

ISUW 2025 Technical Paper
Selected Abstracts for Full Paper Submission

SI No	Theme	Title of Technical Paper	Lead Author Name	Lead Author Organization Name
1	Cyber Security for the Digitalized Grids	Post-Quantum Security for Digitized Grids in India	Prateek Khanna	SolFinder Research
2	Cyber Security for the Digitalized Grids	Enhancing Insider Threat Detection Using Behavioral Analytics Techniques	Rajesh Pathak	Noida Power Company Limited
	Cyber Security for the Digitalized Grids	Enhancing Security for Industrial Control Systems (ICS): An Analysis of Threats and Defense Strategies		
3	Cyber Security for the Digitalized Grids	Assessing the Vulnerability of Cloud-Based Applications to Cyber Attacks	Devesh Verma	BSES Rajdhani Power Ltd.
4	Cyber Security for the Digitalized Grids	Enhancing Cybersecurity in Digitalized Grids through the Implementation of Secure R-GOOSE Protocols	Supratik Pathak	GE Vernova
5	Cyber Security for the Digitalized Grids	Challenges in meeting interoperability requirements of IEC62443 and IEC62351 standards	Mohan Singh	Noida Power Company Limited
6	Cyber Security for the Digitalized Grids	Compliance to Crisis Prevention: The Multifaceted Benefits of PAM and PIM	Kumari Bharti	NOIDA POWER COMPANY LIMITED
7	Disruptive Innovations for Utilities	Analysis of Vegetation Encroachment for Overhead Distribution Lines from the Drone Orthomosaiced Imagery Using Image Classification Techniques	Vikas Gupta	Noida Power Company Limited
8	Disruptive Innovations for Utilities	Dynamic “Distribution Transformer (DT) to Consumer” tagging for efficient Energy Audit	Sameer Patil	Yitran Technologies India Pvt Ltd
9	Disruptive Innovations for Utilities	Enhancing Utility Customer Engagement through Digital Tools	Gufran Basit	Siemens Technology and Services Private Limited
10	Disruptive Innovations for Utilities	Unlocking the Intelligent Utility with Generative AI	Dheeraj Gangadharan	Accenture Solutions Pvt Ltd
	Disruptive Innovations for Utilities	Leveraging GenAI for Sustainable Utility Management: An ESG Perspective	priyanshu agrawal	cognizant
11	Disruptive Innovations for Utilities	Flex-Xplore solution: A Digital Innovation	Sagar Verma	Cognizant Technology solutions
12	Disruptive Innovations for Utilities	AI/ML enabled Asset Digital Twin	Aashutosh Soni	Cognizant

13	Disruptive Innovations for Utilities	Change Detection Using Object-Based Classification Technique In The Parts Of The Greater Noida Region For Electrical Network Planning and Analysis In Utility Management	Vikas Gupta	Noida Power Company Ltd
14	Disruptive Innovations for Utilities	Energy as a Service (EaaS) & Metering Infrastructure in Viksit Bharat	Amit Sharmaa	Ernst & Young LLP
15	Disruptive Innovations for Utilities	Voice of the Customer - What the Digital Customers Wants?	Harshvardhan Senghani	Naavya Solutions
16	Disruptive Innovations for Utilities	Voice of the Customer – What the Digital Customers Want?	Aditya Dutt Mishra	Accenture
17	Disruptive Innovations for Utilities	Application of digital twins for the low-voltage electricity grid– Challenges and opportunities in India	Ajeet Kumar Singh	The Energy and Resources Institute, New Delhi
18	Disruptive Innovations for Utilities	A CIM Based Network Model Management Framework for Load Dispatch Centres	Dr. Najda V M	TNEI Services
19	Disruptive Innovations for Utilities	Robotics Process automation for Master data integration	Anil Kumar Ojha	TP Western Odisha Distribution Limited
20	Disruptive Innovations for Utilities	Next-Gen Utilities: Leveraging AI, VR, and 5G for a Smarter Future	Abhishek Tripathi	Tata Power-DDL
21	Disruptive Innovations for Utilities	Transforming REC Markets with Blockchain: A Decentralized Approach to Rewarding Solar Rooftop Beneficiaries under PM Kusum and Surya Ghar	Vijay C S	Energy Exemplar
22	Disruptive Innovations for Utilities	Evolution of Substation Automation System	Tusar Kanti Bag	TP Central Odisha Distribution Ltd (TPCODL)
23	Disruptive Innovations for Utilities	5G Rollout and its Impact for Electric Utilities	Dibyanjan Sahoo	TP Central Odisha Distribution Limited
24	Disruptive Innovations for Utilities	Leveraging AI in power portfolio optimization	Trusha Biswas	TATA Power - Mumbai
25	Disruptive Innovations for Utilities	Virtual Reality based training module for Operations of ACBs & RMUs in 11kV Substation	Sunil Kashyap	BSES Rajdhani Power Limited
26	Disruptive Innovations for Utilities	Utilities Intelligent Assist	Rishi Raj Singh	Accenture Solutions Private Limited
27	Disruptive Innovations for Utilities	Ensuring Safety Through GIS	Chintamani Chitnis	TP Central Odisha Distribution Ltd
28	Disruptive Innovations for Utilities	AI Strategy for ML Algorithms in DERMS	Balakumar P	Enercent Technologies Pvt Ltd
29	Disruptive Innovations for Utilities	Assessment of Commercial Feasibility for New Electricity Connections: Leveraging AI - Fuzzy Search, Phonetic Matching with SAP Integrations	Vivek Kumar Choubey	Noida Power Company Limited

30	Disruptive Innovations for Utilities	Smart Way of Consumer Indexing	Ganesh Murlidhar Mane	TP Western Odisha Distribution Ltd.
31	Disruptive Innovations for Utilities	Redundant Communication for Unmanned Grids	Swagat Narayan Mohanty	TPWODL
32	Disruptive Innovations for Utilities	DWT based Detection and Classification of Renewable Energy Penetrated Microgrid Faults using Current Signatures	SUMANGAL BHAUMIK	University of Calcutta
33	Disruptive Innovations for Utilities	Optimizing Distribution Network Monitoring: From Centralized Control to Role-Specific Dashboards in Secondary Distribution Systems	Ashish Kumar Joshi	BSES Yamuna Power Limited
34	Disruptive Innovations for Utilities	Mitigating Default Risks in Utility Payments: A Predictive Analytics Framework with Machine learning	Tajveer Tyagi	Noida Power Company Ltd
35	Electric Mobility	Effect of vehicle dynamics on Performance of Electric Vehicle	Minal Rade	D.Y. Patil College of Engineering, Akurdi, Pune
36	Electric Mobility	Opportunity for Battery Swapping in India	Eshwar Pisalkar	Blue Energy Motors
37	Electric Mobility	Strategic Charging Demand Management of Electric Buses: A Case Study on Urban Decarbonization	Mahavir Singh	The Energy and Resources Institute
38	Electric Mobility	Advanced Modulation Techniques for Multilevel Inverters in Vehicle-to-Grid Applications	NASREEN MANSOORI	SILVER OAK UNIVERSITY
39	Electric Mobility	Empowering V2G: Pressing Challenges to Overcome to Harness its True Potential	Dillip Kumar Panda	Cognizant Technology Solutions Pvt. Ltd.
40	Electric Mobility	MW-scale Charging Systems and its Impact on Indian Power Grid	Gaurav Singh	Cognizant Technology Solutions Pvt Ltd
	Electric Mobility	MW-scale Charging Systems (MCSs) a need for Clean & Green Cities and Highways	ANIL BOHARA	BSES RAJDHANI POWER LIMITED
	Evolving Architecture of the 21st Century Grid with Two Way Power Flows	Planning And Design of Distribution Grid with Prosumers and Electric Vehicles and Distributed Energy Resources		
41	Electric Mobility	Battery-Buffered EV charging – A demand driver for stationary storage in a sustainable way	J Sai Keshava Srinivas	Cognizant Technology Solutions Pvt Ltd
42	Electric Mobility	33kV Single Bus Splitting Through RMU in 33kV Air Insulated Substation	Yashobanta Rout	Tata Power Central Odisha Distribution Limited

	Electric Mobility	Mobile Distribution Substation for Rural Remote Areas		
43	Electric Mobility	Harnessing Drone Technology to Transforming India's Future in Mobility	Sanjay Singh Rawat	Accenture Solutions Private Limited
44	Electric Mobility	Advancing Electric Mobility: Innovations in Charging Infrastructure and Integration Technologies	Abhishek Tripathi	Tata Power-DDL
45	Electric Mobility	Planning and Scheduling of EV Charging and Battery Swapping Stations Considering Uncertain EV Load Demand	P Bala Sai Kiran	GE Vernova
46	Electric Mobility	Predictive Modeling and Detection of Electric Vehicle (EV) Charging Infrastructure Using Household data and Grid Optimization	Shishir Shekar	Landis+Gyr
47	Electric Mobility	EVs as Virtual Power Plants (VPP)	Somdeb Bhattacharya	Accenture
48	Evolving Architecture of the 21st Century Grid with Two Way Power Flows	Execution of India's Resource Adequacy Framework at a state level using PLEXOS	Vijay C S	Energy Exemplar
49	Evolving Architecture of the 21st Century Grid with Two Way Power Flows	Transmission Network Planning for Higher Renewable Energy Integration in Rajasthan	Harikrishna K V	The Center for Study of Science, Technology and Policy (CSTEP)
50	Evolving Architecture of the 21st Century Grid with Two Way Power Flows	HVDC Grids: A perspective on opportunities and challenges with energy transition in India	Vinothkumar K	Hitachi Energy Technology Solutions Private Limited, Chennai
51	Evolving Architecture of the 21st Century Grid with Two Way Power Flows	Dual VRF Network Design for Grid IT Offices	Swagat Narayan Mohanty	TPWODL
52	Foundational Blocks for Smart Grids	Unified HES and MDMS for Multiple OEM's Smart Meters	Anil Kumar Ojha	TP Western Odisha Distribution Limited
53	Foundational Blocks for Smart Grids	SMART MICROGRIDS FOR CAMPUSES	Er.S.P.Sharma	NTPC Ltd
54	Foundational Blocks for Smart Grids	TeleNova- Hybrid Communication Technology	Pritesh Kumar Srivastava	Tata Power Western Odisha Distribution Limited
55	Foundational Blocks for Smart Grids	Optimum Location of Directional Fault Passage Indicator for Improving Reliability in Renewable Energy Based Distribution Networks.	Aditya Kumar Pati	TPWODL,Odisha

56	Foundational Blocks for Smart Grids	Multi-directional Integration of EGIS with other IT/OT Systems	Manish Kumar Sharma	TP Western Odisha Distribution Limited
57	Foundational Blocks for Smart Grids	SMART GRID EVOLUTION COVERING DATA COMMUNICATION NEED RELATED STUDIES AND SMART GRID APPLICATIONS FOR TRANSMISSION UTILITIES	AMIT R. KULKARNI	MAHATRANSCO
58	Foundational Blocks for Smart Grids	Meter Reading & Troubleshooting of non-communicable Smart Meters through drones	Ashish Taneja	Tata Power Delhi Distribution Ltd.
59	Foundational Blocks for Smart Grids	Learning from Smart Grid Projects	Manoj Landge	L&T infotech Mindtree
60	Foundational Blocks for Smart Grids	Energy Storage Systems - Applications and Business Models	Adesh Golash	BSES Rajdhani Power Ltd.
61	Foundational Blocks for Smart Grids	Estimation of most probable root cause using digital tools for inverter dominated power grid	Sarthak Dash	GE Vernova
62	Foundational Blocks for Smart Grids	Smart Metering Operation Center (SMOC): Setting the Foundation for a Smart Grid	Hem Thukral	Abu Dhabi Distribution Company (ADDC)
63	Foundational Blocks for Smart Grids	Standardisation -Interoperability & Real Time – Two sides of the same coin	Jaideep Singh	Radius Synergies International Pvt Limited
64	Foundational Blocks for Smart Grids	Imperatives for transitioning from Advanced DMS to DERMS (Distributed Energy Resource Management Systems)	Mohan Singh	Noida Power Company Limited
65	Foundational Blocks for Smart Grids	Energy Management through Smart Meters	Radhika Garg	IGDTUW
66	Foundational Blocks for Smart Grids	Integrated Bespoke Outage Management System: Effective solution for Indian Power Utilities to address Customer Power Failure Grievances	Mr. Birendra Choudhary	Noida Power Company Limited
67	INDIA @ 100 in 2047: Vision for the Indian Power System	Innovative Digital Interventions to accelerate Transition to Green Energy	Dr Surekha Deshmukh	IEEE
68	INDIA @ 100 in 2047: Vision for the Indian Power System	The long-run value of electricity reliability in Western Odisha- A Case Study.	Aditya Kumar Pati	TPWOD, Odisha
69	INDIA @ 100 in 2047: Vision for the Indian Power System	India @ 100 in 2047: Strategic Framework for Achieving a Net-Zero Power Sector	Gufran Bait	Siemens Technology Software Private Limited
70	INDIA @ 100 in 2047: Vision for the Indian Power System	Fortifying India's Power Grid: Climate Resilience in Action	Harsh Raj	Accenture
71	INDIA @ 100 in 2047: Vision for the Indian Power System	Approaches and Challenges to Resource Adequacy Assessment	Nayeem Khan	The Energy and Resources Institute

72	INDIA @ 100 in 2047: Vision for the Indian Power System	IEEE 2800 Complied Power Hardware-in-the-Loop (PHIL) Set-Up for Analyzing PV Plant's Behavior in Power Systems	Sarasij Das	Indian Institute of Science
73	INDIA @ 100 in 2047: Vision for the Indian Power System	Attaining Sustainability with Smart Meters and Net zero in future	Ashish Taneja	Tata Power Delhi Distribution Limited
74	INDIA @ 100 in 2047: Vision for the Indian Power System	Affordable & Reliable Green Energy 24X7 For all Citizens	Praven Kumar V	Accenture
75	INDIA @ 100 in 2047: Vision for the Indian Power System	Net Zero NPCL Roadmap	Krishna Chandra Kumar	Noida Power Company Limited
76	INDIA @ 100 in 2047: Vision for the Indian Power System	Generation Planning Analysis in an India's Evolving Policy Landscape: A Case Study of Uttar Pradesh's Renewable Energy Integration	Sairam Thandra	Center for Study of Science, Technology and Policy
77	INDIA @ 100 in 2047: Vision for the Indian Power System	Towards a Climate Resilient Indian Power Sector by 2047	Harshid Sridhar	GE Vernova, Consulting Services
78	INDIA @ 100 in 2047: Vision for the Indian Power System	Building a climate resilient power system : Lessons learnt and the road ahead	Subhankar Palit	EY GDS
79	New and Emerging Technologies and Trends	Review of Unmanned Traffic Management System for drones	Prateek Khanna	SolFinder Research
80	New and Emerging Technologies and Trends	Optimizing Maximum Power Transfer Capacity in Smart Inverters for Enhanced PV Penetration Using Genetic Algorithm and Coordinated Control	Kishor Shinde	Maharashtra State Electricity Distribution Company Ltd.
81	New and Emerging Technologies and Trends	CIRCULAR ECONOMY OF SOLAR PV PANELS	Chilukuri Maheshwar	ex-Anglo Eastern Maritime Academy
82	New and Emerging Technologies and Trends	Real time monitoring of Distribution transformer (IOT & Smart meter Interface through cloud server)	J.Durairaj	TP Western odisha distribution limited (TPWODL)
83	New and Emerging Technologies and Trends	Advancing Carbon Capture, Utilization, and Storage (CCUS) in India: Insights from the USA and Path Forward	Abhishek Kumar Singh	Accenture
84	New and Emerging Technologies and Trends	Green Hydrogen Marketplace: A Platform for Transparency, Collaboration and Governance (TCG) in the Value Chain	Kushagra Shah	Cognizant Technology Solutions
85	New and Emerging Technologies and Trends	Reimagine the customer experience in the Utilities sector by harnessing the power of Generative AI	Kumar Mayank	Cognizant Technology Solutions
86	New and Emerging Technologies and Trends	Smart Energy Management: The Role of AIoT in Grid-Interactive Efficient Buildings	Aashutosh Soni	Cognizant

87	New and Emerging Technologies and Trends	Evaluating the Role of Analytical Tools in Advancing Green Hydrogen Technology Towards Net Zero Emissions	Manan Pathak	Gujarat Technological University
88	New and Emerging Technologies and Trends	Assessing the Feasibility of BESS as a Sustainable Replacement for Diesel Generators	Aditya Dutt Mishra	Accenture
89	New and Emerging Technologies and Trends	District Cooling System	Ankit Sharma	Accenture Services PVT Limited
90	New and Emerging Technologies and Trends	Integrating Artificial Intelligence for Sustainable Classroom Transformation: A Comprehensive Framework to Enhance Energy Efficiency, Air Quality, and Learning Environment Resilience	Dr.N.Vinoth kumar	kumaraguru college of technology
91	New and Emerging Technologies and Trends	Dynamic Islanding Readiness Scheme for Enhanced Power System Stability	Anil Kumar Vedula	The Tata Power Company Limited
92	New and Emerging Technologies and Trends	Generative AI for Smarter In-House Automation	Yogender Kumar	Noida Power Company Limited
93	New and Emerging Technologies and Trends	Exploring Renewable Energy Dynamics in Power Grids Through Synchrophasor Technology	Aman Gautam	Grid-India
94	New and Emerging Technologies and Trends	BESS Protection Philosophy in Distribution Network	Manvendra Singh Hada	IndiGrid
95	New and Emerging Technologies and Trends	Public Sentiment Analysis on Power Distribution: Leveraging Advanced Machine Learning	Tajveer Tyagi	Noida Power Company Ltd
96	New and Emerging Technologies and Trends	Enhancing Energy Efficiency through Grid-Interactive Buildings and Campuses	Manan Pathak	MY Advisory - Startup
	Smart Grids for Smart Cities and Utilities Integration	Research on Leveraging Street Light Poles for Multifunctional Smart City Applications		Silver Oak University
97	New and Emerging Technologies and Trends	Optimization of a Hybrid plant with Wind, Solar and Battery system for Round the Clock Power – a Case Study	Pritam Sunil	GE VERNOVA (Consulting Services)
98	New and Emerging Technologies and Trends	Criteria for a Typical Resource Adequacy & Generation Expansion Planning at Regional Level in South Asia	Suramya Dwivedi	GE Vernova Consulting Services - GERETPL
99	New and Emerging Technologies and Trends	Strategic Framework for Integrating Prosumers, EVs, and DREs into the Distribution Grid	Mallik E V	The Center for Study of Science, Technology and Policy (CSTEP)
100	Regulations for the Evolving Smart Energy Systems	Advancing Decarbonization in India's Power Sector through Green Electricity Markets	Shivam Puri	NTPC Vidyut Vyapar Nigam Ltd.

101	Regulations for the Evolving Smart Energy Systems	Regulatory Framework for Ancillary Services in Evolving Smart Energy Systems: Challenges and Strategic Solutions	Gufran Basit	Siemens Technology and Services Private Limited
102	Regulations for the Evolving Smart Energy Systems	India's Carbon Credit Trading System: An Assessment Framework for Power Sector Transformation and Market Stability	Sujit Surendran	Cognizant Technology Solution Pvt Ltd.
103	Regulations for the Evolving Smart Energy Systems	Framework for Indian Carbon Markets	Purnima M Gupta	Central Electricity Authority, Government of India
104	Regulations for the Evolving Smart Energy Systems	Tariff rationalization as a key electricity distribution reform	Raman Garg	REC Ltd
	INDIA @ 100 in 2047: Vision for the Indian Power System	Evolving role of Electricity Markets in India		
105	Regulations for the Evolving Smart Energy Systems	Enhancing Regional Energy Cooperation in South Asia: Lessons from Success Stories and the Need for a Unified Regulatory Framework	Maitreyi Karthik	USAID SAREP program at RTI International
106	Smart Grids for Smart Cities and Utilities Integration	Smart buildings and Electric Vehicles Acting as Microgrids in Context of India: The Simulation Step	Moreshwar Salpekar	Sevya Multimedia Pvt Ltd
	Smart Grids for Smart Cities and Utilities Integration	Managing Utilities Smartly in a Smart Building		
107	Smart Grids for Smart Cities and Utilities Integration	Consumer to Prosumer to Flexumer: Shifting paradigm	Prakhar Chaudhary	Cognizant Technology Solutions Pvt. Ltd
108	Smart Grids for Smart Cities and Utilities Integration	Leveraging GIS-Enabled Intelligent Energy Management Systems for Optimized Smart Grid	Sion Dutta	Cognizant
109	Smart Grids for Smart Cities and Utilities Integration	Frequency Regulation of Distributed Generators Supported Multi -Microgrid Using Moden Inertia Control Strategy.	Aditya Kumar Pati	TPWODL, Odisha
110	Smart Grids for Smart Cities and Utilities Integration	Combined Billing and Customer Care Systems for all Utilities in a Smart City	Rohit Rameshchandra Satghare	Rohit Satghare
111	Smart Grids for Smart Cities and Utilities Integration	Enhancing Urban Energy Efficiency through Smart Homes and Smart Appliances	Garima Tanu	NTPC Ltd
112	Smart Grids for Smart Cities and Utilities Integration	Energy efficient classroom for future generation with integrated solution for Air quality, Water and Energy	Dr.N.Vinoth kumar	kumaraguru college of technology
113	Smart Grids for Smart Cities and Utilities Integration	Integrating Decentralized Energy Systems for Enhanced Telecom Infrastructure Resilience	Jagruti Thaku	KTH Royal Institute of Technology

114	Smart Grids for Smart Cities and Utilities Integration	Integrated Resource Planning (IRP) for Renewables Integration	Aditi Narang	Energy Exemplar
	New and Emerging Technologies and Trends	Modelling Optimal Green Hydrogen & Ammonia Supply		
	Regulations for the Evolving Smart Energy Systems	Modelling the Security of Supply in India's Energy Transition		
115	Smart Grids for Smart Cities and Utilities Integration	Impact of Flow-Based Market Coupling on Intraday Trading and System Balancing in the Nordic Power System	Jagruti Thakur	KTH Royal Institute of Technology, Stockholm, Sweden
116	Smart Grids for Smart Cities and Utilities Integration	Solar PV: Tata Power Role in Next Generation of Renewable Energy	Bindu Yadav	TATA POWER DELHI DISTRIBUTION LIMITED
117	Smart Grids for Smart Cities and Utilities Integration	Multi-Objective Optimization Framework for Optimal Allocation of Large-Scale Battery Energy Storage Systems in DER Integrated Power Distribution Networks	Brijesh Singh	KIET Group of Institutions, Delhi-NCR, Ghaziabad
118	Smart Water	Smart Water in a Smart Building	Aryan Jain	Sevya Multimedia Pvt Ltd
119	Smart Water	“Digitization of Atmospheric Water Generator – A Sustainable way of Cost Optimization”	ABHIJIT PANDA	Cognizant
120	Smart Water	Smart Technologies to Address India’s Urban Water Crisis	Anisha Vyas	Accenture
121	Smart Water	Development and Implementation of Cost-Effective Smart Geyser Technology	Divyang Pankajbhai Raval	Shree Swaminarayan Polytechnic
122	Smart Water	Using smart water techniques to reuse water for cleaning and washing to alleviate water shortage problems in urban and rural communities	Srinivasa Murthy Lolla	Bio Electrical & Energy Systems

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- For queries email us at aashima@indiasmartgrid.org
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