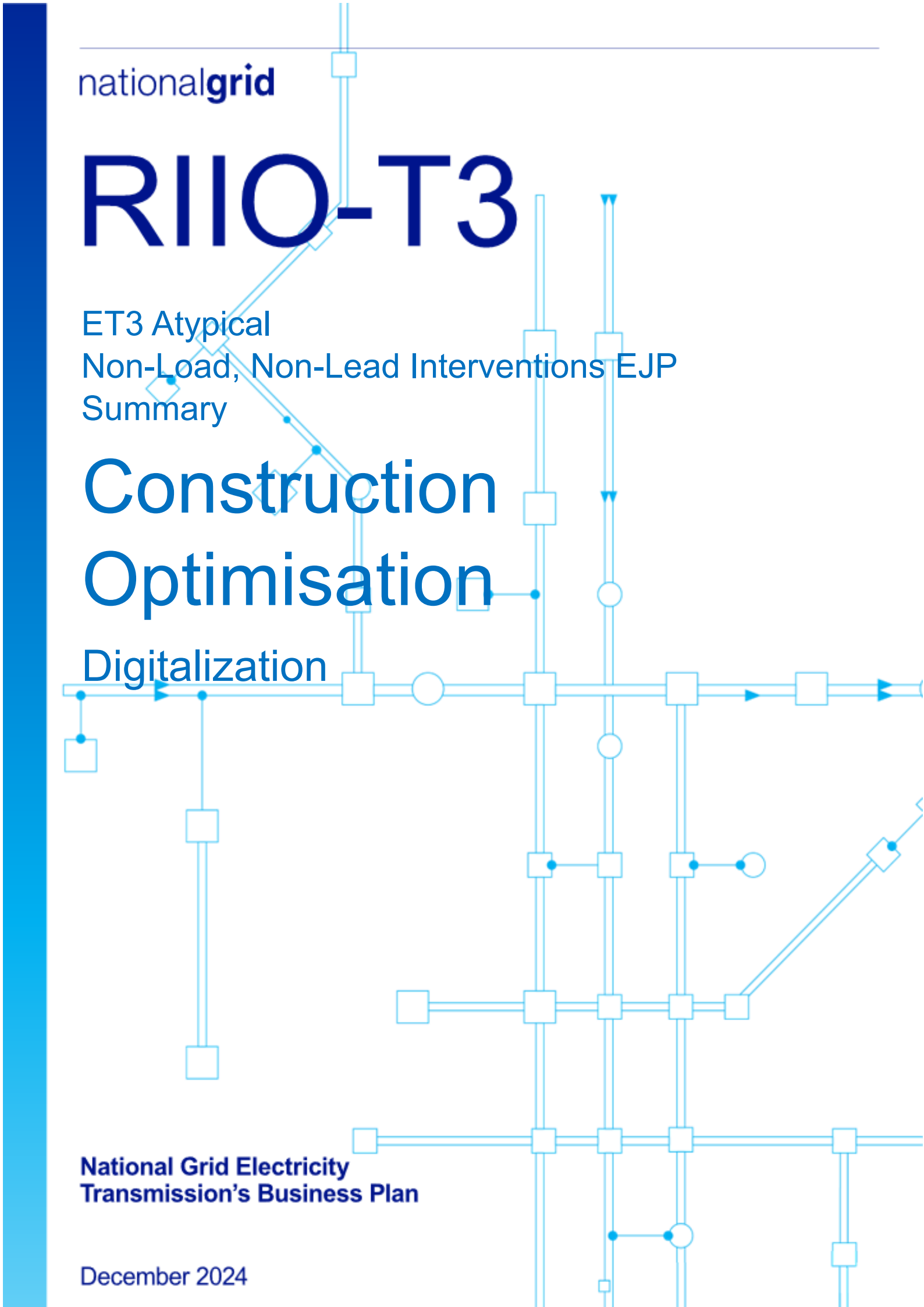


# R110-T3

ET3 Atypical  
Non-Load, Non-Lead Interventions EJP  
Summary

## Construction Optimisation

Digitalization



## Construction Optimisation – investment summary

This investment seeks funding for the digital transformation of the end-to-end construction process at National Grid Electricity Transmission (NGET). The goal is to develop a digital construction platform encompassing a Common Data Environment (CDE), construction materials management, construction project planning and management, construction project risk management, and cost and estimation management.

NGET currently utilises digital tools for new infrastructure project delivery, encompassing project planning, costs, contracts, and risk management. However, with the impending increase in construction work volume—anticipated to be five times the current level due to a significant infrastructure upgrade—there is a pressing need to enhance these tools further. This upgrade is crucial to support the UK's net zero ambitions and to deliver new infrastructure projects efficiently, including both major onshore and offshore projects.

### Drivers for digital investment

The primary driver for this digital investment is the necessity to enhance NGET's capabilities and capacity to support the construction of net zero grid infrastructure on an accelerated timeline. This need arises from several factors:

- **Common Data Environment (CDE):** Currently, project data is decentralized, inhibiting a programmatic approach to delivery. Establishing a CDE will enable better collaboration and management.
- **Construction Materials Management:** Existing systems lack detailed views of supply chain components, leading to inefficiencies. Improved materials management will enhance predictability and reduce downtime.
- **Construction Project Planning and Management:** The manual nature of current project controls limits the capacity to utilize project data. Enhanced digital tools will provide real-time data access and improve decision-making.
- **Construction Project Risk Management:** Current risk management solutions are inadequate for the scale of the infrastructure portfolio. A comprehensive risk management capability will allow better monitoring and mitigate risks.
- **Cost and Estimation Management:** Greater accuracy in cost estimation is required to avoid compounded errors across the portfolio. Enhanced cost management tools will support accurate forecasting and resource allocation.

### Options considered

A comprehensive optioneering and cost-benefit analysis was conducted to review various options for meeting the investment requirements.

### Preferred solution

The preferred solution integrates systems and includes several discoveries and complete CDE rollout across NGET including our joint ventures. This option is the most cost-effective way to meet strategic needs and provides the highest whole life Net Present Value. It includes the following components:

- **Common Data Environment (CDE):** Rollout across all projects in stages, enabling programmatic management and collaboration.
- **Construction Materials Management:** Discovery activities to test digital tools and develop business changes for optimal digital transformation.
- **Construction Project Planning and Management:** Exploring emerging technologies for automated project management and decision-making enhancements.
- **Construction Project Risk Management:** Implementation of advanced risk management practices, including machine learning for proactive risk management.
- **Cost and Estimation Management:** Creating a closed-loop cost estimation capability to ensure accurate budget predictions and resource utilization.

## **Timeline**

The intended investment and rollout plan spans the RIIO-T3 period with key milestones planned through to 2031. Significant milestones include decommissioning of old data platforms, implementation of a state-of-the-art data science workbench, and enhanced data governance by 2028 with further advancements in CI/CD integration for data pipelines and the introduction of a cutting-edge Hybrid Transactional/Analytical Processing (HTAP) database by 2029. By 2031 we intend to have delivered the full rollout of the CDE, enhanced project planning and risk management capabilities, and deployment of advanced analytical tools and AI.

## **Conclusion**

In conclusion, the proposed investments in digital construction optimisation are strategically aligned with our RIIO-T3 objectives and the UK's net zero targets. By implementing an integrated, data-driven digital framework, NGET will enhance efficiency, reduce risks, and improve collaboration across its construction projects. This investment is essential to meet the growing demands of infrastructure delivery, ensuring projects are completed on time, within budget, and to the highest quality standards.