

Interested parties and
stakeholders

Direct Dial: 0203 263 9867
Email: gasnetworks@ofgem.gov.uk

Date: 28 September 2018

Dear colleagues,

RIIO-GT1 and RIIO-GD1: Our decision on applications from National Grid Electricity Transmission plc, National Grid Gas Transmission plc and Wales & West Utilities Limited’s application under the Enhanced Physical Site Security Costs reopener

This letter sets out our¹ final decisions on price control reopener applications from National Grid Electricity Transmission plc (NGET), National Grid Gas Transmission plc (NGGT) and Wales & West Utilities Limited (WWU) for adjustments to allowances for Enhanced Physical Site Security (PSUP) Costs. These decisions are made under Special Condition 6H of NGET’s electricity transmission licence, Special Condition 5E of NGGT’s gas transporter licence and Special Condition 3F of WWU’s gas transporter licence.

In August 2018 we consulted on our initial views following our assessment of the applications and sought the views of interested parties. We received four non-confidential responses from NGET, NGGT, WWU and Centrica, all of which have been published on our website.²

Our final decision

Having considered each response and taking account of our principal objective and our statutory duties under the Gas Act 1986, the Electricity Act 1989, and in accordance with the licence conditions specified above. We have set out our allowance adjustment decisions for NGET, NGGT and WWU in Table 1 (unless stated otherwise all figures are presented in 2009/2010 prices).

Table 1: The requested and allowed funding for NGET, NGGT and WWU’s Enhanced Physical Site Security Costs during the RIIO-1 period (2009/2010 price base).

Licensee	Requested Funding for RIIO-1	Consultation - Proposed Funding for RIIO-1	Decision - Allowed Funding for RIIO-1
NGET	£64.7m reduction	£68.5m reduction	£67.8m reduction
NGGT	£23.8m	£0.0m (£7.8m before materiality threshold)	£0.0m (£8.6m before materiality threshold)
WWU	£15.4m	£14.9m	£14.9m

¹ The terms ‘Ofgem’, ‘the Authority’, ‘we’, ‘us’ and ‘our’ are used interchangeably in this letter. The Authority is the Gas and Electricity Markets Authority. Ofgem is the office of the Authority.

² <https://www.ofgem.gov.uk/publications-and-updates/consultation-riio-1-price-control-reopeners-may-2018>

Taking account of responses to our consultation, we have made minor modifications to our assessment of efficient costs. Following this, we have decided to allow NGET to retain an additional £0.7m. Our assessment of efficient costs for NGGT has increased by £0.8m, but this does not change the outcome for NGGT as our revised view of £8.6m does not meet the materiality threshold of £14.5m. We have made no changes to our assessed costs for WWU.

Taking account of feedback from both NGET and NGGT (NG), we decided to carry out an analysis of unit costs to support our assessment. The results of our unit cost analysis are consistent with the results of our initial assessment, which used top-down benchmarks. We have decided to maintain our consultation position that the top-down assessment approach is appropriate for PSUP projects, with minor adjustments as set out in this letter.

In the rest of this letter we summarise the responses received, explain the reasons for our decision and discuss the next steps.

Background

As owners of electricity and gas transmission and distribution assets in Great Britain, the network operators licensed by Ofgem are responsible for a number of assets that are deemed by government as Critical National Infrastructure (CNI).

Working with the responsible government department, the Department for Business, Energy and Industrial Strategy (BEIS), network operators agree and implement the Physical Security Upgrade Programme (PSUP), which involves measures required to enhance physical security at CNI sites.

At the time of setting the RIIO-T1 and RIIO-GD1 price controls in 2012, there was some uncertainty about the list of sites that require security upgrades and the scope of works required at each site. As a result, we did not include an allowance for the PSUP programme in the baseline allowances. We created an uncertainty mechanism, the reopeners, to provide an opportunity for companies to make applications for additional funding when there is greater certainty about the work required and the costs. There are two reopener windows: May 2015 and May 2018.

In the May 2015 reopener window we received applications from several licensees including:

- NGET – requesting £343.5m of additional allowances, we allowed £287.9m³
- NGGT – requesting £187.6m of additional allowances, we allowed £160.1m

WWU did not submit a funding request in May 2015 due to the high level of uncertainty around the likely cost of its programme of works.

Following the May 2015 reopener window each of the network operators has carried out a review of the scope and delivery requirements at each site and continued discussions to refine the list of CNI sites with the government.

We have now received submissions during the May 2018 reopener window from NGET, NGGT and WWU. These reflect the updated requirements of the PSUP programme and its associated costs.

Phase one of our assessment of the PSUP Costs applications was an informal consultation on the submissions, from 17 May to 20 June 2018.⁴ We received no responses.

Phase two was a consultation, presenting our initial view, from 8 August to 29 August

³ These values include capex, opex and the impact of Real Price Effects

⁴ [Informal consultation on RIIO-1 price control reopeners \(May 2018\)](#)

2018.⁵ Here we presented our initial view on the efficient costs of the works proposed in the submissions. As presented above, our initial view of efficient costs for NGGT's allowance fell below its materiality threshold of £14.5m for the PSUP reopener, and we said that we would not make adjustments to its allowances as part of this reopener. We said that we would assess NGGT's efficient costs as part of RIIO-T1 close out and provide appropriate funding, if required.

We received four responses to our consultation, from NGET, NGGT, WWU and Centrica.

We have now reached our final decision. The reasons for our decision and a summary of the consultation responses are set out below.

The submissions and some consultation responses contain sensitive information that cannot be placed in the public domain. Non-confidential versions of the submissions are published alongside this consultation.

Stakeholder views

We received four responses to our consultation from NGET, NGGT, WWU and Centrica which are summarised below. The full non-confidential responses have been published on our website.⁶

Assessment methodology – All three network operators' responses disagreed with our assessment approach. In particular, they disagreed with the application of high level benchmarks to Project Management (PM) costs. While NGET and NGGT also disagreed with our benchmarks for risk allowances, WWU was supportive of this approach.

Both NGET and NGGT suggested that it would be appropriate to assess costs at a site-level using an appropriate cost driver. They provided their own analysis based on the 2015 reopener allowances which took account of additional complexity of carrying out works on sites owned by other network operators and increased steel prices since 2015. Based on this analysis, NGGT maintained its view that the allowances that it was requesting were appropriate.

Project management costs – The three network operators were of the view that Ofgem has not considered a number of factors when applying a top-down benchmark for PM costs. We discuss each of these in turn below.

All three network operators stated that benchmarks for PM costs drawn from "normal civil projects" cannot be used for PSUP works given the additional complexity associated with PSUP projects. WWU explained that this is due to the complex electronic hardware and software incorporated into the security solution for each site and additional accreditations required for working on these sites.

WWU argued that Ofgem's approach did not recognise the savings made to "base" costs that have been delivered by effective PM activity, and therefore applying a high level benchmark for PM costs that is expressed as a percentage of overall project costs unduly penalises it. It also said that it has submitted costs that are almost entirely ex post so these should be funded as efficient.

Each of the network operators thinks that it has taken the most appropriate contracting strategy for PSUP projects and that it is not appropriate to use high level benchmarks. NG also suggested that Ofgem should consider the size and geographical spread of the projects which result in additional PM costs.

⁵ <https://www.ofgem.gov.uk/publications-and-updates/consultation-riio-1-price-control-reopeners-may-2018>

⁶ <https://www.ofgem.gov.uk/publications-and-updates/consultation-riio-1-price-control-reopeners-may-2018>

Centrica was of the view that NG should be able to demonstrate efficiencies it has achieved over time, given it has been delivering these projects over multiple price controls.

Risk costs – WWU was supportive of our approach of applying a top-down benchmark for risk allowances, however NGET and NGGT believe that further consideration should be given to a number of areas.

NG's consultation response agreed that 10% risk is an appropriate benchmark for risk costs for a normal civils project but that a higher benchmark (15%) or a project specific assessment would be more appropriate for PSUP projects given the additional complexity.

Within the same response NGET also stated that whilst a top-down approach may provide a good basis for comparison, it said "*that risks need to be assessed on a project specific basis*" at different stages of delivery for each project. It asserted that it is widely accepted that a 15% risk allowance is normal at this early planning stage of the project.

Lastly, NG requested that where Ofgem has disallowed risk allowances an appropriate increase should be made to the base cost to cover the cost of mitigating those disallowed risks, as this was not considered in Ofgem's assessment.

Specific cost categories – Both NGET and NGGT disagreed with our initial view that minor works and cabling and communication was not driven by PSUP related activities.

NGET and NGGT also disagreed with our proposed disallowance relating to General Items and Preliminary works (GIP). NGGT thinks that GIP "*will be higher due to the need to complete works at shared sites that require engagement and operational liaison with the site owner*" and NGET states "*The circumstances that are unique to NGET is the duration of the project for which these general items are allocated. As it is longer, the percentage of the overall costs will also be increased*".

Projects to be delivered in RIIO-T2 – NGGT did not agree with our initial view not to fund its front end engineering and design work for projects to be delivered in RIIO-T2. It is of the view that it provided an associated output and therefore there is no reason not to fund this activity in RIIO-T1.

RIIO-1 close out – Finally, Centrica requested that as part of any RIIO-1 close out assessment that Ofgem considers not just additional projects but also actual incurred costs as these relate to the same investment need. Centrica suggests that this assessment should be subject to a materiality threshold and requests that Ofgem consults with stakeholders on this assessment of costs in RIIO-1 close out. Centrica also asked if other gas distribution network operators had projects cancelled and what Ofgem's approach will be for these sites.

Reasons for our decision

Having considered the responses to our consultation we have come to a decision on the funding requested by NGET, NGGT and WWU. This section sets out the reasons for our decision.

Project management – As we note above, the three network operators' responses argue that PSUP projects are not comparable to normal civils projects. However, no evidence was provided to support the assertion that PM costs as a proportion of overall project costs would be higher for PSUP projects than comparable civils projects.

NGET has argued that it is not appropriate to compare across different network operators given the difference in the size of projects and the contract procurement approach. We do not agree with the claim that PSUP projects of different sizes are not comparable and NGET has not provided any evidence to substantiate this assertion. We agree that it is important to consider the different approaches to contract procurement as this will impact how the PM

costs are distributed across different parties. Therefore, as part of our assessment we ensured that we considered both the network operator and contractor PM costs rather than just network operator PM costs to negate any differences due to the procurement strategy. This was done by applying our 15% benchmark to the total PM costs.

NGET's response suggests that additional allowances should be granted due to the geographical spread of projects which results in increased PM costs. Firstly, we do not consider this to be an exceptional circumstance and no evidence was provided to support this view. Secondly, the allowances are determined on a project by project basis and do not consider any possible efficiencies that would be expected when delivering a portfolio of similar projects.

As part of our assessment, we benchmarked our view of efficient PM costs against a number of projects within the energy sector in the UK. These include high-value projects that Ofgem has reviewed as part of the Strategic Wider Works (SWW), Offshore Transmission (OFTO) and Interconnector regimes.

While the precise cost breakdowns for these projects are commercially sensitive, we can say that the assessed PM costs (including both developer/operator and contractor costs) for these projects are typically well below 15% of total project costs, and have ranged from 3% to 10% in the majority of cases.

As part of our previous cost assessment work on SWW, OFTO and Interconnector projects, we have taken account of reports by external consultants on appropriate benchmarks for PM costs and contingency (risk) allowances. Some of these are publicly available, and we provide extracts and links to these reports in Annex 1 below.

We are of the view that 15% is a conservative benchmark as the assessed PM costs for our comparator projects are typically well below this figure, therefore we maintain our consultation position.

Risk allowance – Both NGET and NGGT said that applying a benchmark of 10% of total project costs for risk does not take account of the different delivery stages of the projects and that risks need to be assessed on a project specific basis. We agree that it is important to consider the different delivery stages of projects given risks would either materialise or not during the project. However, we think that it is appropriate to apply the 10% benchmark across all of NG's proposed projects. We recognise that, in some cases, this may be too high or too low relative to the outcome of a detailed site-by-site assessment. However, we think that, at an aggregate level (taking all sites into consideration) the 10% benchmark is appropriate. Moreover, we did not think it was proportionate or necessary to carry out a detailed review of NG's risk register on a site-by-site basis. For comparison, we also reviewed the materialised risk for WWU's projects (which have mostly been completed) and these fell below 10% of the total project costs.

NGET suggested that it is reasonable to apply a higher risk benchmark of 15% for sites that are at the early planning stage. However, as stated above, our recent ex ante cost assessments typically have contingency costs ranging from 6% to 10% of total project costs.

NGGT and NGET have raised that the top-down approach to risk does not consider the complexity of PSUP projects compared to other civils projects. However, we have not received any evidence to demonstrate what the additional risks is, where it has materialised in previous projects and ultimately what the additional allowance that should be considered is.

Additionally, our assessment is based on the proportion of risk when compared to total project costs, therefore additional complexity does not justify a higher proportion of risk. This is because additional complexity would also be expected to increase other project costs

as well, meaning that you would not expect risk costs to be a higher proportion of project costs.

NGGT and NGET suggest that Ofgem has not considered the cost of risk mitigation activities in the baseline costs. We disagree, as our 10% benchmark includes a reasonable allowance for risk, which should cover the cost of mitigation activities. Further, during the assessment we requested further detail on risk mitigation and opportunities that might be realised but no detailed information (including costs) was provided and therefore, we are unable to quantify the cost of mitigation activities.

For the reasons above our decision is to maintain our initial position to reduce NGET's and NGGT's risk allowance to 10% of total project costs.

Specific cost categories – We have considered NGET's and NGGT's response on the minor costs and cabling and communications costs and have decided to allow these costs on the basis that the qualitative explanation provided is sufficient to justify that these costs are related to PSUP work and were efficiently incurred. The result is an increase in allowed revenue of £0.7m for NGET and £0.8m for NGGT, which includes the increased PM and risk allowances (maintaining the same percentage of total project costs).

We have decided to maintain our position on GIP as we have adopted a consistent approach to the 2015 reopener for GIP and NG did not provide any evidence to support its view that additional engagement and the longer duration of the projects are unique circumstances.

Projects to be delivered in RIIO-T2 – We disagree with NG that is appropriate to provide funding in RIIO-T1 for projects that will be delivered in RIIO-T2. To the extent that NG needs to carry out planning and FEED works in RIIO-T1 we will consider these costs as part the RIIO-T2 price control settlement and provide appropriate funding where needed. Furthermore, NGGT has not provided sufficient information for us to take a view whether the submitted costs proposed are efficient.

RIIO-1 close out – We welcome Centrica's views on the RIIO-1 close out process and will consider them fully when developing the methodology, as part of this we will consult on the methodology itself and the outcome of our assessment.

We will consider cancelled PSUP projects for other GDNs as part of the RIIO-1 close out process given that there could be further changes to site classifications during the remainder of the RIIO-1 period.

Assessment methodology – We welcome NGET and NGGT's suggestion that we consider using cost benchmarking (econometrics) to support our assessment of efficient costs. We have carried out our own econometrics, and present the results in Annex 2. We concluded that it is only appropriate to use this approach as a sense check for our original assessment given uncertainty around the main cost driver (fencing perimeter length) used in our model. The four econometric models that we developed show expected total costs (based on projects delivered to date) to be similar to our estimates of efficient costs using top-down benchmarks. We conclude that these results support the outcome of our top-down benchmarking approach.

Our final decision – Following our review of consultation responses, we have decided to amend our initial views on efficient costs as well as adjustments to allowances.

Relative to the position set out in our consultation document, we have decided to allow NGET an additional £0.7m, NGGT an additional £0.8m but have maintained our consultation position for WWU.

Whilst the efficient costs figure for NGGT has increased, the resulting adjustment to allowances still falls below the materiality threshold therefore, we will not be adjusting

NGGT’s allowances at this stage. We will assess NGGT’s efficient costs of the PSUP programme at the end of the price control taking into account up to date information from the remainder of RIIO-T1. Table 2 gives a breakdown of the final figures in our decision and we set out the final allowance profile in the next section.

Table 2 – Breakdown of funding request, our initial view and final decision

Licensee	Funding category	Allowance adjustment requested	Our initial view	Our final decision
NGET	Sites no longer required	£73.9m reduction	£74.0m reduction	£74.0m reduction
	Additional sites	£9.2m	£5.6m	£6.2m
	Development work	N/A	N/A	N/A
	Total (aggregate)	£64.7m reduction	£68.4m reduction	£67.8m reduction
NGGT	Sites no longer required	£18.1m reduction	£18.1m reduction	£18.1m reduction
	Additional sites	£40.3m	£25.1m	£25.9m
	Additional site X	£1.5m	£0.8m	£0.8m
	Development work	£0.1m	£0.0m	£0.0m
	Total (aggregate)	£23.8m	£0.0m (£7.8m prior to materiality threshold)	£0.0m (£8.6m prior to materiality threshold)
WWU	Sites no longer required	N/A	N/A	N/A
	Additional sites	£15.4m	£14.9m	£14.9m
	Development work	N/A	N/A	N/A
	Total	£15.4m	£14.9m	£14.9m

Next steps

Our final decisions on allowed expenditure for the three licensees are set out below.

We maintain our initial view that the efficient costs for NGGT does not meet the materiality threshold for this reopener. Therefore, our decision is to make no adjustment for NGGT as part of this reopener. We will assess the efficient costs for NGGT as part of the RIIO-1 close-out process, and provide funding where needed for efficient costs incurred during the RIIO-T1 price control.

As part of the RIIO-T1 and RIIO-GD1 price control close out processes we will review the delivery of the PSUP programme against the list of sites that were funded. In the case of sites where upgrades that were funded have not been delivered (e.g. because they are no longer required), we may claw back funding provided for those sites.

Table 3: NGET May 2018 reopener - Enhanced Physical Site Security Costs proposed adjustment to annual allowance profile.

NGET £m (09/10 price base)	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total
Existing allowances	17.48	25.55	17.20	39.02	60.62	75.65	45.42	6.95	287.89
Requested allowance	17.58	25.55	17.29	37.12	51.42	42.75	21.49	10.01	223.21
Requested adjustment	0.10	0.00	0.09	-1.90	-9.20	-32.90	-23.93	3.06	-64.68
Ofgem final view of allowances	17.58	25.55	17.17	37.12	51.42	42.75	20.36	8.13	220.08
Ofgem final view of adjustment	0.10	0.00	-0.03	-1.90	-9.20	-32.90	-25.06	1.18	-67.81

Table 4: WWU May 2018 reopener - Enhanced Physical Site Security Costs proposed adjustment to annual allowance profile.

WWU £m (09/10 price base)	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total
Existing allowances	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Requested adjustment	0.000	0.143	0.548	4.866	6.606	3.213	0.000	0.000	15.376
Ofgem final view of adjustment	0.000	0.139	0.532	4.719	6.406	3.116	0.000	0.000	14.912

Our decision will be implemented through the 2018 Annual Iteration Process, which will mean that any adjustments to allowed revenues will take effect from 2019/20.

Please contact Kiran Turner (kiran.turner@ofgem.gov.uk) if you would like to discuss any aspect of this letter.

Yours faithfully,

Geoffrey Randall
Deputy Director, Gas Network Price Controls

Annex 1

External consultancy reports with benchmarks for project management and risk allowances (not an exhaustive list)

Document title and reference	Benchmarks for project management and risk
<p>Parsons Brinckerhoff (Jan/April 2012) – Electricity Transmission Costing Study [Weblink]</p>	<p>Note: PM + Overheads in this report include Engineering design, procurement, tendering, PM, planning permission, head office overheads.</p> <p><u>Project management and risk for typical electricity transmission projects</u></p> <p>AC O/H Line (400kV) Total build cost: £4.5m - £134.6m PM + overheads: 10-11% of capex (£0.4m - £11.2m) Risk/contingency: 10-11% of capex (£0.4m - £11.2m)</p> <p>AC U/G cable – direct buried (400kV) Total build cost: £35.5m - £1,360.4m PM + overheads: 22% of capex (£5.7m - £216.7m) Risk/contingency: 14% of capex (£3.7m - £141.3m)</p> <p>AC U/G cable – Tunnel (400kV) Total build cost: £98.6m - £1,932.6m PM + overheads: 18-19% of capex (£14.8m - £302m) Risk/contingency: 1-1.5% of capex (£0.7m - £23.9m)</p> <p>AC U/G GI cable – direct buried (400kV) Total build cost: £47.1m - £944.8m PM + overheads: 20% of capex (£7.0m - £140m) Risk/contingency: 15% of capex (£5.2m - £105m)</p> <p>AC U/G GI cable – Tunnel (400kV) Total build cost: £109.4m - £1,720m PM + overheads: 17-19% of capex (£15.6m - £265.5m) Risk/contingency: 4-6% of capex (£3.6m - £83.4m)</p> <p>DC Subsea cable (400kV DC) Total build cost: £739.1m - £1,743.6m PM + overheads: 9-10% of capex (£56.9m - £130.4m) Risk/contingency: 14% of capex (£85.2m - £194.6m)</p> <p>In the context of OHL, the report adds that “PM costs for capital projects within the industry are generally</p>

	within the 2.5% to 4% band, dependent upon type and scale of project.”
ACER (July 2015) Report on unit investment cost indicators and corresponding reference values for electricity and gas infrastructure. [Weblink for electricity] [Weblink for gas]	Electricity OHL – 19% of total project cost (project management, consents, studies etc) UG – 12% of total project cost (project management, consents, studies etc) Subsea cables - 10% of total project cost (project management, consents, studies etc) Gas Pipelines – 7% for “engineering and project management” Compressors – 10% for “engineering and project management”
Atkins (June 2016) Consultancy support for Ofgem’s cost assessment of the proposed NSL interconnector [Weblink]	Developer project management cost of 5.9% (as a proportion of capex) “lie within the expected ranges for a HVDC and subsea cable projects”.
Black and Veatch (February 2014) Capital costs for transmission and substations – Updated recommendations for WECC transmission expansion planning (for the Western Electricity Coordination Council, North America) [Weblink]	Recommended value of 10% of capital cost for overhead costs for a range of projects and ownership structures.
British Power International (Nov 2013) Consultancy support for the NEMO interconnector – Cost assessment report [Weblink]	Assessed project management costs to be in the region of EUR 10m out of a total project cost of EUR 631.8m (1.6%) [Developer PM costs only]
Ofgem (April 2018) Offshore Transmission: Cost assessment for the Burbo Bank Extension transmission assets [Weblink]	On project management costs: “[Our consultants - OWC] reviewed the level of project management costs incurred by the Developer in relation to the Project and estimated the standard level of project management costs for such a project would range between 7% and 10% of the cost of the entire project.” Ofgem proposed to allow project management costs of 10% of asset value. Contingency of £13.3m was included in the Initial Transfer Value (6.1% of transfer value).

Annex 2: Econometric modelling of PSUP site costs

Background

Both NGET and NGGT's response suggested that we use econometrics to determine efficient costs at a site-level based on unit cost drivers.

In a confidential annex to its consultation response, NG presented its view of efficient costs derived from econometric modelling of the 2015 reopener allowances for its own PSUP sites (based on site perimeter lengths). We carried out our own econometric modelling and whilst we found the results support our original view we have concluded that it is only appropriate to use this approach as a sense check for our original assessment.

We present our views below; however, due to commercial sensitivity we are unable to provide our detailed assessment as it used confidential data from a number of network operators.

Assessment methodology

We note NG's view that it is appropriate to use fencing perimeter length as a cost driver, and have used the same in our econometric modelling. However, NG has calculated unit costs using allowances rather than actual expenditure. Our view is that it would be more appropriate to carry out this assessment using actual incurred total costs for each site rather than the allowance provided as NGGT has done. Therefore, we have carried out our own benchmarking exercise using actual incurred costs for PSUP projects in RIIO-1, the outcome of our regression analysis is presented in Table 5 below. For clarity our analysis uses the total actual costs incurred which includes all PM and materialised risk.

NGGT has excluded projects which are no longer required and/or cancelled from its econometric modelling. We agree that this is appropriate. In its response, NGGT has only used the results of its modelling to determine its view of the efficient cost for shared sites but not the site extensions as it doesn't consider these sites as comparable projects. We agree that this is appropriate. In addition, we have not applied the results of our econometrics to determine efficient costs for shared site X as we do not have reliable data for fencing perimeter length, which is the main cost driver for the econometric modelling.

In its response NGGT provided details of two uplifts to the results from its econometrics, one for additional complexity for shared sites and the other for increases to steel prices.

We disagree with NGGT's claim that an uplift should be applied due to the additional complexity of working at another network operator site on the basis that NGGT has not provide any evidence to support this assertion. We believe that the engagement that NGGT has carried out with the site owner is sufficient to ensure that this risk is mitigated.

In its consultation response NGGT has claimed that steel prices have increased 47% since 2015, whereas in its original May 2018 submission, it had said that the increase was 20%. The translation of this 20% increase in steel prices into increased physical security costs was explained and justified by NGGT with reference to outturn costs it has experienced. We used this uplift to inform our initial view of efficient costs. NGGT has not provided any explanation or evidence to support this further increase of 27% since the original submission in May. Without this additional evidence, we do not accept the further adjustment proposed by NGGT as we are concerned that it would double count the increase in costs experienced by NGGT that it evidenced in its original submission. Therefore, we disagree with NGGT's adjustment due to increased steel prices and have not adjusted our econometric modelling to reflect this. Our original cost assessment included an uplift in project costs from increases in steel prices and we have decided to proceed with the approach taken at consultation. In any event, the effect of any steel price uplift is small.

Overall we remain of the view that NGET and NGGT need to reflect the substantial experience gained from the delivery of the programme to date. We expect the level of savings derived from such experience and techniques to drive reductions across the delivery programme. This view is supported by Centrica's consultation response.

Results

We have use our econometric models to generate the predicted costs for the PSUP sites included in the NGET, NGGT and WWU's reopener submission, using a pooled OLS approach that included actual incurred costs for a range of PSUP sites across a number of gas and electricity network operators that received allowances for the PSUP programme. The range we present is the average values produced from four models that produced statistically significant results. Three of the models used regressed total site costs against fencing perimeter length as the driver, these were linear, quadratic and logarithmic regressions. The other model was a linear model which regressed total site costs against fencing perimeter length and the number of cameras as the drivers. We note that all the predicted values are for total project costs, ie including PM and risk.

Table 5: Ofgem econometric modelling results for PSUP reopener funding request. Note for NGGT we did not calculate the predicted value for three sites which were not comparable.

Licensee	Submitted costs	Our view of efficient costs	Ofgem econometrics results – minimum predicted value	Ofgem econometrics results – maximum predicted value
NGET	£8.7m	£5.9m	£4.8m	£6.0m
NGGT	£34.4m	£21.6m	£22.2m	£23.4m
WWU	£15.4m	£14.9m	£17.0m	£20.0m

For each licensee, we have presented the maximum and minimum predicted values from the four models. As we have used the pooled OLS approach, our models estimate the average costs rather than the efficient costs from the lowest cost operator.

Our econometric modelling supports our final funding decision for both NGET and NGGT with our view of efficient cost for NGET falling with the range of predicted costs and efficient costs for NGGT only 3% below the predicted costs. WWU's requested allowance is lower than the range of predicted costs.

However, whilst developing the model we noted a number of interesting observations:

- Our benchmarking included other GDNs and we found that WWU had overall costs approximately 25% higher than the average actual cost of the lowest cost network operator (another GDN).
- We found that on average NG's submitted costs were approximately 100% higher (i.e. double) that of the lowest cost network operator (the same GDN as above).

How we use our econometric modelling

The econometric modelling provides a useful benchmark and cross check to our approach of calculating efficient costs. However, we are of the view that econometric modelling should not be used to set the allowance, but rather to act as a cross check. We explain our reasoning below.

The results of our econometric benchmarking exercise presented in Table 2 is based on NG's forecast of perimeter length which is still subject to significant uncertainty. This is because NG has proposed to install protection around entire sites where only a small percentage of the site footprint is classed as CNI assets. We asked NGGT to provide evidence to support its view that the only viable solution must encompass all assets at these sites. NGGT's response stated that at the detailed design phase NGGT will attempt to minimise the perimeter length that needs to be installed. Therefore, we expect there will be potential savings to be realised at the detailed design phase by only protecting CNI assets at these sites, significantly reducing the delivery cost.

We have reservations about relying only on perimeter length as a driver for the assessment of efficient costs. A number of other factors have driven costs at different various sites, and our approach to providing allowances for other sites should ensure that other drivers of costs and variations at other sites can be recognised when setting allowances.

We have also not been able to determine whether the differences observed between network operators is genuine efficiency of delivery or due to project specific circumstances.

Finally, we note that NGGT and NGET sites dominate our regressions in terms of the number of observations and this has the potential to skew our results. This limits our ability to rely on the regression analysis to determine ex-ante allowances based on econometric models.

Conclusions

Given the significant differences between network operators this analysis demonstrates that our original assessment is in line with the predicted costs of PSUP projects.

We also think that the econometric benchmarking is most appropriate as a sense check for this assessment given we have not received all of the data necessary to be able confirm that perimeter length is the most appropriate cost driver.

Having looked at the econometrics on actual delivered projects we get a better sense of total costs covering all areas and how these vary between projects and operators.

This analysis of delivered projects indicates that NG's suggested levels of PM and risk costs are not supported by the evidence from projects that have been delivered.

Therefore, we have decided to maintain our initial assessment approach and only use this benchmarking exercise as a sense check.