

Substation Civils Re-Opener

Enhanced Project Investment Paper

Blyth 275kV Substation – Cladding Replacement

Section Author	Steve Barnett	Date Started	14/06/2022
Reference Number	2018-353		

1. Scheme Summary by Regulatory Category

Unique Identifier	Site	Asset	RIIO Financial Category	Output Year	Total Estimated Cost (£m)
2018-353	Blyth 275kV Substation	Entire Substation Shed	Buildings	2023	■

2. Project Summary

Driver Detail	Blyth is an indoor 275kV Substation enclosed with a steel lattice aluminium clad 'shed'. This was constructed in the 1960's and is now in need of survey and repair. Recent high winds have caused damage to the cladding, with some loss of sheets occurring through failing of the fixings.
Project Overview	<p>The entire substation shed (plan area is 321,140mSquare x 26m tall) is in need of repair. Panels have become loose in high winds and in some instances, detached from the building.</p> <p>Several repairs have been carried out to replace lost wall cladding panels in isolated areas, but all fixing securing panels to frames are in question and require renewing or supplementing. The current fixings are aluminium hook bolts which are exhibiting bi-metallic corrosion and stress fractures. In addition, 16 large boxed rainwater pipes are blocked at the base due to ingress of debris, mainly bird nesting material, which blocks the drain at the bend beneath the pipe entry.</p>
Plant Status Link:	<p>A survey of panel repairs has recently been carried out by Kiloh associates. A combination of outage and non-outage work will be required. The extent of the outage work is yet to be determined.</p> <p>The chosen option is to supplement the original fixings with self drilling self tapping fixings drilled and fixed through the cladding into the sheeting rails from outside.</p>

Scope Diagram





Other Options Rejected.

1. Do nothing.

This option would almost certainly lead to a further loss of cladding/roofing panels during high wind conditions. Existing cladding has been made safe however if nothing is done for a prolonged period then there is increased risk that further loose sheets may cause damage to other equipment, flashover, loss of supply or cause injury or death to personnel and members of the public.

Refixing of lost panels can be difficult due to availability of suitable panels and access issues. If outage constrained, this adds to the difficulty of arranging repairs.

For these reasons, this option is rejected.

2. Replace the existing hook bolts with new.

This option would require both internal and external access to pass the bolts through the cladding from inside and hook around the sheeting rail, whilst securing the nut on the outside. This is a very difficult process and requires twice the access provision (inside and outside at the same time).

For this reason, this option is rejected.

3. Supporting Documents

Please list any other relevant documents that are key to the Gatekeeper's decision

Ref	Document Title	Document location/link(s) (Insert > hyperlink and use a short name)
A		
B		
C		

4. Project Summary

Programme	The works will commence almost immediately, and the bulk of the work (non-outage) be completed within 30 weeks of starting. The small amount of wall cladding requiring outages will be completed as outages allow.		
Outage Requirements & Ops Resource	A series of outages will be required for around 15% of the wall cladding. Roofing work will not require outages. SAP resource will be required.		
Land & consents	Not Applicable		
Key Risks and Hazards	High winds will prevent work being carried out, but this should not affect the overall programme. Outage availability will determine the completion of the small amount of outage dependant cladding work. Working at height on the roof, particularly near the existing rooflights. Protection measures will be required.		
Design to Be Resolved	The chosen fixing is still being considered, but will be a stainless steel self drilling, self tapping large headed (approx 30mm diameter) fixing.		
Development Strategy	N/A		
Assets In Ellipse:	The building is not yet uniquely identified in Ellipse.		
Contract Strategy	To be tendered via the Minor Civils - Roofing & Cladding framework.		
Delivery Vehicle	Asset Operations Asset Management Commercial & Portfolio Infrastructure, and the local AO delivery team (NE Borders).	Delivery Vehicle Engaged?	Yes

5. Delivery & Procurement Strategy

Procurement Strategy	Competitively tender via the Roofing & Cladding framework
Bundled Schemes	The project will fall within the Roofing, Buildings, Structures & Surfaces scheme, 100153, ETX/00069
Material sourcing	Fixings to be sourced from the manufacturer.

6. Key Risks and Opportunities

Programme Risks	Lack of access equipment. Delays to supply of fixings. System access constraints.
NG Project Risks	Lack of access equipment. Delays to supply of fixings. System access constraints.
Envisaged Contractor Project Risks	Provision of sufficient MEWP qualified, safety rules authorised staff. Availability of access equipment of a sufficient size to access the top of the building.

Opportunities	None identified.
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7. Baseline Cost Estimates

All costs in this section are base costs (pre-out-turned), to 2 decimal places

Base Year	2018/19							
Base Cost totals (£m)	Plant Status No.	Costs incurred to date (£m)	Design Estimate (£m)	Contractor Prelims Estimate (£m)	Contractor Construction Cost (£m)	Contractor Temporary Works (£m)	Contingency (£m)	Total Project Cost (£m)
	2018-353	■	■	■	■	■	■	■
Notes:	Assurance adjustment (■) to cost based upon 30 week programme (detail can be found within Appendix 02).							

8. Interacting Projects

Project Number	Project title	Driver Number	Delivery Date (ACL)
n/a			DD/MM/YY
			DD/MM/YY
			DD/MM/YY

9. Sustainability**Sustainability Action Plan:**

What were the most significant opportunities implemented within the scheme?

N/A

10. Outage Bookings

This section identifies outages relating to the works.

Outage Number	Description	Outage Start	Outage Finish	ERTS
n/a	Outages have not yet been requested.			

11. Declarations

Approval	Name	Signature	Date	Declaration
1 Commercial and Portfolio Manager	Sheena Froggatt		17/08/22	The Investment Team Manager has determined that this scheme is in line with overall business goals and objectives.
2. Asset Management Lead	Damien Culley		22/08/22	The Asset Management Lead has determined that this scheme is in line with overall business goals and objectives.