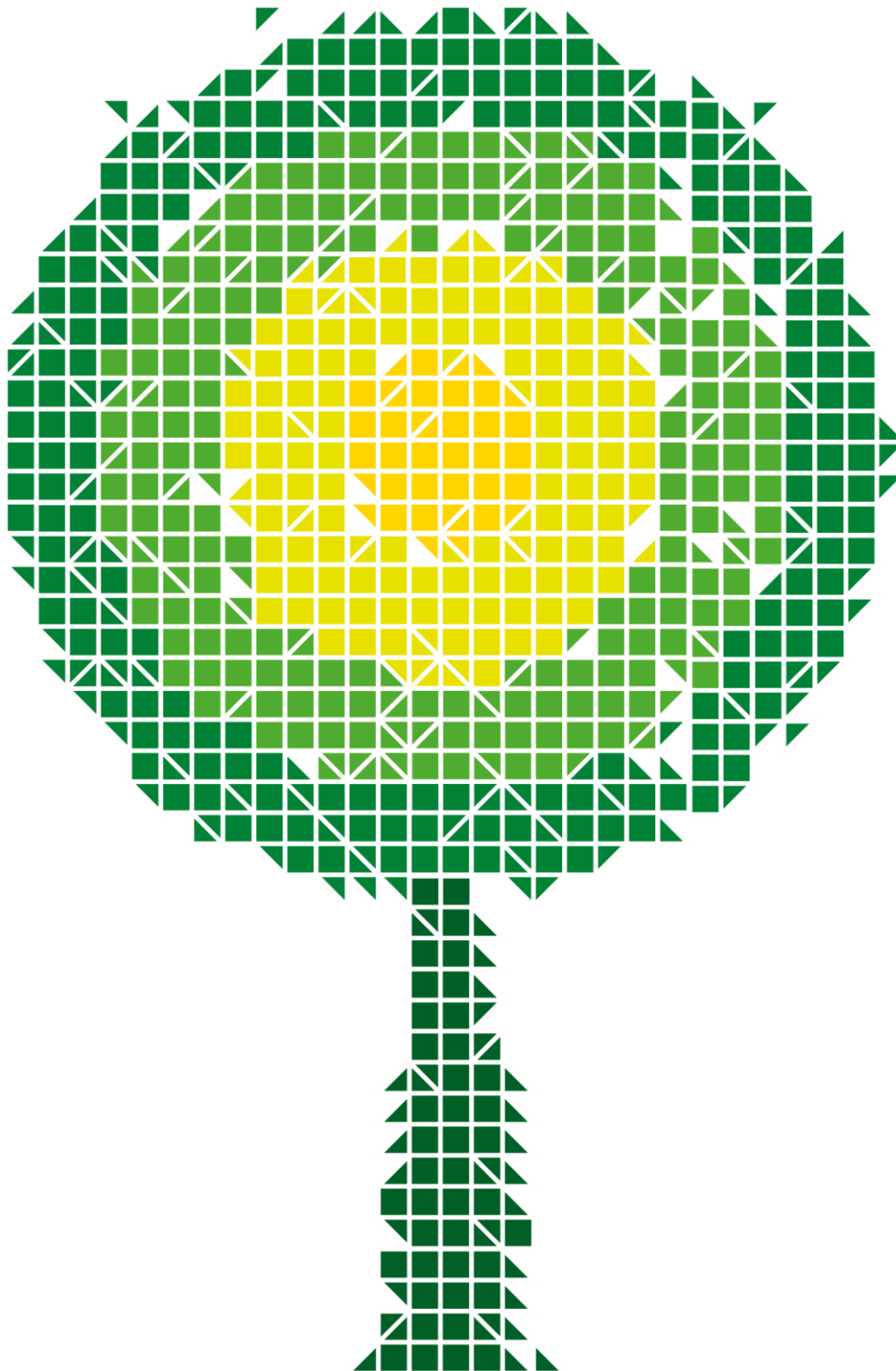


NIE Networks RP6: Non Network IT Assessment Report

16/02/2017

Version 1.2
Final



Gemserve



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CHANGE HISTORY

VERSION	STATUS	ISSUE DATE	AUTHOR	COMMENTS
0.1	Draft	16 th January 2017	C Bolger	First draft
0.2	Draft	23 rd January 2017	C Bolger	Updated following internal review of first draft and the recommendations documents issued to the client 16 th January 2017.
0.3	Draft	3 rd February 2017	C Bolger	Updated following IT Workshop 25 th January 2017.
1.0	Final	9 th February 2017	C Bolger	Version submitted to Utility Regulator for Review
1.1	Final	10 th February 2017	C Bolger	Version updated in line with client feedback
1.2	Final	16 th February 2017	C Bolger	Updated following IT Workshop 14 th February 2017 and in line with client feedback

DOCUMENT CONTROLS

REVIEWER	ROLE	RESPONSIBILITY	DATE
Caspar Swales	Head of Economics and Efficiencies, Utility Regulator	Owner client requirements and document approval.	9 th February 2017



1. INTRODUCTION & BACKGROUND

Gemserv was appointed in September 2016 to provide support to the Utility Regulator (UR) in assessing costs associated with “IT, Market Operations & Enduring Solution” as part of “Northern Ireland Electricity Networks Price Control for period 1 October 2017 until 31 March 2024” (RP6). Gemserv prepared an initial review of the Market Operations Non Network IT aspects of Northern Ireland Electricity Networks (NIE Networks) RP6 submissions in December 2016.

Following on from the report, Gemserv has been instructed to widen our scope to consider the Non Network IT aspects of NIE Networks proposals. This report is intended to inform the UR in preparing its Draft Determination (DD) and is a deliverable produced under work order CON/23/16 dated the 15th September 2016.

This paper also reconsiders aspects of the Market Operations Non-Network IT Assessment, the most recent version of which accompanies this paper.¹ To avoid duplication of work, this report only comments on Market Operations where it differs from that paper or where Gemserv has revisited that analysis.

Please note that unless stated otherwise, all quoted capex and opex numbers are in 2015/16 prices. Where references are made to cost figures from RP5, they relate to a forecast number comprised of an actual and a forecast figure². Recommendations are included where Gemserv has concrete proposals for amendments to NIE Networks’ proposed costs.

1.1. REPORT STRUCTURE

This report is structured as follows:

- Section 2 – describes the financial implications of the Non Network IT spending proposals and our recommendations in relation to same;
- Section 3 – summarises Gemserv’s approach to the analysis within this paper;
- Section 4 – reviews the assessment from the previous Market Operations report and updates it where appropriate;
- Section 5 – considers the impact of the Managed Service Provider Agreement in relation to the proposed Non Network IT capex and opex, and recommends a potential level of efficiency in relation to same;
- Section 6 – analyses NIE Networks proposed Non Network IT investment intended to achieve efficiency gains over the period of RP6;
- Section 7 – sets out Gemserv’s optionality analysis in relation to NIE Networks proposed investments as they describe in the Non Network IT Business Plan Project Briefs;
- Section 8 – examines NIE Networks other Non Network IT planned capex and provides a number of proposals regarding that expenditure;
- Section 9 – discusses NIE Networks Non Network IT opex proposals and outlines Gemserv’s recommendations in relation to same; and

¹ RP6-CON-004 NIE Networks – Market Ops Non Network IT Assessment Report v1.3

² In the majority of cases, the actuals refer to actual spend up to the end of September 2016.



- Section 10 – summarises the impact of this report's recommendations upon NIE Networks proposals.

1.2. SCOPE

The following areas were agreed with the UR as being in scope:

- i. Assessing the following aspects of the Non-Network IT Business Plan:
 - a. All forty-eight (48) project proposals plus the Small Project proposed spend and assessing them across the three categories of project: Infrastructure; Telecoms; and Applications.
 - b. Assessing the proposed capex and opex for those projects to determine whether they are fair and reasonable.
 - c. Ensuring that the capex and opex apportionment to Market Operations is fair and correct.
 - d. Analysing the level of optionality associated with those projects giving the UR the ability to identify potential cost savings.
 - e. Assessing NIEN's proposed "efficiency projects".
 - f. Assessing NIEN programme management and backfill costs.
 - g. Review of project refresh timelines.
 - h. Reconsidering NIEN's proposed IT Strategy to assess whether it is appropriate within the context of RP6 and determining whether the projects above align with that strategy, factoring in whether they are necessary as discussed above under bullet point d.
- ii. Revisit the analysis of the Market Operations allocation, the Enduring Solution planned spend, proposed Tibco capex and opex, and Market Operations – Other Operating Costs from the first report in light of:
 - a. The wider analysis of the Non Network IT spend above,
 - b. Feedback from NIE Networks in relation to the outstanding queries raised and further submissions that they may provide.
- iii. Revisit the analysis of the Managed Service Provider Agreement from the first report and review in the context of all Non Network IT expenditure. Included will be an analysis of the costs driven by the Managed Service Provider. As this contract is under procurement and the final costs will not be available until spring 2017 there will be constraints on this analysis.

1.3. OUT OF SCOPE

The following areas were agreed as being outside the scope of this assignment:

- a) Costs in relation to contestability of connections;
- b) IT costs in relation to D602 ("Investing for the Future") of the Networks Investment Plan;
- c) Capex costs in relation to Metering under the Market Operations Business Plan;
- d) Ensuring the proposed allocation of costs within the Connections category of the Non-Network IT Business Plan are accurate and reasonable;
- e) Reconciliation of Market Operations Non Network IT figures and Connection allocation across the Business Plan and the Networks Investment Plan to ensure consistency across the submissions and accuracy of the proposed allocations;
- f) Building a financial model to inform the analysis of Market Operations costs and Connections Allocation;



- g) Analysis of non-capex costs related to meter installations changes and meter recertification; and
- h) Assessment of costs in relation to meter reading during the price control.



2. FINANCIAL CONTEXT

This chapter provides context to the remainder of this paper by comparing figures across the RP5 and RP6 price control periods. These figures³ are provided for illustrative purposes only as comparisons between periods for IT spending can be challenging. Where Gemserv has compared instances of spending between RP5 and RP6 in other sections of this report, it has been done only where they are directly comparable.

Figure 1 shows the proposed RP6 Non Network IT capital expenditure mapped against the RP5 “run rate” (i.e. the average annual RP5 capex spread over RP6). The conclusions to be drawn from this comparison are necessarily limited as an individual project’s capex may be bespoke; one instance of system investment may be quite different from another.

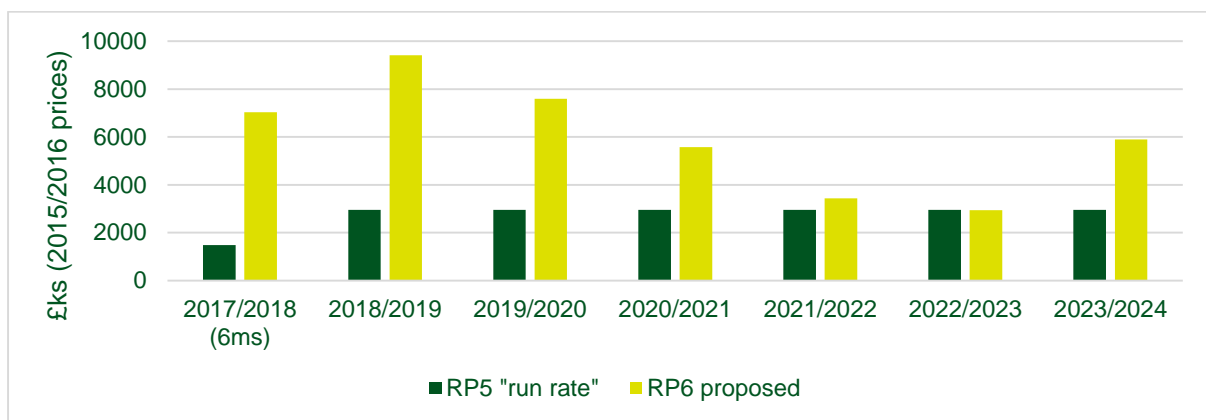


Figure 1: Non Network IT capex - RP5-RP6 comparison

Figure 2 shows the “base rate” of Non Network IT opex (the average annual operational expenditure for RP5 applied across RP6) with the proposed Non Network IT opex impact profiled against it.

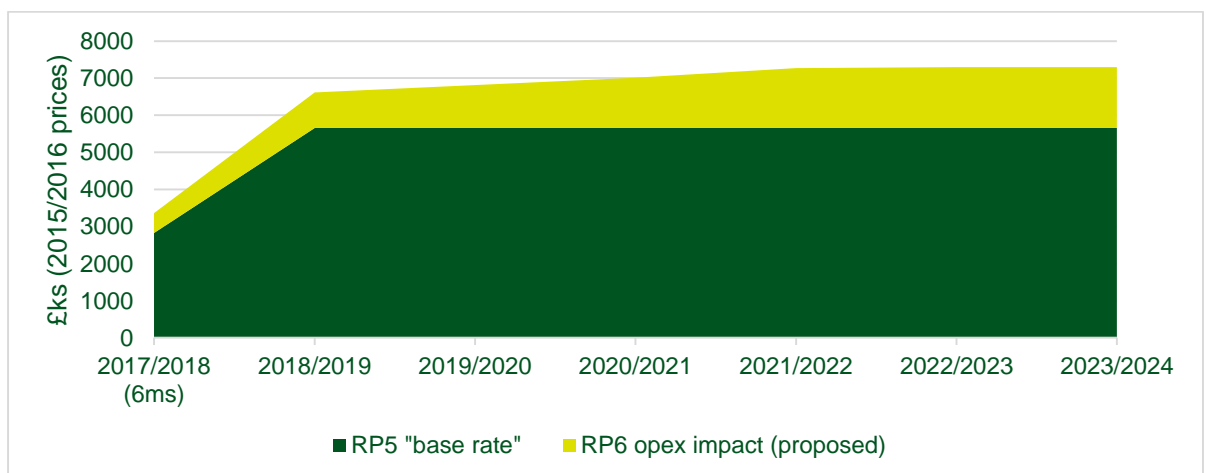


Figure 2: Non Network IT opex – base rate and opex impact

³ They have been calculated upon the basis of Gemserv’s bottom up analysis, the Non Network IT Business Plan and the following query responses (URQ123, URQ142, and URQ143).



Figure 3 compares the average annual Enduring Solution related opex from RP5 and compares it with the proposed Enduring Solution Operating Costs.

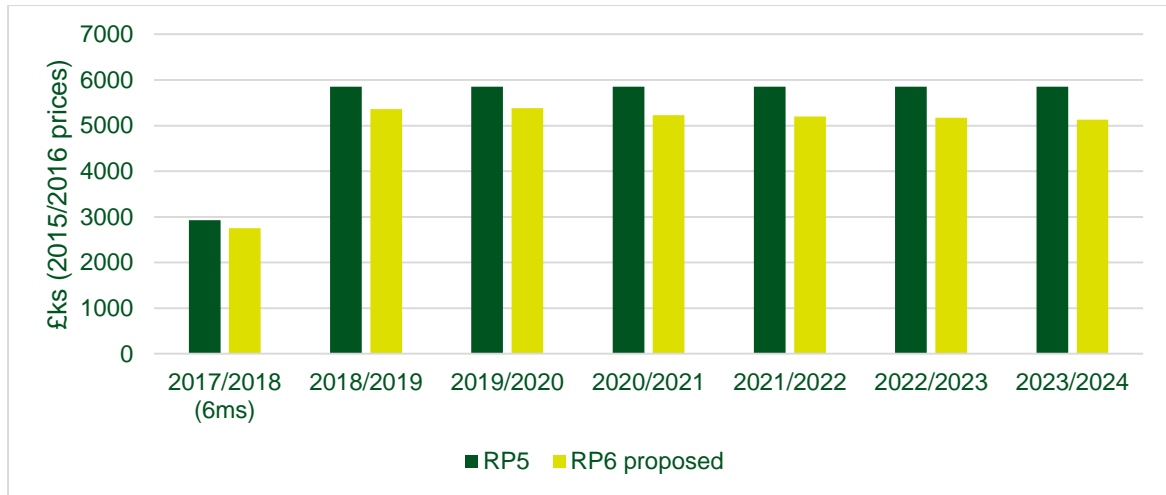


Figure 3: Enduring Solution Operating Costs - RP5 & RP6 Comparison

3. APPROACH

This section describes how Genserv undertook their analysis of NIE Networks' submission and contains a number of assumptions that were made in developing this report.

3.1. UR APPROACH TO RP6

A consideration for Genserv in developing its analysis of NIE Networks' submission has been the UR's published approach to RP6⁴ ("RP6 Approach"). Some key principles from that document that informed our approach include *inter alia*:

1. Providing an efficient revenue cap to enable NIE Networks to deliver the required outputs;
2. Justification of additional opex on the basis of two tests:
 - a. Newness – expenditure is related to a new obligation or specified service level improvement; or
 - b. Exogeneity – is there an exogenous factor driving cost increases in relation to current business activities.
3. Delivery of the price control should maximise the ability of NIE Networks to determine the optimum way to deliver the level of service required by consumers at an efficient cost; and
4. Where proposing service improvements, NIE Networks should be able to quantify those improvements in terms of tangible outcomes and which consumers can understand and have supported.

3.2. ANALYTIC APPROACH



Figure 4: Inputs to this assessment

⁴ Northern Ireland Electricity Networks Ltd, Transmission & Distribution 6th Price Control (RP6), Final Overall Approach, December 2015.



We were requested to adopt a “bottom up” analysis in relation to the IT costs, looking at the proposed instances of project spend and building that up into a set of recommendations for the UR. The process to assess NIE Networks’ proposed Market Operations Non Network IT spend involved the following activities which are summarised in Figure 4:

- a. Preparation of a report document setting out its analysis of the items within the above scope.
- b. Agreement of scope with UR (set out in Section 1.2).
- c. Benchmarking of relevant costs against RP5.
- d. UR managed workshops with NIE Networks at which their submissions, approach and responses to the formal queries were subject to detailed challenge.
- e. Detailed review of NIE Networks’ submission, query responses and other necessary documents.
- f. Submitting questions to NIE Networks via UR’s formal query process and analysing their responses. As of the date of this report, Gemserv has raised 114 queries with NIE Networks.
- g. Application of previous RP5 experience and other relevant subject matter expertise.

3.3. ASSUMPTIONS

Set out below are a number of assumptions that have informed Gemserv’s preparation of this document.

- a. **I-SEM** – any significant I-SEM related spending will be undertaken during RP5 and is excluded from this analysis.
- b. **Smart Metering** – there will not be a significant smart metering roll out in NI during RP6.
- c. **Retail Harmonisation** –the retail markets in NI and Ireland will remain harmonised during RP6.
- d. **NIE Networks’ role consistent** – there will be no significant changes to NIE Networks licence obligations.



4. UPDATED MARKET OPERATIONS ANALYSIS

This section reviews the analysis from the earlier Market Operations report and updates it as appropriate:

- Section 4.1, Tibco upgrades – reconsiders the earlier findings in relation to the incidence of Tibco upgrades during RP6;
- Section 4.2, Market Operations opex allocation – assesses updated information in relation to the Market Operations Opex Allocation;
- Section 4.3, Licence depreciation periods – discusses the licence depreciation periods that were questioned in the initial Market Operations Non Network IT assessment report; and
- Section 4.4, Enduring Solution operating costs – further analyses Enduring Solution Operating Costs in light of new information received from NIE Networks.

4.1. TIBCO UPGRADES

Gemserv previously questioned⁵ the proposed incidence of three Tibco upgrades during RP6 and recommended the exclusion of one of those upgrades⁶. This analysis was grounded in an assessment that the likely market conditions during RP6 (for example the NIE Networks assumed lack of investment requirement for I-SEM, smart metering or retail deharmonisation) and the low historical incidence of upgrades in Northern Ireland (NI) during RP5 did not appear to support such a level of upgrades.

Gemserv queried this rationale with NIE Networks who have since provided further information⁷ intended to substantiate a requirement for this number of upgrades. NIE Networks provided support dates and extended support dates (where available) for a range of Tibco system components⁸ plus a proposed programme for batching those upgrades into three instances. The upgrade windows seem to align with the end of support dates, suggesting the refresh requirements are an important driver of the investment.

This evidence supports the incidence of three upgrades to the Tibco system over RP6 and results in Gemserv viewing the previously excluded £250.3k as being reasonable to permit into the price control.

4.2. MARKET OPERATIONS OPEX ALLOCATION

There were three broad categories of Market Operations operating costs that Gemserv reviewed:

- Non Network IT discussed in Section 4.2.1;
- Enduring Solution Operating Costs reviewed in Section 4.2.2; and
- Market Operations, Other Operating Costs considered in Section 4.2.3.

Overall, we found no evidence to suggest incorrect allocation of opex to these Market Operations categories.

⁵ Query URQ161

⁶ RP6-CON-004 NIE Networks - Market Ops Non-Network IT Assessment Report v1.3

⁷ Query responses URQ170 and URQ170a

⁸ Tibco BW, Tibco BC, Tibco BC Services Plug in, Redhat OS, JVM – PI, Oracle Standard Edition, Oracle Standard Edition 1, Oracle Enterprise Edition, Windows.



4.2.1. Non Network IT

This category related to the Market Operations allocation of the opex proposals contained within NIE Networks' Non Network IT Business Plan. While we found no evidence of this opex being incorrectly allocated to Market Operations, it should be noted that we recommended the exclusion of the Market Operations apportionment of the proposed Non Network IT opex. Gemserv has updated the Market Operations Non Network IT figure proposed for exclusion that we previously recommended to £661.8k; this change has occurred as a result of our updating our cost profiling analysis.

4.2.2. Enduring Solution Operating Costs

This expenditure is comprised of operating costs related to the Enduring Solution as set out in the Market Operations Business Plan and apportioned to Market Operations. On the basis of the evidence submitted to date, the costs allocated to the Enduring Solution Operating Costs appear to be appropriately apportioned to that category and said allocation approach seems to be consistent with that of RP5.

4.2.3. Market Operations, Other Operating Costs

This class of opex contains a variety of operating costs related to Market Operations that are described in the Market Operations Business Plan. The metering-related aspects of this cost category were excluded from Gemserv's scope. NIE Networks provided figures to support those numbers being correctly allocated to Market Operations.⁹ Gemserv has not seen evidence as to raise doubts in relation to this apportionment.

4.3. LICENCE DEPRECIATION PERIODS

Gemserv queried¹⁰ the licence depreciation period being assumed by NIE Networks in their Non Network IT submission. They have since responded that all software licences and Non Network IT capital purchases are included within a five (5) year Regulated Asset Base (RAB) and hence depreciated over a five year period.¹¹ This statement and the available evidence suggests that they are depreciating the licence capex in a manner consistent with a five year RAB for capitalised Non Network IT spend, and hence in line with requirements.

4.4. ENDURING SOLUTION OPERATING COSTS

Gemserv recommended a reduction of £5.02m in the proposed £34.15m Enduring Solution Operating Cost budget in the previous report. In reply to a number of follow up queries¹², NIE Networks have since provided additional information. These responses, follow up engagement, and further analysis have been fed into an updated assessment as follows:

- Section 4.4.1, IT Support Costs – reconsiders the initial recommendation in relation to IT Support Costs;
- Section 4.4.2, Hardware, software and market entry costs – reviews our original findings in relation to the Hardware, software and market entry costs; and

⁹ In response to query URQ250

¹⁰ Query URQ248

¹¹ As per query response URQ248

¹² URQ270, URQ271, URQ272, URQ273, URQ274



- Section 4.4.3, Market Services staff costs – contemplates the original proposals in relation to Market Services staff costs.

4.4.1. IT Support Costs

Gemserv is of the opinion that 10% is a fair estimate of the efficiency that should be attainable upon the proposed Managed Service Provider costs, recognising that the service is undergoing a procurement process. Further justification of this position is set out in Section 5 of this document.

Figure 5 shows how that 10% reduction would reprofile these IT Support Costs over the RP6 period resulting in a £1.7m reduction in these costs. Gemserv would propose to review this position in light of output figures from the Best and Final Offer (BAFO) exercise prior to the Final Determination (FD).

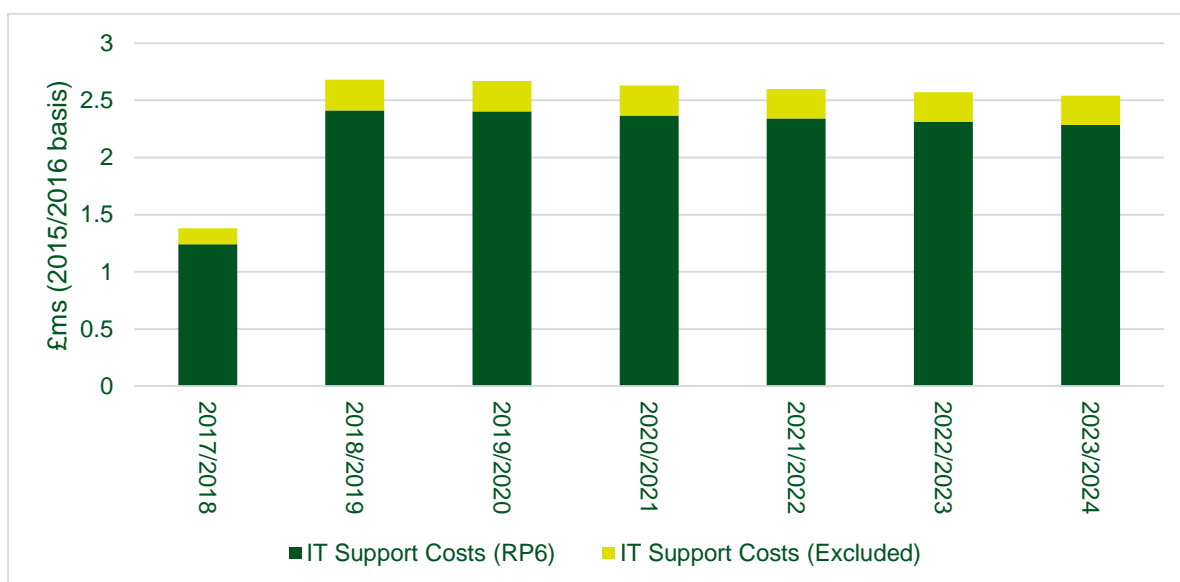


Figure 5: Reprofiled IT Support Costs over RP6

4.4.2. Hardware, software and market entry costs

This section considers the following aspects of this cost category:

- Section 4.4.2.1, Third Party Costs – this sub-section reassesses the proposed Third Party Costs from NIE Networks submission;
- Section 4.4.2.2, Load Profile Costs – re-evaluates our initial recommendation in relation to Load Profile Costs; and
- Section 4.4.2.3, Market Entry Costs – discusses and updates our recommendations in relation to the Market Entry Costs portion of NIE Networks' submission.



4.4.2.1. Third Party Costs

These costs are a function of hardware maintenance to the Enduring Solution system and telecoms charges associated with communicating to the meters. Gemserv previously recommended¹³ a £588.2k reduction upon the £4.94m budget for Third Party Costs on the basis that the per annum average in RP6 appeared significantly higher than that in the previous price control period and there did not appear to be a significant change in obligations across the period. NIE Networks had commented “It is assumed that these costs will remain broadly in line with those in RP5”¹⁴.

In mitigation NIE Networks provided evidence and submissions¹⁵ in support of the following points:

- The first year of RP5 had only six months’ worth of Enduring Solution expenditure which skewed the average figure for the price control period i.e. it was five years’ cost, not five and a half;
- NIE Networks were obliged to pay an extended warranty charge related to supporting certain components¹⁶ of the Enduring Solution during the first two years of RP6 which inflated those numbers, meaning the average was less accurate for drawing comparison; and
- The growth of half hourly meters interacting with the Enduring Solution during RP5 will increase during RP6 meaning that “it is not possible to compare average costs during RP5 and RP6”¹⁷.

There appears to be something of an inconsistency across NIE Networks’ submissions. While forecasting a continual increase in numbers in their query responses¹⁸, they state in the main body of their submission that “[I]t is anticipated that the population of half hourly meters will not increase significantly over the course of RP6”¹⁹. Leaving that aside, the points above do have some impact upon our recommendations.

If the extended warranty costs are stripped out from the RP6 figure and the average figure for RP5 is amended to reflect the reduced Enduring Solution operating time, then the average per annum opex for both periods is very similar: £736.8k for RP5 versus £742.6k for RP6. On the basis of the supplied evidence and statements by NIE Networks, these figures would suggest that when the constituent elements are adjusted, the spend is broadly consistent. Reflecting these considerations, and on the basis of the evidence, it appears that the proposed £4.9m is reasonably incurred.

4.4.2.2. Load Profile Costs

NIE Networks have an obligation to use load profiles²⁰ (currently purchased from Elexon). Gemserv previously understood those costs to be captured under another category of operational cost and by including a distinct category for Load Profile costs, there appeared to be double counting and over recovery of cost. For that reason, Gemserv challenged the proposed Load Profile costs.

¹³ RP6-CON-004 NIE Networks - Market Ops Non-Network IT Assessment Report v1.3

¹⁴ Market Operations Business Plan

¹⁵ Query response URQ273 and URQ274

¹⁶ AIX and PowerHA elements of the infrastructure

¹⁷ Query response URQ273

¹⁸ Ibid

¹⁹ Market Operations Business Plan

²⁰ A requirement under the Trading and Settlement Code and the Market Registration Code.



NIE Networks provided figures and narrative²¹ to show that those numbers had in the previous price control period been contained within the Market Entry Costs category and had just been separated out for RP6. The documentation from NIE Networks showed that they assumed the Load Profile costs from Elexon were being held broadly static across both price control periods. With the costs having increased by £3k in 2013/14, there is potential for costs to inflate over the six and a half years. With that potential, it appears that NIE Networks are not seeking to over recover against this category.

On the basis of that evidence and statements by NIE Networks²², we are minded to include these figures within RP6. As the associated obligation is due to persist during the price control, Gemserv recommends that the proposed £740k should be permitted.

4.4.2.3. Market Entry Costs

Gemserv earlier argued²³ that the average costs related to Market Entry activities across RP5 and the predicted volume of new entrant activity within the Market Operations Business Plan seemed to support a contention that the market entrant costs were too high and we proposed a reduction of £241k. There are a number of factors that have caused this analysis to be reconsidered.

The Market Entry cost line for RP5 included the Load Profile costs while the latter expenditure was a distinct category within the RP6 submission (as discussed in Section 4.4.2.2). Thus the per annum Market Entry costs were significantly lower during RP5. In addition, this straight comparison between the periods is complicated by the predicted change in market entry levels across the price control periods.

Neueda stated²⁴ that levels of market entry had been relatively low in RP5. NIE Networks noted that prior to 2015 there had been limited entry but thereafter it had increased: two entrants in 2015/16; and they quoted a planned work programme of four new market entrants and certifications for existing suppliers.²⁵ This discussion suggested that their internal perspectives on likely future volumes of activity had changed from the assumption in their original submission of one new entrant per annum²⁶.

In discussions²⁷, NIE Networks suggested that the advent of I-SEM was contributing to increased new entrant activity. How enduring this effect will be over the price control period is uncertain; it will be driven by demand in the market which may partly be a product of changing central trading arrangements and the strategies of individual companies participating in the market.

Gemserv modelled a range of price points, making the following assumptions:

- NIE Networks costs of £18k- £45k per new entrant processed;
- NIE Networks costs of £7.7k - £19.3k per recertification performed;
- Balanced Scorecard activities having a relatively nominal impact on resourcing requirements;

²¹ In response to query URQ271

²² IT workshop 25th January 2017.

²³ IT Workshop 25th January 2017

²⁴ Via e-mail dated 26th October 2016

²⁵ In query responses URQ271, URQ272

²⁶ Market Operations Business Plan

²⁷ IT Workshop 25th January 2017



- 1-5 new entrants per annum over the price control period; and
- 1-5 certifications per annum over the price control period.

Figure 6 shows the outcome ranges of results from this exercise.

Assessing the standard deviation within this series suggests a wide variety of outcomes driven by the wide ranges of input values, which were driven by analysis of the figures provided to date by NIE Networks. Assessing the mean and median values suggested £844.1k as an outcome budget for Market Entry Costs, entailing a total reduction of £59.9k upon NIE Networks' submission over the price control period.

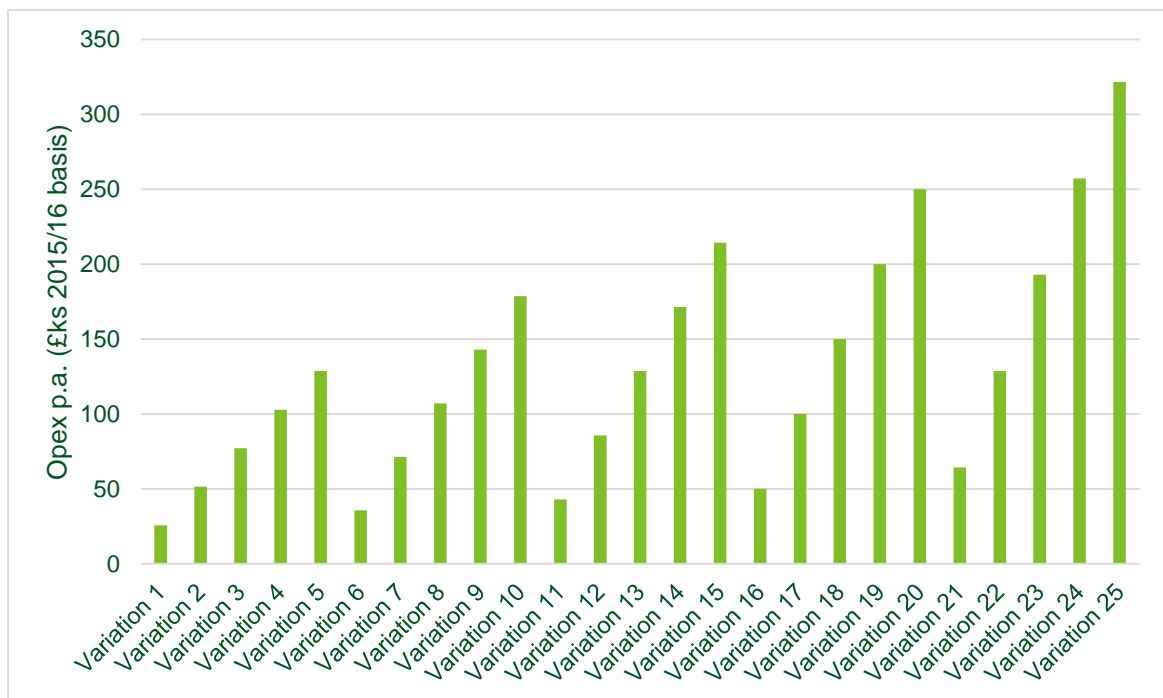


Figure 6: Range of modelled outcomes of per annum Market Entry Costs

Gemserv have questioned NIE Networks on the forecast and historical occurrence of new market entrant, recertification and Balanced Scorecard activities. Upon receipt of those figures, we would propose to cross compare those with the above analysis and the NIE Networks submission to test their robustness.

4.4.3. Market Services staff costs

Gemserv previously recommended²⁸ a resourcing level for Market Services staff consistent with our recommendations from RP5 of 17.9 Full Time Equivalent (FTE), resulting in £2.08m opex not being permitted within the price control. NIE Networks are proposing to maintain the current resource pool of 26 FTE over RP6.

²⁸ RP6-CON-004 NIE Networks - Market Ops Non-Network IT Assessment Report v1.3



Gemserv has since further analysed the staff breakdown and compared the resulting teams, recognising that team structures and operational requirements have somewhat amended over the period. The intent of this work is an attempt to define an efficient team structure. The summary of that analysis is set out below in Table 1.

The output of the above analysis is a per annum reduction of £257.5k staffing opex, or £1.67m over the period of RP6, subject to further evidence being provided to support the requirement for a Market Services Manager. We will be querying team structures and resourcing requirements further with NIE Networks.

Role	RP5 Gemserv	NIE Networks Proposed	RP6 Gemserv	Rationale
Market Registration	2.5	3	3	With evolving requirements, and given evidence of increases in market registration activities, wholesale market and volume of queries, the additional 0.5 FTE appears reasonable.
Data Aggregation	3	3	3	Number has remained constant
Central Design Authority	1.9	1.5	1.5	Critical market role with a degree of constancy in numbers between periods
Market Systems	1	2.5	2	
Systems Management	1	1.5	1	The requirement for 0.5 additional FTE requires objective substantiation.
SAP Analyst		1	1	With volume of SAP upgrades, it appears reasonable to maintain a SAP resource.
Metering - ES processes	2	2	2	
Fieldwork co-ordinator/staff	2	1	1	While the structure of this component of team has altered, overall resource requirement in line with expectations.
Keypad registration team		1	1	
DUOS Billing	3	3.5	3.5	Increase in DUOS billing from 100,000 to 860,000 sites appears to support an additional 0.5 FTE.
Market Services Manager		1	1	Require objective evidence for management resource.
Meter Data Processing	3.5 (incl. 1 general)	9.5	3.5	
Meter reading exceptions	1	4.5		
MV90	1.5	3		Have not seen objective evidence for requirement for additional 6 FTE.
CX111 processing		2		
General admin role	1	0	0	NIE Networks have not appeared to require this resource over price control periods.
Total	17.9	26	19.5	

Table 1: Summary analysis of efficiency of proposed Market Services Staff Costs

RECOMMENDATION

In relation to Market Operations, Gemserv is recommending the following:

- £661.8k opex apportioned to Market Operations should be excluded from the RP6 price control.
- The previously excluded £250.3k for one Tibco upgrades should now be permitted.
- £1.7m of IT Support Costs should not be included under Enduring Solution Operating Costs, subject to review of the outputs from the Managed Service Provider Agreement BAFO.
- £588.2k previously excluded from Third Party Support Costs should be included.



- e. The £740k for Load Profile costs should be included within the Market Operations opex allocation.
- f. £59.9k of the proposed Market Entry Costs should not be permitted within RP6 subject to a further cross comparison of their proposed costs with their historical and forecast market entry workload.
- g. £1.67m of proposed Market Services Staff Costs should not be permitted, subject to further evidence being provided to support the inclusion of a Market Services Manager role.



5. MANAGED SERVICE PROVIDER AGREEMENT

The Managed Service Provider Agreement is omnipresent in delivery of NIE Networks IT function, thus it has a profound influence upon nearly all ICT costs. NIE Networks are proposing that the new contract broadly aligns with the price control period: seven years with an option to extend by three years if necessary.²⁹

This chapter reviews the Managed Service Provider Agreement from the following perspectives:

- a. Section 5.1, Efficiency potential – discusses a potential efficiency attainable on the draft rates within the NIE Networks submission; and
- b. Section 5.2, Service indexation – considers the implications of the approach to indexation of the Managed Service Provider Agreement.

5.1. EFFICIENCY POTENTIAL

Figure 7 shows the impact of the day rate as a proportion of the proposed Non Network IT opex and capex. The day rate under the Managed Service Provider Agreement directly comprises £8.96m out of the £41.78m Non Network IT capex and £1.8m out of the £8.89m Non Network IT opex.

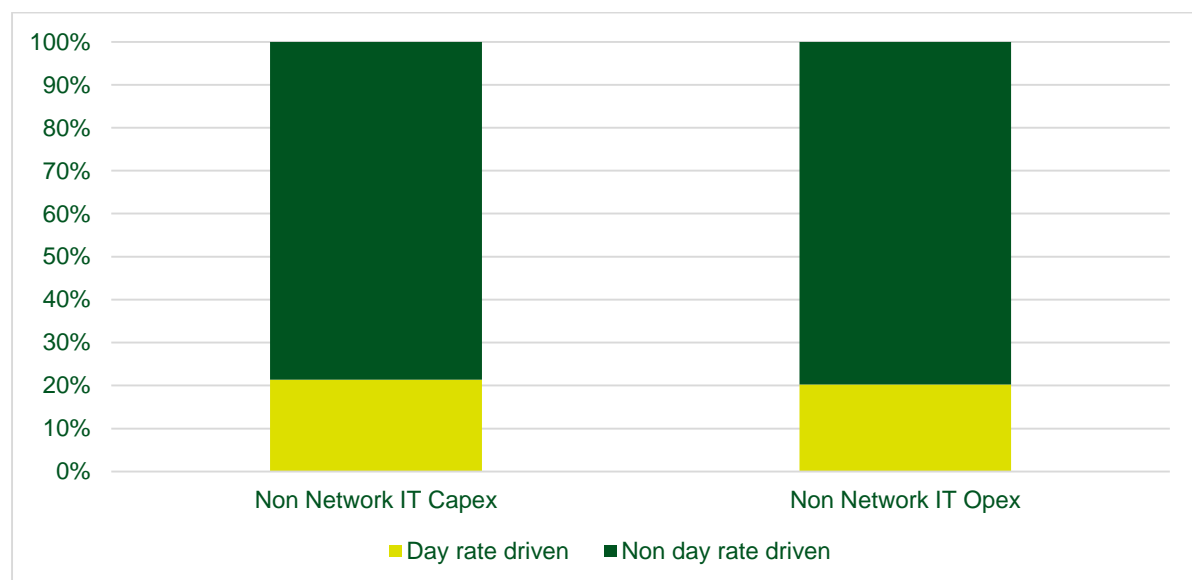


Figure 7: Proportion of Managed Service Provider Agreement costs driven by day rate

Based on an internal benchmarking exercise Gemserv views the blended proposed day rate (£550) as being reflective of likely GB market rates. The UR has considered Regional Price Adjustments in previous water and energy price controls, and given that NI has historically been a low cost region within the UK, we would expect there to be scope for downward movement on the proposed costs.

In addition, as discussed at workshops with NIE Networks, Gemserv is of the view that the following developments should result in significantly lower capex costs: the licence obligations of NIE Networks broadly

²⁹ Query response URQ293



remaining consistent across the price control periods; technological developments such as server virtualisation and cloud computing; and a likely shift to offshoring elements of the support from the Managed Service Provider. In discussions³⁰ NIE Networks noted that the bidders may have some scope for cloud computing during RP6.

Gemserv would expect the impact of the above developments to be reasonably significant as our previous experience suggests considerable savings are attainable through use of the above methods. We would view a 10% reduction on the day rate costs as quite a conservative target. This figure would translate into an £896.3k reduction upon the proposed capex levels.

The Managed Service Provider procurement process is currently underway and the numbers within the NIE Networks submission are based on estimates. NIE Networks stated³¹ that the technical scope of the service previously reviewed³² by Gemserv had not altered between the initial tender and the BAFO. It is expected that the figures from the BAFO exercise³³ will be available in March 2017 ahead of the FD. There is an opportunity at that point to reconsider the appropriate numbers with firmer numbers from a procurement process.

5.2. SERVICE INDEXATION

NIE Networks stated³⁴ that they were proposing an indexation of Managed Service Provider costs of two thirds of the Retail Price Index (RPI) within the procurement. Under the RPI-X price control model adopted by the UR, NIE Networks are entitled to RPI on properly incurred costs. If efficiently incurred Managed Service Provider costs included within RP6 were to receive full RPI, then NIE Networks would in effect be attaining a premium on significant cost element that is being passed through the price control.

Such an outcome would not create an incentive for efficiency within the Non Network IT costs, and it could negatively impact upon customers. It would not have been appropriate for NIE Networks to claim full RPI on the costs within the Managed Service Provider Agreement governed by a two thirds RPI indexation.

NIE Networks have since provided further information³⁵ stating that they had amended their position for the BAFO, in which they have moved to one based on RPI-X i.e. costs inflating with RPI and a variable (x) applying to those costs in order to create an efficiency incentive. They note an intention to align x with NIE Networks' efficiency targets set by the UR. If those targets are consistent, it would align incentives for the distribution company and the Managed Service Provider. This would seem to be an appropriate approach to indexation as it ensures pass through of cost.

³⁰ At IT Workshop 28th January 2017

³¹ In workshop on 25th January 2017.

³² Response to query URQ069.

³³ These are final bids from the remaining participants in the Managed Service Provider procurement that have been shortlisted by NIE Networks.

³⁴ At workshop on 25th January 2017.

³⁵ In query response URQ293



RECOMMENDATION

Gemserv is recommending that a 10% efficiency is applied to the current estimated day rates under the Managed Service Provider Agreement. This would result in £896.29k being excluded from the proposed Non Network IT capex and £179.9k from the Non Network IT opex submission. We would propose this finding is reviewed in light of the figures that emerge from the BAFO exercise in March 2017.



6. EFFICIENCY INVESTMENTS

This section considers a set of capex and opex investments proposed by NIE Networks that are grounded in attaining efficiency gains. NIE Networks framed an approximate £6m efficiency investment in a number of projects as being required to achieve a *per annum* efficiency gain of 0.7% over RP6 (an estimated £34.8m saving).³⁶ This capex was partly justified by NIE Networks on that basis.

In further discussions³⁷, they noted that some of the efficiency gain was through those projects and some was due to productivity improvements; they stated that they were unable to quantify how much of the estimated efficiency gain was due to investment and how much was a result of productivity gains. NIE Networks also noted that efficiency projects may confer other benefits and useful functionality, so it may be inappropriate to designate that spend as not justified purely on efficiency grounds.

An important principle underpinning this analysis is maximising value to consumers. If the savings from an efficiency investment more than outweighs the costs of implementing that initiative, then it would seem that investment is self-funding. If self-funding and it augments the efficient operation of a regulated utility, then arguably it does not require funding from consumers and should not be included within the price control.

In addition, there is a degree of uncertainty over the scale of benefits accruing from these projects, weakening the case for their inclusion within the price control.

Gemserv earlier recommended³⁸ the exclusion of the capex and opex of the proposed Market Operations allocation for projects which primarily had an efficiency rationale. This chapter steps through an updated version of that analysis across the wider Non Network IT spend:

- Section 6.1, Projects with efficiency rationale – isolates the projects for which efficiency is a very significant component of their investment rationale; and
- Section 6.2, Efficiency project assessment – assesses those projects on a more granular basis, reviewing their rationale and/or functionality potential benefits.

6.1. PROJECTS WITH EFFICIENCY RATIONALE

This section reviews the proposed efficiency investments. Gemserv reviewed all proposed projects in detail and isolated those projects with a significant efficiency rationale underpinning their investment case as follows: Figure 8 profiles the efficiency capex across RP6; and Figure 9 profiles the efficiency opex across the price control period.

Ref	Efficiency project capex							
	Oct-17 Mar-18	Apr-18 Mar-19	Apr-19 Mar-20	Apr-20 Mar-21	Apr-21 Mar-22	Apr-22 Mar-23	Apr-23 Mar-24	Total
RP6-025	£ -	£ -	£ 165,000	£ 444,800	£ -	£ -	£ -	£ 609,800
RP6-028	£ 1,218,650	£ -	£ -	£ -	£ -	£ -	£ -	£ 1,218,650
RP6-029	£ -	£ -	£ 608,925	£ 660,000	£ -	£ -	£ -	£ 1,268,925

³⁶ In discussion at workshop on 28th October 2016

³⁷ IT Workshop on 20th December 2016

³⁸ RP6-CON-004 NIE Networks - Market Ops Non-Network IT Assessment Report v1.3



Ref	Efficiency project capex							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
RP6-030	£ -	£ -	£ 507,000	£ 524,000	£ -	£ -	£ -	£ 1,031,000
RP6-031	£ 217,000	£ 366,960	£ -	£ -	£ -	£ -	£ -	£ 583,960
RP6-032	£ -	£ 410,000	£ -	£ -	£ -	£ -	£ -	£ 410,000
RP6-033	£ -	£ -	£ -	£ -	£ 385,200	£ -	£ -	£ 385,200
RP6-034	£ -	£ -	£ -	£ -	£ -	£ 474,200	£ -	£ 474,200
	£ 1,435,650	£ 776,960	£ 1,280,925	£ 1,628,800	£ 385,200	£ 474,200	£ -	£ 5,981,735

Figure 8: Efficiency oriented capex profiled over RP6

Ref	Efficiency project opex							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
RP6-025	£ -	£ -	£ -	£ -	£ 18,000	£ 18,000	£ 18,000	£ 54,000
RP6-028	£ -	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 180,000
RP6-029	£ -	£ -	£ -	£ -	£ 69,000	£ 69,000	£ 69,000	£ 207,000
RP6-030	£ -	£ -	£ -	£ -	£ 87,000	£ 87,000	£ 87,000	£ 261,000
RP6-031	£ -	£ -	£ 74,000	£ 74,000	£ 74,000	£ 74,000	£ 74,000	£ 370,000
RP6-032	£ -	£ -	£ 26,000	£ 26,000	£ 26,000	£ 26,000	£ 26,000	£ 130,000
RP6-033	£ -	£ -	£ -	£ -	£ -	£ 4,000	£ 4,000	£ 8,000
RP6-034	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	£ -	£ 30,000	£ 130,000	£ 130,000	£ 304,000	£ 308,000	£ 308,000	£ 1,210,000

Figure 9: Efficiency oriented opex profiled over RP6

This initial screening suggests there is £5.98m capex and £1.21m opex grounded in an efficiency rationale. The following section considers these projects in more detail.

6.2. EFFICIENCY PROJECT ASSESSMENT

While the projects identified above possess a strong efficiency-oriented rationale, we identified additional considerations that should be factored into this review:

- Foundational Investment – the project technically enables other projects whose necessity is more clearly demonstrated;
- Licence Obligations – project investment that, in the view of Gemserv, that may be required to facilitate NIE Networks discharging their licence obligations for example where it provides a necessary functionality; and/or
- Customer Benefit – there is tangible benefit for the customers of NIE Networks from a particular investment.

We fed the above factors into a further assessment of the individual projects categorised as possessing a strong efficiency rationale. Table 2 sets out the outcomes of this follow up review of the efficiency projects identified above.



Ref	Project Name	Included	Justification
RP6-025	JMS-Maximo PM Integration	Y	Required to enable the Enterprise Service Bus which forms the spine of the IT Architecture.
RP6-028	Single Maximo Instance	Y	Required to avoid two (2) obsolescence projects entailing additional expenditure. Work should enable future systems integration projects.
RP6-029	Condition Based Risk Management (CBRM)	N	The primary benefit and justification for the project appears to relate to efficiency gain and reporting benefits.
RP6-030	Extend Mobile Working	Y	While there is a clear efficiency gain from the removal of the dependency on paper-based processes, it facilitates delivery of NIE Networks' licence obligations and management of system in situations of faults and emergencies.
RP6-031	Mobile Mapping	Y	In addition to the efficiency gain, the proposed project should have safety and asset management benefits.
RP6-032	Enhance Mobile quotations	Y	There should be customer service improvements and maximise NIE Networks meeting the regulatory SLA for production of quotations.
RP6-033	Time Reporting automation 1	N	The primary benefit and justification for the project appears to relate to efficiency gain.
RP6-034	Time Reporting automation 2	N	The primary benefit and justification for the project appears to relate to efficiency gain.

Table 2: More granular analysis of efficiency investments

The outcome of the above analysis is £2.13m capex and £215k opex that should be excluded over the period of RP6. The revised expenditure profile of the efficiency projects identified above is shown in Figure 10.

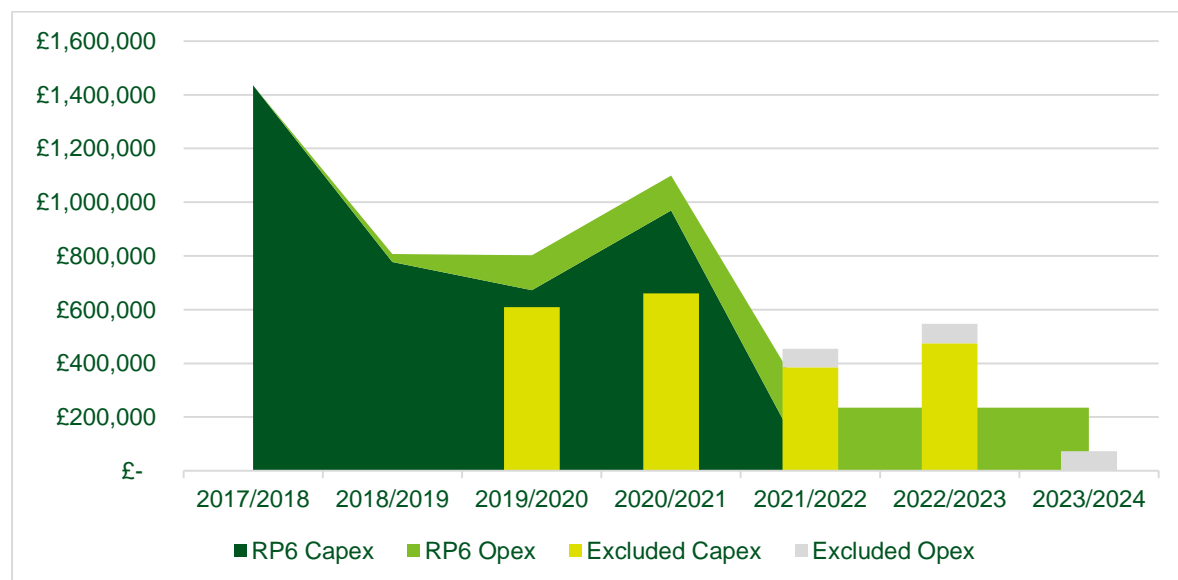


Figure 10: Re-profiled efficiency investment capex and opex following more granular efficiency analysis

The above analysis is grounded in an assessment of the operational practices of NIE Networks from written submissions and engagement at workshops; they have repeatedly portrayed their current operational practices



as heavily paper based and potentially creating risks over RP6. Further validation of this assessment should be carried out via site visits to relevant NIE Networks facilities. As such, the proposed capex and opex figures should be subject to an inspection prior to the FD. Without such confirmation of our understanding, Gemserv would be minded to recommend adopting a precautionary approach and exclude a high proportion of the efficiency project investment.

RECOMMENDATION

Subject to a satisfactory site visit to NIE Networks' facilities, £2.13m capex and £215k opex related to efficiency investment should not be permitted during RP6.



7. OPTIONALITY ANALYSIS

This chapter considers the level of optionality associated with the project briefs contained within NIE Networks' submission.

- Section 7.1, High level optionality analysis – performs a high level screening of projects, isolating a sample of proposed investments that may have a high level of optionality associated with them; and
- Section 7.2, Review of high optionality projects – further assesses the necessity of those projects at a more granular level of detail.

7.1. HIGH LEVEL OPTIONALITY ANALYSIS

For the Non Network IT projects, Gemserv performed an optionality analysis. Essentially this work entailed reviewing the proposed projects and attempting to assess whether they were required during the RP6 price control period. We grouped NIE Networks project proposals into categories (set out in Table 3). Each category had an associated optionality level- High, Medium, Low, N/A- which is intended to serve as a proxy for the degree of necessity for that project; if a project had a high level of optionality, it would suggest that project was not strictly necessary within the price control period.

Category	Explanation	Optionality Level
IH-OBS	Infrastructure & Hardware investment to avoid obsolescence	Low
SYS-OBS	Systems investment to avoid obsolescence	Low
SYS-REF	Systems investment to refresh existing investments	Medium
SYS-OPT	Optional systems investment	High
BI-EFF	Business improvement projects - efficiency gain	High
BI-OPT	Business improvement projects - optional	High
OTH	Other opex projects	Low
SMA	Small Projects	N/A

Table 3: Optionality categories in this analysis

The outcome cost breakdown by category is represented in Figure 11. The Other category relates to the Non Project Specific opex discussed in Section 9.3.

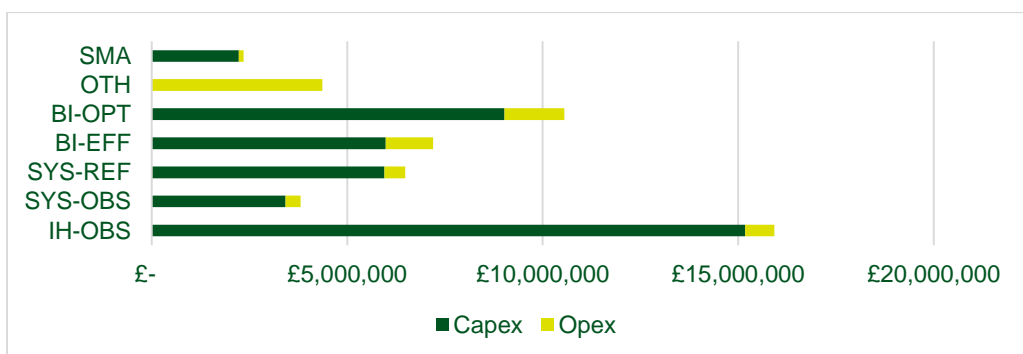


Figure 11: Optionality analysis by category



Breaking that information down by optionality level results in the numbers in Figure 12. This analysis suggests a potential £15m capex and £2.74m opex with a high degree of optionality. These projects are scrutinised more closely in the next section.

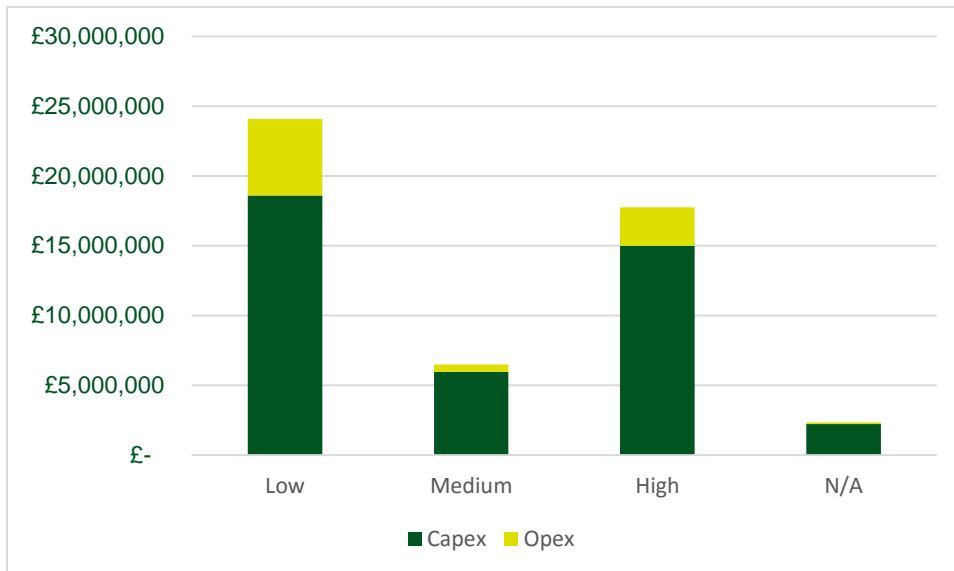


Figure 12: Optionality analysis by optionality level

7.2. REVIEW OF HIGH OPTIONALITY PROJECTS

In this section we review the individual projects identified by the original screening in Section 7.1. As Figure 13 demonstrates, £5.98m capex and £1.21m opex of that figure relates to efficiency projects. These initiatives are discussed in Section 6 and are thus eliminated from the scope of this review, leaving a total of £9.02m capex and £1.53m opex under investigation.

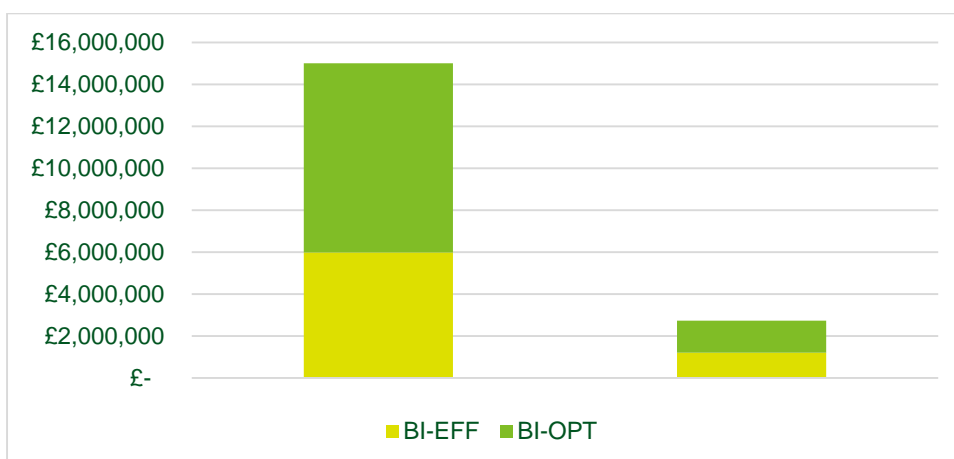


Figure 13: Split of high optionality projects by efficiency and business improvement initiatives



We then considered the individual projects within that figure and assessed their necessity on a project-by-project basis. An input into that analysis were the principles articulated in Section 6 and repeated below for reference:

- a. Foundational Investment – the project technically enables other projects whose necessity is more clearly demonstrated;
- b. Licence Obligations – project investment that, in the view of Gemserv, may be required to facilitate NIE Networks discharging their licence obligations, for example where it provides a necessary functionality; and/or
- c. Customer Benefit – there is tangible benefit for the customers of NIE Networks from a particular investment.

Our review on a project-by-project is summarised below in Table 4.

Ref	Project	Rationale (public)	Included
RP6-015	Network Management System LV Modelling (Upgrade)	Two projects, an improvement one and an upgrade. Due to categorising system initially included as BI-OPT. Upgrade seems reasonable and LV Modelling improvement should improve customer service and manage safety risks.	Y
RP6-022	Maximo - SAP Integration	Project seems to facilitate numerous other projects and is an important one within NIE Networks' proposed architecture	Y
RP6-023	Regulatory Reporting Automation	NIE Networks established a team during RP5 to manage RIGs reporting. NIE Networks do point to difficulties due to separation between numerous internal systems. With the greater integration of internal systems planned over the RP6 period, the role of the team should be eased. The requirement for this project has not been objectively substantiated.	N
RP6-024	Operational Datastore	In our opinion, this project is primarily focused upon efficiency and data quality improvement. The absolute necessity for such a project requires further substantiation	N
RP6-026	NMS-Maximo Integration	Project has potential value from asset management perspective.	Y
RP6-027	Asset Data Consolidation	Project has potential value from asset management perspective.	Y
RP6-035	Forecasting, modelling & scenarios	Absolute necessity of forecasting project requires further substantiation.	N
RP6-036	Document Management	The absolute requirement for wider integration of the Sharepoint project requires further objective evidence.	N
RP6-037	Inventory automation	The current paper-based processes appear to entail risks in relation to cost and customer service. Basis for this project appears suitably evidenced.	Y

Table 4: Assessment of high optionality projects



The outcome of this analysis is that there is £1.9m capex and £843k opex that has been insufficiently substantiated. The revised expenditure profile arising from the above optionality analysis is shown below in Figure 14.

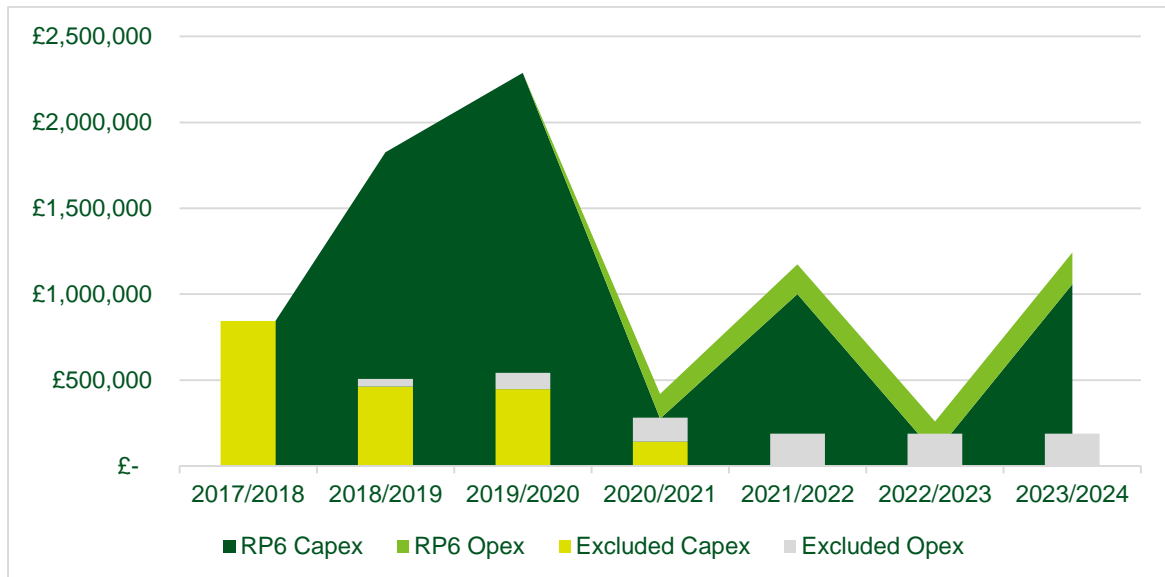


Figure 14: Re-profiled capex and opex following more granular optionality analysis

The above analysis is grounded in an assessment of the operational practices of NIE Networks from written submissions and engagement at workshops; they have repeatedly portrayed their current operational practices as heavily paper based and potentially risky or unsuitable for a distribution company during the period of 2017-2014. Further validation of this assessment should be carried out via site visits to relevant NIE Networks facilities.

RECOMMENDATION

Subject to a satisfactory site visit to NIE Networks' facilities, £1.9m capex and £843k opex should not be permitted during RP6 as a result of the above optionality analysis.



8. CAPEX

NIE Networks proposed £41.8m of Non Network IT capex in their submission. This chapter considers a number of elements of that planned expenditure. They are as follows:

- Section 8.1, SAP HANA – reviews the timing of proposed SAP HANA investments;
- Section 8.2, Non Network IT capex allocation – discusses the Non Network IT capex allocation;
- Section 8.3, Project refresh investment – assesses the requirement for investment in refreshing IT across RP6; and
- Section 8.4, Programme management and backfill costs – examines NIE Networks' planned Programme Management and Backfill costs within the proposals.

8.1. SAP HANA

Gemserv requested that NIE Networks provide further information to substantiate the requirement for the late stage SAP HANA projects during RP6 across two Project Briefs: RP6-018 and RP6-048. Gemserv had noted in engagement with NIE Networks³⁹ that as SAP intended to support these products until December 2025, that the period of April 2024 to December 2025 should be sufficient to plan and complete any necessary upgrades.

NIE Networks⁴⁰ did note that it would be prudent for the upgrade projects, which they characterised as complex, to be completed by the summer of 2025; if the projects were to encounter issues or run over they might run a risk of overlapping with a time when the product was out of support. NIE Networks have since provided further information⁴¹ with the aim of supporting a requirement for this investment during RP6.

The response from NIE Networks appears to assume that the projects have to be run in sequence, resulting in a duration of 18 to 30 months. They have also characterised these projects as “completely independent of each other”⁴². If the projects are run in parallel, the overall duration would be 9-15 months which would appear to fit within the appropriate window in RP7.

The impact of this finding on the Non Networks IT capex is £1m capex that should not be permitted in the price control period.

8.2. NON NETWORK IT CAPEX ALLOCATION

The total Non Network IT capex figure emanating from Gemserv's bottom-up model of the Project Briefs provided by NIE Networks came to a total of £41.882m. The figure quoted in the Non Network IT Business Plan was £41.784m. There appears to be a £98k discrepancy between the two sets of figures, which is a 0.23% proportion of the overall capex suggesting a reasonable consistency between the two. Due to rounding differences and summing error, there are some differences between the two sets of figures. Within the NIE Networks submission documentation, the Non Network IT allocation appeared broadly consistent.

³⁹ IT Workshop 25th January 2017

⁴⁰ IT Workshop 20th December 2017

⁴¹ In response to query URQ165a

⁴² In response to query URQ168. Emphasis taken from NIE Networks response.



Gemserv queried the allocation of Non Network IT capex across different business units (Transmission, Distribution, Connections and Market Operations). There are some variances between the allocations in Gemserv's figures and NIE Networks submission (see Table 5). We have been unable to fully reconcile the two sets of numbers but given the scale of variance, and the discrepancy noted above between our figures and those of NIE Networks, we do not view it to be of such an order as to raise significant concerns.

Business Area	Submission (£ms)	Gemserv (£ms)	Variance
Transmission	2.66	2.60	-£ 59,220
Distribution	21.67	21.82	£ 146,292
Connections	5.77	5.75	-£ 15,930
Market Operations	11.67	11.71	£ 40,904

Table 5: Comparison of capex allocations across business areas

Gemserv reviewed these allocations from the perspective of managing the risks of expenditure being incorrectly allocated. Broadly speaking, we found no evidence of costs being incorrectly allocated to the different NIE Networks business units. As the Connections allocation was deemed out of Gemserv's scope, we focused the analysis upon the non-Connections business units.

This section also discusses the following potential capex/opex allocation risks:

- Subsection 8.2.1, Licence costs – considers matters related to licence costs;
- Subsection 8.2.2, Ongoing enhancements – reflects upon the treatment of ongoing enhancements; and
- Subsection 8.2.3, Treatment of "Small Projects" – reviews how Small Projects are addressed within the capex numbers.

8.2.1. Licence costs

In reviewing the licence costs across the set of projects, and the evidence provided by NIE Networks, Gemserv could find no evidence of licence costs being incorrectly capitalised. The NIE Networks accounting convention is that the first year's licence costs are included as a project cost while thereon annual licence costs are treated as opex. NIE Networks appear to have acted in accordance with this practice in relation to Non Network IT capex.

8.2.2. Ongoing enhancements

There are a number of projects that are subject to ongoing enhancements. Having requested further information on these enhancements from NIE Networks, they were largely of the following nature: amendment of documentation, validation, generation of alerts, adding data, management of workarounds, operational updates. Gemserv is of the opinion that these costs are more accurately considered opex and should be treated as such. NIE Networks should not be permitted to capitalise and add them to the RAB.

On the basis of this analysis, we recommend that £690k should be reallocated from capex to opex as set out in Table 6.



Ref	Non Network IT - Ongoing Enhancements							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Totals
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
RP6-001	£ -	£ -	£ -	£ -	£ 20,000	£ 20,000	£ 20,000	£ 60,000
RP6-015	£ -	£ -	£ -	£ 75,000	£ -	£ 75,000	£ -	£ 150,000
RP6-018	£ -	£ 75,000	£ 75,000	£ 75,000	£ -	£ 75,000	£ -	£ 300,000
RP6-046	£ 30,000	£ 30,000	£ -	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 180,000
TOTALS	£ 30,000	£ 105,000	£ 75,000	£ 180,000	£ 50,000	£ 200,000	£ 50,000	£ 690,000

Table 6: Ongoing Enhancement reallocation

8.2.3. Treatment of “Small Projects”

Gemserv previously stated that as the kinds of projects required under the Small Projects category are not necessarily predictable, there did not seem to be an objective rationale for why the ongoing annual expenditure associated with these projects should be significantly higher in RP6 than in RP5. This idea implied a level of £300k per annum as being appropriate for Small Project capex. For the Market Operations allocation this principle results in an exclusion of £27.5k of Market Operations Non Network IT capex. Applying this approach more widely to the Non Network IT proposed capex in its entirety supports a recommendation that £275k should be excluded.

The character of the activities undertaken in the Small Projects historically and as described in engagement with NIE Networks, suggests they are driven by operational requirements and should more properly be designated as opex. We would recommend that the proposed Non Network IT capex budget of £1.95m capex for Small Projects is reallocated to opex.

8.3. PROJECT REFRESH INVESTMENT

Gemserv has analysed the projects for which NIE Networks have indicated a need for refresh investment during RP6. This expenditure relates to capex necessary to upgrade an existing system. Table 7 lists a number of projects where NIE Networks claimed refresh investment was required during RP6 and Gemserv challenged NIE Networks to substantiate their timelines.

We assessed those proposed refresh timelines against the following set of assumptions:

- A five-year cycle across most IT hardware and software;
- A regular three-year replacement across most IT security vendors, plus ongoing patches and work against potential threats (as seen during RP5);
- Software upgrades occurring before a product comes out of extended support; and
- Laptops being replaced as they cease functioning during RP6.

Project Ref	Project Title	Reasonable Refresh Period?
RP6-001	HP Enterprise Architecture Replacement	Yes
RP6-002	NMS Architecture Refresh	Yes



Project Ref	Project Title	Reasonable Refresh Period?
RP6-003	Enduring Solution Architecture Replacement	Yes
RP6-004	TIBCO Architecture Refresh	Yes
RP6-005	IT Security Architecture	Yes
RP6-006	End User Devices (EUD) [inc. Desktop] Replacement	Yes
RP6-007	Dell Infrastructure Replacement	Yes
RP6-008	Corporate IT Network Upgrade	Yes
RP6-009	Corporate Telephony Services	Yes
RP6-010	Contact Centre Voice Services	Yes
RP6-011	Maximo Upgrade	Yes
RP6-012	Maintenance Mobile Refresh	Yes
RP6-013	Customer Notification System (CNS) Replacement	Yes
RP6-014	Job Management System Upgrade	Yes
RP6-015	Network Management System LV Modelling (Upgrade)	Yes
RP6-016	Wayleaves Payment & Invoicing	Yes
RP6-017	SAP Business Objects Upgrade	Yes
RP6-018	SAP ECC 6 Upgrade	Under review
RP6-019	SAP Supplier Relationship Management (SRM) System Upgrade	Yes
RP6-021	GIS Replacement	Yes
RP6-038	HHU Archive Upgrade	Yes
RP6-039	Routestar (application replacement)	Yes
RP6-040	Routestar Handhelds	Yes
RP6-041	ServiceNet Upgrades	Yes
RP6-042	ServicePower Upgrade	Yes
RP6-043	Market Website Upgrade	Yes
RP6-044	SAP BI	Yes
RP6-046	SAP IS-U / HANA	Under review
RP6-048	TIBCO / SAP PI	Yes

Table 7: Assessment of project refresh periods

In the main, the foregoing suggests that the vast majority of the proposed refresh periods on which they have predicated obsolescence spending seem reasonable. Those items marked as being “Under review” are addressed under other sections of this report.

8.4. PROGRAMME MANAGEMENT AND BACKFILL COSTS

In the Market Operations Non Network IT paper, Gemserv questioned the inclusion of Programme Management and Backfill capex in the permitted spend over the period of RP6. This proposed spend, totalling £3.9m over Non Network IT over RP6, is broken into the following four categories⁴³:

⁴³ As described in query response URQ201



- a. Backfill – defined as costs driven by projects requiring more significant NIE Networks resource than can be accommodated through BAU. The costs are those of backfilling those roles into the business.
- b. Project Management – these are the costs where NIE Networks views a standalone project as requiring an external project management resource that is proposed to be charged into the project at internal rates.
- c. Change Management – these figures are intended to act as an allowance for where projects in the transformation programme result in significant changes to business operations.
- d. Programme Management – these are costs associated with establishing a programme framework, as NIE Networks do not consider it to be feasible to deliver the individual projects as a result of the volume of change.

Figure 15 shows the breakdown of this capex by the above categories.

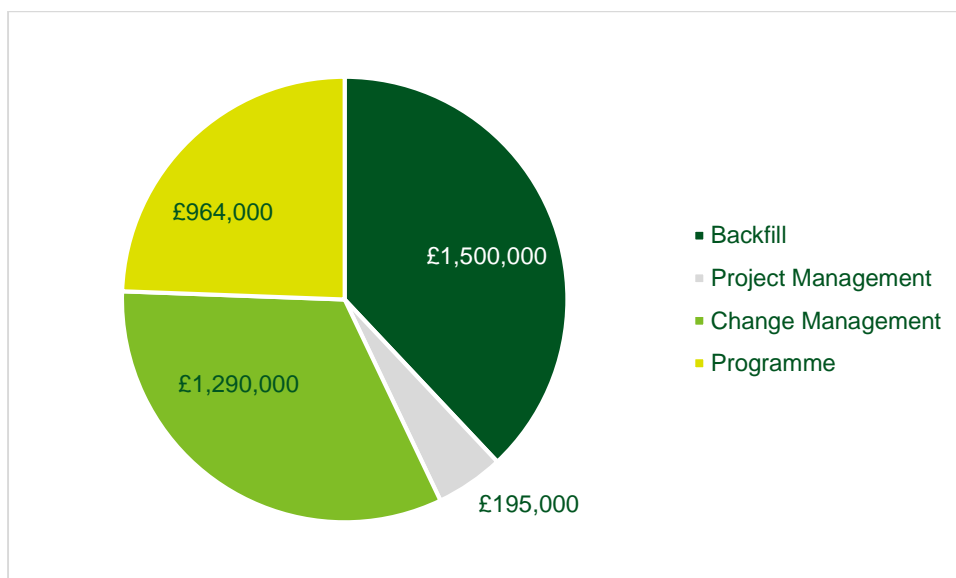


Figure 15: Breakdown of NIE Networks proposed project management and backfill costs

In discussion, NIE Networks stated that the project management and backfill costs would be charged to the business at the internal rate⁴⁴ and that if the costs where using external resources were higher per day, the company would swallow the costs in excess of that day rate.

Gemserv challenged these costs as they appeared to be a new, non-approved category within their submission. NIE Networks provided figures that showed resource costs associated with projects that put a resource demand on the organisation.⁴⁵ However, while the previously UR approved resource costs associated with one high

⁴⁴ £400 per day.

⁴⁵ Enduring Solution, Maximo Lines implementation, GIS/Intergraph upgrade, Online payments and they predict Maximo plant upgrade due in Q2 2017 may require backfill costs.



resource demand project⁴⁶, Gemserv has not seen evidence of the UR explicitly approving business backfill costs.

The level of organisational change and volume of projects expected during RP6 suggests that it may be prudent for NIE Networks to have an allowance for internal resourcing challenges related to the Non Network IT projects during the period. If permitted to have such a fund, they should be required to report against use of these funds so that the UR can monitor them appropriately.

However, Gemserv would still challenge a significant portion of this proposed spend.

The proposed project management budget appears to be a specific category of backfill. While willing to consider a permitted fund for managing resourcing challenges arising from these transformation projects, the absolute requirement for this further category of costs has not been sufficiently supported by evidence. This proposed £196k should not be permitted.

In our opinion, change management as a result of systems changes is a standard business as usual activity. We would expect a business to accommodate it within their ongoing operational spending. Gemserv has not seen objective evidence of a requirement for a £1.29m Non Network IT change management budget; it should be excluded from RP6.

NIE Networks have asserted that this portfolio projects would entail a need for a new programme management framework with a 15% uplift on a number of individual project briefs. The absolute requirement for this new programme management framework has not been adequately substantiated by evidence. On that basis £964k should not be included within this price control.

Figure 16 demonstrates how these costs are reprofiled across RP6 on the basis of these recommendations. The above analysis would result in £2.45m capex not being permitted during the price control period.

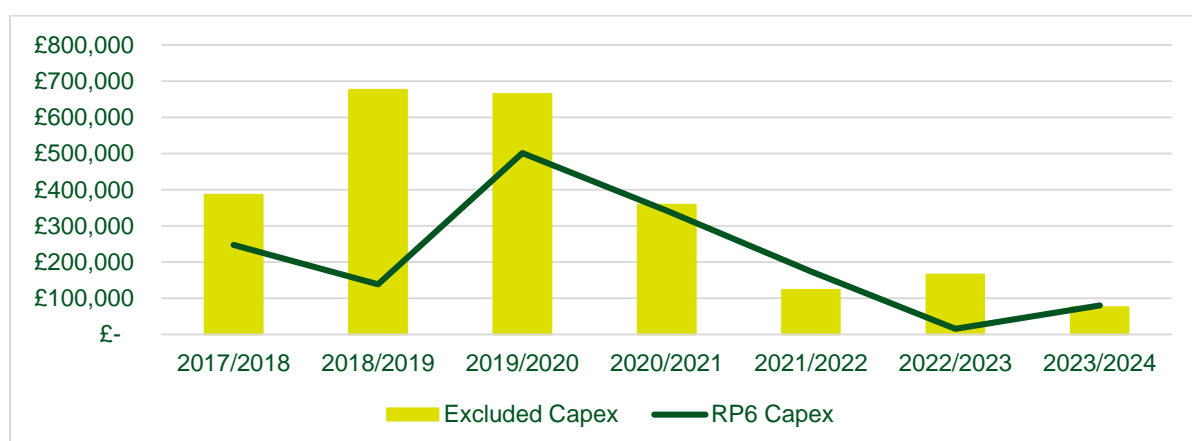


Figure 16: Reprofiled programme management and backfill costs

⁴⁶ Enduring Solution during RP4 and RP5.



RECOMMENDATION

Gemserv is making the following recommendations in relation to NIE Networks Non Network IT capex proposals:

- a. £1m of expenditure in relation to the two late SAP HANA projects should not be permitted during the price control period;
- b. £690k of costs in relation to Ongoing Enhancements should be reallocated from capex to opex;
- c. £275k of proposed capex in relation to Small Projects should not be permitted. The remaining £1.95m should be reallocated from capex to opex; and
- d. £2.45m of programme management and backfill costs should not be permitted over the period of RP6, with NIE Networks required to report against their usage of the remaining £1.5m.



9. OPEX

NIE Networks are predicting that their outturn average annual IT & Telecoms operational expenditure for RP5 will be £5.66m.⁴⁷ Through their Non Network IT submission, they are proposing the addition of a further £1.37m per annum to that figure, estimating an additional £8.9m of Non Network IT related opex over the period of RP6. The most significant portion of that spend (as shown in Figure 17) is intended to occur in the Telecoms and Applications categories. The bulk of the proposed Applications expenditure relates to opex associated with particular project briefs within the Non Network IT Business Plan (“Project Specific opex”). The majority of the proposed Telecoms expenditure relates to opex that is not associated with individual project briefs (“Non Project Specific opex”). This split is created by how NIE Networks account for opex as discussed below.

Figure 17 shows the breakdown of this proposed opex by those categories.

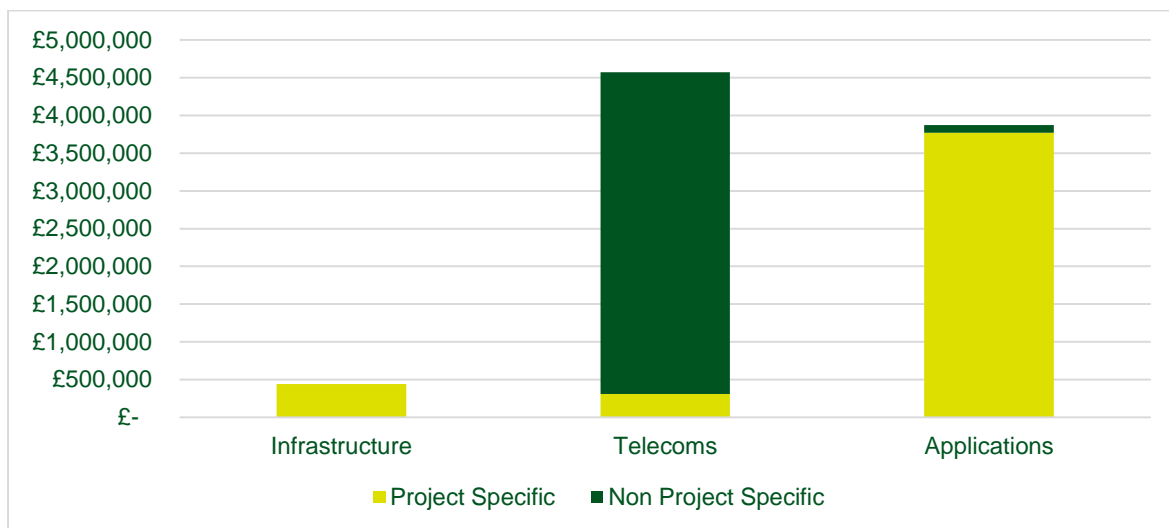


Figure 17: Non Network IT opex impact by category

This section considers this proposed opex impact as follows:

- Section 9.1, Opex allocation – discusses how NIE Networks apportion Non Network IT related capex;
- Section 9.2, Project specific opex – assesses what Gemserv has defined above as Project Specific opex; and
- Section 9.3, Non project specific opex – analyses what Gemserv has categorised as Non Project Specific opex.

The other operational expenditure that was within the scope of our analysis is addressed above in chapter 4 in our discussion of Enduring Solution and Market Operations Other Operating Costs opex categories.

⁴⁷ Non Network IT Business Plan



9.1. OPEX ALLOCATION

NIE Networks⁴⁸ stated that they differentiate between Network IT and Non Network IT in relation to capital expenditure but they do not differentiate between opex costs created by Network IT and Non Network IT investment. To quote:

“Both Network and Non Network IT projects can impact operating costs, e.g. annual rental charges for new circuits added as part of a project. [...] All these charges are treated as IT & Telecoms opex, managed within the same budget and all are included as Indirect costs for the purposes of RIGs reporting.”

For the purposes of our assessment, it means that there are a mix of opex costs that specifically relate to individual projects and a number of opex line items that are smeared across Network and Non Network IT. In order to assess these costs we have split them into the Project Specific and Non Project Specific categories described above.

The spreading of IT & Telecoms operational costs across the business, while it appears to align with the RIGs, complicates assessment of apportionment. It makes it difficult to definitively account for whether opex costs are correctly allocated to an individual business unit. Gemserv has no reason to consider opex costs to be incorrectly apportioned.

The evidence indicates consistency between the Non Network IT opex figures in the Non Network IT Business Plan, the Market Operations Business Plan and the overall Business Plan. This outcome suggests consistency in how those costs are apportioned.

9.2. PROJECT SPECIFIC OPEX

Gemserv reviewed the proposed £4.5m of Project Specific opex. We assessed the assumptions underpinning the opex impact proposals and found them to be broadly reasonable. There were two broad categories of assumptions in relation to Project Specific opex: general and particular.

The general ones related to wider trends that were reflected within the numbers, such as NIE Networks' expectation of the operational telecoms network expanding over RP6. These more general assumptions were addressed by reviewing the costs associated with the specific projects that gave effect to those assumptions. In the example of the telecoms network expansion, that would involve reviewing the costs associated with the project to implement, in this case RP6-008.

In addition, the particular assumptions (discussed in Table 8) were subjected to a test of reasonableness with NIE Networks being required to substantiate those claims. Upon an initial analysis they appeared reflective of market conditions.

ASSUMPTION	BASIS
Additional hardware maintenance costs included as 20% of new incremental asset purchase prices.	Appears to be grounded in standard charges from hardware vendors.

⁴⁸ In response to query URQ073a



ASSUMPTION	BASIS
Software maintenance costs are included as 20% of the new licence purchase price.	Query with NIE Networks to substantiate. ⁴⁹ Seems reflective of practice in the market. Query with NIE Networks to substantiate. ⁵⁰
Additional managed service support charges of new systems have been calculated as 0.2 or 0.4 of an FTE equivalent support resource	These figures appear in line with the support effort related to existing applications at NIE Networks. Query with NIE Networks to substantiate. ⁵¹

Table 8: Basis for particular opex assumptions

Recommendations from other sections in this report also impact upon Project Specific opex, for example Section 4, Section 7, Section 8.2.

9.3. NON PROJECT SPECIFIC OPEX

This section considers the proposed £4.37m of proposed opex without a specific project allocation: Optel, Qlik, Mobilise apps, BT Vodafone. Table 9 analyses this opex in more detail and the associated requirement.

PROJECT	COST	SUMMARY	REQUIREMENT
Optel – BT21CN	£530k	Migrating teleprotection and Scada services onto BT EAD circuits.	BT have announced withdrawing support for Teleprotection and Scada circuits.
Optel – RAD, others	£995k	Building new communications network onto which NIE Networks connect new substations and generation sites so can be monitored and controlled from NIE Networks and SONI control centres.	Current network equipment provider ceased production and withdrew support. New network required.
Optel – Renewables (37 committed sites)	£1,950k	Installation of communications links and networking equipment onto renewables sites and new build substations. Licensing of additional RAD networking equipment and rental coats for leasing BT circuits.	NIE Networks obligation to energise 37 renewables sites before March 2017.
Optel – Renewables (50 non committed sites)	£650k		Costs associated with non committed sites.
BT Vodafone	£140k	Managed services contract costs related to change control and supporting new network nodes, additional Scada locations and annual RPI increase for installed BT circuits.	Under the scope of an existing managed service provider contract with BT and Vodafone.

⁴⁹ URQ285

⁵⁰ URQ286

⁵¹ URQ287



PROJECT	COST	SUMMARY	REQUIREMENT
Qlik	£40k	A reporting application that was initially deployed in order to allow NIE Networks to deliver RIGs.	They base ongoing requirement in relation to ad hoc ongoing development of reporting functionality as small projects.
Mobilise apps	£60k	Deployment of iPhone devices and development and deployment of small apps on the platform.	NIE Networks replacing existing mobile phones and will deploy apps.

Table 9: Non Project Specific opex

NIE Networks describe the Qlik and Mobilise Apps projects as arising from Small Projects that are not explicitly described elsewhere in their submission.⁵² As they arise from the Small Projects, which have yet to be defined, Gemserv is not convinced of the requirement for opex budget additional to that within the Small Projects budget. That said, as the Mobilise apps project relates to deployment of mobile phones, it should be retained as a distinct line item. The Qlik project should be addressed within the Small Project budget and £40k excluded from the opex budget.

RECOMMENDATION

In addition to the reallocations from capex, the Market Operations exclusion, and the associated opex excluded on the basis of the efficiency and optionality analysis recommended in this report, we are recommending that a further £40k should be excluded from the proposed opex budget.

⁵² As per query response URQ074.

10. CONCLUSION

Gemserv commends this report to the UR for their consideration. During this investigation, and with respect to the UR obligations to protect customer's interests, Gemserv have attempted to take a balanced approach in reviewing NIE Networks' submissions. Our conclusions are based on the evidence provided by NIE Networks within the scope and the available timescales.

This section is intended to summarise the impact of its recommendations upon NIE Networks' proposals and it is structured as follows:

- Section 10.1, Non Network IT Capex Recommendations – summarises the impact of Non Network IT capex recommendations from this report;
- Section 10.2, Non Network IT Opex Recommendations – sets out the Non Network IT opex recommendations;
- Section 10.3, Reprofiled Market Operations Analysis – reprofiles our earlier Market Operations analysis on the basis of the assessment above;
- Section 10.4, Consolidated Impact of Recommendations – amalgamates the impact of these recommendations upon NIE Networks proposals; and
- Section 10.5, Next Steps – identifies a number of proposed next steps in progressing this analysis.

Our analysis is intended to be used to help set an efficient level of spend for NIE Networks over the RP6 period. It is for NIE Networks to make decisions on how they meet their licence obligations within the price control thresholds approved by the UR.

10.1. NON NETWORK IT CAPEX RECOMMENDATIONS

The capex impacts of the above proposals are:

- a. Exclusion of £896.2k in relation to the Managed Service Provider Agreement, based on the current estimated figures and subject to review of the BAFO outcomes;
- b. £2.13m capex that should not be included in relation on the basis of an efficiency rationale;
- c. Reallocation of £690k Ongoing Enhancement capex to opex;
- d. Non-inclusion of £275k of Small Projects capex, and reallocation of the remaining £1.95m Small Projects capex to opex;
- e. £2.45m of capex related to Programme Management and Backfill that should not be permitted;
- f. £1m of capex in relation to late SAP HANA projects that should not be included under RP6; and
- g. £1.9m of capex that should be excluded as a result of the optionality analysis.

Table 10 sets out their impact on the proposed Non Network IT capex budget with the figures adjusted to avoid double counting. In total, these recommendations would result in £9.95m not being permitted.

Area	Non Network IT (Capex) - £ks							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
INFRASTRUCTURE	2,761.00	3,144.00	1,914.38	1,796.38	655.00	439.00	2,737.50	13,447.25



Area	Non Network IT (Capex) - £ks							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
TELECOMS	138.00	245.00	146.00	185.00	507.00	378.00	130.00	1,729.00
APPLICATIONS	4,137.80	6,026.74	5,535.67	3,588.65	2,270.45	2,124.05	3,022.44	26,705.80
NIE Networks proposed	7,036.80	9,415.74	7,596.05	5,570.03	3,432.45	2,941.05	5,889.94	41,882.05
INFRASTRUCTURE	2,724.15	3,099.34	1,888.81	1,773.79	626.50	416.22	2,713.07	13,241.89
TELECOMS	135.68	241.19	144.16	182.59	501.21	374.12	128.07	1,707.03
APPLICATIONS	2,685.88	4,471.73	3,447.63	1,923.91	1,384.12	1,063.28	2,007.03	16,983.58
Gemserv recommended	5,545.71	7,812.26	5,480.60	3,880.29	2,511.84	1,853.62	4,848.18	31,932.49

Table 10: Capex proposals and reprofiled capex on basis of recommendations

10.2. NON NETWORK IT OPEX RECOMMENDATIONS

Area	Non Network IT (Opex) - £ks							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
INFRASTRUCTURE	-	2.00	84.00	86.00	88.00	90.00	92.00	442.00
TELECOMS	489.00	764.00	664.00	664.00	664.00	664.00	664.00	4,573.00
APPLICATIONS	45.00	194.00	405.00	607.00	861.00	880.00	880.00	3,872.00
NIE Networks proposed	534.00	960.00	1,153.00	1,357.00	1,613.00	1,634.00	1,636.00	8,887.00
INFRASTRUCTURE	-	1.80	83.60	85.40	107.20	109.00	110.80	497.80
TELECOMS	484.70	759.70	659.70	659.70	659.70	659.70	659.70	4,542.90
APPLICATIONS	271.69	526.24	694.96	854.26	748.08	869.26	719.26	4,683.74
Gemserv recommended	756.39	1,287.74	1,438.26	1,599.36	1,514.98	1,637.96	1,489.76	9,724.44

Table 11: Opex proposals and reprofiled opex on basis of recommendations

Outlined below are the opex effects of a number of Project Specific proposals:

- £661.8k of Market Operations related opex should not be included within RP6;
- £179.9k should be excluded as a result of likely efficiency gains in relation to the Managed Service Provider as per Section 5;
- £215k should not be permitted as a result of projects being excluded on the basis of the efficiency analysis in Section 6;
- £843k should not be permitted on the basis of project spend not being permitted as per the optionality analysis in Section 7;
- The reallocation of £630k expenditure related to Ongoing Enhancements from capex to opex as per Section 8.2.2; and
- The reallocation of £1.95m Small Project expenditure to opex consistent with Section 8.2.3.



The following recommendation relates to the Non Project Specific opex:

- a. Exclusion of the £40k Qlik expenditure from the proposed Non Network IT opex.

Table 11 sets out the impact of these recommendations upon the proposed opex budget. The net effect of the recommended exclusions and reallocations is a net increase in the overall opex budget of £837.4k.

10.3. REPROFILED MARKET OPERATIONS ANALYSIS

Table 12 sets out the reprofiled Market Operations capex and opex on the basis of the analysis in Section 4 above.

Area	Market Ops IT (Capex & Opex) - £ks							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
Non Network IT Capex								
INFRASTRUCTURE	1.58	1,645.68	324.66	308.44	98.45	73.19	1,551.14	5,586.26
TELECOMS	13.27	21.06	11.34	15.59	47.11	36.61	10.11	155.09
APPLICATIONS	862.60	1,897.63	1,103.00	417.66	346.76	658.21	683.69	5,969.56
NIE Networks proposed	2,460.56	3,564.38	1,439.00	741.69	492.32	768.01	2,244.94	11,710.90
INFRASTRUCTURE	1,559.33	1,619.09	321.26	305.41	95.46	70.91	1,548.70	5,520.16
TELECOMS	13.07	20.79	11.23	15.42	46.59	36.22	9.99	153.31
APPLICATIONS	700.27	1,710.86	969.82	301.54	206.80	473.54	108.75	4,471.58
Gemserv recommended	2,272.67	3,350.74	1,302.31	622.37	348.85	580.67	1,667.44	10,145.05
Non Network IT Opex								
INFRASTRUCTURE	-	0.20	4.38	4.58	4.78	4.98	5.18	24.08
TELECOMS	4.03	4.03	4.03	4.03	4.03	4.03	4.03	28.24
APPLICATIONS	0.66	59.10	99.10	101.09	115.71	116.90	116.90	609.48
NIE Networks proposed	4.70	63.34	107.51	109.70	124.52	125.91	126.11	661.79
INFRASTRUCTURE	-	0.18	4.34	4.52	6.70	6.88	7.06	29.66
TELECOMS	3.63	3.63	3.63	3.63	3.63	3.63	3.63	25.42
APPLICATIONS	50.32	118.87	133.25	155.15	149.60	155.81	145.88	908.87
Gemserv recommended	53.95	122.68	141.22	163.30	159.92	166.32	156.56	963.95
Enduring Solution Opex								
IT Support Costs	1,381.00	2,681.00	2,671.00	2,631.00	2,601.00	2,571.00	2,541.00	17,077.00
HW, SW & Market Entry Costs	850.00	1,650.00	1,580.00	1,570.00	1,570.00	1,570.00	1,560.00	10,350.00
Market Services Staff Costs	520.50	1,031.00	1,031.00	1,031.00	1,031.00	1,031.00	1,031.00	6,706.50
NIE Networks proposed	2,751.50	5,362.00	5,282.00	5,232.00	5,202.00	5,172.00	5,132.00	34,133.50
IT Support Costs	1,242.00	2,412.00	2,403.00	2,367.00	2,340.00	2,313.00	2,286.00	15,363.00
HW, SW & Market Entry Costs	792.01	1,584.01	1,584.01	1,584.01	1,584.01	1,584.01	1,584.01	10,296.07



Area	Market Ops IT (Capex & Opex) - £ks							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
Market Services Staff Costs	386.25	772.50	772.50	772.50	772.50	772.50	772.50	5,021.25
Gemserv recommended	2,420.26	4,768.51	4,759.51	4,723.51	4,696.51	4,669.51	4,642.51	30,680.32
Market Operations - Other Opex								
NIE Networks proposed	2,084.36	4,233.72	4,283.72	4,283.72	4,283.72	4,483.72	4,283.72	27,936.66
Gemserv recommended	2,084.36	4,233.72	4,283.72	4,283.72	4,283.72	4,483.72	4,283.72	27,936.66

Table 12: Proposed and reprofiled Market Operations analysis

10.4. CONSOLIDATED IMPACT OF RECOMMENDATIONS

Table 13 summarises the overall consolidated impact of the recommendations contained above.

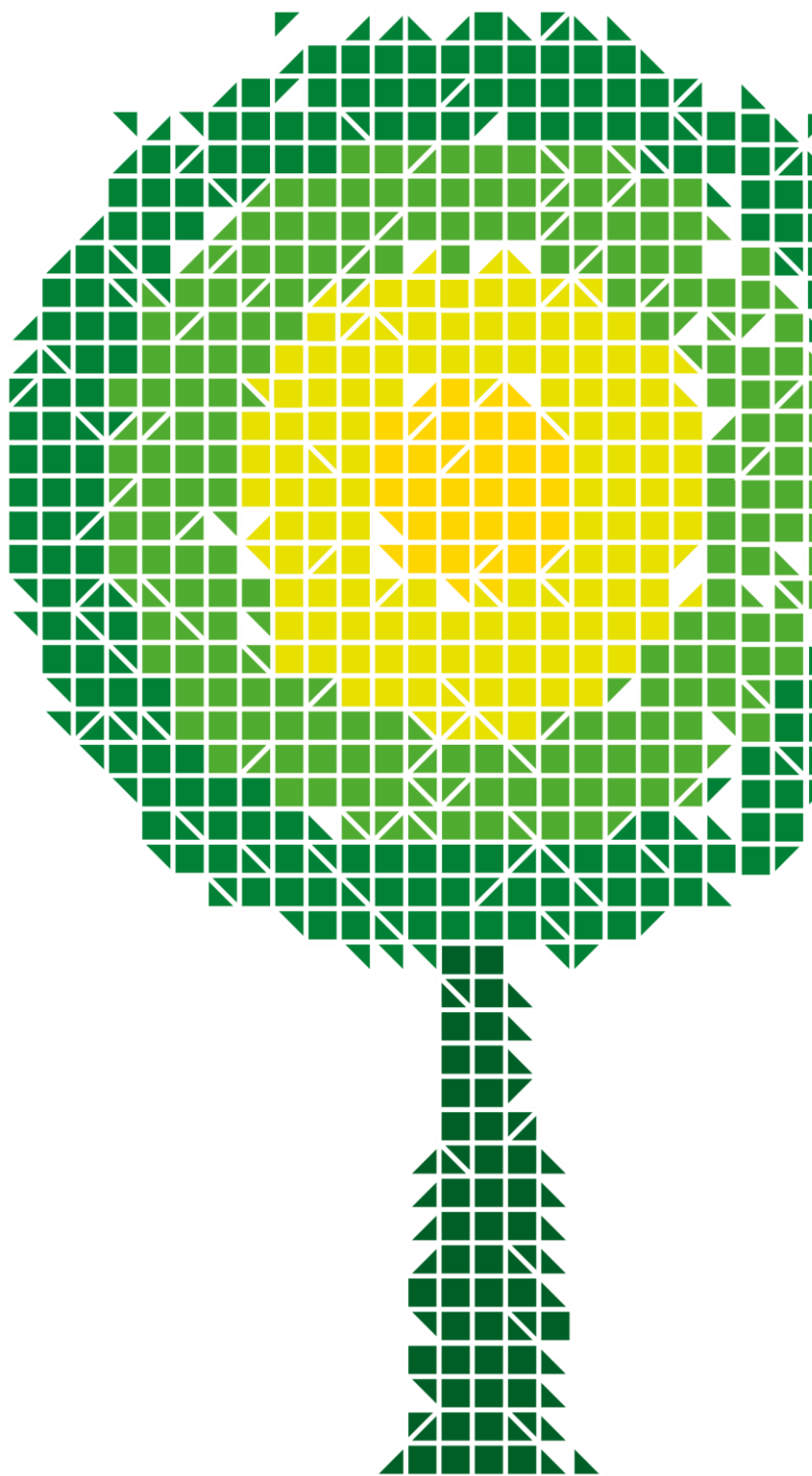
Category	NIE Networks Proposed		Net Recommendation		Outturn	
Non Network IT Capex	£	41,882,046	-£	9,949,553	£	31,932,493
Non Network IT Opex	£	8,887,000	£	837,440	£	9,724,440
Enduring Solution Opex	£	34,133,500	-£	3,453,179	£	30,680,321
Market Operations - Other Opex	£	27,936,665	£	-	£	27,936,665
Subtotal	£	112,839,211	-£	12,565,291	£	100,273,919

Table 13: Consolidated impact of Non Network IT recommendations

As per the Market Operations report, the above also includes the proposed excluded Enduring Solution Operating Costs.

10.5. NEXT STEPS

Gemserv plans to undertake a site visit to an appropriate NIE Networks facility or facilities in order to validate our understanding of the operational practices of the organisation. We intend to further review the analysis within this report on the basis of that site visit, information received through UR's formal query process, relevant responses to the DD and other data as appropriate.



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