



Preparing the Grid for the Digital and Electric Future

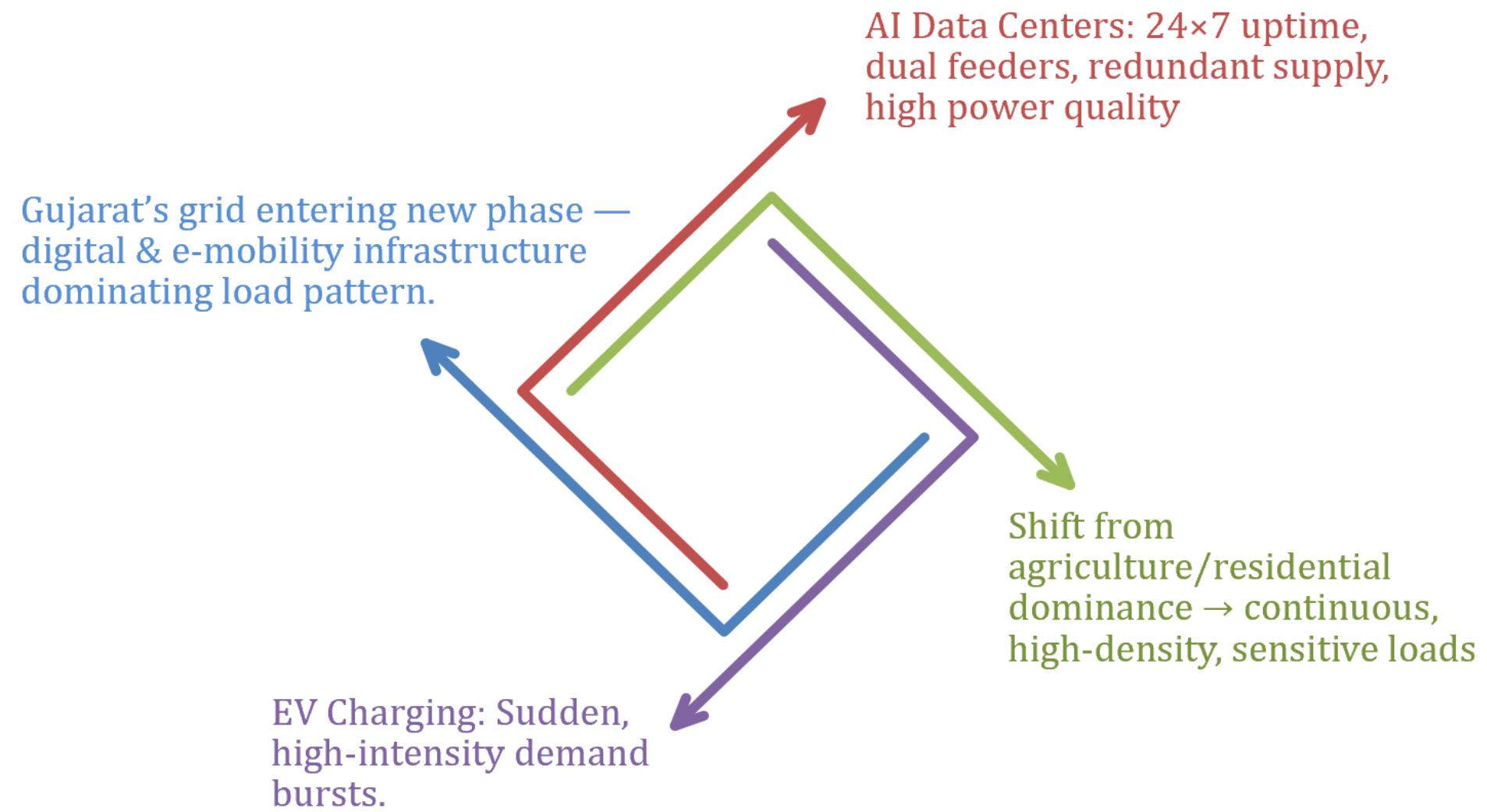


Emerging Challenges for DISCOMs

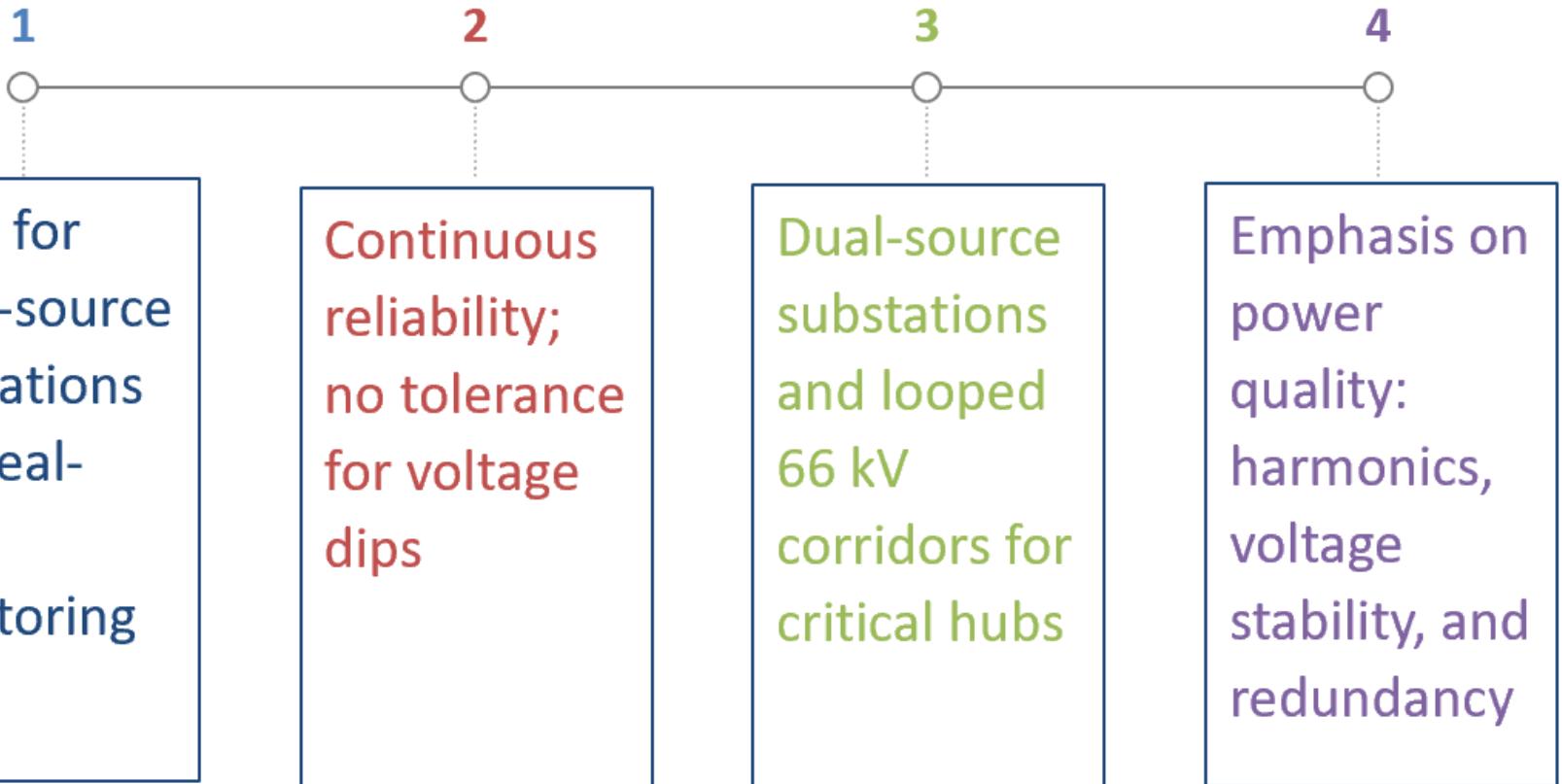
(GW-scale AI Data Centers, MW-scale EV Charging Stations ,Grid-level Power Quality)

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Managing Director

Changing Demand Landscape



Infrastructure Implication



Advanced Grid & Demand Management

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

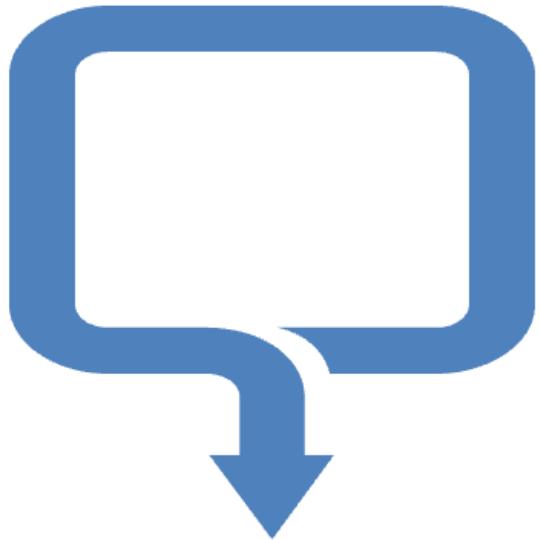


AI-ML Forecasting: Smart meter & AMR data → predictive demand patterns

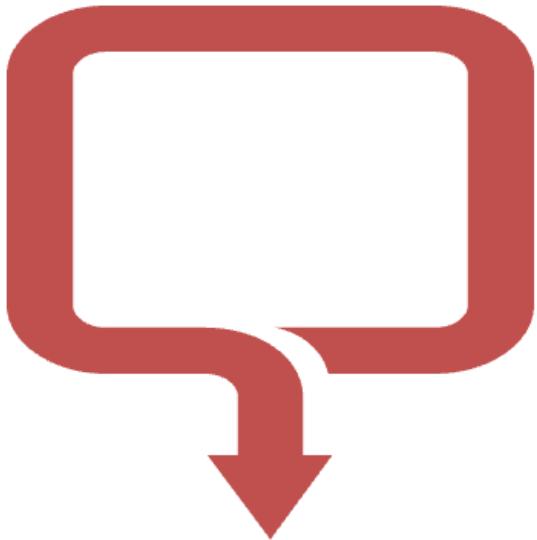
Integration with RE & Weather Data: Synchronize solar/wind generation with EV loads



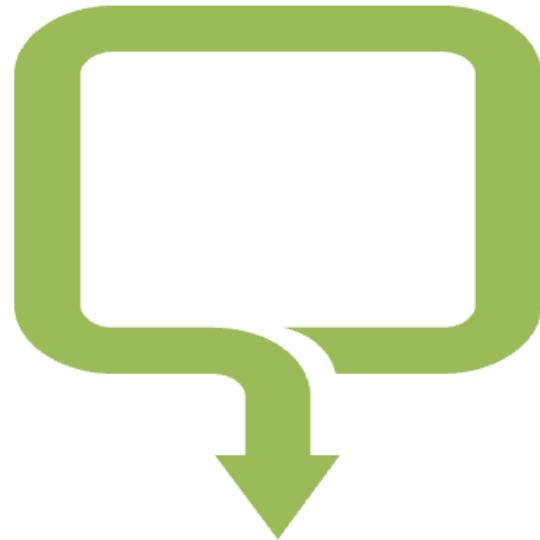
Power Quality, Reliability & Security



Harmonic distortion
from chargers &
drives →
transformer heating



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

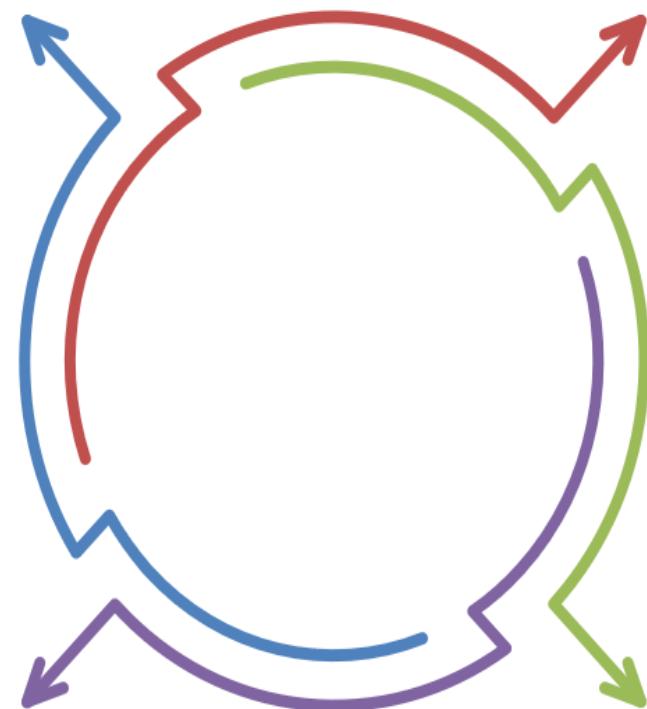


Cybersecurity: SCADA,
AMI, OMS integration
demands data
protection & resilience

MW-Scale EV Charging – Field Challenges

Ultra-fast charging =
transformer & cable stress

Pilot Models: Solar + Battery +
EV depots at bus/logistics hubs



Flicker & equipment fatigue

Upgrades Needed: Urban 11/22
kV feeders, 66 kV backbones,
ring main networks, power
quality meters

Policy & Investment Imperatives

Strategic Coordination: Energy, IT & Transport Departments alignment

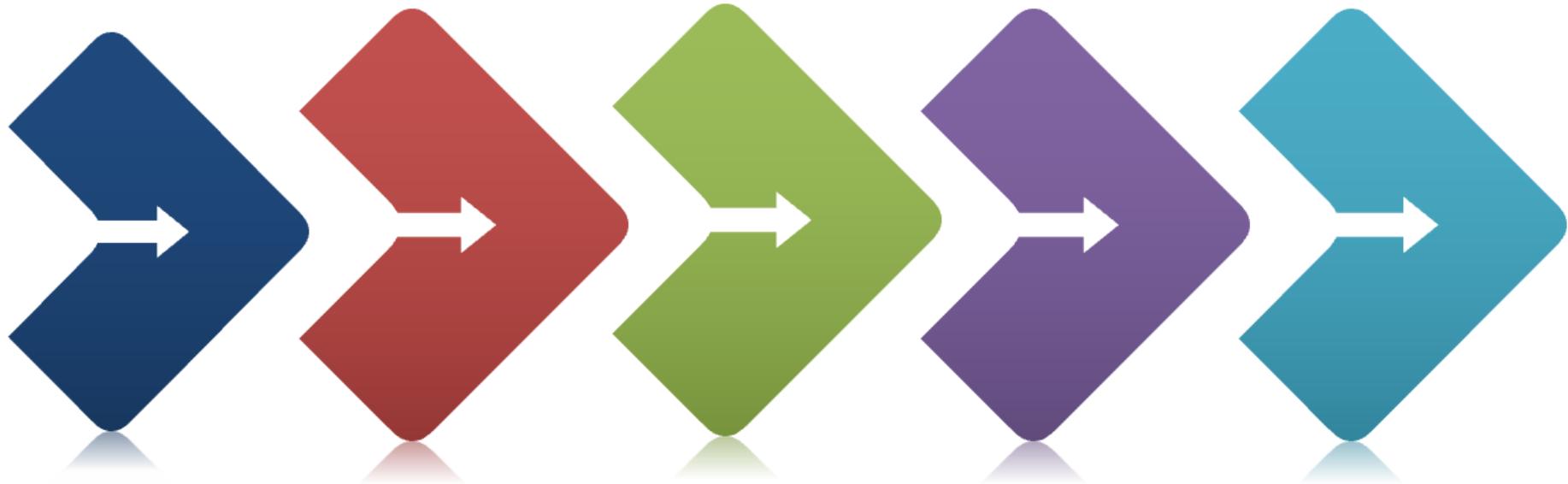
Revamped Distribution Sector Scheme & Green Energy Corridor Funding: Grid modernization & storage inclusion



Financial Viability: Cost recovery models for high-demand consumers

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

Roadmap for DISCOM



Resilient Network:
MVCC,
underground cabling,
higher-rated
22 kV systems

Unified Digital Architecture:
SCADA + GIS +
AMI + OMS +
ERP integration

Digital Twin:
Virtual grid model for predictive maintenance & reliability

Carbon-Free Energy Zones (CFEZs):
Renewable + Storage + Green
Mobility hubs

Dual readiness:
handle both rising demand and digital transformation

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

Thank You