

DIGITAL INFRASTRUCTURE POWER GENERATION

Build operational readiness into power generation for reliability, resilience, and performance

In today's capital-intensive business of supplying power to digital infrastructure, delivering projects on time and on budget is not enough. Developers, investors, and operators are contractually bound to sustain 99.9% availability. New dedicated power supply projects are being developed to support hyperscale AI, high-performance computing (HPC), and mission-critical data center workloads where tolerance for downtime is effectively zero.

Behind-the-meter power plants require a strategic shift from optimizing capital expenditure to maximizing lifecycle performance — An operational strategy that begins long before commissioning is essential.

Critical Issues can Create Risk Before Ground is Even Broken

- Typical EPC planning focuses on capital outlays and overlooks long-term operating risk.
- EPC contracts awarded before operational requirements and digital turnover standards are defined.
- Critical asset data from EPCs and OEMs in inconsistent formats drive costly transformation, validation, and readiness work at commissioning.
- Maintenance and reliability strategies are frequently absent for balance of plant assets.
- Enterprise asset management systems come online too late to influence commissioning readiness.
- Commissioning scope, data standards, readiness metrics, and performance milestones are often undefined.
- Workforce maturity, SOPs, and technology adoption are not planned early.
- Asset management, OT cybersecurity, physical security, and regulatory compliance are managed separately.

Development Phase	Operational Challenge	Data & Insight Challenge	Potential Impact
Concept / Design	Asset design, maintainability, and maintenance strategy not defined early for operations.	No shared lifecycle data model and taxonomy. Hierarchy and criticality are not structured for analytics.	**+5–10%** lifecycle cost **3–6 months** delay in value realization
Procurement / Construction	As-built changes, rework, and punch lists not tied into future asset and work management.	Inconsistent naming, tagging and documentation. Rework and punch lists are not linked to assets.	**+3–8%** rework/change cost **10–20%** lower turnover efficiency
Commissioning / Handover	Asset registers incomplete, and field knowledge not embedded into day-one maintenance readiness.	Data defects are discovered after startup, and commissioning knowledge is not captured in master data.	**+5–15%** startup cost **1–3 months** delayed operational readiness
Operations / Maintenance	Asset history, condition, and criticality not integrated into daily work, leaving technicians navigating silos.	Fragmented history, condition, and criticality with weak master data and integration limiting analytics.	**+10–20%** maintenance cost **20–25%** lower labor productivity

We Can Help Address these Challenges

Drawing on decades of experience delivering and optimizing capital-intensive infrastructure, TRM has developed an intensive methodology—**The TRM One Journey**—that bridges the gap between project completion and operational performance.

Our approach starts by aligning the needs of private equity investors, developers, EPCs, OEMs, operators, and technology providers around a common vision for lifecycle value. We emphasize operationalizing assets before turnover by establishing the operating model early, building data as infrastructure, deploying reliability methods during construction, and integrating asset management, cybersecurity, and compliance from the outset.

1

Strategic alignment & readiness assessment

- Executive workshops
- Governance assessment
- Risk identification
- Operating model alignment
- Readiness benchmarking

2

Asset management & digital strategy

- Asset management framework
- EAM roadmap
- Reliability architecture
- Master data framework
- Technology strategy

3

Ecosystem integration & operational design

- Owner, investor, EPC, OEM alignment
- Digital master data turnover standards
- Maintenance strategies
- Inventory planning
- Operational processes

4

Roadmap, business case & execution planning

- Implementation roadmap
- governance model
- Value realization strategy
- Organizational readiness planning
- Executive business case

5

Implementation integration & go-live

- Preconfigured solution deployment
- System integration
- Data validation
- User training & adoption enablement
- Go-live support

Outcomes you Can Expect

- Accelerate commissioning, shorten time-to-operation, and reduce startup and lifecycle costs.
- Improve scope certainty, minimize rework, and reduce risk with readiness planning and digital handover governance.
- Reach stable operations faster while improving reliability, availability, and uptime.
- Establish trusted, governed asset data to support long-term operational excellence.
- Optimize spares, inventory, and capital to improve working capital and asset supportability.
- Strengthen safety, compliance, physical security, and OT cybersecurity across the lifecycle.
- Deploy reliability-centered, predictive, and condition-based maintenance from day one.
- Build a foundation for automation, digital twins, analytics, and AI-driven continuous improvement.

Delivered By

TRM provides advisory and implementation services spanning enterprise asset management, reliability engineering, operational readiness, master data governance, OT cybersecurity, physical security, maintenance technology, ESG enablement, and digital transformation. Our experts have helped organizations across energy, utilities, manufacturing, transportation, federal, and critical infrastructure sectors establish the foundations required for long-term operational success.

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