



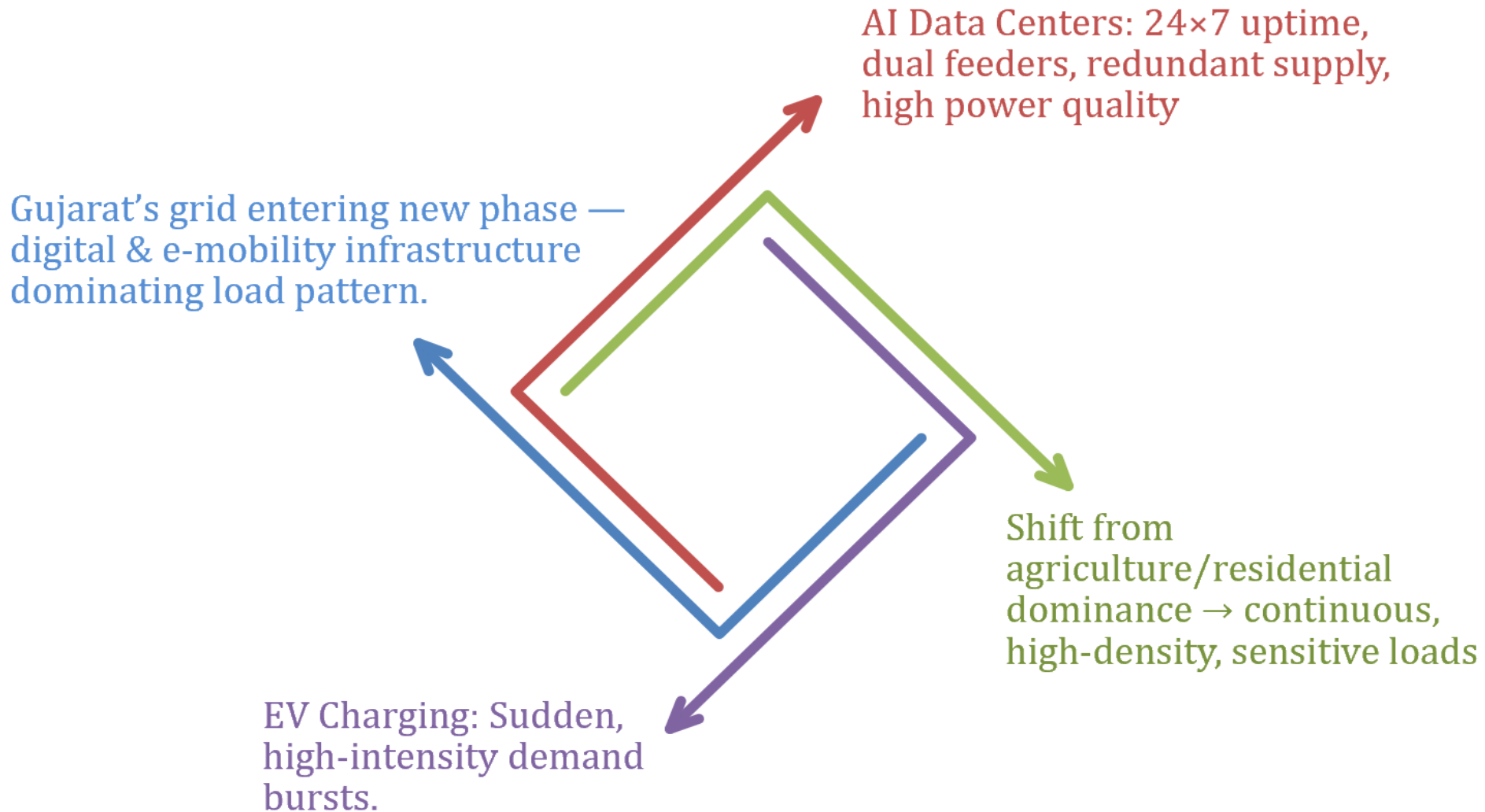
Emerging Challenges for DISCOMs

(GW-scale AI Data Centers, MW-scale EV Charging Stations ,Grid-level Power Quality)

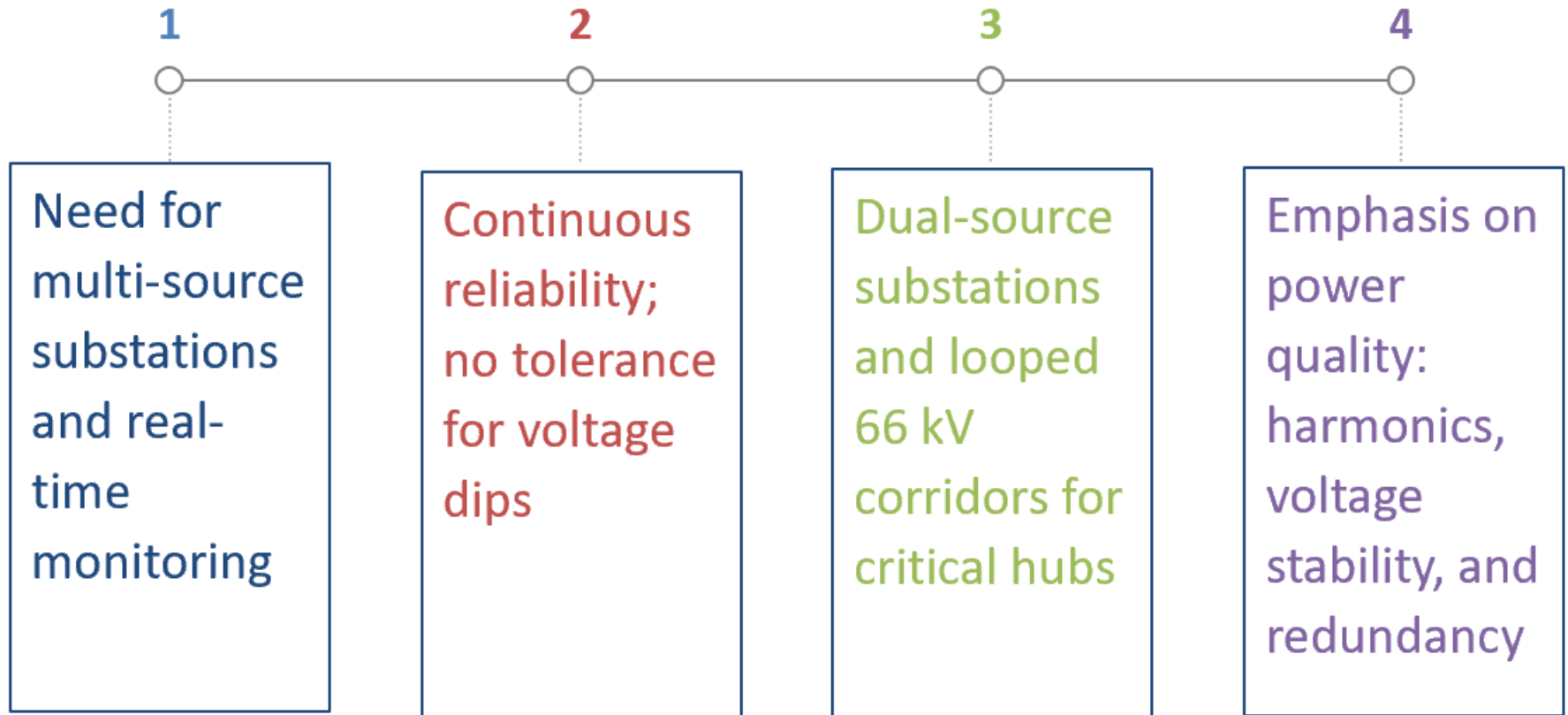
Ketan P. Joshi, IAS
Managing Director

Preparing the Grid for the Digital and Electric Future

Changing Demand Landscape



Infrastructure Implication



Advanced Grid & Demand Management

GIS-based Planning: Identify substations/feeder readiness for MW-GW loads



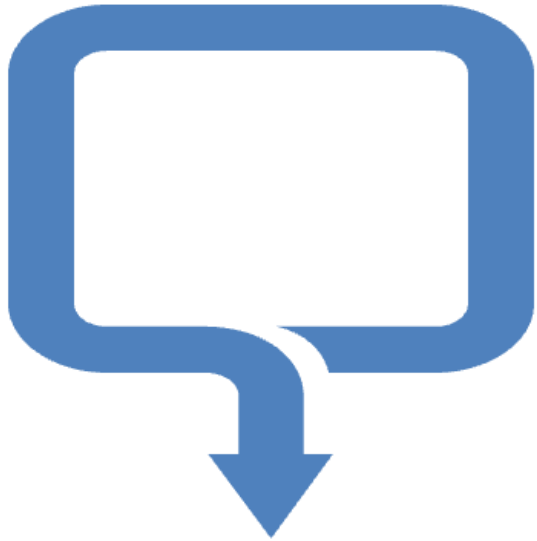
AI-ML Forecasting: Smart meter & AMR data → predictive demand patterns



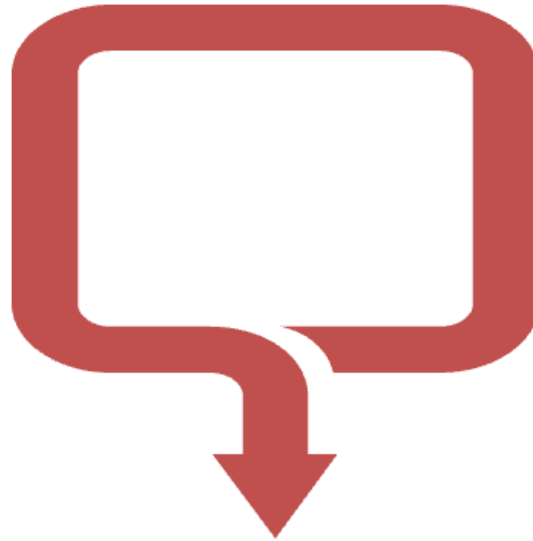
Integration with RE & Weather Data: Synchronize solar/wind generation with EV loads



Power Quality, Reliability & Security



Harmonic distortion
from chargers &
drives →
transformer heating

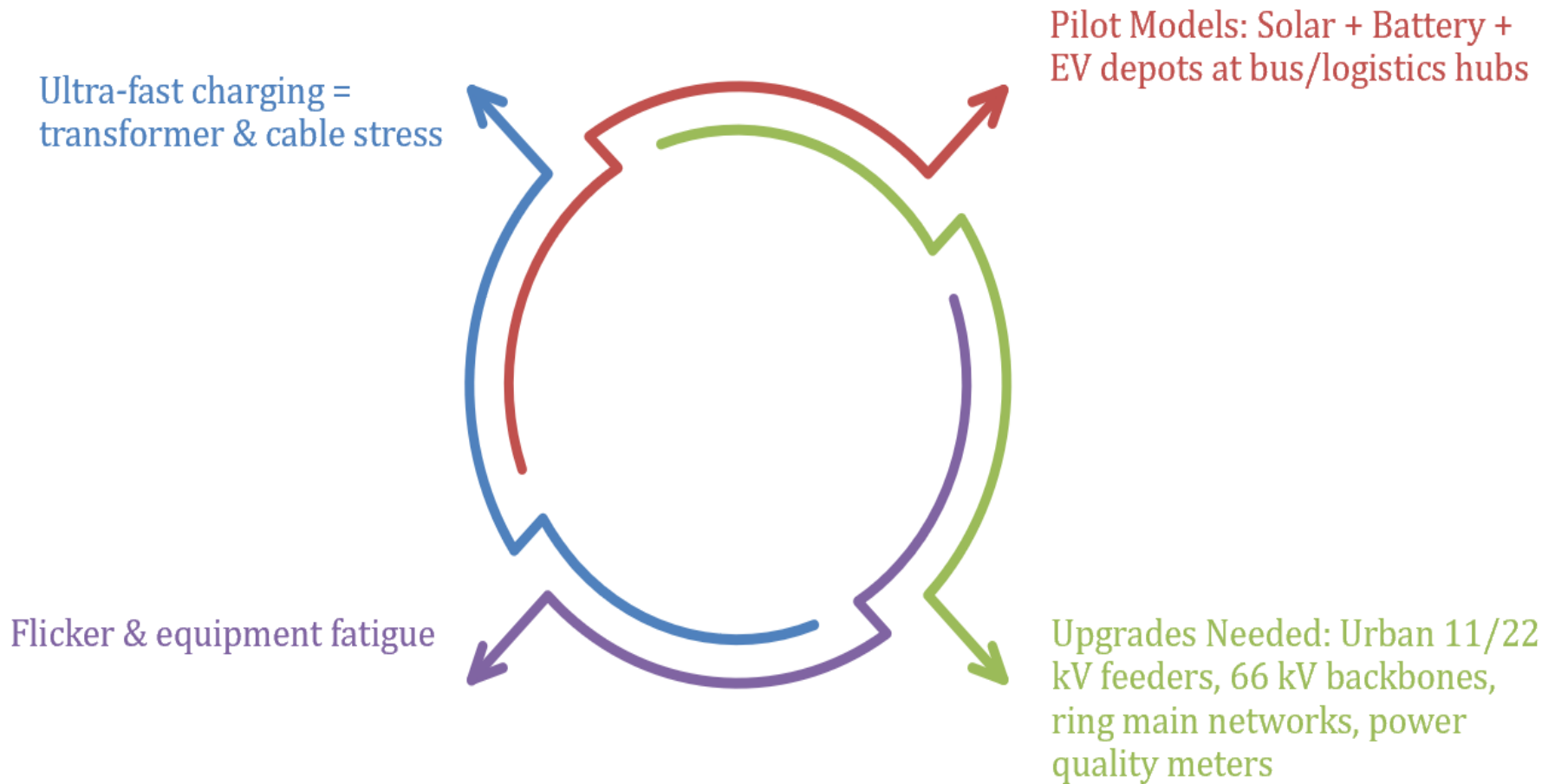


Battery Energy
Storage
System(BESS)
Integration: Stabilize
voltage/frequency at
substation level



Cybersecurity: SCADA,
AMI, OMS integration
demands data
protection & resilience

MW-Scale EV Charging – Field Challenges



Policy & Investment Imperatives

Strategic Coordination: Energy, IT & Transport Departments alignment

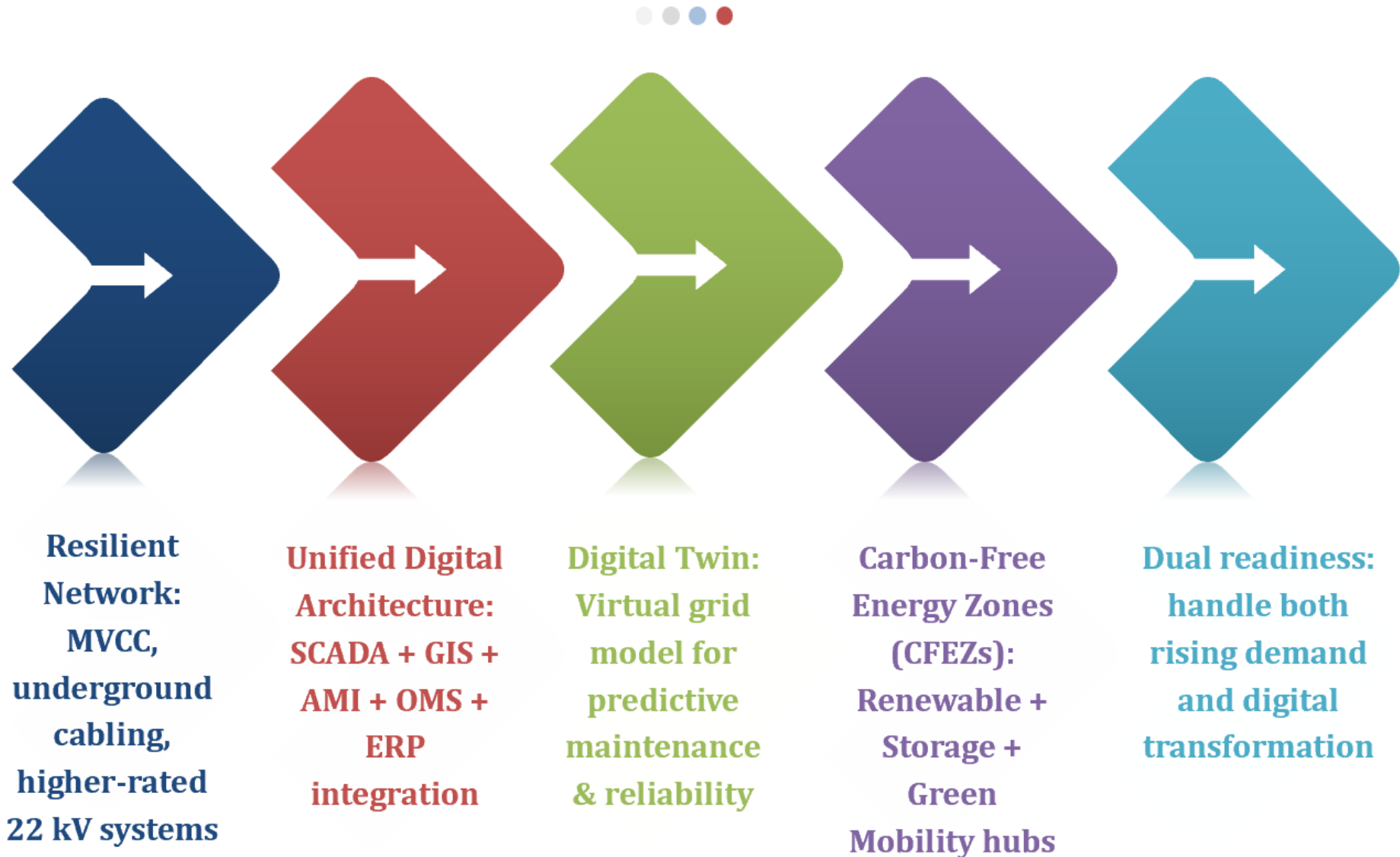
Revamped Distribution Sector Scheme & Green Energy Corridor Funding: Grid modernization & storage inclusion



Financial Viability: Cost recovery models for high-demand consumers

Smart City & Corridor Planning: Load-serving capacity at design stage

Roadmap for DISCOM





Reliable, Resilient, and Ready – Powering Gujarat's Digital Future

Thank You