

Physical Security Upgrade Programme submission May 2018



Table of contents

Table of contents	2
Executive Summary	3
I. Introduction	5
Context and background.....	5
2015 PSUP Confirmation.....	6
II. Changing requirements	7
Site removals from PSUP	7
Additional sites identified for PSUP	7
Adjustment to Totex	8
Capex for new sites	8
Opex	8
III. Cost assessment	10
IV. Summary	12

Executive Summary

1. This submission is to amend allowances for the Physical Security Upgrade Programme (PSUP). It is provided under Special Condition 6H of the transmission licence. These activities are managed as a combined activity across National Grid, although this submission only covers National Grid Electricity Transmission (NGET).
2. The PSUP is designed to enhance the physical security of transmission sites). The Government sets out the criteria for deciding which sites should be hardened. Working with NGET, the Government then agree which sites should be enhanced. At those sites, the Government will then agree with NGET what measures, are required to 'harden' their physical security.
3. In 2015 Ofgem set out allowances to cover 'hardening' a portfolio of sites that had been deemed as requiring hardening by the Government. Following this NGET carried out a detailed review of sites and requirements. NGET has now agreed with the Government a revised list of sites.
4. This has led to a reduction in overall number of sites classed as requiring hardening. Therefore, the allowance previously provided can be reduced by **£64.7m**. This value is arrived at by:
 - Removing sites, with an allowance of £74.5m;
 - Retaining spend efficiently incurred to date on these sites of £0.6m;
 - Adding sites identified and agreed with Government, totalling £9.2m.
5. As planned the programme will be complete by the end of RIIO-T1.
6. Due to the nature of the PSUP and the implications of divulging information on the security of our sites it has not been appropriate to consult with a wide array of stakeholders. Within the submission all sites have been anonymised.
7. This is a shortened version of the submission made to Ofgem with commercial and classified information removed.

Glossary of Terms

Terms, abbreviations and acronyms	Meaning
PSUP	Physical Security Upgrade Programme
NGET	National Grid Electricity Transmission
BEIS	Department for Business, Energy and Industrial Strategy
CPNI	Centre for the Protection of National Infrastructure
Operational Solution	A solution which avoids the need for a physical build
ARC	Alarm Receiving Centre.
THH	Tunnel Head House – egress from cable tunnels.
MWC	Major Works Contractor. As part of the review of the programme, a new contracting arrangement was sought in order to reduce costs and give increased certainty of completion.
SSOR	Site Specific Operational Requirements. The document, agreed with BEIS and CPNI, which details the scope required to deliver the PSUP solution on a site by site basis.

I. Introduction

PSUP is a national programme initiated by the Home Secretary to protect our sites.

A submission was made in May 2015 based on the outputs agreed with BEIS at that time.

Ofgem determined the allowed expenditure to complete these outputs during the RIIO-T1 price control.

Context and background

8. Special Condition 6H of the electricity transmission licence provides for NGET or the Authority to propose, and the Authority to determine, adjustments to the level of Allowed Expenditure in relation to PSUP costs. A determination will lead to appropriate revisions to Price Control Financial Model variables. This will flow through to the annual iteration process for the ET1 price control financial model as described in Special Condition 5B.
9. This report sets out the justification for using this submission window to enable the adjustment of allowed expenditure on physical security costs. Outputs have changed and the materiality threshold is breached.
10. PSUP is a government directed initiative to protect our sites. As the security threats we face as a country have changed the PSUP has also changed. Operational Solutions were agreed for a number of electricity sites, reducing the overall number of our sites that required physical hardening. This reduced the overall number of NGET sites in the PSUP.
11. The Department for Business, Energy and Industrial Strategy (BEIS) and the Centre for the Protection of National Infrastructure (CPNI) are the relevant parties for stakeholder engagement and National Grid has worked closely with them to develop and define the programme. For reasons of national security, it has not been appropriate to engage more widely with the broader stakeholder community or our customers.
12. CPNI acts as BEIS's security advisors, and identifies sites as requiring hardening, based on BEIS defined criteria. The asset and network data that informs this process is provided by the relevant utility, in this case NGET. When our sites require investments to 'harden' them they will become part of the PSUP to increase their resilience to security threats.
13. The overall guidance on scope is provided by CPNI.
14. The entire PSUP programme in National Grid covers both gas and electricity sites. This submission is in respect of NGET's electricity sites. The electricity sites themselves form a range of different operational functions. Given the nature of the industry, most have challenging process safety working environments. The programme includes:
 - Electricity network sites: high voltage substations and tunnel head houses (THHs).
 - Electricity Network Control Centres.

2015 PSUP Confirmation

15. In 2015 NGET proposed to Ofgem a programme of work on our sites which had been agreed with BEIS. Following consultation, in September 2015 Ofgem approved allowances for the PSUP at that time. The link to the determination letter is below¹.
16. At each site NGET develops a site by site solution, based on the high level guidance developed by CPNI and approved by BEIS. These agreed individual requirements are called Site Specific Operational Requirements (SSORs). These are each agreed with CPNI and BEIS.
17. The SSORs form the basis of the design requirements that Major Works Contractors (MWCs) will submit works tenders for. This information has been provided to Ofgem.
18. All prices in this submission are in 09/10 price base, unless stated otherwise.

¹ <https://www.ofgem.gov.uk/publications-and-updates/decision-tpcr4-cost-reviews-and-riio-t1gd1-uncertainty-mechanisms-enhanced-security-upgrades>

II. Changing requirements

Following 2015 NGET carried out detailed assessments and design works for those sites on the PSUP. Alongside this, the sites' classification was also reviewed.

This resulted in changes to the PSUP.

This submission represents a proposed decrease in allowances of £64.7m.

19. BEIS, through CPNI, regularly review the overall guidance for the scope of works at our sites. This is based on CPNI's assessment of the probable means of attack that would-be-attackers may utilise. CPNI also regularly review and revise their assessment of which sites should be hardened.
20. The latest BEIS / CPNI review commenced in 2016 and led to several changes, and included NGET reviewing the delivery scope and needs case for each site.

Site removals from PSUP

21. NGET's review of the need cases led to a number of sites being identified as having no driver to deliver an output in RIIO-T1.
22. Works at these sites were put on hold, and no further costs were incurred whilst formal agreement was sought to remove them from the PSUP. Following discussion with BEIS it has been confirmed that no physical security enhancements are required at these sites.
23. Formal confirmation of the site removals from PSUP was provided by BEIS. Following removal from the PSUP as part of this submission we propose to adjust the allowance of £74.5m provided for these sites in the May 2015 submission minus the development costs to date of £0.6m.
24. The costs were incurred when there was certainty as the sites were on the BEIS list and that the output would be delivered. The costs were mainly incurred on initial scoping and design work carried out to make a robust submission in 2015

Additional sites identified for PSUP

25. Following discussions with BEIS in December 2016 it was agreed that NGET would also carry out further analysis to determine whether any additional sites should be classified as requiring hardening. This reflected changes in CPNI assessment, alongside other changes that could lead to a changing consequence and so need to be included in the PSUP.
26. The aim of the analysis was that its output would provide a comprehensive review of the implications which the threat scenarios as defined by BEIS and CPNI would have for our network, today and into the foreseeable future.
27. This analysis led to the inclusion of additional sites.

Adjustment to Totex

28. The table below summarises the total totex cost year by year over RIIO-T1. The table first shows the allowances received from our 2015 submission phased over RIIO-T1 and then shows the revised costs based on the further analysis that has been undertaken in the intervening period.
29. This forecast reduction in totex leads to a total of £0.36 saving on average consumer bills during RIIO-T1 as the reduced allowances will flow through to customer charges in the final two years of RIIO.

Submission	Totex Costs by Year (£m) – 09/10									Materiality Threshold
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total	
Allowance received from 2015 submission	17.5	25.5	17.2	39.0	60.6	75.7	45.4	7.0	287.9	34.5
Spend to date for sites removed	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.6	
Allowance for sites removed	0.1	0.2	0.1	1.9	9.2	32.9	27.4	2.7	-74.5	
Additional Funding for new sites							3.5	5.8	9.2	
Balance of Additional Funding									-64.7	

Table 1; Total allowances, allowance reduction and increases

Capex for new sites

30. The breakdown of Capex costs for the different activities of design; procurement; civils; technology; and project management have been submitted to Ofgem. Therefore, a value for money assessment can be carried out to compare the costs on a like-for-like basis with the 2015 submission.

Opex

31. Opex costs are associated with operating, maintaining and repairing the PSUP assets. Operation of the PSUP assets is managed on a 24/7 basis by the Alarm Receiving Centre (ARC). The maintenance and repair of assets is managed by the ARC allowing a fully managed service for ISS assets supported by 3rd line ISS Service and Support contracts.
32. The table below summarises the total programme Opex adjustments included in this submission and also, for comparison, what was included in the 2015 submission. This shows that there is approximately £0.5m attributed to sites that are removed, which has been removed from the allowed revenue agreed at the 2015 submission, and covered in the Totex table above.

33. There is no request for additional Opex in RIIO-T1 for the new sites to be completed. This is because the completion date is in the final year of RIIO-T1 and Opex costs will not commence until the start of the next price control.

<i>Submission</i>	<i>Opex Costs by Year (£m) – 09/10</i>				
	<i>17/18</i>	<i>18/19</i>	<i>19/20</i>	<i>20/21</i>	<i>Total</i>
<i>Allowance received from 2015 Submission</i>	<i>1.97</i>	<i>2.46</i>	<i>2.84</i>	<i>3.33</i>	<i>10.6</i>
<i>Changes (a reduction) in allowance included in Electricity Transmission 2018 Submission</i>	<i>-0.01</i>	<i>-0.03</i>	<i>-0.11</i>	<i>-0.33</i>	<i>-0.5</i>
<i>Proposed Opex allowances going forward</i>	<i>1.96</i>	<i>2.43</i>	<i>2.73</i>	<i>3.00</i>	<i>10.1</i>

Table2; Opex Costs

III. Cost assessment

The majority of the costs are market tested, with estimated costs based on previous delivery costs.

Forecast costs are below those in 2015 submission,

Forecast costs are below those forecast in 2015 submission, with reductions in preliminaries, and the unit cost of fencing and cameras.

34. The costs for the completion of the works are based upon our now considerable experience of having carried out similar work at other sites. The MWCs were chosen after an extensive and competitive procurement activity and have been able to forecast and deliver value for money for the existing programme of sites when compared to the outturn costs of the earlier sites.
35. NGET believes that the challenge made to complete the PSUP solution for the estimated cost will be met. This confidence is based on the experience gained by the MWC in completing the design, development, and delivery of the sites.
36. Our MWC estimated the costs to fully develop and deliver the PSUP solution. In terms of timescales, the SSORs were completed in early 2018, where applicable MWC costs were received in March 2018, detailed design will start in 2019 and delivery will complete before the end of March 2021.
37. The cost estimate is market tested from the experience of delivering similar projects as part of the existing portfolio. The unit costs for civils works, and technology work are all lower than at the 2015 submission. When comparing the estimated PSUP costs per metre of fence line, this submission shows that:
 - Civils costs are forecast to be lower than the 2015 submission as a result of driving efficiency.
 - Technology costs are lower as a result of driving efficiency. This reduction has been a result the experience gained to drive value in the supply chain.
38. The risk amounts are benchmarked to those on other schemes and are allocated at P50 by an internal process using industry accepted methodologies. This tool allows NGET to add the actual market tested costs of schemes to its database and uses this updated information to forecast cost and risk values. As such, the amount of risk allocated to the additional sites is in line with other schemes of a similar type and stage of development.
39. The risk element that is attributed to NGET is the estimate of costs of mitigating issues outside of the contractor's control. NGET programme risk is based on the items that would make up the risks for a PSUP solution at an NGET site. NGET programme contingency includes possible drawdowns such as for weather based risk; supplier issues; interface with other works; legislative changes; and any other programme delays that then impact on delivery on site.

40. Contractor risk is allocated to possible scope changes, e.g. Further civils work is required once more detailed design is completed on site because of ground conditions, or design changes post full site survey.

IV. Summary

41. NGET has worked closely with BEIS and CPNI in order to agree the sites requiring a PSUP solution based on the changing landscape. NGET has responded to the changes in both internal and external factors that led to the creation of the submission in 2015.
42. As a result of the changes, a number of sites have been removed from the programme, and some added. Totex allowances of £73.9m (which is the net of £74.5m in allowances, minus efficient spend incurred of £0.6m) will be adjusted for the final two years of RIIO-T1.
43. The additional sites have forecast costs of £9.2m to deliver the PSUP outputs. These costs have been market tested or benchmarked. The additional site costs include a number of efficiency savings over similar costs in the 2015 submission.
44. This represents a net reduction in allowances of £64.7m that will result in a reduction of approximately £0.36 in the average end consumer bill during RIIO T1.