IntelliSmart
A JV of NIIF and EESL

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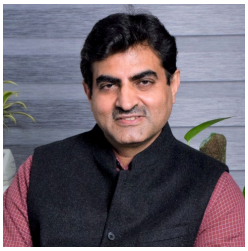
KXCHANGE

INSIDE THE ISSUE...

Fueling the Future: How Green Hydrogen and EVs are Transforming the Energy Landscape

The global energy system is in a significant transformation, with investments in renewable energy surpassing those in fossil fuels over the past decade. In 2022, global investments in energy transition exceeded $1 trillion, showing a 31% increase from the previous year. However, these investments are still insufficient to achieve Net Zero emissions by 2050.



Anil Rawal
MD and CEO, IntelliSmart

In an era marked by unprecedented energy demands, intensified by current global geopolitical events, the narrative of energy security has become central to existence of nations. Energy, arguably, forms the pivot of all political, environmental, economic, and social considerations worldwide. As the world navigates these challenges, exploring alternatives that ensure cost-effective energy delivery without compromising transition goals has become paramount. Green hydrogen, as a zero-emission energy source, emerges as an effective alternative in facilitating the global shift towards a Net Zero emissions future.

The Net Zero ambition requires an annual investment of USD 5.7 trillion until 2030, with proposals to redirect USD 1 trillion from fossil fuels towards energy transition technologies. Total cumulative energy investments should reach USD 44 trillion by 2030, emphasizing energy efficiency, electrification, and grid expansion. Accelerating renewable energy deployment, such as solar and wind, is crucial for reducing carbon emissions and achieving climate goals.

To triple Renewable Energy capacity by 2030, 1,000 GW of renewable power must be added annually, potentially avoiding 7 billion tonnes of CO2 emissions by 2030. Efforts to replace coal power and phase out fossil fuels are also necessary. The energy transition is leading to emerging frontiers including solar, wind, green hydrogen, battery storage, and electric vehicles (EV), reshaping energy generation, distribution, and consumption.

Green Hydrogen: Fuel for a Sustainable Energy Future

Forecasts predict a significant increase in the share of electricity in final energy consumption, rising from 18% in 2020 to nearly 50% by 2070, with the majority sourced from renewable energy. Additionally, 25-30% of energy demand is projected to be met through green hydrogen (GH2) using renewable electricity.

Countries with a low cost of renewables, like India, possess a distinct advantage, potentially becoming leading producers of green hydrogen with far reaching geopolitical and economic impacts.

India, recognizing the transformative potential of green hydrogen, launched the National Green Hydrogen Mission in early 2023. With an ambitious target of generating 5 million metric tonnes annually by 2030, the initiative aims to curtail nearly 50 million tonnes of CO2 emissions and save over $12 billion in fossil fuel imports.

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Beyond emissions reduction, the transition to green hydrogen, fosters the growth of a domestic energy sources, reducing reliance on imported fossil fuels and enhancing energy security. Green hydrogen has the potential to create new global energy centres, challenging the dominance of global oil-producing nations over energy security. It could also reverse wealth flows from energy-dependent nations, like India, to countries that have prospered based on natural resources such as oil. The anticipated growth in cross-border hydrogen trade, especially in sectors like cement, refineries, and chemicals, aligns with evolving environmental legislation, such as the CABM by the UK and IRA by the USA.

Early deployment of hydrogen technologies in developing countries could enhance energy security and prevent a widening global decarbonization divide. A diversified hydrogen market would mitigate supply chain risks, improving energy security globally. Access to technology, training, capacity building, and affordable finance will be pivotal in unlocking hydrogen's full potential to decarbonize the global energy system, contributing to stability and equity worldwide. Green hydrogen, therefore, stands as an imperative disruptor in the evolving landscape of global energy security and transition.

Navigating Towards a Net Zero Future By Accelerating the Electric Revolution

The transportation sector contributes about 15% to the global energy related carbon emissions. Electric vehicles are poised to steer the globe towards a Net Zero future. Recent years have been witnessing remarkable growth in EV sales, marked by expanded range, improved performance and life cycle price parity being achieved in various geographies and various segments of vehicles.

In 2022, EV sales experienced an unprecedented surge, surpassing a significant milestone of 10 million units sold—outpacing the total number of cars sold across the entire European Union. Globally, the share of electric vehicles sales more than tripled in just three years, reaching an impressive 14% in 2022, up from approximately 4% in 2020. If the momentum of the past two years persists, we can align carbon dioxide emissions from cars with the Net Zero Emissions by 2050 (NZE) Scenario by 2030.

Achieving Net Zero requires an annual growth rate of approximately 25% in electric car sales between 2023 and 2030. To accomplish this, rapid expansion of charging infrastructure and scaling up battery manufacturing capacity are imperative.

In India, EVs are poised to account for more than 40% of India's automotive market, generating over $100 billion in revenue by 2030, propelled by robust adoption in various categories. The EV industry in India is gaining momentum, with 100% FDI possibilities, new manufacturing hubs, and an increased focus on improving charging infrastructure. According to an independent study by CEEW, the EV market in India represents a US$206 billion opportunity by 2030 if the nation maintains steady progress toward its ambitious 2030 targets. This would necessitate a cumulative investment of over $180 billion in vehicle production and charging infrastructure.

To provide sustainable progression to the EV market, enhancing grid resilience and grid flexibility is essential. This requires robust demand-side management through grassroots digitalization initiatives. Developing comprehensive strategies for expanding and enhancing the network planning down the distribution transformer and incorporating digital technologies for seamless two-way communication between electric vehicles and grids, is essential. These measures ensure that EVs effectively contribute to grid stability, rather than pose a potential challenge.

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COMING NEXT MONTH!

K XCHANGE 3rd Anniversary Special Edition

Mark your calendars and stay tuned for a captivating exploration of the past, present, and future of energy in **IntelliSmart's 3rd anniversary** special edition of **K-Xchange**.

From cutting-edge advancements in smart grids, digitalisation and sustainable practices, this special edition promises to inspire, inform, and ignite conversation among industry leaders, innovators, and enthusiasts alike.

Don't miss out on this exceptional opportunity to reflect, learn, and connect as we embark on the next chapter of our journey together.

Snapshot: Policy and Regulatory Updates

Delhi Regulator Greenlights BSES Rajdhani's Battery Energy Storage Project

The Delhi Electricity Regulatory Commission (DERC) has approved the Battery Energy Storage System (BESS) agreement between BSES Rajdhani Power (BRPL) and Kilokari BESS for a 20/40MWh energy storage project, marking a significant advancement in Delhi's energy sector. The project, initiated under the Electricity Act, 2003, aims to enhance grid stability by establishing a BESS project at the Kilokari grid substation. With a single-part tariff structure in place, capacity charges set at ₹5.7 million (~$68,981)/MW per year will ensure cost-effectiveness and consumer benefits.

Notably, any financial gains will be passed on to consumers, reducing overall power purchase costs. Consumer protection measures are enforced, ensuring that BRPL is entitled only to the agreed tariff in default scenarios. This decision reflects DERC's commitment to sustainable energy solutions and grid resilience enhancement, aligning with broader efforts to promote clean energy adoption and mitigate environmental impact. Furthermore, it underscores the pivotal role of regulatory bodies in fostering innovation and driving the transition towards a greener, more sustainable energy future for Delhi.

Andhra Pradesh Regulator Rolls Out Green Energy Access Rules 2024

The Andhra Pradesh Electricity Regulatory Commission (APERC) has enacted the Green Energy Open Access, Charges, and Banking Regulations, 2024, a pivotal move in advancing green energy accessibility within the state. These regulations facilitate open access to electricity generated from renewable sources for intra-state transmission systems and distribution systems. Following stakeholder consultations, the Commission revised definitions and eligibility criteria, ensuring alignment with evolving energy needs.

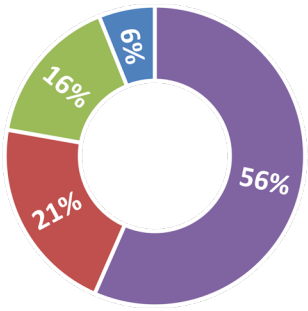
Notably, the regulations prioritize consumer protection and system reliability, with provisions for long-term, medium-term, and short-term open access. The banking facility allows consumers to store excess energy, promoting efficient utilization and grid stability. Additionally, the regulations specify charges, application fees, banking procedures, and green certificate issuance, fostering transparency and accountability in the green energy market. The Commission's proactive approach reflects its commitment to promoting renewable energy adoption, enhancing energy security, and fostering a sustainable energy ecosystem in Andhra Pradesh.

CERC Approves Compensation to NTPC Due to Change in Law

The Central Electricity Regulatory Commission (CERC) has recognized a Change in Law event for NTPC's Gandhar and Kawas solar projects, directing compensation through usage charges. Telangana DISCOMs contested NTPC's claims, citing insufficient documentation and disputing the impact of increased GST rates. Nonetheless, CERC upheld NTPC's assertions, prescribing compensation based on usage charges with a 9.12% discount rate and a 15-year annuity term.

Monthly payments are mandated within 60 days of the order, with reimbursement for carrying costs from the payment date until the order issuance. The Commission also directed reconciliation of additional expenses and carrying costs, instructing DISCOMs to settle claims regardless of SECI's payment status. Furthermore, CERC issued draft regulations for fee determination by Regional Load Despatch Centres, encompassing various stakeholders in the electricity sector. This decision underscores CERC's commitment to fair compensation mechanisms and regulatory oversight, ensuring accountability and stability in the renewable energy sector while fostering transparency and efficiency in compensation processes.

Smart Metering Tender Progress and Status in India



Floated Total Quantity - ~19 Crore

- Ongoing Tenders
- Tenders Under Evaluation
- L1 Decided/ LOA Under Process
- Tenders Awarded

Tenders Awarded				
State	Discom	Meters Quantity (Lakh)	Mode	Status
Andhra Pradesh	APCPDCL, APEPDCL, APSEPDCL	35	TOTEX	Awarded
Andhra Pradesh	APCPDCL, APEPDCL, APSEPDCL	16	OPEX	Awarded
Assam	APDCL	65	TOTEX	Awarded
Bihar	NBPDCL & SBPDCL	150	TOTEX	Awarded
Chhattisgarh	CSPDCL	82	TOTEX	Awarded
Delhi	BSES	10	CAPEX	Awarded
Gujarat	PGVCL	24	TOTEX	Awarded
	DGVCL	18	TOTEX	
	PGCIL	53	CAPEX	
Himachal Pradesh	HPSEB (South)	9	TOTEX	Awarded
Jammu & Kashmir	Power Development Department J&K	6	TOTEX	Awarded
Jammu	JPDCL	8	TOTEX	Awarded
Kashmir	KPDCL	8	TOTEX	Awarded
Maharashtra	BEST	11	TOTEX	Awarded
	MSEDCL	225	TOTEX	Awarded
Madhya Pradesh	MPPKVVCL, Indore	10	TOTEX	Awarded
	MPMKVVCL, Bhopal	11		
	MPMKVVCL, Jabalpur	18		
Punjab	PSPCL	8	CAPEX	Awarded
Uttarakhand	UPCL	16	TOTEX	Awarded
Uttar Pradesh	PVVNL	67	TOTEX	Awarded
	DVVNL	62	TOTEX	Awarded
	MVVNL	79	TOTEX	Awarded
	PuVVNL	78	TOTEX	Awarded
Other States	Other DSICOMs	10	CAPEX/ TOTEX	Awarded
	Total	**1079**		

Tenders L1 Decided and LOA under Process				
State	Discom	Meters Quantity (Lakh)	Mode	Status
Himachal Pradesh	HPSEB	19	TOTEX	L1 Decided/ LOA under Award
Maharashtra	MSEDCL	17	TOTEX	L1 Decided/ LOA under Award
Gujarat	PGCIL	47	CAPEX	L1 Decided/ LOA under Award
Jharkhand	JBVNL	11	TOTEX	L1 Decided/ LOA under Award
Manipur	MSPCL	2	TOTEX	L1 Decided/ LOA under Award
Rajasthan	JVVNL	49	TOTEX	L1 Decided/ LOA under Award
	AVVNL	56	TOTEX	L1 Decided/ LOA under Award
	JdVVNL.	43	TOTEX	L1 Decided/ LOA under Award
Tripura		4	TOTEX	L1 Decided/ LOA under Award
West Bengal	WBSEDCL	45	TOTEX	L1 Decided/ LOA under Award
Other States	Other DISCOMs	7	TOTEX/ OPEX	L1 Decided/ LOA under Award
Total		**300**		

Tenders Under Evaluation				
State	Discom	Meters Quantity (Lakh)	Mode	Status
Arunachal Pradesh	Department of Power	3	TOTEX	Under Evaluation
Andaman & Nicobar	Power Department	1	TOTEX	Under Evaluation
Jharkhand	JSEB	3	TOTEX	Under Evaluation
Meghalaya	Power Department	5	TOTEX	Under Evaluation
Madhya Pradesh	MPPKVVCL	1	TOTEX	Under Evaluation
Punjab	PSPCL	90	TOTEX	Under Evaluation
Puducherry	PED	4	TOTEX	Under Evaluation
Sikkim	Power Department	2	TOTEX	Under Evaluation
Tamil Nadu	TANGEDCO	300	TOTEX	Under Evaluation
Total		**409**		

Smart Meter Ongoing Tenders								
State	Discom	Meters Quantity			Total	No of Packages/ Tenders	Mode	Due Date
		Consumer	DT	Feeder				
Goa	Electricity Department Goa	7,41,160	8,369	829	7,50,356	1	TOTEX	22.05.2024
Gujarat	PGVCL	33,11,031	15,000	-	33,26,031	1	TOTEX	21.05.2023
Gujarat	DGVCL	23,91,869	1,500	-	23,93,369	1	TOTEX	23.05.2023
Haryana	DHBVNL	31,42,249	1,34,002	14,100	32,90,351	4	CAPEX	21.05.2024
	UHBVNL	25,93,754	79,665	12,775	26,86,194	5	CAPEX	20.05.2024
Total		**1,21,80,063**	**2,38,536**	**27,704**	**1,24,46,301**			

Note: The data shown in this section excludes small capacity tenders and covers tenders from September 2021 to till date. The variation in floated quantity is due to cancellation of some tenders in past months.

Highlights: IntelliSmart Achievements

First Smart Prepaid Meter in Gaya's Khizasarai Sub-division!

We are pleased to announce the successful installation of the first smart prepaid meter in the Khizasarai Sub-division of Gaya. This groundbreaking initiative is a pivotal component of our comprehensive smart metering project for South Bihar Power Distribution Company Ltd. Under this ambitious endeavor, IntelliSmart is poised to deploy over 35 lakh smart prepaid meters across 13 districts in South Bihar, ushering in a new era of efficient energy management and consumer empowerment.

Announcing the First Meter Installation in Vadodara's Padra Area

On behalf of Power Grid Corporation of India Limited, IntelliSmart have installed first smart prepaid meter in Padra sub-division of Vadodara for Madhya Gujarat Vij Company Limited (MGVCL). These innovative meters mark a significant step towards empowering consumers with real-time energy consumption monitoring, accurate billing, and hassle-free account recharge options from the convenience of their homes. Furthermore, these devices are poised to play a pivotal role in enhancing the operational efficiency of distribution companies.

Raising Awareness for Smart Meter Adoption in Vadodara

Madhya Gujarat Vij Company Limited (MGVCL), in collaboration with IntelliSmart Infrastructure Pvt. Ltd., recently organized an extensive consumer awareness campaign in Vadodara. This initiative precedes the planned deployment of smart prepaid meters in the city by IntelliSmart on behalf of Power Grid Corporation of India Limited (PGCIL).

The campaign aimed to inform consumers about the various advantages of smart meters, including near real-time energy monitoring, online recharge facilities, accurate billing, and automated meter reading processes. With representatives from MGVCL and IntelliSmart actively participating, the event underscored our collective commitment to promoting informed energy consumption practices in Vadodara.

Empowering Consumers with Smart Meter Awareness

A consumer awareness program on smart metering recently unfolded in the Althan sub-division of Surat. This initiative aimed to enlighten consumers about the myriad benefits offered by smart meters, such as near real-time energy monitoring and convenient online recharge and bill payment facilities.

Under the aegis of Rec Power Distribution Company Limited (RECPDCL), Dakshin Gujarat Smart Metering Pvt. Ltd., a wholly-owned subsidiary of IntelliSmart Infrastructure Pvt. Ltd., is set to install over 17 lakh smart meters in areas administered by Dakshin Gujarat Vij Company Limited (A Government of Gujarat Undertaking Enterprise). This endeavor reflects our commitment to enhancing energy efficiency and empowering communities through cutting-edge technology.

News Flash Bulletin

DISCOMS opt for day ahead market to mitigate soaring summer power costs

DAM segment maintained stable prices with an average market clearing rate of INR 3.91/ kWh, 28% decline from the previous year. Meanwhile, the TAM recorded higher rates, imposing additional financial burdens on DISCOMS,

Ministry Says GENCOs Can Sell Surplus Power in the Market

The Ministry has clarified that power stations must always be available and ready to dispatch power as per Tariff Policy 2016. Power generators can sell surplus power in the power market to best use unutilized generation capacity.

India's first multi-purpose green hydrogen pilot project inaugurated

India's first multi-purpose green hydrogen pilot project at 1,500 MW Nathpa Jhakri Hydro Power Station (NJHPS) in Himachal's Jhakri was inaugurated, SJVN Chairman and Managing Director Geeta Kapur.

Corporate Funding for Energy Storage Sector Totaled $11.7 Billion in Q1 2024

Corporate funding in Energy Storage came to $11.7 billion in 29 deals in Q1 2024, an increase of 432% year-over-year (YoY) compared to $2.2 billion in 27 deals in Q1 2023 and 216% increment in QoQ comparison,.

G7 discussing 2035 end date for coalfired power plants, source says

Energy ministers from the Group of Seven wealthy countries meeting in Italy are discussing setting a common target date of 2035 to shut down their coal powered power plants. An agreement on coal would mark a significant step in the direction indicated by the COP28

PM Surya Ghar Program: MNRE Announces New Vendor Registration Guidelines

MNRE has announced new guidelines for vendor registration under the recently approved PM Surya Ghar: Muft Bijli Yojana rooftop solar program. The program, with an outlay of ₹750 billion (~$9.04 billion), aims to increase residential rooftop solar capacity.

Meeting Peak power demand: Gas-based plants requires dynamic domestic resource allocation

With the summer sun blazing in all glory, the annual concern of meeting India's peak power demand has emerged again. This year, it is expected to touch 260 GW, 7% more than the 243GW recorded in the summer of 2023. By 2030, peak power demand could touch 350GW.

Smart water metering advances in Australia and New Zealand

Cairns Regional Council in Australia's far north Queensland is to deploy Itron's water connectivity and analytics solution, which includes its NBIoT water meters alongside the utility's existing mesh network utilising the Itron Temetra digital platform for data collection & management.

India's power sector dynamics shift with rising exchange share and declining PPAs

India's power market is witnessing a significant transition with PPAs losing their dominance and the share of power exchanges on the rise, data. The short-term market, which accounted for 10% of the sector in FY'17, has grown to 15% currently, reflecting changing dynamics in power trading.

India becomes world's third-largest solar power generator: Report

India has surpassed Japan to become the world's third-largest solar power generator in 2023, driven by significant growth in solar generation, according to a report by global energy think tank Ember. The country's ranking has improved from ninth place in 2015.

Readers: Our Source of Inspiration

Encouraging words for K-Xchange

IntelliSmart extends heartfelt gratitude to all our readers who have consistently supported and appreciated our monthly magazine, K-Xchange. Your positive feedback and encouragement serve as invaluable motivation for us to continually provide insightful and informative content.

The recognition and commendation from the Ministry of Power affirm our commitment to being the premier knowledge and digital partner for utilities. We are deeply grateful for their acknowledgment, which further fuels our dedication to excellence. Once again, we express our sincere appreciation for their kind words and encouragement.

Ministry of Power

"I commend the outstanding efforts of your team for providing insightful information and knowledge about the power sector. This magazine has emerged as a vital forum for fostering innovation and sharing expertise in smart metering. The unwavering dedication to delivering top-notch content is truly admirable and has significantly propelled the advancement of the sector. My heartfelt appreciation goes out to the hardworking team behind K-Xchange for their relentless commitment and tireless efforts in producing a publication that is widely respected and valued in the industry, offering valuable insights to the power sector. Please continue your exceptional work."

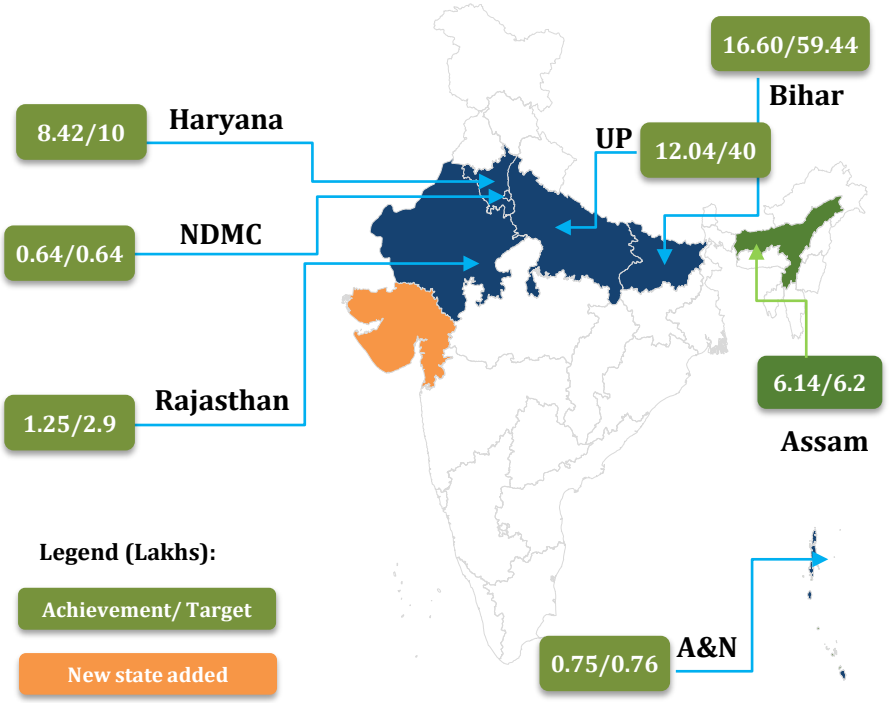
Mysterious Mind Teasers: Crack the Cryptic Riddles

What am I?

I can be measured but not seen,
I can be heard but not touched.
I come in waves but I'm not water,
I bring news but I'm not a messenger.
What am I?

Please submit your answers via email to our official email ID: newsletter@intellismartinfra.in.

April Snapshot: Smart Metering Dashboard and Awards



- ~120 Lakh meters of existing project.
- ~44.47 Lakh meters installed.
- Achieved Installation of ~8.42 lakh Smart Meters in Haryana.
- IntelliSmart has won major contracts to install 192 lakh prepaid smart meters in Assam, Bihar, Gujarat and Uttar Pradesh
- More than 16 lakh smart meters installed in Bihar.

Dream Team Award: Cross Functional

Tarak Mukherjee
Project Director - Assam

Shubhrangsu Dey
GM- Operations, Corporate

Shameem Ansari
AGM -Telecom, Corporate

Prateek Mathur
Sr. Manager - Quality, Corporate

Amit Dimri
Junior Manager - Operations

Nitish Ranjan
Junior Manager - Operations

Devesh Sharma
Warehouse Executive - SCM

Kaushik Shankar
Sr. Officer – SCM, Corporate

Cheers To Peers Award

Manoj Kumar
Officer - Operations

Rashika Jasrotia
GET-Operations

Varun Sharma
Junior Manager - IT

Om Mangukiya
QC executive, Gujarat

Bansi Javiya
QC executive, Gujarat

Ace of Ownership

Prathmesh Deshkar Asst. Manager
IT (App Supp)
Surat, Gujarat (DGVCL).

Dream Team Award: Cross Functional Corporate

Sumit Grover
Chief Financial Officer

Mehul Choudhry
AGM – Treasury Corporate

Mayank Singh
Sr. Manager – SCM Corporate

Pranat Kumar
Manager- Operations (PMU)

K-Xchange 35th Edition

IntelliSmart

IntelliSmart is a joint venture of EESL (Energy Efficiency Services Limited, A Joint venture of PSUs of Ministry of Power, Government of India) along with NIIF (National Investment and Infrastructure Fund, a Government of India backed fund). It is responsible for enabling implementation of Smart meters across the country. The focus of IntelliSmart is to drive efficiencies for DISCOMs, improve revenue management, increase billing efficiency and consumer satisfaction. With our vision of creating a digitalized & resilient power sector, through innovative technological solutions, IntelliSmart is well placed to determine future of infrastructure.

Disclaimer

Editors Note:

Welcome to K-Xchange's 35th Edition, dedicated to India's smart metering landscape. We've provided insights, updates, and expert perspectives on the digitalization journey of the power sector. With your support, we aim to drive sectoral transformation and foster a sustainable energy ecosystem. Share your feedback and ideas as we shape the future of smart metering in India. Embrace the power of knowledge with us.

Happy to hear from you

Newsletter is meant to share updates, case studies, success stories and experiences with various stakeholders on regular basis. For any suggestions/ queries/ inputs, please write to newsletter@intellismartinfra.in

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