# RIIO-T2 Non-Operational IT Capex

## Appendix 1: Project Definition and Justification Papers

January 2023

**Any confidential or commercially sensitive information has been redacted from this document**

# List of Project Definition and Justification Papers

# Integrated Project Management (IPM)

## Project Definition and Justification Paper

## Contents

# 2 Executive Summary

SSEN Transmission's primary function is to provide a safe and reliable supply of electricity to the communities it serves. It also plays a critical role in the transition to a low carbon future, developing, building, maintaining, and operating a network for Net Zero. It is vital to the UK's Net Zero ambitions as it transports huge quantities of clean, green, and renewable power to over a quarter of the UK land mass across some of its most challenging terrain.

This network supports both the UK and Scottish Governments' Net Zero emissions targets, whilst meeting the needs and expectations of stakeholders. With the region home to some of the UK's greatest resources of renewable power, the business has a critical role to play in the transition to a low carbon future, connecting more renewable energy and transporting it across the country.

SSEN Transmission is a growing business, as this transition requires billions of pounds in investment to meet energy demands, both now, and, in the future. Through a fair, balanced, and considered investment programme, we are committed to improving network reliability and enabling the transition to Net Zero, at an affordable cost to consumers.

A key element for the successful delivery of this journey to Net Zero will require SSEN Transmission to build forward looking, digitally enabled teams. This means high levels of user experience with all the digital tools needed to achieve high performance delivery. We will use these tools to develop the 'single source of the truth', to directly support our people and stakeholders, and put safety, efficiency, insight, and great customer service as the main drivers for change in our Capital Delivery programmes.

We have created a vision for Integrated Project Management (IPM) that meets this ambition and is aligned with our overall digital investment plan. Impacts on other areas of the business, such as Finance, Procurement, and other supporting functions, will be assessed to identify if there is any overlap of requirements, and, if so, the most appropriate delivery mechanism determined. SSEN Transmission will use digital

products to capture, manage, integrate, and share our data to drive performance and innovation across our business.

Our RIIO-T2 Business Plan set out four strategic themes. This investment aligns with the "Sector Leading Efficiency" and "Safe and Secure Network Operation" themes and the measurable goals of "Transport the renewable electricity that powers 10 million homes" and "£100 million in efficiency savings from innovation".

The successful delivery of this investment, which will span the RIIO-T2 and RIIO-T3 periods, will enable the integration of IPM capabilities into several wider capabilities, such as Asset and Operations, Engineering Designs, Supplier Collaboration, Enterprise Systems, Resourcing, and Costing.

The investment requested in RIIO-T2 and a breakdown of the cost elements within this investment is shown in Table 1: IPM Cost Summary.

**Table 1: IPM Cost Summary**

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT & T Capex | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Support Costs IT Opex | ■ | ■ | ■ | ■ | ■ | ■ |
| Total Investment | ■ | ■ | ■ | ■ | ■ | ■ |

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# 3 Project Summary

## 3.1 Background

SSEN Transmission's approach to the delivery of large-scale Capital Delivery projects to date has been effective and delivered outcomes in RIIO-T1 and early RIIO-T2. However, with the forecasted rate of growth in connections and large-scale transmission reinforcement expected to accelerate, the legacy approaches will not be sufficient. Additionally, with the growing usage of digital technologies by key stakeholders and customers, there is a risk to the business that efficiencies delivered by these technologies will be lost.

Our current technology landscape within Capital Delivery does not meet or enable us to meet the above requirements because:

- It is fragmented.
- We do not have the functionality required.
- It is outdated and has not kept up with the changes in delivery technology.
- Input is primarily captured manually into Excel-based tools.

## 3.2 Rationale

SSEN Transmission's ambition is to become a digital company and this ambition covers all aspects of the business from project delivery to operational decisions. Based on the current level of digital maturity in the capital asset delivery and the growing portfolio of assets requiring connection to the transmission system there is a risk of not delivering the capital programme, which will impact the Net-Zero ambition. Therefore, there is a need to invest in growing and maturing the digital capabilities of the capital delivery functions.

Integrated Project Management (IPM) is the digitalisation of the management processes underpinning Capital Delivery, such as schedule, cost, risk, or issue management. Standardisation ensures best practices are embedded in complex capital delivery. This has three benefits. First, it leads to a faster and more optimised way of delivering projects. Second, it ensures that the right data is collected at every stage, in a manner that ensures it can be aggregated for provision of insight, providing benefits including:

- Enabling early actions, ensuring bottlenecks are identified and addressed,
- Providing better reporting leading to enhanced stakeholder engagement, and more informed customers, and
- Improving reports allowing for better lessons learnt and enabling iterative improvements to be made.

Finally, this investment will reduce the inherent delivery risk in the capital programme bringing greater confidence in delivery against the business plan commitments and the additional projects that have been funded through the RIIO-T2 period.

The IPM capability is a key enabler for RIIO-T3.

## 3.3 Alignment to our RIIO-T2 Business Plan

This programme supports the five clear goals set out in our RIIO-T2 business plan. This investment also aligns to the delivery of the "Sector Leading Efficiency" and "Safe and Secure Network Operation" themes in our business plan. To enable the plan's delivery, it requires a fully digital business, with the IT digital capabilities to rapidly adapt and change in response to the demands of the business, customers, and stakeholders. Table 2 demonstrates how these investments assist in the delivery of our goals.

Table 2: Integrated Project Management alignment to goals

| RIIO – T2 Business Plan | 2026 Commitment | Alignment | Investment Delivers |
|---|---|---|---|
| Transport the renewable electricity that powers 10 million homes | Our RIIO-T2 Certain View will deliver an electricity network with the capacity and flexibility to accommodate 10 GW renewable generation in the north of Scotland. | High | The capability to use and combine data from different sources within SSEN Transmission to increase the flexibility and capacity of the transmission network **(Efficiently share data)** |
| Aim for 100% transmission network reliability for homes and businesses | Through investing in new technology and ways of working, when cost effective for customers to do so, we will strive for 100% transmission network reliability for homes and businesses. | High | Increased quality of data used in operational decision-making will both reduce risk and increase the reliability of the network **(Data driven decisions)** |
| Every connection delivered on time | We will provide every network connection, tailored to meet our customers' needs, on time, on budget, and to our customers' satisfaction. | High | Support to ensure project delivery to enable new connections **(Provide tailored services)** |
| One third reduction in our greenhouse gas emission | We will reduce the controllable greenhouse gas emissions from our own operations by 33%, consistent with a Net Zero emissions pathway. | Medium | More efficient decisions driven by accurate data **(Operational efficiencies)** |
| £100 million in efficiency savings from Innovation | Our RIIO-T2 Certain View includes £100 million of cost savings through productivity and increased innovation. We aim to go further to save more. | High | An environment that enables increased focus on areas that improve productivity by providing the data to identify those areas. It will also enable improved Innovation decisions **(Creates opportunities)** |

## 3.4 Alignment to our strategic investment drivers

The current strategic investment drivers were identified through a series of workshops and engagement with stakeholders. Through these, we identified two themes that have driven the need for SSEN Tranmission to review and update our Digital and Data Strategy. This review has led to the

need for additional Digital investments to increase the digital IT capabilities and the capability of related systems. The IPM programme has been developed to assist in delivering part of the overall strategy to support these drivers.

These themes were (Figure 1) – Business and Technology.

**Figure 1: Digital Drivers**



The delivery of this investment will enable efficiencies for project delivery of both new connections and transmission network upgrades, as well as increased standardisation of delivery and greater certainty on delivery of capital project outcomes. Its delivery will cater for the massive increase in the amounts of data generated. The current traditional approach and systems will not address the challenges Net Zero brings, as we have a landscape that is disjointed, our processes are not digitalised, and data resides in multiple places. These factors mean the current traditional approach and systems are unlikely to deliver improvements, or add value for customers, stakeholders, and consumers. The current traditional approach and systems has been sufficient for our short- and medium-term delivery, but it is not on par with the modern organisation we want to be. Further, and more importantly, it is also not suited for the extensive delivery we have planned within RIIO-T2 and for RIIO-T3.

Our customers and stakeholders are using new technologies, and this increases our need to evolve and create new ways of working. They require more frequent, accurate, and digital information about the delivery of their projects or project they are interested in. Further, digital maturity is increasing within the user community internally and the lifecycle of technology keeps accelerating and getting disrupted, so there is a need for SSEN Transmission to evolve as well. This means increasing our number of digital channels, and more integrated ways of collaborating on projects.

The delivery of the components within the Integrated Project Management investment programme will ensure that these align with the SSEN Transmission Digital Vision and Strategy. Table 3: Alignment of Drivers to changes shows the alignment of these to our strategic drivers.

**Table 3: Alignment of Drivers to changes**

| Investment/Project | Business Drivers | Technology Drivers | Alignment |
|---|---|---|---|
| Integrated Project Management | We are a critical enabler for Net Zero | Digital and Data evolution in Transmission and the wider energy system | High |
| | Our business is growing and maturing | Growing and maturing Transmission IT | |
| | Meet our promises to the consumer and shareholders | | |

## 3.5    Alignment to Re-Opener guidance

Table 4 sets out how our submission meets the requirements of our licence and the Re-Opener guidance.

**Table 4: Licence and Guidance Requirements for Submission**

| Licence and Guidance Requirement | IT Re-Opener Strategy Summary | This Document |
|---|---|---|
| Clear statement on the needs case, demonstrating alignment with the overall business strategy and commitments. This includes the organisational context, strategy, and business alignment | Section 4 | |
| Description of overall strategy and current operations covering non-operational IT capex investments, including description of IT Strategy, the role of IT Strategy in supporting the business, and overall IT Plan dependencies | Section 4.4 Section 4.5 | |
| Demonstration of the needs case and problem statement, covering the capabilities that need to be enhanced and/or risks that need to be addressed and/or opportunities addressed | Section 4 | Section 3 |
| Explanation of options assessment, including the methodology used | | Section 5 |
| Clear description of preferred option, covering the following: | | |
| • A description of the proposed project including scope and objectives of the proposed option and how the proposed option will either improve operational capability, support meeting business objectives, or reduce risk / create opportunities | | Section 4 |
| • A detailed description of project delivery plans, including project schedule, governance, and KPIs to monitor the progress of the project | Section 6 ███████ | Section 6 Section 7 |
| Breakdown and Justification of costs, including the following: | | |

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| • Justification for the need and amount of allowance required per project, considering the requirements and capabilities being delivered | | Section 8 |
| • An overall portfolio cost for the proposed Re-Openers, and delineation of costs per project | Section 7 | Section 8 |
| • Commitment to the use of good practice governance, including investment management and controls | Section 6.4 | |
| • Inclusion of uncertainty and risk costing | | Section 8 |
| Clarity on the purpose, scope, and dependencies of the project | | Section 7.2 |
| A description of the proposed solution at an appropriate level of detail | | Section 6.3 |
| Quality assurance approach for the project i.e., for testing and acceptance | Section 6.7 | |
| A costed plan for delivery, in line with recognised good practice | | Section 8 |
| Project Resource breakdown showing costs per resource type across defined cost categories | | Section 8 |

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# 4 Project Scope and Outcomes

## 4.1 Project Scope

Our current digital capabilities in Capital Delivery, whilst sufficient for where we have been to date, are no longer sustainable for our growth targets and business ambitions. We, therefore, see the need to make the following changes within our Capital Delivery. We need to:

- Streamline our delivery processes, and enable the embedding of best practices through Digital
- Use technology to give insights on our delivery performance, so we can act earlier and quicker to make corrections
- Collaborate more effectively with our partners, and hold them to account
- Create and leverage the right structures in our finance system to be able to capture and report on capital project costs more efficiently and accurately, reducing the overheads on the business and finance colleagues
- Plan our resource requirements early, so that we remove bottlenecks in terms of materials and resources, and most importantly allow us to engage with suppliers early to manage lead times
- Provide better information to our stakeholders, especially connections customers, so that they can be kept up to date regarding their investments
- Make data an asset in Capital Delivery by ensuring quality data flows through the life cycle of the asset
- Strengthen our foundation for future growth

Ultimately, IPM will deliver integrated digital capabilities to execute Capital Delivery project management functions, including project scheduling, cost management, risk, change, issues, and scope management. This will streamline effort, make handover and governance processes more efficient, and provide insight and performance indicators, leading to faster and more efficient execution of Capital Delivery projects. These integrated digital capabilities are aligned with the vision of being a digital business and enable the flow of data from inception through to Asset Operations. We are realistic on how quickly this can be achieved, and plan to execute this scope across the RIIO-T2 and RIIO-T3 periods. We will focus initially on the core capabilities of Schedule Management, Cost Management, and Reporting, with supporting capabilities of Integration and Workflow and Process Automation being implemented in the current regulatory period. Risk/Issue Management and Change/Scope Management will be a focus for RIIO-T3, along with the continuous improvement and enhancement of the previously delivered functionality. As capabilities are implemented, and embedded into the business, we expect there will be demand for new functionality and increased granularity of information available within the IPM platform. Table 5 sets out the functional capabilities, and how they align to the regulatory period from a delivery perspective.

| Capability | Definition | Delivery Period |
|---|---|---|
| Schedule Management | This capability allows for centralising different planning data, to create integrated views of the delivery schedule, both at project and portfolio level, giving insight and a forward view on delivery.<br><br>The capability will also allow for provision of specific performance indices, such as Schedule Performance Index, where forecasts are compared with baseline plans, allowing for better analysis of deviations. This prompts early action and helps specify the overall risk of a delivery. | RIIO-T2 |
| Project Cost Management Structures (ERP) | Within our core finance platform, design and configure the cost structures that enable the more efficient capture, management and reporting of capital project costs. This will reduce the current overheads and use of non-core systems to manage the current cost breakdown structure and simplify the reporting of costs internally and through Regulatory Reporting. This is a key enabler for the IPM solution. | RIIO-T2 |
| IPM Cost Management | Given the large costs associated with Capital Delivery, this capability is about using cost information to track the spend profile of projects in a more effective way as well as provision of improved cost reports. The capability will integrate with the Project Cost Management Structures enabler (above) within the ERP finance system to provide an improved view of cost performance at project and portfolio level. | RIIO-T2 |
| System Integration | There are key sources of data, notably financial, HR, planning systems, and inventory that Integrated Project Management will require. System or data integration will ensure that such data is in place, enabling the different functions of IPM to provide holistic views across key management functions such as Scheduling, Cost, Risks and Issues, and Change Management. Such integration will also remove the "swivel chair" effect, e.g., double entry of planning data. | RIIO-T2 |
| Reporting Capabilities | Standardisation of processes (scheduling, risk, issues, and change management) and access to central and required sources of data allows for a suite of reports to be created, which can be used across multiple stakeholder groups. The same is also possible when it comes to creation of analytics, especially using PowerBI tools. | RIIO-T2 |
| Workflow and process automation | Given standardisation of processes, it is possible to include automation into these processes by building workflows. This will allow for a speedier execution of processes, such as processes to do with handover, but also identification of issues, and optimisation of execution. | RIIO-T2 |
| Risks and Issues Management | Given each project has risks and issues, this capability is about creating a centralised and standardised method to manage risks and issues across all Capital Delivery projects as well as at a portfolio level. By being able to create heat maps, project and portfolio managers can have a prioritised and focused view on top topics, ensuring key mitigations are in place. Mitigation actions can | RIIO-T3 |

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| | be managed effectively though workflows, and key criteria such as longevity of risks, or issues can show where mitigations are not tracked well. | |
| Change / Scope Management | This capability is about centralising and standardising the methods by which changes are requested, impact assessed and accepted into each project. It is also about providing a portfolio view of changes (approved and in the pipeline) together with a forecast of commercial or schedule impacts. The capability will allow for better decision making, and more robust stakeholder management. It also allows for scrutiny of changes, showing which projects or portfolio have had the largest amount of change, giving traceability to these for future reporting. | RIIO-T3 |
| Action Management | This is short term work scheduling rather than have multiple Excels where teams are collaborating on actions. This is concerned with rolling out team spaces, where people have a collaboration space for their projects, including actions tracking. | RIIO-T3 |
| Continuous Improvement and Enhancement | Once the core functional capabilities have been delivered, initially as a Minimum Viable Product (MVP), these will be iterated and improved in conjunction with the business in order to meet the evolving requirements and feature requests. This could include more sophisticated and advanced functionality, increased granularity and detail in data capture or reporting enhancements. Whilst the precise scope is currently unclear, this block of scope would lend itself well to a more agile delivery approach once the platform and core functionality is available. | RIIO-T3 |

By ensuring that all Digital IT investments are aligned to the Digital and Data strategies, this will ensure that projects deliver the required capabilities and systems that also result in the effective capture and management of data. This approach then becomes a key enabler, by creating an environment that ensures that all parties can exchange accurate data in a timely manner. Exchanging data through the Load (system planning) and Non-Load (asset management) investment processes will ensure stakeholders, planners, and engineers have visibility of all aspects of current and planned projects, outages, and so on, through to real time operations.

Having successful data capture, organisation, and management systems, tools, and capabilities in place enables data-driven investment decisions. This will enable SSEN Transmission to deliver operational efficiency, network resilience, timely connections, and support development of the Net Zero emissions network. Different functions within the business will have different needs, but it is vital to ensure that the data flows consistently, is accurate, and entered only once. There is also the need to transfer the data back to stakeholders so that they can make their own analysis of potential future opportunities.

Integrated Project Management is more than just a capability. It is the design and integration of a set of capabilities that deliver the key benefits across the total lifecycle of project management with seamless hand over to Asset and Operations. In summary:

- Data: In one place, giving insight for better planning, cost management, etc.
- Process: Workflows ensuring we execute management processes more effectively, e.g., governance
- Changes to skill: Changing our people's ability and culture to become more collaborative, value data, enforce accountabilities
- Rationalised technology landscape: streamline and remove redundant systems

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## 4.2    Deliverables

The successful addition of the IPM platform and capabilities will provide SSEN Transmission with the following key deliverables:

- High level design
- Detailed design
- Selection and procurement of IPM Suite/Platform
- Platform deployment and base configuration
- ERP Project Cost Management Capability Release
- Schedule Management Capability Release
- IPM Project Cost Management Capability Release
- Integration of IPM to other applications
- Reporting Suite Release 1
- Workflow and Process Automation Release 1
- Transition to Service

These deliverables will place the business in a prime position to build on these capabilities and sets a strong foundation for the RIIO-T3 regulatory period.

## 4.3    Outcomes and Benefits

The IPM investment will deliver specific outcomes to the business and its stakeholders and customers. These are outlined in Table 6.

Table 6: IPM outcome mapping

| IPM delivers | Outcome |
|---|---|
| Standardisation | Leads to best practice and speedier processes |
| Centralisation of Data | Better insight and performance management |
| Portfolio view | Makes insight across multiple projects, driving economies of scale |
| Management of cross functional handovers | Handing over data into BAU for enhanced operational work |
| Increasing quality of output | Tracking and enforcing vendor obligations and enforcing quality criteria |
| Earlier view of change | At portfolio view, leading to better scrutiny of change and enhanced management of cost implications |
| Integration of planning across multiple functions | Dependency tracking, enhanced material management |

| IPM delivers | Outcome |
| --- | --- |
| Improved cost capture and reporting | More accurate capture of costs of different types in a project orientated finance structure, reducing manual intervention, journalling and allocation overheads and better alignment to the regulatory reporting requirements |
| Reduction in delivery risk | Bring increased certainty and reduced risk to the capital projects delivery |
| Efficiency | Reduced overheads of sharing and transmitting data and information surrounding capital projects, with external suppliers and internally across the SSEN Transmission business. Reduced overheads of cost management and tracking. Reduced effort in the production of regulatory reporting for capital projects. |
| Reduction in Compensation Events | With better control and management of schedule and cost, issues, and risks, this could lead to a reduction in compensation events that are avoidable through enhanced project management and collaboration |

The capabilities that the IPM investment will deliver can also be mapped to a set of benefit drivers. These drivers are aligned to our Net Zero delivery drivers, by achieving our capital programme in the most efficient manner and on time. This will also increase engagement with staff and benefit our stakeholders and customers. Table 7 maps these benefits to the IPM capabilities.

Table 7: Mapping of IPM capabilities to benefits drivers

| IPM Capability | Efficiency Drivers | Increased speed of delivery | Stakeholder Information and Management | Better Employee Satisfaction | Improvements to Safety |
| --- | --- | --- | --- | --- | --- |
| Schedule Management | High | High | Medium | High | Low |
| Project Cost Management Structures (ERP) | High | Low | Low | Medium | Low |
| IPM Cost Management | High | Low | Low | Medium | Low |
| Risks and Issues Management | High | High | High | Low | High |
| Change/Scope Management | High | High | High | Low | High |
| System Integration | High | High | Low | High | Low |
| Reporting Capabilities | High | High | High | Medium | Medium |
| Workflow and process automation | High | High | Low | High | Low |

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As previously mentioned, the projected capital spend for the next three years is several billions of pounds per year. Based on our external digital partners' experience of delivering similar capabilities within similar environments, and industry norms and averages, we believe that the benefits mention in Table 5 and Table 6 can be conservatively estimated at between 0.5 to 1%in capital project delivery costs and overheads.

# 5    Optioneering & Preferred Option

## 5.1    Method of evaluation

There were several different options available including delivering the work now and seek funding within the RIIO-T2 re-opener window, do nothing, or defer all the delivery until RIIO-T3. All these options were presented and debated within SSEN Transmission IT, Capital Delivery, and the wider business. Guidance was also sought from our digital partners, who assisted us to create the Digital Vision. The criteria that this evaluation was held against included:

- Impact on meeting strategic objectives
- Impact on meeting 2030 Strategy
- Impacts on RIIO-T3 Foundation
- Unmissable Quick Wins
- Alignment with stakeholder expectations

This led to options being narrowed down, which are outlined in the following section.

## 5.2    Options Considered

The subsequent different options were considered, evaluated, and set out in Table 8.

<div align="center">Table 8: Options considered</div>

| Options | Pros | Cons |
|---|---|---|
| **Delay IPM until end of RIIO-T2** | • Wider choice of solutions specific to the capability needed as technology and solutions move forward, e.g., a wider range of solutions that provide risk and issue management | • Higher operational costs due to maintaining and supporting current multiple systems<br>• Having to manage data across multiple systems, risking poor quality data, user, and stakeholder experience<br>• Different roadmap of product upgrades, leaving inconsistency in use, and alignment of upgraded capabilities<br>• More difficult to use out-of-the-box functionality, given different solutions are not integrated or part of a platform<br>• Harder execution of training, and vendor management, given multiple parties are involved |
| **Deliver IPM now** | • Less integration, albeit integration with ERP systems, Asset Management Systems, and Inventory Management systems will be required<br>• A platform-based solution with expertise in IPM and a consistent roadmap of product evolution<br>• Better use of integrated data<br>• Easier use of out of box functionality, leading to less costs of implementation | • Increased risk due to limited number of vendors<br>• Potentially limited in certain functionalities in certain capabilities, for example, there might be better products in the market for change management, but this might be a weaker capability in the chosen platform |

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| | • Easier training given one platform owner deployment<br>• Easier management of vendors | |
| **Do Nothing** | • No investment costs required<br>• Little change and intervention to inflight projects<br>• No additional training required | • Increased headcount in the business to delivery projects, and high likelihood that they won't deliver without IPM<br>• Will slow down or impede future growth of capabilities given limitations to certain systems<br>• Cannot reap awards of integration, especially integration of data<br>• Will continue to suffer from "swivel chair" effect |

## 5.3    Preferred Option

The preferred option is to develop the "Deliver IPM now" option, resulting in the majority of IPM capability centred in one already integrated platform and solution. It requires only one procurement process, and the selected platform is designed for Integrated Project Management for Capital Delivery. This approach can be described as a hub that delivers the required capabilities. It leverages some of the existing systems (through integration), where they either provide strong capability or are part of an SSEN Transmission wide service (e.g., Finance).

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# 6    Approach

## 6.1    Delivery Methodology

Based on the level of IT delivery maturity within SSEN Transmission IT, it was determined that the standard SSE methodology of Waterfall Lite would be the most appropriate. This would enable the part of the delivery that may have a fixed budget, fixed scope, and fixed timescale to deliver against an agreed business case.

It was recognised that there are several components within the plan that may be suited better to an Agile delivery methodology and, once the level of experience and maturity grows within the IT delivery function, then elements will be delivered by this approach.

## 6.2    Defining and sequencing projects

A phased delivery approach will be utilised in the delivery of this investment. The scope will be split and delivery of this investment between RIIO-T2 and RIIO-T3 will deliver the maximum benefit to the business. This will realise early benefit where available, and this approach was discussed at several internal workshops. From these sessions, the following sequence was agreed.

1) Schedule and Cost are two key capabilities to deliver; therefore, these will be the focus of the first stage of delivery. Given the dependency on the ERP changes needed for Project Cost Management, this activity needs to be completed prior to the IPM Cost Management release.

2) Change Management, Risk and Issues, and Action Management will be deferred to RIIO -T3 and will be delivered as sequential short cycle projects at the beginning of that cycle.

3) Data cleansing is fundamental to underpin all these deliveries, therefore, its activities are planned in parallel with many of the projects.

In order to bring greater confidence to delivery of the core scope in the RIIO-T2 period, we have mobilised this project already – focussing on initial design and requirements gathering to support a procurement activity that will secure a solution and implementation partner for this project.

## 6.3    Technology Considerations

Based on the current favoured design, the platform would aim to utilise our core platforms whilst replacing some of our satellite systems in alignment with our Common Data Environment (CDE). This can be seen from a user's perspective in Figure 2.

**Figure 2: A user's perspective to the technology considerations**
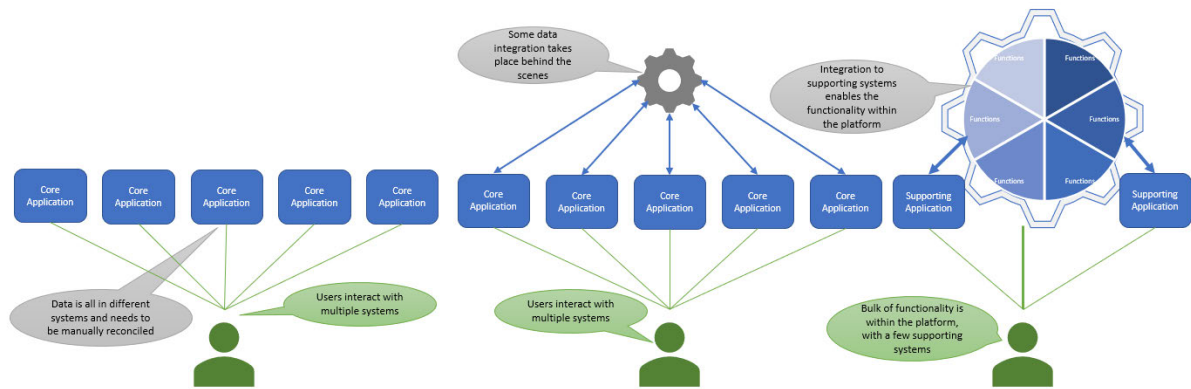
## 6.4    Governance

This investment will follow relevant change control guidelines to ensure that any changes to scope, schedule, or finances are formally signed off at the right level. Our approach will result in reduced business change and disruption. Due to the size of the investment required to deliver IPM, an appropriate level of governance will be required.

We already have a well-defined robust governance structure in place within SSEN Transmission (Figure 3). This enables all parties to understand the required governance. Each level has a separate Terms of Reference (ToR) and an associated Financial Framework to manage financial risk to the projects.

**Figure 3: Governance structure**
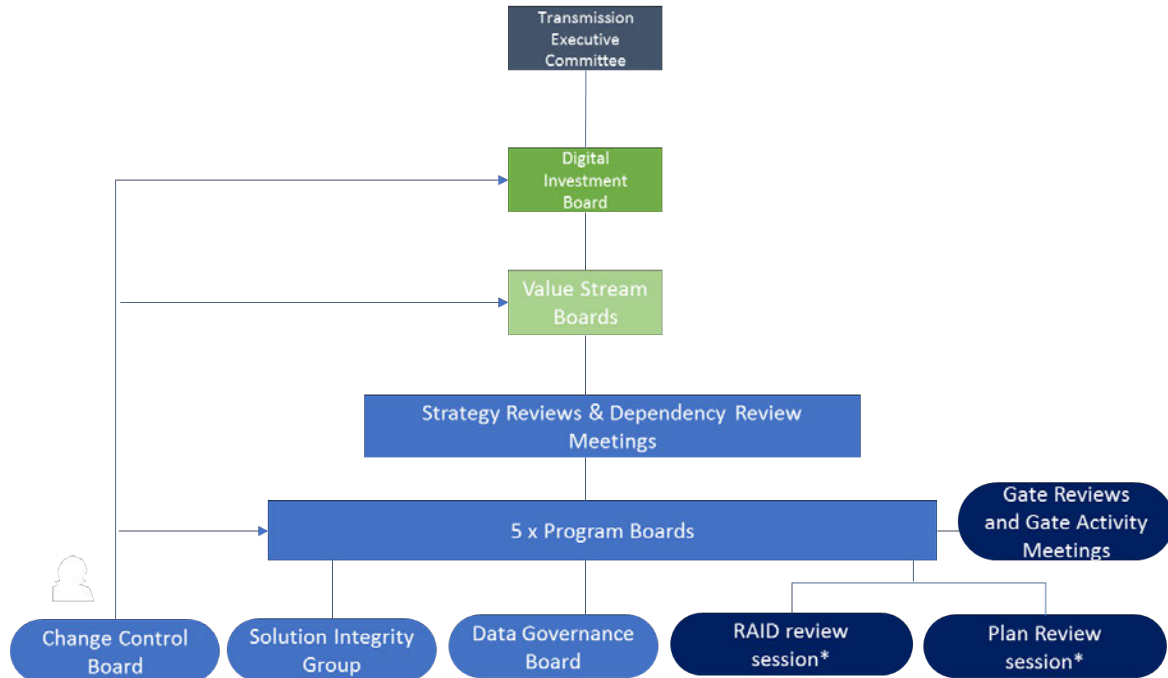


The appointed Value Stream Lead updates their Value Stream Board monthly. As mentioned, due to the size of this investment, there will also be a requirement to update the Digital Investment Board. These updates will ensure that progress against the relevant milestones is on track and any associated financial or project risks are discussed at the appropriate level. Any blockers to progress can discussed and, if required, re-prioritisation of delivery can be agreed.

## 6.5    Procurement

The standard approved SSEN Transmission procurement process will be followed where required to ensure we achieve value for money. We are currently engaged in a procurement exercise to identify and appoint a solution and partner for implementation of this solution. If additional consulting services are needed to support this projects, we will  access these services through existing framework agreements.

## 6.6    Change Management

The primary aim is to ensure readiness and smooth the path for acceptance and continuity of service. The change management function will understand the impact of the change, effectively communicating and providing training as required. This will be handled by our in-house Business Change Team.

# 7    Plan

## 7.1    Delivery Timelines

The Investment will be delivered in various stages, and currently our best view of the plans, and the basis on which we are going to tender is the expected timeline as outlined in █████████████ ████████████████████████████████████████ Whilst this may change as a result of the outcomes from the inflight tender and vendor recommendations, we have confidence that this scope and sequence will deliver the RIIO-T2 outcomes. Table 9: Sequencing of projects shows the current proposed milestones, sequencing and duration of each of the projects within the investment.

As discussed, they are in this order to not only maximise the delivery of benefit to both SSEN Transmission and our stakeholders, but also our customers, and, ultimately, the consumer. We also plan to use the Supplemental Questions process to advise on updated costs and timeline as the tender process develops.
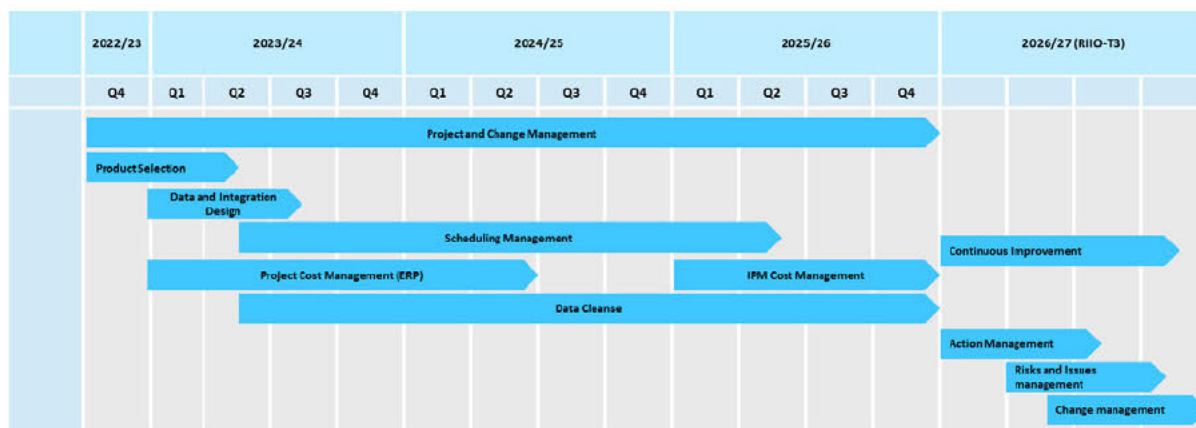
**Figure 4: Delivery Timelines**



**Table 9: Sequencing of projects**

| # | Project Name | Start | Finish | Duration |
|---|---|---|---|---|

| 1 | Project & Change Management | Q4 2022/23 | Q4 2025/26 | 39 months |
|---|---|---|---|---|
| 2 | Data and Integration Design | Q1 2023 | Q2 2023 | 6 months |
| 3 | Product Selection | Q1 2023 | Q2 2023 | 6 months |
| 4 | Project Cost Management (ERP) | Q1 2023 | Q2 2024/25 | 18 months |
| 5 | Schedule Management | Q3 2023 | Q4 2024 | 18 months |
| 6 | IPM Cost Management | Q2 2024 | Q4 2025 | 9 months |
| 7 | Data Cleanse | Q1 2023 | Q4 2025 | 27 months |
| 8 | Action Management | Q1 2026 | Q4 2026 | Defer to RIIO-T3 |
| 9 | Risk and Issues | Q1 2026 | Q2 2026 | Defer to RIIO-T3 |
| 10 | Change Management | Q1 2026 | Q4 2026 | Defer to RIIO-T3 |

## 7.2 Dependencies

We have identified the following dependencies for this investment (Table 10: Project Dependencies). These dependencies will be managed through good practices in project management and factored into the project mobilisation and execution.

### Table 10: Project Dependencies

| Dep. ID | Dependency | Impact | Direction |
|---|---|---|---|
| D1 | Securing Re-Opener funding | If this is not received, then we will be unable to deliver business goals and commitments. | Inbound |
| D2 | Availability of our vendors and their capacity to deliver to our timelines | If not available, then project schedule will be delayed, and business value will be reduced. | Inbound |
| D3 | Availability of key stakeholders impacting the plan, such as the risk that sometimes key operational constraints (such as storms etc) occupy them | If not available, then business capability development will be assumed, and projects based on IT understanding rather than clear business need. | Inbound |
| D4 | Actual projects to test the solution with, project priorities, and their delivery schedule | If not available, then value add of the build solution will not be realised | Inbound |
| D5 | Ramping up internal IT capabilities (considering a very competitive labour market) | If not available, then project schedule will be delayed, and business value will be reduced. | Inbound |
| D6 | Other value streams within the programme to provide appropriate data governance and data quality from other non-capital delivery systems. This is seen most notably in | If not available, then project schedule will be delayed, and business value will be reduced. | Inbound |

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|---|---|---|---|
| | those that are currently working on Master Data Management | | |
| D7 | The IPM project is dependent on the Finance Transformation Programme to deliver the ERP changes for Project Cost Management structures | If not available, then the IPM Cost Management capability release will be delayed. The likelihood of this impact is low as the Project Cost Management scope is scheduled to deliver as soon as possible with a six-nine month schedule buffer between the scope items | Inbound |

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## 7.3 Risks to the plan

The following are risks to the delivery of the plan (Table 11: Risks to the plan).

Table 11: Risks to the plan

| Risk | Impact | Probability | Mitigations |
|---|---|---|---|
| **Risk that the delivery approach leads to cost and time overruns** | Time and Cost | 20% | A strong governance framework to ensure that projects have management oversight for their delivery |
| **Licence costs may increase beyond budget** | Cost | 20-30% | Re-advise through the SQ process on Class 2/3 costs that will become firmer through the tenders that are inflight |
| **Procurement delays** | Time and Cost | 20% | Ensure early engagement with procurement to understand potential blockers early in process |
| **Capability gap to support and deliver projects in the programme** | Resourcing | 30-40% | Third party tactical support will be provided where required with plan to transition capability in-house for enduring delivery |
| **Development time and cost may exceed the project duration given complexities in interoperability between systems** | Time | 30-40% | Alignment and steering from Asset Management, Capital Programme, and Services |
| **Risk that the technology built will not be used by the workforce to drive the benefits** | Benefits Realisation | 10-30% | Gain strong business sponsorship before all delivery to ensure the commitment to achieving the benefits |

## 7.4    Resourcing

The following resource requirements have been identified to successfully deliver the components within the IPM investment. They can be supplemented by external resources if it is not possible to fulfil the resource requirement from within the current IT resource pool (Table 12). It is expected to utilise the Waterfall Lite methodology; therefore, the project will utilise a standard project team model, but this will be flexed as required.

Table 12: Resources and roles

| Resource and Role | Internal/External | Objectives |
|---|---|---|
| Programme and Project Manager | Internal/External | Lead the project and ensure it is delivering to the agreed timelines. Accountable for the end-to-end delivery |
| Procurement and legal support | Internal | Responsible for communicating with vendors to buy, rent or contract products and services needed to achieve project objectives |
| Value Stream (VS) /Business SMEs | Internal | Provide guidance and oversight on the deliverables to ensure they meet requirements and expectations. Organise business engagement forums |
| Product Owner | Internal | Business representative that will own the solution from the business perspective, support the deliver of the right solution to meet business needs and inform the product/solution enhancement roadmap after initial delivery |
| Change Lead | Internal | Manage the change process and execute the change plan working with support from the business |
| Business Analyst | Internal | Gather the business, customer, and stakeholder requirements |
| Data assurance and protection | Internal | Provide a framework to make sure that data is available, usable, consistent, and secure. This includes creating data standards and processes that provide accountability to make sure data management is effective |
| Change Manager | Internal | Manage all aspects of IT changes, prioritise change requests, assess their impact, and accept or reject changes |
| Change Analyst | Internal | Identify the impacts resulting from changes to people, process, systems, and culture |
| Infrastructure Designer | Internal/External | Produce infrastructure technical designs to support the business in line with the organisations, technical strategy, and market developments |
| Security Assurance | Internal/External | Responsible for processes aimed at ensuring individual system components can adequately protect themselves from attacks |

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|---|---|---|
| **Testing** | External | Conduct automated and manual tests to ensure the software created by developers is fit for purpose |
| **Developers** | External | Design, program, build, deploy, and maintain software |
| **Transition Support** | Internal | Support the business when it migrates from old system to new solution |
| **Solution Architect (IT)** | Internal/External | Create the overall technical vision for a specific solution to a business problem. They design, describe, and manage the solution |
| **Data Architect** | Internal/External | Encompass the design, development, and optimisation of the conceptual and logical data systems |
| **Others** | N/A | Non-people costs related to the project |

Our strategy for resourcing is to use third party developers and external Digital Partners as required, but we will maximise the utilisation of our own internal capabilities, including reaching out to SSE group.

Whenever we use external resourcing, we will use existing consulting and other frameworks, that have been established through SSE procurement processes. In respect to any additional external support, we will use SSE procurement to align with regulatory requirements to bring in best capabilities and obtain the best price. Our quality and performance of resourcing is managed through appropriate vendor performance management. Internal resources are managed through internal performance management.

## 7.5    Confidence in our plan

Given what we know so far, we are confident in the plan and the resourcing that has been proposed. Currently, we are going through a tender process to procure the IPM platform and the corresponding implementation services, this will bring additional confidence to our resource and cost estimates – along with confirmation of the delivery plan. Our focus will be on the core scope, as outlined in section 3. Where there are material changes to the investment that come to light through H1 of 2023, we will leverage the SQ process to keep the regulatory parties up to date. Therefore, we are confidence in this approach and delivery timeline based on two factors:

- A clear and achievable scope and defined deliverables
- Input from experienced SMEs on effort required to deliver the project scope

# 8    Costs

## 8.1    Costing Approach & Cost Breakdown

This investment is made up of two different expenditures:

- **Resource costs**: we plan to deliver this investment using a hybrid resource model as outlined in the previous section. Our model is built by leveraging experience from and by incorporating lessons learnt from other organisations.
- **Platform Costs**: working in conjunction with our digital partners, we have estimated additional costs that will be required to develop the product.

Across the expenditure types, we propose to spend a total of ▮▮▮▮▮▮▮ with a breakdown of each component of the investment displayed below (Table 13).

**Table 13: Cost Breakdown per scope area (2018/19 Prices, £m)**



## 8.2 Cost Breakdown

Based on the size of the required team to deliver the capabilities required, the following resource costs are detailed in Table 14: Cost breakdown for required resources.

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Table 14: Cost breakdown for required resources

| Resource Type | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |
| ███████████ | ███ | ███ | ███ | ███ | ███ | ███ |

## 8.3   Assumptions

The following assumptions (Table 15) were utilised to determine the expected costs within the investment.

Table 15: Assumptions

| A. ID | Assumption | Impact if assumption is broken |
|---|---|---|
| A1 | As there is not sufficient skills or bandwidth within SSEN Transmission IT or the business, we will use our consulting partner frameworks to source resources. | Schedule & Cost Impact – if external resources are not available, then costs will increase due to bidding war for resources and additional time taken to acquire. |
| A2 | The procurement process will follow SSEN Transmission procurement processes and standards. | Schedule Impact – if different procurement processes are required, this will extend the time allocated in plan. |
| A3 | A cloud-based solution will fulfil the requirements. | Cost Impact – a non-cloud-based solution will require additional design work. |
| A4 | Standard Unit rates will be used in costing resources (both internal and external). | Cost Impact – the project budget may require additional funds to cover change in projected costs. |
| A5 | The delivered platform will require ongoing support. | Cost Impact – if this is not required, then support costs will require adjusting. |
| A6 | Third Party resources are available in timely manner. | Schedule & Cost Impact – if inputs are not received when required, then this will delay the delivery of the strategy artefacts and increase costs. |
| A7 | The business will be capable of providing experienced SME resource. | Schedule & Cost Impact – if inputs are not received during the early stages, then this will delay the delivery of the strategy artefacts and increase costs. |

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## 8.4    Cost Assurance

Our costs are built up based on traceability and experience (Table 16).

- **Working with consultancies** Our plan has been put together through working with our Strategic Advisors. Each partner has contributed to our projects, including providing the effort estimates we would expect to see. These are based on their experience partnering on similar projects delivered elsewhere.
- **Benchmarking** We have benchmarked this plan with projects of a similar size and scale to demonstrate that the overall investment is within the expected amount for an organisation of our size. This has given further confidence that we:
    - Haven't excessively forecasted any costs, and we are delivering the investment efficiently
    - We haven't under forecasted and will be hit with unexpected costs when we come to deliver

**Table 16 - Cost assurance**

| Cost assurance mechanism | Applies to this PDJP | How it applies? |
|---|---|---|
| High level plan | Yes | We created a high-level plan and ensured we have aligned our resources against this plan |
| Top-down resource estimates | No | |
| Bottom-up resource estimates | Yes | Detailed resource plan created |
| Confidence weighting on resource estimates | No | |
| Experience from prior investments | Yes | Input was received from both internal SSE resources and Strategic Partners |
| RIIO1/2 allowance and expenditure | Yes | Similar projects delivered in RIIO- T1 |
| Negotiated and market tested frameworks and contracts (e.g., consulting services or managed services) | Yes | Unit rates for the resource costings is based on a combination of internal loaded costs and the rates set out in negotiated and agreed framework consulting agreements |
| RFx processes | Yes | Procurement inflight and costs will be update one complete and flagged via SQ process |
| External benchmark of investment titles | Yes | A third-party assurance activity has been undertaken to review the scope, timeline, resource mix and costs being proposed in this investment |
| Unit cost assumptions | Yes | Standard Unit costs applied |
| Expert/External provider support to paper | Yes | External consultancy input on the scope and effort estimates |
| Project delivery risks | Yes | We have assessed the project delivery risks as described in section 5.3 |

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# 9    Operating and sustaining the solution

Based on our experience, and what we understand currently, we will need to pay, on an ongoing basis, for both licence costs for the IPM Platform and support costs. The final solution selected will determine the exact cost associated with this (Table 17: Support Costs).

Table 17: Support Costs

# 10    Conclusion

The growing amount of transmission and new connections assets that need to be built to enable the UK to deliver on its Net Zero commitments is placing an increasingly large challenge on SSEN Transmission to ensure that it delivers these connections in time. There is a need to ensure the successful efficient delivery of these Capital projects, also the need to ensure that all the other associated aspects of its delivery into asset operations (e.g., capture, storage, and sharing of data), right through to decommissioning, is managed. Increasing the availability of this data is required and requested by both internal and external parties.

To assist in navigating this rapidly changing energy landscape, a Digital and Data Vision has been created. Our Digital Vision sets out our ongoing journey to become a more fully digitalised business. An Integrated Project Management (IPM) platform will deliver the capabilities and platform that are aligned to and enhance this vision over the remainder of RIIO-T2, and into the RIIO-T3 period. It will benefit all our stakeholders and customers, and, ultimately, the end-consumer. We are seeking investment of ▮▮▮▮▮▮ for the remainder of the RIIO-T2 period, summarised in the table below.

Table 18: IPM Investment Summary (2018/19 Price Base, £m)

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT & T Capex | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| Business Support Costs IT Opex | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| Total Investment | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |

This investment in IPM will deliver the required platform and capabilities through a series of coordinated steps by splitting the investment into several logical scope items, while prioritising the delivery order by focusing on the highest value add first. These different scope items are as follows:

- Change & Project Management
- Data and Integration Design
- Product Selection
- Project Cost Management (ERP)
- Schedule Management
- IPM Cost Management
- Data Cleanse

The investment is expected to deliver the core capabilities by the end of RIIO-T2, with additional capabilities being delivered in early RIIO-T3 as well as enhancing the core functionality through continuous improvement. A core programme team will consist of both internal and external resources support by the relevant business SMEs.

# System and Network Planning

## Project Definition and Justification Paper

## Contents

# 2    Executive Summary

SSEN Transmission's primary function is to provide a safe and reliable supply of electricity to the communities it serves. We play a critical role in the transition to a low carbon future, developing, building, maintaining, and operating a network for Net Zero. It is vital to the UK Net Zero ambitions as it transports large quantities of clean, green, and renewable power over a quarter of the UK land mass across some of its most challenging terrain.

This network supports both the UK and Scottish Governments' Net Zero emissions targets whilst meeting the needs and expectations of stakeholders. With the region home to some of the UK's greatest resources of renewable power, our business has a critical role to play in the transition to a low carbon future, connecting more renewable energy, and transporting it across the country.

The impact of delivering Net Zero will be substantial, and significant, on our network and our business. We are already seeing unprecedented growth in the number of connection requests. Further, the number and size of capital projects that we will need to deliver on an annual basis between now and 2030 is more than double the largest year we had in the RIIO-T1 period. Now separated from SSEN Distribution, our business needs to grow in capacity and capability to meet the demands that are placed on us. Technology investment, through our Digital Programme, is key to that success. This is both in terms of building the platforms and capabilities to enable our business to operate more effectively, and in new digitally enabled ways, but, also, through the liberation of data and exploitation of information in day-to-day business decision making.

Our Digital Strategy sets out our vision to be a more digitalised business. Our Business Planning and Commercial (BPC) directorate (which includes functions such as System Planning and Investment, System Performance, and Regulatory Reporting) has identified areas for business improvement and new opportunities to deliver business benefit. These benefits drive efficiencies, enable the Acceleration of Strategic Transmission Investment (ASTI), and aim to respond to stakeholders quicker and more accurately. Collectively, the impact of these benefits all has direct correlation to benefits for the end consumer. Moreover, because of gained efficiencies, and ability to focus on high value add work, the outcomes also drive employee satisfaction, which itself is also a benefit.

Our RIIO-T2 Business Plan set out four strategic themes. This investment aligns with the "Sector Leading Efficiency" and "Safe and Secure Network Operation" themes and the measurable goals of "Transport the renewable electricity that powers 10 million homes" and "£100 million in efficiency savings from innovation".

Our proposed investments fall into two distinct groups. Five investments will be in our System Planning & Investment and System Performance functions. We will be investing to centralise and integrate data with the intention to use it more effectively with better quality across our modelling and system performance efforts. Additionally, we will enhance our modelling capabilities by implementing functionalities in our core systems and increasing the speed of processing by investing in High Performance Compute.

The remaining investment is in Regulatory Reporting (RRP). Given anticipated changes to digitise RRP at industry level, and internal ambitions to make RRP more streamlined, we intend to invest in strategy and architecture work, looking at key reports, and seeing how the end-to-end process of creating, verifying, and providing the reports can be enhance through digital exploitation.

The total Investments requested is £4.47 million. Table 19: System and Networks Planning cost breakdown summarises the funding requested.

Table 19: System and Networks Planning cost breakdown (2018/19 Prices)

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT Capex | █ | █ | █ | █ | █ | █ |
| Business Support Costs IT Opex | █ | █ | █ | █ | █ | █ |
| Total Investment | █ | █ | █ | █ | █ | £4.47m |

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# 3 Project Summary

## 3.1 Background

To achieve Net Zero we must address the increased growth in generator and demand connections, complex interrelated portfolio of projects, and the need to integrate new technologies such as offshore grids, Flexible AC Transmission Systems (FACTs), and HVDC systems, leading to complex interactions and system design challenges. We use multiple data points from multiple sources to perform our functions and address these challenges by improving our data collection, interpretation, organisation, and feeding into the systems.

At this point, our architecture for network modelling needs revising, so that we can remove duplication, create more rationalisation, and ensure we develop the functionalities that are required to perform our role efficiently and effectively. To run more complex models and with more frequency (more scenarios, more sensitivity analysis), we need to increase the computing power that underpins our systems.

The above trends and challenges directly impact the way we do work in System Planning and Investment and System Performance functions. Through engagement with stakeholders, assessment of internal capabilities, and a review of technology trends, we have identified initiatives that allow us to make short- and medium-term improvements and set foundations that enable our future growth.

Our Business Planning and Commercial directorate is also accountable for SSEN Transmission's Regulatory Reporting. In this area, we have not applied the potential of Digital to streamline the collection and verification of data and make the creation of reports more efficient, with the ability to provide traceability easier. As such, the time and effort we take to create and verify our reports needs to improve. Our colleagues would like to see more centralisation of data, more application of automated capability to self-verify data, at point of collection, and use of Digital reporting capabilities to produce reports.

## 3.2 Rationale

We have provided our rationale separately and in two groups. These are System Planning and System Performance, and Regulatory Reporting.

### 3.2.1 System Planning and System Performance

Given the context in the energy landscape, and the outlook on the work we must do, we recognise we need to:

- Develop enhanced network models to represent the complex behaviour of the renewable generation, storage, and demand on our network, and the network upgrades that are required to accommodate them.
- Use these enhanced models to investigate more scenarios and sensitivities in optioneering, so we can identify the best investment strategies and opportunities to improve the efficiency of project delivery and system reliability for the benefit of our customers.
- Respond to an increased volume of requests (e.g., connections), both more efficiently, and, with a reduced response time.
- Provide more network data points to external stakeholders.
- Enhance our processes and technology to manage the increased work load we anticipate.

These objectives mean we need to:

- Use external data in more variety and volume (external to SSEN Transmission) and ingest these into our modelling systems, leading to increased modelling complexity but enhanced results.
- Use internal data more efficiently, and, to the greatest possible extent, do so in an automated and integrated manner, leading to more comprehensive hand-offs, which allow downstream functions to perform their activities more effectively. Equally, the integration will introduce more automation, removing errors, and creating efficiencies.
- Rationalise and upgrade our network modelling systems and tools and use the latest enhanced technology through relevant enhancements and upgrades.
- Increase computational power and the speed to meet increased demands on modelling outputs, such as modelling more scenarios and considering more sensitivities.
- Build the foundation to share appropriate model and network data with external stakeholders, in line with open data platform obligations and ambitions.

### 3.2.2 Regulatory Reporting

Our Business Planning and Commercial directorate is accountable for the creation and business validation of Regulatory Reporting. We foresee future changes in how Regulatory Reporting will be managed at an industry level, with ambitions to both digitalise the process, and increase transparency.

Our objective is to achieve a leaner internal process for report creation and simpler verification and validation of data. This means full end-to-end traceability of data, the ability to analyse cause and effect, and automation of the steps that create the reports.

Given the volume of the data inputs involved in RRP and the complexity inherent within it, we are intending to start with developing a strategy. This activity will identify key reports that are suitable candidates for transformation. We will then assess the end-to-end process and architect the data models, processes, and the system changes that transform the creation of the reports, achieving the objectives we have outlined above.

This exercise has two immediate benefits. First, it provides us with an implementation roadmap for RIIO-T3 investments. Second, it gives us a template approach to analyse other reports, leading to a scaled transformation in RIIO-T3. We believe undertaking this investment at the end of RIIO-T2 is fitting. This is driven by three factors:

1. We are giving time to align with other industry parties, including Ofgem to understand future requirements better.
2. We gain the ability to learn from others (e.g., Electricity and Gas Distribution) who have similar objectives.
3. We can ensure some of our data investments in RIIO-T2 have been realised to inform our activities more appropriately.

## 3.3 Alignment to our RIIO-T2 Business Plan

In our RIIO-T2 business plan, we outlined five business goals and four strategic themes. In Table 20 below, we show that the goals and outcomes we have identified for our projects in this investment plan align with the business goals we have set in our RIIO-T2 plan. This investment supports the delivery of the "Sector Leading Efficiency" and "Safe and Secure Network Operation" themes in our business plan.

**Table 20: System and Networks Planning Alignment to goals**

| RIIO – T2 Business Plan | Commitment | Alignment | Investment delivers |
|---|---|---|---|
| **Transport the renewable electricity that powers 10 million homes** | Our RIIO-T2 Certain View will deliver an electricity network with the capacity and flexibility to accommodate 10 GW of renewable generation in the north of Scotland by 2026. | High | Enhanced modelling and planning capabilities provide us with more optioneering and meet network requirements. This better prepares the future of the network to absorb the additional generation we foresee, noting that our initial target of 10GW is going to increase. |
| **Aim for 100% transmission network reliability for homes and business** | By investing in new technology and ways of working, when cost effective for customers to do so, we will strive for 100% transmission network reliability for homes and businesses by 2026. | High | Better use of data will lead to an enhanced analysis of network requirements and performance, allowing identification (in more proactive manner) the refurbishment and reinforcement needs of the network, and providing better insight for more accurate scoping of investments. |
| **Every connection delivered on time** | By 2026, we will provide every network connection, tailored to meet our customers' needs, on time, on budget and to our customers' satisfaction. | High | Our investments are aimed at providing information optioneering and analysis to our colleagues internally in a faster and more effective manner. This includes the options we will deliver to customers as part of the connection process, which will lead to speedier response in the application process, making the process easier and more enhanced for customers. It also provides our customer with better decision-making options, allowing them to move faster with their investments. |
| **One third reduction in our greenhouse gas emission** | Reduce the controllable greenhouse gas emissions from our own operations by 33% by 2026, consistent with a Net Zero emissions pathway. | Medium | Through our investments we will generate additional data and set the foundation to produce portfolio views of our projects. This further enables our assessment of scope 1 and 2 carbon production and leads to our ability to reduce carbon footprint. |
| **£100 million in efficiency savings from Innovation** | Our RIIO-T2 Certain View includes £100 million of cost savings through productivity and increased innovation, and we aim to go further to save more. | High | Our investment is aimed at incorporating more automation into our processes. The better use of and sharing of internal data, will also mean our overall delivery and response processes can become more streamlined, leading to efficiencies. |

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## 3.4    Alignment to our strategic investment drivers

Our strategic investment drivers have two clear components: Business and Technology. The business drivers reflect the changing priorities of our customers, stakeholders, and consumers, and considers the changes we need to make to our business because of external factors.

The technology dimensions consider the age of our technology assets, the need to set up foundations for future growth of the IT and our business, better use of data, and the innovation opportunities that technology will bring (Figure 1.).

As the transmission network expands and its complexity grows, its needs become more complicated such as to continuously study the network, produce multiple models, include different energy scenarios, and present different investment options and technologies (e.g., HVDC and FACTs).

At the same time, the function to assure the operations and risks to the network increases and the regulatory reporting about the network becomes more difficult.

On the other hand, opportunities to leverage data and use cloud computing to increase computational power present unique opportunities and should be leveraged for positive impact. Equally, the evolution of better functionality and the development of new product sets can lead to enhanced modelling capabilities and must be considered.

The presentation of new challenges, increased complexity of work due to volume and variety, and access to better technology means that we have clear opportunities to make the investments we are presenting in this paper. These investments clearly align with the business and technology drivers we have outlined in the figure above as outlined in Table 21.
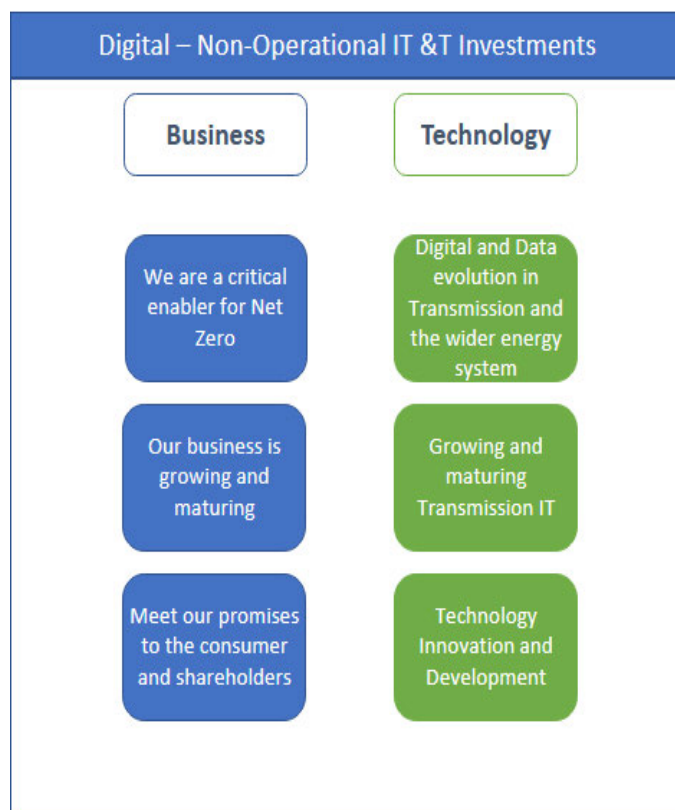
Table 21: Alignment to our strategic drivers



Figure 5 - Digital Drivers

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| Type | Business Drivers | Alignment Level | Justification |
|------|-----------------|-----------------|---------------|
| **Business Drivers** | We are a critical enabler for Net Zero. | High | Our investments will more effectively create the plans and options that prepares the network for Net Zero, identifying priority areas for investment. |
| | Our business is growing and maturing. | High | We are improving our technologies, processes, and skills because of these investments in line with the future demands on our business. These consider increased volume of connections, better information sharing about network, and more volume of analysis as required by the increasing demands on the network. |
| | To meet our promises to the consumer and stakeholder. | High | Our stakeholders want us to meet the needs for a greener future. We are investing our planning and modelling capabilities to consider their requirements and share transparent information about how we have considered them in our planning decisions and assumptions more readily and easily. |
| **Technology Drivers** | The Digital and Data evolution in Transmission and the wider energy system. | High | We are investing to use more data sets. We are investing in the integration of our systems. This provides us with the right operational backbone, making data flow easily within systems, and building the foundation to leverage future technologies for better insight and more customer / stakeholder service. |
| | To grow and mature SSEN Transmission IT. | High | As our IT capabilities grow, we are setting up independent systems, improving the age of our IT assets, and ensuring we are in line with the latest products and trends within the market. |
| | To have Technology Innovation and Development. | High | We are following a cloud first strategy, using the latest product sets in our investment domains, and working with our partners to ensure we include the latest innovations. |

## 3.5 Alignment to re-opener guidance

Table 22 below sets out how our submission meets the requirements of our licence and the Re-Opener guidance.

**Table 22: Licence and Guidance Requirements for Submission**

| Licence and Guidance Requirement | Strategy & Investment Summary | This Document |
|---|---|---|
| Clear statement on needs case, demonstrating alignment with the overall business strategy and commitments. Including the organisational context, strategy, and business alignment | Section 4 | |
| Description of overall strategy and current operations covering non-operational IT & T capex investments, including description of IT Strategy, the role of IT Strategy in supporting the business, and overall IT Plan dependencies | Section 4.4<br>Section 4.5 | |
| Demonstration of needs case and problem statement, covering the capabilities that need to be enhanced and/or risks that need to be addressed and/or opportunities addressed | Section 4 | Section 3.2<br>Section 4 |
| Explanation of options assessment, including the methodology used | | Section 5 |
| Clear description of preferred option, covering the following: | | |
| • A description of the proposed project including scope and objectives of the proposed option and how the proposed option will either improve operational capability, support meeting business objectives, or reduce risk / create opportunities | | Section 5.1 |
| • A detailed description of project delivery plans, including project schedule, governance, and KPIs to monitor the progress of the project | Section 6 | Section 7 |
| Breakdown and Justification of costs, including the following: | | |
| • Justification for the need and amount of allowance required per project, considering the requirements and capabilities being delivered | | Section 8.2 |
| • An overall portfolio cost for the proposed Re-Openers, and delineation of costs per project | Section 7 | Section 8 |

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| | | |
|---|---|---|
| • Commitment to the use of good practice governance, including investment management and controls | Section 6.4 | |
| • Inclusion of uncertainty and risk costing | | Section 8.4 |
| Clarity on the purpose, scope, and dependencies of the project | | Section 3.1<br>Section 7.2 |
| A description of the proposed solution at an appropriate level of detail | | Section 6 |
| Quality assurance approach for the project i.e., for testing and acceptance | Section 6.7 | Section 8.4 |
| • A costed plan for delivery, in line with recognised good practice | | Section 8<br>Section 8.2 |
| • Project Resource breakdown showing costs per resource type across defined cost categories | | Section 7.4 |

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# 4    Individual Projects

We have identified six projects that make up this investment. Five of these projects are within our System Planning and Investment functions. We have also identified an investment for RRP. These investments aim to create efficiencies and increase the effectiveness of our modelling and set the foundation for better reporting in RRP. We have listed these projects in Section 4 and show their scope, outcomes, and mapping to benefits below.

## 4.1    Scope of proposed projects

Table 23 (below) summarises the description and the scope of the System and Network Planning programme of work.

**Table 23: Summary of project scope**

| Project Title | Scope |
|---|---|
| **Data Architecture and Design** | The Data Architecture Project is a pre-requisite for the other projects in this investment. The objective is to re-assess the data models that underpin Investment Planning and System Performance business capabilities, taking into considerations the future growth in volume and complexity. We will take a wider perspective by also considering the data requirements and dependencies of other functions, such as Asset Management and Customer Service Teams. The outcomes we enable us to:<br><br>• Understand the data models and interdependencies between systems,<br><br>• Scope the databases required to feed data into and store models out of our system modelling tools, and<br><br>• Establish rules and standards that define the quality of required and produced data, outlining accountabilities, and handing these over to Data Governance initiatives.<br><br>This project will provide a clear view of how data will flow to and from related systems. It is important to have this view as we scope and create the designs within the initiatives below. |
| **Integrated Modelling Data Platforms** | SSEN Transmission has already stood up a business wide Integrated Data Platform. In this project:<br><br>• We will be standing up appropriate databases within the Integrated Data Platform for the consumption of downstream systems of System Planning & Investment and System Performance.<br><br>• In alignment with the Data Architecture, data will either be manually fed or, where appropriate, automatically fed into these databases.<br><br>• We will also create databases that store the results of our analysis. This way we can reuse models and better manage change amongst them.<br><br>• Our business colleagues in System Planning and Investment and System Performance, have unique and niche skills and can verify, manipulate, and process the data they are given. We will provide super user accesses and capabilities to this group and provide them with functionality so that they can best perform their verification activities and prepare the data sets and parameters they wish to use within the modelling and performance tools.<br><br>Organising and centralising the data, so that it is verified, manipulated, and better prepared for consumption in modelling allows us to better control the input to downstream systems and make data consumption by these systems more streamlined and efficient. |
| **High Performance Compute** | SSEN Transmission needs more computing power to increase our ability to unlock more complex modelling. As we anticipate that the size of data consumption will increase, and because we want to be able to turn out more analysis as demanded by other SSE directorates and stakeholders, this project scope will be:<br><br>• Scoping the optimum infrastructure, in-line with the system architecture used for System Planning and Investment and System Performance to implement High Performance Compute and meet non-functional and performance requirements.<br><br>• To design and build the infrastructure, and implement in a phased manner, in line with the system developments from our Network Modelling Systems and Tools project. |

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|---|---|
| **Network Modelling Systems and Tools** | DIgSILENT PowerFactory is a leading power system analysis software application for use in analysing generation, transmission, distribution, and industrial systems. It will be the core system for our Planning & Investment and System Performance capability. We have already deployed PowerFactory, but with only part of the functionality we require. However, our current tool also includes other systems, such as PSSE (Power System Simulator for Engineering – Siemens) and PSCAD. In this project, we will:

• Define the architecture for the future of the Planning & Investment and System Performance capability, giving us the foundation and allowing us to evolve into and beyond RIIO-T3. This architecture will consider where to deploy capabilities, establish integration, and system enhancements and developments. The output should be a rationalised target architecture that is efficient and cost effective to operate and own.

• We will define the use cases that enhance our functionalities within the architecture. We foresee that the majority will be in PowerFactory, but we may consider development in other systems, or additions of new ones if appropriate.

• Finally, this project will define a roadmap that is to be implemented in RIIO-T2. We will concentrate on the foundational components of the designed architecture, deploying functionalities that provide early wins, meet urgent requirements, but also set the platform for future growth. |
| **Power Quality Monitoring Systems** | The Power Quality dashboard is a tool to help the System Performance and the Transmission Control Centre (TCC) teams to check the network's compliance with relevant Power Quality standards, identify trends, and baseline the systems performance throughout the network, as well as supporting the customer connection journey.

• Currently, data is collected from two different vendor platforms with a third vendor platform coming into operation soon. The scope of this project is to store all Power Quality data in a single database that is vendor agnostic and device independent. The new database should be a standard type that can easily be queried for advanced use of the data. For quick access to the data a simple user front-end will let a user extract data in a standardised format.

• The scope of the project also includes making improvements in the reporting artefacts, adding more insight and analysis, and allowing for better visualisation of the information provided in this respect. Where appropriate, we wish for these reports and insight to be shared more readily within SSEN Transmission and externally with stakeholders to facilitate better decision making. |
| **RRP Optimisation Strategy** | We recognise the external ambitions to digitise the Regulatory Reporting Pack (RRP) and to making improvements internally that allow for more effective and efficient ways to verify information and produce reports.

The scope of the strategy exercise is as follows:

• Identify key reports that qualify for end-to-end transformation.

• By analysing the end-to-end production life cycle of the reports, analyse the data, process, technology, and skill requirements and define improvements that result into end-to-end transformation of these reports.

• Provide a roadmap of the implementation of improvements, considering dependencies and inflight projects elsewhere, whilst factoring in the requirements set by the industry as part of overall digitisation of RRP. |

## 4.2    Outcomes and Benefits

We have identified several benefit drivers that are associated with our projects and their outcomes. These are as follows:

- **Efficiency and Cost to Consumer**: These are drivers associated with increasing output, speeding up delivery processes, and doing so with less effort. Efficiency drivers can either increase the output or reduce the cost of delivery. The net impact is a better cost to both the consumer and the business. Through our investments, we are also meeting other customer requirements, such as meeting deadlines, optimising projects to reduce impacts on outages, and improving system reliability. These will all have efficiency benefits that impact the end consumer.
- **Enabling and Expediting Net Zero**: Benefits in this category associate with increasing both SSEN Transmission's own capabilities to make more effective decisions, producing plans and designs to enable, and expedite, the realisation of Net Zero. The capability allows us to prioritise and focus on key aspect of design and accelerate the strategic changes within the network. The capacity will allow us to be able to respond to complex design decisions faster and with more accuracy and finding variety of different solutions that accelerate our network transformation. This capability will enhance business and technology capabilities to enable more complex analysis, investigate more options, and use better data sets, in turn leading to better insight that results in plans and design with reduced risk and more robust assumptions. Such capabilities can also provide more information to external stakeholders, allowing them to challenge plans, produce more innovative ideas and support other industry bodies in their efforts to produce more effective outcomes for Net Zero.
- **Increasing Reliability and Resilience**: Capabilities we intend to create or enhance will lead to more concrete examples about our network models and plans. As we are enhancing our modelling capabilities, consequently, we will produce better and speedier recommendations to maintain high reliability as our network expands. Further, it will strengthen and expand the network in a manner that increases its resilience.
- **Better for our Employees**: The capabilities and functionalities that we implement will make work more efficient for our own staff, giving them extra time to focus on more complex decisions, and activities that extends their own personal capabilities, but also that of the SSEN Transmission business. This will inevitably lead to a more satisfying workplace, as we create a workplace that is more efficient, but also leaves room for personal growth.

Table 24 (below) articulates the key outcomes of each project. Table 25 shows which benefits drivers are highly enabled by the projects.

Table 24: Business outcomes

| Project | Business Outcome |
|---|---|
| **Data Architecture** | • Clear understanding of the data requirements within System Planning & Investment and System Performance teams<br><br>• Visual articulation of data flows, allowing to understand downstream requirements, and manage dependencies<br><br>• Ability to set rules and quality standards and integrate with Data Governance<br><br>• Prerequisite for the scoping and requirements gathering of concurrent projects |
| **Building Integrated Network Planning Data Bases** | • Setting up the databases for the System Planning and Investment Team, and the System Performance teams<br><br>• Provision of super user and functional capability to these teams to verify and process data prior to consumption of modelling tools<br><br>• Ability to store model data for re use and better change and configuration management |
| **High-Performance Compute** | • Design and implementation of an infrastructure that meets the performance and non-functional requirements of the System Planning & Investment and Performance solution architecture |
| **Network Modelling Systems and Tools** | • Defining the architecture for the System Planning & Investment and System Performance set of solutions and tools<br><br>• Defining the use cases to develop enhanced functionalities and integration of systems to arrive at more efficiency and more output from modelling<br><br>• Creation of a roadmap and implementation of the steps within T2 |
| **Power Quality Monitoring System** | • Centralising the data used for Power Quality Monitoring to enable easier access to the data<br><br>• Creation of enhanced visualisation and insight within reports<br><br>• Broader sharing of insight and output both internally and externally |
| **RRP Optimisation Strategy** | • Scoping the end-to-end optimisation of key reports with a view to digitising the creation and verification of these reports<br><br>• Creating an approach for internal capabilities to use to scope further optimisation |

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**Table 25 – Benefits of investment**

| Project | Benefit Drivers | | | | Justification |
|---|---|---|---|---|---|
| | Efficiency and Cost to Consumer | Enabling and Expediting Net Zero | Increasing Reliability and Resilience | Better for our Employees | |
| **Data Architecture** | High | High | High | High | By providing the Data Architecture, we are providing the prerequisite for the projects below, de-risking delivery, and providing a visual tool for future scoping of projects and better management of data. |
| **Building Integrated Network Planning Data Bases** | High | High | Medium to High | High | By provision of appropriate data models, and ensuring key data is in right systems, with right quality, we remove improve time it takes to find, correct, and enter data into central databases. Aggregating the data into central databases, increases our ability to create more insight, consume data faster, and, where required, apply automation to verify data. These will enable us to provide better insights for Enabling the Net Zero and Create Efficiencies for ourselves and consumers. |
| **High Performance Compute** | High | Medium | Medium | High | High Performance Compute will make modelling and simulations faster. We envisage this computation power will reduce the speed of modelling, but could lead into creation of more outputs as a result. |
| **Network Modelling Systems and Tools** | High | High | High | High | The additional functionality we will incorporate into our modelling tools will enhance our modelling outputs and their frequency. These will enable us to build more insight and scenarios as we plan for our future network. This will have four benefits of enabling Net Zero, making optimised decisions for investments (hence, saving money for the consumer), and giving ourselves more efficiencies. |

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| **Quality Monitoring Systems (QMS)** | High | High | High | Medium | With the expansion of our network, and the anticipation we have for the increase of volume for connection offers, we will enhance our processes, functionalities, and data consumption in QMS activities. These will allow us to provide better insight into our connections offer process, but also allow our operations team to perform their work more effectively. The combination of the improvements we anticipate contribute to enabling network as we better serve connection offers, will provide better insight for efficiency operations, as we identify key interventions early and leads to a higher reliability of network. |
| **RRP Optimisation Strategy** | High | Medium | Low | High | We intend to identify key reports that are beneficial to the control of our outcomes and control by the regulator and aim to improve their data provision, granularity for assessment, and verification. This will allow us to justify our trends and efforts and to enter better dialogue with our stakeholders and internal colleagues. The impact of efficiencies will also be favourable for our own team, as they will be able to focus more activities. |

Table 26 below explains the distinct levels of possible benefits.

Table 26: Categorisation of benefit drivers

| Benefit drivers | |
|---|---|
| **High** | The project will have many use cases that directly impact and realise benefits within this category. |
| **Medium** | The project will have some use cases that directly impact and realise benefits within this category. |
| **Low** | The project will not have many use cases that directly impact and realise benefits within this category. |

# 5    Optioneering & Preferred Option

## 5.1    Method of evaluation

In approaching our optioneering, we have considered three scenarios. These are as follows:

1. **Do Nothing**: This means not attempting to carry out the projects identified in these investment paper and continue with business as usual. This option is only valid if the risks and costs of doing the projects significantly outweigh the benefits, and there is no sense of urgency for their outcomes.
2. **Defer to RIIO-T3**: These options consider a scenario whereby the benefits and rewards from the outcomes of the projects are justified. However, there is no urgency to achieving the project outcomes now, and their overall impact will be greater if these projects are delayed and started in RIIO-T3. One example driver for accepting this scenario is if there are major business or industry dependencies that justify a later start.
3. **Complete in the remaining time for RIIO-T2**: This is the scenario where we will use the remainder of RIIO-T2 to implement the projects. This scenario is valid if the benefits and rewards from the outcomes justify the costs and risks associated with doing the projects and that there is a sense of urgency associated with them.

In Section 3.2, we have outlined our analysis for each project and why we have considered them for RIIO-T2.

## 5.2    Options Considered

The following options in Table 27 were considered

Table 27: Options considered

| Option | Justification |
|---|---|
| Defer to RIIO-T3 | We have disregarded delaying until RIIO-T3 for the following reasons:<br>• Any delays would not allow us to enable the Acceleration of the Strategic Transmission Investment (ASTI).<br>• It will be too late to defer the projects until RIIO-T3, as most of the analysis and work required and enabled by these initiatives will need to start in RIIO-T2.<br>• There are interdependencies between projects, and starting part of a functionality now, whilst deferring others, or delaying a project, will mean incomplete delivery and inefficiency to delivery.<br>• By doing the proposed projects, we are enhancing our foundational capabilities for future growth. We anticipate that, within T3, we need to utilise further pointed digital solutions that require these foundations to be in place.<br>• The investments we propose are required to enable the Net Zero challenges and current ambitions of the electricity industry. Deferring them to T3 will be too late for the requirements set by this context. |
| Do within RIIO-T2 | We believe that the time to deliver these initiatives in RIIO-T2 is correct. Aside from the reasons we have outlined in the other two scenarios, we would also consider:<br>• We will continue to build on the RIIO-T1 capabilities we have put in place |

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| | • Some of the other already accepted initiatives within our investment plan, for example Pre-Connection Maps, Customer CRM, will be better served and have dependencies from the initiatives we have outlined here. These dependent investments are all in RIIO-T2. |
| **Do Nothing** | We disregard this option as the ambitions for 2030 have increased the volume of work and complexity of it. Doing nothing will: <br><br> • Not allow us to enable the Acceleration of Strategic Transmission Investments, <br><br> • Continue not realise efficiencies that can be achieved, <br><br> • Continue to make us unable to respond with adequate speed to the demands from our customers and stakeholders, <br><br> • Mean we are unable to provide our employees with better experience, and <br><br> • Restrict us from leveraging the latest technology in this space, which otherwise would provide us with extended capabilities, innovation, and wider internal and external integrations. |

Based on the justifications above, we have considered that justification of these projects to start within RIIO-T2 is valid.

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# 6    Approach

## 6.1    Delivery Methodology

Within SSEN Transmission, we have methodologies for waterfall and agile delivery. However, for the delivery of these investments, given our ability to define requirements up front, and our ability to set the right roadmap, we believe a waterfall methodology is the most suitable whereby we define releases, and the deliver these releases through our waterfall methods (Figure 6: Waterfall Lite method).

**Figure 6: Waterfall Lite method**
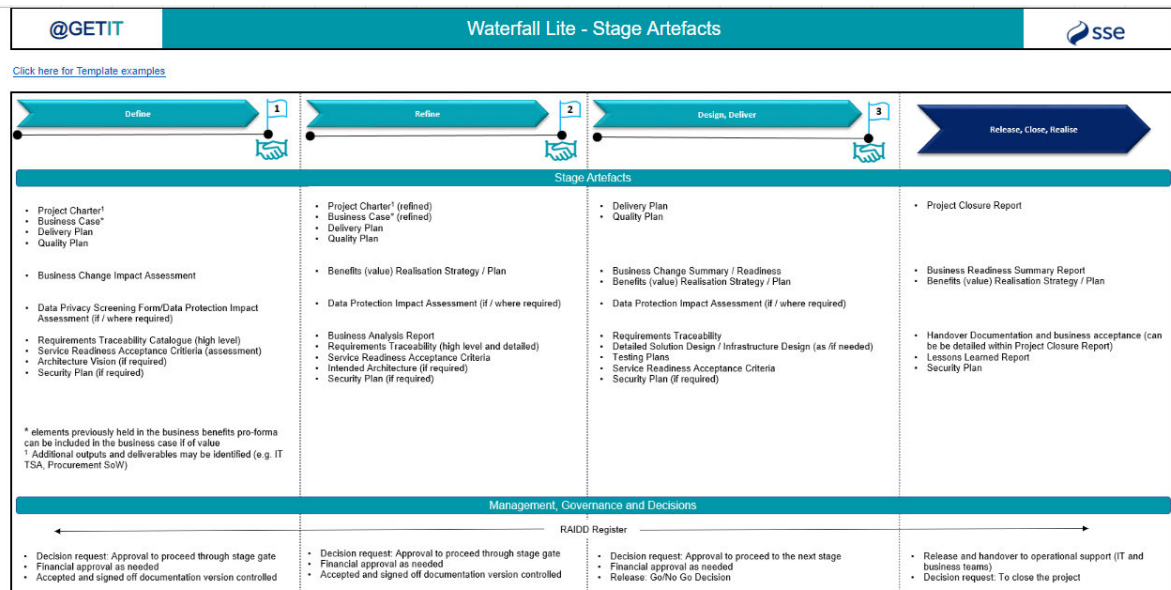


Our methodology considers key elements of a successful delivery and in it will have workstreams of activity involving:

- Project Management
- Change Management
- Data Architecture and Data Management
- Solution Design and Development
- Testing
- Deployment
- Support Transition

For each one of these workstreams of activities, our methodology outlines specific tasks and provides accelerators so that we can mobilise quickly and more effectively manage our own teams and our partners.

The way we intend to organise ourselves is to create one Value Stream of work within Business Planning and Commercial and, subsequently, define a series of projects within the programme. So, we can both define and manage dependencies and provide maximum outcome, we will sequence and plan projects in a manner that does not create business constraint but does manage inbound and outbound dependencies.

During the delivery, we will be working hand in hand with our business teams. Our change management framework includes the role of the Business Implementation Manager (BIM). The BIM

is a dedicated business individual to the project (sometimes on full time basis), who is accountable for ensuring requirements are valid, that business input to the project is realised, and the right level of project to business engagement is achieved. The BIM will also ensure that the right users are available for training and provides the project with timely feedback. This is important as we intend to achieve high levels of adoption. The BIM can manage any external customer interactions we may have and be a conduit to our external stakeholders, so that if there are any requirements to be considered on their behalf, then to do so in an effective manner.

## 6.2 Defining and sequencing projects

Our sequencing of projects is designed so that we can:

- Achieve maximum value and outcome for our stakeholders and business
  - Manage dependencies – both internal to this programme and external to it
  - Manage resource constraints from the business

You will see the sequence of our projects in our plans, the justification for which is explained in Table 28 below.

Table 28: Sequencing of projects

| Sequence | Projects | Description |
|---|---|---|
| 1 | Data Architecture | This project will carry out the design of the Data Architecture and solution setting out the underpinning data models and requirements for the rest of the projects. This de-risks their delivery and provides a foundational capability to manage and scope data in the future. |
| 2 | Build Databases | This project will build the databases in a phased manner, beginning with priority ones. The priorities are set by the availability of data and the urgency set out by the architecture. The databases will allow for functionalities to be rolled out and used. |
| 2 | High Performance Compute | In parallel with our data work, we will commence the start of High-Performance Compute. This will give early benefits in speeding up some of the current modelling we do, but also set the foundation as we ramp up further modelling capabilities. |
| 3 | Network Modelling | As Data Architecture starts, we will develop the design and architecture of the Network Modelling Solutions. We will create a roadmap and backlog of use cases that enhance functionality and establish the required integration. The roadmap is aimed at rationalising our solution set. In alignment with our High Performance Compute and Database Build, we will then deploy the use cases identified in the roadmap. |
| 4 | Power Quality Monitoring (PQM) | As we start sequence 3, we will ramp up PQM. By starting this work after building the databases and scoping the Network Modelling, we will have better defined the scope and requirements and managed any dependencies. |
| 5 | RRP Optimisation Strategy | RRP Optimisation Strategy is separated from sequences one to four. Our current plan is to commence this work in last year of RIIO-T2 to allow other data initiatives within SSEN Transmission to complete and better engage with the industry to understand digitisation requirements. |

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## 6.3    Technology Considerations

Our technology considerations fall into the following topics:

- **Data Sources**: We have two types of data sources – data that exists in our core systems, such as Asset Management (Maximo), or data that is in a non-digitised format. For the former, we will pull data out of those systems through our Integrated Data Platform. For the latter (data that is not in a digitised format), we will be digitising this data in two ways. Where needed, we will scan documents and keep the digitised format in a centralised repository. Where applicable, and feasible, we will enter data into core systems to keep a single repository. We will be using our existing technologies and do not anticipate that we will need to add anything further in our architecture, albeit we will need to implement new use cases.
- **Data Input, Verification, Storage, and Integration**: Our Integrated Data Platform, which we have already established as part of our RIIO-T2 investment, will be the technology platform we leverage in this solution.
- **Application Integration**: We foresee some level of integration in our architecture. When investing in integrations, we will aim to leverage integration capabilities that exist within applications and avoid customisation as much as possible. An additional investment is requested for a strategic Application Integration Platform, which will be implemented towards the end of RIIO-T2.
- **Workflow and Process Automation**: As part of our IT enablement value stream, we are building capabilities using Power Apps to implement Workflow Automation. In absence of Workflow Automation already existing in our core systems, we will leverage these capabilities.
- **High Performance Compute**: We intend to consider multiple options in this space. Virtual Machines are amongst these, but, at the time of writing of this investment paper, our team are working on considering other options.
- **Modelling Functionality**: PowerFactory (PF) is our strategic systems for network modelling. We intend to create a rationalised architecture with PF at the core and to migrate into it, including functionality that resides in other systems.
- **SharePoint and External Data Sharing**: We have an existing SharePoint, which we will utilise to share information internally. Where we will share data externally, we will utilise the open data platform technology being implemented in out Enabling Technologies value stream.

## 6.4    Governance

We already have a well-defined robust governance structure for our Digital Programme in SSEN Transmission. This investment will sit within the Network Planning value stream, which is already established. Please see Section 6.4 of the "RIIO-T2 Re-Opener – Strategy and Investment Summary" document for more information on the programme governance.

## 6.5    Procurement

We will be using existing procurement processes, which are designed to meet our regulatory requirements. These procurement processes work closely with project and key internal stakeholders to ensure the right level of expertise is brought forward for the scope and requirements of the project. We use Pre-Qualification processes to ensure those invited to our procurement have the right capabilities.

In parallel with this, our procurement teams utilise processes that oversee the performance of our partners. This ensures our partners are meeting both their quality and commercial obligations.

## 6.6    Change Management

For business change and readiness, we will utilise our Change Management Framework. This framework introduces key roles and guides the project on how to assess and manage the impact of the change on the business and execute user enablement and engagement. Our approach to business change management is to engage with key internal stakeholders early so that the case of change is collaboratively defined and managed through the life cycle of the project. Where the complexity of the project demands, and our internal capacities are not sufficient, we will procure the change management services needed from specialist partners and have considered this in our cost estimates. Our change framework is to ensure user readiness and a smooth path for the adoption of the solutions.

# 7    Plan

## 7.1    Delivery Timelines

The project timeline below (Figure 7) is based on delivering the key capabilities up front, but also considers both internal and external dependencies and the availability of business resources.

Given our objective to enable the Acceleration of Strategic Transmission Investment, we are starting with key enablers and upfront studies to mobilise and speed our plan. As such, we are starting with Architectural, Scoping and High-Level Design activities. We consider these important foundations are needed to support the benefits of Net Zero.

Figure 7: Delivery timeline
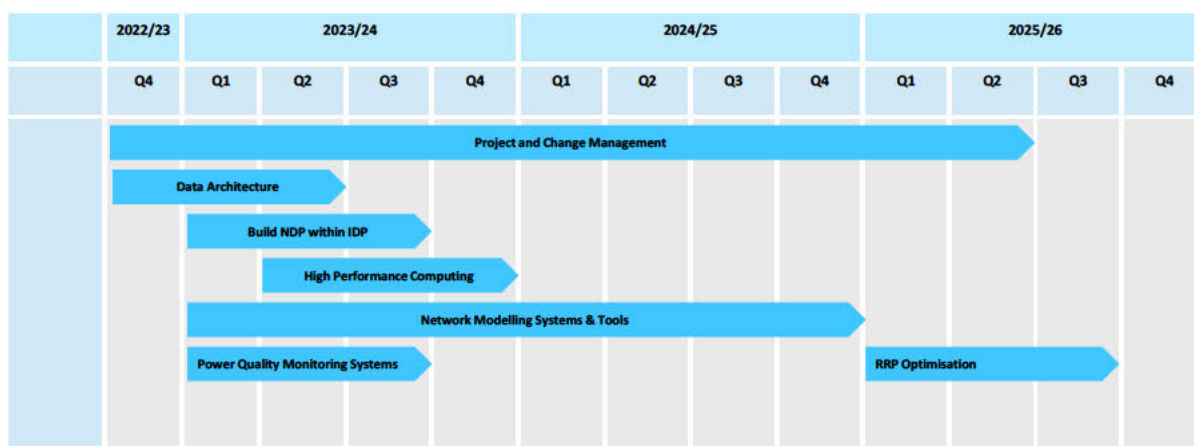


Based on the schedule above, the key milestones are (Table 29):

Table 29: Key milestones

| # | Project Milestone | Start | Finish | Duration |
|---|---|---|---|---|
| 1 | Data Architecture | Q4 2022/23 | Q2 2023/24 | 9 months |
| 2 | Building of Modelling Data Based in Integrated Data Platform | Q1 2023/24 | Q3 2023/24 | 9 months |
| 3 | Building High Performance Compute | Q2 2023/24 | Q4 2023/24 | 9 months |
| 4 | Network Modelling Systems and Tools | Q1 2023/24 | Q4 2024/25 | 24 months |
| 5 | System Power Quality Monitoring | Q1 2023/24 | Q3 2023/24 | 9 months |
| 6 | RRP Optimisation Strategy | Q1 2025/26 | Q3 2025/26 | 9 months |

## 7.2    Dependencies

The following dependencies have been identified for this programme (Table 30). We have indicated where these dependencies are from within SSEN Transmission, but outside of the programme of investments (other investments not here outlined), versus from dependencies external to SSEN Transmission all together.

**Table 30: Investment dependencies**

| Dep. ID | Dependency | Impact | Direction |
|---------|-----------|--------|-----------|
| D1 | Internal Resource Availability | If this is not available, then business capability development will be assumed, and projects based on IT understanding rather than clear business need. | Inbound |
| D2 | Progress of Asset Management and Customer Digital Programme work | If this is not available, it will have an impact on the schedule. | Inbound |
| D3 | Product and Partner Vendors timely start | If this is not available, then the project schedule will be delayed, and business value will be reduced. | Outbound |
| D4 | We are dependent on the Integrated Data Platform to be available and populated with relevant data | If this is not available, then the project delivery will take longer with increased cost. | Inbound |
| D5 | We are dependent on the Architecture team making a design decision on the platform for High Performance Compute | This is a critical path dependency for the High Performance Compute scope of work. | Inbound |
| D6 | For any external data sharing, we are dependent on the implementation of an Open Data Platform by the Enabling IT value stream | Minimal impact as external data sharing obligations could be achieved through other means if a platform were not available. | Inbound |

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## 7.3 Risks to the plan

We have identified the following as the top risks to our programme of work (Table 31).

Table 31: Risk to delivery of investment

| Risk | Impact | Probability | Mitigations |
|---|---|---|---|
| **Industry Changes**: Given the fluidity within the political and economic landscape, there are risks that external pressures might change the industry strategy, thus putting more short term demands that inevitably changes the digital strategy in this space. | High | Medium | We will be looking at an architecture that is flexible and scalable and we will link our digital initiatives with parts of the business strategy that is clear and more robust. Where possible, we will use Agile ways of delivery to create iterative developments and adjust requirements and solutions to minimise risk-of-regret solutions. |
| **Resource Availability**: We are currently operating in a high demand environment for key resources. Given this situation, it is possible that some key resourcing to face delays that impacts plans. | High | Low | We will use multiple channels for recruitment and will identify key partners who can provide short term services to fulfil capacity and capability shortages. We will also define our plans to ensure resource requirements are streamlined. |
| **Delivery Risks**: Given the level of complexity of scope, interdependencies, and functionality in these investments, there is a risk that delivery timelines maybe impacted due to unforeseen factors, delaying the provision of outcomes, and potentially impacting quality. | Medium | Medium | During development, we will identify complexities early and build appropriate contingencies into execution plans. We will engage with key partners and stakeholders to ensure detailed dependencies are captured, but also use partners and product owners appropriately to sequence and plan key parts of plan. |

## 7.4    Resourcing

The following resources are required to successfully deliver the portfolio of projects in this investment (Table 32).

Table 32: Resources and roles

| Resource | Internal/ External | Roles and Responsibilities |
|---|---|---|
| Programme and Project Manager | Internal | Lead the project and ensure it is delivering to the agreed timelines. Accountable for the end-to-end delivery. |
| Procurement and legal support | Internal | Responsible for communicating with vendors to buy, rent, or contract products and services needed to achieve project objectives. |
| Value Stream (VS) /Business SMEs | Internal | Provide guidance and oversight on the deliverables to ensure they meet requirements and expectations. Organise a business engagement forum to playback. |
| Change Lead | Internal | Manage the change process and execute the change plan working the business support. |
| Business Analyst | Internal | Gather the business, customer, and stakeholder requirements. |
| Data assurance and protection | Internal | Provide a framework to make sure that its data is available, usable, consistent, and secure. This includes creating data standards and processes that provide accountability to make sure data management is effective. |
| Change Manager | Internal | Manage all aspects of IT changes. They prioritize change requests, assess their impact, and accept or reject changes. |
| Change Analyst | Internal | Identify the impacts resulting from changes to people, process, systems, and culture. |
| Infrastructure Designer | Internal | Responsible for producing infrastructure technical designs to support the business in line with the organisations, technical strategy, and market developments. |
| Security Assurance | Internal | Responsible for processes aimed at ensuring individual system components can adequately protect themselves from attacks. |
| Testing | External | Conduct automated and manual tests to ensure the software created by developers is fit for purpose. |
| Developers | External | Design, program, build, deploy, and maintain software. |
| Transition Support | Internal | Support the business when it migrates from old system to new solution. |
| Solution Architect (IT) | Internal | Create the overall technical vision for a specific solution to a business problem. They design, describe, and manage the solution. |
| Data Architect | Internal | Encompass the design, development, and optimisation of the conceptual and logical data systems. |
| Others | N/A | Non-people costs related to the project. |

## 7.5    Confidence in our plan

Confidence in our proposed plan is high. We have several key assumptions, which, if not realised, can lead to risks or issues that adversely impact our plans. As stated in our risks and dependency sections, dependencies between projects, availability of business resources, management of the complexity of the project, provision of funding and dependencies with our partners are key dimensions that drive those assumptions.

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Our plans and estimates are produced by collaboration with SMEs, external consulting partners, and with a view of our experience in delivering similar projects. We have also taken guidance from our project delivery methodologies.

Our digital programme is in flight. This allows us to leverage from certain economies of scale and accelerators that are currently used projects within these investments. This gives more confidence to our plans and the realisation of the schedules we have proposed.

Finally, where needed, and based on the risks and assumptions we foresee, we have included contingencies. These are considered in our build and testing phases of work because there are complexities that could arise in these phases. We have also considered some contingency in our data cleanse activities. Our benchmark for such contingencies aligns with industry benchmarks and do not exceed unacceptable levels.

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# 8    Costs

## 8.1    Costing Approach & Cost Breakdown

This investment is made up of two different expenditures. Across the expenditure types (Table 33), we propose to spend £4,466,463. All costs are in 2018/19 price base.

Table 33: Project Cost Breakdown (2018/19 Price base, £m)

| Solution Part | 2022 - 2023 | 2023 - 2024 | 2024 - 2025 | 2025 - 2026 | Total |
|---|---|---|---|---|---|
| Data Arch and Readiness | ■ | ■ | ■ | ■ | ■ |
| Building NPDM within IDP | ■ | ■ | ■ | ■ | ■ |
| High Perform Compute | ■ | ■ | ■ | ■ | ■ |
| Power Factory and Modelling T | ■ | ■ | ■ | ■ | ■ |
| QMS | ■ | ■ | ■ | ■ | ■ |
| RRP Optimisation | ■ | ■ | ■ | ■ | ■ |
| License Costs | ■ | ■ | ■ | ■ | ■ |
| Hardware Costs | ■ | ■ | ■ | ■ | ■ |
| Support Costs | ■ | ■ | ■ | ■ | ■ |
| Total | ■ | ■ | ■ | ■ | £4.47m |

## 8.2    Cost Breakdown

Based on the size of the required team to deliver the capabilities required, the following resource costs are likely to result (as detailed in Table 34).

Table 34: Cost breakdown for required resources (2018/19 Price base, £m)

| Resource Type | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|
| SSEN T (Internal & Contingent Resource) | ■ | ■ | ■ | ■ | ■ |
| 3rd party services (Consulting/SI Services) | ■ | ■ | ■ | ■ | ■ |
| 3rd Party Services (Business Change and Readiness) | ■ | ■ | ■ | ■ | ■ |
| Software Procurement | | | ■ | ■ | |
| Hardware Procurement | ■ | ■ | ■ | ■ | |
| Software Maintenance | ■ | | | | |
| Hardware Maintenance | ■ | ■ | ■ | ■ | |
| Total | ■ | ■ | ■ | ■ | £4.47m |

## 8.3    Assumptions

The following assumptions were taken in estimating the costs for our investments.

In the calculation of our costs, we have made two key assumptions about our unit rates.

| A. ID | Assumption | Impact if assumption is broken |
|---|---|---|
| A1 | As we are using internal resources, or are acquiring resources through the contract market, we aligned the rates in the cost estimates to the external charging statement | Cost Impact: project budget may require additional funds to cover change in projected costs. |
| A2 | As we are using resourcing through third party partners, we have assumed an average daily rate of £1000 per day. | Cost Impact: project budget may require additional funds to cover change in projected costs. |

## 8.4    Cost Assurance

Our cost estimates are built by:

- **Working with consultancies:** Our plans have been put together from working with our Digital Partners. Each have contributed to our scoping of our investment and have provided effort estimates based on their previous experience.

- **Benchmarking:** We have benchmarked our plans against previously sized project delivered within SSEN Transmission or Group (using Group data where data sharing is allowed) to size the overall investment. This has given further confidence that we:

    a) have not over forecasted any costs, and we are delivering the investment efficiently, and
    b) we have not under forecasted and will be hit with unexpected costs when we come to deliver.

The table below (Table 35) shows the assurance mechanism we have used.

Table 35: Assurance mechanism

| Cost Assurance Mechanism | Applies to this PDJP | How it applies? |
|---|---|---|
| **High Level Plan** | Yes | We have created a High-Level Plan, assured its deliverability, and ensured we have aligned our resource estimates to it. |
| **Top-Down Resource Estimates** | No | We used a bottom-up estimation approach. |
| **Bottom-Up Resource Estimates** | Yes | We have used a bottom-up estimation by identifying key resources and estimating effort against key activities. |
| **Confidence Weighting on Resource estimates** | Yes | We have used our internal benchmarks and industry experience to compare spread of effort, for example percentage effort to Project Management. |
| **Experience from prior investments** | Yes | We have compared projects to the previous work we, or our partners, have done. |
| **RIIO1/2 Allowance and Expenditure** | Yes | This is similar projects delivered in RIIO- T1. |
| **Negotiated and Market Tested frameworks and contracts (e.g.,** | Yes | We have engaged with our delivery partners to test key underlying assumptions and costs. |

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| | | |
|---|---|---|
| Consulting Services or Managed Services) | | |
| RFx Processes | No | We have not applied any RFx assumptions. We assume the work will be done in the UK |
| External Benchmark of investment titles | Yes | We have engaged our partners and consulting experts and used their comparisons. |
| Unit Cost Assumptions | No | We have assumed internal and contract market resources at average £500 per day and third-party resources to be at £1000 per day. |
| Expert/External Provider Support to paper | Yes | We have used our consulting and IT partners who have experience in delivering similar projects for support. |
| Project Delivery Risks | Yes | We have outlined them in Section 6.3. |

# 9 Operating and sustaining the solution

SSEN Transmission have an IT Operations function to which all projects transition to, through a Service Transition methodology. Our project estimates have considered the transition costs. However, as projects complete, there is a need to add more capacity and expertise to the enduring support function. This additional capacity and capability will be procured in line with procurement standards and processes.

At this point and based on our experience with similar portfolio of projects, our support costs can be estimated as show in Table 36. We have similarly estimated the license costs associated with our investments in the same table.

Table 36: breakdown of operational expenditure

| Type | Category | 2023 -2024 | 2024-2025 | 2025-2026 | Total |
|---|---|---|---|---|---|
| Business Support Costs IT Opex | Support costs | ■ | ■ | ■ | ■ |
| Total | | ■ | ■ | ■ | ■ |

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# 10    Conclusion

Digital technologies offer multiple avenues for improvements and the investments we have outlined in this paper allow us to leverage such opportunities.

Our digital and data strategy is aligned to our business objectives. In our latest revision of this strategy, issued in March 2021, we outlined our intentions to make "Maximise the value and opportunities presented by having easy access to a wide range of data from across the organisation to support future network modelling & forecasting, regulatory reporting, system planning, connections and innovation"[1]. We are seeking approval of an allowance of £4.33 million to deliver the System and Network Planning scope as set out in this project definition paper which will enable us to:

- Take a whole system view in our planning and investments of the network,
- Use data to better predicts areas of reinforcement, leading to a more secured and resilient network,
- Incorporate efficiencies and allow us to increase the speed of delivery, leading to a faster expanding network with better cost effectiveness, and
- Allow us to enhance our leadership position for a more sustainable future, not only for Great Britain, but, also, as an influencing force globally.

Our investments more specifically aim to:

- Create improved network models that cover a wider range of scenarios,
- Execute power system analysis faster and more often,
- Be capable of sharing results of the different analysis wider (internally and externally),
- Introduce better reporting mechanisms,
- Implement more automation for standard reporting (e.g., regulatory), and
- Ensure we keep on top of our data (e.g., accuracy, quality) as we will need to share it more

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[1] SSEN Transmission Digital Strategy, pp 10

# RIIO-T3 IT Strategy and Planning

## Project Definition and Justification Paper

## Contents

# 1    T3 - Executive Summary

SSEN Transmission IT has a key part to play in delivering digital solutions that enable the core functions of the business as well as accelerating Net Zero infrastructure delivery. This is through smart, collaborative digital solutions, delivering data best practice in line with modernising energy data and regulatory guidance, and supporting the ongoing efficiency objectives of the business.

SSEN Transmission IT is an expanding and maturing function within the wider business, where focus in the early years of the current regulatory period has been on delivering foundations and establishing the core functions. Attention now needs to shift in the next phase towards enhancing strategic planning capabilities. Aligned with a cross-business objective, we need to move towards establishing an evergreen strategy framework for IT, that operates on a rolling multi-year horizon – unconstrained by the five-year regulatory cycle. In support of that objective, and the corresponding IT Strategy that will be developed, we expect our IT Operating Model will need to evolve and change to continue delivering value and supporting the business.

SSEN Transmission operates under a regulatory regime known as RIIO (Revenue = Incentives + Innovation + Outputs). We are about to embark on the process of developing the strategy and business plan for the next regulatory period (RIIO-T3). We seek to leverage this opportunity to create the evergreen strategy framework and deliver key strategy artefacts in service of the business and underpinning the RIIO-T3 business plan for IT Telecoms.

In scope for this investment is:

- Development of a new strategy framework for IT
- Development and approval of an evergreen IS strategy, and corresponding sub-strategies – digital, data, technology, Operational Technology, obsolescence that are linked to the business strategy and the business strategic goals for RIIO-T3
- Delivery of an IT operating model design, including changes in the sourcing model and organisational structure as needed to serve the business in RIIO-T3
- Establishment of a roadmap of change needed to achieve the desired future state
- Development, assurance, and submission of RIIO-T3 business plan appendix for Non-Operational IT & Telecoms (IT) and Operational IT
- Development, benchmarking, assurance, and submission of RIIO-T3 project definition and justifications, in line with the yet to be released RIIO-T3 sector specific methodology and guidance
- Ongoing support to Ofgem in the evaluation of our submission through the Supplementary Question process

To deliver the high-level scope set out above, we are making a funding request of **£1,245,642.**

Table 37: Investment Summary (2018/19 Price Base)

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT Capex | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Support Costs IT Opex | ■ | ■ | ■ | ■ | ■ | ■ |
| Total Investment | ■ | ■ | ■ | ■ | ■ | £1.25m |

# 2 Project Summary

## 2.1 Background

SSEN Transmission operates under a regulatory regime known as RIIO (Revenue = Incentives + Innovation + Outputs). We are about to embark on the process of developing the business plan for the third regulatory period for Transmission Operators (TOs) known as RIIO-T3. This will be the first time that SSEN Transmission has undertaken the IT business planning as a separate business entity from SSEN Distribution. As a relatively new IT function within a recently separated business, our capabilities within the function are still maturing and developing. Our prior focus was on establishing the foundations and setting up the delivery programmes for Non-Operational IT & Telecoms (IT) and Cyber Resilience. We have yet to fully establish our IT Strategy function, however, we plan to do so through the remainder of RIIO-T2.

Whilst, at time of writing, the Sector Specific Methodology is not yet available for RIIO-T3, we assume that, at its heart, the requirements will be similar to the current regulatory period. These include:

- Ensuring and demonstrating alignment of the IT Strategy and investments to the business strategy and goals

- Identification of risks that need to be managed or the regulatory obligations that need to be met

- Demonstration of the need to invest in specific capabilities and the outcomes that will be delivered

- Justification of the proposed expenditure, supported by good practices and evidence

- Assurance and benchmarking of proposed expenditure

More broadly, our business is moving towards a rolling evergreen strategy approach, where the strategy is maintained on an annual basis, with a forward-looking five-year horizon. We need to establish the IT and other technology related strategies (e.g., Cyber Security, Digital, Data, Operational Technology etc) and develop the capabilities to manage this within our business. We believe that, by doing this, we will be able to establish clearer long-term vision, which will guide short-medium term investment, establish enabling capabilities early, and, overall, create better value for stakeholders and consumers by being more strategic with the investments that we are making.

## 2.2 Rationale

The rationale for this investment is as follows:

1. We want, and need, to deliver a high-quality Information Technology (IT) & Operational Technology (OT) business plan for RIIO-T3, which will be aligned to the business strategy and RIIO-T3 plan.
2. We need to ensure that the SSEN Transmission IT function is setup to be successful in RIIO-T3.
3. We want to enhance capability within the Transmission IT function, specifically in the development and management of strategy, to better serve our internal and external customers and stakeholders.
4. We need to develop programmes of work that create or enhance business value, but also mitigate risk in our technology estate and on behalf of the business as they go about their functions.

5. We need to deliver an IT Strategy and Operating Model design for IT & OT for the RIIO-T3 period, that builds on the great work in the current period but aligns with the longer-term business strategies.
6. We need to address issues in the RIIO-T2 IT related allowances, where we were under-funded in key areas e.g., Operational IT Capex and Business Support Costs (IT).

## 2.3 Alignment to our RIIO-T2 Business Plan

This programme directly supports the five clear goals set out in our RIIO-T2 business plan. A fully digital business with the IT digital capabilities to rapidly adapt and change in response to the demands of the business, customers, and stakeholders (even on small scale projects) enables the delivery of our RIIO-T2 business plan. Table 38 demonstrates how these investments assists in the delivery of our commitments.

Table 38: RIIO-T3 IT Strategy and Planning - Alignment to commitments

| RIIO – T2 Business Plan | Commitment | Alignment | Investment Delivers |
|---|---|---|---|
| Transport the renewable electricity that powers 10 million homes | Our RIIO-T2 Certain View will deliver an electricity network with the capacity and flexibility to accommodate 10 GW renewable generation in the north of Scotland by 2026 | High | SSEN Transmission IT's ability to support the core business functions depends on being able to set and execute an appropriate strategy through RIIO-T2 and into RIIO-T3. |
| Aim for 100% transmission network reliability for homes and business | By investing in new technology and ways of working, when cost effective for customers to do so, we will strive for 100% transmission network reliability for homes and businesses by 2026 | High | Development of an Operational IT Strategy and approach to obsolescence and resilience in Operational Systems is a core part of transmission network reliability. Identifying and making further investments in Operational systems through RIIO-T2 and RIIO-T3. Additionally, exploitation of data to make network control decisions will be underpinned by robust data strategy and corresponding capabilities and investments. |
| Every connection delivered on time | By 2026 we will provide every network connection, tailored to meet our customers' needs, on time, on budget and to our customers' satisfaction | High | SSEN Transmission IT's ability to support the core business functions depends on being able to set and execute an appropriate strategy through RIIO-T2 and into RIIO-T3. |
| One third reduction in our greenhouse gas emission | Reduce the controllable greenhouse gas emissions from our own operations by 33% by 2026, consistent with a net zero emissions pathway | Medium | SSEN Transmission IT's ability to support the core business functions depends on being able to set and execute an appropriate strategy through RIIO-T2 and into RIIO-T3. |

| | | | |
|---|---|---|---|
| £100 million in efficiency savings from Innovation | Our RIIO-T2 Certain View includes £100 million of cost savings through productivity and increased innovation, and we aim to go further to save more | High | Effective IT Strategy, supported by the relevant sub-strategies (Digital, Data etc) will enable core business efficiency drivers to be realised through investment in timesaving or value creating platforms that support the business in being more efficient and effective. |

Furthermore, this investment enables SSEN Transmission IT to develop a RIIO-T3 IT business plan which builds on the foundations established in RIIO-T2, establishing additional capabilities within the technology function to produce and manage IT Strategy and associated strategy artefacts that inform the vision and direction of travel for the function. The IT Strategy itself, when produced, will be linked to the business strategy and vision for RIIO-T3 and beyond – and the corresponding IT Operating Model and change roadmap will contain the investments that need to be made in Non-Operational and Operational IT through the next regulatory period.

## 2.4 Alignment to our strategic investment drivers

The current strategic investment drivers were identified through a series of workshops and engagement with stakeholders. These engagements and workshops clearly identified two themes that have driven the need for SSEN Transmission to review and update the strategy that has given rise to the overall Re-Opener submission. This review has led to the need for additional Non-Operational IT & T investments to increase IT capabilities and systems.

These themes are (see Figure 8) – Business and Technology, with three investment drivers under each theme. These are discussed in more detail in the overarching Strategy and Investment Summary document.

Figure 8: Strategic Investment Drivers
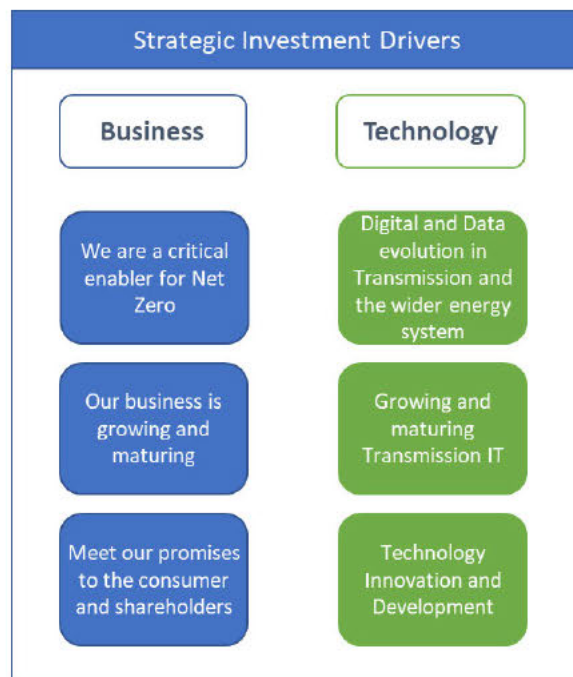
The tables below show the alignment of this investment against the strategic investment drivers that have been identified.

Table 39: Business driver alignment

| Investment/Project | Business Driver | Alignment |
|---|---|---|
| RIIO-T3 IT Strategy & Planning | We are a critical enabler for Net Zero | SSEN Transmission IT has a continuing role in supporting the delivery of Net Zero Infrastructure by the business. We need to determine the best investments in digital, data, and platforms to enable this as well as ensuring current platforms are maintained and kept up to date. |
| | Our business is growing and maturing | As the business grows and matures, SSEN Transmission IT will need to invest in line of business and enabling platforms and capabilities to support that expansion. This will continue through RIIO-T3. |
| | Meet our promises to the consumer and shareholders | Our business will determine and set out its RIIO-T3 business plan objectives, and our IT business plan and investments will be in service of those commitments. Equally, as future obligations and incentives become clear, digital platforms may create the opportunity to deliver efficiency targets or realise incentives. |

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Table 40: Technology driver alignment

| Investment/Project | Technology Driver | Alignment |
|---|---|---|
| RIIO-T3 IT Strategy & Planning | Digital and Data evolution in Transmission and the wider energy system | Under RIIO-T2, the obligations on SSEN Transmission for developing a Digitalisation Strategy and adherence to the Data Best Practice Guidance, along with industry-wide Modernising Energy Data initiatives came into effect and matured. RIIO-T3 presents an opportunity to fully consider the digital and data requirements of a modern energy system and factor into our future strategy and business plan. |
| | Growing and maturing Transmission IT | This investment will allow us to develop an evergreen strategy framework and corresponding strategies, as well as developing the next evolution of our IT Operating Model with the capabilities needed to take us into and beyond RIIO-T3. Additionally, this investment will enable an IT Strategy function to be established as an enduring capability. |
| | Technology and Innovation Development | Given the rapid pace of change in the technology sector, having a regular opportunity to review the latest developments and factor into our plans is crucial for us to deliver a modern, cost effective, and valuable service to our internal and external customers and stakeholders. |

## 2.5 Alignment to Re-Opener guidance

The table below sets out how our submission meets the requirements of our licence and the Re-Opener guidance.

Table 41: Licence and Guidance Requirements for Submission

| Licence and Guidance Requirement | Strategy & Investment Summary | This Document |
|---|---|---|
| Clear statement on needs case, demonstrating alignment with the overall business strategy and commitments. Including the organisational context, strategy, and business alignment | Section 4 | |
| Description of overall strategy and current operations covering non-operational IT capex investments, including description of IT Strategy, the role of IT Strategy in supporting the business, and overall IT Plan dependencies | Section 4.4 Section 4.5 | |
| Demonstration of needs case and problem statement, covering the capabilities that need to be enhanced and/or risks that need to be addressed and/or opportunities addressed | Section 4 | Section 2.2 Section 3 |

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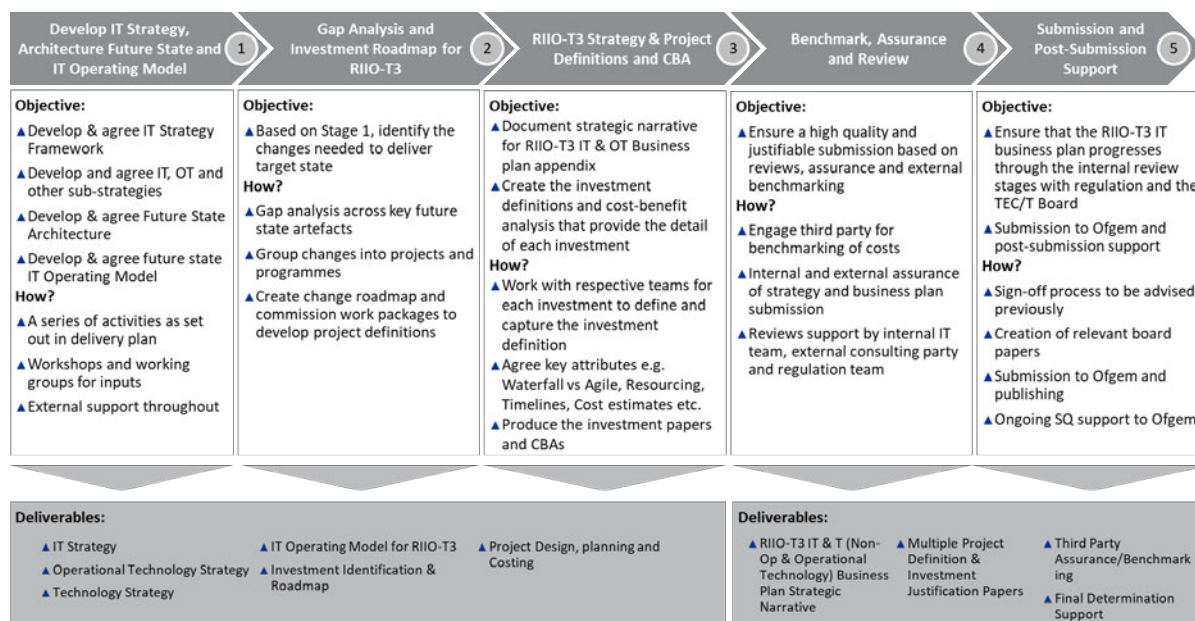| | | |
|---|---|---|
| Explanation of options assessment, including the methodology used | | Section 4 |
| Clear description of preferred option, covering the following: | | |
| • A description of the proposed project including scope and objectives of the proposed option and how the proposed option will either improve operational capability, support meeting business objectives, or reduce risk / create opportunities | | Section 3 |
| • A detailed description of project delivery plans, including project schedule, governance, and KPIs to monitor the progress of the project | Section 6 | Section 6 |
| Breakdown and Justification of costs, including the following: | | |
| • Justification for the need and amount of allowance required per project, considering the requirements and capabilities being delivered | | Section 7 |
| • An overall portfolio cost for the proposed Re-Openers, and delineation of costs per project | Section 7 | Section 7 |
| • Commitment to the use of good practice governance, including investment management and controls | Section 6.4 | |
| • Inclusion of uncertainty and risk costing | | Section 7 |
| Clarity on the purpose, scope, and dependencies of the project | | Section 3<br><br>Section 6.3 |
| A description of the proposed solution at an appropriate level of detail | | Not applicable in this project |
| Quality assurance approach for the project i.e., for testing and acceptance | Section 6.7 | Section 6 |
| A costed plan for delivery, in line with recognised good practice | | Section 6<br><br>Section 7 |
| Project Resource breakdown showing costs per resource type across defined cost categories | | Section 7 |

# 3 Project Scope and Outcomes

## 3.1 Project Scope

This project will deliver the Non-Operational and Operational IT & Telecoms (IT) Business Plans for RIIO-T3. At the same time, we will take the opportunity to enhance the strategy development and planning capabilities within SSEN Transmission IT, creating lasting artefacts that can be maintained internally in the future as part of a rolling strategy and roadmap refresh on an annual basis. This is not a capability that we currently enjoy within SSEN Transmission IT.

The following approach and corresponding activities are planned during this project:

**Figure 9: RIIO-T3 IT Strategy & Planning – Delivery Approach**



| 1. Develop IT Strategy, Architecture Future State and IT Operating Model | 2. Gap Analysis and Investment Roadmap for RIIO-T3 | 3. RIIO-T3 Strategy & Project Definitions and CBA | 4. Benchmark, Assurance and Review | 5. Submission and Post-Submission Support |
|---|---|---|---|---|
| **Objective:** <br> ▲ Develop & agree IT Strategy Framework <br> ▲ Develop and agree IT, OT and other sub-strategies <br> ▲ Develop & agree Future State Architecture <br> ▲ Develop & agree future state IT Operating Model <br> **How?** <br> ▲ A series of activities as set out in delivery plan <br> ▲ Workshops and working groups for inputs <br> ▲ External support throughout | **Objective:** <br> ▲ Based on Stage 1, identify the changes needed to deliver target state <br> **How?** <br> ▲ Gap analysis across key future state artefacts <br> ▲ Group changes into projects and programmes <br> ▲ Create change roadmap and commission work packages to develop project definitions | **Objective:** <br> ▲ Document strategic narrative for RIIO-T3 IT & OT Business plan appendix <br> ▲ Create the investment definitions and cost-benefit analysis that provide the detail of each investment <br> **How?** <br> ▲ Work with respective teams for each investment to define and capture the investment definition <br> ▲ Agree key attributes e.g. Waterfall vs Agile, Resourcing, Timelines, Cost estimates etc. <br> ▲ Produce the investment papers and CBAs | **Objective:** <br> ▲ Ensure a high quality and justifiable submission based on reviews, assurance and external benchmarking <br> **How?** <br> ▲ Engage third party for benchmarking of costs <br> ▲ Internal and external assurance of strategy and business plan submission <br> ▲ Reviews support by internal IT team, external consulting party and regulation team | **Objective:** <br> ▲ Ensure that the RIIO-T3 IT business plan progresses through the internal review stages with regulation and the TEC/T Board <br> ▲ Submission to Ofgem and post-submission support <br> **How?** <br> ▲ Sign-off process to be advised previously <br> ▲ Creation of relevant board papers <br> ▲ Submission to Ofgem and publishing <br> ▲ Ongoing SQ support to Ofgem |
| **Deliverables:** <br> ▲ IT Strategy <br> ▲ Operational Technology Strategy <br> ▲ Technology Strategy | ▲ IT Operating Model for RIIO-T3 <br> ▲ Investment Identification & Roadmap | ▲ Project Design, planning and Costing | **Deliverables:** <br> ▲ RIIO-T3 IT & T (Non-Op & Operational Technology) Business Plan Strategic Narrative | ▲ Multiple Project Definition & Investment Justification Papers | ▲ Third Party Assurance/Benchmarking <br> ▲ Final Determination Support |

## 3.2 Deliverables

The deliverables of this investment include the following:

1. **IT Strategy** – Establish the IT Strategy Framework and create the IT Strategy for SSEN Transmission IT to reflect the latest business strategy and drivers of change. Clearly demonstrate what has changed. Deliver or update other key sub-strategies that support the IT Strategy (e.g., Obsolescence, Digital, Data etc) and that will identify investments.

2. **Technology Strategy** – Establish a Technology Strategy & Architectural Future State that clearly articulates the future state from a technology perspective, identifying key technology and business infrastructure and applications that will feature in the IT estate in the future and how they will be established.

3. **Operational IT Strategy** – A specific strategy for Operational IT, which has been separated from SSEN Distribution, but has been under-served historically when part of a shared capability. Now separated, we can develop this critical area of capability in line with our specific needs and we need to take this opportunity to do so.

4. **IT Operating Model for RIIO-T3** – With the strategic direction and future state identified, we need to design the future capabilities that will be needed to deliver and support that

end-state. We need to examine our resourcing approach, sourcing mix, governance, and KPIs to determine the right organisational design for SSEN Transmission IT.

5. **Investment Identification and Change Roadmap** – With the strategies, end state, and operating model established – we can undertake the gap analysis to identify the changes and investments needed as well as the Operating Costs for SSEN Transmission IT under Business As Usual (BAU). We will group the agreed improvements into projects and deliver a strategic multi-year programme of work.

6. **Design, Planning and Costing** – For each project identified, we will undertake a more in-depth activity to define and plan the initiative resulting in the inputs needed for the Project Justification Papers (or the equivalent under the RIIO-T3 methodology).

7. **Project Justification Papers** – For each individual investment justification, build out the definition, investment needs, options assessment, solution identification, and benefits. This will include meeting any Cost Benefit Analysis (CBA) requirements for the portfolio of projects.

8. **Assurance and benchmarking** – Conduct benchmarking for cost justification and value for money assurance.

9. **Review, Update & Approve** – Ensure that the Investment Justification Papers progress through the internal SSEN Transmission review and approval stages with regulation and the relevant approval governance within SSEN Transmission prior to submission.

10. **Final Determination Support** – Support Ofgem's evaluation of the submitted business plan, by providing responses to Supplementary Questions (SQs) and following draft determination make the relevant updates to the IT & OT business plans to enable further submission.

## 3.3 Outcomes and Benefits

The project will deliver the following outcomes and benefits:

Table 42: Outline benefits and outcomes from this investment

| | | Outline Business Benefits | | |
|---|---|---|---|---|
| **Benefit Number** | **Benefit Category (Financial / Strategic / Regulatory / Safety)** | **Description of Benefit** | **Benefit Value (state if non-financial)** | **Benefit Owner** |
| 1 | Regulatory | This investment will allow SSEN Transmission IT to develop and deliver a robust, high quality, and well justified RIIO-T3 business plan for IT and OT that is able to meet the requirements of the methodology once published. This will being additional confidence in the investments proposed. | Risk reduction | SSEN Transmission IT |
| 2 | Safety | Supports SSEN Transmission in delivering a reliable service to customers by ensuring that platforms and services are well maintained and kept up to date. | Risk reduction | SSEN Transmission IT & OT Applications and Infrastructure |
| 3 | Strategic | Ensures confidence in our business plans avoiding significant resource time spent resolving issues and dealing with supplementary questions. | Risk & cost reduction | SSEN Transmission IT |
| 4 | Strategic | Establishes an evergreen IT Strategy Framework and Strategy artefacts that can be maintained by a new IT Strategy capability within the IT function. | New capability | SSEN Transmission IT |
| 5 | Strategic | Creates sufficient resource capacity for early and detailed planning to meet the RIIO-T3 submission timeline and guidelines. | Risk reduction | SSEN Transmission IT |
| 6 | Financial | Well justified RIIO-T3 IT & OT Business Plans, including any financial benefits that will be delivered. | Cost savings or avoidance | SSEN Transmission IT |

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# 4    Optioneering & Preferred Option

## 4.1    Method of evaluation

When reviewing our options in this area, we followed a two phased approach:

- We conducted brainstorming sessions/workshops with key stakeholders to identify possible options for ensuring we could match the business and market drivers described in Section 1.

- We compared the benefits of the options in supporting our regulatory compliance requirements.

## 4.2    Options Considered

**Table 43: Investment Delivery Options**

| | Description | Comment | Estimated Costs | Impact | Conclusion |
|---|---|---|---|---|---|
| 1 | Do nothing | Lack of investment in this area will lead to the development of the RIIO-T3 plan "side-of-desk", leading to issues with the level of detail and accuracy of costs and overall, a sub-standard submission to Ofgem | Low | We will be unable to deliver broader benefits of a business aligned IT Strategy, Operating Model and change roadmap to input into the business plan. | Reject – unable to meet requirements |
| 2 | Develop the plan with in-house resources | Use of internal resources will impact BAU, inflight or planned RIIO-T2 projects. Lack of external viewpoint and expertise. | Medium | Whilst RIIO-T3 strategy and plan will be delivered, there will be impact on other BAU or RIIO-T2 delivery. No current Strategy capability in SSEN Transmission IT. | Reject – sub-optimal solution given broader short to medium-term impact and long-term impact of using resources without the necessary skills and experience. |
| 3 | Develop the plan with contractors | Contractor resources would require significant effort from our staff to guide, organise and manage their work. This will impact BAU, inflight or planned RIIO-T2 projects. Capability would not be built internally. | High | Whilst RIIO-T3 strategy and plan will be delivered, there will be impact on other BAU or | Reject – sub-optimal solution given broader short-term impact and |

| | | | | RIIO-T2 delivery. There is no current Strategy capability in SSEN Transmission IT, with limited capability to build the opportunity with contractors. | long-term impact of using resources without the necessary skills and experience. |
|---|---|---|---|---|---|
| 4 | Use a third-party consultancy to support the development of the plan in conjunction with an internal team | By having a third-party consultancy to support the required scope, this will reduce the amount of guidance and management of the team doing the detailed planning, thus minimising the additional workload on an already overallocated team. Outputs will be delivered, and capability will be enhanced. | High | Positive impact<br><br>Business plan requirements are met<br><br>Internal capability is established and matured<br><br>Additional expert insight and external viewpoints learnt | Preferred |

## 4.3    Preferred Option

Our preferred option is 4 – Use a third-party consultancy to support the development of the plan in conjunction with an internal team. We propose to create a hybrid team of a small number of internal resources, who can create the nucleus of a SSEN Transmission IT Strategy team in the future and combine with external expertise from a strategic consulting partner.

This option ensures we address the scope outlined in section 3, enhance internal capabilities, bring external input and insight, and create a long-term strategy framework, processes, and governance that will reduce future external resourcing needs.

# 5    Approach

## 5.1    Delivery Methodology

This project will be managed in accordance with the Waterfall Lite project delivery methodology detailed within SSE's Transformational Change Governance Framework.

**Figure 10: Delivery methodology for this project**
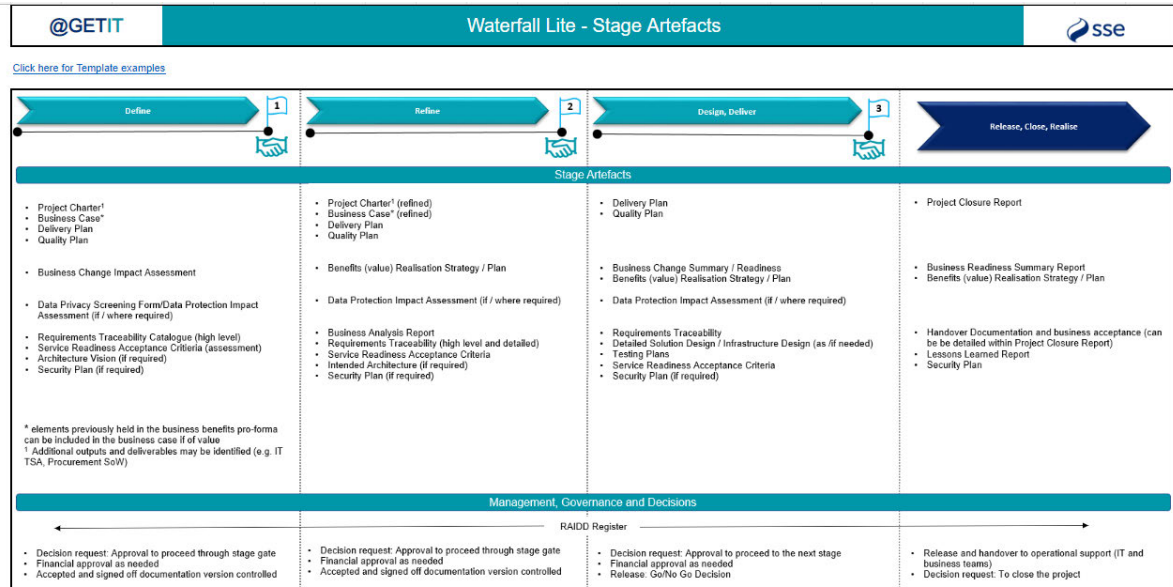


Considering the type of project delivery and to drive cost efficiencies, a "light touch" approach is planned. The Project Manager will define the approach in more detail at the next stage gate.

More information regarding the Waterfall Lite methodology is contained in the "RIIO-T2 Re-Opener – Strategy and Investment Summary" document.

## 5.2    Governance

We will establish the delivery governance appropriate for this project, which will be integrated into the wider RIIO-T3 Governance in-place across the organisation. Mindful of the overheads of governance, we will implement a three-tier project governance structure as articulated in the diagram below (Figure 11) – leveraging other governance forums as needed.

Figure 11: RIIO-T3 IT Strategy & Planning - Governance Model
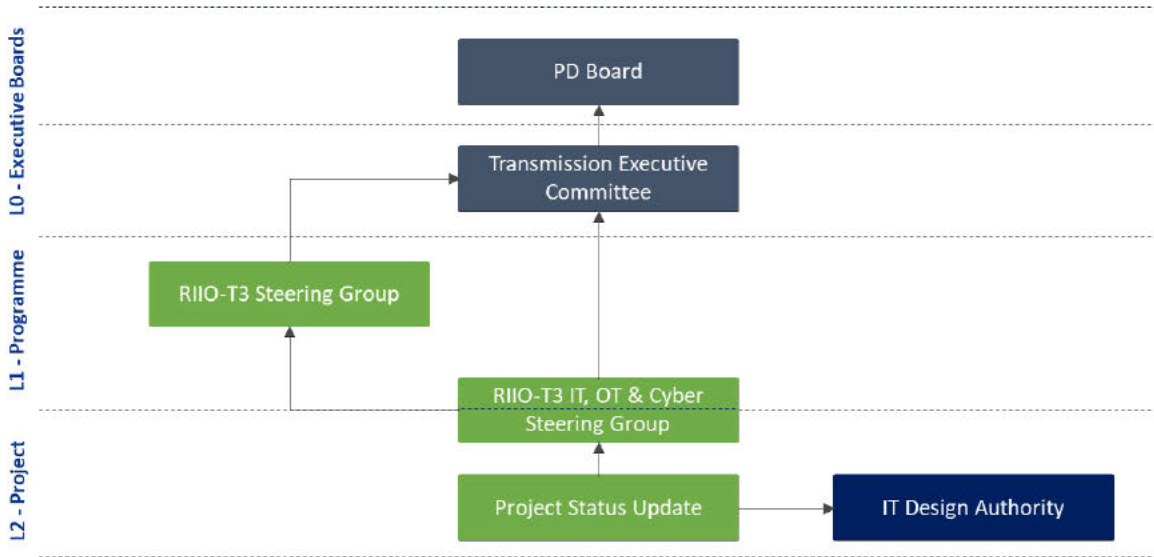
As this investment will be part of a wider programme and need the requisite approvals within SSE, the following governance forums may be required, including the project specific forums. These are set out in Table 44 below.

Table 44: Governance Forums for this project

| Forum | Description | Governance Type |
|---|---|---|
| SSEN Transmission Board | Executive board for SSEN Transmission with highest level of sign-off, which may be required for the approval of the RIIO-T3 IT & OT business plans. | BAU |
| Transmission Executive Committee | Executive board for SSEN Transmission, will be kept informed of progress updates and be the main approval forum for the RIIO-T3 IT & OT business plans. | BAU |
| RIIO-T3 Steering Group | Central steering group for the RIIO-T3 business plan across SSEN Transmission. | RIIO-T3 |
| RIIO-T3 IT, OT, and Cyber Steering Group | Programme specific steering group for the RIIO-T3 IT, Operational Technology and Cyber strategy and business plans. Accountable for day-to-day running of the programme of work across this investment and the equivalent Cyber Resilience project. Expected to have a monthly cadence. | Project |
| IT & OT Strategy & Business Plan – Project Update | Project update meeting for the IT & OT Strategy and Business Planning. Responsible to the Steering Group for the delivery of this scope of work. | Project |
| IT Design Authority | BAU IT design authority for strategic and solution architecture reviews and approvals. | BAU |

## 5.3    Procurement

The standard approved SSEN Transmission procurement process will be followed where required to ensure we achieve value for money. We anticipate needing to procure consulting services to support this project. We have access to these services through existing framework agreements.

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## 5.4    Change Management

There will be no direct business change management or business readiness that comes because of change implemented through this investment project. However, effective engagement with our business stakeholders is critical to us establishing a strong RIIO-T3 IT & OT Business Plan. The project scope does include the development of a framework of tools, processes, and governance that will be designed and implemented as new capabilities within the SSEN Transmission IT function. These new capabilities will be embedded into the function by collaborative design and engagement in the delivery of the project itself and formalised through training and knowledge handover and transition activities.

# 6    Plan

## 6.1    Planning and sequencing the project

The plan set out in Section 6.3 has been put together with support from an external strategic advisor (consulting partner) and follows a logical sequence of activities that are needed to develop an IT Strategy, an IT Operating Model, a roadmap of change, and a subsequent business plan.

The activities in the plan have been sequenced with the following considerations:

1. A good IT Strategy needs to be clearly linked to the business strategy and goals, which are being set in late 2022/early 2023 for the wider business and specifically for the RIIO-T3 period.
2. Once the IT Strategy has been established, including the future state architecture, then the operating model for IT can be determined – including specific decisions on insourcing versus outsourcing different capabilities, or growing specific breadth and depth in capabilities to support key strategic initiatives e.g., Operational Technology, Cloud or Cyber Security.
3. With the IT Strategy, future state architecture, and IT Operating Model agreed, a gap analysis can be performed that will inform the change roadmap. This will show the projects and investments that need to be made to transition from the current to the future state.
4. Once the investments and roadmap have been identified, these can be scoped and detailed through project definition activities, which will be encapsulated in the IT & OT business plan appendices.
5. The Strategy & Investment summary can be developed once the IT Strategy has been developed and the investments identified. This will be updated in parallel with the project definition phase.
6. Once the Operating Model for IT and OT has been agreed, then the corresponding baseline Business Support Costs for IT and the Operational IT Operating Costs Expenditure (Opex) can be determined, as the project costings are set out and the operating cost impact determined then these additional costs can be factored into the Opex estimates.
7. Once there is sufficient project definition, including costing, available then the benchmarking and assurance activities can commence – engaging a third party to support with the cost benchmarking
8. Finally, the business plan submission and appendices can be updated in line with the benchmarking outcomes and the submission finalised (including the integration of the IT plan) into the wider RIIO-T3 business plan and business plan data tables.

## 6.2    Delivery Timelines

Figure 12 (below) shows the delivery timelines for the RIIO-T3 Strategy and Planning project.



Figure 12: RIIO-T3 IT Strategy and Planning – Delivery Timelines
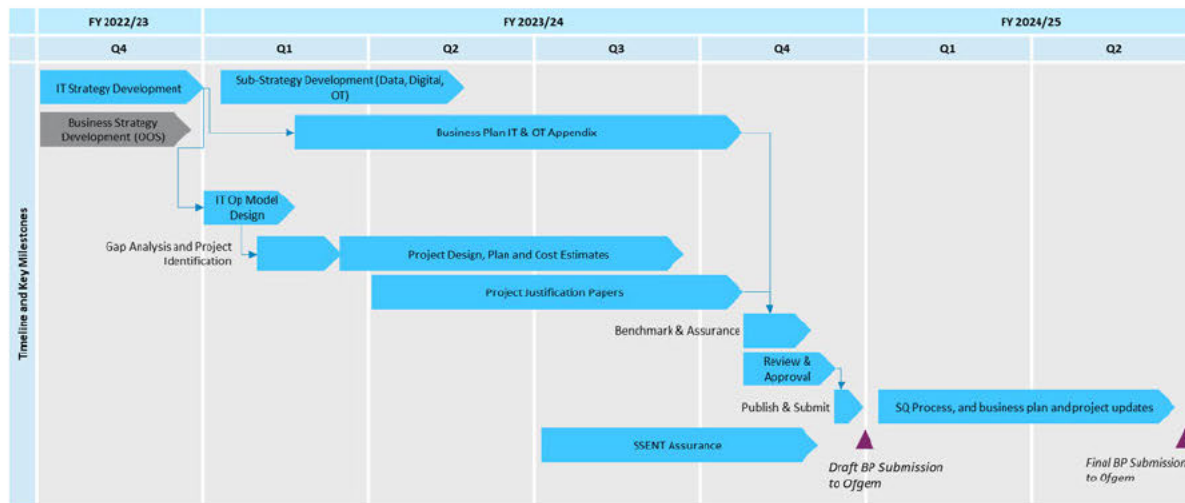
## 6.3    Dependencies

At this stage, we have identified the following high-level dependencies for this investment. These dependencies will be managed through good practices in project management and factored into the project mobilisation and execution.

Table 45: RIIO-T3 IT Strategy and Planning – Project Dependencies

| Dep. ID | Dependency | Impact | Direction |
|---------|-----------|--------|-----------|
| D1 | SSEN Transmission Business Strategy is needed to input into the IT Strategy and the IT Business Plan appendix. | If this is not received, then we will be unable to demonstrate clear alignment to the business goals and commitments. | Inbound |
| D2 | SSEN Transmission RIIO-T3 Business Goals and Commitments are needed to ensure alignment with the IT business plan submission. | If this is not received, then we will be unable to demonstrate clear alignment to the business goals and commitments. | Inbound |
| D3 | SSEN Transmission business stakeholders will be needed to input into the IT Strategy, project identification, and project scoping. | If not available, then business capability development will be assumed, and projects based on IT understanding rather than clear business need. This will weaken the RIIO-T3 plan. | Inbound |
| D4 | SSEN Transmission IT – business relationship managers, value stream leads, architecture team, Head of Digital Delivery and CIO will be needed to input, support, or lead on various stages of the delivery, | If not available, then the strategy could be developed in isolation and the project definitions weak. | Inbound |

| | | | |
|---|---|---|---|
| D5 | SSE Group IT inputs into shared costing and services across Non-Operational and Operational IT are required. | If not available, then the costing input will be assumed rather than based on quoted inputs. | Inbound |
| D6 | SSE Transmission Finance input into the baseline and extended cost modelling for Capex and Opex are required. | If not available, then the cost estimates and financial planning will not be validated by the finance team and the finance team will not receive the forecast costings from IT & OT. | Inbound & Outbound |
| D7 | Cyber Resilience RIIO-T3 submission will depend on the IT Strategy and Operating Model outputs to inform the risk assessment and the Cyber Strategy for SSEN Transmission. | If not available, then the Cyber Strategy and Cyber Risk Assessment will not be linked to the IT strategy, which will compromise the integrity of the Cyber Business Plan Appendix for RIIO-T3. | Outbound |
| D8 | This investment is dependent on Ofgem providing the Sector Specific Methodology and Guidance prior to the development of the detailed business plan submission and project definition. | Whilst we can develop the early strategy artefacts, which will be enduring, without the detailed methodology for RIIO-T3, we will be unable to develop the IT business plan and project papers. | Inbound |
| D9 | Customer/stakeholder engagement and research will be conducted through the wider RIIO-T3 business planning activities, we will be dependent on this to provide inputs to our IT Business Plan development especially for the Digital Strategy | If not provided centrally, then we will establish our own stakeholder engagement to support the IT & Digital Strategy development | Inbound |

## 6.4    Risks to the plan

The following high-level risks have been identified through the definition of this project. These risks will be captured in the project duration mobilisation and risk mitigation plans created and monitored in line with the risk management approach used as part of the proposed delivery methodology.

Table 46: RIIO-T3 IT Strategy and Planning – Delivery Risks

| Risk. ID | Risk | Impact | Probability | Mitigation |
|---|---|---|---|---|
| R1 | Lack of Ofgem Sector Specific Methodology and Guidance for RIIO-T3 means that effort and duration estimates could be extended. | Medium | Low | Align effort estimates to RIIO-T2 requirements and assume worst-case timeline. |
| R2 | Business and IT resource capacity to input might be constrained, which means that project identification and definition will be of lower quality that required. | Hight | Medium | Engage stakeholders early regarding inputs and timings. Use expert external resources to support identification and definition. |
| R3 | Timelines are assumed and may need to adapt once guidance has been received. | Medium | Low | Align effort estimates to RIIO-T2 requirements |

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| | | | | and worst-case timeline assumed. |
|---|---|---|---|---|
| R4 | The SSEN Transmission business strategy is being developed in Q1 2023, in parallel with the early phases of the project. If it is delayed, this could impact the IT Strategy delivery. | Low | Medium | Allow sufficient time to re-align IT Strategy and IT Business Plan Appendix with incremental effort |

## 6.5    Resourcing

The resources needed to deliver this project are all people based, with the following types of roles and resources required to deliver (Table 47).

Table 47: RIIO-T3 IT Strategy and Planning – Resource Breakdown

| Resources | Other Supporting Resources | Focus Area |
|---|---|---|
| IT Strategy & Operating Model Lead | CIO, Head of Digital Delivery, Value Stream Leads, Architecture, Business Strategy Team, Delivery Team | IT Strategy – Create the IT Strategy and Vision to reflect the latest business strategy and drivers of change<br><br>IT Operating Model – design the future state (and interim state) operating model for IT to reflect the IT Strategy |
| Head of Architecture (Transmission IT) | CIO, Head of Digital Delivery, Value Stream Leads, Architecture, Business Strategy Team, Delivery Team | Future State Architecture/IT Strategy – Establish the architecture blueprint for RIIO-T3 as part of the IT Strategy<br><br>Project Definition – support the gap analysis and future state design to enable cost estimation |
| IT Business Plan Lead | Head of Digital Delivery, Value Stream Leads, Architecture, Business Strategy Team, Delivery Team | IT Roadmap – Gap analysis and identification of initiatives, grouped into projects and investments<br><br>IT and OT Business Plan – development of the overarching RIIO-T3 Strategy and Investment Plan summary for the RIIO-T3 IT & T business plan appendices for Non-Operational and Operational IT |
| Delivery Team | Head of Digital Delivery, Value Stream Leads, Architecture, Project Managers, Business Stakeholders, Portfolio Management | Design Planning and Costs – Identify the investments that are needed, and the needs case for each investment (value, risk, new demand, and costs) |
| | Head of Digital Delivery, Value Stream Leads, Architecture, Project Managers, Business Stakeholders, Portfolio Management | Project Justification Papers – For each individual investment justification, build out the definition, investment needs, options assessment, solution identification and CBA in line with the Sector Specific Methodology & Guidance |
| N/A | External Benchmark | Assurance and benchmarking – Conduct benchmarking for cost justification and value for money assurance |
| Project Manager | CIO, Regulation, and Finance | Review, Update, and Approve – Ensure that the Investment justification papers progress through the internal SSEN Transmission review and approval stages with regulation, the Transmission Exec Committee, and Power Distribution Board |

## 6.6    Confidence in our plan

We have high confidence in this delivery timeline based on:

1. Benchmarking against the effort and time required to complete the RIIO-T2 submission and RIIO-T2 Re-Opener submissions

2. Input from experienced SMEs on the scope

3. External supplier quotation to support the bulk of the scope of work

4. Acceleration of the plan, if required, is feasible through adding resources to the project team e.g., if risk R3 materialises

# 7 Costs

## 7.1 Costing Approach

The costing was done using a bottom-up approach and in collaboration with key internal stakeholders.

Source information for the costs are as follows:

- Input from the team with experience in delivering similar projects.
- Resource effort estimates in effort-days per month.
- Review and validation of effort estimates by external consultancy.

## 7.2 Cost Breakdown

The costs shown in Table 48 below, are broken by resource type over the remaining years of the regulatory period. All the costs are based on resource effort and supplier cost estimates to deliver the project. There are no corresponding hardware or software related costs.

Table 48: RIIO-T3 IT Strategy and Planning – Cost Breakdown (2018/19 Price Base)

| | Resource Type | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|
| 1 | SSEN T (Internal & Contingent Resource) | ■ | ■ | ■ | ■ |
| 2 | 3rd party services (Consulting/SI Services) | ■ | ■ | ■ | ■ |
| 3 | 3rd Party Services (Business Change and Readiness) | ■ | ■ | ■ | ■ |
| 4 | Software Procurement | ■ | ■ | ■ | ■ |
| 5 | Hardware Procurement | ■ | ■ | ■ | ■ |
| 6 | Software Maintenance | ■ | ■ | ■ | ■ |
| 7 | Hardware Maintenance | ■ | ■ | ■ | ■ |
| | **Total** | ■ | ■ | ■ | **£1.25m** |

## 7.3 Assumptions

The following assumptions (Table 49) have been made to determine the cost estimates and the associated delivery plan. These assumptions will be managed through the standard assumption management process within the delivery methodology.

Table 49: RIIO-T3 IT Strategy & Planning – Cost and Plan Assumptions

| A. ID | Assumption | Impact if assumption is broken |
|---|---|---|
| A1 | Draft business plan submission will be in January 2024, with subsequent final submission in H2 2024 following draft determinations | Schedule Impact – depending on the scale of extent of the deviation. If dates are sooner, then this would be more challenging to meet. |

| | | Cost Impact – if the dates are later, then this may require additional investment to provide support over a longer period. |
|---|---|---|
| A2 | A combination of internal and external (consulting) resources will be used for delivery | Cost Impact – if internal resources are not available, then external costs will increase. |
| A3 | Not all SSE Waterfall Lite gated deliverables are required as this project is doing the design, planning, and costing work | Minimal impact – gate strategy can be established in mobilisation and agreed. |
| A4 | Key resources will be made available at the start of the project to support mobilisation | Schedule & Cost Impact – if inputs are not received during the early stages, then this will delay the delivery of the strategy artefacts and increase costs. |
| A5 | Project definition activities will be led by respective leads within SSEN Transmission IT | Schedule & Cost Impact – projects could take longer to define, or external resourcing will need to increase, to deliver the required outputs. |
| A6 | Benchmarking of projects will be based on cost estimates | Minimal impact – extended benchmarking could continue in parallel if other benchmarks are needed. |
| A7 | There will be no hardware or software purchase required to support this project, all costs are based on resource effort estimates only | Minimal impact – this is a resource only based project. |

## 7.4    Cost Assurance

To ensure that costs are as accurate as possible and represent fair value for money for stakeholders and customers. We have utilised several mechanisms to determine and assure the costs contained within this project definition. These are set out in Table 50.

Table 50: RIIO-T3 IT Strategy & Planning – Cost Assurance Mechanisms

| Cost Assurance Mechanism | Applies to this PDJP | How it applies? |
|---|---|---|
| High Level Plan | Yes | Planning and sequencing the project is set out and the corresponding delivery timeline shown in Section 5. This has been developed and used to inform the cost estimates and phasing. |
| Top-Down Resource Estimates | No | |
| Bottom-Up Resource Estimates | Yes | Detailed resource planning was done based on the delivery plan in Section 5.1. |
| Confidence Weighting on Resource estimates | No | |
| Experience from prior investments | Yes | Inputs received from the team developing the RIIO-T2 Non-Operational IT Re-Opener submission, alongside input from external parties with experience in developing equivalent RIIO2 submissions in other sectors. |

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| | | |
|---|---|---|
| RIIO1/2 Allowance and Expenditure | No | |
| Negotiated and Market Tested frameworks and contracts (e.g., Consulting Services or Managed Services) | Yes | Unit rates for the resource costings is based on a combination of internal loaded costs and the rates set out in negotiated and agreed framework consulting agreements. |
| RFx Processes | No | |
| External Benchmark of investment titles | Yes | A third-party assurance activity has been undertaken to review the scope, timeline, resource mix, and costs being proposed in this investment. |
| Unit Cost Assumptions | Yes | Assumed unit costs for resources are standardised across all submissions in this Re-Opener. |
| Expert/External Provider Support to paper | Yes | External consultancy input on the scope and effort estimates. |
| Project Delivery Risks | Yes | We have assessed the project delivery risks as described in section 5.3. |

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# 8     Operating and sustaining the solution

No technical solution is being delivered, therefore, this does not apply. However, the scope proposed will develop a much firmer modelling of costs for the operating costs needed to support and manage IT and OT services in the RIIO-T3 period.

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# 9    Conclusion

To prepare for RIIO-T3 we are making a funding request of **£1,245,642.** This includes the scope of work to produce an evergreen IT Strategy, the RIIO-T3 submission documentation, and ensures we have sufficient benchmarking, and efficient assurance in our plans and cost expenditure.

Table 51: Investment Summary

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT Capex | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Support Costs IT Opex | ■ | ■ | ■ | ■ | ■ | ■ |
| Total Investment | ■ | ■ | ■ | ■ | ■ | £1.25m |

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# Small IT Changes

## Project Definition and Justification Paper

## Contents

## 2 Executive Summary

As SSEN Transmission staff, its stakeholders, and customers grow on their Digital journey, their usage and need for increased digital solutions increases. To service these additional demands, several approaches are required, some of which may not require large scale IT deployment of systems and tools or the high overheads of a full-scale project or programme. Therefore, as part of SSEN Transmission IT, there is a need to develop capabilities that enable it to deliver small IT changes alongside more substantial investments. These smaller demands would be characterized by being simpler and of lower cost, but still being able to demonstrate business benefit if not encumbered by the overhead of project management.

There is evidence available of historic demand for small IT changes that deliver business benefit and consumer value. The types of requests that we have experienced previously within the RIIO-T2 period are as follows:

- Small hardware purchases
- Software upgrades
- Small software purchase
- Small platform changes
- Small user interface and workflow changes to applications

This does not mean that other types may be requested during the period of this funding, and, if they appear, then they will be evaluated according to the agreed criteria developed and agreed between IT and the business.

We are requesting **£1,072,482** allowance to support this investment, as set out in Table 52 below.

**Table 52: Small IT changes cost breakdown for this programme**

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT & T Capex | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Support Costs IT Opex | ■ | ■ | ■ | ■ | ■ | ■ |
| Total Investment | ■ | ■ | ■ | ■ | ■ | £1.07m |

For the purposes of this investment, we propose an ex-ante "use it or lose it" funding model. We will report on this allowance on an annual basis using the "IT Project Reporting" template submitted alongside the RRP. (We expect the RIGs would have to be updated to capture this reporting requirement, should Ofgem accept this proposal). This approach will ensure that the business will be continually striving to mature its digital footprint and actively seek continuously improvements for the benefit of this stakeholders and end consumer knowing that is has the capabilities in place to build on.

# 3 Project Summary

## 3.1 Background

Since the start of the RIIO-T2 period, there has been a rapid change in the scale of investment and adoption of digitalisation across the utility industry. These changes have meant that additional allowances that were not anticipated, due to the rapid changes of pace, are now required to continue to deliver business benefit. SSEN Transmission has also refreshed our Digital Vision and Strategy to ensure that our continual investment in digital continues to deliver against this.

SSEN Transmission has experienced a scale of new demand (mainly small IT changes) that was outside the original strategy we had set out, but made good business sense, and, therefore, we have invested in those changes. Based on this experience and the growing digital maturity of SSEN Transmission and our customers, it has been identified that there is a need to put in place an allowance that will cover these small changing demands for the remainder of the RIIO-T2 period. This is to ensure that we can continue to make those investments without compromising on other commitments.

## 3.2 Rationale

As SSEN Transmission builds towards realising its ambition of becoming a leading digital utility, the external landscape will also be changing, and our customers and stakeholders are also becoming more digitally mature. Therefore, there will be an expectation that we will quickly be able to adapt and provide digital solutions as a matter of course. These solutions will not always require a large-scale IT delivery and will on numerous occasions require a small IT change.

The objective of this investment is to create the capability for the IT team to react efficiently and effectively to small demands that arise through any particular year, that do not warrant the overheads of a full project lifecycle being applied. These solutions will also be enabled by our Digital Vision, where all our customers, stakeholders and staff are able to access the data they need, when they need it.

This demand for small digital solutions will also be driven by internal demand as business users' digital skills mature, and they become a more educated and/or demanding user.

As the number of users of the IT tools and systems grows, so will the number of requests. Therefore, by developing these capabilities and supplying the demand (internal and external), that will put in place a mechanism to unlock the additional value that small scale projects can bring to the business, and, ultimately, the end consumer.

Based on historical data and demand, the expected projects (demand) can be broken down into the following types of change:

- Small hardware purchases
- Software upgrades
- Small software purchases
- Small platform changes
- Small workflow or user interface changes

However, it is not prudent to artificially constrain unknown demand, therefore we propose to assess new small IT demands based on the following criteria:

- No more than 20 days' worth of effort
- Cost will not exceed £50,000
- Will not be connected to or have reliance on an inflight project
- Have no architectural impact
- Have no regulatory impact
- Does not handle personnel information

This will help deliver operational efficiency, network resilience and data-driven investment decisions, supporting the development of our network, including renewable generation connections for our customers, as we build a network for Net Zero emissions in line with the Digital Vision and strategy.

## 3.3 Alignment to our RIIO-T2 Business Plan

This investment is in service of the five clear goals set out in our RIIO-T2 business plan, and the corresponding strategic themes. A fully digital business with the IT digital capabilities to rapidly adapt and change in response to the demands of the business, customers, and stakeholders, even on small scale projects, enables the delivery of our RIIO-T2 business plan. Table 53 demonstrates how these investments assists in the delivery of our commitments.

Table 53: Small IT changes Alignment to commitments

| RIIO – T2 Business Plan | 2026 Commitment | Alignment | Investment Delivers |
|---|---|---|---|
| Transport the renewable electricity that powers 10 million homes | Our RIIO-T2 Certain View will deliver an electricity network with the capacity and flexibility to accommodate 10 GW renewable generation in the north of Scotland. | High | The capability to use and combine data from different sources within SSEN Transmission to increase the flexibility and capacity of the transmission network. (efficiently share data) |
| Aim for 100% transmission network reliability for homes and business | By investing in new technology and ways of working, when cost effective for customers to do so, we will strive for 100% transmission network reliability for homes and businesses. | High | The increased quality of data used in operational decisions which will reduce risk and increase usage of network. (data driven decisions) |
| Every connection delivered on time | We will provide every network connection, tailored to meet our customers' needs, on time, on budget and to our customers' satisfaction. | High | Assistance to ensure project delivery to enable new connections. (provide tailored services) |
| One third reduction in our greenhouse gas emission | We will reduce the controllable greenhouse gas emissions from our own operations by 33%, consistent with a Net Zero emissions pathway. | Medium | More efficient decision-making driven by accurate data. (operational efficiencies) |
| £100 million in efficiency savings from Innovation | Our RIIO-T2 Certain View includes £100 million of cost savings through productivity | High | An environment that enables increased focused on areas that improve productivity by |

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| | and increased innovation, and we aim to go further to save more. | | providing the data to identify those areas. It will also enable improved Innovation decisions. **(creates opportunities)** |
|---|---|---|---|

## 3.4    Alignment to our strategic investment drivers

The current strategic investment drivers were identified through a series of workshops and engagement with internal and external stakeholders.

These engagements and workshops clearly identified two themes that have driven the need for SSEN Transmission to review and update their Digital and Data Strategy. This review has led to the need for additional Digital investments to increase their digital IT capabilities and the systems. The small IT changes capabilities has been developed to assist in delivering part of the overall strategy to support these drivers.

The investment drivers were grouped in Business and Technology categories, as set out in Figure 13.

**Figure 13: Digital Investment Drivers**

**Strategic Investment Drivers**

| Business | Technology |
|---|---|
| We are a critical enabler for Net Zero | Digital and Data evolution in Transmission and the wider energy system |
| Our business is growing and maturing | Growing and maturing Transmission IT |
| Meet our promises to the consumer and shareholders | Technology Innovation and Development |

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The flexibility that comes from having the capability to deliver small IT changes enables SSEN to react quickly to the drivers. These drivers are changing constantly and creating large scale IT projects may not be the best approach to respond to these challenges as they may not deliver in time to deliver the benefits identified.

The delivery of these small IT changes will also ensure that these align with SSEN Transmission's Digital Vision and Strategy. Table 54 shows the alignment of these to our strategic drivers.

**Table 54: Alignment of Drivers to changes**

| Investment/Project | Business Drivers | Technology Drivers | Alignment |
|---|---|---|---|
| Small IT changes | Our business is growing and maturing | Digital and Data evolution in Transmission and the wider energy system | High |
| | Meet our promises to the consumer and shareholders | Growing and maturing Transmission IT | |

## 3.5  Alignment to Re-Opener guidance

Table 55 below sets out how our submission meets the requirements of our licence and the Re-Opener guidance.

**Table 55: Licence and Guidance Requirements for Submission**

| Licence and Guidance Requirement | IT Re-Opener Strategy Summary | This Document |
|---|---|---|
| Clear statement on needs case, demonstrating alignment with the overall business strategy and commitments, including the organisational context, strategy, and business alignment | Section 4 | |
| Description of overall strategy and current operations covering non-operational IT capex investments, including description of IT Strategy, the role of IT Strategy in supporting the business, and overall IT Plan dependencies | Section 4.4 Section 4.5 | |
| Demonstration of needs case and problem statement, covering the capabilities that need to be enhanced and/or risks that need to be addressed and/or opportunities addressed | Section 4 | Section 3.2 |
| Explanation of options assessment, including the methodology used | | Section 5 |
| Clear description of preferred option, covering the following: | | |
| • A description of the proposed project including scope and objectives of the proposed option and how the proposed option will either improve operational capability, support meeting business objectives, or reduce risk / create opportunities | | Section 4 |

| | | |
|---|---|---|
| • A detailed description of project delivery plans, including project schedule, governance, and KPIs to monitor the progress of the project | Section 6 | Section 7.1 |
| Breakdown and Justification of costs, including the following: | | |
| • Justification for the need and amount of allowance required per project, considering the requirements and capabilities being delivered | | Section 8.1 |
| • An overall portfolio cost for the proposed Re-Openers, and delineation of costs per project | Section 7 | Section 8.2 |
| • Commitment to the use of good practice governance, including investment management and controls | Section 6.4 | |
| • Inclusion of uncertainty and risk costing | | Section 7.3 |
| Clarity on the purpose, scope, and dependencies of the project | | Section 3.2 |
| A description of the proposed solution at an appropriate level of detail | | Not applicable in this project |
| Quality assurance approach for the project i.e., for testing and acceptance | Section 6.7 | |
| A costed plan for delivery, in line with recognised good practice | | Section 7 |
| Project Resource breakdown showing costs per resource type across defined cost categories | | Section 7.4 |

# 4    Project Scope and Outcomes

## 4.1    Project Scope

The nature of this investment means that the scope is unknown and will not be known until the demand is notified to the IT function. Examples of historical small IT change demands include but are not limited to:

- **PS CAD Software** – an upgrade our current PSCAD Version 4 Professional License to Version 5 Enhanced Package and transfer from a dongle-based licence model to certificate (internet) based model.
- **High Performance Workstations** – non-standard items purchased and deployed to deliver high capability workstations to enable the power systems team to deliver project effectively to the business.
- **Workstation Platform** – Ensuring a good connectivity and IT experience for all returning workers required additional support for Transmission staff returning to the office.
- **Encrypted Hard Drives** – for the secure storage of bulk survey data
- **Additional Autodesk Licenses** – to expand and continue a functional pilot
- **Office Refresh** – Provision of new IT hardware for our key office locations to facilitate effective hybrid working which was introduced post the COVID pandemic.

## 4.2    Outcomes and Benefits

The benefits delivered by each small IT change will be unique to that specific change and cannot be identified or quantified at this time as the demands are inherently unknown. Whilst some small IT changes may be related to mandatory regulatory or statutory requirements, we would assess all small IT change based on the cost versus benefit. We would assess the quantifiable and non-quantifiable benefits of the proposed change, before determining whether to proceed or not.

All small IT changes will be subject to a small IT changes team review to ensure that they deliver value for the business and, ultimately, the end consumer, otherwise, they will be rejected, deferred, or re-worked. This team will be a 'virtual' team created as needed for the purpose of providing guidance and responsible for the decision to proceed with the change or not. As this is an ad-hoc and flexible change driven requirement, it was decided that there was no need of a 'full time' or permanent team to manage this process.

Whilst we cannot identify the specific benefits, we would anticipate the following types of benefits would be realisable through different examples of small IT changes (Table 56).

**Table 56 – Potential benefits from different change types**

| Project | Outcome | Quantifiable Benefits | Non-Quantifiable Benefits |
|---|---|---|---|
| Small Hardware purchase | • Specific to identified business needs | • Improved efficiencies | • Motivated staff<br>• Regulatory/safety requirement |
| Software upgrades | • Patched software<br>• Additional functionality | • Reduced risk of software vulnerabilities<br>• Improved efficiencies<br>• Increase in result accuracy | • Closer alignment to Industry standards |
| Small software purchase | • Gap in business needs plugged | • Increased capabilities in specific area<br>• Improved efficiency<br>• Increase in result accuracy | • Improved Staff working environment |
| Small Platform changes | • Professional authored/best practice<br>• Address specific business needs | • Reduced bespoke support costs<br>• Reduced time to produce reports | • Improved reporting/awareness of potential issues<br>• Improved quality reports/dashboards<br>• Increased stakeholder/customer engagement |
| Small workflow or user interface changes | • Enhancements to platforms, user interfaces or workflows that support key business processes | • User efficiency<br>• Reduction in time to execute processes<br>• Stakeholder satisfaction increase | • Enhanced user experience |

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# 5    Optioneering & Preferred Option

## 5.1    Method of evaluation

Our method for options evaluation assumes that this new demand will exist regardless of the option, with the options identified focussing on how to meet that known-unknown demand. We have considered the following in the assessment of the options:

- Can the demand be fulfilled?
- Impact on business and customer satisfaction?
- Impact on other projects across the portfolio

## 5.2    Options Considered

As part of this options assessment, we have considered the options set out in Table 57.

**Table 57: Evaluation of different options**

| Options | Pros | Cons |
|---|---|---|
| Add additional scope to inflight projects to try and deliver both | • New demand is met, business and customer benefits delivered<br>• Project already underway so no need for small IT changes Board | • Increase cost of inflight projects (which may be outside of allowances or budget)<br>• Increase complexity of inflight projects<br>• New demand may not align to any inflight projects<br>• Project request may not align to any inflight projects |
| Establish an allowance and develop the capabilities to deliver small IT changes requested | • New demand is met, business and customer benefits delivered in the simplest way possible<br>• Manage scope effectively<br>• Increase digital maturity through small incremental changes<br>• Demonstrate ability to respond and adapt to changing Digital landscape<br>• Higher business and customer satisfaction<br>• No impact on the wider delivery portfolio | • May lead to unsustainable level of demand requests due to success |
| Do Nothing – (i.e., do not establish a small IT change investment allowance & mechanism) | | • Business demands potentially not met, resulting in stakeholder dissatisfaction<br>• Reduction in scope and/or<br>• Missed opportunities to deliver increased consumer value<br>• Decreased stakeholder/customer satisfaction score due to inflexibility of IT delivery methods<br>• Fall behind in digital maturity and ambition of being leading digital utility |

## 5.3    Preferred Option

The preferred option is to establish an allowance and develop the capabilities to deliver small IT changes requested. The other options are discounted as follows:

- "**Add additional scope to inflight projects**" – This will put the inflight projects at risk in terms of changing the original scope that can lead to delays, increased complexity, and costs. Depending on the change request, it may not align with any of the inflight projects, and, therefore, may never be delivered. This may reduce the opportunities to the business to profit from the changes and, ultimately, the end consumer value.
- "**Do Nothing**" – This does not align with the Digital Vision and Strategy and does not enable the delivery of consumer and business value by incremental changes that can be supported and enabled by the delivery of small IT changes. It also does not encourage either staff, stakeholder, or customers to consider the rapid creation of small innovative solutions as it does not provide any opportunities to do such.

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# 6 Approach

## 6.1 Delivery Methodology

Part of the remit of the small IT changes team will be to determine the most appropriate IT delivery method for the small change. The chosen method should reflect the complexity of the change and scope. It is expected, due to the small scale of these changes, that the overheads would be kept to a minimum to maximise the benefits delivered. As the demand is currently unknown and will grow and vary over time, it is not possible to advocate one delivery method over another at this moment.

## 6.2 Defining and sequencing projects

The request for a project will go to the small IT changes team, where the project will be assessed against an agreed criterion developed between SSEN Transmission IT and the Business. If the project is successful in meeting the required criteria, then the project will be placed into the small IT project pipeline. Its priority and sequencing within the pipeline will both depend on business need and the capability of the SSEN Transmission IT team to deliver it.

The pipeline will be reviewed regularly (monthly) by the small IT changes team and, based on this review, the sequencing of the projects within the pipeline many change as business and capabilities change.

## 6.3 Technology Considerations

A key requirement for the acceptance of the small IT change is the fact that it will not have any dependency on other inflight projects and no architectural impact on the current IT system, therefore, technology considerations are applicable for this investment.

## 6.4 Governance

Normal governance for SSEN Transmission IT projects would require the following approach (Figure 14), but, as these projects are small (both in terms of cost and time), a lighter structure will be put in place to reduce the overhead, but keep an appropriate level of governance in place (Figure 14 and Figure 15).

As mentioned in Section 3.1, the small IT changes team will be a 'virtual' team in the sense that they only exist for the purpose to assess the small change request against the defined criteria. They will not exist as a permanent team but will meet and agree or reject requests – they will only exist as a team for the duration of this purpose.

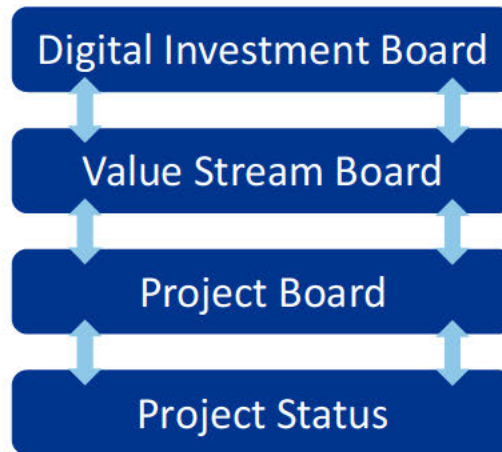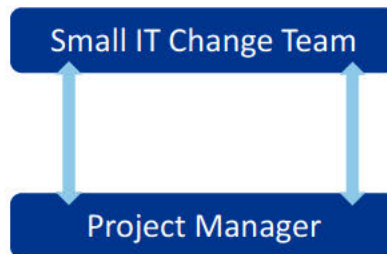Figure 14: Standard SSEN IT Governance model



Figure 15: Proposed Governance model



A 'virtual' small IT changes team will be responsible for the initiation or rejection of projects and provide a route for Project Managers to request decisions when required. However, they will not be responsible for the day to day running of the projects. The 'virtual' team will contain experienced members with the required level of authority to make the decisions and capable of understanding business need and consumer value add.

All projects that request small IT change support will be reviewed by the 'virtual' small IT change team. This team will be made up of representatives from both the business and SSEN Transmission IT and supported by the Business Change Team.

For projects to be considered small IT changes and thereby reviewed by the 'virtual' small IT change team they must fulfil the following requirements.

- No more than 20 days' worth of effort
- Cost per change will not exceed £50,000
- Will not be connected to or have reliance on an inflight Project
- Has no architectural impact
- Have no regulatory impact
- Do not handle personnel information

Once agreed that the request fulfils the previous requirements, then the 'virtual' small IT changes team will utilise an agreed set of criteria to evaluate whether the request should be taken forward. This set of criteria may include

- Improved operational awareness
- Consumer benefit
- Support process improvements for regulatory reporting

- Overall value delivered to SSEN Transmission
- Business and financial benefit

To accompany the "Use it or Lose It" based allowance, we propose to use the supplementary IT Project Reporting template and report expenditure against this allowance to the regulator on an annual basis through the RRP process.

## 6.5    Procurement

Where additional capability is required, we will leverage our Digital Partners Framework to bring on the best parties to support. This framework has been set up in RIIO-T2, connecting SSEN Transmission to new partners who have specific skillsets that we can leverage. To achieve the outcomes from our digital projects, we need to think differently, and align ourselves to providers who can support us with that.

## 6.6    Change Management

The small IT changes that will be delivered will not require any change management due to the scale of their impact by their very nature. Therefore, this section is not relevant.

# 7    Plan

## 7.1    Delivery Timelines

As this investment will be demand driven, and that demand is currently not known, it is not possible to map an exact delivery timeline.

## 7.2    Dependencies

Individual small IT changes may identify specific dependencies once delivery is under way, but this cannot be accounted for at this stage. Table 58 identifies any dependencies assumed.

Table 58: Identified dependencies

| Dep. ID | Dependency | Impact | Direction |
|---------|-----------|--------|-----------|
| D1 | Key resources will be made available at the start of the project to support mobilisation | Schedule & Cost Impact – if inputs are not received during the early stages, then this will delay the delivery of the change and increase costs | Inbound |

## 7.3    Risks to the plan

The following have been identified as risks to the delivery of this investment allowance (Table 59).

**Table 59: Risks**

| Risk | Impact | Probability | Mitigations |
|------|--------|-------------|-------------|
| The chosen IT delivery model leads to cost and time overrun | Time and Cost | 20% | A strong governance framework to ensure that projects have management oversight for delivery. |
| Capability gap to support and deliver projects in the pipeline | Resourcing | 10- 20% | Third party tactical support will be provided where required with plan to transition capability in-house for enduring delivery. |
| Development time and cost may exceed the project duration given complexities in current digital maturity level | Time | 10-20% | We will have alignment and steering from small IT changes Board and Business SMEs. |
| The technology built will not be used by the workforce to drive the benefits | Benefits Realisation | 10-30% | We will gain strong business sponsorship before all delivery to ensure the commitment to achieving the benefits. |
| Scope creep will push budget outside limit | Time and cost | 20% | There will be a strong governance framework to ensure that projects have management oversight for delivery. |
| Demand for changes exceeds agreed budget | Benefits Realisation | 10-30% | We will gain strong business sponsorship before all delivery to ensure project prioritisation correct. We will utilise business change management to ensure the solution is embedded. |
| Small changes do not meet future strategic direction | Benefits Realisation | 10-30% | We will gain strong business sponsorship before all delivery to ensure alignment. |
| Requests bypasses standard governance by incrementing scale of change | Governance | 10-30% | A strong governance framework to ensure that projects have management oversight for delivery. |

## 7.4    Resourcing

It is expected that, due to the small-scale nature of these different project types, all projects will be manged in-house (where possible) to reduce costs and build capabilities with SSEN Transmission IT and the wider business, but, if required, external resources may be used. This is more likely in projects/requests that demand specialised services (e.g., a particular training requirement). Therefore, in terms of resources it is expected based on previous experience that:

- Small change requests will be Value Stream agonistic
- May require both SSEN Transmission IT BAU and/or Core Team resources
- May require engagement with SSE Group IT
- May require procurement engagement

A list of typical resources that will be required as outlined in Table 60.

**Table 60: Resource types**

| Resource | Internal/External | Objectives |
|---|---|---|
| Project Manager | Internal | Lead the project and ensure it is delivering to the agreed timelines. Accountable for the end-to-end delivery |
| Business SME | Internal | Provides the business expertise, guidance, and oversight on the deliverables to ensure they meet requirements and expectations. |
| Business Analyst | Internal | Gather the business, customer, and stakeholder requirements |
| Visualisation/Web Developer | Internal/External | Develops reporting/dashboard/Web solutions to meets the business requirements |
| Trainer | Internal/External | Trains business users to ensure that we have a high adoption and achieve the outcomes and benefits |
| Scrum Master | Internal/External | Facilitates an Agile development team, with responsibility for managing the exchange of information between team members |
| Product Manager | Internal | Project's key stakeholder—typically someone from marketing or product management, or the lead user of a system |
| Others | N/A | Other costs related to the project (e.g., light touch finance support) |

## 7.5    Confidence in our plan

This investment is unique as the Small IT Change demand is unknown, therefore, there is inherent uncertainty on the exact resource profile or cost. The investment plan has been built in collaboration with the internal Portfolio Management and Business Resource Management team and has utilised historic demand that has been delivered to date to as an indicator of future needs. This work has also been reviewed with our Strategic Partner, a third-party consultancy with significant expertise in the delivery of projects utilising this small change approach. As an additional control, we have proposed that the funding should be based on a "Use It or Lose It" based allowance which will be reported against on an annual basis.

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# 8 Costs

## 8.1 Costing Approach & Cost Breakdown

This investment is made up of as follows expenditure:

- **Resource costs** – we plan to deliver this investment using internal and if required external resource model as outlined in the previous section. Our model is built by leveraging experience from and by incorporating lessons learnt from other organisations.

Across the expenditure types, we propose to spend **£1.07 million** across the remaining RIIO-T2 period (three years).

## 8.2 Cost Breakdown

Given the nature of this investment allowance, and the known scope, it is not clear how the costs will be broken down between different resource types. As with other investments, the costs could be allocated across the following cost types:

- SSEN Transmission (Internal & Contingent Resource)
- Third party services (Consulting/SI Services)
- Third party Services (Business Change and Readiness)
- Software Procurement
- Hardware Procurement
- Software Maintenance
- Hardware Maintenance

Table 61 shows the cost profile for this investment allowance.

**Table 61: Cost breakdown (2018/19 Price Base)**

| Resource Type | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|
| All Costs | ███ | ███ | ███ | ███ |
| Total | ███ | ███ | ███ | £1.07m |

## 8.3 Assumptions

Previous small IT change projects that have been delivered in the RIIO-T2 period to date were used for benchmarking cost and the following assumptions were used. Table 62 outlines the assumptions made for this investment.

**Table 62: Assumptions**

| A. ID | Assumption | Impact if assumption is broken |
|---|---|---|
| A1 | No more than 20 days' worth of effort. | Schedule Impact – Number of small IT changes delivered will be less to ensure overall schedule not breached |
| A2 | Cost per change will not exceed £50,000 | Cost Impact – Number of small IT changes delivered will be less to ensure overall budget not breached |

| | | |
|---|---|---|
| A3 | Will not be connected to or have reliance on an inflight Project | Schedule & Cost Impact – change will have to be rejected due to not meeting acceptance criteria |
| A4 | There is no architectural impact from the proposed new demand | Schedule & Cost Impact – change will have to be rejected due to not meeting acceptance criteria |

Also, it was assumed that the cost of any software purchased and/or software upgrades requiring updated license that this cost including resource costs would not exceed the £50,000 threshold.

## 8.4    Cost Assurance

Our costs are built up based on traceability and experience (Table 63). Used standard rates, negotiated framework rates and previous small IT project costs as a basis upon which to build our costs. We have also utilised external experience to check our estimates, these include

- **Working with consultancies** – Our plan has been put together from working external consultancies. Each have contributed to the projects, including providing the effort estimates we would expect to see. These are based on similar projects delivered elsewhere.
- **Benchmarking** – We have benchmarked this plan with previous experience of delivering similar sized and types of IT projects within SSEN Transmission to date, to demonstrate that the overall investment is within the expected. This has given further confidence that we:
    - Have not over forecasted any costs, and we are delivering the investment efficiently.
    - We have not under forecasted and will be hit with unexpected costs when we come to deliver.

Table 63: Cost assurance

| Cost Assurance Mechanism | Applies to this PDJP | How it applies? |
|---|---|---|
| High Level Plan | Yes | We have created a High-Level Plan and assured its deliverability and ensured we have aligned our resource estimates to it. |
| Top-Down Resource Estimates | No | |
| Bottom-Up Resource Estimates | Yes | We have used a bottom-up estimator by identifying key resources and estimate effort against key activities. |
| Confidence Weighting on Resource estimates | Yes | Used industry wide experience with our Strategic Partners |
| Experience from prior investments | Yes | Based estimates on historical demand |
| RIIO1/2 Allowance and Expenditure | Yes | Similar projects delivered in RIIO-T1 |
| Negotiated and Market Tested frameworks and contracts (e.g., Consulting Services or Managed Services) | Yes | Unit rates for the resource costings is based on a combination of internal loaded costs and the rates set out in negotiated and agreed framework consulting agreements |
| RFx Processes | No | |

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| | | |
|---|---|---|
| External Benchmark of investment titles | Yes | Engaged widely with business and group |
| Unit Cost Assumptions | No | |
| Expert/External Provider Support to paper | Yes | External consultancy input on the scope and effort estimates |
| Project Delivery Risks | Yes | We have outlined these in the document |

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# 9    Operating and sustaining the solution

There may be a small residual operating cost of the changes, once they have been delivered, as the primary purpose of all these changes is to improve on and align with the Digital Vision and Strategy. Therefore, they will be expected to be used regularly/day to day by either the Business, Stakeholders, or Customers, so, therefore, will require some level of support.

Depending on the type of change delivered, this will reflect on the expected level of support due, but, due to the small-scale nature of these changes, it can reasonably be expected that the support costs will be absorbed in the existing BAU cost of running the support models in place. This is reflected in Table 64.

**Table 64: Support Costs**

|  | Project Type | 2023 – 2024 | 2024 – 2025 | 2025 – 2026 | Total |
|---|---|---|---|---|---|
| **Operational Expenditure** | Small IT changes | ■ | ■ | ■ | ■ |
| **Total** |  | ■ | ■ | ■ | £0 |

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# 10    Conclusion

Experience to date has demonstrated that there is a need and demand for the business to have the capabilities within SSEN Transmission IT to deliver small IT changes that deliver value to the business, stakeholders, and external customers.

As the digital energy landscape changes and the necessary drive towards Net Zero accelerates, there is a pressing need for SSEN Transmission to be able to react to evolutions in business and technology, recognising the opportunity to deliver new capabilities, increase safety, or become more efficient. As digital maturity increases so does the need for small IT changes, both in interactions within SSEN Transmission, but also in dealing with its growing number of external stakeholders and customers.

The traditional approach to deliver change via large scale IT deployment may, in future, be met by a maturing digital workforce embracing small incremental IT changes. Therefore, this investment will enable SSEN Transmission IT to develop and deliver the required changes.

Based on historical demand to date, it is expected that the requests will fall into the following change types. However, we are not constraining the demand given the unknowns.

- Small Hardware purchase
- Software Upgrades
- Small Software purchase
- Small Platform change
- Small User Interface or Workflow changes

A set of criteria has been developed and agreed with the business and SSEN Transmission IT to help determine if any project requests fall into the small IT changes mandate. If successful in meeting the required criteria, then the projects will be prioritised and placed in the small IT changes pipeline.

It is expected to complete approximately eight projects per year, based on previous demand and the growing level of digital maturity internally and externally. These projects are expected to cost approximately £50,000 (2021/22 price base) each with a project duration of 20 working days. When discounted, this equates to the following commercial summary and the request for **£1.07 million** to support this ongoing need.

**Table 65: Small IT Change Commercial Summary**

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT & T Capex | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Support Costs IT Opex | ■ | ■ | ■ | ■ | ■ | ■ |
| Total Investment | ■ | ■ | ■ | ■ | ■ | £1.07m |

Given the unknowns, including whether there will be a consistent level of demand through the remainder of the RIIO-T2 period, we propose the use of a regulatory mechanism to ensure that there is value to the consumer. We propose that the allowance is granted on an annual ex-ante "Use it or Lose It" basis, with the allowance returned to the consumer based on annual reporting through the RRP.

# Project TReNDS (TRansmission Network Digital Substation)

## Project Definition and Justification Paper

## Contents

## 2    Executive Summary

The scale of the capital project delivery in SSEN Transmission throughout the remainder of RIIO-T2 and throughout RIIO-T3 will increase in line with the demands placed on the organisation through the Accelerated Strategic Transmission Investment (ASTI). Building a Network for Net Zero and maintaining a Safe and Secure Network Operation, will require substantial capital project investment as we scale our electrical network. In line with our RIIO-T2 Strategic Theme of Sector Leading Efficiency, and the measurable goal of £100 million of efficiency savings from investments, we continually seek ways to innovate and reduce the cost of capital projects.

In supporting the transition to a low carbon economy, development of digital substations supports modernising our network and aligns with the greater convergence of Information Technology and Operational Technology. The development of digital substations captures the innovation opportunity of modernising our network through the integration of new technologies. Implementation of digital substations is not new for SSEN Transmission ██████████████████████████████████████████████████████████████████████████████. Project TReNDS aims to expand the Digital Substation to the next level by ███████████████████████████████████████████████████████████████

This expansion of Digital Substations ███████████████████████████████████████ This represents continual savings for consumers in the overall cost for delivering Net Zero related infrastructure.

We are requesting £2.18 million[2] of investment to deliver the Project TReNDS outcomes, summarised in Table 66.

Table 66: Investment Summary

| Cost Table (£m 2018/19) | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|---|---|---|---|---|---|---|
| Non-Op IT Capex | ███ | ███ | ███ | ███ | ███ | ███ |
| BSC IT Opex | ███ | ███ | ███ | ███ | ███ | ███ |
| Total Investment | ███ | ███ | ███ | ███ | ███ | £2.18m |

The remainder of this project definition and justification contains confidential information and has been redacted from this document.

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[2] All costs in this paper are adjusted to 2018/19 prices