

Digital Intelligence for Future Grids

Accelerating the transition to smarter, resilient systems



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The Energy Transition is Accelerating



Demand rising rapidly



+60% demand growth expected



Renewables dominate new capacity

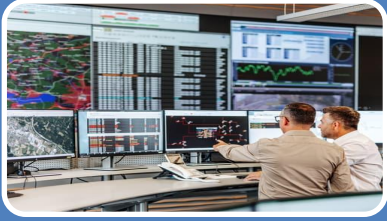
The Grid Was Not Designed for This

From centralized → distributed

From predictable → volatile

From passive → active

Grid Complexity is Increasing Rapidly



DERs, EVs, storage integration

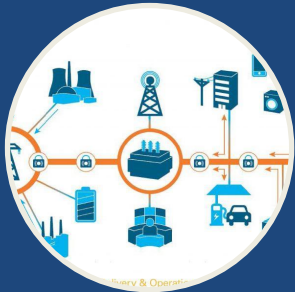


Multi-directional flows



Operational uncertainty

DER Penetration & Bidirectional



Rise of
prosumers



Reverse
flows



Protection
challenges



Ageing Infrastructure & Congestion



Legacy
assets



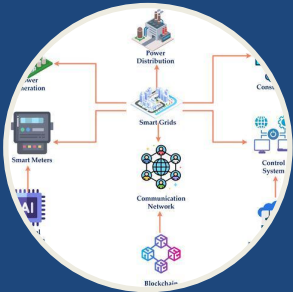
Capacity
limits



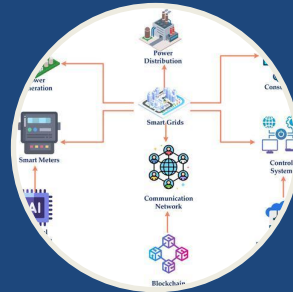
Grid
bottlenecks



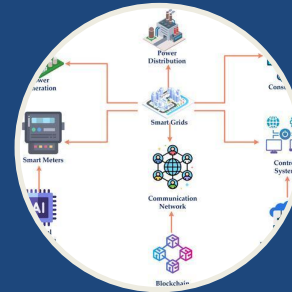
Data Fragmentation



Siloed
systems



Disconnected
platforms



No unified
visibility



Cybersecurity & Visibility Gaps



Expanded
attack surface



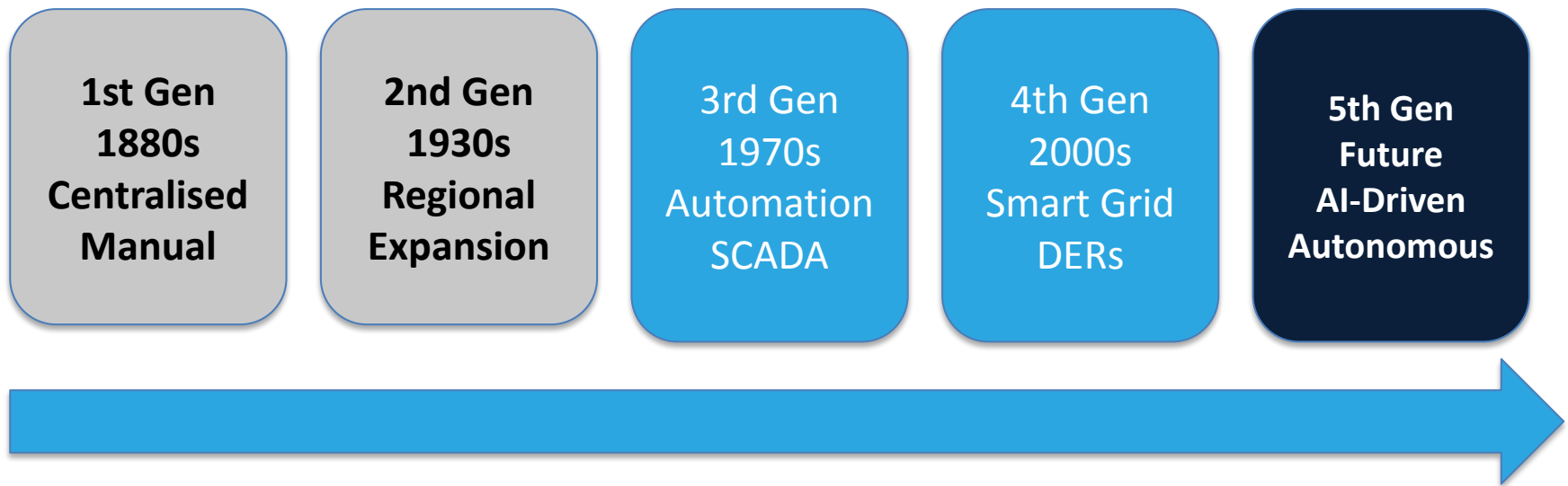
IT/OT
convergence



Limited
monitoring



Evolution of Power Grids — From Centralised Systems to Intelligent Networks



Centralised → Distributed →
Intelligent

Future Grid Vision



Fundamental transformation of power systems

- Decarbonisation
- Decentralisation
- Digitalisation

Digital • Flexible • Intelligent



Real-time
data



Adaptive
systems



AI-driven
decisions



From Reactive to Predictive



Reactive →



Predictive →



Autonomous

AI, IoT, Automation & Analytics



Real-Time Decision Support



Live monitoring



Faster decisions

AI-Driven Forecasting & Optimisation



Demand
forecasting



Renewable
prediction



Optimised
operations



Digital Twins & Predictive Maintenance



Virtual asset
models



Predict
failures



Reduce
downtime

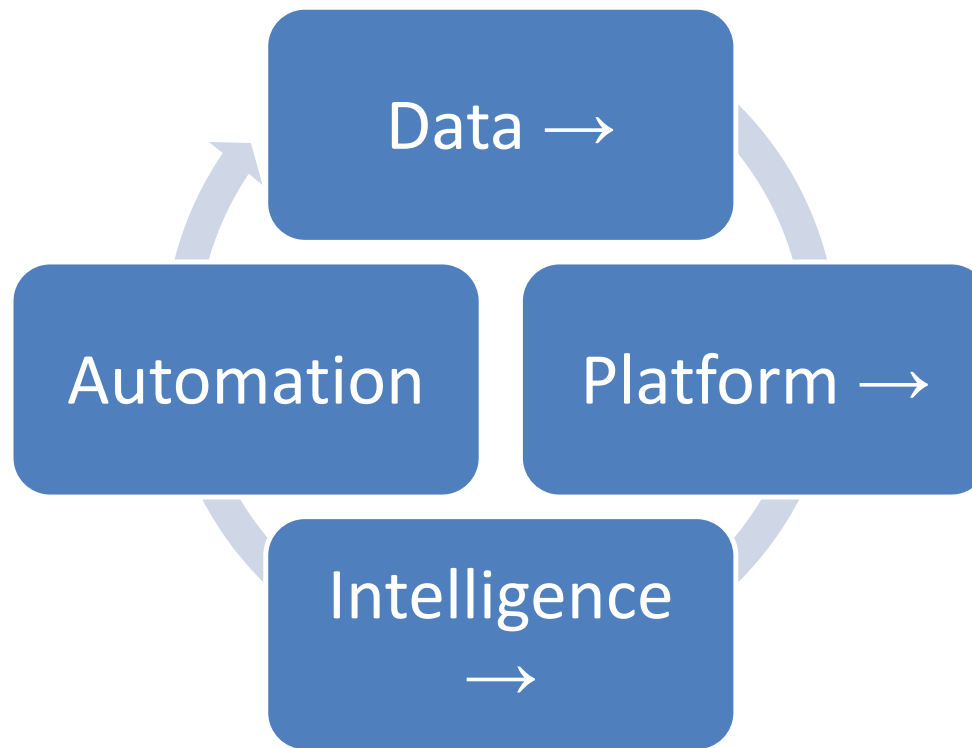


Predictive & Self-Adaptive Operations

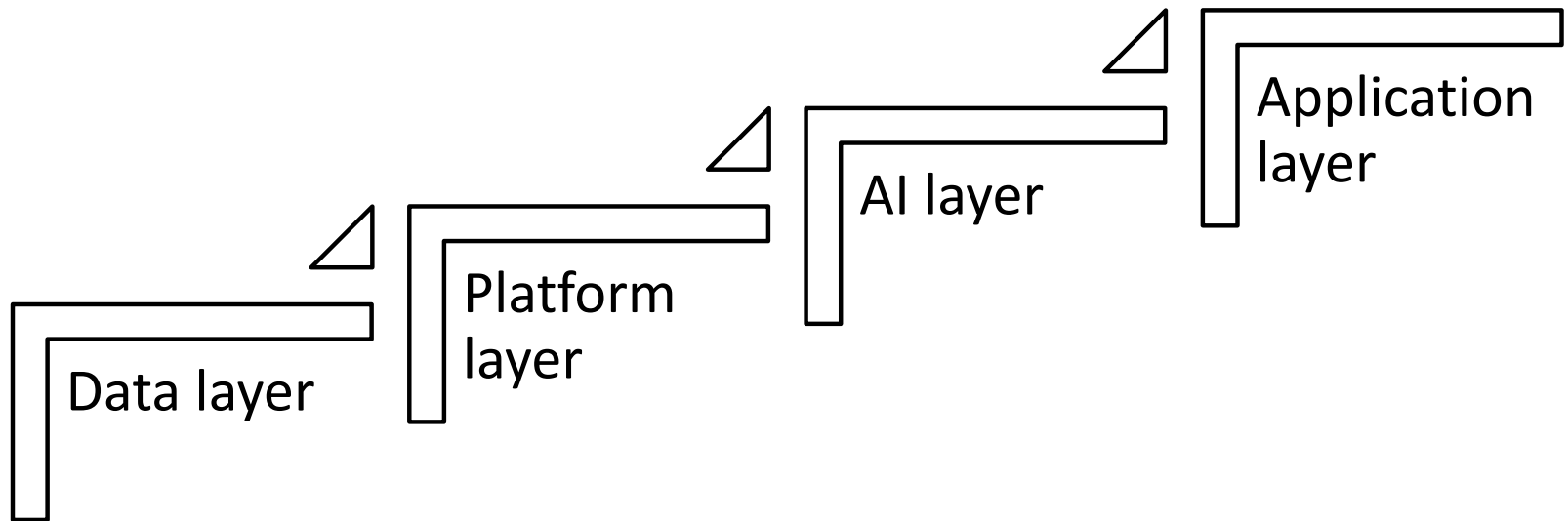
Self-healing grids

Automated optimisation

Digital Transformation Roadmap



Digital Grid Architecture



Secure-by-Design Digital Grids



Built-in
security



Zero trust



Resilient
systems



Standards & Compliance

IEC 61850

ISO/IEC 27019

Trust & Data Integrity



Reliable
data



Secure
exchange



Trusted
decisions

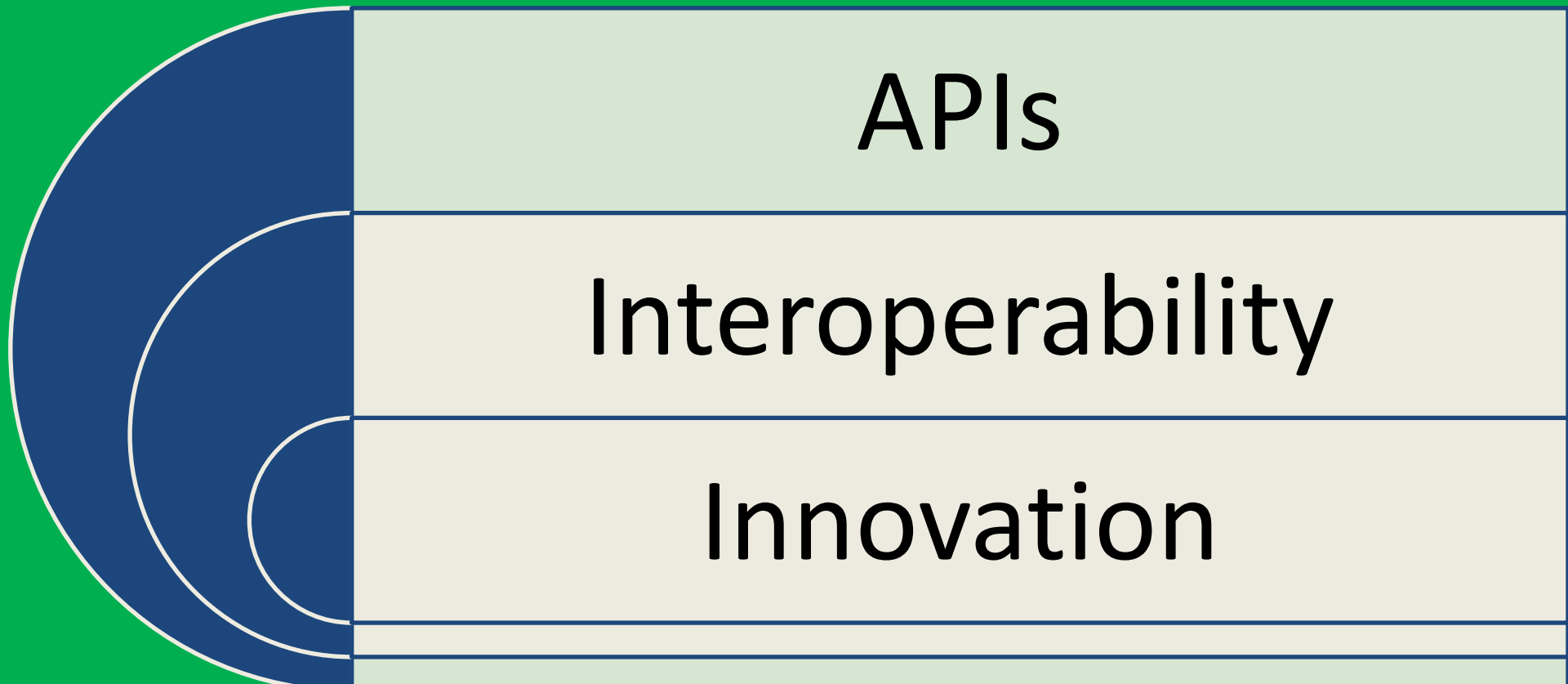


Collaboration is Key



Utilities + Regulators + Innovators

Open Platforms & Shared Data

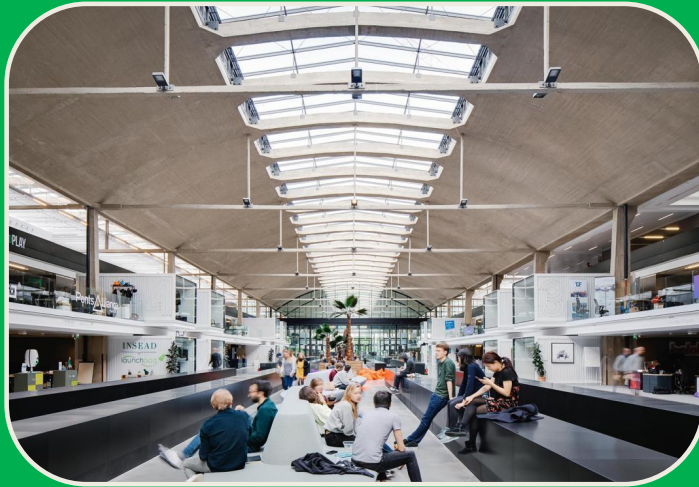


APIs

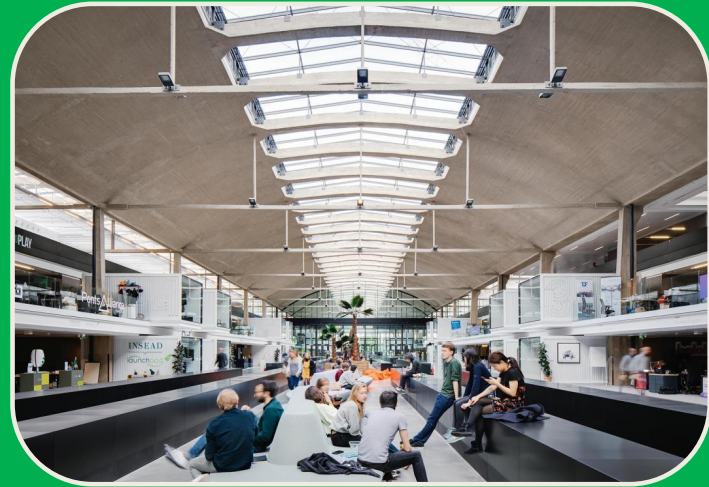
Interoperability

Innovation

Co-Innovation Ecosystems



Partnerships



Faster
innovation

Great Standard Consulting Ltd — Enabling Energy Transformation

We transform complex energy systems into intelligent, AI-driven grids.

Smart Grid Architecture

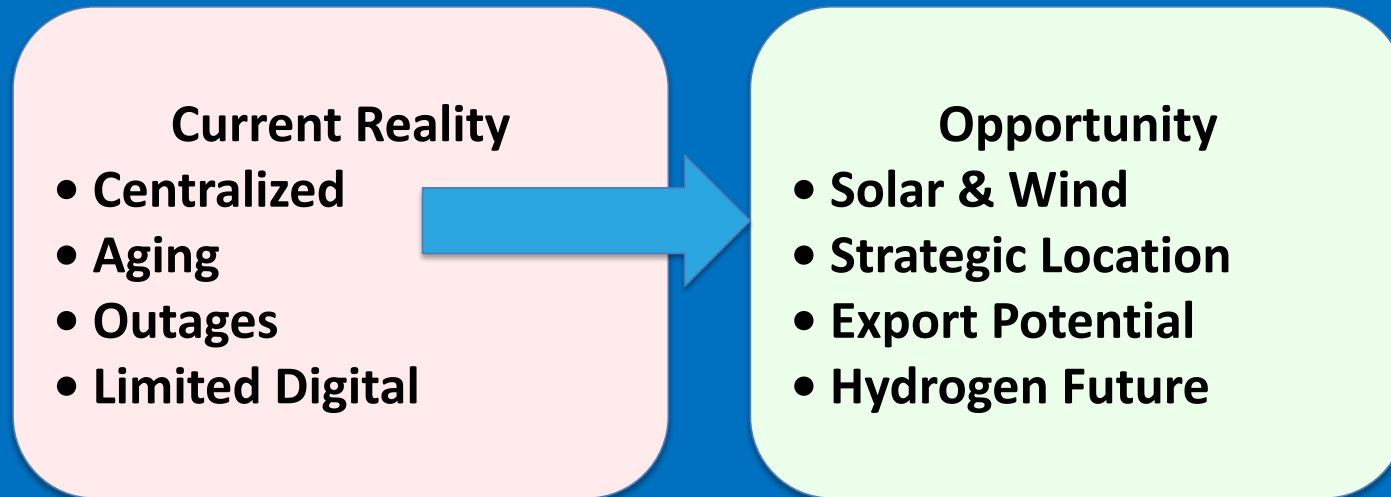
AI Optimisation

Digitalisation

Renewables

From Complexity → Clarity → Control

Case Study: Libya — From Legacy Grid to Global Energy Hub



Leapfrogging into Intelligent Energy Systems

From Vision to Implementation-Proven Delivery

Challenge

- Remote Ops
- High Cost
- Instability

Solution

- Hybrid Grid
- Multi-source
- Smart Control

Impact

- Reliability ↑
- Fuel ↓
- Efficiency ↑

From Strategy → Real Implementation