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# MODERNIZATION OF DISTRIBUTION UTILITIES



High performing and financially viable distribution utilities for enabling clean energy transition



Smart Distribution



Demonstration Projects  
on Advanced Technologies



Power Procurement  
Optimization



South Asia Distribution  
Utility Network (DUN)



Capacity Building



Cybersecurity

# Context



*Launch of Virtual SGKC by Hon'ble Cabinet Minister, R.K. Singh, Ministry of Power and Ministry of New and Renewable Energy*

In South Asia, the United States Agency for International Development (USAID) program, the South Asia Regional Energy Partnership (SAREP) is supporting Distribution Utilities for providing quality, reliable, efficient, cleaner 24x7 power supply to all citizens. Ministry of Power (MoP), Government of India (GoI) is implementing distribution reforms through its flagship Revamped Distribution Sector Scheme (RDSS) with the goal of minimizing Aggregate Technical and Commercial (AT&C) losses and enhancing the distribution infrastructure. SAREP is supporting MoP, nodal agencies and state distribution utilities to implement smart distribution, innovative demonstration projects and build capacity of workforce.



*Advanced Technology Deployed using Artificial Intelligence based Drones in Bhopal, Madhya Pradesh*

# Key Interventions



## Deployment of Advanced Technologies



### Innovative demonstration projects on

- Asset management using AI/ML based drone application in Madhya Pradesh (MP) Central DISCOM
- Distribution transformer health monitoring in MP East DISCOM
- AI/ML based data analytics in MP West DISCOM
- Consumer engagement for distribution management in Assam DISCOM
- Building-Grid integration metrics and program frameworks in Indore DISCOM
- Behavioral demand response in North Delhi DISCOM
- AI-based Digital Assistant (Chatbot) for consumer engagement in Dhaka DISCOM, Bangladesh
- Improving performance of distribution utilities in Maldives



### Smart Grid Knowledge Centre (SGKC)

- Incubation Hub for smart-grid technologies
- Technology Innovation Park
- Virtual SGKC



### National Supervisory Control and Data Acquisition (SCADA) Resource Centre (NSRC) – a Centre of Excellence (CoE) for distribution utilities



### Updation of smart-grid master plan with advanced technologies for Bhutan Power Corporation (BPC)



### Cost-benefit analysis of smart metering projects for BPC



## Smart Distribution Cities



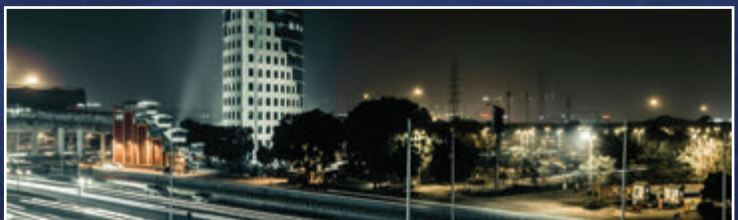
### Strategy and design for Smart Distribution cities in India



### Development of implementation approach, technology selection, specifications, costing, and detailed project reports for five cities- New Delhi, Varanasi, Indore, Guwahati and Noida



### Conceptualization and design of Smart Distribution in Thimphu city, Bhutan



# Key Interventions



## Optimizing Power Procurement



National Energy Portfolio Management program titled 'Urja Prabandhan Abhishayak Aayojna (UPAAY)' in partnership with Energy Efficiency Services Limited (EESL) - a comprehensive, centralized, customizable, plug-and-play, cost-effective, and cybersecure power purchase optimization solution for DISCOMs



Hand-holding two DISCOMs to deploy UPAAY for efficient demand forecast, schedule optimization, and power procurement from exchanges



## South Asia Distribution Utility Network (DUN)- a Platform for Peer-to-Peer Knowledge Exchange



Establishment and institutionalization of DUN in Power Finance Corporation (PFC)



Enable Utility-to-Utility (U2U) connect and knowledge sharing among distribution utilities in South Asia



Develop tools and knowledge products for South Asian distribution utilities





### Capacity Building



Design and rollout strategy for training programs under Revamped Distribution Sector Scheme (RDSS) for executives of Indian distribution utilities



Develop training modules and conduct Training-of-Trainers on smart metering in partnership with Power Sector Skill Council (PSSC) and National Power Training Institute (NPTI) on smart metering and advanced technologies



Develop training modules and conduct Training-of-Trainers on smart distribution, SCADA and other advanced technologies for regional distribution utilities



### Cyber Aware Digital Transformation



Development of Cybersecurity Posture Assessment Tool (CPAT)



Comprehensive preparedness assessment for distribution utilities



Capacity building for senior and operational level officials



# Key Achievements



**Three pilots launched** to demonstrate the deployment of advanced technologies for the distribution utilities of Madhya Pradesh



**DUN was launched** by Shri R. K. Singh, Hon'ble Cabinet Minister (Power, New & Renewable Energy), in presence of Ms. Veena Reddy, Mission Director- USAID, Power Secretaries of South Asia, and Senior Gol Officials



Conceptualized and developed **Detailed Project Reports (DPRs)** for smart distribution cities

White Paper on **“Drone Applications for Power Sector”** released in World Utility Summit 2023





Training courses under RDSS approved for **35,000 DISCOM** executives across India, with a **budget of ~INR 1 billion**



**Trained 1,100 distribution utilities' officials** on smart metering



NSRC approval under RDSS with a budget of ~INR 230 million, marked by the foundation stone laid at NPTI Faridabad by Hon'ble Minister of State, Ministry of Power

Collaboratively developed the Smart Meter Installer Technician Training Module with PSSC



# Partners

## Central Sector (India)

- Ministry of Power (MoP)
- National Smart Grid Mission (NSGM)
- Power Finance Corporation Limited (PFC)
- Energy Efficiency Services Limited (EESL)
- Powergrid Corporation of India Limited (PGCIL)
- National Power Training Institute (NPTI)
- Power Sector Skill Council (PSSC)

## State Sector (India)

- Assam Power Distribution Company (APDCL)
- Dakshin Haryana DISCOM
- Distribution Utilities of Haryana - Uttar Haryana DISCOM
- Distribution Utilities of Madhya Pradesh -MP Central DISCOM  
MP East DISCOM, MP West DISCOM

## South Asia

- Bhutan Power Corporation Limited (BPC)
- Ceylon Electricity Board (CEB)
- Lanka Electricity Company (LECO)
- Dhaka Power Distribution Company Limited (DPDC-Bangladesh)
- Distribution Utilities of Maldives - State Electric Company Limited(STELCO), FENAKA Corporation Limited
- Nepal Electricity Authority (NEA)

## About SAREP

The South Asia Regional Energy Partnership (SAREP), a flagship program to advance objectives of the U.S. Government’s Clean Asia Enhancing Development and Growth through Energy (Clean EDGE), is a five-year initiative (2021-26) that aims to improve access to affordable, secure, reliable, and sustainable energy across six South Asian countries—Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka—in line with these countries’ climate and clean energy priorities.



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