Scottish & Southern Electricity Networks

RIIO-ED2 Investment Decision Pack w

Digital Comms

Investment Reference No: 22/SSEPD/IT-ASSET/DIGITAL_COMMS

CONTENTS

Definitions and Abbreviations	
BPDT	Business Plan Data Table
CAPEX	Capital Expenditure
CEG	Community Energy Group
DER	Distributed Energy Resources
DG	Distributed Generation
DSO	Distribution System Operator
EJP	Engineering Justification Paper
EV	Electric Vehicle
FTE	Full Time Equivalent
IDP	Investment Decision Pack
IP	Internet Protocol
IOT	Internet Of Things
ISDN	Integrated Services Digital Network
LAN	Local Area Network
LCT	Low Carbon Technology
NPV	Net Present Value
ODIF	Output Delivery Incentives - Financial
OPEX	Operational Expenditure
PSTN	Public Switched Telephone Network
SIP	Session Initiation Protocol
WAN	Wide Area Network

1. Executive Summary

During RIIO-ED2 we will need to manage 2 major impacts on our communications systems. The first is the national switch off of the Public Switched Telephone Network (PSTN) system which will be phased out (currently scheduled for the end of 2025), so new IP based phones will be required at our depots and offices. The second is changes to WAN, LAN and WiFi facilities at our depots and offices, to replace obsolete equipment and also to ensure our networks are suitable for a digital business. Both of these requirements are covered by this Digital Comms project.

2. Investment Summary Table

Summary Table			
Name of Scheme / Programme	Digital Comms		
Primary Investment Driver	Safe, Resilient and Responsive Networks		
Scheme Reference / Mechanism or Category	22/SSEPD/IT-ASSET/DIGITAL_COMMS		
Output References / Type			
Cost (CAPEX)	[redacted]		
Delivery Year	RIIO ED2		
Reporting Table	C4		
Outputs Included in RIIO ED1 Business Plan			
Spend Apportionment	**ED1**	**ED2** [redacted]	**ED3**

3. Introduction and Background Information

The PSTN system is scheduled to be phased out by the end of 2025 and changes are required to the existing mobile network in order to service IoT. As these systems, or their replacements (e.g. Internet Protocol (IP) based phones), are already well established, we have already started to move to these new communication networks in RIIO-ED1. For example, we have already replaced the legacy Integrated Services Digital Network (ISDN) lines in our call centres with a new Session Initiation Protocol (SIP) infrastructure and have both 5G and IoT mobile systems in use in a few specific areas. In RIIO-ED1 we also upgraded our Local Area Networks (LANs) and Wide Area Networks (WANs), along with adding WiFi facilities to several of our sites.

In RIIO-ED2 we will continue to upgrade our systems to ensure all of our PSTN based phone infrastructure is replaced, replace and upgrade WAN, LAN and WiFi equipment, and use 5G and IoT based mobile networks where these are appropriate. The new SIP based systems will need to be installed in all our offices and depots. However, as these systems rely on a continuous electricity supply (unlike PSTN) we will need to ensure robust backup arrangements are in place to maintain contact with our staff, customers and stakeholder should the main power to any site fail. The demands of running a Digital business will require further improvements to our LAN, WAN and WiFi systems in some of our offices and depots, especially as some of the current equipment will become obsolete during the period. For the newer mobile systems, we need to ensure these are able to fully integrate with our core systems in the same way the existing mobile based systems are connected. Note that this project does not include the new digital communication networks for our Operational Technology (OT) systems (e.g. telemetry), as these are covered in our OT submission.

4. Business Plan Fit

This project can be mapped to following strategic themes:

Progress to Net Zero	Safe, resilient and responsive networks	A trusted and valued service to customers and communities	Positive Impact on Society
✓	✓	✓	

5. Optioneering

Our RIIO-ED2 plan is based on working with the supply chain to deliver the best value replacement to our current systems. Our highest priority will be to ensure reliability and resilience across our regions, whilst looking to achieve a good balance between cost and function. At the very least we expect the new systems to provide:

- Full IP (SIP Infrastructure based) phone systems for all of our currently PSTN served offices and depot, where that location is still deemed as requiring fixed communications:
    - This will include all necessary hardware and software.
- Where the office or depot does not already have a viable alternative to the fixed communication network in the case of a power outage, ensuring there are reliable backup arrangements.
- Where not already provided, ensuring that the new fixed phone system can continue to integrate with other systems where appropriate (e.g. Interactive Voice Response software).
- Update WAN and LAN systems, as well as WiFi, at our offices and depots, so that legacy equipment is replaced and they are suitable for running a Digital business (e.g. engagement in Flexibility market, viewing and editing of large files such as photos, videos etc., analytics using cloud-based tools and data).
    - Our current RIIO-ED2 plans have been based on our 2020 survey of these locations.
- Linking new 5G systems to our IT systems as appropriate (e.g. for the roll out and updates of Apps and data).
- Linking IoT based mobile systems to other IT systems, where these are not part of our telemetry systems, e.g. third-party weather reporting sensors (although as a general rule we would look to obtain such data through an API service with the third party).

As stated in part of our RIIO-ED2 submission for field communications (see our separate Engineering Justification Paper for this work), we are seeking to obtain additional spectrum and deploy our own secure and power resilient communications solution with coverage designed to meet our operational requirements. While no technology choice commitment has been made, this could be “Private LTE”. In this scenario it would be possible to facilitate data connections at fixed and mobile locations as required for the business, and this could be designed to include vehicles and tablets using widely available technology, and with the coverage, resilience and security we expect. This facility is of course subject to the OFCOM process for the release of spectrum, and if approved will be managed under a re-opener: no costs have therefore been allowed for this facility in our current submission.

A major concern is how customers are able to contact us in a power outage once the PSTN systems is withdrawn. This issue is not under our control, so we will continue to work with industry bodies and regulators to try and ensure robust measures are in place, particularly in regard to vulnerable customers.

5.1.1 Alternative Options

As the national PSTN telephone network will be decommissioned in 2025, and some of our digital comes network equipment will be unsupported by vendors during ED2, doing nothing is not an option if we wish to retain telephony and digital comms in our offices and depots.

The work set out in this project has been trialled at a couple of our offices and is based on industry best practice. However, given the pace of IT and telecom development, the market will be re-examined throughout the project lifecycle to ensure the best value solutions at that time are chosen for delivery.

6. Stakeholder Evidence

Our recent Stakeholder workshops have confirmed that far more customers (50-70%, depending on groups) now prefer to contact us through digital channels than other means. This is in alignment with other studies, such as the HM Passport bilateral engagement stakeholder, where 60-70% of their customers choose the self-serve online option. Having effective digital communications in place to all of our core sites will greatly aid our digital interactions with our stakeholders, such as holding video calls. Nonetheless many of our customers still prefer voice communication, especially in emergency situations, so maintaining voice comms at our core site will be vital. This is particularly true for vulnerable customers, where almost 60% stated that this was their preferred method of communication.

More details of overall stakeholder engagement are set out in the ***Digital Investment Plan (Annex 5.2).***

7. Analysis and Cost

Costs have been built up using a bottom up approach and have been based on the best currently available solutions. However, IT is a rapidly changing area, so the market will be re-examined prior to delivery, and the best value option to meet the requirements set out above will be chosen. The project has been assessed over a 5-year lifecycle, with both Opex and Benefits equated for that operational period, as IT projects often need updating after 5 years. Although there are some benefits, there is no viable alternative to replacing the PSTN system and obsolete comms, therefore in line with guidance no CBA has been completed (and hence no NPVs in the table below).

7.1 Cost Profile

This project has the following cost profile, rounded to 2 decimal places for simplicity and will be delivered as a rolling programme of updates across the various sites. Costs and benefits have been set out in the years they are expected to occur. The full build up of costs is contained in the ED2 IT Investment Plan (Non-Op Capex) Cost Estimate spreadsheet.

	Total £'M	2023/24 £'M	2024/25 £'M	2025/26 £'M	2026/27 £'M	2027/28 £'M
CAPEX	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ED2 OPEX	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]
ED2 Benefits	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]
5 Year OPEX	[redacted]					
5 Year Benefits	[redacted]					

Note that depots and offices have been split into 6 groups for estimating – see costing sheet.

7.2 Benefits

7.2.1 Financial Benefits

The primary benefit of this project will be to ensure that depots and offices have phone communication once the national PSTN is switched off, and replacing legacy communication equipment (WAN, LAN and WiFi) so that digital comms is not compromised. The financial benefit below relates to the improvements of digital comms at the various sites when legacy equipment is replaced. Replacement of PSTN with SIP phones does not have any direct financial benefits, however is necessary to maintain voice communication once the national PSTN system is withdrawn. Note that the benefits below are shown for the first 5 years after the project is implemented.

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Reduction in staff needing to travel to other offices for meetings, due to comms allowing full video. This equates to an offset of 3 new FTE. [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Reduction in time waiting for data to download / systems to refresh in offices and depots. This equates to an offset of 3 new FTE. [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

The following benefits cannot be accurately estimated but are likely to show some savings.

- Reduced travel as upgraded WAN/LAN/Wi-Fi etc. will support our digital business to make better, quicker, decisions, and help to facilitate a low carbon business.
- Improve areas of poor comms / 5G to reach more areas.
- Improved digital comms enables the data to come back from the field to feed systems which can then be shared via Open Door.

7.2.2 Non-Financial Benefits

The prime benefit of this project is to ensure we have reliable fixed communications to our offices and depots once PSTN is withdrawn, replace legacy communication equipment (WAN. LAN and WiFi) and that the move to new mobile services (e.g. 5G) does not detrimentally affect our service.

The project also supports others, notably any that requires communications with third parties.

7.2.2.1 Foundation to other Projects/Initiatives

The project supports Fieldwork (5G Rollout) and the Vulnerability Strategy (PSTN Switch Off).

7.3 Key Assumptions

We are assuming that there will be suitable back-up facilities in the national communications systems to enable our customers to contact us in the case of an outage once the PSTN system is switched off. At present some of our customers report that they only have a mobile signal for a matter of minutes after an outage, and this is a major concern, particularly in regard to vulnerable customers.

The current programme and costings assume that all planned RIIO-ED1 system changes will be complete before the start of RIIO-ED2. If some of the current planned application changes are not completed, this will increase the complexity, and hence cost and timescale, of this project.

7.4 High Level Dependencies

We are dependent on any agreements made between the various regulators and telecoms providers to ensure we can deliver the required outcomes.

7.5 Deliverability & Risk

Our ***Ensuring Deliverability and a Resilient Workforce (Chapter 16)*** describes our approach to evidencing the deliverability of our overall plan as a package, and its individual components. Testing of our EJPs has prioritised assessment of efficiency and capacity, and this has ensured that we can demonstrate a credible plan to move from SSEN's ED1 performance to our target ED2 efficiency. We have also demonstrated that SSEN's in house and contractor options can, or will through investment or managed change, provide the capacity and skills at the right time, in the right locations. This assessment has been part of the regular assessment of our EJPs, IDPs and BPDT's. Our ***Deliverability Strategy (Annex 16.1) and Supply Chain Strategy (Annex 16.2)*** are included in the Business plan Submission.

Our deliverability testing has identified a major strategic opportunity which is relevant to all EJPs.

- In ED2 SSEN will change the way Capital Expenditure is delivered, maximising synergies within the network to minimise disruptions for our customers. This is particularly relevant for a Price Control period where volumes of work are increasing across all work types.
- The principle is to develop and deliver Programmes of work, manage risk and complexity at Programme level and to develop strategic relationships with our Suppliers and Partners to enable efficiency realisation.

8. Conclusion

The implementation of the Digital Comms project will ensure that all of our offices and depots will, where appropriate, continue to have phone systems once PSTN is switched off nationally, and that legacy communication equipment (WAN, LAN and WiFi) is replaced with equipment that maintains security and is suitable for a digital business. It is also a prime enabler for digital working within our regions.