



Programme

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

Dated 24 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'Herbemont**, REScoop.eu (Belgium)
- **Antoine Jourdain**, Enedis (France)
- **Luca Lo Schiavo**, ARERA (Italy)
- **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)

0137 *Robust and reliable design of a micro-grid supply chain based on photovoltaic energy in presence of system disruptions (Case study: Yazd; a sunny city with 320 days sunshine)*, Davood Shishebori, Yazd Electric Distribution Company (Islamic Republic Of Iran); Faride Behdad, Yazd Electric Distribution Company (Islamic Republic Of Iran); Ahmad Ahmadi Yazdi, Yazd Electric 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 Prokhnich, 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 Prösl-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 Seitzl, 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 Bernardts, Eindhoven University of Technology (The Netherlands); Johan Morren, Eindhoven University of Technology (The Netherlands); Han (J.G.) Slootweg, 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); MASAHITO 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 (CREG) (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 Sloopweg, 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)

0288 *Evaluation of the impact of high presence of small DERs connected to the urban LV network*, Juliana Katic, University of Novi Sad, Faculty of Technical Sciences (Serbia); Vladimir Katic, University of Novi Sad, Faculty of Technical Sciences (Serbia)

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 Systems Support Applications Analysed in a Hardware-in-the-Loop Simulation Set 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 Kaspírek, 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 Ild 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 Reihls, 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, Suncheon national University (The Republic Of Korea); 성돈 김, Suncheon national University (The Republic Of Korea); Han Seunghun, Suncheon 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 Dahlmann, 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 Kolektor Etra (Optional but mandatory registration)