PROGRAM

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TIMETABLE 7th SOLAR INTEGRATION WORKSHOP

TUESDAY, 24 OCTOBER 2017			
Solar Workshop Day 1			
08:00 – 09:00	FOYER		
	REGISTRATION		
09:00 – 09:10	ALEXANDER 2		
	OPENING: WELCOME AND INTRODUCTION		
09:10 – 10:50	ALEXANDER 2		
	SESSION 1: KEYNOTE SESSION		
	COFFEE BREAK (25 MIN) & POSTER SESSION		
11:15 – 13:00	ALEXANDER 1	ALEXANDER 2	ALEXANDER 3
	SESSION 2A: FORECASTING I	**SESSION 2B: POWER SYSTEM ASPECTS**	**SESSION 2C: R&D PROJECTS**
	LUNCH (1H)		
14:00 – 15:45	ALEXANDER 1	ALEXANDER 2	ALEXANDER 3
	SESSION 3A: FORECASTING II	**SESSION 3B: PV IN DISTRI-BUTION GRIDS I**	**SESSION 3C: PV AND STORAGE**
	COFFEE BREAK (20MIN)		
16:05 – 18:15	ALEXANDER 1	ALEXANDER 2	ALEXANDER 3
	SESSION 4A: INTERNATIONAL EXPERIENCE	**SESSION 4B: PV IN DISTRI-BUTION GRIDS II**	**SESSION 4C: REGULATORY AND MARKET ASPECTS**
18:15	POSTER RECEPTION & NETWORKING		

WEDNESDAY, 25 OCTOBER 2017			
Solar Workshop Day 2			
09:00 – 10:50	ALEXANDER 1	ALEXANDER 2	ALEXANDER 3
	SESSION 5A: FREQUENCY ISSUES	**SESSION 5B: NORTH AMERICAN EXPERIENCE**	**SESSION 5C: VOLTAGE ISSUES**
10:50 – 11:15			
	COFFEE BREAK (25MIN)		
11:15 – 12:15	ALEXANDER 2		
	CLOSING SESSION: PODIUM DISCUSSION		
	LUNCH (1H)		
13:00 – 17:20	ALEXANDER 1 – 3		
	OPENING SESSION 16TH WIND INTEGRATION WORKSHOP		

TUESDAY, 24 OCTOBER 2017

08:00 – 09:00 Registration

09:00 – 09:10 Welcome

09:10 – 10:50	SESSION 1 – KEYNOTE SESSION
> Session Chair	T. Ackermann (Energynautics, Germany)
09:10 – 10:30	**Presentations (20 min. each)**

- **A General Overview on the Challenges of Integrating Renewables**
  H. Berndt (Tennet, Germany) (Submission-ID SIW17-324)
- **Essential Reliability Services from Utility-Scale PV Power Plants**
  M. Morjaria, V. Chadliev (First Solar, USA), V. Gevorgian (National Renewable Energy Laboratory – NREL, USA), C. Loutan (CAISO, USA) (Submission-ID SIW17-312)
- **Solar, *the* Piece of the Puzzle**
  M. Abbenhuis (Tennet, Netherlands) (Submission-ID SIW17-325)
- **Greening the Grid: RE Grid Integration Study with India**
  D. Palchak (National Renewable Energy Laboratory – NREL, USA) (Submission-ID SIW17-62)

10:30 – 10:50 Discussions

10:50 – 11:15 COFFEE BREAK & POSTER SESSION

11:15 – 13:00	SESSION 2A – FORECASTING I
> Session Chair	B. Ernst (Fraunhofer IWES, Germany)
11:15 – 12:35	**Presentations (20 min. each)**

- **Forecasting PV/CPV at National Level – Portugal Experience**
  J. Esteves, R. Pastor, N. Pinho da Silva, R. Pestana (REN, Portugal), Z. Chen (China Electric Power Research Institute – CEPRI) (Submission-ID SIW17-29)
- **Impact of Photovoltaic Yield Forecasting on Future Power System Operations in Japan**
  Y. Udagawa, K. Ogimoto, J. Gari da Silva Fonseca (University of Tokyo, Japan), H. Ohtake (National Institute of Advanced Industrial Science and Technology, Japan), S. Fukutome (JP Business Service Corporation, Japan) (Submission-ID SIW17-265)
- **Nowcasting of PV Power Feed-in with High Availability and under Consideration of Self-consumption**
  H. Misfeld, J. Kühnert, J. Rosenkranz, U. Focken, M. Lange (energy & meteo systems, Germany) (Submission-ID SIW17-267)
- **Investigating the Effect of Aggregation on Prediction Intervals in Case of Solar Power, Electricity Consumption and Net Demand Forecasting**
  D. van der Meer, J. Widén, J. Munkhammar (Uppsala University, Sweden) (Submission-ID SIW17-81)

12:35 – 13:00 Discussions

11:15 – 13:00	SESSION 2B – POWER SYSTEMS ASPECTS
> Session Chair	N. Miller (GE Power, USA)

11:15 – 12:35 Presentations (20 min. each)

- **Derivation of a Q(U)-control Tolerance Band for Inverters in Order to Meet Voltage Quality Criteria**
  M. Schoeneberger, S. Patzack, H. Vennegeerts (Forschungsgemeinschaft für elektrische Anlagen und Stromwirtschaft – FGH, Germany), M. Lindner, R. Witzmann (Technical University of Munich – TUM, Germany) (Submission-ID SIW17-264)
- **Low Voltage Ride Through with High Current Injection**
  A. Falk, C. Puritscher (SMA Solar Technology, Germany) (Submission-ID SIW17-310)
- **Investigation of Impacts of Solar PV on Transmission System Voltage Stability Considering Load Characteristics and Protection**
  B. Alghamdi (King Abdulaziz University, Saudi Arabia), M. Alamri (Saudi Aramco, Saudi Arabia), L. A. Tuan (Chalmers University of Technology, Sweden) (Submission-ID SIW17-218)
- **RES Integration Study and Secured System Operation Under High PV Penetration in Japan**
  K. Ogimoto (University of Tokyo, Japan), K. Ohbayashi, K. Asano (New Energy and Industrial Technology Department Organization – NEDO, Japan) (Submission-ID SIW17-212)

12:35 – 13:00 Discussions

11:15 – 13:00	SESSION 2C – R&D PROJECTS
> Session Chair	J. Matevosyan (ERCOT, USA)

11:15 – 12:45 Presentations (18 min. each)

- **The Global Electricity Network – Feasibility study**
  J. Yu (SGCC, China), G. Sanchis (RTE, France), N. Chamollet (EDF, France), A. Iliceto (TERNA, Italy), K. Bakic (ELES, Slovenia) (Submission-ID SIW17-20)
- **e-Highway2050 project: Tomorrow's Grid for Low-Carbon Energy in Europe**
  G. Sanchis (RTE, France), N. Grisey (RTE, France), T. Anderski (Amprion, Germany), R. Pestana (REN, Portugal), E. Peirano (Technofi, France) (Submission-ID SIW17-35)
- **Digital Transformation Towards Improvements on RES integration**
  D. Kreiken (Tennet, Germany)
- **Smart Renewable Hubs: Solar Hybridisation to Facilitate Renewable Energy Integration**
  J. M. Estebaranz, R. Duran, A. R. Rocha (COBRA, Spain), J. Servert, E. Cerrajero, D. Lopez (IDIE, Spain), E. Stavropoulou, M. Kourasi, P. Markopoulos (HEDNO, Greece), E. Sanchez, J. M. Oyarzabal (TECNALIA, Spain), A. Vaiani, M. Ledda, A. Ardito, C. Puglisi, S. Mandelli, A. Venturini (CESI, Italy), A. Dimeas, R. Gogou (NTUA, Greece) (Submission-ID SIW17-241)
- **BIOSTIRLING-4SKA : A Cost Effective and Efficient Approach for a New Generation of Solar Dish-Stirling Plants Based on Storage and Hybridization**
  D. Barbosa, P. André, T. Paixão (University of Aveiro, Portugal), A. van Ardenne, D. Kant (ASTRON, Netherlands), L. Saturnino Gonzalez, D. Rubio (GONVARRI STEEL SERVICES, Spain), L. Verdes-Montenegro, E. Garcia (Institute of Astrophysics of Andalusia – IAA, Spain), I. Calama, F. Caballero (ALENER, Spain), P. Eskilson, L. Gustavsson, C. Anderson, J. Lindh (Cleanergy, Sweden), R. Keller (Max Planck Institute for Radioastronomy – MPIfiR, Germany), M. Silva Perez, G. Lobo, V. Ruiz (CTAER, Spain), J. Pino, L. Valverde (University of Sevilla, Spain), C. Holze, D. Isaza, R. Misseeeuw (ToughTrough – TT, Germany), N. Pfanner, A. Schies (Fraunhofer ISE, Germany), J. T. Konttinen (Tampere University of Technology, Finland), The Biostirling Consortium – Zabala Innovation Consulting, Spain) (Submission-ID SIW17-299)

12:45 – 13:00 Discussions

13:00 – 14:00 LUNCH BREAK

14:00 – 15:45	SESSION 3A – FORECASTING II
> Session Chair	E. Lannoye (EPRI International,Ireland)

14:00 – 15:30 Presentations (18 min. each)

- **Understanding Spatio-Temporal Solar Forecasting**
  R. Amaro e Silva, M. C. Brito (University of Lisbon, Portugal) (Submission-ID SIW17-176)
- **Utility Scale Solar Short Term Generation Forecasting for Improved Dispatch and System Security**
  J. Dyson, H. Mackenzie (Dispatch Solutions, Australia), N. Engerer, J. Luffman (Solcast, Australia) (Submission-ID SIW17-138)
- **Country Scale Solar Irradiance Forecasting for PV Power Trading**
  S. Cros, E. Buessler, F. Le Guillou, M. Turpin (Reuniwatt, France) (Submission-ID SIW17-73)
- **Experiences with State Forecasting of Smart Distribution Grids using Solar Generation Forecast**
  F. Paulat, K. Korotkiewicz, M. Ludwig, M. Zdrallek (University of Wuppertal, Germany), X. Le Pivert (Steadysun, France) (Submission-ID SIW17-58)
- **Short-Term Solar Forecasting Performance of Popular Machine Learning Algorithms**
  A. Dobbs, T. Elgindy, B.-M. Hodge, A.Florita (National Renewable Energy Laboratory – NREL, USA) (Submission-ID SIW17-198)

15:30 – 15:45 Discussions

14:00 – 15:45	SESSION 3B – PV IN DISTRIBUTION GRIDS I
> Session Chair	E. Tröster (Energynautics, Germany)

14:00 – 15:20 Presentations (20 min. each)

- **U-Control – Recommendations for Distributed and Automated Voltage Control in Current and Future Distribution Grids**
  O. Marggraf, S. Laudahn, B. Engel (TU Braunschweig, Germany), M. Schoeneberger, S. Patzack, H. Vennegeerts (Forschungsgemeinschaft für elektrische Anlagen und Stromwirtschaft – FGH, Germany), T. Bülo (SMA Solar Technology, Germany), F. Wirtz, J. Brantl (Bayernwerk, Germany), M. Cremer, M. Meyer, A.Schnettler (RWTH Aachen, Germany), M. Lindner, C. Aigner, R. Witzmann (Technical University of Munich – TUM, Germany), F. Pizzutto (Maschinenfabrik Reinhausen, Germany), I. Ghourabi, A. Großhans (Netze BW, Germany), R. Frings (Infrawest, Germany) (Submission-ID SIW17-157)
- **Coordinating LVRT, AID and Area EPS Reclosing Mechanisms**
  S. Laudahn, F. Rauscher, B. Engel (TU Braunschweig, Germany), T. Bülo (SMA Solar Technology, Germany), J. Bömer (Electric Power Research Institute – EPRI, USA) (Submission-ID SIW17-230)
- **Smart Network Control with Coordinated PV Infeed**
  S. Hempel, J. D. Schmidt, E. Tröster, T. Ackermann (Energynautics, Germany) (Submission-ID SIW17-254)
- **Consideration of Different Features of Photovoltaic Power Plants for an Efficient Integration in a Smart Distribution Grid**
  M. Modemann, P. Steinbusch, R. Uhlig, M. Zdrallek (University of Wupperal, Germany), W. Friedrich, U. Schlüter (Phoenix Contact Energy Automation, Germany), S. Blanaru (SPIE SAG, Germany) (Submission-ID SIW17-156)

15:20 – 15:45 Discussions

14:00 – 15:45	SESSION 3C –PV AND STORAGE
> Session Chair	A. O'Connell (EPRI, USA)

14:00 – 15:30 Presentations (18 min. each)

- **Guidelines for the Design of Residential and Community Level Storage Systems Combined with Photovoltaics (PV)**
  S. Afxentis, M. Florides C. Anastassiou, V. Efthymiou, G. E. Georghiou (University of Cyprus – UCY, Cyprus), P. Norgaard, H. Bindner (DTU, Denmark), J. Kathan, H. Brunner, C. Mayr (Austrian Institute of Technology – AIT, Austria) (Submission-ID SIW17-166)
- **Development of a Grid-Friendly Active Power Control of PV-Batteries using Rolling Forecasts**
  C. Schweinsberg, J.-D. Schmidt, E. Tröster (Energynautics, Germany), D. Maihöfner, J. Hanson (TU Darmstadt, Germany) (Submission-ID SIW17-252)
- **PV Integration and Storage Optimization for a Solar Farm on a Mall Rooftop in Reunion Island**
  N. Sébastien, E. Buessler, E. Chaintreau, S. Cros (Reuniwatt, France) (Submission-ID SIW17-331)
- **The Potential for Energy Storage to Serve as Pollution Control Technology under the Clean Air Act**
  K. E. Wadsack, T. Acker (Northern Arizona University, USA) (Submission-ID SIW17-48)
- **Optimal Planning and Operation of Hybrid Energy System Supplemented by Storage Devices**
  M. S. Javadi (Islamic Azad University, Iran), A. Anvari-Moghaddam, J. M. Guerrero (Aalborg University, Denmark) (Submission-ID SIW17-286)

15:30 – 15:45 Discussions

15:45 – 16:05 COFFEE BREAK

16:05 – 18:15	SESSION 4A – INTERNATIONAL STUDIES AND EXPERIENCE
> Session Chair	T. Ackermann (Energynautics, Germany)

16:05 – 17:53 Presentations (18 min. each)

- **Connection of Large-Scale Solar Farms to Weak Networks**
  B. Badrzadeh (Australian Energy Market Operator, Australia) (Submission-ID SIW17-326)
- **Short-term Off-river Pumped Hydro Energy Storage to Support 100% Renewable Electricity in Australia's Energy Markets**
  B. Lu, A. Blakers, M. Stocks, K. Anderson (Australian National University, Australia) (Submission-ID SIW17-63)
- **Supporting Hydro Generation with PV in Costa Rica – Benefits of higher PV shares in a primarily hydro-based system**
  P.-P. Schierhorn, T. Ackermann (Energynautics, Germany), F. Fernandez (DIgSILENT, Germany), C. Echevarría Barbero, J. R. Paredes, C. Tagwerker (Inter-American Development Bank – IDB, USA / Costa Rica) (Submission-ID SIW17-xxx)
- **Renewable Energies Integration into the Namibian Transmission Network**
  M. Manchen, E. Krige (NamPower, Namibia) (Submission-ID SIW17-119)
- **Impact of Waterworks Pumps Demand Response to Increase Maximum Photovoltaic Integration Capacity**
  M. Imanaka, Y. Uchiyama, T. Saito, J. Baba, N. Fujii (University of Tokyo, Japan), N. Higa (Smaeco, Japan) (Submission-ID SIW17-266)
- **Challenges of Power System Planning in the Integration of Solar Power in Hambantota and other Areas of Sri Lanka**
  U.N. Sanjaya, G.B. Alahendra, P.A.G.S. Abeynayake, H.M.W. Banda (Ceylon Electricity Board, Sri Lanka) (Submission-ID SIW17-8)

17:53 – 18:15 Discussions

16:05 – 18:15	SESSION 4B – PV IN DISTRIBUTION GRIDS II
> Session Chair	M. Morjaria (First Solar, USA)

16:05 – 17:53 Presentations (18 min. each)

- **Voltage Sensitivity-based Reactive Power Control Strategy for Managing High Shares of PV Systems in LV Distribution Grids**
  F. de Nigris (ABB, Switzerland | Eindhoven University of Technology – TU/e, Netherlands), A. Oudalov, A. Timbus (ABB, Switzerland), J. G. Slootweg, N. Blaauwbroek (Eindhoven University of Technology – TU/e, Netherlands) (Submission-ID SIW17-129)
- **Predicting Hosting Capacity of Photovoltaic Power Production in Low-voltage Grids Using Regressive Techniques**
  D. van der Meer, J. Andersson, V. Bernström, J. Törnqvist, J. Widén (Uppsala University, Sweden) (Submission-ID SIW17-227)
- **Rooftop PV in Indian Electricity Distribution Networks**
  T. Ackermann, E. Tröster, P.-P. Schierhorn J.-D. Schmidt, B. Narasimhan (Energynautics, Germany), J. Gaebler, H. Bhatnagar, S. Goel, F. Huebner (Deutsche Gesellschaft für Internationale Zusammenarbeit – GIZ, India) (Submission-ID SIW17-253)
- **Overcoming Grid Connection Limitations of PV Plants in Distribution Networks with Battery Storage Systems**
  P.Chodura, M. van Melzen, K. Broess, M. Verburg (DNV GL, Netherlands), U.Albarosa (3G ERES, Jordan) (Submission-ID SIW17-41)
- **Automated Quantification of PV Hosting Capacity in Distribution Networks under User-defined Control and Optimisation Procedures**
  W. Martin, Y. Stauffer, C. Ballif, A. Hutter, P.-J. Alet (CSEM PV-center, Switzerland) (Submission-ID SIW17-238)
- **Photovoltaics and Opportunistic Electric Vehicle Charging in a Swedish Distribution Grid**
  R. Luthander, M. Shepero, J. Munkhammar, J. Widén (Uppsala University, Sweden) (Submission-ID SIW17-75)

17:53 – 18:15 Discussions

16:05 – 18:05	SESSION 4C – REGULATORY AND MARKET ASPECTS
> Session Chair	J. Novacheck (NREL, USA)

16:05 – 17:45 Presentations (20 min. each)

- **EMPOWER – A Network Market Approach for Local Energy Trade and Renewable Electricity System Integration**
  B. A. Bremdal, J. Rajasekharan, C. W. Kunze (Smart Innovation Norway, Norway), P. Olivella Rosell (Polytechnical University of Catalonia – UPC, Spain) (Submission-ID SIW17-104)
- **Time and Locational Value of PV on Distribution Feeders in Spain**
  A. O'Connell, B. Rogers, J. Roark, J. Smith (Electric Power Research Institute, Ireland/USA), R. Martinez, E. Meroño, J. C. Rucian, A. Reig, J. Cabetas (Iberdrola, Spain) (Submission-ID SIW17-300)
- **Comparison of Different Photovoltaic Models in a Capacity Credit Evaluation**
  P. Tapetado, J. Usaola (University Carlos III Madrid, Spain) (Submission-ID SIW17-233)
- **Technology Trends, Regulation and the Impact on the Market for Residential PV systems – Techno-Economic Implications of Regulation on Storage and Smart Meters**
  K. Burges, M. Döring (Ecofys Germany, Germany), F. Lobas-Funck, C. Reinhold (Technical University Braunschweig, Germany) (Submission-ID SIW17-228)
- **Remuneration of Controllable Reactive Power Inside so far Free of Charge Ranges: Cost-Benefit Analysis**
  E. Kämpf, M. Braun, H. Wang (University of Kassel | Fraunhofer IWES, Germany), B. Ernst (Fraunhofer IWES, Germany) (Submission-ID SIW17-168)

17:45 – 18:05 Discussions

18:15 POSTER RECEPTION & NETWORKING

WEDNESDAY, 25 OCTOBER 2017

09:00 – 10:50	SESSION 5A – FREQUENCY ISSUES
> Session Chair	B. Weise (DIgSILENT, Germany)

09:00 – 10:20 Presentations (20 min. each)

- **An Experimental Study on P-f and Q-V Droop Control of Photovoltaic Power Generation Contributing to Grid Frequency Operation**
  Y. Kimpara, M. Kurimoto, Y. Manabe, T. Funabashi, T. Kato (Nagoya University, Japan) (Submission-ID SIW17-108)
- **Mitigating Frequency Fluctuations in Power Grids with High Photovoltaic Penetration: AGC 30 Model Case Study**
  A. A. Dawuda, T. Oyama, T. Tsuji (Yokohama National University, Japan) (Submission-ID SIW17-100)
- **Distributed Grid-forming Inverters in Power Grids**
  P. Unruh, T. Gühna (Fraunhofer IWES, Germany) (Submission-ID SIW17-240)
- **On Frequency Stability in the Future Renewable Nordic Power System with Gas Sector Integration**
  J. Ikäheimo, J. Kiviluoma (VTT, Finland) (Submission-ID SIW17-120)

10:20 – 10:50 Discussions

09:00 – 10:50	SESSION 5B – NORTH AMERICAN EXPERIENCE
> Session Chair	J. C. Smith (UVIG, USA)

09:00 – 10:30 Presentations (18 min. each)

- **Anonymous Solar Forecasting Trial Outcomes – Lessons Learned and Trial Recommendations**
  E. Lannoye (EPRI International, Ireland), A. Tuohy (EPRI, USA), W. Hobbs (Southern Company Services, USA), J. Sharp (Sharply Focused, USA) (Submission-ID SIW17-126)
- **Pre-event Estimation, Real-time Forecasting and Post-event Analysis of the Impact of the Aug 21, 2017 Solar Eclipse on Renewable Generation in California**
  J. Zack (AWS Truepower, USA) (Submission-ID SIW17-258)
- **Large-Scale Stability Modelling of Solar PV with Consideration of FRT Vulnerability**
  N. Miller, D. Lew (GE Power, USA)
- **Renewable Energy Futures in the East**
  J. Novacheck, G. Brinkman (National Renewable Energy Laboratory – NREL, USA) (Submission-ID SIW17-135)
- **Using Probabilistic Renewable Forecasts to Determine Reserve Requirements**
  E. Ela, A. Tuohy, R. Entriken (EPRI, USA), E. Lannoye (EPRI International, Ireland), R. Philbrick (Polaris Systems Optimization, USA) (Submission-ID SIW17-125)

10:30 – 10:50 Discussions

09:00 – 10:50	SESSION 5C – VOLTAGE ISSUES
> Session Chair	B. Badrzadeh (AEMO, Australia)

09:00 – 10:20 Presentations (20 min. each)

- **Mitigation of Voltage Rise Caused by Intensive PV Development in LV Grid**
  P. Kacejko, P. Pijarski (Lublin University of Technology, Poland) (Submission-ID SIW17-278)
- **Optimal Voltage Control in Distribution Systems with Photovoltaic and Electric Vehicles for Cooperation with Transmission System**
  T. Tsuji, H. Nishigami, H. X. Nguyen, T. Takano (Yokohama National University, Japan) (Submission-ID SIW17-97)
- **Maintaining Grid Voltage from Spot Renewable Generation**
  F. Cornelius, J. Tepper (ABB, Germany), J. Maret (Romande Energie, Switzerland), J. Kern (ABB, USA) (Submission-ID SIW17-SIW17-14)
- **Assessment of Active Power Curtailment Methods With Regard to the German Regulatory Context**
  F. Meier (Fraunhofer IWES | University of Kassel, Germany), J. Kupka (University of Kassel, Germany), C. Töbermann (Fraunhofer IWES, Germany), M. Braun (Fraunhofer IWES | University of Kassel, Germany) (Submission-ID SIW17-53)

10:20 – 10:50 Discussions

10:50 – 11:15 COFFEE BREAK

11:15 – 12:15	SESSION 6 – CLOSING SESSION
> Session Chair	M. Morjaria (First Solar, USA)

11:15 – 11:45

Challenges and Solutions for Future Operational Challenges Caused by Solar

Panelists:

- J. Dyson (Greenview Strategic Consulting, Australia)
- B. Engel (SMA Solar Technology, Germany)
- E. Lannoye (EPRI, USA)
- R. Luthander (Uppsala University, Sweden)
- J. Novacheck (NREL, USA)

11:45 – 12:15 Discussions

12:15 – 14:00 LUNCH

POSTER PRESENTATIONS

- **Evaluating Business Models of a Decentralized Energy System**
  C. Dufter, M. Hinterstocker, B. Hörner, S. von Roon (Forschungsgesellschaft für Energiewirtschaft – FfE, Germany) (Submission-ID SIW17-45)
- **Metering Solar Energy for Rental Flats**
  J. Bergner (University of Applied Sciences Berlin – HTW, Germany), N. Pflugradt (Bern University of Applied Sciences, Switzerland), B. Siegel, D. Beier, V. Quaschning (University of Applied Sciences Berlin – HTW, Germany) Submission-ID SIW17-72)
- **HIL Test on Voltage Management of Distribution Power System by Smart Inverter Control of Photovoltaic Generations and Electric Vehicles**
  S. Kamo, Y. Ota, T. Nakajima, H. Toda (Tokyo City University, Japan), K-I. Kawabe (Tokyo Institute of Technology, Tokyo, Japan), A. Yokoyama (University of Tokyo, Japan) (Submission-ID SIW17-152)
- **Probabilistic Forecast of Solar Irradiation Based on Beta Regression and Copula Based Markov Process**
  T. Shiga (Toyota Central R&D Labs., Japan), T. Kato (Nagoya University, Japan) (Submission-ID SIW17-160)
- **Contribution of National Solar Mission toward Climate Change: Success Story of Solar Parks in India and the Recent Downward Trends in Solar Tariff**
  R. S. Meena (Ministry of New & Renewable Energy, India | Rajasthan Technical University, India), D K Palwaliya (Rajasthan Technical University, India), N. Gupta (Malaviya National Institute of Technology, India), A. K. Sharma, D. K. Sambhariya (Rajasthan Technical University, India), S. Johari (Rajasthan Technical University, India | Sri Balaji College of Engineering & Technology, India), S. Agariya (National Institute of Solar Energy, India | Ministry of New & Renewable Energy, India), S. K. Sharma (University of Kota, India), Ms Punam (Rajasthan Renewable Infra, India) (Submission-ID SIW17-220)
- **Feasibility Study of PV-Wind Hybrid Power System with Storage for Water Pumping for Irrigation in Ouled Fares Region, Algeria**
  T. Tahri, K. E. Meddah, A. Benkraouda (Chlef University, Algeria) (Submission-ID SIW17-223)
- **Stochastic Optimization of PV Battery System Operation Strategy under different Utility Tariff Structures**
  J. S. Erdal, M. Korpås (Norwegian University of Science and Technology, Norway) (Submission-ID SIW17-235)
- **Benchmarking of Smart Grid Concepts in Low-Voltage Distribution Grids**
  O. Bertetti, E. Tröster (Energynautics, Germany), A. Malmquist (KTH Royal Institute of Technology, Sweden) (Submission-ID SIW17-251)
- **Limiting Voltage Dips & Inrush Currents When Energizing Power Transformers: Controlled Switching of Gang Operated Switches —Theory and Case Study**
  P. Taillefer, L. Poutrain (Vizimax, Canada), J. Sanchez (France) (Submission-ID SIW17-261)
- **Value of Solar PV Revisited: A System-planning View**
  T. Bischof-Niemz, J. Calitz, J. Wright, (Council for Scientific and Industrial Research – CSIR, South Africa) (Submission-ID 308)
- **Load Frequency Control in Power Network with High Penetration of Photovoltaic Using Hybrid Air Conditioner**
  T. Sawa, T. Tsuji, T. Oyama (Yokohama National University, Japan), T. Yagi, T. Tsukada (Tokyo Gas, Japan) (Submission-ID SIW17-311)