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10TH EDITION

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Jacob RODRIGUEZ RIVERO* (1), Ana ROMERO GARCÍA (1), Gustavo PRESA ARIAS (1), David PEÑALVER MARTÍN (1), Carlos Alberto SANCHEZ OSPINA (1), Luis CHOFRE GARCÍA (1), José BELLO GARCÍA (1), Marta COZAR GUEVARA (1), Gabriele LICASALE (1), Glodeanu ADRIÁN (2),
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1: University of Wuppertal, Germany; 2: SWKiel Netz GmbH, Germany

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Andrew GARNER (1), Georg BRANDSTÄTTER (1), Clemens KORNER* (1), Gerhard JAMBRICH (1), Carolin MONSBERGER (1), Michael NIEDERKOFLER (2), Andreas SCHNEEMANN (2), Stefan STRÖMER (1), Yannick WIMMER (1)
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1449 *Comparison of Automated Methods for Heat Network Expansion from an Economic Perspective*

Nicole BARTON*, Timo MAYREGGER, Markus ZDRALLEK
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1450 *Impact Of Inverter-Based Resources Penetration On Reliability Of Islanding Relays Performance*

Mehdi BIGDAD*, Alexandre BACH, Trung Dung LE, Marc PETIT
CentraleSupélec / GeePs laboratory, France

1454 *Comparative Assessment of Distribution Network Architectures under Varying DER Penetration Levels*

Carlos CHAPARRO*, Vincent DEBUSSCHERE, Marie-Cécile ALVAREZ-HERAULT, Jérôme BUIRE
G2ELab, France

1455 *Operational Risk Quantification for Preventive Control in Low Voltage Grids with Distributed Energy Resources*

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1: DLR Institute of Networked Energy Systems, Oldenburg, Germany; 2: Carl von Ossietzky University of Oldenburg, Oldenburg, Germany

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Alexander PETERS*, Julian BIGALKE, Simon BRAUN, Luka ALHÄUSER CISNEIROS E FARIA, Andreas ULBIG
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Jacqueline TRICOT, Sofiane BOUIBEB, Paul PIKE*, Sébastien DELBOS
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1464 *Addressing Distribution Network Planning: A Case Study in Northern Italy*

Davide FRATELLI* (1), Aleksandar DIMOVSKI (1), Corrado Maria CAMINITI (1), Matteo SPILLER (1), Marco MERLO (1), Francesca CRAMAROSSA (2)
1: Department of Energy, Politecnico di Milano, Italy; 2: Deval S.p.A

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Dominik J. STORCH* (1), Simon NIEDERLE (2), Christoph J. STEINHART (3), Michael KREISSL (3), Christian GUTZMANN (3), Maik GÜNTHER (4), Michael FINKEL (1), Rolf WITZMANN (2)
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Jacob LYNCH* (1), Martin CATON (2), Edward CORR (3), Andrew FORSTER (4), Peter LANG (5)
1: National Grid Electricity Distribution; 2: Low Carbon Electric Limited; 3: Power Networks Demonstration Centre; 4: Nortech Management; 5: UK Power Networks

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Luciano MASOTTI* (1), Michele PASTORE (1), Francesco CAPPUCCIO (2), Ehsan POURHOSSEINI (2), Matteo BRESCHI (2), Tariq KHAN (2), Davide Stefano PICCAGLI (2)
1: Enernex LLC, United States of America; 2: CESI S.p.A. Italy

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Andrew URQUHART* (2), Murray THOMSON (2), Liza TROSHKA (1)
1: National Grid, United Kingdom; 2: Loughborough University

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Joel SEPPÄLÄ, Marko JUNTUNEN*
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1485 *Reliability Assessment Of §14a EnWG Grid Control And Impact On Redundancy And Fallback Strategies*

Charlotte WEITZEL* (1), Prof. Dr. David ECHTERNACHT (2), Christoph CHRISTOFOLINI (3), Dr. Xiaohu TAO (3)
1: energyandpeople GmbH; 2: University of Applied Sciences Düsseldorf; 3: Schleswig-Holstein Netz GmbH

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Yerim LEE*, Dongjun HAN, Changhyun JEON, Hojun YANG, Dongjun WON
Inha University, South Korea

1487 *Resolving Unbalance Due To Single-phase Transformers On HV Feeders*

Andrew URQUHART* (1), Iro PSARRA (2), Neville RICHARDS (2), Thomas WILSON (2), Murray THOMSON (1), David PENFOLD (3)
1: Loughborough University, United Kingdom; 2: CGI; 3: National Grid Electricity Distribution

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Cleberton REIZ*, Everton ALVES, Clara GOUVEIA, Micael SIMÕES, Jorge PEREIRA
INESC TEC, Portugal

1494 *Impact of Communication Disruptions on Grid-Serving Flexibility Control*

Farah NASR*, Nikita KIRSCH, Simon BRAUN, Andreas ULBIG
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1498 *Long-term Load Forecast For Distribution System Using LLM*

Aris Evangelos DIMEAS* (1), Sotiris CHRISTOPOULOS (1,2)
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Savvas PANAGI (1,2), Louiza STYLIANIDOU* (1,2), Phoivos THERAPONTOS (1), Chrysovalantis SPANIAS (1), Petros ARISTIDOU (2)
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Giuditta PISANO*, Adriano CASU, Fabrizio PILO
University of Cagliari, Italy

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Nina ŠTUMBERGER*, Rosa TERKOWSKI, Simon BRAUN, Andreas ULBIG
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Adriano CASU*, Samuele SETZU, Barbara CANNAS, Giuditta PISANO, Fabio PISANO, Fabrizio PILO
University of Cagliari, Italy

1516 *Exploring the Dynamics of Reinforcement Learning Agents Using Flexible Load Profiles to Improve Electrical Grid Management*

Sven SAUERBAUM* (1), Daniel HENN (2), Joachim GERLACH (3)
1: VIVAVIS AG, Germany; 2: University, Siegen; 3: Albstadt-Sigmaringen University

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Johannes HEID* (1,2), Jakob SEESE (2), Angela Maria GAMBA CARDENAS (1,2), Andrea SCHOEN (2), Nils BORNHORST (1), Martin BRAUN (1,2)
1: University of Kassel, Germany; 2: Fraunhofer IEE

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Christophe CHAUSSIN*, Alaa BARNAT, Gilles CORDIER, Axelle COUSINOU, Mehdi EL KANSOULI, Laurine HAMARD, Yue HONG, Iyadh KIOUA, Tsiry RASENDRASOA, Maxence ROBAUX, Côme STEPHANT, Raphaël TEBOUL
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Gertjan KOK* (1), Helko VAN DEN BROM (1), Ties VAN DER HEIJDEN (2), Bart PLEITER (3)
1: VSL B.V.; 2: TU Delft; 3: Alliander N.V.

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Bence BERECZKI*, Artem MEDVEDEV, Bálint HARTMANN, István VOKONY
Department of Electric Power Engineering, Faculty of Electrical Engineering and Informatics Budapest University of Technology and Economics

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Simona RUGGERI*, Susanna MOCCI, Fabrizio PILO
University of Cagliari, Italy

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Simona RUGGERI*, Sara CARCANGIU, Gianni CELLI, Giuditta PISANO, Alessandro SECHI, Gian Giuseppe SOMA, Fabrizio PILO
University of Cagliari, Italy

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1: University of Cagliari, Italy; 2: Enel foundation, Italy; 3: E-distribuzione, Italy

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Marius ENGEBRETHSEN*, Wojciech PORADOWSKI, Rune JACOBSEN, Einar Kirkhus NILSEN
REN, Norway

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Adam BABŚ*, Tomasz SAMOTYJAK
Institute of Power Engineering, Poland

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Sharon BOAMAH* (1), Priya MITTAL (1), Michel CARABALLO (2), Janise MCNAIR (1), Arturo BRETAS (3)
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Jacob Mathew KARUMAMKOTT*, Sinéad HANLEY, Cristina COLEMAN KENNY
ESB Networks, Republic of Ireland

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Erwan CHIBOUT*, Simon CAMAL, Georges KARINIOTAKIS
Mines Paris PSL, France

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Lucas LAFAYE* (1), Remy RIGO-MARIANI (1), Vincent DEBUSSCHERE (1), Marie-Cecile ALVAREZ HERAULT (1), Leonard BACAUD (2), Jeremy HIRSCH (2), Philippe CROS (2), Pierre GRANGER (2)
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Erwan CHIBOUT*, Simon CAMAL, Georges KARINIOTAKIS
Mines Paris PSL, France

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1551 *Institutional Drift in Power System Planning*

Bálint HARTMANN*, Balázs Ágoston TURÓCZI, Péter SŐRÉS, István VOKONY
Budapest University of Technology and Economics, Hungary

1552 *Digital Twin for Day-ahead and Intraday Market Co-optimization Using Dynamic Line Rating*

Bálint HARTMANN*, Bence BERECZKI, Péter SŐRÉS, István VOKONY
Budapest University of Technology and Economics, Hungary

1553 *Unified LSTM-LLM Testbed for Real-Time Renewable Bidding and DSO Grid Feasibility Analysis*

Hojun YANG* (1), Bambuushar MUNKHTULGA (1), Sanghun AHN (1), Hyeonseop SHIN (2), Dongjun WON (1)
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1563 *A P2P-based Transactive Energy Framework for Reconfigurable Power Distribution Networks with Mixed Architecture*

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1564 *Algorithm-Driven Demand Flexibility: Driving Customer Engagement and Grid Optimization under Demand Side Management Strategies*

Sujata GURUJI, Nilesh KANE*, Shriram SAVARKAR, Chintamani CHITNIS
Tata Power Company Limited, India

1567 *Data-Driven Identification of Residential Heat Pump Types and Cycling Characteristics Using Smart Meter Data*

Meysam ASADI*, Robbert CLAEYS, Kamran JALILPOOR, Jan DESMET
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1580 *Comprehensive and Sustainable Distribution Network Planning and Optimization Using CYMDIST: A Technical Assessment of NPCL's 33-kV/11-kV System*

Sovik SHARMA*, Kirti TRIPATHI, Gaurav SHARMA
NOIDA POWER COMPANY LIMITED, India

1581 *Load Transfer Automation Scheme for Distribution Network Reconfiguration and N-1 Contingency Compliance*

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Daniel VESELÝ, František RAJSKÝ*
ČEPS a.s., Czech Republic

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Thanh Kha TRAN*, Raphael GUFFOND, Lina RUIZ, Samuel GRIOT
Nexans, France

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Thomas LÉVY* (1), Sébastien DELBOS (2), Axel JOURNE (3)
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1126 *A Heuristic Algorithm For Distribution Grid Congestion Management*

Zhenyuan WANG (1), Susanne SCHMITT* (2), Marco GIUNTOLI (2), Faiq GHAWASH (2), Milos SUBASIC (2)
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Alfred EINFALT* (1), Andreas FERNBACH (1), Gerhard ENGELBRECHT (1), Juliana KAINZ (1), Daniel HAUER (1), Sabine KUBICEK (2), Roland ZOLL (2), Thomas POLL (2)
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Anne VAN DER MOLEN*, Ranko STOJAKOVIC, Sjors VAN DER HEIJDEN, Mark SCHEER, Ruurd LAMMERS, Stefan VAN DER MAAT
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Luca RAVANELLI*, Catia SANTINI, Stefano MELZI, Alessandro ZANI, Marco RIVA
ABB S.p.a., Italy

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ABB spa, Italy

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Hiroyuki YOSHIDA*, Shinichi DOI, Toshiki ODA
The Kansai Electric Power Co., Inc., Japan

1149 *Performance Evaluation of Novel Injection-based ASC Control Method Using Primary Testing*

Janne LEMINEN* (1), Janne ALTONEN (1), Saku SIERMALA (1), Mika TAUSA (1), Hanna-Mari AALTO (2), Petteri KANGASLUOMA (2)
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Miguel M BURGUETE*, Alberto SENDIN, Diego GARCIA, J Sebastian GOMEZ
Iberdrola España, Spain

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Senne STIENERS*, Lies DEBRUYNE, Jan CAPPELLE, Marta VANIN
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Tongxun WANG*, Wenxiao MA, Dandan FENG, Zhikai WANG, Zhaoliang LI, Yang WANG
CEPRI, China

1161 *Wide-Area Voltage Optimisation for Active Distribution Networks*

Andreas KAROGIANNIS* (1), Georgios KARAMANIS (1), Andreas AVRAS (2,3), Allan DOWNIE (2,3), Ibrahim FAIEK ABDULHADI (2,3), Oussama YOUSFI (4), Colin SCOBLE (4), Gustavo LEONARDO (4), Odilia BERTETTI (4), Elyse UWIMPAYE (4), Ewan PATON (4), Parul AGHI (4),
1: SMPnet, UK; 2: PNDC, UK; 3: University of Strathclyde, UK; 4: UK Power Networks, UK

1163 *Pilot-Phase Results of E.ON Hungária's Local Flexibility Market Platform*

Gabor Mihaly PETER*, Szabolcs PAPP
E.ON Észak-dunántúli Áramhálózati Zrt., Hungary

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Pranav Jayant KULKARNI* (1), Alexander GEIGER (1), Sanket GAIKWAD (2), Michael BRAND (3), Andreas ULBIG (1,2), Antonello MONTI (1,2), Sebastian LEHNHOFF (3)
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Jeffrey WISCHKAEMPER*, B. Don RUSSELL, Carl BENNER, Karthick MANIVANNAN
Texas A&M University, United States of America

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Daniyal Ahmed KHAN* (1), Susanne SCHMITT (1), Marco GIUNTOLI (1), Faiq GHAWASH (1), Martin LINDNER (2), Athanasios KRONTIRIS (3)
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Rafael ARRANZ PADILLA* (1), Stefan-Mircea ILIESCU (2), Gheorghe-Ioan NICOLAESCU (2), Georgiana-Florentina BALANICA (2), Andrei-Sebastian POPA (2), Carles PUJOL SOLER (2)
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Benoit PUEYO (1), Jean François AURIN* (1), Alain GRISVAL (2)
1: Fournier Grospaud Synerys; 2: OMEXOM, France

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Jano SCHUBERT* (1,2), Edwin MORA (1), Mathias DUCKHEIM (1), Stefan NIESSEN (1,2)
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Uttejh REDDY, David WICKSTRÖM, Dimitra TSAKMAKOPOULOU*
Arkion Solutions AB, Sweden

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Thibaut THÉATE*, David VANGULICK
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Koen VANTHOURNOUT* (1), Bruno MACHARIS (2), Bert DE DECKER (1), Harm LEENDERS (2), Reinhilde D'HULST (1)
1: Orion Grid Technologies; 2: Fluvius System Operator

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Edoardo DACCÒ (1), Diego RAGGINI* (2), Fabio LEONARDI (2), Alessandro CIROCCO (2), Hasnain SALMAN (2), Gaetano IANNARELLI (2), Alberto VANNONI (3), Riccardo LAZZARI (3), Alessandro BOSISIO (4), Davide FALABRETTI (1)
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Wagner HOKAMA* (1), Adriano Peres DE MORAIS (2), Daniel Pinheiro BERNARDON (2)
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1195 *Continuous PQ Insights for Grid-Friendly Non-Linear Assets*

Carina LEHMAL*, Peter DOLLFUSS, Josef VOGEL, Zeljko BOBAR
Tele Haase, Austria

1200 *From Concept to Reality: How Sensorization and Automation Are Transforming MV & LV Networks*

José GONÇALVES* (1,2), Pedro C. MIGUEL (2), Bruno E. SANTO (3)
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Tatsuro AKIMOTO* (1), Masayuki WAKUTANI (1), Masahiro MINAMI (1), Takumi YOSHIOKA (1), Takaya ANEGAWA (1), Tohlu MATSUSHIMA (2), Takashi HISAKADO (3), Shin TOGUCHI (4), Yuya KAWACHI (4)
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Takahisa HAYASHI* (1), Yuta NAKAMURA (1), Takao TOKUHARA (1), Toshiki ODA (1), Masahiro TANAKA (2), Takenori KOBAYASHI (2), Tomokazu MORITA (3)
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1212 *Customer-Oriented Online Service for Distribution Network Optimization and Promotion of Energy Transition*

Minna KURONEN*, Susanna KARMELA
Helen Electricity Network Ltd, Finland

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Ramy ALI*, Ronan MEERE, Edmund O'CARROLL
Electricity Supply Board (ESB) Networks, Ireland

1219 *Economical and Resource-Saving Use of Phase Shifting Transformers within the Swiss 150 kV Grid of the City of Zurich*

Andri CASURA* (1), Britta HEIMBACH (1), Philipp SCHMITT (1), Martin WOLFRAM (2)
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1225 *Increase In Grid Utilisation & Capacity Through Impedance Reduction & Voltage Control Using Capacitive Transfer System Cable*

Ashkan Daria HAJILOO*, Karl DE JONG, Charles LUCAS-CLEMENTS, Jorge VIÑUELA PÉREZ
Enertechnos, United Kingdom

1226 *Impact of A Vacuum Circuit-breaker on a MV Network: Modelling, Stresses Developped, and Description of the Non-linearity Involved*

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Jacco REULING* (1), Juan Camilo LÓPEZ (2), Deepak TUNUGUNTLA (3), Pieter ZEILSTRA (3), Johann L. HURINK (1), Gerwin HOOGSTEEN (1)
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1235 *Applications of Machine-Learned State Estimation in Low-Voltage*

Marc DÜNSER*, Denis VETTORETTI, Clemens KORNER
AIT- Austrian Institute of Technology - Center for Energy, Austria

1236 *Identifying And Mapping Shared Service Cables Using Artificial Intelligence For The Adoption Of Low Carbon Technology On The LV Network Of Ireland*

Amandeep SINGH*, Sadaf ZAHEER, Tara NÍ REACHTAGÁIN, Jack HERRING
ESB, Ireland

1241 *Dynamic Line Rating in Practice: Comparing Sensor-Based and Sensorless Methods on the Portuguese Grid*

Davide RAPOSO*, André NEVES, Ana Carolina MONTEIRO, Diana MACEDO, David CARVALHO, Mariana CÔRTE-REAL
E-REDES, Portugal

1242 *Sparse-PMU-Based Fault Location for Enhanced Operation of Distribution Power Networks*

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1254 *Demonstrating an Open Digital Twin Platform for Unified MV–LV Operation*

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Emma JUSERIUS*, Anders JOHNSSON
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1257 *DA/RE – Two Years Of Operational Experience With An IT Platform For Small-Scale Flexibility In Redispatch*

Jens HÖNEN*, Bernd SEIFERT, Florian GUTEKUNST
TransnetBW GmbH, Germany

1263 *Pilot for Model-Free Active Flexibility Management for Low-Voltage Grids According to German Regulation (§14a EnWG)*

Jano SCHUBERT* (1,2), Edwin MORA (1), Mathias DUCKHEIM (1), Erhard AUMANN (1), Philipp DOLCH (1), Stefan NIESSEN (1,2)
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1265 *Interoperable Digital Twin Data for Electrical Distribution Grids*

Sebastian PETER* (1), Bharathwajanprabu RAVISANKAR (1), Kavya MADA (2), Felix PROBST (3), Dennis SCHMID (3), Fabian REINDL (4), Gerhard MEINDL (4), Ron BRANDL (2), Marco JUNG (2), Stefan KIPPELT (3), Rajkumar PALANIAPPAN (1), Ulf HÄGER (1)
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1267 *Tripling Capacity Through Voltage Regulation On Long MV Feeder*

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1270 *Overhead Line Fault Location on 11kV Networks Using a Common Disturbance Information Platform*

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1271 *EleXsys dSTATCOMs in the E-REDES LV Network: Field Results and Insights for Advanced Volt/Var Control*

João BARBOSA* (1), Mark HIBBERT (2), Shane GOODWIN (2), Dr Edward BURSTINGHAUS (2), Pedro FERREIRA (3)
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Mattia D'ANDOLA* (1), Ludéric VAN CALCK (1), Nichita BOZGA (1), Julien VANDEBURIE (2), Thomas WEHENKEL (2), Martin JASIENSKI (3), Frederik VAN CLEEMPUT (3), Pierre-François CROUSSE (1)
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Arnaud ROUFFIGNON*, Thomas BUISSERET, Thibaut THÉATE, David VANGULICK
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Paul KROEMER* (1), Antoni CHAJAN (1), Christoph SCHÖNHOFEN (1), Hauke JÜRGENSEN (2), Alexander KROGGEL (2), Matthias RUDOLPH (2)
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Francisco Javier ROS RAPOSO*, Jacinto JURADO TABARES, Julio Alejandro GONZÁLEZ MEJÍAS, Rubén CARMONA PARDO
Ingelectus, Spain

1290 *Customer Perception of Demand-Side Flexibility Tariffs in Switzerland*

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1300 *Edge-Hosted Virtual Protection Functions: Implementation and Validation of a Docker-Based vIED Using IEC 61850 SV and GOOSE*

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1301 *Algorithm Benchmark for Partial Discharge detection sensitivity in small-scale Medium Voltage Networks*

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1304 *Improving Grid Resiliency on Island-Based Microgrids for Reducing Blackouts in Unplanned Disconnection Events by Using Near-Real-Time Monitoring and Flexible Loads Management*

Matias Ariel KIPPKE SALOMÓN* (1,2), Kristin BOBECK (3), Arne BERLIN (3), Linda-Maria WADMAN (4), Pablo ARBOLEYA (1,2)
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1306 *AI for Predictive Maintenance and Customer Satisfaction Improvement*

Charles GEISMAR*, Caroline EL KHARRAT, Colin THIRARD, Jérémy BESSON
ENEDIS, France

1307 *DIGITECHNETZ – Challenges and Solutions in Implementing a Smart Grid Platform in Real Low-Voltage Distribution Grids*

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1310 *Data-Driven Low-Voltage Grid Operations*

Christoph JÄTZ* (1), Sandrino BENECKE (1), Matthias HANSEN (2), André GEUEKE (2), Nicolas PITTROF (3), Sebastian KUMPFMÜLLER (3), Christian MEFFERT (4)
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Sofia TAVARES*, Pedro FERREIRA
EDP Innovation, Portugal

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José Afonso ROMANCINI*, Lucas Fritzen VENTURINI, Mateus Netto GUIDI, Willian Alano BATISTA
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Ana LISBOA*, Ricardo BORGES, Artur FIGUEIREDO, Liliana TRINDADE
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Sasan ROSTAMBEIK TAFRESHI*, Saber LEHATEM, Thomas SCHALLER, Matthieu ANNE
Enedis, France

1324 *Sustaining a National Asset-Risk Methodology: Governance, Alignment and Expertise Transition in Common Methodology v3*

Joanne PEACOCK (1), Landel JOHNSTON* (2), Gavin HOWARTH (3), Linda HULL (4)
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Frantisek KELEMEN* (1), Anna KULMALA (1), Mika LIFFLANDER (1), Parul AGHI (2), Gustavo LEONARDO (2), Kaikong HO (2), Colin SCOBLE (2), Oussama YOUSFI (2)
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Mansoureh ZANGIABADI*
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Eric DÜRHOLT* (1), Markus ZDRALLEK (1), Bastian BAUHAUS (2)
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1375 *Open Integrated IoT Suite To Master The Challenges Of The Energy Transition*

Smaran SUBBAIAH B G*, Martin GOTTSCHALG, Bitan BHATTACHARYA, Erhard AUMANN, Chaitanya BISALE
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1376 *Grid Guardian – The Platform For Long-Term Monitoring of Compensated Network Parameters*

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Finn NUSSBAUM*, Joost LINDNER, Anna-Lena STEEN, Payam TEIMOURZADEH BABOLI, Christian BECKER
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1382 *The Monitoring Of The LV Electric Network Within The Realized Self Optimizing Grid (SoG) Concept Of The MV Electric Distribution Network*

Dušan VUKOTIĆ* (1), Miloš ISAILOVIĆ (2), Stojan ŠIŠKOSKI (1), Sunčica CVETKOVIĆ (2), Božidar ĆIRIĆ (1), Nikola ČOLOVIĆ (2)
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Kristijan Frano ĆAVAR, Anton MARUŠIĆ, Ivan PERIŠA, Branimir GABRIĆ*, Hrvoje JELIĆ
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1407 *Exploring New Levers Against Upper Voltage Violation Constraint, Medium Voltage Shunt Reactor Investigation Feedback*

Djamel HADBI* (1), Mathieu FERRARIS (2), Jocelyn BOUVIER (1), Dominique LEGRAND (1)
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1408 *VICORE: A Hybrid Real-Time Test Platform for PAC Functions Using Virtualized IEDs in Power Distribution Network*

Reza RAZI* (1), Martin LEGRY (1), Frédéric COLAS (1), Xavier GUILLAUD (1), Van-Hoa NGUYEN (2), Thierry COSTE (2), Nicolas FAVARCQ (3)
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1409 *Feeder Forecast for Proactive Congestion Management in Low-Voltage Grids*

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1410 *Pilot Results on Autonomous Inverter Control for LV Grids*

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1414 *Data Governance for LV Grid Twins_Lessons from Spain and Portugal*

Angel GIMÉNEZ GARCÍA, Iraitz GORROÑO BIKANDI, Haritz ZUBIA URRUTIA*
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Martin CASTIN (1), Alireza BAHMANYAR (1), Adrien LEERSCHOOL (1), Laurine DUCHESNE (1), Adrien BOLLAND (2), Thomas WEHENKEL (3), Simon GERARD* (3), Damien ERNST (2)
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Remi LEBLANC*, Franck WEBER
ENEDIS, France

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Elise MORSKIEFT* (1), Denny HARMSEN (2), Maarten SLOOT (2), Bram POSTHUMA (1), Peter MEIJER (1), Martin BINNENDIJK (1)
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Maximilian GERHARD*, Frederik GIELNIK, Michael SURIYAH, Thomas LEIBFRIED
Karlsruhe Institute of Technology, Germany

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Swapnil RAO*, Vikas KOUL, Megharaj DAHARE, Pavithra ARASAN, Nisha DUBAL, Shriram SAVARKAR
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Ketan JADHAV, Shreyas MANE*, Yash MANE, R POTE, Vikas KOUL, Ajay POTDAR
The Tata Power Company Limited, India

1453 *The Case of the Shunt Reactor in Substation 110/35/20 kV Krk, Croatia*

Ivica RADETIĆ*, Igor VOLARIĆ, Josip ŽUTOLIJA
HEP ODS d.o.o., Croatia

1457 *Automated AI-Based Asset Mapping: Lessons Learned From Large-Scale Deployment in Distribution Network*

André SIH*, Thiago CAZES, Rodrigo FERREIRA, Carlos BISCHOFF
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1461 *Maps of Hosting Capacity for Distribution Networks: Aligning Theoretical KPIs with Strategic Decision-Making Needs*

Tommaso DIECI* (1), Davide FRATELLI (1), Matteo SPILLER (1), Corrado Maria CAMINITI (1), Aleksandar DIMOVSKI (1), Marco MERLO (1), Pierluca PINCIOLLA (2)
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1469 *Proactive Distribution Grid Operation Enabled by Continuous Power Quality Monitoring and Analytics*

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1474 *Qualification of a Data-Driven Grid Modelling Approach for Low Voltage Networks*

Alexandre DELYON*, Pacome ARMAGNAT, Clementine BENOIT, Chloé LUCAS-MONTFORT, Noemi VARGHA
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1481 *Automating Fault Location, Isolation, and Service Restoration in German Distribution Networks: Cost-Benefit Analysis and Lessons Learned from the NETZlabor Allgäu*

Felix STREHLE*, Lukas GROMES, Paul HORN, Christian LAKENBRINK, Miriam BADER
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1482 *Small-Scale DC Grid Demonstration in Port of Funchal*

Pedro COSTA (1,4), Luis RODRIGUEZ (1,4), Pedro NETO (1,4), Diogo REIS (2,3), Anne NIIN (1,4), Lucas PEREIRA (3,4), Hugo MORAIS* (1,4)
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1483 *Enabling Interoperable EV Integration through Protocol Translation: Bridging Smart Charging Infrastructure with Operational Grid Systems*

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1484 *Qualification Of A Data-Driven GIS Enhancement Approach For Low-Voltage Grids*

Benoît COLANGE, Romain BAILLY*, Chloé LUCAS-MONFORT, Noemi VARGHA
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1490 *On the Evolution of Reactive Power Demand in Swiss Medium and Low Voltage Networks*

Alexandre MACHER (1), Corrodi YVES (2), David LEHNEN* (2)
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1492 *Fast and Accurate Grid State Estimation Using Physics-Informed Graph Neural Networks*

Corentin TISSIER*, Rafael CARRILLO, Diya ACHI, Pierre-Jean ALET
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1493 *Field Evaluation of a Phase Balancer in Low-Voltage Networks*

Balázs TŐZSÉR*, József, Lehel ZOLTÁNI, István TÁCZI DR.
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1496 *OptiQU: Coordinated Multi-Level Voltage and Reactive Power Control for Enhanced Voltage Quality and Secure Grid Operation*

Irene HAMMERMEISTER* (1), Eric TÖNGES (2), Nils BORNHORST (2), Johannes HEID (1,2), Gabriela FRITZLER (1), Timo REHWALD (1), Andrea SCHOEN (1), Ronald HALBAUER (3), Jan MESCHEDE (3), Julia HOLL (4), Sina STRAUSSBERGER (4), Andrey LUZHBIN (5), Maximilian N
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1503 *Anticipating the Human Impact of AI : A Workshop-Based Approach of transformation at Enedis*

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Enedis, France

1504 *Automated Consolidation Of Dispersed DSO Data Resources Into A Consistent Digital Twin Of The Distribution Grid*

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1511 *E.ON-Lab: Prescaling The Transformation Of The Power Grid Into A Digital, Flexible, And Intelligent System*

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1520 *Implementation of Real-Time Fault Level Monitoring to Facilitate Decarbonisation Growth*

Mark KENT*, Ralph EYRE-WALKER, Russell BRYANS
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1527 *Digital Twin for Future Power and Energy Systems: A Review*

Morteza VAHID-GHAVIDEL*, Sahar SEYYEDEH-BARHAGH, Hannu LAAKSONEN
University of Vaasa, Finland

1539 *Building a Virtual Power Plant: Providing Ancillary Services and Local Congestion Management with a Large-scale Fleet of Public EV Chargers*

Maud TOUSSAINT SCHURMANS*, Jelle GARCET, Louis SOKAL, Tommaso DIFONZO
Engie Laborelec, Belgium

1542 *A Microservice-Oriented Integration Layer for LV Management Tools*

Gil SAMPAIO (1), Jacinta FERREIRA (1), José SOUSA (1), João FERNANDES (2), Raquel FIGUEIREDO (2), José OLIVEIRA* (2)
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1544 *Generating Insights for Low-Voltage Distribution Grids from Per-Phase Smart Meter Data*

Mattia SECCHI* (1), Anton HØYER TROELSEN (1), William Ancher KROGSGAARD AMMENTORP (1), David Valentin TANASE (1), Lunodzo MWINUKA (1), Christian FOTTELER (2), Henriette DYHR RAHBEK (3), Carsten BUHL NIELSEN (3), Kai HEUSSEN (1)
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1548 *A Case Study on the Operation of the Change Simulator for the Prevention of Line Electrical Distributon Due to Worker's Negligence*

Yu jung AN*, Jeong hun YOO
KEPCO, Republic of South Korea

1550 *HIL-Based Protection, Automation, and Control Testing Platform: Benchmark of GOOSE Message Transfer Times Across Multi-Vendor IEDs*

Jhonatan Antônio CASSOL, Leonardo de Freitas SILVEIRA, Bruna Rafaela dos Santos DIANA, Luiz Fernando FREITAS-GUTIERRES, Adriano Peres MORAIS*
Federal University of Santa Maria, Brazil

1554 *Integrating Data Engineering And Data Science Tools To Enhance Distribution Network Performance*

Bruno OLIVEIRA*, Tauan OLEA
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1560 *A Fault Current Limiting Circuit Breaker Pilot Installation*

Jesper MAGNUSSON* (1), Johan NOHLERT (1), Thomas ERIKSSON (1), Martin KROPF (2)
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1561 *An Integrated Framework for Managing Energy Imbalance in Iran's Distribution Networks through Optimal Deployment of Distributed Renewables, Storage Systems, and Demand Response*

Rashin ILKA*, Habib Allah RAVAGHI ARDABILI, Rahil ILKA, Abdolhossein ESMAEELZADEH, Reza KORDBACHEH, Ali KOMASI
Greater Tehran Electric Power distribution Company, Iran

1562 *Field Validation and Perspective on Distribution-scale Grid-Forming Battery Storage for Synthetic Inertia*

Istvan TACZI, Bence BERECZKI, Balint HARTMANN*, Peter SORES, Istvan VOKONY
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1565 *Remote Protection for Digital Substations – Piloting Experiences and Analysis*

Anna KULMALA* (1), Ontrei RAIPALA (1), Petri HOVILA (1), Henry NIVERI (1), Konsta ANTIKAINEN (2), Tomi ÖSTER (3)
1: ABB Distribution Solutions; 2: Suur-Savon Sähkö; 3: Järvi-Suomen Energia

1566 *Proactive Detection of Unauthorized Cryptocurrency Mining Loads in Distribution Networks Using Integrated Electrical and Privacy-Preserving Telecom Data*

Abdolhossein ESMAEILZADEH*, Habib allah RAVAGHI ARDABILI, Rashin ILKA, Ali KOMASI, Reza KORDBACHE
Great Tehran Electricity Distribution Company, Iran

1568 *Implementing And Performance Of Innovative Grid Technologies Increased Grid Utilization And Faster Grid Development For Smart Grid Distribution Networks*

Mark NORTON* (1,2), Peter HUGHES (3,2), Dominic QUENNELL (4,2), Leo RICHARD (5,2), Alexander KRISTENSEN (6,2)
1: Smart Wires, Ireland; 2: CurrENT Europe; 3: CTC Global; 4: Enertechnos; 5: Epsilon-Composite; 6: Magtech

1569 *Deployment of Innovative Operating Technologies to Mitigate LV Congestions: Identified Field Problems and Solutions*

Ane MARTÍNEZ*, Alena ULASENKA, Gorka PUENTE, Luis DEL RÍO, Álvaro ORTIZ, Santiago GUTIERREZ
Ormazabal, Spain

1571 *Embedding Flexibility-Driven Innovation in Distribution System Planning*

Gian Giuseppe SOMA*, Gianni CELLI, Fabrizio PILO
University of Cagliari, Italy

1573 *Prediction-Based Control of a Building-Integrated DC Microgrid with HESS*

Daniela ESER*, Erik WOEHR, Loris SCHMIT, Jonathan HUFGARD, Michael SURIYAH, Thomas LEIBFRIED
Karlsruhe Institute of Technology, Germany

1574 *LV outage Management in ADMS*

François CHEVALIER, Tom CARRON*, Henri MEURÉE
Sibelga SO, Belgium

1577 *Reduction of the Impact of Power Measurement Errors on Grid Parameter Estimation*

Johannes ROLINK*
FH Münster - University of Applied Sciences, Germany

1579 *Lessons Learned from Developping a DERMS Optimization Platform in a Large-Scale Distribution Network*

Paul JAVAL (2), Saoussen ABIDI (1), Tristan BASLER (1), Ilyas GLAIB (1), Jean JODEAU (1), Arthur LEENE (1), Pierre MORDANT (1), Lucas SELINI (1), Emilie PIC (1), Hamza ZAKRAOUI (1), Germain FRANCOIS* (1)
1: Sia AI, France; 2: Enedis, France

1582 *Automated Metro-Style Low Voltage Grid Visualization for Rapid Grid Development*

Lennard SCHAAP* (1), Joan RESSING (1), Anne VAN DALSEN (1,2), Rick VAN KASTEREN (1,2), Sterre DE LANGE (1)
1: Alliander, Arnhem, The Netherlands; 2: ElastIQ-Connect, 's-Hertogenbosch, Netherlands

Theme 3 – New Regulation and Practices to Spark Innovation and Minimize Business Risk

1115 *Connection Of Distributed Electrical Energy Generation Sources With Enabled P/U Characteristic*

Matjaž KLANČNIK*, David POČIVAVŠEK
Elektro Celje, d.d., Slovenia

1120 *Adopting the Smart Grid Maturity Model to Drive Regulatory Innovation and Manage Business Risk: The Nama Electricity Distribution Experience, Oman.*

Ahmed ALSHAQSI*
The Authority for Public Services Regulation, Oman

1127 *KYEC – Leveraging Artificial Intelligence for Consumer Empowerment in Smart Metering*

Dr. Nilesh KANE*, Karunakaran B, Ruman MAKNOJIA, Dey DEVANJAN, Ajit MORE
Tata Power Company Limited, India

1128 *AI-Driven Load Disaggregation for Smart Meter Consumers*

Dr. Nilesh KANE*, Karunakaran B, Ruman MAKNOJIA, Dey DEVANJAN, Shetty VINEETH
Tata Power Company Limited, India

1131 *Survey And Analysis Of Real-time Distribution Grid Congestion Management*

Anne VAN DER MOLEN (1,3), Job WELLEMAN (2), Laurens DE VRIES (2), Aad CORRELJE (2), Phuong NGUYEN (3), Koen KOK (3), Peter VAN DER WIELEN (3), Eveline SAHNI* (1)
1: Stedin; 2: TU Delft; 3: TU Eindhoven

1145 *Community Energy Storage Systems in Low-Voltage Distribution Networks: Definitions, Use- Cases, and Deployment Challenges*

Elias Mandefro GETIE*, Md Umar HASHMI, Louise SADOINE, Geert DECONINCK
KU Leuven/EnergyVille, Belgium

1198 *Designing Active Operation in Low-Voltage Distribution Grids: Requirements, Interfaces and Roadmap*

Eric TÖNGES* (1), Andrea SCHOEN (1,2), Frank MARTEN (2), Marco PAU (1,2), Denis MENDE (1,2)
1: University of Kassel, Germany; 2: Fraunhofer Institute for Energy Economics and Energy System Technology IEE

1199 *Grid Capacity Market For Pre-empting Grid Congestion*

Berend HOPMAN*, Wester COENRAADS, Richard WESTERGA, Michel EMDE
TNO, The Netherlands

1206 *Open Data–Driven Estimation of Long-Term Distribution Line Outage Risks in Disasters*

Takaya ANEGAWA* (1,2), Kyosuke TAKAYAMA (2), Atsushi ISHIGAME (2), Takumi YOSHIOKA (1)
1: Kansai T&D, Japan; 2: Osaka Metropolitan University

1215 *Preliminary Evaluation: methodological approach for Grid Initiatives analysis, sharing and prioritization*

Maria RODNAYA*, Luca DI STEFANO, Rita LEOPARDI
Enel Grids, Italy

1221 *Flexible Connection Agreements And TOTEX Incentive Regulation For Efficient Network Infrastructure Deployment: The Spanish Case*

Manuel ROMEO MONTERDE, Tomás GÓMEZ SAN ROMÁN, Miguel Ángel RUIZ HERNÁNDEZ*, José Pablo CHAVES ÁVILA
Comillas Pontifical University, Institute for Research in Technology (IIT), Spain

1227 *Italian 2025 Distribution Network Development Plans, overview and possible improvements*

Giacomo VIGANO', Marco ROSSI, Simona SELLITTO*
Ricerca sul Sistema Energetico, Italy

1229 *Future for Security of Supply for Electricity Distribution*

Liza TROSHKA* (1), Steve QUINN (1), Nigel TURVEY (2), Furong LI (2)
1: National Grid, United Kingdom; 2: University of Bath

1234 *Accelerating Replacement Of Ageing Distribution Transformers: Mapping The Landscape With EU-TRACE*

Miguel MARTINEZ VELÁZQUEZ (1), Ricardo HENRIQUES (2), Ondrej CERNY (2), Bruno DE WACHTER* (3), Tomas JEZDINSKY (3)
1: Institute for Research in Technology (IIT), Universidad Pontificia Comillas, Spain; 2: E.DSO, Belgium; 3: International Copper Association Europe, Belgium

1237 *The Lack Of A Legal Framework For Regulatory Sandboxes In Energy Markets*

Quentin PEIFFER* (1,2), Victoria VANDERLINDEN (1)
1: Sibelga, Belgium; 2: Université libre de Bruxelles

1239 *How Tariff-Based EV Flexibility Can Delay - But Not Solve - Network Loading Challenges In Northern Ireland*

Karen PLATT (1), Tim BUTLER (1), Andy PRICE-ALLISON* (1), Naomi MORROW (2), Esther DUDEK (1), Fuqian ZENG (1), Emma PYM (3), Peter WELDON (3), Efrosyni THEOCHAROUS (3)
1: EA Technology, Capenhurst, United Kingdom; 2: Northern Ireland Electricity Networks Limited, Belfast, Northern Ireland; 3: SYSTRA,Woking,UK

1259 *Identification of Energy Sharing Use Cases in the research project SkIES*

Louisa WASMEIER* (1,2), Erwan TAILLANTER (1), Alexander HEYDER (1)
1: FfE, Germany; 2: Universität Kassel

1262 *Unlocking The Flexibility Behind AI-based Energy Management Systems (EMS) For Congestion Management*

Trung NGUYEN* (1), Wico MULDER (2), Erwin FOLMER (1), Sadegh SEDDIGHI (1), Carolien KATTENBELT (1), Luc NIES (3), Ronald VAN WEELE (3), Aliene VAN DER VEEN (2)
1: HAN University of Applied Sciences; 2: TNO; 3: Alliander

1266 *End-to-End Generation Framework for Dynamic Energy and Grid Tariffs*

Joé WENGLER*, Xavier LEUNG, Jonas WÄFLER, Michael AUER, Ariane KOLLER, Gunnar FUHRMANN
ewz, Switzerland

1268 *From Setup Towards a Functional Local Flexibility Market*

Dan TELÉN* (1), Pirjo HEINE (1), Jukka RINTA-LUOMA (2), Sonja NURMIAINEN (2), Suvi PELTOKETO (2)
1: Helen Electricity Network Ltd., Finland; 2: Fingrid Oyj, Finland

1302 *Analysis of the Alignment Between Low-Voltage Network Hosting Capacity and Regulatory Constraints for Prosumers: Case Study in Federation of Bosnia and Herzegovina*

Marin MAJSTOROVIĆ*, Drago BAGO, Sonja SUŠAC, Mia PREVIŠIĆ, Ivan ŠIMOVIĆ
JP „Elektroprivreda HZ HB" d.d. Mostar, Bosnia and Herzegovina

1308 *Estimating the Energy Use of Public EV Charging Infrastructures*

Helena OLSSON, Thomas CHAVERONDIER*, Thibaut BUFFARD
Enedis, France

1349 *Strategies for BESS Deployment Aligning Market Solutions and Regulatory Frameworks with Grid Needs*

Mansoureh ZANGIABADI*
Northern Powergrid, United Kingdom

1362 *Price Signals and Carbon Emissions: Why EV Charging is Cleaner Than Expected*

Julian Marius MITTAG*, Leonardo FERHATI, Mattia SECCHI, Charalampos ZIRAS, Mattia MARINELLI
Technical University of Denmark, Denmark

1366 *Distributed Energy Resource Remuneration For Power System Resilience Enhancement*

Xavier WEISS* (1), Lars NORDSTRÖM (1), Patrik HILBER (1), Arne BERLIN (2)
1: KTH, Royal Institute of Technology, Sweden; 2: Vattenfall Eldistribution AB, Sweden

1402 *Towards a New Era of Data Acquisition: Belgian Railway Expertise and Perspectives for Power Distribution Networks*

Alain GRISVAL (1), Numa COUNIOT (2), Thomas LAPORTE* (3)
1: OMEXOM, France; 2: AXIANS, Belgique; 3: Hylight, France

1422 *Comparison of Different Dynamic Network Tariffs for Economically Operating Battery Energy Storage Systems in Distribution Grids*

Frederik GIELNIK*, Victor WEISE, Olga KINAS, Michael SURIYAH, Thomas LEIBFRIED
Karlsruhe Institute of Technology, Germany

1424 *Assessment of Baseline Methods for DSO Flexibility Markets: Quantitative Evidence From the UK*

Jake VERMA*, I. A. Grant WILSON, Daniel L. DONALDSON
University of Birmingham, United Kingdom

1425 *A Unified Grid-State Signal for Activating Household Flexibility Under Real German System Conditions*

Antonia WEBER* (1,2), Florian DINGER (2), Dominik SCHLIPF (2), Frank TRUCKENMÜLLER (1), Gernot SCHULLERUS (1)
1: Reutlingen University, Germany; 2: TransnetBW GmbH, Germany

1443 *Learning from Europe's Local Flexibility Markets: Design Options and Key Success Features*

Kris KESSELS*, Janka VANSCHOENWINKEL, Anibal SANJAB, Wicak ANANDUTA, Helena GERARD
VITO/EnergyVille, Belgium

1452 *Managing EV Charging and Renewables under Limited LV Grid Capacity: A Regulatory Perspective*

Stephan CEJKA*, Franz ZEILINGER
Siemens AG Austria

1458 *GeoDescriber x GeoLLM: Let The Energy Data Speak*

Axel DECLERCQ* (1), Léon LIM (1), Eric LAVERGNE (2), Lydia OULD OUALI (2), Benoît GROSSIN (2)
1: Enedis, France; 2: EDF R&D, France

1463 *Fairness Quantification of Congestion Management Measures in Distribution Systems Based on Customer Impacts*

Anna-Lena STEEN*, Finn NUSSBAUM, Payam TEIMOURZADEH BABOLI, Christian BECKER
Institute of Electrical Power and Energy Technology, Hamburg University of Technology (TUHH), Germany

1465 *Dynamic Operating Envelope Grid Prequalification for Sequentially Coordinated Flexibility Markets*

Wicak ANANDUTA*, Anibal SANJAB
VITO & Energyville, Belgium

1477 *PyECOM Frontend – Assessment of Algorithms for Energy Communities*

Larissa MONTEFUSCO (1,4), Victoria DEICHMANN (1,4), Diogo REIS (1,2), Eduardo GOMES (3,4), Diogo FERREIRA (1,4), Lucas PEREIRA (3,4), Hugo MORAIS* (1,4)
1: INESC ID; 2: U. Madeira, Portugal; 3: ITI – LarSys; 4: IST, Portugal

1505 *Investigation of Aggregated Flexibility Potentials of Electric Vehicles Based on Energy and Power Boundaries*

Andreas BONG*, Julian BIGALKE, Philip KVESIC, Andreas ULBIG
IAEW at RWTH Aachen University, Germany

1522 *Modelling of Flexibility Potentials of Residential Heat Pumps*

Julian BIGALKE*, Andreas BONG, Andreas ULBIG
IAEW at RWTH Aachen University, Germany

1523 *Machine-Readable Network Tariffs as Enablers of Flexibility and New Market Models in Future Distribution Grids*

Niklas THIDEVALL*, Eddie OLSSON, Mattias ESBJÖRNSSON
RISE - Research Institutes of Sweden

1531 *PV Hosting Capacity Assessment with Traditional Solutions and Beyond: A Brazilian Case Study*

Iuri L. Q. M. SILVA (1), Fillipe M. de VASCONCELOS (1), Leandro T. MARQUES (1), Vinicius C. MORO (1), Leonardo V. BONATTO* (2), Marcos J. RIDER (3)
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1538 *Fairness For Distribution Network Operations and Planning*

Pedro CARVALHO* (1), Zijie LIU (1,2), Md. Umar HASHMI (1,2), Dirk VAN HERTEM (1,2)
1: KU Leuven, Leuven, Belgium; 2: EnergyVille, Genk, Belgium

1541 *Peer-Relative Smart-Meter KPIs For Meter Quality Validation And Flexibility Tariffs*

Gideon MBIYDZENYUY* (1), Saleh JAVADI (2)
1: University of Borås, Sweden; 2: Blekinge Institute of Technology

1549 *Battery Bidding Strategies under Extreme Price Events: A Comparative Study of DRL Approaches Using Quantile-Spike Forecasting*

Dong Seok KIM*, Kang Hyeok HEO, Seung Wan KIM
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