel Foundation (Italy)

0234 *Socio-technical Modelling of Customer Roles in Developing Low Voltage Distribution Networks*, Katja Sirviö, University of Vaasa (Finland); Petra Berg, University of Vaasa (Finland); Kimmo Kauhaniemi, University of Vaasa (Finland); Hannu Laaksonen, University of Vaasa (Finland); Pirjo Laaksonen, University of Vaasa (Finland); Arto Rajala, University of Vaasa (Finland)

0239 *A novel optimal electricity pricing method in microgrids based on customers' participation levels*, HamidReza Mansouri, Tehran Electrical Power Distribution Co. (Islamic Republic Of Iran); MohammadMajid Jalali, Tehran Electrical Power Distribution Co. (Islamic Republic Of Iran); Hossein Sabouri, Tehran Electrical Power Distribution Co. (Islamic Republic Of Iran)

0246 *The multiple roles of a battery energy storage system - Results of a pilot project*, Evdokia Kaffe, ewz (Switzerland); Tara Feizi, ewz (Switzerland); Raffael La Fauci, ewz (Switzerland); Benedikt Loepfe, ewz (Switzerland)

0250 *Local energy communities: an insight from European smart grid projects*, Antonios Marinopoulos, European Commission - Joint Research Centre (The Netherlands); Julija Vasiljevska, European Commission - Joint Research Centre (The Netherlands); Anna Mengolini, European Commission - Joint Research Centre (The Netherlands)

0263 *A Two-stage Operating Strategy of Microgrids With Consideration of Uncertainty For Participating in Power Market*, Lin GAN, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); Wenxiong Mo, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); Zichong Zhang, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); GuoPei WU, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); LinHuan LUO, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); Hang Zhang, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China); Dapeng Chen, South China University of Technology (China); Hao He, China Southern Power Grid, Guangzhou Power Supply CO., Ltd (China)

0264 *Analysis on the Stakeholders of Microgrid Businesses for the Development of Dissemination Policies*, Sungwook Hwang, KEPCO (The Republic Of Korea); Yongseung Lee, KEPCO (The Republic Of Korea); Junbo Sim, KEPCO (The Republic Of Korea); Wook Won Kim, KEPCO (The Republic Of Korea); Hakju Lee, KEPCO (The Republic Of Korea)

0272 *Local energy markets: Opportunities, benefits, and barriers*, Goncalo Mendes, Lappeenranta University of Technology (LUT) (Finland); Jere Nylund, Lappeenranta University of Technology (LUT) (Finland); Salla Annala, Lappeenranta University of Technology (LUT) (Finland); Samuli Honkapuro,



Lappeenranta University of Technology (LUT) (Finland); Olli Kilkki, Empower (Finland); Jan Segerstam, Empower (Finland)

0280 *Considering various consumers profiles in a smart-grid*, Benoit Durillon, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Arnaud Davigny, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Sabine Kazmierczak, Lille Catholic Institut (ICL) - Faculty of Business, Economics, and Sciences (France); Hervé Barry, Lille Catholic Institut (ICL) - Faculty of Business, Economics, and Sciences (France); Christophe Saudemont, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Benoît Robyns, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France)

0281 *Optimal operation and fair profit allocation in community microgrids*, Bertrand Cornélusse, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium); Simon Lachi, Nethys S.A (Belgium)

0291 *The innovative role of local system operator as a facilitator of grid and community services in the local electricity market*, Iliana Ilieva, Smart Innovation Norway (Norway); Xue Wang, InnoEnergy (Sweden); Jayaprakash Rajasekharan, Smart Innovation Norway (Norway)

0294 *Localised Energy Consumption Aggregates using Smart Metering data*, Karima Boukir, Enedis (France); Olivier Chaouy, Enedis (France); Bruno Traverson, EDF R&D (France)

0297 *GRID AND MARKET HUB: EMPOWERING LOCAL ENERGY COMMUNITIES IN INTEGRID*, Pedro Matos, EDP Distribuição (Portugal); Guido Pires, EDP Distribuição (Portugal); Ricardo Bessa, INESC TEC (Portugal); Fábio Coelho, INESC TEC (Portugal); Ana Alonso, INESC TEC (Portugal); Hossein Shahrokni, Kungliga Tekniska högskolan (KTH) (Sweden); Xavier Rodrigues, INESC TEC (Portugal); Tiago Soares, INESC TEC (Portugal); Aram Mäkivierikko, Kungliga Tekniska högskolan (KTH) (Sweden)

0304 *Collaborative Business Model in Future Distribution Network with Shared Network Access (SNA)*, Fang Zhai, Tsinghua University (China); Zhipeng Zhang, University of Bath (United Kingdom); Furong Li, University of Bath (United Kingdom)

0317 *Platform based business models in the future energy market*, Bernt Arild Bremdal, Smart Innovation Norway & University of Tromsø (Norway); Dagfinn Wåge, Lyse (Norway) Gunnar Crawford, Stavanger commune (Norway)

0319 *Privacy by Design for Local Energy Communities*, Pol Van Aubel, Radboud University (The Netherlands); Michael Colesky, Radboud University (The Netherlands); Jaap-Henk Hoepman, Radboud University (The Netherlands); Erik Poll, Radboud University (The Netherlands); Carlos Montes Portela, Enexis (The Netherlands)

0323 *Blockchain for peer-to-peer energy exchanges: design and recommendations*, David Vangulick, ORES - University of Liège (Belgium); Bertrand Cornélusse, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium)

0330 *Developing Policy Schemes Towards Grid-Scale Microgrids; Discussing The Iranian Case*, Mohammad Hassan Bahmani, Tarbiat modares university (Islamic Republic Of Iran); Mahmoud Reza



Haghifam, Tarbiat modares university (Islamic Republic Of Iran); Majid Miri Larimi, Tarbiat modares university (Islamic Republic Of Iran)

0354 *The roles of the Distribution System Operators in making microgrids an integrated part of the electricity distribution system of the future*, Hadi Safarifarmad, Khorasanrazavi Electric Distribution Co. (Islamic Republic Of Iran)

0356 *Establishment of ESS by customer type for optimal effect and Analysis of efficiency improvement of power system operation through installation of ESS*, Chung-yeol Yang, Korea Electric Power Corporation (The Republic Of Korea); In-gyu Choi, Korea Electric Power Corporation (The Republic Of Korea); Ki-ju Ahn, Korea Electric Power Corporation (The Republic Of Korea); Seung-ho Yang, Korea Electric Power Corporation (The Republic Of Korea)

0375 *Sizing and dispatching of local energy communities to assess their potential economic impact through regulation and community design*, Damien Schyns, Tractebel (Belgium); Frédéric Tounquet, Tractebel (Belgium); Parvathy Chittur Ramaswamy, Tractebel (Belgium); Siebert Bressinck, Tractebel (Belgium); Vincenzo Giordano, Tractebel (Belgium)

0384 *Improved methods for stakeholder analysis to unveil vital roles and responsibilities in the future flexibility markets*, Iliana Ilieva, Smart Innovation Norway (Norway); Sanket Puranik, Smart Innovation Norway (Norway); Bernt Bremdal, Smart Innovation Norway (Norway)

0393 *Topological power plants as embedded microgrids for the market and grid integration of distributed energy resources*, Maria Vasconcelos, RWTH Aachen University (Germany); Nicolas Thie, RWTH Aachen University (Germany); Armin Schnettler, RWTH-AACHEN University (Germany); Michael Metzger, Siemens AG (Germany); Alexander Hammer, Siemens AG (Germany); Markus Reischböck, Siemens AG (Germany); Robert Koeberle, AllgäuNetz GmbH & Co. KG (Germany)

0399 *Methodology for Factual Justification to Prioritize Critical Infrastructures during Emergency Power Supply*, Christoph Steinhart, Augsburg, University of Applied Sciences (Germany); Sonja Baumgartner, Augsburg, University of Applied Sciences (Germany); Michael Finkel, Augsburg, University of Applied Sciences (Germany); Rolf Witzmann, Technical University of Munich (Germany)

0400 *Organisation of the commercial and public services for the installation of local and renewable energy communities*, Ruth Van Caenegem, Eandis (Belgium); Wim Cardinaels, Energyville (Belgium); Frederik Loeckx, Flux50 (Belgium); Freddy Van Bogget, KBC (Belgium)

0402 *Lessons learned from local energy projects in Scotland*, Calum Edmunds, University of Strathclyde (United Kingdom); Stuart Galloway, University of Strathclyde (United Kingdom); Damien Frame, University of Strathclyde (United Kingdom)

0404 *Strengthening the foundation of community energy models: community engagement and socio-economic impacts in Project SENSIBLE*, Gisela Mendes, EDP NEW R&D (Portugal); Pedro Castro, EDP NEW R&D (Portugal); Alexandre Neto, EDP NEW R&D (Portugal); Julian Marsh, MOZES (United Kingdom); Lucelia Rodrigues, University of Nottingham (United Kingdom); Lorna Kiamba, University of Nottingham (United Kingdom)



0416 *Providing a customer microgrid as a service – A review of a pilot installation*, Vincent Gliniewicz, Vattenfall R&D (Sweden); Annika Larsson, Vattenfall R&D (Sweden); Jonas Wetterstrom, Vattenfall R&D (Sweden)

0439 *Challenges for coordination consumption of a pool of prosumers*, Moch Arief Albachrony, CEA & BPPT (Indonesia); Duy Long HA, CEA-INES (France); Quoc Tuan Tran, CEA/INES, INSTN – Paris Saclay University (France); Adrien BRUN, CEA-INES (France); Marc PETIT, Centrale Supélec (France)

0440 *Real-Time Bidding Strategies from Micro-Grids Using Reinforcement Learning*, Ioannis Boukas, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium); Bertrand Cornélusse, University of Liège (Belgium)

0479 *Berlenga Island - Sustainable Smart Microgrid*, Ricardo Santos, EDP Distribuição (Portugal); Gonçalo Faria, EDP Distribuição (Portugal); Claudia Pinto, EDP Distribuição (Portugal); Antonio Fonseca, EDP Distribuição (Portugal); António Joyce, LNEG (Portugal); Nuno Cativo, Camera Peniche (Portugal)

0480 *Energy Community: the Italian Scenario within the pan-European Framework*, Claudio Carlini, RSE - Ricerca sul Sistema Energetico (Italy), Diana Moneta, RSE - Ricerca sul Sistema Energetico (Italy); Valerio Angelucci, RSE - Ricerca sul Sistema Energetico (Italy)

0494 *Multi-objective Role of BESS in an Energy System*, Nadezda Belonogova, Lappeenranta University of Technology (LUT) (Finland); Ville Tikka, Lappeenranta University of Technology (LUT) (Finland); Samuli Honkapuro, Lappeenranta University of Technology (LUT) (Finland); Jukka Lassila, Lappeenranta University of Technology (LUT) (Finland); Jarmo Partanen, Lappeenranta University of Technology (LUT) (Finland); Pirjo Heine, Helen Electricity Network Ltd. (Finland); Atte Pihkala, Helen Electricity Network Ltd. (Finland); Hannu-Pekka Hellman, Helen Electricity Network Ltd. (Finland); Juha Karppinen, Helen Ltd. (Finland); Kristiina Siilin, Helen Ltd. (Finland); Jussi Matilainen, Fingrid Oyj (Finland); Minna Laasonen, Fingrid Oyj (Finland); Markku Hyvarinen, Helen Electricity Network Ltd. (Finland)

0496 *Peak Demand Charge Reduction in Microgrids through Adaptive Optimal Energy Management*, Dino Ablakovic, Siemens AG (Germany); Markus Reischböck, Siemens AG (Germany); Constantin Ginet, Siemens AG (Germany)

0497 *On the design of a microgrids aggregation management framework to provide ancillary services*, Alessio La Bella, Politecnico di Milano (Italy); Marcello Farina, Politecnico di Milano (Italy); Carlo Sandroni, RSE, Ricerca sul sistema energetico (Italy); Riccardo Scattolini, Politecnico di Milano (Italy)

0500 *Testing grid-based electricity prices and batteries in a field test*, Victor Reijnders, University of Twente (The Netherlands); Marco Gerard, University of Twente (The Netherlands); Gerard Smit, University of Twente (The Netherlands); Johann Hurink, University of Twente (The Netherlands)

0513 *Demand Side Management in a rural area*, Pedro Castro, EDP NEW R&D (Portugal); Ricardo André, EDP NEW R&D (Portugal); Alexandre Neto, EDP NEW R&D (Portugal); Gisela Mendes, EDP NEW R&D (Portugal); Clara Gouveia, INESC TEC (Portugal); Olli Kilkki, Empower (Finland); Carlos



Florez, ARMINES (France); André Madureira, INESC TEC (Portugal); Andrea Michiorri, ARMINES (France)

0520 *Distributed Iterative Local Energy Bidding in Agent-based Microgrids*, Yajun Zhang, University of Bath (United Kingdom); Chenghong Gu, University of Bath (United Kingdom); Furong Li, University of Bath (United Kingdom)

0521 *Assessment of Relative Efficiency of Differing Energy Markets for Community Energy*, Lanqing Shan, University of Bath (United Kingdom); Heng Shi, University of Bath (United Kingdom); Liz Sidebotham, Northern Powergrid (United Kingdom); Furong Li, University of Bath (United Kingdom)

0523 *Flexibility for DSOs on a local scale: business models and associated regulatory questions raised in the InterFlex project*, Christian Dumbs, Enedis (France) Grégory Jarry, Accenture (France); Didier Laffaille, Commission de régulation de l'énergie (France); Stanislav Hes, CEZ Distribuce (The Czech Republic); Demijan Panic, E.ON (Sweden); Ingmar Leisse, E.ON (Sweden); Julien Bruschi, Enedis (France)

0529 *Improved Residential Electricity Feedback through Household-specific Baselines*, Aram Mäkivierikko, Kungliga Tekniska högskolan (KTH) (Sweden); Hossein Shahrokni, Kungliga Tekniska högskolan (KTH) (Sweden); Olga Kordas, Kungliga Tekniska högskolan (KTH) (Sweden)

0539 *Microgrid Business Intelligent Model Based on a Fuzzy System*, Hoda Farag, Alexandria Electricity Distribution Company (Egypt); Mohamed Elhoseiny, Alexandria Electricity Distribution Company (Egypt)

0552 *Impact of An Aggregator of Distributed Energy Resources on Traditional Power System Participants*, Ivan Pavić, University of Zagreb, Faculty of Electrical Engineering and Computing (Croatia); Mateo Beus, University of Zagreb, Faculty of Electrical Engineering and Computing (Croatia); Hrvoje Pandžić, University of Zagreb, Faculty of Electrical Engineering and Computing (Croatia); Tomislav Capuder, University of Zagreb, Faculty of Electrical Engineering and Computing (Croatia); Ivona Štritof, Hrvatska elektroprivreda d.d. (Croatia); Ivan Andročec, Hrvatska elektroprivreda d.d. (Croatia)

0591 *A multi-agent system approach to model the interaction between distributed generation deployment and the grid*, Miguel Manuel de Villena Millan, University of Liège (Belgium); Axel Gautier, University of Liège (Belgium); Raphael Fonteneau, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium)

Posters theme 2: Architecture and system development

0078 *Assessment Studies Regarding the Optimal Sizing of Wind Integrated Hybrid Power Plants For Off-Grid Systems*, Lennart Petersen, Department of Energy Technology, Aalborg University (Denmark); Florin Iov, Department of Energy Technology, Aalborg University (Denmark); German Claudio Tarnowski, Vestas Wind Systems (Denmark); Carlos Eduardo Carrejo Gonzales, Vestas Wind Systems (Denmark)

0082 *SPORE @REIDS – A multi-fluid microgrid demonstrator in Singapore*, Quentin Antoine, Engie Laborelec (Belgium); Stijn Uytterhoeven, Engie Laborelec (Belgium)



0089 *EDPD's experience with data analytics and stochastic simulation methods for risk-controlled network planning*, Andre Aguas, EDP Distribuição (Portugal); Vera Pereira, EDP Distribuição (Portugal); Pedro Carvalho, AmberTree (Portugal); Joao Machado, AmberTree (Portugal); Luisa Jorge, EDP Distribuição (Portugal); Ricardo Prata, EDP Distribuição (Portugal); Rui Bento, EDP Distribuição (Portugal); Luís Ferreira, AmberTree (Portugal)

0091 *Microgrid Open Architecture: The need for an Open Architecture that Promotes Flexibility, Scalability, and Security*, Mark Ossel, OSGP Alliance (The Netherlands)

0106 *A methodology to assess the potential of demand response of industry in Italy*, Simone Maggiore, Ricerca sul Sistema Energetico (RSE) (Italy); Claudio Zagano, Ricerca sul Sistema Energetico (RSE) (Italy); Anna Realini, Ricerca sul Sistema Energetico (RSE) (Italy)

0119 *Validating the ELECTRA Web-of-Cell control concept – An overview of possible simulation environment enhancements*, Mattia Cabiati, Ricerca sul Sistema Energetico (RSE) (Italy); Carlo Tornelli, Ricerca sul Sistema Energetico (RSE) (Italy); Christian Seidl, AIT Austrian Institute of Technology (Austria); Thomas Strasser, AIT Austrian Institute of Technology (Austria)

0128 *Isolated microgrid design problem considering resiliency indices*, Sajjad Rahmanzadeh, Guilan Power Distribution Company (Islamic Republic Of Iran); Hamed Daneshvar, Guilan Power Distribution Company (Islamic Republic Of Iran); Ali Mirzazadeh, Guilan Power Distribution Company (Islamic Republic Of Iran)

0143 *Design of a grid-connected campus microgrid considering energy efficiency and financial feasibility*, Ba Hau Vu, Kookmin University (The Republic Of Korea); Munir Aminu Husein, Kookmin University (The Republic Of Korea); Il-Yop Chung, Kookmin University (The Republic Of Korea); Jintae Cho, Korea Electric Power Corporation (The Republic Of Korea)

0174 *Design of Decentral Energy System – Optimized Energy Supply on Basis of PSS[®]DE*, Han Rui, Siemens AG (Germany); Ben Gemsjaeger, Siemens AG (Germany); Tongtong Akerman, Siemens AG (Germany)

0178 *A 100% renewable isolated μ -grid in Mafate*, Davide Beretta, EIFER (Germany); Philippe Mocoteguy, EIFER (Germany); Giovanna Sessa, EIFER (Germany); Matthieu Limagne, EDF SEI La Reunion (France); Jean Emmanuel Boucher, Powidian (France)

0185 *Guidelines for residential customer interface and connection principles in LVDC grids*, Antti Alahäivälä, VTT Technical Research Centre of Finland Ltd (Finland); Kari Mäki, VTT Technical Research Centre of Finland Ltd (Finland); Anna Kulmala, VTT Technical Research Centre of Finland Ltd (Finland); Jussi Ikäheimo, VTT Technical Research Centre of Finland Ltd (Finland); Kim Forssen, VTT Technical Research Centre of Finland Ltd (Finland); YoungPyo Cho, KEPCO Research Institute (The Republic Of Korea); Jintae Cho, KEPCO Research Institute (The Republic Of Korea); JuYoung Kim, KEPCO Research Institute (The Republic Of Korea); HONGJOO KIM, KEPCO Research Institute (The Republic Of Korea)

0192 *LV Connect and Manage: A Novel Solution for LCT Integration*, Samuel Jupe, Nortech Management Limited (United Kingdom); Mikhail Prokhlich, Western Power Distribution (United Kingdom)



0194 *Architecture of Virtual Power Plant for Ancillary Services*, Jibrán Ali, DITEN-University of Genova (Italy); Stefano Massucco, DITEN-University of Genova (Italy); Federico Silvestro, DITEN-University of Genova (Italy)

0255 *Design and development of a smart urban microgrid for an electric logistics fleet*, Christos Keramisanos, UK Power Networks Services (United Kingdom); Peter Harris, UPS (United Kingdom); Ismini Dimitriadou, UK Power Networks (United Kingdom)

0257 *On Fostering Smart Grid Systems Development and Validation with a Model-Based Engineering and Support Framework*, Filip Prössl-Andrén, AIT Austrian Institute of Technology GmbH (Austria); Thomas Strasser, AIT Austrian Institute of Technology GmbH (Austria); Jürgen Resch, Ing. Punzenberger COPA-DATA GmbH (Austria); Christof Brandauer, Salzburg Research Forschungsgesellschaft m.b.H. (Austria); Georg Panholzer, Salzburg Research Forschungsgesellschaft m.b.H. (Austria); Christian Seidl, AIT Austrian Institute of Technology GmbH (Austria)

0284 *Reliability Evaluation of Grid-Connected Microgrids with High Penetration of Renewable Distributed Energy Resources*, Alberto Escalera Blasco, IMDEA Energy Institute (Spain); Milan Prodanovic, IMDEA Energy Institute (Spain); Rodrigo Segovia, IMDEA Energy Institute (Spain); Edgardo D. Castronuovo, University Carlos III de Madrid (Spain)

0301 *Multi-Laboratory Cooperation for Validating Microgrid and Smart Distribution System Approaches*, Marcel Otte, Hamburg University of Applied Sciences (Germany); Daniele Pala, Ricerca sul Sistema Energetico (RSE) (Italy); Carlo Sandroni, Ricerca sul Sistema Energetico (RSE) (Italy); Sebastian Rohjans, Hamburg University of Applied Sciences (Germany); Thomas Strasser, AIT Austrian Institute of Technology (Austria)

0303 *Artificial Intelligence for Microgrid Planning*, Age Van der Mei, Duinn (The Netherlands); Jan-Peter Doomernik, Enexis (The Netherlands)

0305 *An Energy Storage Integration Tool for Microgrid Techno-economic Assessment*, Anastasia Nikolopoulou, DNV GL (The Netherlands); Novy Francis, DNV GL (The Netherlands); Jos van der Burgt, DNV GL (The Netherlands); Rick Scharrenberg, DNV GL (The Netherlands)

0320 *Integrating an Agent-Aggregator Model for Demand Side Management in Distribution Network Planning*, Irena Dukovska, Eindhoven University of Technology (The Netherlands); Raoul Bernard, Eindhoven University of Technology (The Netherlands); Johan Morren, Eindhoven University of Technology (The Netherlands); Han (J.G.) Sloopweg, Eindhoven University of Technology (The Netherlands)

0322 *Block-level microgrids for power system resilience: Scaling and impacts*, Aminy Ostfeld, University of California, Berkeley (The United States of America); Michael Whitmeyer, University of California, Berkeley (The United States of America); Alexandra von Meier, University of California, Berkeley (The United States of America)

0324 *Blockchain for peer-to-peer energy exchanges: probabilistic approach of Proof of Stake*, David Vangulick, ORES - University of Liège (Belgium); Bertrand Cornélusse, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium)



0336 *Study on Small Power Grid Model with an EMS that controls diesel generators, PV and storage batteries*, YOSHIKI KUSHIMA, TEPCO Power Grid, inc. (Japan); KAZUHIRO YOSHIMURA, Tokyo Electric Power Company Holdings, Inc. (Japan); SATORU KOIZUMI, TEPCO Power Grid, inc. (Japan); MASAHIKO MIYATA, TEPCO Power Grid, inc. (Japan)

0338 *Development and Test of KEPCO Distribution Management System*, Cheol-Min Chu, KEPCO Research Institute (The Republic Of Korea); Won-Wook Jung, KEPCO Research Institute (The Republic Of Korea); Jeong-Hun Kim, KEPCO Research Institute (The Republic Of Korea); Jong-Nam Weon, KEPCO Research Institute (The Republic Of Korea)

0363 *When to go for microgrids? Analysis of the main drivers in energy access context*, Gauthier Roig, Tractebel (Belgium); Sebastien Leyder, Tractebel (Belgium); Stanislav Yordanov, Tractebel (Belgium)

0373 *Smart Grid Security Method: Consolidating requirements using a systematic approach*, Marie Clausen, OFFIS e.V. (Germany); Marion Gottschalk, OFFIS e.V. (Germany); Sebastian Hanna, OFFIS e.V. (Germany); Christina Kronberg, OFFIS e.V. (Germany); Christine Rosinger, OFFIS e.V. (Germany); Maike Rosinger, OFFIS e.V. (Germany); Judith Schulte, OFFIS e.V. (Germany); Johann Schütz, OFFIS e.V. (Germany); Mathias Uslar, OFFIS e.V. (Germany)

0388 *Power Systems Modelling of a Community Energy Project*, Gita Judah, Frazer Nash (United Kingdom)

0403 *Distributed P2P Energy Trading System Using Matching Mechanism*, Yasuhiro Takeda, The University of Tokyo (Japan); Shin Fukushima, The University of Tokyo (Japan), Kenji Tanaka, The University of Tokyo (Japan)

0407 *Robust holistic architecture for smart power systems*, Albana ILO, TU Wien (Austria); Christian Schirmer, TU Wien (Austria); Daniel-Leon Schultis, TU Wien (Austria)

0413 *A Practicable Design of Energy Internet Compatible with Current Power Supply System*, AiQiang Pan, Shanghai Electric Power Research Institute,SGCC (China); Ling Pan, Shanghai Electric Power Research Institute,SGCC (China); Ting Zhao, Global Energy Interconnection Research Institute (China); Di Zhang, Global Energy Interconnection Research Institute (China)

0414 *Residential quarters as innovative energy cells*, Linda Günther, Bergische Universität Wuppertal (Germany); James Garzon-Real, Bergische Universität Wuppertal (Germany); Daniel Wolter, Bergische Universität Wuppertal (Germany); Markus Zdrallek, Bergische Universität Wuppertal (Germany); Nadine Lucke, Gas und Wärme Institut Essen e.V. (Germany); Jörn Benthin, Gas und Wärme Institut Essen e.V. (Germany)

0415 *Analysis of local demand trends and forecasting through weather correction and benefit to DSO transition and microgrids*, Jonathan Fox, SP Energy Networks (United Kingdom); Milana Plecas, SP Energy Networks (United Kingdom); David Neilson, SP Energy Networks (United Kingdom); Dirk Cannon, Digital Engineering (United Kingdom); James Parr, Digital Engineering (United Kingdom)



0420 MASERA: Microgrid for Affordable and Sustainable Electricity in Remote Areas, Kévin Choletais, EDF R&D (France); Stéphane JAMET, Enedis (France); Roch DROZDOWSKI-STREHL, Nanyang Technological University (Singapore)

0446 A novel approach for peer-to-peer exchange in microgrids with respect to carbon emissions, Nikolas Spiliopoulos, Newcastle University (United Kingdom); Uma Rajarathnam, Enzen Global (India); Damian Giaouris, Newcastle University (United Kingdom); Phil Taylor, Newcastle University (United Kingdom); Neal Wade, Newcastle University (United Kingdom)

0453 An Adaptable System Architecture for Modular, Standardized and Scalable Urban Energy Systems, Jonas Hinker, TU Dortmund University (Germany); Sergio Contreras, TU Dortmund University (Germany); Johanna Myrzik, TU Dortmund University (Germany)

0455 LV network control architecture: H2020 InteGrid case study, José Costa, EDP NEW R&D (Portugal); Célia Trocato, EDP Distribuição (Portugal); Jorge Moreira, EDP Distribuição (Portugal); André Madureira, INESC TEC (Portugal); David Rua, INESC TEC (Portugal); David Fonseca, EDP Distribuição (Portugal)

0484 Evaluation of coordinated control of flexibility in an energy community in the presence of renewables, storage and grid injection limits, Parvathy Chittur Ramaswamy, Tractebel (Belgium); Damien Schyns, Tractebel (Belgium); Louise De Vos, Tractebel (Belgium); Niels Leemput, Tractebel (Belgium); Siebert Bressinck, Tractebel (Belgium); Vincenzo Giordano, Tractebel (Belgium)

0503 SGAM use case definition of an information exchange architecture, Aleksei Mashlakov, Lappeenranta University of Technology (LUT) (Finland); Ville Tikka, Lappeenranta University of Technology (LUT) (Finland); Samuli Honkapuro, Lappeenranta University of Technology (LUT) (Finland); Pyry Lehtimäki, Tampere University of Technology (Finland); Sami Repo, Tampere University of Technology (Finland); Antti Keski – Koukkari, VTT Technical Research Centre of Finland Ltd (Finland); Matti Aro, VTT Technical Research Centre of Finland Ltd (Finland); Rinat Abdurafikov, VTT Technical Research Centre of Finland Ltd (Finland); Anna Kulmala, VTT Technical Research Centre of Finland Ltd (Finland)

0506 Microgrid as a technological mean to multi-energy communities penetration, Edoardo Corsetti, Ricerca sul Sistema Energetico (RSE) (Italy); Giuseppe Antonio Guagliardi, Ricerca sul Sistema Energetico (RSE) (Italy); Carlo Sandroni, Ricerca sul Sistema Energetico (RSE) (Italy)

0508 Automated Demand Response System: Linking Customers and System Operators for Improving Energy Efficiency and Network's Manageability – A Demonstration Project, Luís Marques, Efacec (Portugal); Filipe Campos, Efacec (Portugal); André Simões, Efacec (Portugal); Filipe Lopes, Efacec (Portugal); Rui Fonseca, Daikin Industries (Japan); Shuji Furui, Daikin Industries (Japan)

0534 A framework to evaluate microgrids & energy storage for increasing distribution system reliability, Gaurav Singh, Electric Power Research Institute (EPRI) (The United States of America); Jouni Peppanen, Electric Power Research Institute (EPRI) (The United States of America); Arindam Maitra, Electric Power Research Institute (EPRI) (The United States of America); Jigar Patel, Hydro one (Canada)



0558 *Visions, Functions and Implementation of DSOs – A UK Perspective*, Furong Li, University of Bath (United Kingdom); Wangwei Kong, University of Bath (United Kingdom)

0588 *Integration of a PV energy balancing and trading mechanism in a microgrid*, Sandford Bessler, AIT Austrian Institute of Technology GmbH (Austria); Mark Stefan, AIT Austrian Institute of Technology GmbH (Austria); Friederich Kupzog, AIT Austrian Institute of Technology GmbH (Austria)

0600 *The Development & Implementation of a Common Application Platform to Support Local Energy Communities*, Richard Potter, EA Technology (United Kingdom); Rachel Coxcoon, Centre for Sustainable Energy (United Kingdom); Mark Dale, Western Power Distribution (United Kingdom); Richard Ash, EA Technology (United Kingdom); Poppy Maltby, Regen (United Kingdom); Daniel Hollingworth, EA Technology (United Kingdom)

16:30 – 18:00: Oral Session:

Theme 2: Architecture and system development

Chair : Fabrizio Pilo, University of Cagliari (Italy)

0043 *Microgrids for decentralized energy markets based on blockchains*

Giovanni Velotto, ABB Corporate Research (Sweden); **Ritwik Majumder**, ABB Corporate Research (Sweden); Bemgt Stridh, ABB Corporate Research (Sweden)

0276 *Bottom Up Approach for the Prediction of the Deployment of Distributed Energy Resources*

Oliver Pohl, Schleswig-Holstein Netz AG (Germany); Torsten Sowa, Schleswig-Holstein Netz AG (Germany); Tobias Pletzer, Schleswig-Holstein Netz AG (Germany); Xiaohu Tao, Schleswig-Holstein Netz AG (Germany); Maximilian Rose, Schleswig-Holstein Netz AG (Germany)

0396 *DC Microgrids for energy communities in the developing world*

Christina Papadimitriou, National Technical University of Athens (Greece); **Vasilis Kleftakis**, National Technical University of Athens (Greece); Nikos Hatziaargyriou, National Technical University of Athens (Greece)

0415 *Analysis of local demand trends and forecasting through weather correction and benefit to DSO transition and microgrids*

Jonathan Fox, SP Energy Networks (United Kingdom); Milana Plecas, SP Energy Networks (United Kingdom); David Neilson, SP Energy Networks (United Kingdom); Dirk Cannon, Digital Engineering (United Kingdom); James Parr, Digital Engineering (United Kingdom)

0492 *An industrial solution of data-sharing enabling LECs*

Victoria Tan, Enedis (France); Patrick Liminana, Enedis (France); Corinne Soors, Enedis (France); Benoit Vuillaume, Enedis (France)

0506 *Microgrid as a technological mean to multi-energy communities penetration*

Edoardo Corsetti, Ricerca sul Sistema Energetico (RSE) (Italy); Giuseppe Antonio Guagliardi, Ricerca sul Sistema Energetico (RSE) (Italy); Carlo Sandroni, Ricerca sul Sistema Energetico (RSE) (Italy)

0534 *A framework to evaluate microgrids & energy storage for increasing distribution system reliability*

Gaurav Singh, Electric Power Research Institute (EPRI) (The United States of America); Jouni



Peppanen, Electric Power Research Institute (EPRI) (The United States of America); Arindam Maitra, Electric Power Research Institute (EPRI) (The United States of America); Jigar Patel, Hydro one (Canada)

18:00 – 19:30: Reception in the Workshop Venue



Friday 8 June

08:00 – 08:30: Registration

08:30 – 08:50: **Keynote Speech**

“Distributed Generation Intergration Practices and Standardization”, Wenpeng Luan, IEC (China)

08:50 – 09:50: **Round Table**

[RT 2: Microgrids and Local Energy Communities \(LEC\) – architecture of operation, protection and safety](#)

Convener : Ignaz Hübl (Austria)

Panelists :

- Ilo Albana, TU Wien (Austria)
- Ricardo André, EDP (Portugal)
- Mark Mc Granaghan, EPRI (USA)

09:50 – 10:20: Coffee Break

10:20 – 11:20: **Poster Session focusing on theme 3 (all posters available)**

[Posters theme 3: Network integration, control concepts and operations](#)

0012 *Nested Microgrids: Operation and Control Requirements*, Sam Al-Attiyah, Imagimob (Sweden); Ritwik Majumder, ABB Corporate Research (Sweden)

0031 *Light-Weight IEC 61850 GOOSE Based Loss of Mains Protection for Smart Grid*, Mike Mekkanen, Assistant professor (Finland)

0045 *Examining solar system behavior and single-phase energy storage batteries in a small-scaled micro-grid to decrease reliance on AC network power*, Javad Behkesh Noshahr, Ardabil Province Electricity Distribution Company (Islamic Republic Of Iran)

0053 *Bidirectional electrical conversion: the first step towards smart energy gates*, Benoît Bidaine, CE+T Energrid (Belgium); Paul Bleus, CE+T Power (Belgium); Thierry Joannes, CE+T Power (Belgium); Philippe Ledent, CE+T Energrid (Belgium); François Milstein, CE+T Power (Belgium); Jean-Pierre Chisogne, CE+T Energrid (Belgium)

0056 *Advanced Islanding Detection in Grid Interactive Microgrids*, Hannu Laaksonen, University of Vaasa (Finland); Petri Hovila, ABB Oy (Finland); Kimmo Kauhaniemi, University of Vaasa (Finland); Katja Sirviö, University of Vaasa (Finland)



0064 *Assessment of the Low Voltage Ride-Through capability of a smart distribution transformer with On-Load Tap-Changer (OLTC) for renewable applications*, Ron Brandl, Fraunhofer IEE (Germany); Gunter Arnold, Fraunhofer IEE (Germany); Pablo Cirujano, Ormazabal Cotradis (Spain), Gonzalo Pérez de Nanclares, Ormazabal Cotradis (Spain); LUIS DEL RIO ETAYO, Ormazabal Corporate Technology (Spain); Asier Soto, Ormazabal Corporate Technology (Spain); Alena Ulasenka, Ormazabal Corporate Technology (Spain); Ibon Larracochea, Ormazabal Corporate Technology (Spain)

0080 *Active Network Management Scheme for Reactive Power Control*, Katja Sirviö, University of Vaasa (Finland); Hannu Laaksonen, University of Vaasa (Finland); Kimmo Kauhaniemi, University of Vaasa (Finland)

0086 *Load Step Pre-announcement and Bang-Bang controller Implemented in Islanded Microgrids to Improve Frequency Stability*, Yi Guo, TU Wien, ESEA (Austria); Tobias Görlich, University of Vienna (Austria), Wolfgang Gawlik, TU Wien, ESEA (Austria)

0087 *Time Synchronous Control of Grid- and PV-Emulators for Laboratory Testing within a Co-Simulation Environment*, Christian Seidl, AIT Austrian Institute of Technology (Austria); Thomas Strasser, AIT Austrian Institute of Technology (Austria); Marios Maniatopoulos, National Technical University of Athens (Greece); Panos Kotsampopoulos, National Technical University of Athens (Greece)

0093 *A Scalable ICT-Structure for Smart Grid Solutions for Local Energy Communities*, Christina Sufke, Westnetz GmbH (Germany); Carsten Hermanns, Westnetz GmbH (Germany)

0095 *Integrative Analysis of the Operational Impact of a MV Storage System in Back-Up and Ancillary Services Modes - Microgrid and Islanded Mode Simulation*, Jose Manuel Terras, EDP Distribuição (Portugal); André Neves, EDP Distribuição (Portugal); Bernardo Almeida, EDP (Portugal); Nuno Ferreira, EDP Distribuição (Portugal); Miguel Louro, EDP Distribuição (Portugal); José Manuel Ferreira Pinto, EDP Distribuição (Portugal); Filipe Matos, EDP Distribuição (Portugal); Pedro Veloso, EDP Distribuição (Portugal); José Damásio, Siemens AG (Germany); Teresa Pinheiro-Alves, Universidade Évora (Portugal)

0099 *Assessing the benefit of island operation of variable distributed generation in reliability improvement of radial distribution networks*, Zeljko Popovic, University of Novi Sad, Faculty of Technical Sciences (Serbia); Stanko Knezevic, Schneider Electric DMS NS (Serbia)

0103 *Smart metering communication performance analysis in EDP Distribuição*, Mário Tomé Chaves, EDP Distribuição (Portugal); Rui Santos Barbosa, EDP Distribuição (Portugal); Luís Amorim, EDP Distribuição (Portugal)

0111 *On frequency control provision with a microgrid containing battery energy systems and renewable energy sources*, Jannick Gallmann, ETH Zurich (Switzerland); Stavros Karagiannopoulos, ETH Zurich (Switzerland); Marina González Vayá, EKZ (Switzerland); Gabriela Hug, ETH Zurich (Switzerland)

0112 *Robust Control Strategy for the Energy Storage System of a Multiservice DC Microgrid*, Nelson Koch, CSEM SA (Switzerland); Christian Rod, CSEM SA (Switzerland); Pierre-Jean Alet, CSEM SA (Switzerland); Christophe Ballif, CSEM SA (Switzerland)



0113 *Novel Unified Control Strategies for Seamless Transfer of Operation of Three-Phase PV-Inverter from Grid-tied to Islanded Mode*, Shrinath Kannan, Indian Institute of Technology – Madras (India); Rohit Kumar, GnanasekarHTW Berlin school of Applied sciences (Germany); Krishna Vasudevan, Indian Institute of Technology – Madras (India)

0120 *Microgrid coordinated control system with VSG*, HAOBIN ZHU, NR Electric Co Ltd (China); XU Guangfu, NR Electric Co Ltd (China); YU Qunbing, NR Electric Co Ltd (China); CHEN Jun, NR Electric Co Ltd (China); ZHU Xianwen, NR Electric Co Ltd (China); Xu Li, NR Electric Co Ltd (China)

0127 *Comprehensive and Asymptotic Stable Controller for SST-based Micro-Grids*, Hamzeh Beiranvand, Lorestan University (Islamic Republic Of Iran); Esmael Rorok, Lorestan University (Islamic Republic Of Iran); Ebrahim Sharifipour, Electricity distribution company of Lorestan (Islamic Republic Of Iran); Freydoon Khodnia, Electricity distribution company of Lorestan (Islamic Republic Of Iran); Hekmat Beiranvandi, Electricity distribution company of Lorestan (Islamic Republic Of Iran)

0130 *Voltage-drop phenomenon and countermeasures in distribution grids with large amount of photovoltaic power generation*, Toshiki Oda, Central Research Institute of Electric Power Industry (Japan); Naoyuki Takahashi, Central Research Institute of Electric Power Industry (Japan); Satoshi Uemura, Central Research Institute of Electric Power Industry (Japan)

0131 *Microgrids Can Strengthen Grid Resilience*, Doina Vornicu, CEZ Romania (Romania); Laurentia Predescu, CEZ Romania (Romania)

0132 *Smart Rural Grid*, Ramon Gallart, Estabanell Energía (Spain); Santiago Martínez, Estabanell Energía (Spain); Luisa Candido, Estabanell Energía (Italy)

0136 *Verification of Off-Grid System for Remote Islands Using A Renewable Energy and Storage System*, Jun Yoshinaga, TEPCO Power Grid, inc. (Japan); Masato Watanabe, TEPCO Power Grid, inc. (Japan); Soichiro Kama, Waseda University (Japan); Teru Miyazaki, Waseda University (Japan); Yasuhiro Hayashi, Waseda University (Japan)

0156 *Impact of Adaptive Virtual Impedance Control of DERs Used for Power Sharing on the Protective Schemes of an Islanded Microgrid*, Mojtaba Khederzadeh, Shahid Beheshti University (Islamic Republic Of Iran)

0158 *Incentive based control method of customer side battery energy storage systems in local energy community*, Hiroyuki Hatta, Central Research Institute of Electric Power Industry (Japan); Eitaro Omine, Central Research Institute of Electric Power Industry (Japan)

0159 *Dynamic cooperative operation of distributed resources in multiple microgrids*, Wook Won Kim, KEPCO (The Republic Of Korea); Sungwook Hwang, KEPCO (The Republic Of Korea); Yongseung Lee, KEPCO (The Republic Of Korea); Junbo Sim, KEPCO (The Republic Of Korea); Hakju Lee, KEPCO (The Republic Of Korea)

0168 *Line Voltage Regulation in Low Voltage Grids*, Mara Holt, TU Dortmund University (Germany); Gerhard Grosse-Holz, Elektro-Bauelemente GmbH (Germany); Christian Rehtanz, TU Dortmund University (Germany)



0177 *Battery Swap Station Participation in Microgrid Unit Commitment*, Ferinar Moaidi, K. N. Toosi University of Tech (KNTU) (Islamic Republic Of Iran); Masoud Aliakbar Golkar, K. N. Toosi University of Tech (KNTU) (Islamic Republic Of Iran)

0181 *Assessment of Harmonic Emission Value of Distributed Generation System in Microgrid Based on Improved Complex Linear Regression*, Peng Zhang, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China); Ling Pan, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China)

0187 *Research on Control Strategy of Hybrid AC/DC Distributed System Based on Multifunction Power Electronic Transformer*, Liang Ge, Beijing Sifang Automation Co., Ltd. (China); Qianjie Liu, Nanjing Sifang Epower Automation Co., Ltd. (China); Yun Liu, Nanjing Sifang Epower Automation Co., Ltd. (China); Jiahong Wu, Nanjing Sifang Epower Automation Co., Ltd. (China)

0191 *Test and operation of a hybrid microgrid in the French island of Sein*, Thibaut Lafont, EDF (France); Etienne Radvanyi, EDF (France); Vincent Vernhes, EDF (France); Sébastien Ruiz, EDF (France); Camille Zakhour, EDF (France); Boris Deneuve, EDF (France)

0205 *Multi-objective Optimization of a Local Energy Community with distributed energy storage systems in Italy*, Susanna Mocci, University of Cagliari (Italy); Fabrizio Pilo, University of Cagliari (Italy); Gian Giuseppe Soma, University of Cagliari (Italy)

0210 *Agent based distributed optimal power flow using ADMM method*, Tung Lam Nguyen, Grenoble Electrical Engineering Laboratory (G2ELAB) (France); Quoc Tuan Tran, CEA-INES (France); Raphael Caire, Grenoble Electrical Engineering Laboratory (G2ELAB) (France); Catalin GAVRILUTA, AIT Austrian Institute of Technology (Austria)

0211 *A New Protection Strategy for Micro-grid Based On Relative Measured-Impedance and Regional Negative Sequence Component*, Jie Song, State Grid Shanghai EPRI (China); Yupeng Li, State Grid Shanghai Shinan Electric Power Supply Company (China); Xuan Yin, Shanghai university of electric power (China); Xiangli Deng, Shanghai university of electric power (China); Qishi Xiao, State Grid Shanghai EPRI (China); Yang Du, State Grid Shanghai EPRI (China)

0214 *LCL-filter Optimization Design Considering Stability of Grid-Connected Inverters in Microgrid*, Tiantian Chen, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China); Peng Zhang, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China); Ling Luo, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China); Ling Pan, Electric Power Research Institute of State Grid Shanghai Electric Power Company (China)

0225 *A Droop Control Design Method in DC Microgrids*, Gi-Young Lee, Hanyang University (The Republic Of Korea); Byoung-Sun Ko, Hanyang University (The Republic Of Korea); Rae-Young Kim, Hanyang University (The Republic Of Korea); Seok-Woong Kim, KEPCO Research Institute (The Republic Of Korea); Jintae Cho, KEPCO Research Institute (The Republic Of Korea); Juyong Kim, KEPCO Research Institute (The Republic Of Korea)



0226 *Probabilistic Topology Detection for Efficient MV-Micro Grid Control with Autarkic Smart Grid Systems*, Marcel Modemann, University of Wuppertal (Germany); Philippe Steinbusch, University of Wuppertal (Germany); Roman Uhlig, University of Wuppertal (Germany); Markus Zdrallek, University of Wuppertal (Germany); Wolfgang Friedrich, Phoenix Contact Energy Automation GmbH (Germany)

0227 *Experimental validation of Adaptive FCC and BRC functionalities for the proposed ELECTRA Web-of-Cells*, Mattia Cabiati, Ricerca sul Sistema Energetico (RSE) (Italy); Antonio Guagliardi, Ricerca sul Sistema Energetico (RSE)ItalyRiccardoLazzariRicerca sul Sistema Energetico (RSE) (Italy); Evangelos Rikos, Centre for Renewable Energy Sources and Saving (CRESS) (Greece)

0233 *Research on Key Technologies of Regional Integrated Energy Management System*, Yuquan Liu, Guangzhou Power Supply Co. Ltd. (China); Zhenhua Ding, Dongfang Electronics Co. Ltd. (China); Yanle Liu, Dongfang Electronics Co. Ltd. (China); Yingying Sun, Dongfang Electronics Co. Ltd. (China)

0236 *Grid-Forming Converters – Inevitability, Control Strategies and Challenges in Future Grids Application*, Ali Tayyebi, AIT Austrian Institute of Technology (Austria); Florian Dörfler, ETH Zurich (Switzerland); Friederich Kupzog, AIT Austrian Institute of Technology (Austria); Zoran Miletic, AIT Austrian Institute of Technology (Austria); Wolfgang Hribernik, AIT Austrian Institute of Technology (Austria)

0237 *Fallback Solution for a Low-Voltage Regulator Control using Artificial Neural Networks*, Haiyan ma, TU Kaiserslautern (Germany); Stefan Lang, Pfalzwerke AG (Germany); Wolfram H. Wellßow, TU Kaiserslautern (Germany)

0238 *The Strijp-S living lab for embedded microgrid studies*, Martijn Roos, Eindhoven University of Technology (The Netherlands); Rik Fonteijn, Eindhoven University of Technology (The Netherlands); Phuong Nguyen, Eindhoven University of Technology (The Netherlands); Johan Morren, Eindhoven University of Technology (The Netherlands); Han Sloomweg, Eindhoven University of Technology (The Netherlands)

0248 *H2020 SENSIBLE Project – Laboratory Results for the Short-Circuit Behaviour of the Storage Devices, under Islanding Conditions*, Nuno Lopes Filipe, EDP NEW R&D (Portugal); Miguel Castanheira Marques, EDP NEW R&D (Portugal); Ricardo André, EDP NEW R&D (Portugal); Luís Rocha, EDP Labelec (Portugal); Bernardo Almeida, EDP Distribuição (Portugal); André Neves, EDP Distribuição (Portugal); Miguel Louro, EDP Distribuição (Portugal); José Damásio, Siemens SA (Portugal); Clara Gouveia, INESC TEC (Portugal)

0258 *Research on grid instability caused by the interactions in microgrid*, Rong Cai, ABB Corporate Research Center (China); Jiayang Ruan, ABB Corporate Research Center (China); Xing Huang, ABB Corporate Research Center (China); Hailian Xie, ABB Corporate Research Center (China)

0259 *Control Algorithm of DC Microgrids by using voltage compensation term*, Byoung-Sun Ko, Hanyang University (The Republic Of Korea); Gi-Young Lee, Hanyang University (The Republic Of Korea); Rae-Young Kim, Hanyang University (The Republic Of Korea); Seok-Woong Kim, KEPCO Research Institute (The Republic Of Korea); Hyun-Min Kim, KEPCO Research Institute (The Republic Of Korea); YoungPyo Cho, KEPCO Research Institute (The Republic Of Korea); HONGJOO KIM, KEPCO Research Institute (The Republic Of Korea)



0266 *Study on Probability Distribution of Photovoltaic Power Fluctuations at Multi-time Scales*, Ling Luo, EPRI, State Grid Shanghai Municipal Electric Power Company (China); chen fang, EPRI, State Grid Shanghai Municipal Electric Power Company (China); Yong Yang, Shanghai university of electric power (China); Chunyang Li, Shanghai university of electric power (China); Fen Li, Shanghai university of electric power (China); Peng Zhang, EPRI, State Grid Shanghai Municipal Electric Power Company (China)

0269 *High precision distribution grid monitoring system utilizing optical communication network*, Shimpei Oe, The Kansai Election Power Co.,Inc. (Japan); Hideki Miyamoto, The Kansai Election Power Co.,Inc. (Japan); Makoto Murata, The Kansai Election Power Co.,Inc. (Japan); Takayoshi Yamamoto, The Kansai Election Power Co.,Inc. (Japan); Masayuki Oyama, The Kansai Election Power Co.,Inc. (Japan)

0274 *Control and protection of DC based residential microgrid in LVDC distribution system*, Antti Alahäivälä, VTT Technical Research Centre of Finland Ltd (Finland); Kari Mäki, VTT Technical Research Centre of Finland Ltd (Finland); Anna Kulmala, VTT Technical Research Centre of Finland Ltd (Finland); Jussi Ikäheimo, VTT Technical Research Centre of Finland Ltd (Finland); Kim Forssen, VTT Technical Research Centre of Finland Ltd (Finland); YoungPyo Cho, KEPCO Research Institute (The Republic Of Korea); Jintae Cho, KEPCO Research Institute (The Republic Of Korea); JuYoung Kim, KEPCO Research Institute (The Republic Of Korea); HONGJOO KIM, KEPCO Research Institute (The Republic Of Korea)

0287 *LV network state estimation using decoupled load-flow algorithm*, Mitja Antoncic, Faculty of Electrical Engineering, University of Ljubljana (Slovenia); Bostjan Blazic, Faculty of Electrical Engineering, University of Ljubljana (Slovenia)

0292 *Smartgrids enabling Microgrids and islanding operation: SENSIBLE as a real demonstration case study*, Ricardo André, EDP Labelec (Portugal); Filipe Guerra, EDP Labelec (Portugal); Christian Mose, Siemens AG (Germany); Salvador Rodriguez, GPTECH (Portugal); Clara Gouveia, INESC TEC (Portugal); Ricardo Santos, EDP Distribuição (Portugal); Pedro Castro, EDP NEWR&D (Portugal); Nuno Lopes Filipe, EDP Labelec (Portugal); João Maciel, EDP NEWR&D (Portugal)

0299 *A Data-driven Home Energy Management System for Sub-Saharan Africa*, Shuangyuan Wang, University of Bath (United Kingdom); Ran Li, University of Bath (United Kingdom); Zhong Zhang, University of Bath (United Kingdom); Furong Li, University of Bath (United Kingdom); Clive Tomlinson, Swanbarton Limited (United Kingdom); Edwin MATLOTSE, University of Botswana (Botswana)

0302 *Multimodal Microgrids: Flexibility for the Power System*, Martin Zimmerlin, KIT (Germany); Martin Wilferth, KIT (Germany); Thomas Leibfried, KIT (Germany)

0309 *Operating Properties of Hybrid Inverters and Power Flow Regulators*, Petr Mastny, Brno University of Technology (The Czech Republic); Jan Moravek, Brno University of Technology (The Czech Republic); Jiri Drapela, Brno University of Technology (The Czech Republic)

0311 *Coordinated Control of Multiple Distributed Sources in Islanded Operation of Microgrid*, Yu An, Shanghai Jiao Tong University (China); Dong Liu, Shanghai Jiao Tong University (China); Qiang Liu, Guizhou Power Grid Co. Ltd. (China); Qingsheng Li, Guizhou Power Grid Co. Ltd. (China); Yuhui Huang, Shanghai Jiao Tong University (China)



0316 *Protection Systems for Microgrids with High Rate of Inverter-Based-Generators*, Philippe ALIBERT, Schneider Electric (France); Jean Wild, Schneider Electric (France)

0328 *Management and Dispatching of Distributed Operating Power Reserve in an Urban Microgrid beyond DSO Risk Decision*, Bruno FRANCOIS, Centrale Lille - L2EP (France); Xingyu YAN, HEI - L2EP (France); Xin WEN, Centrale Lille - L2EP (France); Dhaker Abbes, HEI - L2EP (France)

0329 *Dealing with Uncertainty in PV-powered Microgrids: An Optimal Corrective Approach*, Fausto CALDERON-OBALDIA, GeePs-UPMC (France); Amjad Anvari-Moghaddam, Aalborg University (Denmark); Jordi Badosa, LMD (France); Josep M. Guerrero, Aalborg University (Denmark); Juan C. Vasquez, Aalborg University (Denmark); Anne Migan, GeePs-UPMC (France); Vincent Bourdin, LIMSI (France)

0331 *Sizing of a battery system based on simulation of operation in an islanded network*, Dimitri Nesterov, Tractebel (Belgium); Niels Leemput, Tractebel (Belgium); Jozef Doms, Tractebel (Belgium)

0333 *Microgrid Controller Standards for Integration and Interoperability*, Jim Reilly, Reilly Associates (The United States of America); Geza Joos, McGill University (Canada)

0334 *Microgrid predictive control method that supports resiliency and economic efficiency*, Masataka Imabayashi, HITACHI (Japan); Masatoshi Kumagai, HITACHI (Japan); Masatoshi Watanabe, HITACHI (Japan)

0345 *Developing Protection Schemes for Low Voltage Microgrid with High Penetration of Photovoltaic Generation*, Tran The Hoang, Grenoble Electrical Engineering Laboratory (G2ELAB) (France); Quoc Tuan Tran, CEA/INES, INSTN – Paris Saclay University (France); Yvon Besanger, Grenoble Electrical Engineering Laboratory (G2ELAB) (France)

0351 *Realtime-Substitution Mechanisms for Missing Field Measurements – Field-approved Methods and Evaluation Results*, Stefan Kitzler, AIT Austrian Institute of Technology (Austria); Mark Stefan, AIT Austrian Institute of Technology (Austria)

0352 *Simulation-based cost-benefit analysis for innovative components in low voltage grids*, Mark Stefan, AIT Austrian Institute of Technology (Austria); Paul Zehetbauer, AIT Austrian Institute of Technology (Austria); Khalil Hamad, Fachhochschule Oberösterreich – F&E GesmbH (Austria); Andres Moreno, Fachhochschule Oberösterreich – F&E GesmbH (Austria); Wolfgang Prügler, MOOSMOAR Energies OG (Austria); Roland Sperr, Linz Strom Netz GmbH (Austria)

0357 *Development on estimation method of output of photovoltaic power generations for microgrids operation*, Satoshi Uemura, The Central Research Institute of Electric Power Industry (Japan)

0360 *Redundancy and Synchronization Improvement for Prevailing Phase Angle Estimation and Flicker Source location*, Sergio Santos, ZIV Automation (Spain); Aitor Amezua, ZIV Automation (Spain); Maja Pikula, ZIV Automation (Spain); Asier Llano, ZIV Automation (Spain)

0362 *High Performance Virtual Generator BESS for Distribution SystemsSupport Applications Analysed in a Hardware-in-the-Loop SimulationSet Up*, Francesco Baccino, ABB Power Grids, Grid Automation (Italy); Pietro Serra, ABB Power Grids, Grid Automation (Italy); Tilo Buehler, ABB Power



Grids, Grid Automation (Switzerland); Andrew Kitimbo, Vattenfall (Sweden); Ulrika Morild, Vattenfall (Sweden)

0380 *Fuzzy-logic based Autonomous Operation of Small-scale Microgrid in Emergency*, JiSong Hong, Chonnam National University (The Republic Of Korea); Seon Ju Ahn, Chonnam National University (The Republic Of Korea); Joon-Ho Choi, Chonnam National University (The Republic Of Korea); Sang-Yun Yun, Chonnam National University (The Republic Of Korea)

0383 *Distributed optimisation with restricted exchanges of information: charging of an electric vehicle fleet*, Roman Le Goff Latimier, ENS Rennes, SATIE Laboratory (France); Hamid Ben Ahmed, ENS Rennes, SATIE Laboratory (France); Bernard Multon, ENS Rennes, SATIE Laboratory (France)

0386 *EXPERIMENTAL MICROGRID WITH IEC 61850 STANDARD*, Thierry COSTE, EDF R&D (France); Sébastien VILBOIS, EDF R&D (France)

0390 *DEMOCRAT: Demonstrator of a micro-grid integrating storage*, Marta Ribeiro, Efacec (Portugal); Luís Marques, Efacec (Portugal); Ismael Miranda, Efacec (Portugal); Alberto Bernardo, Efacec (Portugal)

0406 *ACTIVE AND REACTIVE POWER REQUIREMENTS AT DSO-TSO INTERFACE, A CASES STUDY BASED ON FOUR EUROPEAN COUNTRIES*, Serdar Kadam, AIT Austrian Institute of Technology (Austria); Roman Schwalbe, AIT Austrian Institute of Technology (Austria); Stefan Übermasser, AIT Austrian Institute of Technology (Austria); Christoph Groiss, Salzburg Netz GmbH (Austria); Alfred Einfalt, Siemens AG Österreich (Austria); Katja Sirviö, University of Vaasa (Finland); Hannu Laaksonen, University of Vaasa (Finland); Petri Hovila, ABB (Finland); Bostjan Blazic, Faculty of Electrical Engineering, University of Ljubljana (Slovenia)

0417 *The INVADE project: Towards the flexibility operator concept and its application to the Spanish pilot*, Pol Olivella-Rosell, CITCEA-UPC (Spain); Pau Lloret-Gallego, CITCEA-UPC (Spain); Roberto Villafafila-Robles, CITCEA-UPC (Spain); Stig Ø. Ottesene, Smart Systems (Norway); Ramon Gallart, Estabanell Energía (Spain); Andreas Sumper, CITCEA-UPC (Spain)

0421 *Optimal energy management of Microgrid based on FCCHP in the presence of electric and thermal loads considering energy storage systems*, Mojtaba Rahmanzadeh, K.N.Toosi University of Technology (Islamic Republic Of Iran); Hamed Haggi, K.N.Toosi University of Technology (Islamic Republic Of Iran); Masoud Aliakbar Golkar, K.N.Toosi University of Technology (Islamic Republic Of Iran)

0423 *RESERVE Irish Demo – Virtual Output Impedance Control for Voltage Stability*, Sriram Karthik Gurumurthy, RWTH Aachen University (Germany); Marco Cupelli, RWTH Aachen University (Germany); Antonello Monti, RWTH Aachen University (Germany); Ronan Murphy, ESB Networks (Ireland); Jonathan Sandham, ESB Networks (Ireland)

0424 *Influence of Inaccurate Medium Voltage Microgrid Synchronization on Synchronous Generators*, Simon Eberlein, University of Stuttgart (Germany); Krzysztof Rudion, University of Stuttgart (Germany)



0426 *Energy Management of a Microgrid with Emission limitations under Uncertainty*, Amir Abdollahi, SKED co., Kerman (Islamic Republic Of Iran); Abdolvahid Mahdavinia, SKED co., Kerman (Islamic Republic Of Iran); Hooman Khaloie, Shahid Bahonar University of Kerman (Islamic Republic Of Iran); Mehran Mohammadnejad, Shahid Bahonar University of Kerman (Islamic Republic Of Iran)

0428 *Assessing the Flexibility Provision of Microgrids in MV Distribution Grids*, Daniel Contreras, University of Stuttgart (Germany); Ouafa Laribi, University of Stuttgart (Germany); Manswet Banka, University of Stuttgart (Germany); Krzysztof Rudion, University of Stuttgart (Germany)

0434 *LV microgrid supplied by diesel generator and PV*, Josef Hrouda, EGC-CB, s.r.o. (The Czech Republic); Filip Broz, EGC-CB, s.r.o. (The Czech Republic); Jan Petrasek, EGC-CB, s.r.o. (The Czech Republic); Karel Prochazka, EGC-CB, s.r.o. (The Czech Republic); Jan Jiricka, E.ON Distribuce a.s. (The Czech Republic); Martin Kaspirek, E.ON Distribuce a.s. (The Czech Republic)

0435 *Economic Operation Optimisation of Battery Energy Storage Systems in a Solar Rich Microgrid*, Asanga Jayawardana, University of Wollongong (Australia); Massimo Fiorentini, University of Wollongong (Australia); Duane A. Robinson, University of Wollongong (Australia); Ashish P. Agalgaonkar, University of Wollongong (Australia)

0436 *An Approach for Validating and Testing Micro Grid and Cell-based Control Concepts*, Falko Ebe, University of Applied Sciences Ulm (Germany); Basem Ibi, University of Applied Sciences Ulm (Germany); Matthias Casel, University of Applied Sciences Ulm (Germany); Christoph Kondzialka, University of Applied Sciences Ulm (Germany); Gerd Heilscher, University of Applied Sciences Ulm (Germany); Christian Seitzl, AIT Austrian Institute of Technology (Austria); Roland Bruendlinger, AIT Austrian Institute of Technology (Austria); Thomas Strasser, AIT Austrian Institute of Technology (Austria)

0444 *Flexibility and optimization services validation in a microgrid*, Andraž Andolšekcyber, GRID GmbH & Co. KG (Austria); Mag. Peter Nemčekcyber, GRID GmbH & Co. KG (Austria); Amador Gómez López, Enel Iberia (Spain); Andrea Zocchi, Siemens (Italy); Jorge Bruna Romero, Circe (Spain); Miguel Ángel Oliván Monge, Circe (Spain)

0454 *Evaluation of different local var control strategies in low voltage grids*, Daniel-Leon Schultis, TU Wien (Austria); Albana ILO, TU Wien, ESEA (Austria); Christian Schirmer, TU Wien (Austria)

0465 *LabLink – A novel co-simulation tool for the evaluation of large scale EV penetration focusing on local energy communities*, Daniel Stahleder, AIT Austrian Institute of Technology GmbH (Austria); David Reihs, AIT Austrian Institute of Technology GmbH (Austria); Felix Lehfuss, AIT Austrian Institute of Technology GmbH (Austria)

0467 *Outage monitoring and management in Overhead and Cable networks with various types of architecture*, Andrey Kucheryavenkov, Trinity Engineering LLC (The Russian Federation); Ekaterina Kartasheva, Trinity Engineering LLC (The Russian Federation); Elena Kondrashenko, Trinity Engineering LLC (The Russian Federation)

0473 *Control method and storage system sizing for PV-Diesel microgrid: From simulation to experimental analysis*, Thai Phuong DO, National Institute of Solar Energy (INES), French Alternative Energies Atomic Energy Commission (France); Gabin KOUCOI, National Institute of Solar Energy



(INES) French Alternative Energies Atomic Energy Commission (France); Franck BOURRY, National Institute of Solar Energy (INES) French Alternative Energies Atomic Energy Commission (France); Xavier LEPIVERT, SteadySun, Savoie Technolac (France)

0476 *InterFlex - Simris– Technical management of a grid-connected microgrid that can run in an islanded mode with 100% renewable generation*, Milica Bogdanovic, RWTH Aachen University (Germany); Henning Wilms, RWTH Aachen University (Germany); Marco Cupelli, RWTH Aachen University (Germany); Michael Hirst, EON (United Kingdom); Luis Arturo Hernandez Salmeron, EON (Germany); Antonello Monti, RWTH Aachen University (Germany)

0482 *Demonstration of the technical and commercial VPP concept: Slovenia demo in InteGrid*, Ursula Krisper, Elektro Ljubljana d.d. (Slovenia)

0487 *InterFlex Swedish Demo in Malmö – Cross Carrier Integration for Enhanced Flexibility in Local Energy Communities and Microgrids*, Amir Ahmadifar, RWTH Aachen University (Germany); Tobias Blacha, RWTH Aachen University (Germany); Marco Cupelli, RWTH Aachen University (Germany); Paul Guest, EON (Sweden); Antonello Monti, RWTH Aachen University (Germany); Dirk Müller, RWTH Aachen University (Germany)

0488 *Improved real-time operation of microgrids with integrated economic constraints*, Martin LEGRY, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Frederic Colas, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Jean Yves Dieulot, CRISTAL- Centre de Recherche en Informatique, Signal et Automatique de Lille (France); Christophe Saudemont, L2EP - Lille Laboratory of Electrical Engineering and Power Electronics (France); Yann PANKOW, Engie Laborelec (Belgium)

0489 *Performance of combined renewable generation and storage in the context of energy firming*, Andrei Szabo, Siemens AG (Germany); Dino Ablakovic, Siemens AG (Germany); Joachim Bamberger, Siemens AG (Germany)

0495 *Electric vehicles charging in unbalanced Belgian low-voltage grids: a case study*, Marta Vanin, University of Trento (Italy); Frederik Geth, KU Leuven (EnergyVille) (Belgium); Dirk Van Hertem, KU Leuven (EnergyVille) (Belgium); Reinhilde D'hulst, VITO (Belgium)

0499 *Decentralised control for combined heat and power system in energy community*, Heng Shi, University of Bath (United Kingdom); Zhong Zhang, University of Bath (United Kingdom); Furong Li, University of Bath (United Kingdom)

0501 *Local stability performance analysis of islanded microgrid based on inner control loops approach*, Guy Wanlongo Ndiwulu, Université catholique de Louvain (UCL) (Belgium); Emmanuel De Jaeger, Université catholique de Louvain (UCL) (Belgium); Angelo Kuti Lusala, Université Kongo (UK) (The Democratic Republic Of The Congo)

0502 *Scheduling of operation in Low Voltage distribution networks with multiple Distributed Energy Resources*, Konstantinos Kotsalos, Efacec (Portugal); Nuno Silva, Efacec (Portugal); Ismael Miranda, Efacec (Portugal); Helder Leite, University of Porto (Portugal)



0511 *Voltage regulation in stand-alone microgrids with storage units: a multi-variable H-infinity control approach*, Quang-Linh Lam, G2Elab - GIPSA-lab, Grenoble INP (France); Antoneta Iuliana Bratcu, GIPSA-lab, Grenoble INP (France); Delphine Riu, G2Elab, Grenoble INP (France)

0514 *Multi-Energy Systems in Small Settlements: Methodology and Case Study for Electricity and Heat Supply*, Athanasios Stefanidis, Avaloq Evolution AG (Switzerland); Marija Zima-Bockarjova, ABB Corporate Research (Switzerland); C. Yaman Evrenosoglu, ABB Corporate Research (Switzerland); Alexandre Oudalov, ABB Power Grids (Switzerland)

0517 *Novel Method for identifying maximum Renewable Energy Penetration in Distribution Grids*, Veronica Biagini, ABB Corporate Research (Germany); Marco Giuntoli, ABB Corporate Research (Germany); Peter Noglik, ABB Corporate Research (Germany); Matthias Biskoping, ABB Corporate Research (Germany); Georg Gutermuth, ABB Corporate Research (Germany); Kalpesh Bhalodi, ABB Corporate Research (Germany); Alexandre Oudalov, ABB (Switzerland)

0518 *The optimal scheduling of a campus micro-grid with CHP and storage devices*, Gim Jaehyeon, Sunchon national University (The Republic Of Korea); 성돈 김, Sunchon national University (The Republic Of Korea); Han Seunghun, Sunchon national University (The Republic Of Korea)

0525 *Flexibility model of integrated energy sources for the strategic planning of Distribution Networks*, Gianni Celli, University of Cagliari (Italy); Fabrizio Pilo, University of Cagliari (Italy); Simona Ruggeri, University of Cagliari (Italy)

0532 *Validation of Advanced Interoperability Functions for Battery Energy Storage Systems*, Christian Messner, AIT Austrian Institute of Technology GmbH (Austria); Jun Hashimoto, Fukushima Renewable Energy Institute, AIST (FREA) (Japan)

0542 *Field Test on a DSO Microgrid in Southern Sweden – Design and Control Aspects*, Ingmar Leisse, E.ON Energy Networks (Sweden); Demijan Panic, E.ON Energy Networks (Sweden)

0550 *Results of the Sologrid Pilot Project – Decentralized Load Management to Increase the Efficiency of Local Energy Communities*, Nicolas Stocker, Adaptricity AG (Switzerland); Andreas Ulbig, Adaptricity AG (Switzerland); Damiano Toffanin, Adaptricity AG (Switzerland)

0553 *A Microgrid model for the integrated operation of Heat and Electricity*, EunTae Son, Dongshin University (The Republic Of Korea); Dongmin Kim, Dongshin University (The Republic Of Korea); Kyungsup Lee, Dongshin University (The Republic Of Korea); Minsoo Kim, NURI Telecom Co., Ltd (The Republic Of Korea); Sungwook Hwang, Korea Electric Power Corporation (The Republic Of Korea)

0560 *Preventive Management and Control of a Microgrid System using Flexibility of Distributed Storage*, Clara Gouveia, INESC TEC (Portugal); André Madureira, INESC TEC (Portugal); José Gouveia, INESC TEC (Portugal); Jean Sumaili, INESC TEC (Portugal); Dewan Fayzur Rahman, INESC TEC (Portugal); Ricardo Bessa, INESC TEC (Portugal); Carlos Moreira, INESC TEC (Portugal); Luís Seca, INESC TEC (Portugal)

0561 *Realizing stacked benefits opportunities of a Distribution Connected energy storage system*, Arindam Maitra, Electric Power Research Institute (EPRI) (The United States of America); Jouni Peppanen, Electric Power Research Institute (EPRI) (The United States of America); Ram Ravikumar,



Electric Power Research Institute (EPRI) (The United States of America); Tanguy Hubert, Electric Power Research Institute (EPRI) (The United States of America); Michael RUMANCIK, AVANGRID (The United States of America); Megan Pomeroy, AVANGRID (The United States of America); Giovanni Damato, Electric Power Research Institute (EPRI) (The United States of America)

0566 *Protection concepts for MV island grids – An applied approach*, Christina Tzanetopoulou, BKW Energie AG (Switzerland); Matthias Dietrich, BKW Energie AG (Switzerland); Luigi Scoca, BKW Energie AG (Switzerland)

0572 *Ending Node Voltages Based DG Placement in Distribution Networks*, Akbar Bayat, Zanjan Electrical Distribution Company (Islamic Republic Of Iran)

0576 *Improvement Of Micro-Grid Islanding Detection Using Smart Methods Based On Multi-Resolution Analysis And Data Whitening*, Negar Karimipoor, Charmahal & Bakhtiari Distribution company (Islamic Republic Of Iran); Saleh Asgari, Niroo research Institute of Iran (Islamic Republic Of Iran)

0593 *Modelling of three-phase four-wire low-voltage cables taking into account the neutral connection to the earth*, Frederic Olivier, University of Liège (Belgium); Raphael Fonteneau, University of Liège (Belgium); Damien Ernst, University of Liège (Belgium)

11:20 – 11:40: Keynote Speech

“Technical challenges and innovative solutions for the operation of microgrids”, Constantin Ginet, Siemens (Germany)

11:40 – 13:10: Oral Session:

[Theme 3: Network integration, control concepts and operations](#)

Chair : Ricardo Prata, EDP (Portugal)

0116 *Agent-based Grid Automation in Distribution Grids: Experiences Under Real Field Conditions*
Marcel Ludwig, Wuppertal University (Germany); Kamil Korotkiewicz, Wuppertal University (Germany); Benedikt Dahmann, Wuppertal University (Germany); Markus Zdrallek, Wuppertal University (Germany)

0191 *Test and operation of a hybrid microgrid in the French island of Sein*

Thibaut Lafont, EDF (France); Etienne Radvanyi, EDF (France); Vincent Vernhes, EDF (France); Sébastien Ruiz, EDF (France); Camille Zakhour, EDF (France); Boris Deneuille, EDF (France)

0200 *Protection coordination of an inverter generation based microgrid for an unbalanced distribution system*

Mobolaji Bello, Electric Power Research Institute (EPRI) (The United States of America); **Arindam Maitra**, Electric Power Research Institute (EPRI) (The United States of America); Roger Dugan, Electric Power Research Institute (EPRI) (The United States of America); Araya Gebeyehu, Southern California Edison (SCE) (The United States of America); Jorge Araiza, Southern California Edison (SCE) (The United States of America); Dean Weng, Electric Power Research Institute (EPRI) (The United States of America); Sean McGuinness, Electric Power Research Institute (EPRI) (The United States of America)



0444 *Flexibility and optimization services validation in a microgrid*

Andraž Andolšek, cyberGRID GmbH & Co. KG (Austria); Mag. Peter Nemček, cyberGRID GmbH & Co. KG (Austria); **Amador Gómez López**, Enel Iberia (Spain); Andrea Zocchi, Siemens (Italy); Jorge Bruna Romero, Circe (Spain); Miguel Ángel Oliván Monge, Circe (Spain)

0550 *Results of the Sologrid Pilot Project – Decentralized Load Management to Increase the Efficiency of Local Energy Communities*

Nicolas Stocker, Adaptricity AG (Switzerland); Andreas Ulbig, Adaptricity AG (Switzerland); **Damiano Toffanin**, Adaptricity AG (Switzerland)

13:10 – 13:15: Closing Session

13:15 – 14:30: Lunch

14:30 – 16:30: Technical Visit at Kolector Etra (Optional but mandatory registration)