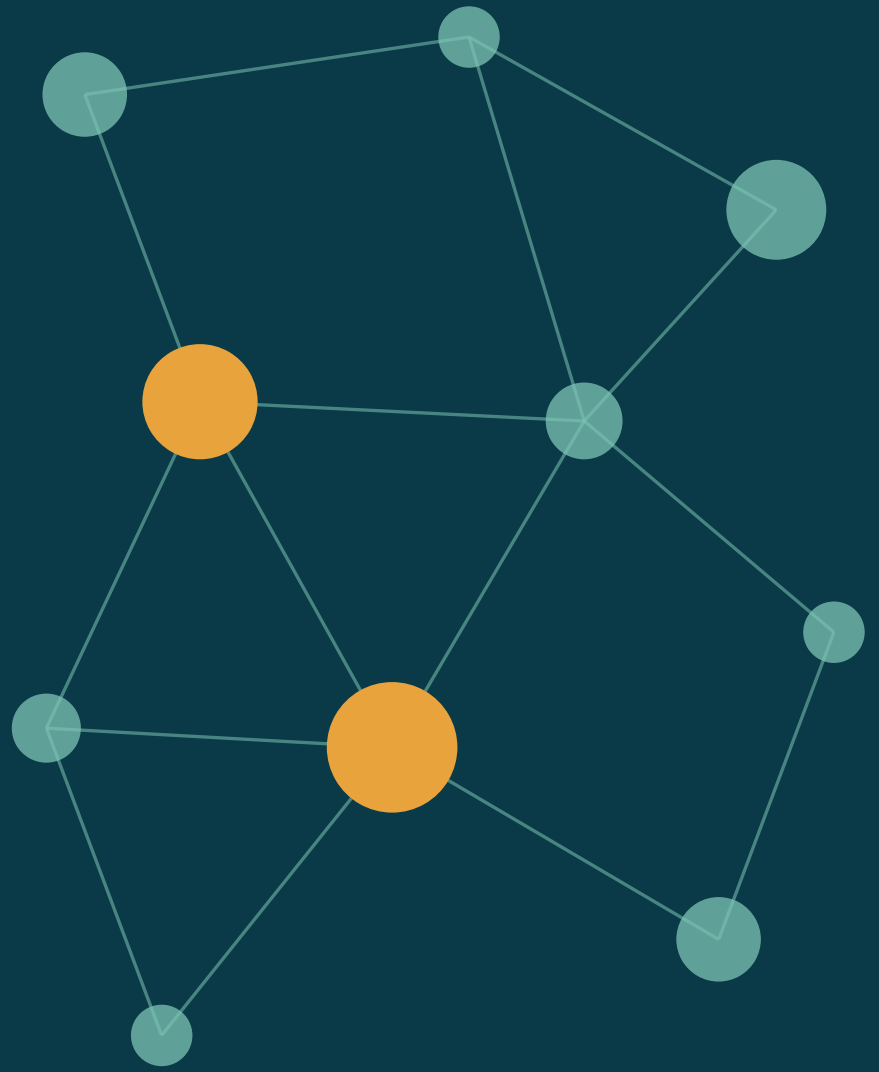
MIDDLE EAST ENERGY 2026 · DUBAI

Powering the Future: Learnings from Dubai visit



Managing Director, Dakshinanchal Vidyut Vitran Nigam Limited (DVVNL)

Dubai World Trade Centre, 1–3 September 2026 · Presented October 2026

The Dubai visit at a glance

WHEN
1–3 September 2026

WHERE
Dubai World Trade Centre

WHAT
Middle East Energy 2026 Summit

Four programme areas ran in parallel

Leadership Summit

- Geopolitics and energy security
- AI and data-centre demand
- The future utility and digital transformation

Technical Excellence Forum

- Next-generation grid architectures
- Power quality and switchgear
- Cybersecurity and data-driven planning

Intersolar Middle East

- Solar integration
- Voltage regulation
- Grid flexibility through storage

Energy Storage Forum

- Battery storage in the Middle East
- Grid-forming solutions
- Software and AI for storage projects

What the programme put on the table

1 Geopolitics and security	Geopolitics & Energy Security: The Chokepoints That Matter Now
2 Grid architecture and demand	Next-Gen Grid Architectures in the Era of Power Electronics & AI · UAE Grid Transformation: Balancing Clean Energy Growth with Demand Challenges · Powering the AI Era: Building Sustainable Data Centres · Planning Future Grids: Data-Driven Automation
3 Utility transformation	The Future Utility: Transforming from Energy Provider to Energy Platform · The Utility Survival Playbook: Decarbonise, Digitise, or Be Disrupted · Corporate Digital Transformation in the Utility Sector · How AI and Digital Technologies Are Transforming Energy Systems
4 AI governance, control and cyber	Governing AI for Resilient Energy Systems · AI in Control Room: Transformative Power or Existential Risk? · Grid Cybersecurity: Securing Grids Against Cybersecurity Threats
5 Storage, solar and power quality	Unlocking Energy Storage in Middle East; Early Middle East BESS Projects · Grid-Forming Solution for Resilient Power; AI & Software Integration for BESS Projects · Grid Flexibility via Storage; Solar Integration via Voltage Regulation · Sustainable Switchgear; Power Events to Process Insight; Enhancing Power Quality · Peak Performance: Engineering & Optimizing High Performing BESS in MENA

Five themes

1 Powering the future

The opening theme: a cleaner, smarter and stronger grid.

2 Energy security

Resilience through diversified supply and system design.

3 The grid challenge

New demand, from data centres to fuel moving onto the grid, meeting stretched infrastructure.

4 The digital grid

Common identifiers, connected systems, governed AI and cybersecurity.

5 Storage and flexibility

Solar and wind made dependable through storage and flexibility.

Powering the Future: the opening theme

THEME 1 OF 5 · POWERING THE FUTURE

The opening theme looked forward to what the power system must become.

Energy security and reliability stayed central, even as renewables and electrification expand.

What the future grid has to be



Cleaner: decarbonisation

Cleaner supply and wider end-use electrification.

For the grid: changes the generation mix and the way power flows through networks.



Smarter: digitalisation

Described as the grid's operating system: integrated data and operational decisions rather than separate portals.

For the grid: data and connected assets become core infrastructure.



Stronger: resilience

Networks that keep supplying through disruption.

For the grid: diversified systems, flexible capacity and operational readiness.

Energy security depends on resilient system design

THEME 2 OF 5 · ENERGY SECURITY

Exposure

- Geopolitical chokepoints and exposure to disruption
- Supply-route vulnerabilities, from the European perspective
- The need to diversify supply

Resilience levers

- Distributed systems
- Diversified systems
- Increasingly electrified systems

Together, these were cited as resilience benefits

LEARNINGS

For a DISCOM, resilience means fewer and shorter interruptions for critical loads such as hospitals, water supply and industry.

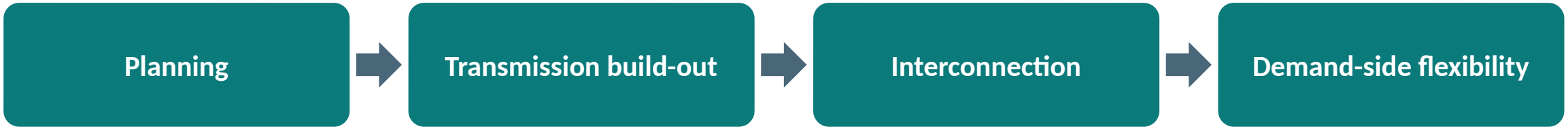
The grid challenge meets AI demand

THEME 3 OF 5 · THE GRID CHALLENGE

The grid challenge
A prominent theme at the summit: new demand puts pressure on generation, networks, connections and flexibility at once.

AI and hyperscale data centres
Presented as new drivers of demand: large, concentrated loads.

Four things must move together



The slowest of the four decides how fast the whole chain moves

LEARNINGS

Large new loads test local feeder and transformer headroom first. Knowing spare capacity by feeder before a request arrives lets the utility respond to new load with confidence.

Fuel is moving onto our wires

THEME 3 OF 5 · THE GRID CHALLENGE

Moving to electricity

Road transport	Petrol and diesel vehicles	→	**Electric two-wheelers, cars and buses**
Cooking	LPG cylinders and firewood	→	**Induction cooktops**
Farming	Diesel pumpsets	→	**Electric and solar-powered pumps**
Railways	Diesel locomotives	→	**Electric locomotives**

What it does to our network

- More load on the same feeders and transformers
- New demand often arrives in the evening, when the network is already busy
- Overloads and outages if upgrades come late

Topics in the IRENA-related discussion: end-use electrification, enabling grids, investment, international cooperation

LEARNINGS

Know which feeders and transformers will fill up first, and plan upgrades before the load arrives, not after.

A digital utility is built in layers

THEME 4 OF 5 · THE DIGITAL GRID

5 — Decisions and services
Control room · field operations · billing and collections · consumer service

4 — Analytics and AI
Anomaly detection · prioritisation · forecasting · reporting

3 — Controlled data layer
Shared store · access control · audit trail

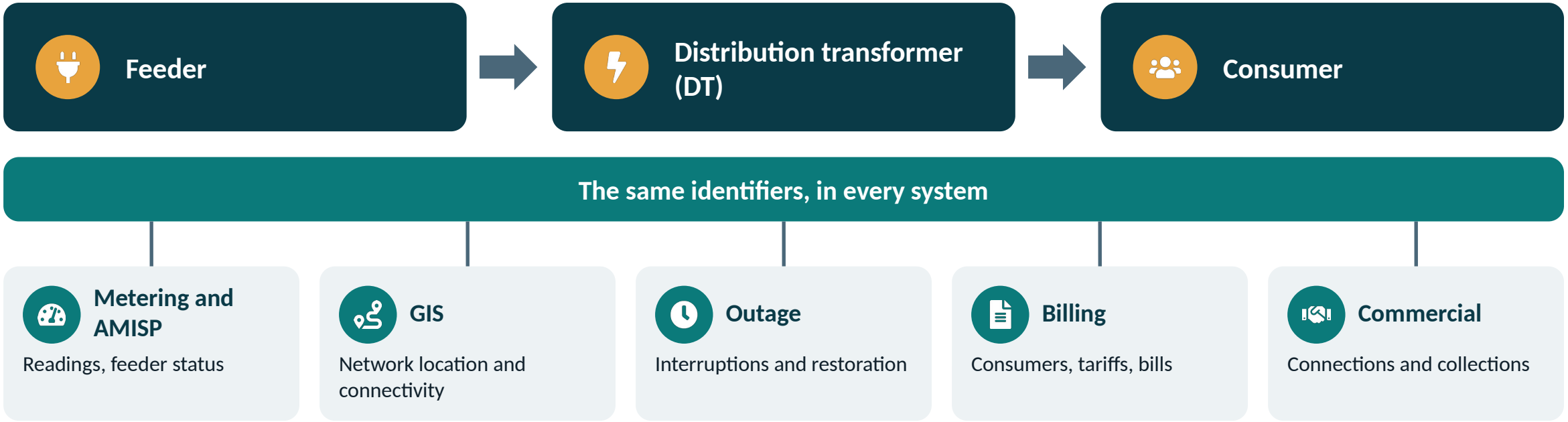
2 — Integration and identity
Common IDs (feeder, DT, consumer) · APIs · data-quality rules

1 — Field and metering
Feeder and DT meters · AMISP · SCADA · consumer meters

Security, governance and audit

One identifier chain, many systems

THEME 4 OF 5 · THE DIGITAL GRID



What integrated means

One ID per asset in every system. Shared data definitions. Access control and an audit trail on shared data.

LEARNINGS

Data quality and common identifiers come before AI. Without them, analytics will reflect inconsistent records rather than the real network.

AI in the control room: governed assistance

THEME 4 OF 5 · THE DIGITAL GRID

Machine proposes

Detect: AI flags an anomaly

Prioritise: ranked exceptions

Human decides

Review the evidence

Approve or reject

System records

Act: switching or field action

Log: audit trail

Safeguards

- Human review
- Auditable logs
- Access controls
- Cyber safeguards

Cybersecurity as systems get connected

THEME 4 OF 5 · THE DIGITAL GRID

Corporate IT
Billing · CRM · office systems

Firewall or gateway, one-way where possible

Data platform zone
Shared data layer · APIs

Firewall or gateway, one-way where possible

Control and SCADA
Control room · SCADA servers

Firewall or gateway, one-way where possible

Field devices and meters
Feeder, DT and consumer meters · AMISP

- Segment IT from OT
- Least privilege and MFA for privileged access
- Time-bound, logged vendor and AMISP access
- Central logging and monitoring
- Rehearsed incident response and restore

More integration widens the attack surface, so security should be designed in with the data platform rather than added afterwards.

Renewables vary, so the grid needs flexibility

THEME 5 OF 5 · STORAGE AND FLEXIBILITY

Solar and wind produce when nature allows, not when consumers need power.

Solar
Peaks at midday

Wind
Changes with weather and season

Consumer demand
Peaks in the evening

Midday: surplus
Output exceeds load. The surplus can reverse the power flow and push voltage beyond limits towards the feeder end.

Evening: shortfall
Solar fades just as demand peaks, so the rest of the system must ramp up quickly.

Flexibility closes the gap: storage, demand response and tariff signals can move energy from the hours of surplus to the hours of need.

Storage makes renewables available when needed

THEME 5 OF 5 · STORAGE AND FLEXIBILITY

Solar and wind
Produce when nature allows

Battery storage (BESS)
Stores the surplus energy

Network and consumers
Supplied in the evening peak

What storage does for the network

Peak shaving
Charges off-peak and discharges at peak, reducing costly peak supply.

Renewable integration
Holds midday surplus and releases it in the evening.

Network support
Relieves loaded feeders and substations.

Resilience
Supports critical loads; grid-forming systems can keep an islanded section supplied.

ONE OPTION AMONG SEVERAL

Judge each case on cost, safety, software integration and grid-forming capability.

LEARNINGS

Start where the need is clear: feeders with high solar, weak rural feeders, and critical loads such as hospitals and water supply.

What this means for a DISCOM

Digitalisation as the grid's operating system	→	**From fragmented systems to one operational picture** Feeder, DT, consumer, outage, billing and metering data on common identifiers, before AI.
Resilience and energy security	→	**From retrospective reports to real-time operations** Feeder interruption telemetry, control-room alerts and restoration tracking.
Large annual grid-investment needs	→	**From blanket capital spending to targeted investment** Rank by transformer loading, damage history, feeder losses and outage recurrence.
AI in operations, with governance	→	**From AI pilots to governed deployment** Human review, audit logs, access controls and cyber safeguards.
Electrification and distributed generation	→	**From transition ambition to network readiness** Planning, voltage management and flexibility, including storage.

Summary: key learnings from Dubai

1. Energy security lies in diversification.
2. New loads, from data centres to electric vehicles, are landing on infrastructure that is already stretched.
3. Digital value rests on foundations: common identities and connected systems come before AI.
4. AI is a tool to be used with human decisions, logged actions and security designed in.
5. Solar and wind vary; storage and other forms of flexibility make them dependable.

Thank you

