

<b>Partick Grid Site Rationalisation - OFGEM Justification Paper</b>	
<b>Name of Scheme/Programme</b>	Partick Grid Site Rationalisation
<b>Primary Investment Driver</b>	Civil works driven by condition of civil items
<b>Scheme reference/mechanism or category</b>	SPNLT20104
<b>Output references/type</b>	NLRT2SP20104
<b>Cost</b>	£2.96m
<b>Delivery Year</b>	2024
<b>Reporting Table</b>	Tables C0.7 and C2.2a AP and C2.2a CI
<b>Outputs included in RIIO T1 Business Plan</b>	No

<b>Issue Date</b>	<b>Issue No</b>	<b>Amendment Details</b>
July 2019	Issue 1	First issue of document
December 2019	Issue 2	Amendments to scope of works and costs.

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## 1 Introduction

Civil assets used to support the main electrical equipment are essential to the safe operation of the transmission system. The condition of these assets can have a bearing on the strategy for the management of the electrical assets and long term stewardship of civil assets is a key priority.

At Partick 132kV substation the life of the main plant has been extended through evolution in technologies, mid-life interventions and improved maintenance regimes, however from a series of visual and intrusive inspections, undertaken by Structural Engineers, it has been determined that substation building and associated basement areas are no longer fit for purpose.

The original buildings remaining on the site date back to the early 1900s (when they formed part of a power station). Over the years various buildings have been demolished, however the remaining building currently houses batteries, protection & control, and telecoms equipment.

This paper supports a proposal to rationalise Partick Grid 132kV substation.

## 2 Background Information

Civil assets are classed as non-lead assets and are not within the scope of the NARM mechanism. However, SPT have an asset management system in place to ensure that these assets are inspected, recorded and managed from a risk perspective.

A comprehensive programme of civil inspections have been undertaken across the network and it was identified through these inspections that Partick 132kV substation building and associated basement areas are in a poor condition and without further intervention will degrade to a point where it cannot be repaired and will fail.

## 3 Optioneering

The following is a summary of the options considered for this Programme. The respective associated documents covering the considered options are available for review.

The costs provided in the table are TOTEX costs and include capital expenditure for the construction works as well costs for ongoing maintenance of the existing building and basement areas for a period of 40 years. There is no expected maintenance associated with Option 4.

	<b>Option</b>	<b>Status</b>	<b>TOTEX Cost (£m)</b>	<b>Reason for rejection</b>
1	<b>Do Nothing</b>	Rejected	<b>N/A</b>	Through a detailed visual inspection and intrusive testing process it has been determined that no intervention will lead to failure of the asset. The current condition of the building and basements means this option was rejected.
2	<b>Refurbishment of the existing building and repairs to the basement areas</b>	Rejected	<b>£3.2m</b>	Refurbishment of building and basement areas has been deemed to be impractical and uneconomic. Therefore this option was rejected.

3	<b>Refurbishment and rationalisation of the site, retaining sections of the existing building and repairs to the basement areas</b>	Rejected	<b>£3.2m</b>	Refurbishment of building and basement areas has been deemed to be impractical and uneconomic. Therefore this option was rejected.
4	<b>Rationalisation of the site through demolition of the existing building, make good the basement areas and relocate the existing plant to a new housing.</b>	Proposed	<b>£2.95m</b>	-

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## 4 Detailed analysis

### 4.1 Selected Option

Option 4 is the preferred option. This includes the rationalisation of the site through demolition of the existing building, works to make good the basement areas and relocating the existing plant to a new housing is the preferred option.

The other options all include significant ongoing costs associated with the maintenance of the building and basement. This is to be expected for a building and basements which are over 100 years old.

### 4.2 Condition Assessment

#### 4.2.1 Methodology Approach

SPT has a strategy with civil assets to visually inspect annually and intervene when asset condition requires. This has been a historical approach and interventions have been reactive maintenance and defect repairs. They were expected to be replaced in line with the associated electrical assets. As the life of the main plant has been extended through evolution in technologies, mid-life interventions and improved maintenance regimes, the required life of the associated buildings also requires to be examined.

A comprehensive programme of civil inspections has been undertaken across the network and it has been identified through these inspections that the building at Partick 132kV substation is in poor condition.

#### 4.2.2 Outputs from Assessment

During the inspection programme each civil asset has been assigned a Health Index consistent with the standard SPT range of 1 to 5. Health Index 1 is considered to be new or as new and Health Index 5 is end of life.

Partick substation building was identified as being Health Index 5. This means that the assets are either at or approaching End of Life and in need of refurbishment.

Based on the findings of the initial inspection a more detailed inspection was undertaken by a structural engineer. This including intrusive testing to determine concrete strength and assess the structural stability of the building and basement areas. This assessment was used to determine the current condition of the building and basement areas, determine the remedial works that were required and assess the options for continued use.

The findings of this structural assessment and consideration of the ongoing maintenance costs determined that Option 4 was preferred choice.

### 4.3 Sustainability

The SPT sustainability approach is to prioritise reuse, then refurbish and finally replace if there is no other option. In this instance the demolition of the existing building is the preferred option due to the condition of the building. It is proposed to minimise the transfer of waste off site by taking the building masonry, crushing it, grading it and reusing it as backfill to the basement areas.

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#### 4.4 Innovation

Innovation is a key component to deliver developments in all aspects of work. While the technology used in the project will be standard with a proven track record and the application adopted in line with industry standards, SPT will look to use innovate ways of project delivery and installation to deliver this programme of works.

#### 5 Conclusion

The historical approach to buildings as assets which are maintenance free and replaced with the associated plant at end of life is no longer a valid investment strategy. This is due to the development of mid-life refurbishments and improved maintenance of the main plant equipment. Rationalisation of Partick substation is required to ensure life extension that aligns with the electrical plant.

- Predicted costs: £ 2.96m
- Timing of investment: 2020-2024
- Declared outputs: N/A

#### 6 Future Pathways – Net Zero

We have reviewed this project against the criteria set out within the business plan guidance and have assessed that it does not prevent achievement of our Net Zero plans or lead to stranded assets

#### 7 Outputs included in RIIO T1 Plans

No