




Site Security

ED2 Engineering Justification Paper Addendum

ED2-NLR(A)-SPEN-002-SAF-EJP-ADD

Issue	Date	Comments
Issue 0.1	Aug 2022	Internal Draft for Review
Issue 0.2	Aug 2022	Internal Draft with Comments Addressed
Issue 1.0	Aug 2022	First Issue - Draft Determination Response

Scheme Name	RIIO ED2 - CV14 - Site Security			
PCFM Cost Type	Non-Load Related - Other			
Activity	Site Security			
Primary Investment Driver	Safety of the public and the ongoing protection of our network assets against theft, unauthorised entry, vandalism and terrorism			
Reference	ED2-NLR(A)-SPEN-002-SAF-EJP-ADD			
Output Type	Legal & Safety - Site Security			
Cost	SPD	£6.383m	SPM	£9.051m
Delivery Year	2023 2028			
Reporting Table	CV14			
Outputs included in ED1	Yes/No			
Business Plan Section	Ensure a Safe and Reliable Electricity Supply			
Primary Annex	Annex 4A.18: Legal and Safety (CV14) Strategy			
Spend Apportionment	ED1 £m	ED2 £15.433m	ED3 £m	

	Proposed by	Endorsed by	Approved by
Name	David Cupples	Ralph Eyre-Walker	Russell Bryans
Signature			
Date	23.08 2022	23.08 2022	23.08.2022

I Purpose

This addendum has been prepared to provide additional information and justification to ED2-NLR(A)-SPEN 002-SAF-EJP Site Security EJP following receipt of RIIO ED2 Draft Determination. The content of addendum is in response to comments and feedback provided by Ofgem as to the “Partial Justification” status of the EJP. The purpose of this document is to support Ofgem’s assessment for Final Determination including supporting any associated impact on engineering adjustments within Ofgem’s financial modelling.

2 Ofgem Comments & Feedback

2.1 RIIO-ED2 Draft Determinations SPEN Annex

The following comments are taken from Table 26 of “RIIO-ED2 Draft Determination SPEN Annex”.

Ofgem Comment Partially Justified We agree in principle with SPEN’s desire to upgrade substation site security. We are concerned with the significant increase in expenditure proposed by SPEN when compared to RIIO-ED1, however we broadly agree with SPEN’s optioneering and intervention prioritisation.

Ofgem Identified Risks - Due to the significant increase in proposed expenditure, we believe there is a deliverability risk associated with the EJP.

2.2 Draft Determination SQs

Following the receipt of Draft Determination, SPEN submitted SQs including ‘SPEN_DD_016 EJP Clarification’ which contain detail relevant to this EJP. The relevant content of the SQ has been included below for reference.

SPEN Submitted SQ_DD_016 (25/07/2022)

ED2-NLR(A)-SPEN-002-SAF-EJP – Site Security

“We agree in principle with SPEN’s desire to upgrade substation site security. We are concerned with the significant increase in expenditure proposed by SPEN when compared to ED1, however we broadly agree with SPEN’s optioneering and intervention prioritisation. Due to the significant increase in proposed expenditure, we believe there is a deliverability risk associated with the EJP.”

Please could Ofgem clarify which components of site security deliverability are uncertain (e.g. Smart Locks) to allow SPEN to provide additional evidence for these areas.

SQ SPEN_DD_016 – EJP Clarification - Ofgem Response (08/08/2022)

ED2-NLR(A)-SPEN-002-SAF-EJP – Site Security

We were not satisfied that SPEN has provided sufficient evidence in regard to the security systems area of investment

We were not satisfied that the EJP contained sufficient justification for the proposed smart lock expenditure, as the benefits derived from its roll out in SPM are not demonstrated beyond metal theft reduction. We welcomed the further information on the benefits of the smart locks provided during our ED2 site visits. We welcome those comments to be submitted in writing for consideration. Furthermore, we are aware that these works contain multiple elements regarding the development, roll out and use which were not clearly justified in the EJP.

Any further information will be considered if provided.

3 Additional Justification

3.1 Summary of any Ofgem SQs

SPEN responded to two SQs (SPEN059 & SPEN074) Issued by Ofgem on the 07/02/22 & 16/02/22 and the responses have been appended in Section 4 for reference. SPENs response to the SQs provided further detail on the following points:

- Justification around the increase in Site Security Expenditure in ED2.
- Review undertaken by SPEN of existing Site Security Assets to identify required interventions.
- Prioritisation of sites and delivery method
- Justification on increased activity in SPM in 27//28
- Clarity on Site Security (HV) volumes
- Clarity on Site Security (EHV) unit costs
- Clarity on Site Security (132kV) unit costs in SPM

3.2 Additional Supporting Information

3.2.1 Site Security Systems

Site security systems are critical in ensuring SPEN fulfils its responsibilities as DNO under ESQCR and Electricity Act, as set out within the needs case in Section 3 of the EJP. This becomes even more important as the transition to Net zero creates greater reliance on electricity supply, meaning substations and network assets are at a higher risk of being targeted and have a greater impact should supply be interrupted.

Table I below provides a summary of recorded security incidents within our SPD and SPM licence areas across RIIO-ED1. This data indicates that unauthorised access into operational sites is a growing concern that is influenced by the social economic environment including cost of living and metal prices.

Taking this into account alongside the increased physical and cyber threats as reliance on the electricity network grows with Net Zero, it is imperative that DNOs continue to invest in maintaining the necessary levels of security at substations.

	Substation Voltage	2016	2017	2018	2019	2020	2021
SPM	EHV and HV Substations	153	51	44	26	23	10
SPD	EHV and HV Substations	27	33	19	26	18	20

Table 1 - RIIO-ED1 Reported Security Incidents

SPEN's current security system installations at substations vary in age, condition, and level of security provided. Furthermore, connectivity and capability for real-time monitoring through ScottishPower's Alarm Receiving Centre is often not possible with the legacy systems. Real-time monitoring is essential to intervening in deterring against and reacting to security incidents. More importantly, being able to make assets safe for the public and those working on or near them as soon as possible after an incident has occurred is critical. Without real-time monitoring, the timescale of an incident can often be dependant on when the site is next visited by personnel or contractor, a member of the public raising concern, or a fault / loss of supply incident. This also aligns with works ongoing in physical and cyber security around SPEN's critical operating systems (e.g. telecoms and control networks) and preventing unauthorised access.

Therefore, the planned site security systems interventions in RIIO-ED2 at our primary and grid sites are required to bring our substations into line with our current Site Security Policy ASSET-01-023. As per our response to Ofgem SQ SPEN059, the volumes of site security systems upgrades were based on SPEN's security asset register supplemented by expert assessments and site visits. Within the EJP we assessed options for delivery of the required interventions and opted to progress with delivery over multiple price controls. Table 2 below provides a summary of the volume delivery profile of site security systems at our Grid and Primary substation sites.

	Substation Voltage	23/24 (Vol)	24/25 (Vol)	25/26 (Vol)	26/27 (Vol)	27/28 (Vol)	Total (Vol)
SPM	132kV Grid	9	9	9	9	10	46
	EHV Primary	104	104	105	105	105	523
SPD	EHV Grid	7	7	7	8	7	36
	EHV Primary	62	62	62	62	63	311

Table 2 - Volume Profile for Security Systems

Site security systems update work shall be delivered by ScottishPower Corporate Fire and Security and their framework contractors. Deliverability has been considered in the decision to adopt a multi price control strategy. This programme of works shall be delivered alongside the fire systems upgrade works by a single contractor ensuring most efficient delivery. The delivery prioritises our highest risk sites first as set out within both the Site Security EJP, Fire Mitigation EJP and SQ responses. There are no foreseen risks to delivery of the volumes proposed within RIIO-ED2.

3.2.2 Smartlocks

The smartlock programme in SPEN involves the rollout of an innovative locking solution which uses smart-key technology to securely control access to our operational sites. SPEN initially identified through trials in RIIO-ED1 a preferred technology supplier and have since worked with this supplier to develop the current standard being rolled out in our SPM and SPT licences.

[REDACTED]

[REDACTED]

[REDACTED]

Further to the needs case set out in Section 3 of the EJP, locking systems across our three licences vary and involve the use of multiple key types and key variances to manage access to our operational sites. The two key drivers for the replacement of the existing mechanical locking systems are;

- The ability for lost or stolen keys to be used / copied and provide unauthorised access to substation sites. This had been identified as being a common factor in metal theft and other unauthorised access occurrences across our network
- Existing key / lock manufacturers products no longer manufactured / supported

Following the trials of smartlock solutions, it became apparent that further benefits could be achieved by rolling out a new locking system including:

- Contractor Management ability to limit third party key holders' access to project specific sites and for fixed periods only.
- Programme/Contract Management provision to track access of personnel to confirm access was taken / site was visited (e.g. site inspections / landscaping.).
- Audit trail accurate records of key holders who have visited a site / location.

The proposed smartlock 'roll out' programme within RIIO-ED2 follows the same process currently applied in SPM within RIIO-ED1 and SPT within RIIO T2. At each substation all ESQCR access locations (e.g. high security palisade gate / main access door) shall be fitted with a smartlock padlock or barrel. This ensures that for someone to take access to the substation they must hold an activated smartlock key.

Our volumes for smartlock padlocks / barrels required within RIIO-ED2 have been based on the volumes delivered within the ongoing SPM roll-out experienced within RIIO-ED1. Table 3 below provides a summary of forecast volumes per site.

[illegible]

Table 3 - Smartlock Volumes per Site

The delivery of smartlock rollout will continue to follow the efficient process developed within SPM in RIIO-ED1. This involves using internal staff (predominantly substation inspectors) to install smartlocks alongside carrying out of substation inspections. This has been proven within SPM to be successful, with a significant proportion of the network now completed and remaining volumes to be completed within RIIO ED2. Taking account of this proven delivery approach there are no foreseen

[illegible]

[REDACTED]

4. Appendix

The content of this appendix has been redacted.