

Northern Ireland Electricity Networks Ltd

Transmission & Distribution 6th Price Control (RP6)

Final determination

30 June 2017



About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Our Mission

Value and sustainability in energy and water.

Our Vision

We will make a difference for consumers by listening, innovating and leading.

Our Values

Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted

Be a united team

Be collaborative and co-operative

Be professional

Listen and explain

Make a difference

Act with integrity

Abstract

The purpose of this document is to inform stakeholders of our final determination for the sixth price control for Northern Ireland Electricity Networks Ltd (NIE Networks), known as RP6. We are also consulting on the necessary licence modifications to implement RP6. The RP6 price control is due to be effective from 1 October 2017.

Audience

Industry, consumers & statutory bodies.

Consumer impact

NIE Networks has a pivotal role in terms of 'keeping the lights on.' Both the effectiveness and efficiency of NIE Networks are key to industry and domestic consumers. The RP6 price control aims to set an efficient revenue cap to enable NIE Networks to deliver quality outputs that customers need.

NIE Networks' costs are a material and controllable element of electricity tariffs and RP6 investment decisions are expected to underpin improvements in service delivery for consumers.

As a result of RP6, network charges will see a small decrease while providing NIE Networks with the funding to maintain, operate and grow an efficient and innovative electricity network. RP6 provides £657m of investment, including mechanisms to facilitate the construction of the North South Interconnector.

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1 Executive Summary

Introduction

- 1.1 The purpose of this document is to set out the final determination for the NIE Networks RP6 price control.
- 1.2 RP6 is the name given to the price control for the six and half year period from 1 October 2017 onwards.
- 1.3 RP6 sets out the amount that NIE Networks is allowed to build, operate and maintain its transmission and distribution electricity network. It also sets out an incentive regime and sets KPIs and outputs which NIE Networks is expected to deliver over the period. Key decisions for the price control include levels of allowed investment and running costs, efficiency targets, KPIs and rate of return.
- 1.4 This final determination details the proposals of the Authority (the Utility Regulator, us) with respect to the RP6 price control period. It also considers the expected impact of these proposals on consumers, in particular the expected impact on network charges and consumer bills.
- 1.5 The document is our final determination, having already consulted on our draft determination published March 2017. Various consultation responses were received on the back of our draft decisions contained within our publication document as well as two stakeholder workshops.
- 1.6 The first workshop was an open invitation event as publicised alongside our publication. As a result of feedback from participants we then held a second stakeholder workshop at the Consumer Council for Northern Ireland (CCNI) offices.
- 1.7 This final determination is accompanied by a set of licence modifications to implement RP6. There is a 28-day period for consultation feedback on our RP6 Licence Modifications.
- 1.8 Our final determination and Licence Modifications, the RP6 price control is scheduled to come into effect 1 October 2017.

Key changes from draft to final determination

- 1.9 For ease of reading, at the beginning of each section we have highlighted the main changes that we have made since the draft determination.

- 1.10 Since the draft determination and after considering the responses to our consultation, further discussions, analysis and evidence provided, we have made a number of changes including:
- Overall indirect allowances increase by £18m in acceptance of the company costing errors contained within their original business plan submission and subsequent upward revision to their 2015/16 base Indirects cost, carried forward across the 6½ years of RP6;
 - Direct capital allowances have been increased by £15.5m following a review of information provided by the company in response to the draft determination;
 - Introduction of headroom in setting aside our draft determination 2% P₀ efficiency discount and extra headroom in our assessment of RPEs applying to RP6;
 - The rate of return has changed slightly from 3.29% to 3.18% because of movements in debt markets.

Approach to RP6

- 1.11 We published our RP6 Final Overall Approach document on 22 December 2015. This paper followed an extensive period of consultation and engagement with the company, CCNI, DfE and other stakeholders which included a prolonged consumer engagement exercise.
- 1.12 The conclusion of this set out the aim of the RP6 price control which was to set an efficient revenue cap to enable NIE Networks to deliver quality outputs that customers need.
- 1.13 NIE Networks submitted its RP6 proposals (Business Plan) on 29 June 2016 in line with the requirements we had set out in our Business Plan Template. This process built on significant effort from the Utility Regulator and company over the last three years, in an attempt to implement a robust reporting framework which aligns with the cost reporting of GB electricity distribution companies.
- 1.14 The NIE Networks proposals were then subject to an extensive query process from the Utility Regulator. We also shared a significant amount of our initial thinking with NIE Networks as part of the process. This allowed the company to provide a number of further detailed responses to us on a variety of areas. We took these into account in arriving at the draft determination and have further considered many subsequent (i) submissions (ii) consultation responses (iii) representation during meetings/workshops and (iv) further queries and responses from the company before finalising our RP6 determination.
- 1.15 We have continued to use and refine a number of regulatory tools in arriving at the proposals in this paper.

- 1.16 These included applying econometric techniques to compare NIE Networks to comparable GB electricity distribution companies and determine an efficient level of costs. We also applied our expertise in assessing investment costs, including working with consultants where appropriate. We have considered regulatory precedent in ensuring the rate of return is set at an efficient level which allows the company to finance its activities and in setting achievable productivity targets for the period.
- 1.17 We have included clear incentive regimes and also set outputs for RP6 which we expect NIE Networks to deliver against. We have identified a number of development objectives which we propose to ensure ongoing progress is made in RP6 to better improve consumer outcomes.

Capital Investment

- 1.18 We reviewed direct capex allowances in light of the company's response to the draft determination. As a result we have included a further £17.7m of allowances in the final determination less £1.8m for reductions in allowances previously included and less a pre-funded allowance of £0.4m for outputs not delivered in RP5.
- 1.19 This final determination includes an allowance of £336.3m of direct capital investment for work that has been confirmed. This is a reduction of £29.4m on the costs proposed by NIE Networks for the same work in its business plan.
- 1.20 The final determination allows for additional capital investment to be determined during RP6 for work whose scope or cost cannot be defined with any reasonable certainty at this stage. Our tariff modelling for RP6 includes an estimate of £84.0m for work of this type which we expect to be undertaken. The total of this and the confirmed investment described above (£420.3m) is equivalent to the £445.6m of direct capital investment identified by the company in its business plan.
- 1.21 In addition to this, work of the order of a further £200m may be required in the RP6 period to improve the capacity and capability of the transmission system, including the North/South Interconnector.
- 1.22 Allowances for total network investment amount to £657m across RP6, including both direct network investment, metering, ICT as well as IMF&T.

Efficiencies in operational expenditure

- 1.23 As a result of a number of consultation responses from both company as well as CCNI, we are proposing to reduce the company forecast for RP6 Indirects and IMF&T by just under 3% compared to the 10% reduction proposed at draft, as a result of detailed top-down econometric modelling. This is equivalent to just under a £2m per annum difference between us and the company's RP6 Business Plan submission.

- 1.24 On the back of our draft determination approach to rolling forward 2015/16 base operational costs minus a P_0 efficiency discount, the company scrutinised its RP6 Business Plan submission against our working assumptions. Various company representations have meant we have adjusted upwards the company 2015/16 base operational costs. The impact of this is greatest when rolling forward across the six and a half years of the RP6 period i.e. in amending upward their base costs.
- 1.25 Reflecting on the above, we have introduced an additional developmental objective where we expect the company to make improvements in its data assurance processes to assist in the avoidance of future errors in cost reporting.
- 1.26 For the moment, we have considered but specifically not acted upon MNI's recommendation that we introduce formal regulatory audit of the company's cost reporting and hope this will prove unnecessary as we progress through RP6.
- 1.27 Our econometric modelling is taken from extensive model testing, selection and our eventual triangulation approach. Our final determination continues to ensure we have taken a conservative view of NIE Networks' efficiency gap to the upper quartile comparator companies in GB, rather than upper decile.
- 1.28 We continued to develop our triangulation approach from draft determination by examining the sensitivities of our draft P_0 adjustment of 2% to base operational costs; including whether and how we apply a local labour adjustment to our regional wages adjustment of company datasets, more explicit account of the differences between companies due to topological differences (urban versus rural networks via inclusion of a new over-head line (OHL) variable, explicit account of our "middle-up" models alongside the top-down models included at draft determination and consideration of the company's special factor claims and our own negative special factor assessment as counter.
- 1.29 On real price effects we have considered the various representations from consultees and we have decided that it remains reasonable to treat labour as a single cost category, rather than attempt to differentiate between specialist and general labour. Similarly we see no strong reason to change the 1% per annum productivity assumption as set by the CC at RP5 and after considering the literature on this topic.
- 1.30 While the result of our detailed analysis suggests limited change to the real price effects from the draft determination and that a catch up efficiency of 2% remains reasonable we have concluded that, in arriving at an overall balanced package for RP6, it is appropriate to set the final determination without assuming a P_0 adjustment. We have also set the frontier shift more conservatively than in the draft determination. We recognise that this provides significant headroom to NIE Networks in RP6 and we regard this headroom as providing NIE Networks with appropriate flexibility to resolve challenges as they arise without requiring regular regulatory intervention.
- 1.31 The larger part of the difference between claimed operational costs and final determination values are due to us disallowing company claims for additional Indirects

and IMF&T funding for ESQCR (whose statistical relationship to capital investment cost drivers we view as unproven) and Innovation programmes (now treated separately).

- 1.32 Out-performance remains incentivised under the 50:50 sharing incentive (between the consumer and the company). Incentivised out-performance during RP6 will, having revealed further efficiencies, be taken into account when setting RP7 efficient costs and be included as a reduction to the company's cost base going forward.
- 1.33 The final determination figures are set out below in comparison with the NIE Networks forecast.

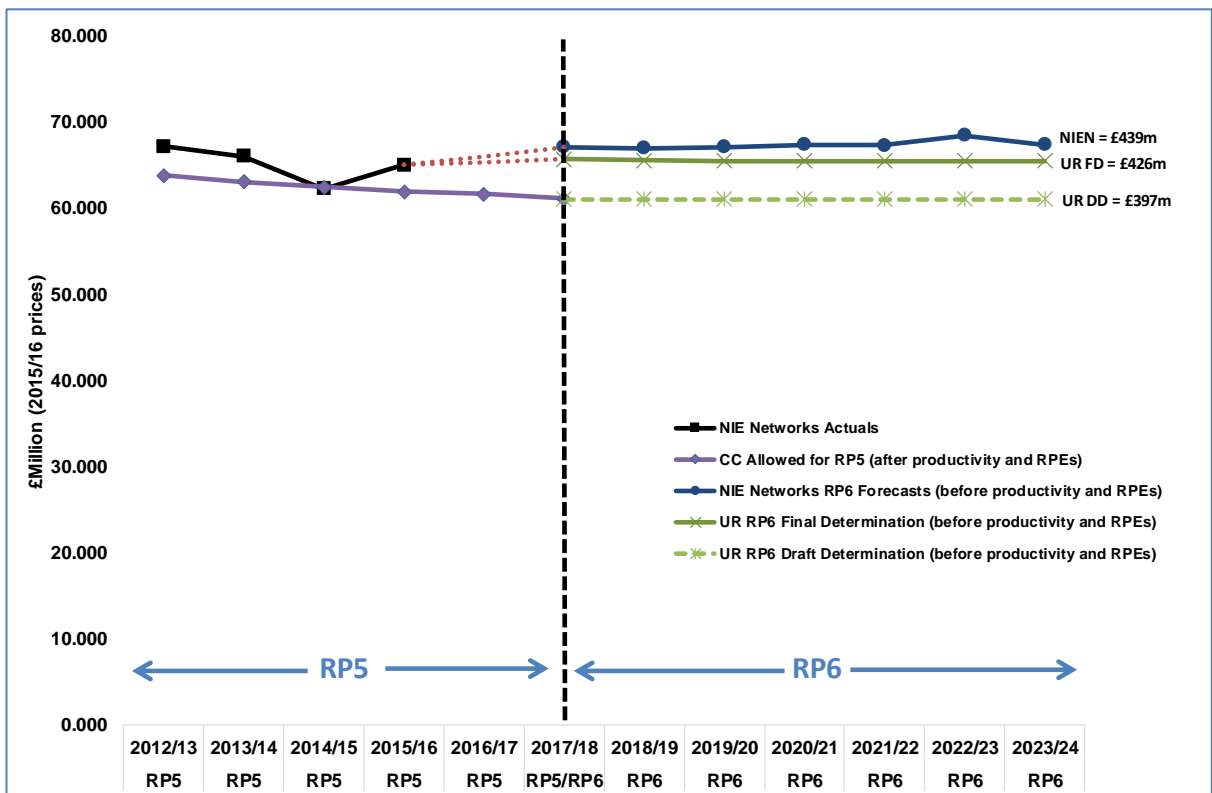


Figure 1: Draft determination IMF&T and Indirects

RP6 Outputs and KPIs

1.34 Various outputs and KPIs are now included within our final determination having developed the detail of many of our draft determination proposals:

- **new Reliability Incentive concerning Customer Minutes Lost (CML)** – which incentivises the company to reduce the amount of time customers suffer from supply interruptions;
- **new Substitution Mechanism concerning capital investment**, to ensure any deferral of planned projects is efficient, alongside annual reporting of progress with the company’s capital plan. The mechanism and reporting thereof will be subject to reputational risk and annual commentary within our annual Cost & Performance Report (RP6 Monitoring Plan);
- **continuous consumer engagement** subject to reputational risk and annual commentary within Cost & Performance Report (RP6 Monitoring Plan). CEAP to oversee the progress by the company against the six recommendations contained in the consumer research report, “Empowering consumers: beginning a conversation on consumer priorities for the Northern Ireland electricity network”.
- **Guaranteed Standards of Service (GSS)** subject to ongoing consultation and subsequent development during RP6 AND subject to reputational risk and annual commentary within Cost & Performance Report;
- **Asset management** for development during RP6 alongside various new metrics, all subject to reputational risk and to be reported within Cost & Performance Report (RP6 Monitoring Plan);
- **Worst served customers (WSC)** subject to reputational risk and annual commentary within Cost & Performance Report (RP6 Monitoring Plan);
- **new customer advocacy and survey metrics** subject to reputational risk and annual commentary within Cost & Performance Report (RP6 Monitoring Plan) AND subject to developmental timeframe of year 3 of RP6;
- **new connections metrics** subject to reputational risk and annual commentary within Cost & Performance Report (RP6 Monitoring Plan) AND subject to development;
- **new monitoring of batched ICT** components of NIE Networks’ proposed ICT expenditure examined for monitoring purposes;
- **new monitoring of real price effects performance** reporting within our annual Cost and Performance Report (CPR), examining the extent of actual price effects set against RP6 funded (or forecast) RPEs

Financial Aspects

- 1.35 We propose to apply a rate of return of 3.18% at the outset of the RP6 period. Our starting rate of return is lower than the figure put forward by the company of 4.1% because we have:
- aligned NIE Networks' cost of equity to be no higher than Ofgem's estimated RIIO-ED1 cost of equity;
 - updated NIE Networks' February 2016 cost of debt calculation for the latest market evidence; and
 - used the OBR's inflation forecast to translate the forecast nominal cost of debt into its real, RPI-stripped equivalent, in preference to NIE Networks' lower inflation forecast.
- 1.36 This return will subsequently be adjusted up or down within period in light of any changes in market interest rates when NIE Networks raises new debt.
- 1.37 In assessing whether our final determination leaves NIE Networks in a position where it will be able to finance its activities during the RP6 period, we have considered the results of our financeability analysis and the ability that the business will have to utilise both equity and debt finance.
- 1.38 Our assessment is that NIE Networks is capable of financing itself through the RP6 period with a prudent mix of equity and debt capital.

RP6 Tariffs and Consumer Impact

- 1.39 In 2015/16 total network charges accounted for approximately 21% of the final electricity bill. This percentage varies each year depending on electricity wholesale prices and other costs which make up the final bill, such as system operator costs and supplier costs.
- 1.40 The percentage of the final electricity bill also varies depending on the customer group. Network charges account for approximately 25% of the final bill for domestic and 22% for small business customers. For large energy users and small to medium enterprise customers, network charges account for between 5% and 18% of the final electricity bill.
- 1.41 Table 1 shows a comparison of NIE Networks' proposed average network charges at the end of RP6 (2023/24) compared to the Utility Regulator's proposed average network charges at the end of RP6 (2023/24). The current average network charge for a domestic customer is £130 per annum.

Customer group	Number of customers	NIE proposed Average network charges at the end of RP6			UR proposed Average network charges at the end of RP6		
		D £/annum	T £/annum	Total £/annum	D £/annum	T £/annum	Total £/annum
Domestic	790,000	123	17	140	109	15	124
Small business	65,000	579	83	662	510	76	586
SME > 70k VA	5,000	8,807	1,485	10,292	7,763	1,345	9,107
LV & HV LEU > 1MW	172	58,358	19,667	78,025	51,435	17,807	69,242
33kV LEU >1 MW	18	103,902	91,441	195,343	91,576	82,793	174,369

Table 1: RP6 NIE Transmission and Distribution forecast average network charges

- 1.42 In summary, our proposals would result in a small decrease over the RP6 period in the network charges paid by consumers. By 2023/24 this reduction would be £16 per annum compared to the NIE Networks proposals and £6 per annum compared to the current tariff equating to c.1.1% on the total retail bill. The comparable figures for larger customers will be significantly higher with a reduction in current tariffs of up to £5k for the very largest by 2023/24. It is important to remember that these figures all exclude RPI inflation and costs associated with transmission network capacity growth projects which are uncertain. RPI inflation will be applied to NIE Transmission and Distribution allowed revenue each year.

RP6 Revenue Impact

- 1.43 Table 2 shows the impact on overall revenue across the RP6 period as the final determination proposes to reduce the company RP6 submission by just under 9%.

	NIE Networks Proposal £m	Utility Regulator Final determination £m
Distribution	1,284.3	1,173.3
Transmission	278.2	255.6
Total	1,562.5	1,428.9

Table 2: RP6 effect on NIE Networks revenue

- 1.44 The reduction represents the net impact from the following final determinations (non-exhaustive list of more material assumptions):

- Proposed rate of return of 3.18% compared to NIE Networks' 4.1%;

- just under a 9% reduction to direct network investment in capital projects and programmes, across the RP6 period;
 - a productivity assumption of 1% per annum, applied to both operation and capital investment expenditure across the RP6 period, and real price effects;
 - a detailed bottom-up assessment of NIE Networks' IT proposals by Gemserv consulting;
- 1.45 The total determined values in RP6 have been calculated by an assessment of various different categories of expenditure and/or activities. However, the determined values form the composite price control under which NIE Networks has been fully and adequately funded to meet and comply with all of its relevant requirements (i.e. both its regulatory licence and statutory obligations) through the total allowance determined in the RP6 final determination. This includes, for example and without limitation, investing in the network to create capacity for new economic connections, maintaining compliance with all network codes and standards, meeting all network safety requirements and carrying out activities in line with a best practice UK DNO e.g. consumer engagement.
- 1.46 Given the RP6 period is six and a half years we would expect that some of the assumptions we have incorporated into our determination will outturn higher or lower and some assumed costs will fail to materialise while others will appear. This leads to the potential of NIE Networks over/under recovering in different areas. However we view the overall package as being balanced and including both flexibility and headroom to deal with the uncertainty. Importantly we would expect that NIE Networks will manage issues as they arise in RP6 in the context of this overall package and not seek to require regulatory intervention (other than in areas identified in the final determination) to deal with issues which might create additional costs in one area.

Next Steps

- 1.47 Our RP6 Licence Modifications are published alongside our final determination documentation. Responses to the accompanying consultation on related licence modifications are due on 28 July and we expect to bring the RP6 price control into effect from 1 October 2017.

2 Introduction

Purpose of the document

- 2.1 On 22 December 2015 we published our final approach document to RP6 detailing our overall approach to the next price control for Northern Ireland Electricity Networks Ltd (NIE Networks). This sixth price control is referred to as RP6.
- 2.2 The purpose of this document is to provide our final determination of RP6.
- 2.3 This document sets out our draft determination for consultation as follows:
- Section 1 contains our Executive Summary
 - Section 2 introduces the reader to the reasons for this document; background; RP6 approach and duration; NIE Networks' submission and the subsequent RP6 Business Plan Query process; our draft determination and subsequent consultation responses
 - Section 3 provides a high level review of NIE Networks' progress to date with regard their last price control or RP5
 - Section 4 focuses upon the proposed RP6 regulatory contract with regards outcomes and outputs for consumers and any new KPIs we expect to begin monitoring NIE Networks during RP6
 - Section 5 details our approach to operating costs and efficiencies where we benchmark the efficient level of expenditure across IMF&T and Indirect costs across RP6
 - Section 6 details our approach to and determination of other operating costs
 - Section 7 provides a high level description of our assessment of NIE Networks' ICT expenditure for RP6, as undertaken by Gemserv consultancy
 - Section 8 details our approach to and determination of the company pensions deficit repair
 - Section 9 details our approach to network investment benchmarking, the roll-forward of any deferred capital expenditure under RP5 into RP6 and other optional investment planning (including innovation funding)
 - Section 10 details our approach to frontier shift, including real price effects (RPEs) and productivity assumptions across both operational and capital expenditure
 - Section 11 details market operations and other activities, and our approach to setting an efficient level of expenditure for these costs

- Sections 12 details various financial aspects of RP6, including the weighted average cost of capital (WACC) and finance-ability
- Section 13 details the various uncertainty mechanisms both proposed by the company and our draft determination decisions for consultation
- Section 14 details the various incentive mechanisms both proposed by the company and our draft determination decisions for consultation
- Section 15 details and future reporting requirements for RP6, to enable our annual cost and performance reporting of NIE Networks' progress against its regulatory contract
- Section 16 focuses on any RP6 implications for NIE Networks' licence and the various licence modifications we shall progress with the company in advance of the more formal Licence Modifications and Appeals (LMA) process
- Various Technical Annexes are also listed, including web links, to the various sections above.

Background

2.4 The role of the Utility Regulator is determined under legislation and its statutory principal objective in relation to electricity matters is:

“To protect the interests of electricity consumers in Northern Ireland, wherever appropriate by promoting effective competition between persons engaged in or in commercial activities connected with the generation, transmission or supply of electricity.”

2.5 We are a non-ministerial government department, accountable to the NI Assembly.

2.6 In carrying out its functions, the Utility Regulator should act in the manner best calculated to further the principal objective, having regard to:

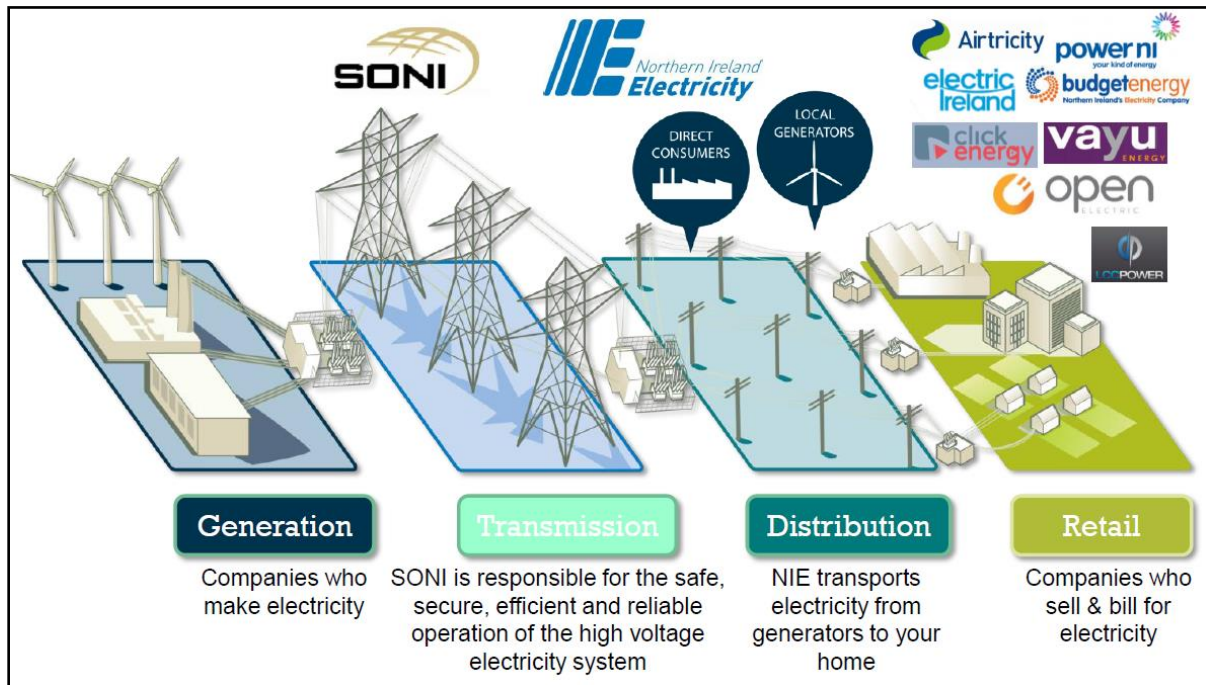
- The need to secure that all reasonable demands for electricity are met; and
- The need to secure that licence holders are able to finance the activities which are the subject of obligations imposed under NI energy law.

2.7 The Authority is required to carry out its respective electricity functions in the manner which it considers is best calculated:

- to promote the efficient use of electricity and efficiency and economy on the part of persons authorised by licences or exemptions to supply, distribute or participate in the transmission of electricity;
- to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity;

- III. to secure a diverse, viable and environmentally sustainable long-term energy supply;
 - IV. to promote research into, and the development and use of, new techniques by or on behalf of persons authorised by a licence to generate, supply, distribute or participate in the transmission of electricity; and
 - V. to secure the establishment and maintenance of machinery for promoting the health and safety of persons employed in the generation, transmission, distribution or supply of electricity.
- 2.8 In performing the above duties, regard shall also be had to the interests of groups of vulnerable consumers in Northern Ireland, comprising the disabled and chronically sick, pensioners, low income consumers and residents of rural areas.
- 2.9 In carrying out its electricity functions, the Utility Regulator must not discriminate between persons whose activities include generating, supplying or transmitting electricity.
- 2.10 We set overall limits on how network prices can rise, or are required to fall, through a process called price controls.
- 2.11 The price control process must therefore start with a business plan (including actual data for previous years), as submitted by NIE Networks, setting out their proposals for costs going forward. The information submitted will be scrutinised by us. In doing so, we seek to ensure NIE Networks deliver best value for money for all consumers.
- 2.12 Our approach is based on best practice regulation of natural monopolies. Our task essentially consists of implementing a framework within which, in return for providing monopoly services to an acceptable quality, the company receives a reasonable assurance of a revenue stream in future years that will cover its efficient costs and ensure fairness for the consumer.
- 2.13 Due to its natural monopoly position, the amount of revenue which NIE Networks earns is subject to a price control. This is set by the Utility Regulator following consultation with stakeholders and the wider public.
- 2.14 The electricity network is made up of a transmission and a distribution component. NIE Networks has responsibility for the running of its distribution system. However due to EU requirements for the independence of certain activities, NIE Networks shares the responsibilities of running its transmission network.
- 2.15 Transmission related responsibilities are split between NIE Networks and a separate body; the System Operator for Northern Ireland (SONI). NIE Networks' own, finance and carry out the necessary maintenance and development of the transmission network.

- 2.16 SONI is responsible for the day to day operation of the transmission system. That is, SONI directs the flows of electricity over the transmission network from generators. In doing this they are continually matching the supply of and demand for power across Northern Ireland. SONI is also responsible for connections to the transmission system. More recently SONI have become responsible for transmission system planning.
- 2.17 The various activities and responsibilities within the electricity industry in Northern Ireland are illustrated below. This split in responsibilities, particularly between NIE Networks and SONI, should be kept in mind when reading this document and is highlighted below in diagrammatic representation.



RP6 Approach

- 2.18 On 23 September 2015 we published a RP6 Overall Approach document for consultation on our intended overall approach to the next price control for Northern Ireland Electricity Networks Ltd (NIE Networks).
- 2.19 The RP6 price control aims to set an efficient revenue cap to enable NIE Networks to deliver quality outputs that customers need. NIE Networks' costs are a material and controllable element of electricity tariffs and RP6 investment decisions are expected to underpin improvements in service delivery for consumers.
- 2.20 We published our RP6 Final Overall Approach document on 22 December 2015. The responses to our September 2015 consultation were published along with our final approach. We set out the main areas of comment from the consultation responses and made some adjustments to our approach in response to consultation feedback.
- 2.21 In particular we included additional detail or confirmed and restated our original approach. Overall we did not consider our changes materially altered our approach.
- 2.22 Various stakeholder workshops occurred during our draft determination process:
- a draft RP6 Overall Approach for consultation workshop on 8 October 2015; plus
 - two stakeholder planning workshops with wider stakeholders and renewables representatives on 11 and 12 January 2017. These included engagement with stakeholders over many of the key issues for the RP6 period in the context of NIE Networks' RP6 Business Plan submission.
- 2.23 The revision to our original timetable¹ was the result of both lessons learned from the closest network price control to RP6 in the form of GD17, as well as in light of the company's substantial [RP6 Business Plan submissions](#). Our aim was to progress RP6 by building on the substantive engagement with the company and stakeholders alike and further engagement with stakeholders is planned for the 8-week consultation period² between draft and final determinations.
- 2.24 We are grateful to all those that attended the various workshops, their contributions on the day and the various consultation responses we received from organisational representatives alongside other bilateral engagement meetings.

¹ The revised timetable included the addition of a staged approach to Licence modifications as required under new legislation.

² The effective start date of the RP6 price control remains 1 October 2017 and will build on various consultation stages to the determination process, including the new more consumer focused 8-week formal consultation between draft and final determinations (as specified within the [Fresh Start Agreement](#) which introduced a new 8-week maximum consultation period for policy, starting from May Elections 2016 onward).

2.25 The revised RP6 timeline as presented to stakeholders, also included within our website, is at Table 1 below:

RP6 Key Stages	Revised RP6 Timetable (8-week consultation)	Updated RP6 Timetable with regards LMA process
Approach Document		
<i>Initiate working level meetings - scoping phase</i>	13 February 2015	
<i>Close off scoping</i>	18 August 2015	
<i>Publish RP6 Approach Document for consultation</i>	23 September 2015	
<i>Stakeholder Workshop</i>	8 October 2015	
<i>Publish Approach Document</i>	18 November 2015	
RP6 Business Plan		
<i>Initiate working level meetings – clarify the Approach</i>	18 November 2015	
<i>Close off clarifications</i>	16 December 2015	
<i>Issue Business Plan Information Requirements to NIE Networks</i>	20 January 2016	
<i>Business Plan Information Requirements formal query process</i>	Jan/February 2016	
<i>Close queries and end query process</i>	17 February 2016	
<i>Business Plan submission from NIE Networks</i>	29 June 2016	
Draft Determination		
<i>Business Plan formal query process</i>	July 2016 to February 2017	
<i>Publish Draft Determination for consultation</i>	24 March 2017	
Final Determination		
<i>Draft Determination consultation closes</i>	19 May 2017	
<i>Publish Final Determination</i>	28 June 2017	30 June 2017
<i>Article 14(2) Stage 1 Licence Modification Notice</i>	28 June 2017	30 June 2017
<i>x28 day min period for Licence Modification Notice Period ends</i>	27 July 2017	28 July 2017
<i>Due consideration of responses to proposed Licence Modification</i>	28 July to 3 August 2017	31 July to 3 August 2017
<i>Article 14(8) Stage 2 Notice of decision on how to proceed published</i>	4 August 2017	August 2017
<i>x56 day minimum period from publication date of decision to proceed</i>	29 September 2017	29 September 2017
Effective start date for RP6	1 October 2017	1 October 2017

Table 3: Revised RP6 timetable

Duration

2.26 In our RP6 Final Overall Approach document we stated we believed a 6-year duration would strike the right balance between providing sufficient certainty for NIE Networks of the strong incentive to reduce costs whilst not exposing the company or consumers to undue risk.

2.27 A re-alignment of regulatory and RIGs/NIE Networks' financial reporting years to run simultaneously April 20XX to 31 March 20XY was possible if we extended RP6 to 6½ years. This option would then remove the requirement for NIE Networks and us to pro rata between years for simple differences in tariff (accounting) and price control years as we monitor the company's progress during the RP6 period³.

³ If NIE Networks accepts our determination we shall require it to work with us to produce a Monitoring Plan setting out its programme for delivery over the RP6 period. The RP6 Monitoring Plan will need to be fully consistent with our

2.28 We are adopting a once only, 6½ years duration for the RP6 price control period.

RP6 Business Plan submission

2.29 The company at RP6 submitted a comprehensive Business Plan, addressing various requirements as laid out by the Utility Regulator in our Business Plan Templates (BPT) and associated information requirements:

- BPT Overarching Guidance which included a brief set of instructions for the RP6 Business Plan submission alongside our requirement for a public facing Executive Summary
- BPT Guidance Notes, similar to those employed across the existing RP5 Regulatory Information Guidance (RIGs)
- BPT Reporting Workbooks, where NIE Networks were expected to populate their historical and forecast projections alongside other data in support of their RP6 Business Plan
- BPT Commentaries, where NIE Networks had the option to populate in free text any special considerations they might have wished to draw to the attention of the Utility Regulator when using their data submission
- BPT Assurance Workbooks (if deemed necessary by the teams responsible for individuals sections⁴)
- BPT Glossary Appendix, including any additional definitions of terms to those already applying to the current RP5 RIGs

2.30 The company's web-based [RP6 Document Library](#) contains both their main report business plan, executive summary and various supporting reports:

- Transform Model – a N Ireland specific model evaluating options for low carbon technologies
- Domestic consumers willingness to pay for network improvements (Perceptive Insight Market Research)
- Quantitative research with non-domestic consumers (Perceptive Insight Market Research and Queen's University, Belfast)

determination and shall supersede its RP6 Business Plan. In so doing, we shall provide customers, stakeholders and ourselves with the means of assessing progress during the control period.

⁴ Apart from the BPT Pensions (for which specific Data Assurance requirements as detailed in the BPT Pensions Guidance Notes apply) no formal data assurance of the RP6 business plan submission was required. Instead we expected NIE Networks to include their best estimate of costs and activities across the RP6 price control period and to be held to account for their delivery of the eventual RP6 regulatory contract of outcomes, outputs and KPIs.

- Empowering consumers, beginning a conversation on consumer priorities for the N Ireland electricity network - summary & recommendations from consumer engagement
- Have your say on the future of the electricity network, 2017-2024 - proposed investment options for discussion with consumers
- The way forward, an outline of NIE Networks' investment plans, 2017-2024 - outline of the proposed RP6 core & optional business plan

2.31 In addition, the company submitted:

- **a suite of BPT documents** comprising completed Excel spreadsheets and commentary Word documents, as provided by the Utility Regulator for completion⁵. These fulfilled our requirements on:
 - BPT Reporting Workbooks where NIE Networks populated spreadsheets with their historical and forecast projections alongside other data in support of the RP6 Business Plan; and
 - BPT Commentary Templates where NIE Networks had the option to populate in free text any special considerations they may have wished to draw to the attention of the Utility Regulator when using their data submission.
- **various supporting reports and supplemental documents** to the suite of BPT documents in fulfilment of our requirement to provide supporting material, consistent with the information in the suite of BPT documents, the RP6 Main Report and Executive Summary.

2.32 In total, the RP6 submission files totalled over 270MB worth of data, spreadsheets, reports and annexes.

RP6 Business Plan Query Process

2.33 As with any network price control the Utility Regulator established a query process to lodge new queries with NIE Networks on a weekly basis, with the expectation of a x10 working day turnaround for response by the company.

2.34 Given the very comprehensive submission from the company and the degree of positive, working level engagement between respective teams across:

- pensions;
- operational expenditure benchmarking;

⁵ The various BPT requirements were refined through a very positive, working level engagement process with the company. Draft BPTs were discussed, alongside our minded to approaches to key RP6 workstreams as documented within our draft and final RP6 Overall Approach documents.

- network investment;
 - innovation;
 - outputs, incentives and uncertainty; as well as
 - all the various financial aspects to RP6,
- 2.35 More than three hundred individual queries were raised across the 8-month duration the team examined, assessed and tested the RP6 Business Plan submission.
- 2.36 The query process also augmented the positive working level engagement that took place throughout the draft determination stage. Important and material issues discussed in meetings were recorded formally as queries for NIE Networks consideration and subsequent submission to the Utility Regulator.
- 2.37 The regular engagement meetings also allowed both NIE Networks and ourself to identify material differences of opinion and/or approach in the lead up to the draft determination publication. This has meant we have adjusted our approach in a number of important workstreams, including benchmarking efficiencies of Indirects and IMF&T, our bottom-up assessment of the company's ask regarding both ICT and innovation investment, as well as wider network investment and pensions considerations.
- 2.38 The decision to move to the 8-week consultation period is set out in the Fresh Start Agreement (FSA), clause 65 with Appendix F6 - Draft Guidelines on Good Practice in Public Consultation Engagement recommending, amongst other things, "early and continuous engagement - pre consultation,...of the issues through a dialogue with stakeholders prior to policy decisions being more formally considered".
- 2.39 Whilst our formal 8-week consultation period for the draft determination was somewhat shorter than the 12 weeks that would previously have applied, our aim over the successive months after the company submitted its RP6 Business Plan has been to engage in as transparent a manner as possible to ensure our formal consultation benefits from early, pre-consultation engagement envisaged under the FSA.

RP6 draft determination

- 2.40 Our RP6 draft determination was published 24 March 2017 and contained:
- a main report, including executive summary; along with
 - various technical annexes detailing how we arrived at our draft decisions.
- 2.41 An 8-week consultation period ensued, at the end of which various consultation responses were received on the back of our draft decisions contained within our publication document as well as two stakeholder workshops.

- 2.42 The first workshop was an open invitation event as publicised alongside our publication. As a result of feedback from participants we then held a second stakeholder workshop at the Consumer Council for Northern Ireland (CCNI) offices, sending invites out once again to all the first workshop participants, and focused discussion on how RP6 consumer research had influenced decisions, from NIE Networks' RP6 Business Plan through to our draft determination.
- 2.43 Our formal query process was extended during this period of consultation to cope with both company queries raised in response to our draft as well as further queries from ourselves to the company. The latter included queries raised to refine our further understanding of both original business plan submission and subsequent representations by the company as we progressed through the stages to the draft determination and consultation.

RP6 consultation responses

- 2.44 A large number of consultation responses were received on Friday 19 May 2017 the date of consultation close.
- 2.45 We have considered all consultation responses and organised our responses to individual consultee points of argument through the compilation of two technical annexes which include:
- publication of all consultation responses (redacted where requested for reasons of commercial sensitivity);
 - NIE Networks' consultation response; and
 - all other non-NIE Networks' consultation responses and our own response to the various points of argument raised.

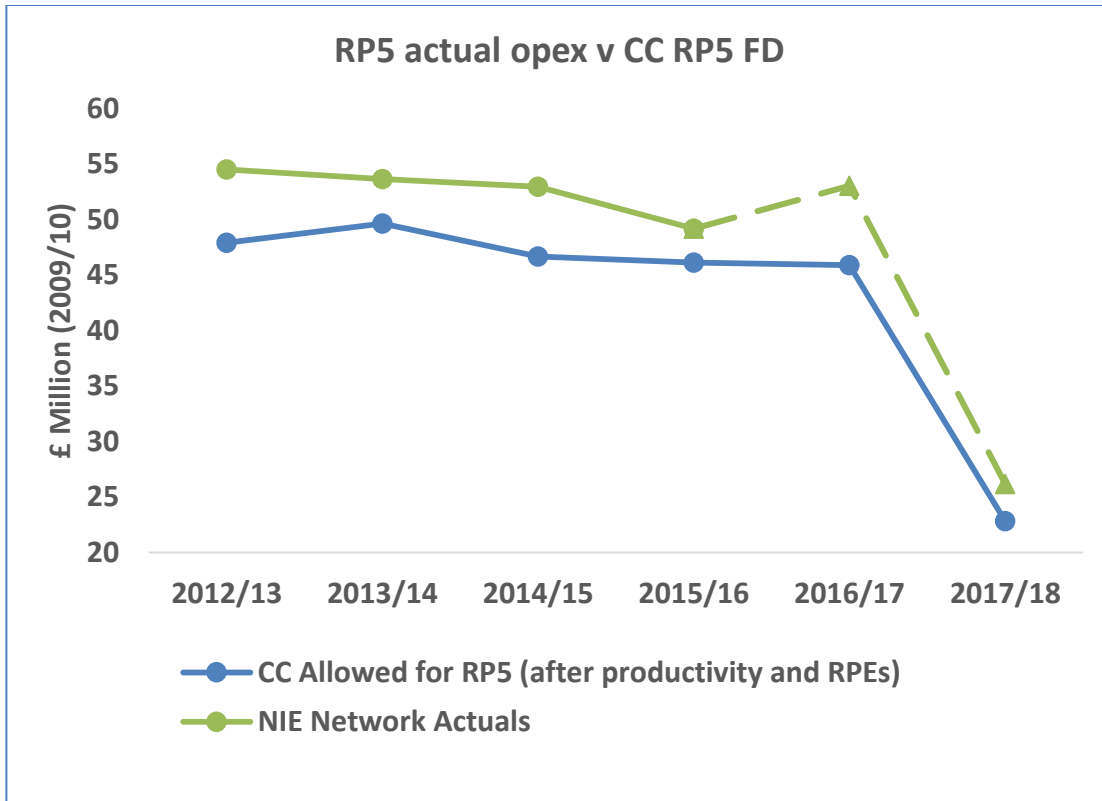
3 RP5 Delivery

Introduction

- 3.1 In RP5 the previous Competition Commission (now CMA) defined the key outputs including allowances and investment outputs.
- 3.2 To enable a better understanding of delivery, we compare the allowances set against actual performance.
- 3.3 Reflection on company performance against previous allowances, informs our view going forward and can highlight important or emerging issues for consumers in RP6.
- 3.4 We will now examine the main outputs of RP5, with a brief analysis of differences between allowances and outputs. By its nature this analysis is very high level as RP5 is incomplete. We will provide a full review of RP5 in our cost reporting framework once we have received full accounts for the period. We expect this will be in 2018.

Opex Costs

- 3.5 The term 'Opex Costs' is used to distinguish the ongoing running costs of NIE Networks electricity system. For example Opex Costs include: maintenance of poles and wires, business rates, meter reading and costs of supporting retail market opening.
- 3.6 Compared to the CC's Final Determination, NIE Networks have spent more than forecast for each of the four years ending 31st March 2013, 2014, 2015 and 2016. The main areas for the over-spending are: Inspections costs; Maintenance costs; Fault costs; and Indirect costs.
- 3.7 Costs in relation to NIE Networks expenditure on Inspections, maintenance, faults and tree cutting (IMF&T) and indirects are discussed in detail in Chapter 5: IMF&T and Indirects.
- 3.8 For the four years ending 31 March 2016, NIE Networks have spent circa £20m more than the CC RP5 final determination allowances.



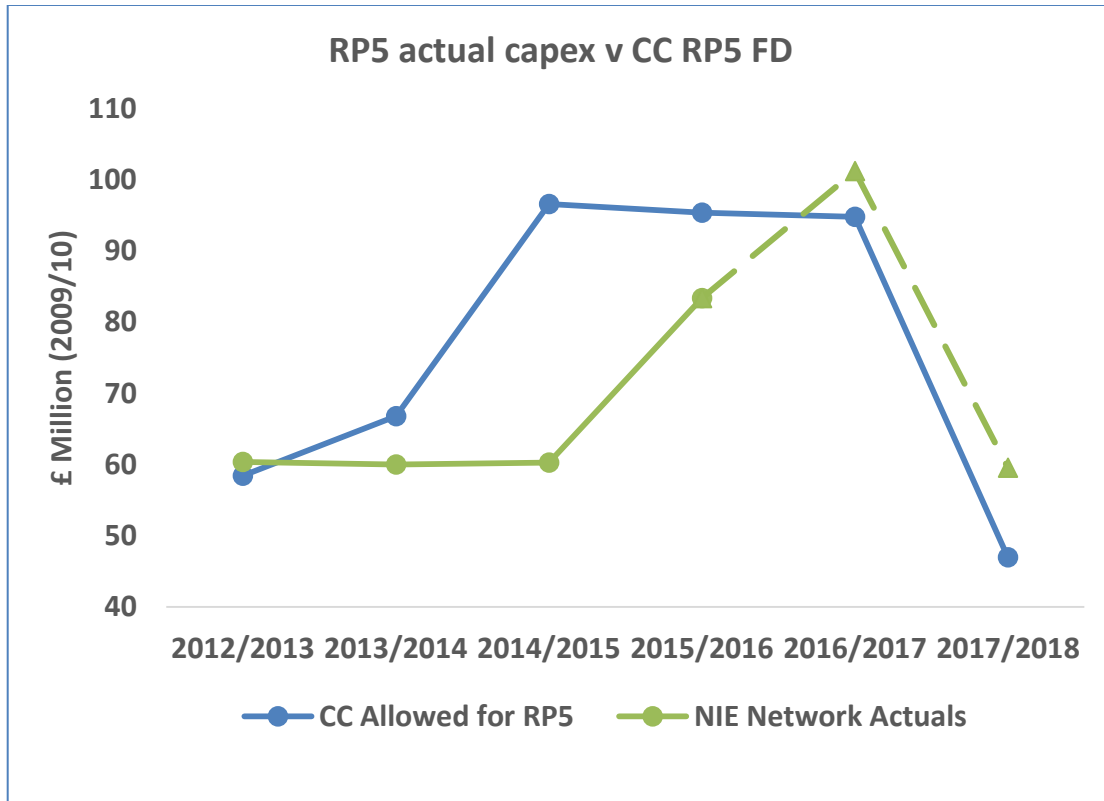
Note 1: 2016/17 and 2017/18 NIE actuals are NIE forecast costs

Note 2: 2017/18 costs based on half year data as RP5 finishes end September 2017

Figure 2: NIE Networks actual RP5 opex v CC RP5 opex final determination (2009/10 prices)

Capex Costs

- 3.9 The term 'Capex Costs' is used to refer to new assets installed on NIE Networks electricity system. For example Capex Costs include: the purchase and installation of new assets; replacing old assets; and connecting customers to the electricity network.
- 3.10 When compared to the CC's Final Determination NIE Networks has spent roughly £53m less on capex up to the end of March 2016. Most of this underspend occurred in the 2014/2015 year.
- 3.11 NIE Networks has explained the main reasons for the under-spend as; phasing of projects; and the targeting of lighter circuits pending the CC's Final Determination.



Note 1: 2016/17 and 2017/18 NIE actuals are NIE forecast costs

Note 2: 2017/18 costs based on half year data as RP5 finishes end September 2017

Figure 3: NIE Networks actual RP5 capex v CC RP5 capex final determination (2009/10 prices)

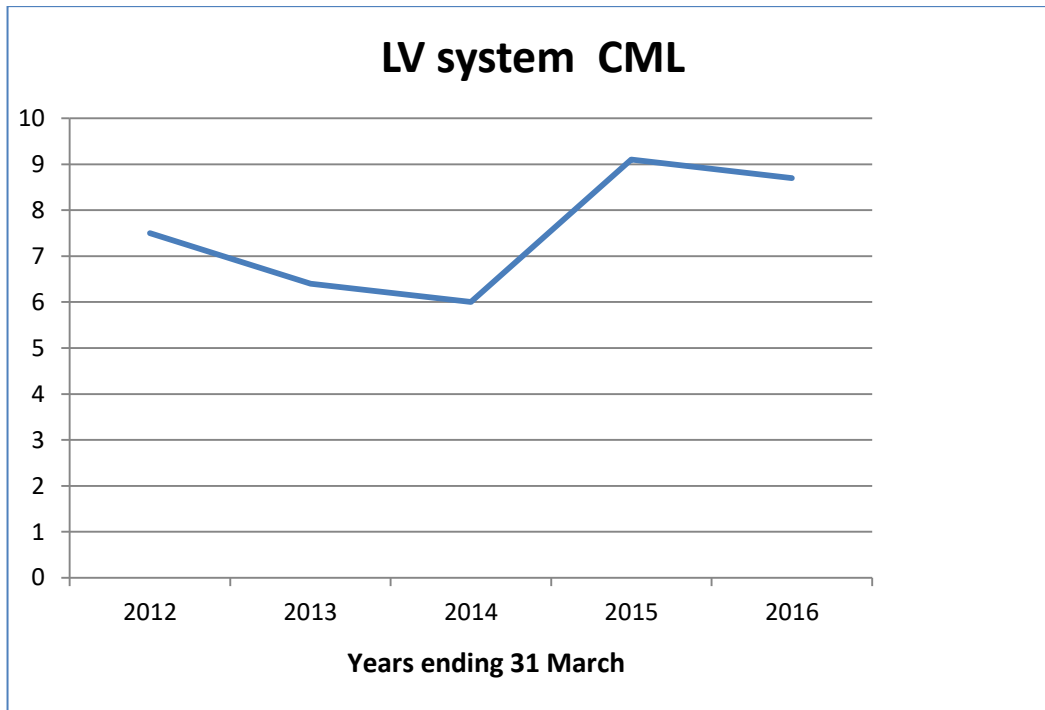
RP5 Output delivery and performance (outputs and outcomes)

Introduction

- 3.12 It is important to consider how the electricity system is performing, in order to give a more meaningful picture of efficient investment.
- 3.13 One of the ways of assessing the performance of the electricity system is to monitor frequency and duration of interruptions to electricity supply. The frequency of interruptions is captured in a metric called Customer Interruptions (CI), and the duration of interruptions is captured in a metric called Customers Minutes Lost (CML).
- 3.14 Although the CC did not set targets for CI or CML, for the purposes of this section we focus on the duration of interruptions as captured in the CML metric.

Customer Minutes Lost

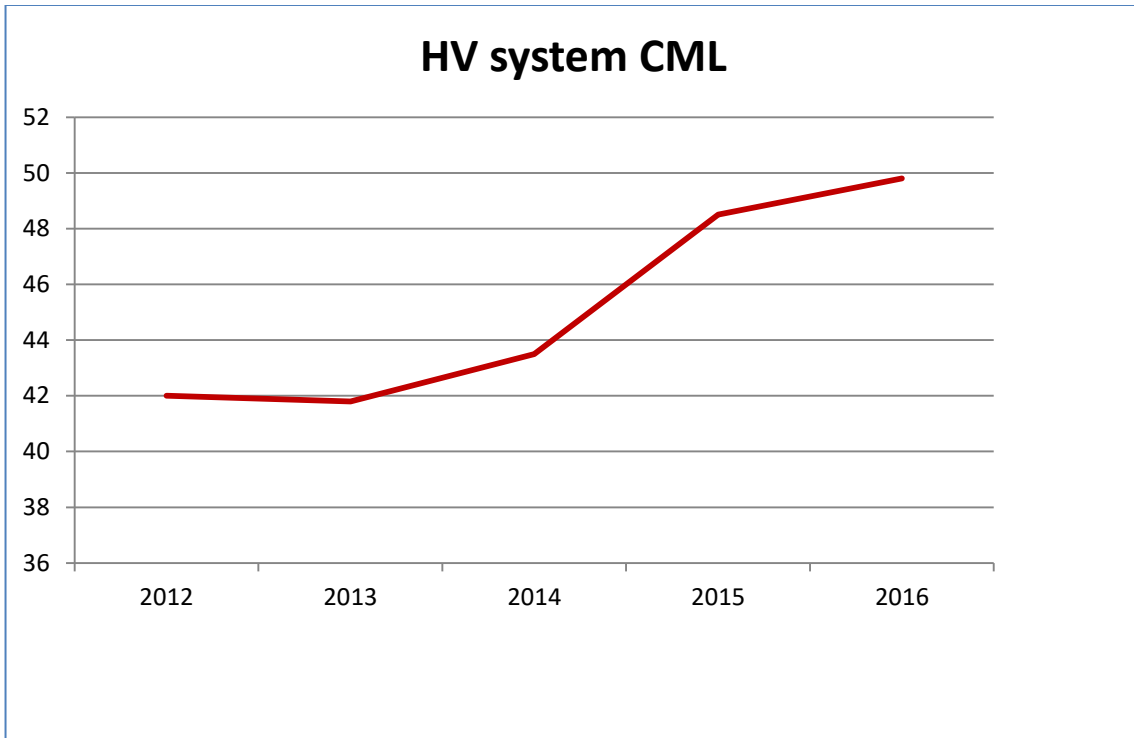
- 3.15 CML is the average minutes lost per customer, per year, where an interruption to electricity supply lasts for three minutes or longer.
- 3.16 The Customer (or Supply) Minutes Lost is a measure of reliability as it takes into account the amount of interruptions and the length of those interruptions. A network which is inadequately maintained will degrade and, after a time, have more frequent and lengthy faults which will be reflected in CML performance.
- 3.17 A degrading trend should not be assumed in the short term due to annual fluctuations in fault data and therefore it would not be prudent to give weight to the CML data at this time. We will, however, monitor the CML trend annually in order to identify potential links between under-investment and degrading network performance.
- 3.18 The Low Voltage system feeds domestic and commercial loads. Performance over the RP5 period is shown in figure 4 below.



Note 1: measured as an average, per customer, per year

Figure 4: NIE Networks Customer Minutes Lost (CML) 2012 to 2016 on Low Voltage System

- 3.19 The High Voltage system feeds some industrial consumers and the majority of secondary substation loads. Performance over the RP5 period is shown in figure 5 below.



Note 1: measured as an average, per customer, per year

Figure 5: NIE Networks Customer Minutes Lost (CML) 2012 to 2016 on High Voltage System

Future Reporting

- 3.20 We noted in the RP5 approach document that although the CC did not set targets for CI or CML, for RP5, we intended to consider again these measures for the following price control (RP6). We have given target setting for CI and CML further consideration and proposed a reliability incentive scheme and this is discussed further in RP6 Outcomes, Outputs & KPIs.
- 3.21 We expect to review the performance of NIE Networks for the entire RP5 period and produce a Cost and Performance report towards the end of 2018. We expect that the report will review NIE Networks' performance on opex, capex and outputs for the RP5 period.
- 3.22 We plan after the review of RP5, to produce an Annual Cost and Performance report each year for RP6, to monitor progress of performance against regulatory allowances, to enable better transparency for all stakeholders. As RP6 commences mid-way through the normal reporting cycle, which is normally at the end of March, we will need to consider whether it is appropriate to review and report on either a ½ year or 1½ years performance.

Application of D3 (deferral) mechanism

- 3.23 Figure 2 shows the variance between capital investment in RP5 and the capital allowances included in the Competition Commission's final determination for RP5 in 2009/10 prices.
- 3.24 Up to 2015/16, the company had invested £53m less capital (in 2009/10 prices) than the RP5 final determination allowed.
- 3.25 The capital allowances set by the Competition Commission in the RP5 final determination were ex-ante allowances. The company was incentivised to under-spend its allowances through the 50:50 cost risk sharing mechanism, which shares out-performance between the company and consumers. In addition, the Competition Commission specified measures to protect consumers from the deferral of planned network investment (the D3 mechanism). The intention is that there should be no double funding of deferred planned network investment.
- 3.26 As part of its response to the draft determination, the company provided an update to the Network Investment RIGs based on 5 years of actual data and projections for the remaining half year of RP5. The company also submitted an updated assessment of the outturn for direct network investment in RP5. The company estimated that it would out-perform the direct network investment allowance for RP5 by £40.5m in 2015/16 prices (15% of an allowance of £270m).
- 3.27 The savings in planned network investment achieved by the company in RP5 form the basis for our determination of unit rates for the same activities in RP6.
- 3.28 The application of the D3 deferral mechanism is limited to a category of 'planned network investment' which are the activities the Competition Commission identified a specific output or volume of outputs for in the RP5 final determination, a total of £195m (42%) of the capital allowances in 2009/10 prices, the equivalent of £234m in 2015/16 prices.
- 3.29 The company's updated RP5 out-turn report indicated that £38.2m (in 2015/16 prices) of the out-performance achieved relates to activities the Competition Commission had identified a specific output or volume of outputs for in the RP5 final determination. It is this block of savings only which may be considered in respect of any deferral of outputs (and funding) to RP6. The company indicated that it still planned to deliver all the planned outputs for RP6 and that there was no deferral from RP5 to RP6.
- 3.30 At the draft determination, we made no adjustment to the RP6 determination for pre-funded costs due to deferral of RP5 outputs. For the final determination, we have updated our assessment to take account of the latest network investment data provided by the company. We have identified one area of deferral of RP5 outputs relating to flood

defences of distribution substations as follows (with capital values stated in 2015/16 prices):

- The output for permanent flood protection of distribution substations in RP5 was 5 number. The final determination included an allowance equivalent to £182k per unit.
- The company has stated that it will deliver 5 units (the full RP5 output) at an average cost of £38k per unit. This equates to an out-performance of £721k. The company will retain 50% of this saving under the 50:50 cost risk sharing mechanism.
- However, we understand that three of the outputs claimed by NIE Networks in RP5 were sub-stations which were rebuilt as part of the RP5 programme where the new substation equipment was raised to above flood level as part of this rebuild. We consider this a natural consequence of rebuilding a sub-station and not the delivery of two separate outputs (to replace switchgear and to provide flooding protection). We have therefore concluded that three of flood protection outputs have been deferred.
- In RP6, NIE Networks plans to provide permanent protection to 9 further primary substations. The company has not indicated that any of these will be rebuilt. It has priced the outputs as bundling of existing facilities at a unit rate of £122k. It could have chosen to provide flood protection to any three of these in RP5. We have therefore determined that 3 of these units are deferred from RP5 and deducted a pre-funded allowance of £369k from the RP6 allowance. The delivery target for RP6 remains 9 units.

3.31 We will review the final out-turn of planned network investment and volumes for the RP5 period in detail when final information is available. Any shortfall in out-turn volumes will be taken into account in the use of any 'no double-recovery' principle in setting the subsequent price control.

3.32 In our review of the latest outturn information we noted that a part of the out-performance is driven by large savings in a small number of areas. For example:

		RP5 allowance £m	RP5 spend £m	Variance	
T07	Kells substation 110kV Switchgear	8.680	4.552	4.128	48%
T10	Replace 110kV switchgear at 3 substations	6.766	4.755	2.011	30%
T11a	275kV Ancillaries - protection equipment	4.178	2.616	1.562	37%
T11d	Transformer bunding at one site	0.400	0.072	0.328	82%
D10	Replace services (undereaves)	10.618	7.445	3.173	30%
D50	Permanent flood protection	0.908	0.188	0.720	79%
		31.550	19.628	11.922	38%

Table 4: Examples of direct capex out-performance in RP5

3.33 The level of saving delivered on these selected items is substantial and indicates that the company delivered a stepped change in efficiency from the expectations it had when it

prepared its business plan for RP5. There may be lessons to learn from looking back to how the company prepared its estimates for RP5 and chart how the out-performance was delivered and how it continues to benefit consumers in subsequent price controls. When we review the final out-turn of planned network investment for RP5 we will expect the company to prepare an assessment of how out-performance on planned network investment was delivered in RP5. This explanation may also be of interest to consumers who are asked to fund the company gain share of 50% of out-performance. We will therefore ask the company to publish a simple clear explanation of direct capital investment out-performance in RP5, including examples of major savings, and any lessons learnt. This will allow consumers to understand how the out-performance was achieved and how they have benefited from the 50% out-performance gain share paid to the company.

4 RP6 Outcomes, Outputs & KPIs

Key changes from draft to final determination

- 4.1 We have considered the various responses to our draft determination consultation and specifically assessed each of the company outputs offered up by NIE Networks in its RP6 business plan. Our assessment is included at Annex J – Outcomes, Outputs and KPIs⁶ where we:
- decide what outputs we intend including or excluding at this final determination and subsequent RP6 Monitoring Plan;
 - state how do we intend to regulate. If included for RP6, we state whether they are subject to regulatory processes and/or requirements
 - state how we intend working with the company and other stakeholders, to develop these outputs and KPIs prior to their inclusion within RP6 Monitoring Plan (for annual reporting of progress)
- 4.2 Our over-arching principle is one of ensuring we develop *actionable data* since gaining insight, without taking action, is of no real value to the consumer. This is why at Annex J – Outcomes, Outputs and KPIs, we intend working bilaterally with the company and/or through the Consumer Engagement Advisory Panel (CEAP) to develop agreed definitions and the means of reporting progress (databases and spreadsheets to inform the RP6 RIGs and Annual Cost and Performance Report of NIE Networks) to support flexible regulation which meets consumers’ needs.
- 4.3 Since we view the RP6 allowance as sufficient for an efficient company to deliver to the same standards as NIE Networks’ DNO comparators in GB, many of the outputs we expect to be delivered regardless of whether or not we provided specific allowance for within this determination. Rather, we view the total RP6 package as just that, a package of funding sufficient to support the company delivery of all the various outcomes, outputs and KPIs detailed herein.
- 4.4 The RP6 Monitoring Plan is due to be begin its development as soon as this determination has been accepted, and shall contain the following:
- agreement on any new metrics, their definitions and reporting structure under new RP6 RIGs

⁶ We reflect on Outcomes, Outputs and KPIs as articulated by NIE Networks in their RP6 Business Plan in response to our original RP6 Approach Document (where we stated we would set out a basket of outputs and outcomes for consumers as part of our determination). Where KPIs have been offered up by the company, these relate to precise levels of service the company would intend to deliver for consumers through either the course of or at close of the RP6 period.

- a detailed consideration of which outcomes and outputs to target as KPIs, including whether tramlines and/or trajectories are important elements and whether the Regulator expects such KPIs to be (i) maintained at current performance standards or (ii) whether improvement(s) in service are to be targeted, and their quantum. In essence, the RP6 Monitoring Plan shall work through the detail of whether certain standards of service are to be improved or maintained.
- 4.5 The total determined values (as proposed) in RP6 have been calculated by an assessment of various different categories of expenditure and/or activities. However, the determined values form the composite price control under which NIE Networks has been fully and adequately funded to meet and comply with all of its relevant requirements (i.e. both its regulatory licence and statutory obligations) through the total allowance determined in the RP6 final determination. This includes, for example and without limitation, investing in the network to create capacity for new connections, maintaining compliance with all network codes and standards, meeting all network safety requirements and carrying out activities in line with a best practice GB DNO e.g. including consumer engagement.
- 4.6 Given the RP6 period is six and a half years we would expect that some of the assumptions we have incorporated into our determination will outturn higher or lower and some assumed costs will fail to materialise while others will appear. This leads to the potential for NIE Networks to over/under recover in different areas. However, we view the overall package as being balanced and including both the flexibility and headroom to deal with the uncertainty. Importantly we would expect that NIE Networks will manage issues as they arise in RP6 in the context of this overall package and not seek to require regulatory intervention (other than in areas identified in the final determination) to deal with issues which might create additional costs in one area. The overall package (including the defined re-opener mechanisms, the 50:50 cost sharing mechanism and the risk element of the Return of Capital) provides for NIE Networks to be able to finance its activities which are the subject of obligations imposed by or under Part II of the Electricity Order.
- 4.7 The Regulator will then likely take a very poor view of any under-achievement against RP6 outcomes, outputs and KPIs, especially if the company continues to state that unless and until we provide specific funding, for example, in support of enhanced consumer and stakeholder engagement they shall not spend against that area.
- 4.8 The Regulator would in such an instance, view the matter as grounds to introduce new licence modifications to ensure delivery by the company to the expected standards of service in RP6 outcomes, outputs and KPIs. In addition, the Regulator expects the company to deliver services for consumers as would any reasonable and prudent network operator so that any approach and business case by the company for additional funds during the RP6 period would need to be set against the existence of any under-performance against outcomes, outputs and KPIs.

Introduction

- 4.9 Of the outputs (n=55) identified by the company, alongside various other incentives and uncertainty mechanisms referenced within its RP6 Business Plan and annexes, we examined each using our experience of setting KPIs, targets and monitoring company performance in other regulated sectors and price controls locally.
- 4.10 In applying best regulatory principles to RP6 we already have set out our intention to establish an RP6 Monitoring Plan, setting out a programme for delivery over the RP6 period by NIE Networks. The RP6 Monitoring Plan will be fully consistent with our determination and shall supersede the company's RP6 Business Plan.
- 4.11 Our annual cost and performance reporting of NIE Networks' progress in meeting its RP6 regulatory contract, targets and KPIs, for example, shall apply strong, local reputational incentives upon NIE Networks in the same manner as we have developed our model of regulation for NI Water. The inclusion of a financial incentive to promote improved network reliability will be included as well, especially over any rewards or penalties to be applied to NIE Networks.
- 4.12 We set out below our views on the Outputs, KPIs and Development Objectives for RP6 and will continue to develop and add more detail to these as we progress to an agreed RP6 Monitoring Plan.

Consumer Engagement Advisory Panel (CEAP)

- 4.13 Our collaborative partnership vehicle of the CEAP is also then expected to provide the necessary oversight and scrutiny prior to our commenting on company progress within our Annual Cost and Performance Report of NIE Networks, subject to agreement of a new Terms of Reference⁷ for the panel for the RP6 period and beyond.
- 4.14 Once the final determination has been accepted we shall progress onto development of the RP6 Monitoring Plan, where we would be happy to allow the CEAP to perhaps extend its oversight role to cover, at the least, the development of new, actionable consumer measures and satisfaction surveys.
- 4.15 One of the first tasks for the CEAP will be the necessary review and evaluation of the RP6 consumer research to ascertain what worked well and what lessons are required for new research in the future, both during RP6 and to inform the next price review of RP7.

⁷ New terms of reference for CEPA to include potential for wider stakeholder involvement.

Ongoing consumer and stakeholder engagement

- 4.16 The company included various improvements (incremental and discrete) to customer service across RP6 including:
- telephone call response rates and time to response (including use of HVCA)
 - zero defaults of GSS and zero failures on OSS
 - priority information service for customers already on the Critical Care Register
 - reduce complaint numbers and respond within target time periods
 - zero complaints escalated to the CCNI
 - prompt response to social media, written enquiries or phone contacts
 - provide a new multi-channel communication approach to reporting power cuts
- 4.17 During our pre-consultation engagement the company submitted a further presentation concerning the additional costs, over and above those already sought within RP6 Business Plan, to achieve an equivalent level of consumer and stakeholder engagement with its comparator DNOs. NIE Networks has claimed an additional £230k per annum is necessary to deliver equivalent consumer services effort to GB.
- 4.18 We are of the view that such additional costs (i) are already included in equivalent GB DNO costs (benchmarked to NIE Networks within our Indirects and IMF&T efficiencies), (ii) protect the company's "brand" and/or (iii) are very likely to reduce the overall cost of their customer service effort by adopting industry best practice where increased customer satisfaction leads to lower repeat contacts (which tend to burn resources).
- 4.19 We expect NIE Networks to engage in continuous engagement, equivalent to GB DNOs, since they are adequately funded to do so under our approach to efficiency benchmarking (Indirects and IMF&T).
- 4.20 The CEAP, our collaborative partnership approach to RP6 is expected to continue to make progress in the development of new customer focused measures/metrics, subject to the following requirements:
- comparability with other service providers
 - whether the metrics provide *actionable data* for the company and stakeholders, including ourself as Regulator

- 4.21 To enable cross-utility comparison of consumer satisfaction with other local, monopoly network providers we have already introduced a customer advocacy question⁸ into NI Water's regular consumer research.
- 4.22 The Consumer Engagement Oversight Group (a similar collaborative partnership group under water who were responsible for the delivery of consumer research to inform NI Water's last price control) facilitated the development of new surveys (replacing older, outdated surveys) which now provide NI Water with actionable data⁹ from both:
- province wide Omnibus Survey, including all of NI Water's customer base (representative samples of both domestic plus the industrial & commercial customer bases); and
 - a quarterly survey (unannounced) of customers who have contacted NI Water for whatever reason.
- 4.23 NIE Networks has expressed a desire to continue to work with the Utility Regulator to develop its existing customer surveys, perhaps to facilitate the consideration of whether to introduce a RP7 incentive around customer satisfaction scores.
- 4.24 Whether bilaterally, or through the CEAP, we are determined to bring in new customer advocacy measures of consumer satisfaction, through the RP6 period, so that at the least we have trialled new metrics during the RP6 period to inform the subsequent development of the next price control of NIE Networks at RP7. Whilst the RP6 period spans 6½ years, our experience of (i) introducing and trialling new metrics spans a number of years long development and that (ii) when considering subsequent KPIs and their targets, at least 3 years of data are required before reliable trends are evident with which we can set new targets.
- 4.25 On this basis, we have included new customer advocacy and survey metrics within our RP6 developmental objectives.

Connections and contestability

- 4.26 NIE Networks has offered a number of outputs and KPIs for connections and contestability with the aim of offering an excellent service to connections customers whilst facilitating competition in connections.¹⁰ The KPIs and outputs fall within the broad categories listed below:
- improving the overall time to deliver a demand connection by 20%.

⁸ Customer advocacy questions are commonplace questions, used in both public and private sectors and internationally. Customer advocacy feedback will allow us to compare local regulated monopoly networks to the very best organisations across the world.

⁹ Actionable data is required since gaining insight, without taking action, is of no real value. Data which is not actionable is, most simply, data that is not usable or useful.

¹⁰ NIE Networks Business Plan submission to UE, Page 490.

- complete feasibility study on managed connections
- delivery of 12 Major Projects to release 33kV congestion
- at least four engagements with major customers per annum
- assign dedicated account manager for all key customers (developers)
- deliver four connections surgeries per year
- audit effectiveness of documentation annually
- deliver heat map approach for transmission capacity at a high level i.e. Zone level
- provide feasibility study for load customers in Year 1 of RP6 and provide budget quote option for load customers in Year 1 of RP6
- online “job illustrator” tool available for customer use to estimate costs and network access
- online system available for customer use to track jobs and status
- online payment tool available for Customer use during RP6
- establish IT system to enable contestability in connections and delivery of ICP led projects

4.27 We understand that NIE Networks is not requesting an allowance in RP6 for these outputs.¹¹

4.28 The CEAP consumer and stakeholder research suggested that connections customer service was a key area for improvement – see its Recommendation 2. We recognise that NIE Networks has cited broad evidence of need for its proposed outputs on the basis of stakeholder and customer research which it has undertaken. They are also, with a few exceptions, mostly potentially measurable, specific and actionable. We would expect these to be time bound, and so NIE Networks should consider when these can be delivered where it hasn’t specified as such.

4.29 We set out our view on each outputs in Annex J. For most outputs, we will leave to NIE Networks to decide what initiatives it considers will best improve customer service and satisfaction. We do not intend to add these to the monitoring plan.

4.30 We also note that NIE Networks has agreed some measures which may benefit customers as part of the UR’s connections review - see the April 2017 decision document. We will discuss how these can be taken forward in a similar vein.

¹¹ The exception to this is 33kv reinforcement general activity output (which sits within bullet 2 output above) and IT enhancements for contestability service level output (which sits within bullet 5 above).

Guaranteed Standards of Service (GSS)

- 4.31 In our Draft Determination, we proposed that it would not be appropriate for consumers to cover the cost of implementation of a new GSS regime. We still maintain that the consumer should not carry the burden of the cost of compensation payments due where there have been failures by the Company to meet the standards.
- 4.32 However we view it as appropriate to consider in more detail potential costs associated with changing GSS, including the arguments made by NIE Networks in its response to the draft determination, once there is clarity on the GSS decision.
- 4.33 The GSS review is at an early stage with new legislation required to be formally drafted and passed through the Department for the Economy and the Executive. We expect that any new standards would not come into effect by October 2017, but during RP6, which we estimate would be in 2018/19.
- 4.34 We will consider any cost issues with the new GSS regime under the Change of Law provision in NIE Networks' Distribution Licence.
- 4.35 We note that the NIE Networks business plan submission proposed a move to an 18 hour restoration period from 24 hours currently and we view this as being funded within the RP6 allowances. We also considered (as discussed further from paragraph 5.210) the need for a negative special factor adjustment to account for the fact that NIE Networks has benefited in being benchmarked with GB DNOs with much tougher GSS standards, but decided not to make an adjustment. We will take this into account when considering NIE Networks proposals for costs.
- 4.36 In addition, NIE Networks highlighted incentive mechanisms in GB which it claimed GB DNOs used as a source of revenue which contribute to improved GSS standards. We expect that the Reliability Incentive Mechanism will provide a similar tool for NIE Networks in RP6.
- 4.37 In the draft determination we set out our intention to introduce annual reporting of all GSS and ex gratia payments to include performance against both an 18 hour and a 12 hour restoration period from October 2017 within the RP6 RIGs. We acknowledge that no payments will be made for the 12 and 18 hour restoration periods until such times as the existing restoration period of 24 hours were to be reduced.
- 4.38 We would expect to receive reporting on payments made under the existing GSS regime, together with information on how long it takes NIE Networks to get customers back on supply following a fault or severe weather incident. We expect to receive this annually and intend to publish this information in our annual cost and performance reports on the Company's progress against the RP6 contract.

Decision

- 4.39 In relation to GSS, decisions have not yet been made. We are continuing with the review of the GSS regime to bring it up to date with the current regulatory and legislative environment. We issued a Consultation in April 2017 which closed on 31st May 2017. The consultation set out the proposal to bring the GSS regime in line with the level of consumer protection afforded in GB by the Electricity (Standards of Performance) Regulations 2015.
- 4.40 It is proposed to make new GSS Regulations which are based on the GB GSS regime, but with adaptations to suit the Northern Ireland environment. At this stage, the review focuses on distribution and supply GSS, with connections GSS being considered at a later date. It is proposed to leave the OSS in place.
- 4.41 The key changes proposed are as follows:
- a reduction in the restoration time due to a fault in normal weather conditions from 24 hours to 18 hours (where 5,000 or more premises are affected by a single fault, a 24 hour standard will apply);
 - an increase in the compensation payment values to align with GB;
 - an introduction of categories of “severe weather” for supply restoration;
 - an introduction of GSS for multiple disconnections;
 - an introduction of GSS for rota disconnection;
 - a new standard for distribution companies in relation to responding to complaints;
 - automating most of the compensation payments for Critical Care Register customers (we will also consider extending this to vulnerable customers);
 - supplier GSS for appointments, charges, payments and complaints;
 - new reporting - with the new regime we want to ensure that all payments made under the new regulations are reported annually (including goodwill payments) so that we have a measurable marker of performance. In the interests of transparency, we propose to publish the figures on our website. From October 2017 we would also expect to receive information on payments made under the existing GSS regime, together with information on how long it takes NIE Networks to get customers back on supply following a fault or severe weather incident.
- 4.42 In our GSS review we are currently considering the consultation responses from NIE Networks and the other stakeholders, together with NIE Networks’ response to the Draft Determination. The next step would be to engage with the Department for the Economy to draft and implement new GSS Regulations. We will continue to engage with NIE Networks and other stakeholders at each stage of the review.

- 4.43 We note from the response to the Draft Determination that NIE is broadly content it would be able to comply with most of the proposed new GSS standards. We acknowledge NIE Networks' concerns as to the proposed new severe weather provisions and will engage further with the Company to explore these concerns as review continues.
- 4.44 NIE Networks' and others' responses and our high level views are summarised in Annex Q – NIE Networks consultation responses and Annex R - Consultation responses (non-NIE Networks) respectively.

RP6 Developmental Objectives

- 4.45 As with previous water and gas network price controls, we plan to include various developmental objectives during the RP6 price control period. This is necessary to provide the time and space for considered engagement with the company / stakeholders to identify, define, trial and then introduce the new metrics as KPIs, prior to our reflecting on company progress within the reputational confines of our annual cost and performance reports.

Developmental objectives unchanged from draft

- 4.46 RP6 developmental objectives will include the following, for example, and are unchanged from the draft:
- asset health and load indices – we agree with the company these are not robust enough at the present time to inform asset management decisions. We plan to make load indices a component of the delivery of load related investment, as part of the development of asset management excellence during RP6
 - worst served customers (WSC) – currently the company monitors to a different standard to GB DNOs and proposes to move to the GB DNO standard of, "someone who experiences six or more interruptions in an eighteen month period" during the RP6 period. Monitoring of the new standard during RP6 will establish a robust time series to inform RP7, including whether to introduce targeted WSC standards and/or investments to improve WSC.
 - new customer advocacy and survey metrics – to be developed either bilaterally with NIE Networks or through the continued work of the CEAP, we intend to trial such in sufficient time to properly inform our next price control of NIE Networks at RP7. We also intend such new measures to inform the development of our annual cost and performance monitoring of NIE Networks as we move through the RP6 period.

New development objective and Data Assurance Plan

- 4.47 A new developmental objective concerning data assurance is necessary given the late establishment by the company that its user defined, rules apportionment within its costing spreadsheet (circa 65k rows and 15 million cells) was at fault for under-reporting total Indirects at 2015/16, our base year for RP6. This provided little in the way of

assurance that another years' worth of data submitted at time of the RP6 Business Plan were any more reliable.

- 4.48 Given the reliance on manual, user intervention to data systems we queried where the company had spent the £1m provided by CC at RP5 for data systems to support new RIGs licence requirements. The response was that the largest proportion of the allowance had been spent on labour, not systems. Given funding in both RP5 and RP6, we consider NIE Networks has been fully funded to deliver systems solutions to these issues.
- 4.49 Whilst the company at RP5 had suggested to the CC there was a need for £100k per annum to support data assurance audits, we are not aware of any of these having been carried out. Indeed, as a result of the 2015/16 errors the company investigated why their errors had occurred and how they might mitigate similar risks going forward. They have suggested a number of relatively simple reconciliations to their worksheets and recognised that their rules based apportionment processes benefit from cross-working and discussion between finance and regulation staff and engineering professionals from within their company.
- 4.50 Unless data assurance is improved during RP7, the Regulator will consider the appropriate next steps which include undertakings and putting less weight on NIE Networks' submissions in arriving at future decisions.
- 4.51 During RP6 we shall expect the following to be both included in our RP6 Monitoring Plan for development and eventual submission, well in advance of preparing for the company's next price control at RP7:-
- examination and review of NIE Networks' own audit reports, both internal and external
 - Director level sign-off of any further and future regulatory reports
 - Data Assurance Plans and milestones to achieve reliable, actionable data, including but not limited to the following:
 - i. CML (feeding the new Reliability Incentive);
 - ii. consumer satisfaction ratings and surveys (new development objective for RP6);
 - iii. ICT investment, payback from efficiencies and benefits (such as enhanced reliability and automatic data assurance); as well as an

Asset management development objective

- 4.52 The transmission and distribution of electricity to consumers is an asset intensive process. It requires investment in transmission and distributions systems including

transformers, switchgear, overhead and underground conductors, supply connections and consumer meters. Investment is also required in indirect assets necessary for the effective management of the system including IT systems, offices, vehicles, maintenance and testing equipment and other facilities. Over time, it is necessary to replace assets as they reach end of life and create new assets to maintain the capacity, capability and safety of electricity supply.

- 4.53 In our approach to RP6, we noted that we expect the monopoly service providers we regulate to demonstrate effective long term stewardship of the asset base which has been and continues to be funded by consumers. We asked NIE Networks to prepare a plan to improve their asset management capability.
- 4.54 In its business plan submission, the company noted the Asset Health and Load indices introduced by Ofgem in DPCR5. While it was working to develop these, it noted that the work was still in its infancy and that an incentive scheme for RP6 would not be appropriate. We agree with this in respect of Asset Health Indices, although we have attached a Load Index target to funding for load growth. The company also sought funding for a CBRM system to allow it to improve its asset management systems and we have included funding for this work in the final determination.
- 4.55 During RP6, we expect NIE Networks to continue to review and develop its plans for asset management. While this is an essential part of service delivery, we also expect the company to focus on the information and processes necessary to inform decisions on asset investment and asset replacement expenditure during RP7 and in future price controls to deliver the necessary level of service at a least whole life cost. In particular, NIE Networks should look forward to key decisions it expects the Utility Regulator to make during the RP6 and ensure that the information necessary to inform such decisions have been collected and analysed during the early years of the RP6 period to ensure that robust information is provided in a timely way for its RP7 business planning process that all parties are familiar with.
- 4.56 While we consider that industry standard approaches, such as the Ofgem Common Methodology for asset health, criticality and monetised risk, and generic approaches such as condition based risk management (CBRM) have value, our focus is outcomes rather than techniques or process. Good asset management is a means to delivering service objectives (including reliability and safety) at least whole life cost to consumers. We expect the company to develop and apply the techniques it uses to achieve this underlying objective. In doing so, it must apply the techniques in a way that goes beyond data simplification and expert judgement to make use of real data to reflect the complexity and opportunities of managing a broad asset base. As a first step, we expect the company to set out how the work it plans to do will deliver this for the RP7 business plan.
- 4.57 To monitor delivery of this objective during GD17, we will introduce asset management development reporting into the Annual Cost Reporting to require NIE Network to update

its Asset Management Capability Assessment and Plan for Asset Maintenance and report on progress against the delivery of these plans, with a particular focus on the needs of the RP7 business plan submission and price control.

Direct network investment outputs

- 4.58 The final determination of direct network investment, which is described in Section 9 is based on a detailed bottom up assessment of investment proposed by NIE Networks including an assessment of the volumes of work which the company planned to deliver in RP6.
- 4.59 The types and volumes of outputs on which the final determination is based are set out in Annex P. This excludes projects where the allowances will be determined at a later date under the D5 mechanism.
- 4.60 These outputs have been divided into two categories:
- Those where it has been possible to identify a volume of activities and associated costs. Unit costs have been calculated for these activities in Annex P
 - Those where a lump sum has been identified to fund a general activity for which no specific outputs have been identified.
- 4.61 In principle, the company is to make all the investment necessary in RP6 to ensure compliance with licence conditions and relevant legislation subject to the incentive and uncertainty mechanisms set out in Sections 13 and 14, specifically:
- the cost risk sharing mechanism set out in Section 14 from paragraph 14.8;
 - the inefficient spend clause set out in Section 14 from paragraph 14.10;
 - the measures to tackle risks from the deferral of planned network investment set out in Section 14 from paragraph 14.12;
 - the planned network investment substitution mechanism set out in Section 13 beginning paragraph 13.8.
- 4.62 In addition, the following nominated outputs shall be delivered in RP6:
- Resolution of all safety sign and staywire issues required under the Electricity, Safety, Quality and Continuity Regulations (ESQCR).
 - Completion of all very high and high risk sites including those identified by NIE Networks in their response to our query URQ091
 - Refurbishment and re-conductoring of 33 spans of the Eden Main – Carrickfergus double circuit tower line to bring the asset to the company's asset standard. No further expenditure on this line would be expected in the foreseeable future.

- In its business plan submission the company set out plans to reinforce the 33kV network which have been accepted in the final determination. These plans are based on traditional solutions of network reinforcement. The incremental nature of these solutions means that they provide additional capacity on the network over and above that necessary to solve the issue that triggered the upgrade in the first place. This additional capacity has a value in that it provides resilience in the long term and it may allow further connections in the short term. If the company identifies alternative solutions at lower cost, it should demonstrate how the lower cost solution delivers the same package of immediate and long term benefits as the solution proposed in the business plan and reflect any diminution of benefits delivered as a pre-funded allowance for RP7.
- Completion of works on the 275kV switch-house at Kilroot. No further expenditure on this project will be expected in the foreseeable future.
- The reinforcement necessary to meet demand connections as they arise.
- At the end of RP6 there should be no more than 2% of the primary substation population operating at load index 5 according to the load index report included in the cost and volumes RIGs and this should be reflected in NIE Networks planned investment for RP7.
- All incomplete outputs from RP5 carried over into RP6 (e.g 275kV & 110kV protection works) to be completed as quickly as possible during RP6.

4.63 Subject to the delivery of these nominated outputs, the uncertainty and incentive mechanism which apply to direct networks investment provide the company with a wide degree of flexibility in the application of investment and the outputs it decides to deliver. In particular:

- There are no pre-defined outputs attached to direct network investment defined as lump sum activities in Annex P.
- No specific outputs are attached to the indirect costs including those associated with the delivery of direct network investment.
- The deferral mechanism allows the company to defer planned investment to subsequent price controls where the deferral can be demonstrated to be economic.
- The company has wide discretion to select the items of plant it decides to replace and refurbish within any allowance or sub-allowance.
- The company can substitute investment and volumes between the various sub-allowances which make up an individual allowance where the volume of output is defined.
- The substitution mechanism proposed for RP6 allows the company to fund additional outputs across the plan by substitution of up to 20% of the investment from defined direct network allowance, up to a total limit of 10% in total.

5 IMF&T and Indirects

Key changes from draft to final determination

5.1 The key changes since our draft determination include the following:

- Acceptance of the company costing errors contained within their original business plan submission and upwards revision to their 2015/16 base Indirects cost, which is then carried forward across the six and a half years of RP6.
- Re-estimation of our econometric models to include the revised data from NIE Networks.
- Inclusion of a new overhead line length as a proportion of total network length (OHL/length) to account for impacts from sparsity, rurality and network design.
- Consideration of company revised special factors submission and our own negative special factors for lack of equivalence in standards of service on ESQCR and GSS/OSS, as well as lower local property costs compared to the GB DNO company comparators.
- For final determination we have ascertained a triangulated estimated efficiency gap figure of 2.31%. However, the Utility Regulator has decided not to apply this efficiency discount to NIE Networks' base costs rolled forward from 2015-16. This provides NIE Networks with significant headroom during the six and a half years of RP6.
- Acceptance of additions to base opex for a change of law (defined benefit pensions scheme) and operational IT & Telecoms (BT21CN and RAD).

Introduction

5.2 This Chapter assesses NIE Networks' Inspections, Maintenance, Faults and Tree cutting (IMF&T) and Indirect costs. NIE Networks requested over £440m as part of their RP6 business plan to cover their IMF&T and Indirect costs for the six and a half year period of RP6. This equates to around 28% of NIE Networks' £1,563m business plan (in total revenue).

5.3 IMF&T may be described as the investment made in order to maintain the day-to-day operation of the network. Indirect costs relate to functions that support direct activities, including the categories of Closely Associated Indirect costs (CAI) and Business Support.

5.4 Closely Associated Indirects are costs that support direct activities, such as Network Design & Engineering, Project Management, Engineering Management and Clerical

Support, System Mapping, Control Centre, Call Centre, Stores, Operational Training and Vehicles & Transport.

- 5.5 Business Support encompass 'overhead' type costs such as Network Policy, HR, Finance & Regulation, CEO, IT & Telecoms and Property Management.
- 5.6 For both NIE Networks and GB DNOs, IMF&T and Indirects include costs that are capitalised and costs that are not capitalised. As a result, our econometric benchmarking analysis, which we use to assess an efficient allowance, cuts across NIE Networks' capex and opex.
- 5.7 In setting an allowance for RP6 therefore, Indirect and IMF&T costs are split between opex and capex based on the proportion of NIE Networks' IMF&T and Indirect costs that were capitalised by NIE Networks in 2015/16. However, for the purposes of our benchmarking analysis we do not distinguish between IMF&T and Indirect costs which are capitalised and those which are not capitalised.
- 5.8 A proportion of IMF&T and Indirect costs are allocated to connections for NIE Networks and GB DNOs. As a result, we have conducted benchmarking on a pre-allocation of IMF&T and Indirect costs to connections basis (gross) and a post-allocation of IMF&T and Indirect costs to connections basis (net).
- 5.9 We assess other opex separately, such as costs for severe weather, rates and licence fees, and this is detailed in Chapter 6.
- 5.10 Frontier Shift for both opex and capex is assessed separately in Chapter 10.

RP5 Expenditure

- 5.11 RP5 IMF&T and Indirect expenditure was set by the Competition Commission (now referred to as the Competition and Markets Authority (CMA)) as part of its work during the RP5 price control referral. The CC arrived at their allowances through econometric benchmarking of NIE Networks with Distribution Network Operators (DNOs) in Great Britain (GB).
- 5.12 The CC compared NIE Networks to the fifth placed company out of 15 DNOs and established a range of efficiency scores, against four different approaches to the wage adjustments. After assessing the results of the models, the CC determined that for 2011/12, an approximate 6% reduction was warranted for NIE Networks' IMF&T and Indirect costs, including the 275kV network.¹² These findings, combined with other analyses undertaken by the CC, were then carried forward into RP5 allowances for NIE

¹² In paragraphs 8.223-8.224 of the RP5 determination, the CC set a cost benchmark of £53.6m versus a NIE cost of £57.0 for the 2011/12 year. Paragraphs 7.35-7.36 of the CC's RP5 determination document show this was rolled this forward in real terms.

Networks. It is important to note however, that qualifying opex and qualifying capex were subject to a 50:50 sharing mechanism between the company and its customers.¹³

- 5.13 As part of NIE Networks' RP6 submission to the Utility Regulator, the company provided RP5 outturn opex for the period 2012/13 to 2015/16 (4 years). We can use this information to gain an insight into whether or not NIE Networks outperformed its opex allowance during the first four years of RP5. In turn, we compare NIE Networks' actual IMF&T and Indirect expenditure with the corresponding allowances that were set as part of the RP5 price control review by the CC.
- 5.14 The figure below outlines IMF&T and Indirect allowances and actual expenditure in the period 2012/13 to 2015/16 (distribution plus transmission), excluding atypical severe weather. The chart shows that NIE Networks overspent their RP5 allowance (as determined by the CC) in three years of the price control, thus far (out of four years of outturn data, thus far). 2014-15 is the only year in which NIE Networks out-performed their IMF&T and Indirect allowance, thus far in RP5.
- 5.15 It should be noted this chart has been revised from the draft determination as NIE Networks have since submitted updated 2015/16 data to the Utility Regulator. The impact being that outturn 2015/16 IMF&T and Indirect expenditure has increased from £62.30m in the draft determination to £65.06m in the final determination, which is an increase of approximately £2.76m. As a result, NIE Networks overspent their IMF&T and Indirect allowance in 2015/16 by £3.07m.
- 5.16 This follows overspend of £3.40m in 2012/13, overspend of £2.97m in 2013/14, and underspend of £0.19m in 2014/15. In total, NIE Networks have overspent by approximately £9.24m (2015/16 prices) with respect to IMF&T and Indirects compared to their allowance during RP5.
- 5.17 It is important to note that until we obtain NIE Networks' actual expenditure for the entire RP5 period (April 2012 to September 2018), it is difficult to gain a full insight into NIE Networks' over- or under-performance during RP5.

¹³ Further information can be found in Chapter 19 of the CC RP5 Final Determination document

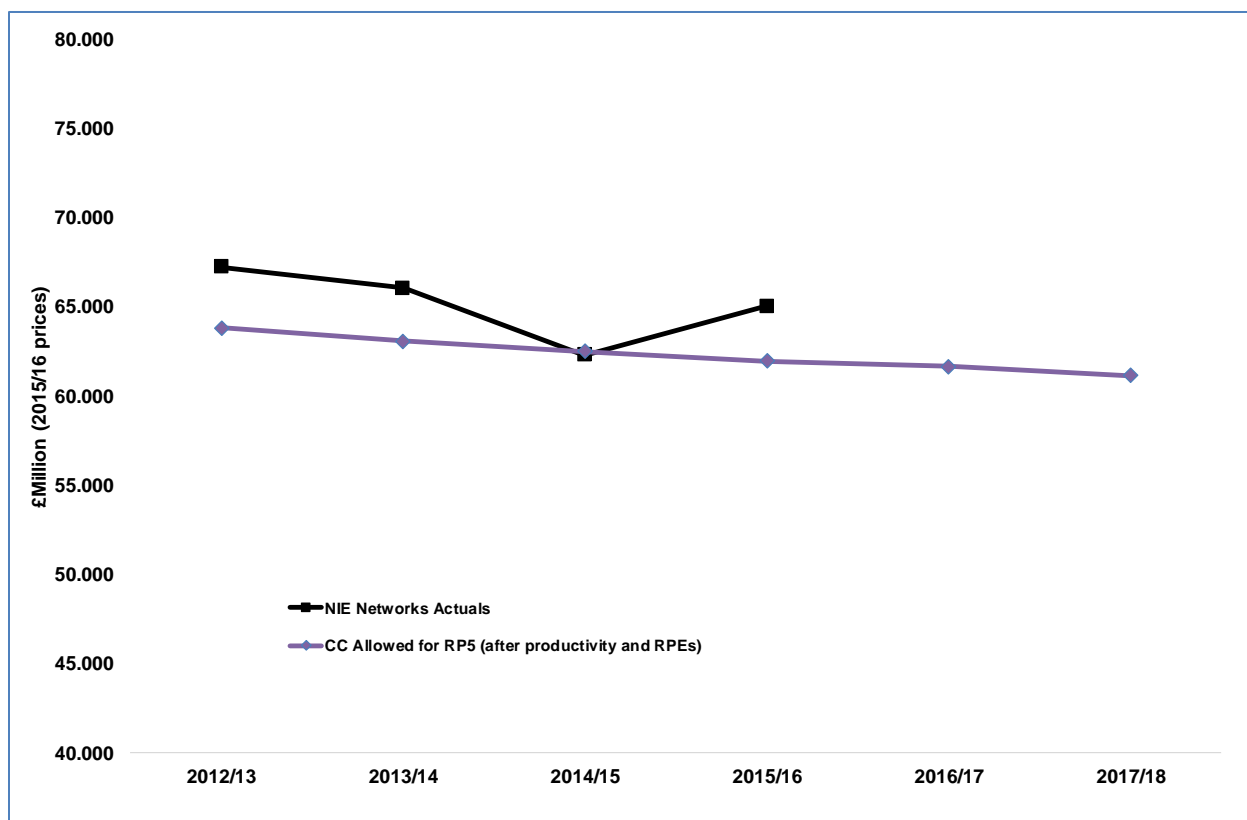


Figure 6: NIE Networks outturn Indirect and IMF&T expenditure^{14 15}

Benchmarking Methodology for RP6

- 5.18 Benchmarking is essentially the process of comparing a firm's costs and performance to the industry best or best practices from other similar companies. For the Utility Regulator this effectively means comparing the relative performance of NIE Networks to those DNOs that operate in Great Britain (using Ofgem data), utilising multivariate statistical techniques. As electricity distribution companies are natural monopolies, regulatory benchmarking may be necessary to drive down costs and improve quality of service in the absence of competitive pressures.
- 5.19 Benchmarking has been adopted by regulators around the world, including regulators such as Ofgem, Ofwat, Office of Rail and Road (ORR) and the Water Industry Commission for Scotland (WICS) in Great Britain. In Northern Ireland, the Utility Regulator has undertaken econometric and unit cost benchmarking of NI Water for a number of its price controls (namely PC10, PC13 & PC15), with notable success. For example, since 2007-08 the Utility Regulator has seen NI Water's operational efficiency gap reduce considerably, from an estimate of 49% in 2007-08, to around 13% in 2014-

¹⁴ Excludes atypical severe weather

¹⁵ 2017/18 only relates to first half of the financial year i.e. 1 April 2017 to 30 September 2017. CC allowance is multiplied by two, solely to aid comparability with previous full financial years.

15. Since the start of PC10, annual operational expenditure in the water and sewerage business has reduced by around £60m in real terms.¹⁶
- 5.20 The Utility Regulator has also introduced opex benchmarking for GD17, comparing the historic and business plan costs of the Gas Distribution Network companies (GDNs) in Northern Ireland to their counterparts in GB.¹⁷ This was the first time such comprehensive benchmarking of opex had been undertaken in Northern Ireland's natural gas distribution industry.
- 5.21 For RP6 the Utility Regulator has undertaken benchmarking to assess efficient distribution IMF&T and Indirect expenditure for NIE Networks. Cambridge Economic Policy Associates (CEPA), utilising expert modelling advice from Dr Andrew Smith, helped develop the econometric models used by the Utility Regulator in this RP6 final determination, and were involved from an early stage in the process.¹⁸
- 5.22 We have benchmarked distribution IMF&T and Indirect expenditure that are both "controllable" and "comparable". By "controllable", we refer to costs that are to some degree within management control; and by "comparable", we refer to costs that are incurred by all DNOs and smooth across time - therefore comparable in scope.
- 5.23 Our focus is on benchmarking IMF&T and Indirect costs attributable to the distribution network as there are fewer transmission operators (TOs) in GB than DNOs, which makes the benchmarking of electricity transmission more difficult (14 DNOs compared to only 3 TOs). However, as GB DNOs operate high voltage 132kV lines, we allocate NIE Networks' IMF&T and Indirect costs attributable to 110kV transmission assets to their distribution business in order to improve comparability. Additional data adjustments have also been made, which are discussed below.
- 5.24 The benchmarking techniques we have examined in RP6 include:
- Pooled Ordinary Least Squares (POLS) regression analysis;
 - Random Effects (RE) estimation; and
 - Unit Cost comparisons.
- 5.25 The Utility Regulator and CEPA met NIE Networks on 23 March 2015 to discuss how the Utility Regulator aimed to build on the benchmarking undertaken by the CC during RP5. The Utility Regulator stated how it was minded to apply approaches and principles used

¹⁶ Calculated as the difference in operational spend between 2009-10 (year immediately before PC10) and 2014-15.

http://www.uregni.gov.uk/uploads/publications/final_Cost_and_Performance_Report_for_PC13_-_embargoed_until_1200_26th_Nov_2015_final_v.pdf

¹⁷ The top-down model estimates were used at GD17 as a 'sense-check'.

¹⁸ Dr Andrew Smith is a Senior Lecturer in Transport Regulation and Economics and Research Group Leader for the Economics and Discrete Choice Research Group at the Institute for Transport Studies, University of Leeds (joint position with Leeds University Business School). He was academic advisor to OFWAT on econometric efficiency analyses, including 2015 CMA enquiry.

by the Utility Regulator in its other network price control determinations (namely for NI Water and the gas distribution network companies (GDNs) in Northern Ireland for GD17) as well as best practice from other regulatory determinations, including from the Competition and Markets Authority (CMA).

- 5.26 CEPA undertook a number of data adjustments to both NIE Networks and to the 14 GB DNOs to ensure as like-for-like a comparison as possible. Only costs that were deemed “controllable” and “comparable” were included in the benchmarking data set. Using this data, CEPA developed and estimated a number of econometric and unit cost models in order to ascertain the likely efficiency performance of NIE Networks. Atypical severe weather, rates and pension deficit costs have been assessed separately.
- 5.27 The UR has continuously worked with NIE Networks during the price control process and shared internal workings and calculations when possible. This has included a number of knowledge transfer sessions between the Utility Regulator’s consultants CEPA and NIE Networks’ consultants NERA. This has ensured an open and transparent process throughout between the Utility Regulator and NIE Networks, which we hope to continue going forward. NIE Networks were able to replicate the UR’s draft determination analysis to a high degree of accuracy, and this assisted in developing their consultation response.¹⁹
- 5.28 The overall approach to benchmarking taken by CEPA, and the application of benchmarking results to baseline expenditure, are summarised in the diagram below:

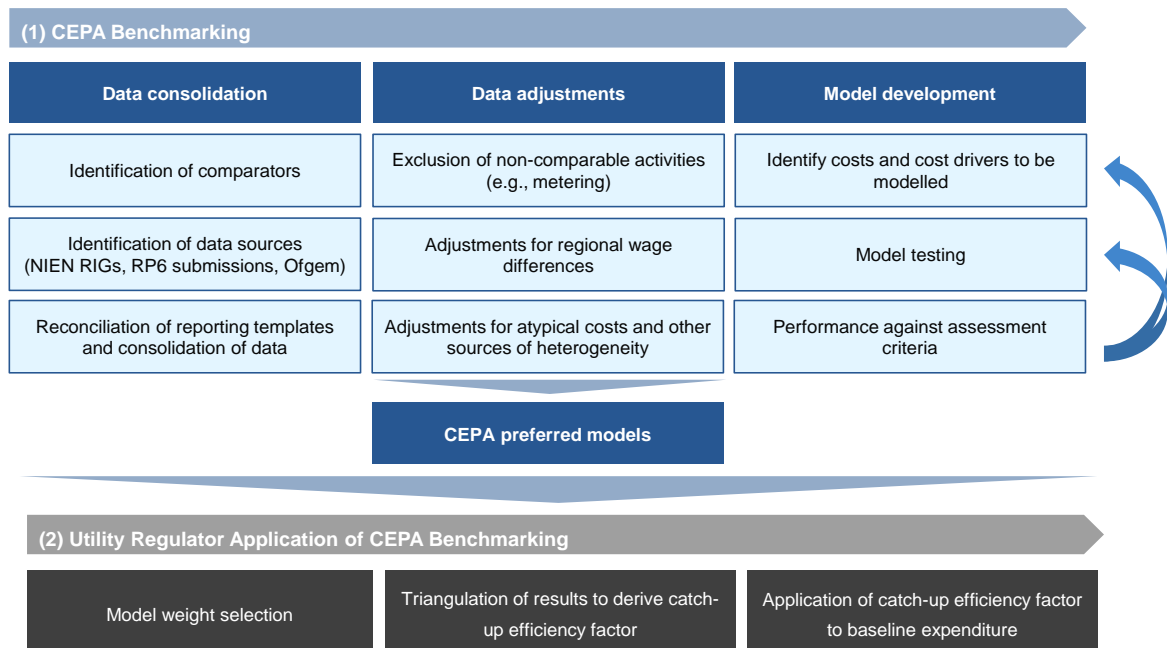


Figure 7: Summary of benchmarking and cost assessment approaches

¹⁹ NIE Networks were able to replicate the UR’s draft determination triangulated efficiency gap to 0.01 p.p.

5.29 As part of the RP6 process the Utility Regulator also asked NIE Networks to provide evidence that it had undertaken its own assessment of company efficiency levels. In our RP6 Final Overall Approach document from December 2015 we stated the following:

“We expect NIE Networks to have carried out sufficient benchmarking to inform its decision on the scope for improving efficiency that it has included in its RP6 Business Plan. We expect to see this justification together with information for us to be able to carry out benchmarking checks against peer enterprises operating elsewhere in the UK and Europe.”²⁰

5.30 An overview of NIE Networks’ benchmarking approach was provided in our draft determination.

5.31 Since the draft determination NIE Networks and NERA have submitted additional information, including detailed analysis within their consultation response. These findings (using additional data etc) were largely in line with their previous results, with NIE Networks continuing to consider themselves more efficient than the upper quartile (benchmark) company.

5.32 The Utility Regulator acknowledges that NIE Networks have undertaken a considerable amount of analysis within its benchmarking submission and Regional Labour Cost Adjustment work and this has proved informative for the Utility Regulator in setting its RP6 final determination. It is also clear that NIE Networks and NERA have been constructive and transparent in explaining their efficiency approach and methodology, and have shared the underlying data and models with the Utility Regulator when requested.

5.33 It is also fair to say that the results NERA find for NIE Networks are quite marginal. The UR does not feel that NIE Networks have conclusively demonstrated that they are a ‘frontier company’ and that catch-up efficiencies do not even need to be considered.

5.34 Furthermore, the NERA approach departs somewhat from the approach taken by the CC in RP5, where costs were previously determined. While the UR does not feel obliged to rigidly follow any particular regulatory precedent, we have identified a number of significant drawbacks to NIE Networks and NERA’s disaggregated benchmarking approach which cannot be overlooked:

- Volume based cost drivers may risk capturing a firm’s workload inefficiency rather than exposing efficient working practices. For example, we have some reservations and concerns that the use of the number of faults as the sole driver of fault costs may also potentially reflect bad quality of service being delivered by DNOs with a high proportion of overhead lines. As a result, the fault model specification used by NERA may inadvertently reward DNOs if they have poor quality of service, rather than reflect differences in fault costs caused exogenously by differences in network

²⁰ Paragraph 4.40 of the Utility Regulator’s RP6 Final Approach Document.
https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/2015-12-22_RP6_Final_Approach_Document_-_final.pdf

design. In contrast, the UR's explanatory variables (such as the CSV) have distinct advantages as they are more exogenous in nature.

- Some of NERA's models were based upon the use of forecast data rather than actuals. The UR considers that actual data is preferable as it will disclose DNO cost performance levels which are currently technically achievable. Using actual outturn data will mean the resulting model estimated coefficients and correlations²¹ will be based on actual cost relationships in the industry.
- The NERA approach uses only a sub-set of the benchmarking models used by Ofgem at RIIO-ED1. Furthermore, the econometric models used within this approach cover a more limited proportion of IMF&T and Indirect costs than our top-down / middle-up benchmarking approach, with the remainder of IMF&T and Indirect costs being modelled using unit cost analysis.²² A significant disadvantage of unit cost analysis compared with an econometric modelling approach is that it fails to capture the impact of economies of scale on costs. We consider this to be significantly important given the wide size range of DNOs included in the benchmarking analysis and the high probability that a large proportion of indirect costs are likely to be fixed.
- Throughout this process, the UR have received three different versions of the "V1 – Total Asset Movement" worksheet from NIE Networks, which is used to calculate MEAV. All of which result in a significantly different MEAV for NIE Networks. As a result of this and other reasons, we do not consider it appropriate to use MEAV to assess the relative efficiency of NIE Networks in this final determination. Further details of our reasoning is provided in Annex D: Special Factors.

5.35 Therefore, to ensure consumer interests are fully protected, the Utility Regulator, assisted by CEPA, has conducted its own benchmarking analysis for RP6.

Summary of UR Analysis at Draft Determination

5.36 In the draft determination the UR used econometric analysis undertaken by CEPA to inform its assessment of NIE Networks' IMF&T and Indirect costs. CEPA's draft determination analysis can be seen at Annex A –CEPA Regional Wage Adjustment and Annex B- CEPA Efficiency Modelling.²³

5.37 In summary, the UR believed that the following approach was warranted for IMF&T and Indirect costs at draft determination:

- The UR set a baseline for IMF&T and Indirect costs of £62.229m, using 2015-16 data.

²¹ Correlations between dependent and independent variables.

²² For example NERA / Ofgem's faults and CAI models only cover a proportion of trouble call and CAI costs.

²³ This analysis has been further refined by the UR for final determination with model results documented within Annex N – Detailed IMF&T and Indirects Benchmarking Results. Although Annex A and Annex B relate to the draft determination, the UR has included them within this final determination for transparency.

- The UR applied a 2.0% efficiency catch-up target, based on its triangulated approach to analysing CEPA's efficiency model results.
- The UR did not allow around £37m (£5.7m per annum) in additional IMF&T and Indirect expenditure which NIE Networks had requested. The Utility Regulator considered that these additional costs were not justified on the basis they mirror such costs already incurred by comparator DNOs in Great Britain.

5.38 At draft determination, the Utility Regulator set an overall IMF&T and Indirects allowance of £397m for the RP6 period, compared to a business plan request of £442m. This resulted in an approximate 10% reduction to NIE Networks' business plan forecasts.

Consultation Responses to the Draft Determination

- 5.39 The UR received 23 responses in total to the draft determination. However, only a proportion of these respondents discussed the detail of the UR's methodology for setting the IMF&T and Indirects allowance.
- 5.40 The Consumer Council welcomed the 2.0% efficiency gap finding by the UR at draft determination stage. However, they did question certain aspects of the triangulation approach taken by the UR – namely on the regional wage adjustment, special factors and the UR's chosen models, all of which they considered were overly favourable to NIE Networks.
- 5.41 NIE Networks and their Consultants NERA made a detailed submission, making critical comments on the application of the regional wage adjustment, model selection, the baseline adopted and how new costs were assessed at draft determination. NIE Networks also made a submission on special factors for the UR to consider.
- 5.42 In particular, NIE Networks alongside NERA made a number of criticisms of the UR's modelling approach, stating that the UR analysis has largely ignored NIE Networks' own assessment in its Business Plan. NIE Networks also criticised our top-down benchmarking approach, stating that their disaggregated approach is the more robust approach and they contend that the top-down models selected by the UR in the DD are biased against NIE Networks. We refute these claims, and our explanations are provided in more detail in the sections below.
- 5.43 As mentioned, NIE Networks have also submitted a number of special factor claims with regards to the modelling approach the Utility Regulator decided to take in the draft determination. The Utility Regulator has carefully considered these claims for final determination, and more details of our assessment are provided further on in this chapter.
- 5.44 The Utility Regulator has considered comments on the IMF&T and Indirects costs from all other respondents and these have informed our refinement of the analysis at this final

determination. Relevant comments are discussed below within each sub-section to which it relates.

- 5.45 The UR has built upon the substantial econometric modelling work undertaken by CEPA at draft determination stage and further refined the analysis. The detailed model results used at final determination are documented below. We also provide a separate technical analysis which provides a complete and thorough assessment of NIE Networks' special factor claims.

Resubmission of NIE Networks data since draft determination

- 5.46 It is important to note that since the publication of our draft determination, NIE Networks have conducted quality assurance of their 2015/16 data and found a number of errors that resulted in significant revisions to NIE Networks' financial RIGs and C1 matrix data in 2015/16.
- 5.47 NIE Networks submitted their revised cost data to the Utility Regulator on the 3 May 2017, which left limited time for us to act on the new data before the publication of the final determination. After careful consideration, and despite the limited time remaining, we decided to take the new data submitted to us by NIE Networks into account for this final determination. However, and as detailed in Chapter 4 – outcomes, outputs and KPIs, it is imperative that NIE Networks improve their data quality assurance processes. This will begin with the submission to this office of a Data Assurance Plan, whose aim will be to ensure the risk of such material data revisions are avoided in future.
- 5.48 Unless data assurance becomes satisfactory during the RP6 period, prior to RP7, the Regulator will consider the appropriate next steps which include undertakings and putting less weight on NIE Networks' submissions in arriving at future decisions.
- 5.49 The 2015/16 data revisions have had two major impacts:
- Firstly, IMF&T and Indirect expenditure in 2015/16 as reported in NIE Networks' financial RIGs data was significantly higher than the equivalent figure used in the draft determination, which was caused by a significant error in the allocation of costs between direct and IMF&T costs by NIE Networks. This is important due to the fact that this figure is used to set NIE Networks' baseline IMF&T and Indirect allowance during RP6. However, the rectification of this error did not affect the data used for benchmarking of NIE Networks with GB DNOs. As a result, the rectification of this allocation error in NIE Networks' financial RIGs data would result in an increase in NIE Networks' baseline IMF&T and Indirect allowance during RP6.
 - Secondly, NIE Networks found that some costs had been incorrectly labelled by members of its staff, and as a result had been wrongly allocated to IMF&T and Indirects instead of capex. This error had an impact on NIE Networks' financial RIGs data and also on the data source used to benchmark NIE Networks with GB DNOs. The rectification of these allocation errors resulted in a decrease in NIE Networks' outturn 2015/16 IMF&T and Indirect expenditure during 2015/16 in both data

sources. All else being equal, the expected impact of these changes on NIE Networks' baseline IMF&T and Indirect allowance during RP6 is ambiguous.²⁴

- 5.50 As mentioned, the second impact resulted in NIE Networks' benchmarking data being amended from the draft determination. As a result, the Utility Regulator was required to make a decision on whether we should update the benchmarking analysis using the new data provided by NIE Networks given the very limited amount of time available until the publication of the final determination.
- 5.51 After close consideration, we decided to update the benchmarking analysis conducted at the draft determination. However, we think it is important to note that while the rectification of these data errors is appreciated, the fact that NIE Networks has only identified these errors at this late stage of the process has only served to reduce the Utility Regulator's confidence in the accuracy of the data provided by NIE Networks further. These concerns are outlined in more details in Annex D, and are reflected in the approach we have taken to assess the relative efficiency of NIE Networks with GB DNOs in this final determination.
- 5.52 Our concerns regarding the accuracy of NIE Networks' data has been exacerbated further due to the following reasons:
- NIE Networks have decided not to quality assure the other years of data used within the benchmarking analysis (2012/13, 2013/14 and 2014/15) as they stated that this was not feasible given the time constraints and the requirement to manually verify each cost centre coding of expenditure.
 - During site visits to NIE Networks offices we have found that the RIGs process undertaken by NIE Networks is of a very manual nature and extremely susceptible to human error. In addition, given the significant RIGs expenditure allowance provided to NIE Networks during RP5, we question whether the manual nature of the RIGs process is an exogenous decision by NIE Networks or an inefficient decision. We consider it reasonable to expect that with the £1m RIGs allowance given to NIE Networks by the CC to spend during RP5, that this allowance could have been more effectively spent, for example, by automating the RIGs process rather than employ individuals to manually input, manage and reconcile RIGs data. The former is likely to have required a higher initial investment but would have resulted in lower labour costs, significant improvements in data quality/ accuracy, and would have been in the best interests of consumers.
 - On a related point, the RP5 CC final determination stated that NIE Networks had sought an annual allowance of £100k, "for the cost of a data assurance audit as well as any reporting requirements not included in Ofgem's RIGs". However, given the errors NIE Networks have spotted in the 2015/16 data this close to the final

²⁴ The baseline is based on 2015/16 outturn IMF&T and Indirect expenditure. Thus, all else being equal, a decrease in outturn IMF&T and Indirect expenditure would result in a decrease in NIE Networks' baseline IMF&T and Indirect allowance during RP6. However, at the same time, the decrease of 2015/16 outturn IMF&T and Indirect expenditure is likely to improve the relative efficiency of NIE Networks compared to GB DNOs. As a result, the impact of this data change on NIE Networks' baseline IMF&T and Indirect RP6 allowance is ambiguous.

determination, it was not clear to the Utility Regulatory whether NIE Networks had undertaken any annual data assurance audit(s) throughout RP5 so we put this question to the company.

- The company response to our query highlighted a number of internal audit “advisory notes” for RIGs preparation, which resulted from a sample audit of sign off documents across the population of the RIGS Templates. This evidence contrasts with the reasons the company provided the Utility Regulator with for their 2015/16 data revisions, which supported company recommendations to conduct a more wide ranging reconciliation between costing data and systems. It is hoped that this will ensure incorrect coding of cost information is identified early enough to remedy prior to submission to the UR.

UR’s Modelling Approach at Final Determination

Introduction

5.53 For the final determination, the Utility Regulator has carefully considered all consultation responses following the publication of the draft determination and have refined our modelling approach accordingly.

5.54 Any changes we have made are discussed in detail in the sections below, but the most significant points of departure from the modelling approach adopted in the draft determination are summarised below:

- The inclusion of NIE Networks’ resubmitted cost data in our benchmarking data set.
- The addition of an “overhead line %” explanatory variable in the top-down IMF&T and Indirect models, and in the middle-up NOCs and CAI benchmarking models, to capture the impact of differences in network topology on IMF&T and Indirect costs. This change in approach is the result of careful consideration of NIE Networks’ special factor claims.
- The inclusion of the Utility Regulator’s chosen middle-up models in the set of benchmarking models used explicitly to assess the relative efficiency of NIE Networks compared with GB DNOs. This is in contrast to the draft determination where our middle-up models were only used as a sense check. This change in approach is the result of careful consideration of consultation responses on this issue by NIE Networks and CCNI.
- We have made the decision to place 75% weight on our “no local labour adjustment” models and 25% weight on our “local labour adjustment” models. This is in contrast to the approach taken at draft determination, where we placed 50% weight on our “no local labour adjustment” models and 50% weight on our “local labour adjustment” models. This change in approach reflects careful consideration of consultation responses on this issue by NIE Networks and CCNI.
- For final determination we have ascertained a triangulated estimated efficiency gap figure of 2.31%. However, the Utility Regulator has decided not to apply this efficiency discount to NIE Networks’ base costs rolled forward from 2015-16. This

provides NIE Networks with significant headroom during the six and a half years of RP6.

- 5.55 In addition to the results of our chosen modelling approach at final determination, for transparency we have also reproduced the analysis conducted by CEPA in their paper “RP6 Efficiency Advice”, which was published alongside the draft determination main document, using NIE Networks’ resubmitted data and the modelling approach taken at draft determination.²⁵ This can be found in Annex B and provides a useful comparison to which the analysis presented in this chapter can be compared to.

GB DNOs as comparators

- 5.56 Following the approach taken by the CC at RP5, we benchmark NIE Networks with GB Distribution Network Operator companies (DNOs).
- 5.57 The electricity network in Northern Ireland is made up of a transmission and a distribution component.²⁶ NIE Networks has responsibility for the running of its distribution system, which covers lines of less than 110kV. However due to EU requirements for the independence of certain activities, NIE Networks shares the responsibilities of running its transmission network. Transmission related responsibilities are split between NIE Networks and a separate body, the System Operator for Northern Ireland (SONI).
- 5.58 In GB there are 14 DNOs which own and operate electricity distribution network assets within a defined geographical area. Allowances for the regulatory period 2015/16 to 2023/24 have been set by Ofgem within their RIIO-ED1 price control. GB DNOs typically cover the network from 132kV down to the low voltage network. Electricity transmission services are provided by three onshore transmission operators (TOs), and are independent from DNOs. For the purposes of this benchmarking exercise, we focus on GB DNOs.
- 5.59 The table below summarises the characteristics of UK electricity distributors (customer numbers, length of network and units distributed) and actual totex in 2015/16, as published in Ofgem’s RIIO-ED1 Annual Report 2015/16.
- 5.60 In terms of customers served, the smallest DNO (SSEH) serves around 760,000 customers, while the largest (EPN) serves around 3,600,000 customers. NIE Networks operates towards the lower end of this range, with approximately 855,000 customers, but still comparable to the GB DNOs in terms of scale. With around 17.6 customers per km of network, NIE Networks is one of the most rural DNOs, with LPN from London clearly the most urban, having 62.6 customers per km line of network.

²⁵ See Annex B of the draft and final determination.

²⁶ Transmission in Northern Ireland relates to electricity lines of 110,000 volts or greater (275kV, 110kV). Distribution in Northern Ireland relates to lines of less than 110,000 volts (33kV, 11kV, 6.6kV and below), all the way down to the service cable that goes to the meter in homes and businesses.

Company	Actual totex	Customer numbers	Line length (km)	Customers / km line
EMID	£308m	2,622,449	72,976	35.9
ENWL	£244m	2,381,080	57,946	41.1
EPN	£281m	3,599,594	97,261	37.0
LPN	£189m	2,311,906	36,933	62.6
NPGN	£188m	1,596,374	41,244	38.7
NPGY	£248m	2,291,522	53,874	42.5
SPD	£192m	2,002,257	57,984	34.5
SPMW	£239m	1,503,914	46,844	32.1
SPN	£173m	2,281,009	52,841	43.2
SSEH	£151m	762,398	48,332	15.8
SSES	£276m	3,016,250	78,012	38.7
SWALES	£142m	1,122,920	35,612	31.5
SWEST	£223m	1,590,050	50,248	31.6
WMID	£312m	2,463,217	64,269	38.3
GB Average	£226m	2,110,353	56,741	37.2
NIE Networks	£176m	854,580	48,659	17.6

Table 5: Background DNO company information (2015/16) ²⁷

- 5.61 Overall, NIE Networks is one of the smallest distributors in the UK, and is similar in terms of size and network characteristics as Scottish Hydro Electric Power Distribution (SSEH) who operate in the North of Scotland. However, NIE Networks is comparable to the GB DNOs in terms of scale.
- 5.62 It is also important to compare companies in terms of quality of service (i.e. reliability). While a company may have lower day-to-day costs than another, it is important to ensure that such performance is not at the expense of safety, customer service and reliability.
- 5.63 The Utility Regulator has therefore compared NIE Networks' customer service performance with GB DNOs. With regards to network reliability and resilience, there are three reliability measures that can be compared across companies:

²⁷ GB totex data from page 8 of Ofgem's RIIO-ED1 Annual Report 2015/16.

<https://www.ofgem.gov.uk/publications-and-updates/riio-electricity-distribution-annual-report-2015-16>

Customer numbers and network length taken from each DNO's published key summary information.

- The number of customer interruptions per 100 customers (CI)
- Customer minutes lost (CML)
- Average restoration time per customer interruption (CML / CI)

5.64 We examine four years of GB DNO and NIE Networks performance in terms of the three metrics described above (2012/13 to 2015/16) and the results are shown in the graphs below.²⁸ It should be noted however, that outages of more than three minutes are included in the GB definition. This is different from NIE Networks where CI and CML numbers are recorded after one minute.

5.65 In addition, it is also the case that some differences exist on severe weather events between Northern Ireland and Great Britain. In order to ensure a fairer comparison we exclude severe weather events from company data. These events must meet pre-determined thresholds to be excluded from final performance values.

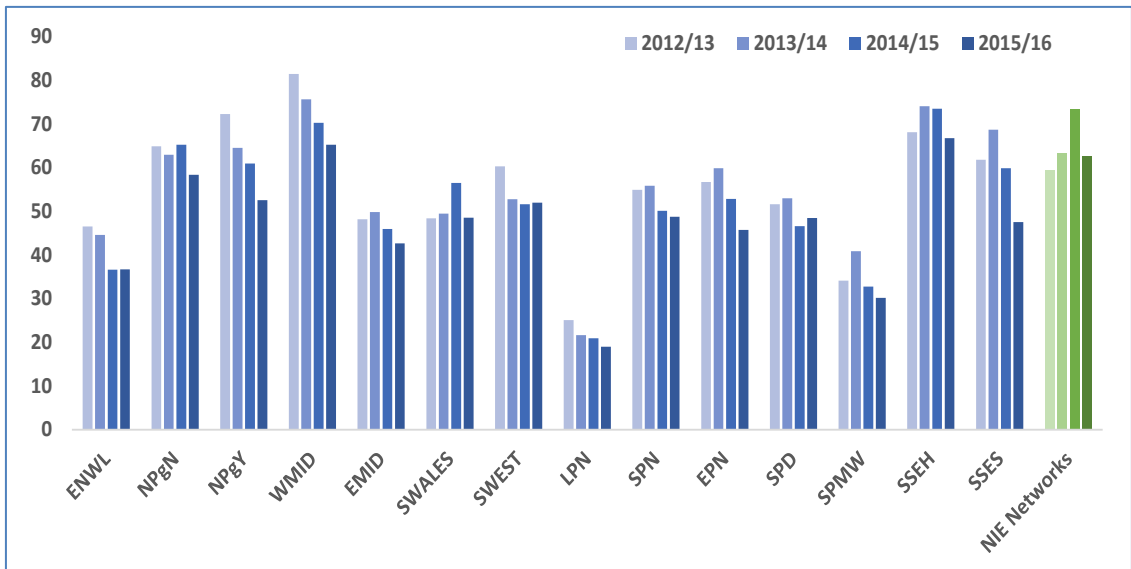


Figure 8: Customer interruptions per 100 customers – 2012/13 to 2015/16

5.66 In the four years of data examined (2012/13 to 2015/16), NIE Networks faced a similar number of customer interruptions per 100 customers as WMID and SSEH. In contrast, LPN who operate in London, experience the least number of customer interruptions of the 15 DNOs, averaging only 22 customer interruptions per 100 customers over the period.

²⁸ GB CI and CML data from Ofgem’s RIIO-ED1 Annual Report 2015-16 and DPCR5 Company Performance Report 2010-2015.
<https://www.ofgem.gov.uk/publications-and-updates/riio-electricity-distribution-annual-report-2015-16>
<https://www.ofgem.gov.uk/publications-and-updates/electricity-distribution-company-performance-2010-2015>

5.67 Overall, customer interruptions in 2015/16 range from 19 (LPN) to 67 (SSEH) per 100 customers.

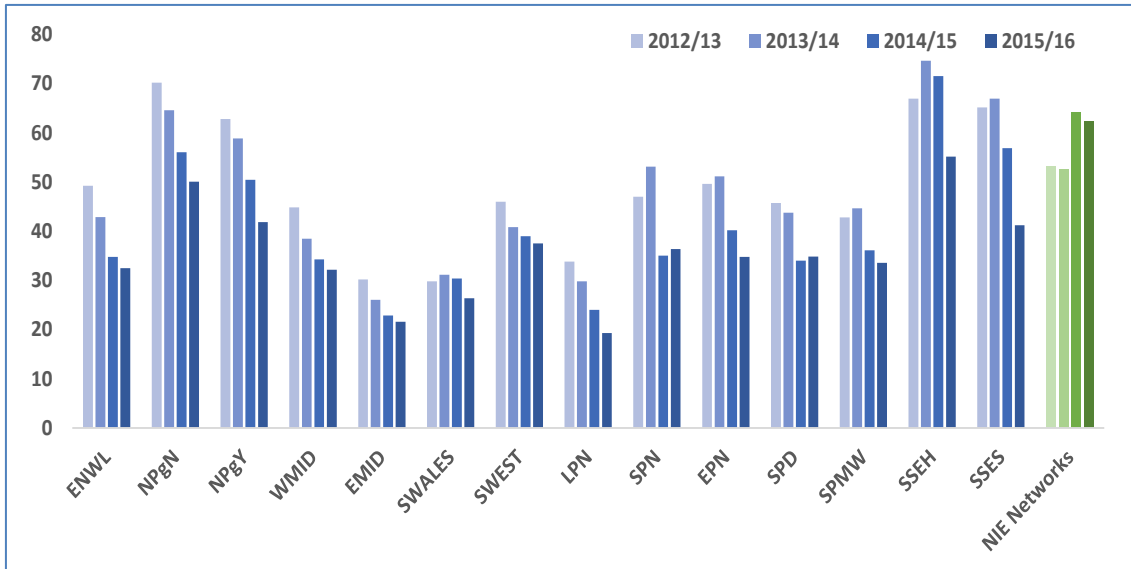


Figure 9: Customer minutes lost – 2012/13 to 2015/16

5.68 In terms of customer minutes lost over the period 2012/13 to 2015/16, NIE Networks faced a similar figure as SSEH and NPgN. Overall, CML in 2015/16 range from 19 (LPN) to 62 (NIE Networks).

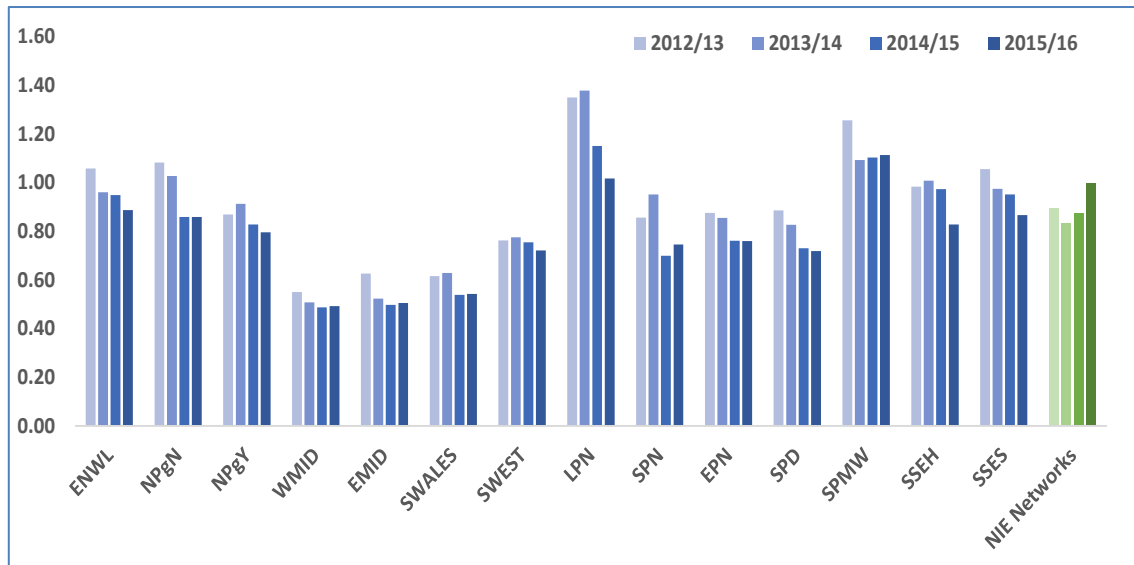


Figure 10: Customer minutes lost per customer interruption – 2012/13 to 2015/16

5.69 Ofgem at RIIO-ED1 used CML per CI, a proxy for average restoration time, to benchmark DNOs in terms of reliability performance. Over the period 2012/13 to 2015/16, NIE Networks' average restoration time was comparable to GB DNOs. NIE

Networks were ranked 9th in 2012/13, 6th in 2013/14, 10th in 2014/15 and 13th in 2015/16.

5.70 Generally speaking, from the analysis we have undertaken, we consider that comparing the relative costs of NIE Networks with the GB DNOs to be entirely appropriate from a service quality point of view and from a scale point of view. Differences in scale can be appropriately controlled for in the benchmarking by including scale variables within the econometric models (i.e. customer numbers, network length and units distributed). In addition, while there are naturally differences in the levels of service between all the DNOs used in the benchmarking, none of these differences are so material as to invalidate any cost comparison.

5.71 It is important to note, however, that while in general terms the level of service performance is comparable between NIE Networks and GB DNOs, the standards and policies to which NIE Networks operate are slightly different. Examples include:

- **Guaranteed standards** - NIE Networks currently operate at a 24 hour standard during RP5 whereas GB DNOs operated to a 18-hour standard at DPCR5 and now to a 12-hour standard at RIIO-ED1.
- **Consumer engagement** –higher levels of consumer engagement are conducted by GB DNOs on average than by NIE Networks.
- **Innovation** –higher innovation expenditure by GB DNOs than NIE Networks, on average.
- **ESQCR** – GB DNOs currently operate to higher ESQCR standards than NIE Networks.

5.72 It is important to note that the four factors listed above could arguably warrant a negative special factor adjustment(s) within CEPA's comparative benchmarking, i.e. increase NIE Networks' modelled costs within the benchmarking exercise. This will be explored later in this Chapter.

Data sources

5.73 NIE Networks have populated the Utility Regulator's RP6 Business Plan Templates (BPTs) which have been structured by the Utility Regulator to facilitate benchmarking with GB DNOs. In addition, the Utility Regulator has also relied upon NIE Networks' Regulatory Instructions and Guidance (RIGs), which have been populated with data up to 2015-16. Additional bespoke data has been provided by NIE Networks when requested by the Utility Regulator during the business plan query process.

5.74 We are grateful to Ofgem (the Regulator of the gas and electricity industries in Great Britain) for providing the Utility Regulator with the comprehensive data which allows us to undertake this benchmarking analysis. Ofgem provided the Utility Regulator with detailed data used in their RIIO-ED1 determination, which included historic outturn data and company forecasts. Ofgem also provided company RIGs data from the 14 DNOs, which

included one additional year of outturn data (2015/16). As a result, we had access to 6 years of historical DNO data from 2010/11 to 2015/16.

- 5.75 For our RP6 benchmarking models we decided not to rely upon RIIO-ED1 forecasts or allowances but solely rely upon historic outturn data. The use of historic data is the same approach as was adopted by the Utility Regulator during its NI Water price controls (PC10, PC13 & PC15) as well as in GD17. This is in contrast to NIE Networks' benchmarking analysis, which frequently used forecast data.
- 5.76 By focusing on historic data we ensure that allowances for RP6 are set on what should be currently technically achievable when it comes to actual efficiency levels, rather than relying upon forecasts which may prove to be mistaken in hindsight. Correlations between dependent and independent variables and the resulting coefficients will arguably be more reliable as it will be based on actual cost relationships evident in the electricity industry.
- 5.77 Throughout this benchmarking exercise our preference has been to use a balanced panel. As a result, we have only used the most recent four years of available GB data within our benchmarking analysis (2012/13 to 2015/16). As we have 15 DNOs (including NIE Networks), pooling across the four years means we have a sizeable sample of 60 observations. The Utility Regulator considers this is a long enough time-series of historic data to allow a robust set of models to be estimated for the basis in which it is being used.
- 5.78 As mentioned, NIE Networks resubmitted cost data following the publication of the draft determination, which we have incorporated into our benchmarking analysis accordingly.

Data adjustments

- 5.79 We have made a number adjustments to the data to account for: differences in the scope of activities / assets; non-controllable costs; atypical costs; re-allocation of costs; DNO-specific costs and other regional factors. These adjustments are made in advance of benchmarking, and are necessary in order to avoid differences between companies that are not related to inefficiency.
- 5.80 These adjustments are summarised below but more detailed information can be found in CEPA's RP6 Efficiency Advice Paper in Annex B to the draft determination.

Differences in the scope of assets

- 5.81 In GB, there are 14 DNOs and 3 TOs. There are 12 DNOs in England and Wales which operate networks with voltages up to and including 132kV. National Grid operates a separate transmission network at voltages of 275kV and 400kV. Scotland has two regional DNOs, operating networks with voltages up to 33kV. Voltages of 132kV and above are categorised as transmission in Scotland.

5.82 Therefore, in order to ensure a like-for-like comparison with GB DNOs, the Utility Regulator allocates NIE Networks' 110kV transmission related costs to distribution. This essentially means that we compare NIE Networks' 110kV and below network costs with GB DNOs' 132kV and below network costs (except Scotland). This is adopting a similar approach as the CC undertook during their determination of RP5. In effect, this means we exclude NIE Network's 275kV transmission costs from the benchmarking.

Differences in the scope of work undertaken

- 5.83 NIE Networks incur costs associated with metering but GB DNOs do not. As a result, we have excluded metering costs, market opening costs, and indirect costs associated with metering from NIE Networks costs. For similar reasons, we exclude costs reported by GB DNOs related to non-distribution activities.
- 5.84 There are also a number of DNO specific costs that are incurred by a single, or small number, of DNOs, which we have excluded. These costs include: regional factors applied by Ofgem at RIIO-ED1 for London Power Networks (LPN), SSEH and Scottish Power Manweb (SPMW); streetworks costs; ETR 132 tree cutting costs; and "Network Operating Costs (NOCs) other".
- 5.85 The Utility Regulator has not excluded wayleaves payments from our benchmarking. At RP5 the CC noted that NIE Networks faces trade-offs between the costs of wayleaves payments to landowners (which were aligned with Scottish Power), administrative costs of its wayleaves payment process and the benefits of landowners' goodwill. Taking these factors into account, the CC considered that the rates paid by NIE Networks is a controllable choice by the company and included these costs in its IMFT and Indirects models. The Utility Regulator has taken the same approach in this final determination.
- 5.86 However, it is important to note that in NIE Networks' consultation response to our draft determination, the company argued that the high proportion of overhead lines in their network means they incur higher wayleaves costs than a DNO with a low proportion of overhead lines in their network. The Utility Regulator has taken into account NIE Networks' argument and have adjusted our modelling approach accordingly for final determination by adding an explanatory variable in our benchmarking models that captures the proportion of overhead lines in the network. More details are provided in the special factor section below and in Annex D.

NIE Networks' atypical costs

- 5.87 It is important to exclude any one off atypical costs so that the resulting efficiency gap represents a true reflection of relative cost performance. Taking this into account NIE Networks were asked to submit any atypical IMF&T and Indirect cost items incurred during RP5 within their benchmarking submission to the Utility Regulator for RP6.
- 5.88 Each potential atypical cost has to be assessed by the Utility Regulator to ascertain whether it is appropriate to be included or excluded from the models. NIE Networks submitted two atypical cost claims within their submission: costs associated with the

Competition Commission referral and costs associated with the North-South Interconnector. We accepted both claims, and hence excluded these costs from the benchmarking.

- 5.89 Furthermore, we have excluded atypical severe weather costs from our benchmarking since severe weather event costs will differ significantly across time and across companies. We have arrived at a separate allowance for atypical severe weather costs for RP6, which is discussed in Chapter 6 below.

Other cost exclusions – rates, licence fees & pension deficit repair costs

- 5.90 While the majority of firms will incur expenditure such as rates, licence fees and pension deficit repair costs to some degree, we have excluded these costs from our benchmarking. For clarity, ongoing pension costs are included within the IMF&T and Indirects base costs so that it is only those pension deficit repair costs which are given separate treatment within our benchmarking analysis.

Re-allocation of costs

- 5.91 A share of indirect opex costs incurred by NIE Networks are allocated to connection activities, which are treated outside of the price control as connection costs are funded through customer connection charges. Compared to GB DNOs, NIE Networks appears to be allocating a relatively high proportion of indirect costs to connections, with a noticeable step-change in the allocation rate in 2014/15. NIE Networks have stated that this is caused by a ramp up in connection work. As a result, if we conduct benchmarking on a post-allocation basis this would improve NIE Networks' efficiency performance as a larger share of indirect costs would be excluded from the assessment.
- 5.92 To account for these effects CEPA have run models on both a pre- and post-allocation basis. This means we have run models on a gross cost basis, where we do not allocate a proportion of indirect costs to connections, and on a net cost basis, where we do allocate a proportion of indirect costs to connections. This is similar to the approach taken by the CC at RP5.
- 5.93 There are advantages and disadvantages of both approaches, as were highlighted by CC at RP5. The pre-allocation approach does not create any perverse incentive to inefficiently allocate indirect costs to connections. On the other hand, it requires the modelling of both regulated and unregulated costs, which in turn requires the Utility Regulator to make a gross to net adjustment when applying the catch-up efficiency factor to baseline costs. Conversely, the post-allocation approach focuses on regulated costs and does not require us to determine the share of opex to be allocated to connections. However, this approach could create distortions in the relationship between costs and costs drivers, and has the potential to perversely incentivise NIE Networks to allocate a large proportion of indirect costs to connections. By running models on a pre- and post-allocation basis we have effectively managed the trade-off between using both approaches.

- 5.94 In NIE Networks' consultation response to our draft determination, the company stated that during the benchmarking period connections were not contestable in Northern Ireland, whereas the connections market was contestable in GB. As a result, NIE Networks claim that they carry out more connections activities relative to GB DNOs. To account for this NIE Networks have argued that the Utility Regulator should either place 100% on pre-allocation models, or apply a special factor claim to pre-allocation modelling results. This is in contrast to the approach we decided to take at the draft determination where we applied a 50% weight to pre-allocation models and a 50% weight to post allocation models. In Annex D we have carefully considered the arguments put forward by NIE Networks but have opted to remain with our approach at draft determination.
- 5.95 In addition to the arguments presented in Annex D, we were somewhat surprised by NIE Networks' response with regards to this issue given NIE Networks did not express any concerns with the pre-allocation approach before the publication of our draft determination. In previous workshops with the Utility Regulator, NIE Networks, CEPA and NERA; NIE Networks and NERA had expressed their preference to apply a weighting of 100% to pre-allocation models and discount all post-allocation models and results.
- 5.96 NIE Networks' vehicle costs differ from those of GB DNOs as they lease all of their vehicles whereas GB DNOs have a mixture of leasing/buying. To account for this difference we have included DNO non-op capex relating to vehicles in closely associated indirect (CAI) costs. This is a similar to the approach taken by Ofgem at RIIO-ED1. Similarly, we have allocated non-op capex relating to property to business support property management costs.
- 5.97 However, we have not allocated non-op capex relating to IT & Telecoms and Small Tools, Equipment, Plant & Machinery (STEPM) as this expenditure is lumpy, which makes comparisons across time and companies difficult. Alternatively, non-op capex relating to IT & Telecoms is being assessed separately by Gemserv,²⁹ and we propose to apply the derived catch-up efficiency factor from our benchmarking to 2015-16 STEPM baseline costs. Both of these decisions were also taken in the draft determination.

Regional wage adjustment

- 5.98 In order to ensure that companies are not unfairly advantaged by being situated in a low-cost region for labour or disadvantaged by being situated in a high-cost region we apply a regional wage adjustment (RWA) to each company's costs in advance of benchmarking.
- 5.99 Regional wage and price variations are taken into account by a number of economic regulators of network companies, including by Ofwat (PR14) and Ofgem (RIIO-GD1 and

²⁹ See CEPA's Regional Wage Adjustment paper in Annex A.

RIO-ED1). The CC determination of NIE Networks for RP5 made a wage adjustment between the different companies used in its benchmarking, including NIE Networks.

5.100 In PC15, in assessing NI Water's capex programme, the Utility Regulator undertook a regional price adjustment which took into account lower procurement prices in Northern Ireland than in England and Wales. For our opex efficiency models, we implemented a negative special factor upon NI Water to take account of lower wage levels in Northern Ireland for PC10, PC13 and PC15. Similarly, a regional wage adjustment was used in GD17 by the Utility Regulator to adjust the opex costs for the GDNs which were benchmarked.

5.101 The Utility Regulator has been advised by CEPA on the various approaches which can be undertaken with regards to applying a RWA. We have accepted CEPA's advice and used their baseline approach to provide a central estimate of NIE Networks' efficiency levels. CEPA's advice to the Utility Regulator is to adopt a regional wage adjustment for NIE Networks of 0.877 (i.e. -12.3%). This means that we would expect NIE Networks' labour costs on average to be 12.3% lower than the UK average. While Northern Ireland has a negative RWA, London for example has a positive RWA, as it is widely recognised as a high cost region.³⁰

5.102 CEPA's baseline RWA is calculated under the following assumptions:

- 12 region split;
- 2-digit SOC code;
- Mean hourly wages excluding overtime; and
- Approach to averaging: first apply the SOC code weights; then take the ratio between the region in question and the UK; and then average across time (SOC; x/UK; years).

5.103 In NIE Networks' response to the Utility Regulator's draft determination, the company and NERA have identified a number of elements of CEPA's baseline RWA approach that they consider fails to reflect differences in the labour costs NIE Networks faces relative to DNOs in other parts of the UK:

- The choice of SOC code level (2, 3 or 4 digits);
- The inclusion or exclusion of overtime; and
- The averaging approach.

5.104 We consider that CEPA has sufficiently supported their arguments for arriving at their recommended approach in their regional wage paper (see Annex A: CEPA Regional

³⁰ A positive RWA will mean that its opex costs are adjusted downwards for the models.

Wage Adjustment), and therefore we have not revised our regional wage approach with regards to the above issues from the draft determination.

- 5.105 It is also important to reiterate that in addition to adopting CEPA's preferred approach as a baseline, the Utility Regulator has been guided by the CC's determination for NIE Networks in RP5 where they recognised that there were a number of potentially valid approaches to wage adjustment which could be undertaken.

*"There is no single 'correct' method for making a wage adjustment to the costs of NIE and GB DNOs as part of benchmarking analysis. Some methods would use relatively detailed or granular wage data on the type of occupations that are relevant to NIE's business. But the sample size for this data is quite small and we have some concerns about its accuracy. However, if more aggregated data is used, there is a greater risk that estimation results are influenced by wage data for occupations that are not relevant to NIE's activities."*³¹

- 5.106 The CC built upon this reasoning in its RP5 determination for NIE by producing econometric results from a range of different wage adjustment methods, rather than relying upon one single method. As a sense check, we have also ran a selection of alternative regional wage approaches in our pre-modelling adjustments, also provided by CEPA. This provides the Utility Regulator with a range of efficiency estimates and ensures that the Utility Regulator has been reasonable in considering sensitivities of the regional wage adjustment on the benchmarking results.
- 5.107 The next step of the process was to decide how the RWA should be applied to company cost data. We have considered the following two issues closely: calculating the quantum of labour costs to be adjusted, and adjusting for locally incurred costs.

Calculating the quantum of labour costs to be adjusted

- 5.108 The two sub-options to choose from are: using actual company labour costs; or using notional weightings applied to cost categories to determine labour costs. Based on CEPA advice, and following CC and Ofgem precedent, we have used a notional approach, which avoids any potential errors or bias in the information submitted by each individual company.

Adjusting for locally incurred costs

- 5.109 Some labour costs, e.g. cost centres, can potentially be located outside of a company's operational area or can be imported from other areas. In theory, competitive pressures should therefore eliminate price differentials across regions. At RIIO-ED1, Ofgem accounted for this by applying a percentage to the amount of labour costs in each cost category that need to be carried out locally. However, the CC did not consider this at RP5, and instead applied the RWA to all indirect labour costs.

³¹ Paragraph 8.66 of CC RP5 Determination.
https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

5.110 The Utility Regulator sought advice from CEPA on this issue. While recognising the logic behind Ofgem’s approach, CEPA considered it difficult to pinpoint the total proportion of labour that can realistically be procured nationally by DNOs. Furthermore, CEPA were unable to find the exact source of Ofgem’s assumptions and, as a result, were unable to duplicate Ofgem’s analysis. As a result, CEPA recommended, in the absence of further evidence, applying the regional labour adjustment to all labour costs to avoid potentially spurious accuracy.

5.111 On the 10 January 2017, NIE Networks and NERA sent the Utility Regulator a response to CEPA’s RWA paper, which expressed their concerns with CEPA’s recommendation with regards to the application of the RWA to all labour costs:

“In addition to controlling for the fact that labour only represents a part of DNOs’ total costs, it is also important to control for the fact that some categories of labour are effectively sourced from a national labour market. In essence, staff could be located anywhere in the country (or even abroad). Hence, DNOs in low-wage areas, like Northern Ireland, do not enjoy a cost savings relative to other DNOs for those employees. Applying the RLA to DNOs’ entire labour share unfairly penalises those DNOs in low-wage regions and rewards DNOs in high-wage regions.”³²

5.112 To take into account recommendations from CEPA and NIE Networks, we assessed NIE Networks’ relative efficiency using three different approaches in relation to a local labour adjustment in our draft determination:

- **CEPA Baseline:** No local labour adjustment (i.e. apply RWA to all labour costs)
- **Local labour sensitivity 1:** Apply Ofgem’s RIIO-ED1 local labour adjustment to GB DNOs’ and NIE Networks’ costs.
- **Local labour sensitivity 2:** Apply Ofgem’s RIIO-ED1 local labour adjustment to GB DNOs’ costs only.

5.113 The local labour sensitivities are discussed further in the sections below.

5.114 Further details on our regional wage adjustment approach are discussed in CEPA’s regional wage paper, which is included in Annex A of this final determination.

5.115 The local labour adjustment was discussed in length by NIE Networks and CCNI in their responses to our draft determination. CCNI and their expert consultants’ Economic Consulting Associates (ECA) did not consider that a sufficient case had been made to apply a local labour adjustment to NIE Networks’ costs. Accordingly, they argued that the Utility Regulator should determine the efficiency gap using data with no local labour adjustment. In contrast, NIE Networks reiterated their previous arguments with regards to applying a local labour adjustment in full, and in turn recommended that the Utility

³² NERA, 2017. Response to CEPA’s Regional Labour Adjustment Approach. Prepared for NIE Networks. pp.10-11.

Regulator applies a 100% weight to local-labour adjustment models. We have carefully considered both responses and have adapted our approach to triangulation accordingly by applying a 75% weight to “no local labour adjustment” models and 25% weight to “local labour adjustment” models.

5.116 The rationale for why the Utility Regulator has decided to change its approach for the final determination is discussed in detail below.

Modelling Approach and Results

5.117 CEPA have advised the Utility Regulator on the best econometric models to use in the benchmarking of NIE Networks in RP6. CEPA’s model development methodology followed an iterative process of model refinement that considered variations in the spectrum of costs assessed (i.e. the disaggregation of models) and the cost drivers used.

Disaggregation of models

5.118 CEPA’s main focus has been on testing top-down and middle-up IMF&T and Indirect models, but they also tested more disaggregated models used by Ofgem at RIIO-ED1 (tree cutting and faults) and totex models:

- i. Top-down IMF&T and Indirect models
- ii. Middle-up models: network operating costs (NOCs), closely associated indirects (CAI), business support, load related capex and non-load related capex.
- iii. Total capex models
- iv. Totex models
- v. Disaggregated models: tree cutting and faults.

Cost drivers

5.119 CEPA tested the inclusion of different cost drivers that are often used to explain differences in costs across electricity distribution companies. These are described in the table below:

Drivers	Rationale
Customer numbers	Number of customers connected (i.e. connections). This is a scale variable as it is a measure of total consumer base.
Energy throughput	This is an output measure and related to both scale of network and network usage.
Network length	Total length of lines (not including dual circuits). This is a scale variable as it measures total network length.
Network density	Captures rural vs. urban divide.
Peak demand	This is a scale variable as it is a proxy for maximum system capacity. It is also an output variable as it is a measure of yearly peak demand.
Mean Equivalent Asset Value (MEAV)	Measures the overall size and complexity of the network.
Composite scale variables (CSV)	Used by CC and Ofgem, these weight together various cost drivers together. CEPA use the CSV used by the CC at RP5, which applies a 50% weight to network length, a 25% weight to customer numbers, and a 25% weight to units distributed (or energy throughput).
Spans cut and spans inspected	Directly linked to the number of trees cut and inspected.
Total number of faults	Driver of fault expenditure.
MACRO CSV	Top-down totex cost driver used by Ofgem in RIIO-ED1. This is a CSV which places a weighting on MEAV and customer numbers. The weights are identified by running a regression of totex on MEAV and customer numbers.
Customer minutes lost & number of customer interruptions	Quality of service indicators capturing interruptions to end-customers.

Table 6: CEPA cost drivers

Estimation method

5.120 Following regulatory precedent set by Ofgem at RIIO-ED1 and CC at RP5, we selected Pooled Ordinary Least Squares (POLS) as our primary estimation method.

5.121 However, we also recognise the benefit in testing Random Effects (RE) models that recognise the panel structure of the data. Ofwat used this approach at PR14, and Ofgem tested this approach at RIIO-ED1 (albeit only using POLS to determine allowances).

5.122 For RP6 therefore the UR has also estimated its models using RE techniques, alongside POLS. However we only use the results from Pooled OLS in our modelling analysis and triangulation in our final determination.

Functional form of the cost function

5.123 CEPA have used Cobb-Douglas function forms in all of their final models but they also tested models with the inclusion of quadratic terms to allow for cost elasticities to vary across companies.

5.124 These models did not pass CEPA’s model selection criteria and therefore are not included in the final set of models put forward in this draft determination.

Model selection criteria

5.125 To arrive at a set of preferred models, CEPA have taken the ‘general-to-specific’ approach to refine the set of viable cost drivers used in the models. Within this model refinement process, CEPA have applied a number of statistical diagnostic tests to ensure that the model specifications and estimation method are appropriate for the data being examined.

5.126 CEPA’s model refinement process is summarised in the figure below, and more details are provided in CEPA’s RP6 Efficiency Advice Paper in Annex B of this final determination.

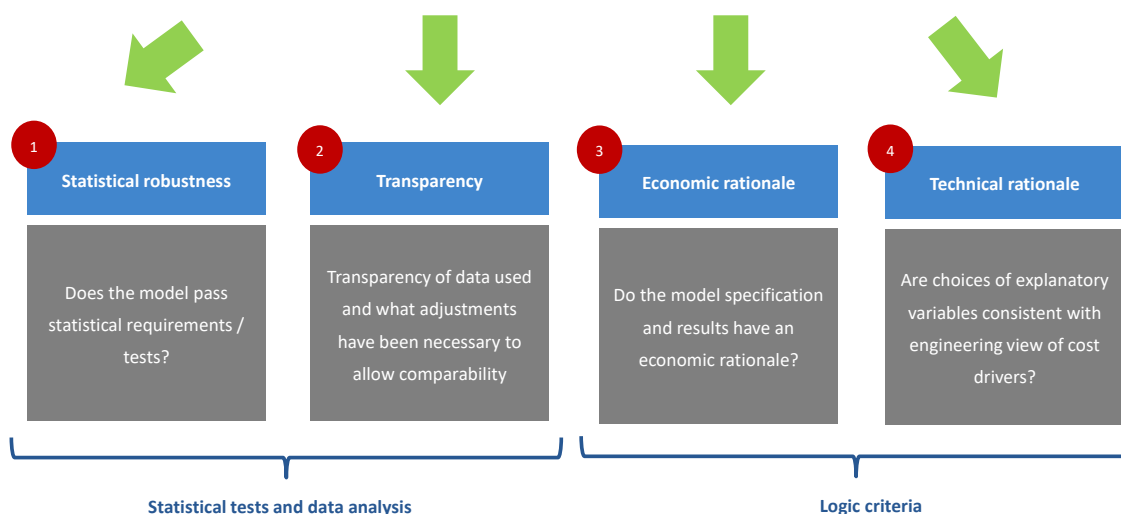


Figure 11: CEPA model selection criteria and estimation

5.127 The result of CEPA’s model refinement process resulted in the list of potential cost drivers being refined to network length, network density, CSV and MEAV.

5.128 In the table below we present a set of three IMF&T and Indirect models we selected from CEPA’s analysis as our final set of IMF&T and Indirect Models for our draft determination. All three models passed CEPA’s model selection criteria.

Model Number	Modelled cost	Cost Driver	Performance against selection criteria	
			Pre-allocation	Post-allocation
1	IMF&T and Indirects (CEPA Preferred)	Network length, Network density	Performs well	
2	IMF&T and Indirects (CC RP5 M4 Model)	CSV, time dummies	Performs well	
3	IMF&T and Indirects (CC RP5 M6 Model)	Length / customer numbers, time dummies	Performs well	

Table 7: RP6 Draft Determination Final IMF&T and Indirect Models

- 5.129 As mentioned in the data adjustments section, we estimate these models on a pre-allocation and post-allocation basis, and under different local labour assumptions.³³
- 5.130 An alternative approach to using total IMF&T and Indirect cost models is to run more disaggregated middle-up models such as NOCs, CAI and Business Support, which sum up to total IMF&T and Indirect costs. The potential benefit of this approach is that we are able to select cost drivers that better reflect these costs on a disaggregated basis than those chosen in the total IMF&T and Indirect models.
- 5.131 At the draft determination, we arrived at a preferred set of NOCs, CAI and Business Support models based on CEPA analysis, which can be used to derive a catch-up efficiency factor for IMF&T and Indirects.³⁴ Similarly, we have run these models on a pre- and post-allocation basis, and under the different local labour adjustments discussed above. All models pass CEPA’s model selection criteria.

³³ At the draft determination, we estimated our chosen set of models under three different local labour assumptions: i) No local labour adjustment; ii) Apply Ofgem’s RIIO-ED1 local labour adjustment to all companies (i.e. Ofgem DNOs and NIE Networks); and iii) Apply Ofgem’s RIIO-ED1 local labour adjustment to Ofgem GB DNOs only. However, we made the informed decision to rely only on options 1 and 2 only when estimating NIE Networks’ relative efficiency. This decision has not changed for the final determination.

³⁴ Utility Regulator’s approach to triangulation across NOCs, CAI and Business Support models is detailed below.

Model Number	Modelled cost	Cost Driver	Performance against selection criteria	
			Pre-allocation	Post-allocation
4	Network Operating Costs (NOCs)	Network length, Network density	Performs well	Performs well
5	Closely Associated Indirect Costs (CAI)	CSV	Performs well	Performs well
6	Business Support Costs	CSV	Performs correctly, Marginally fails the RESET test.	Performs well

Table 8: RP6 Draft Determination NOCs, CAI and Business Support Models

- 5.132 As mentioned, CEPA also ran more disaggregated Ofgem models (tree cutting and faults), capex models, and totex models, but CEPA's and the Utility Regulator's focus has mainly been on IMF&T and Indirect cost models, as discussed above. As a result, model estimation results for these models are not presented here, but are presented in CEPA's RP6 Efficiency Advice Paper in Annex B of this final determination. The results of the models used for triangulation in this RP6 final determination are within Annex N.
- 5.133 At this point it is important to note that we have cognisance of Ofgem's approach to benchmarking at RIIO-ED1. However, Ofgem opted to take a totex approach to benchmarking at RIIO-ED1, which involved placing a 50% weight on totex econometric modelling and 50% weight on disaggregated bottom-up modelling.
- 5.134 After consideration, the Utility Regulator does not feel it is appropriate to use a totex approach to benchmarking and cost assessment at RP6 given that NIE Networks' capex requirements are likely to differ significantly from the capex requirements of GB DNOs.
- 5.135 This was also the viewpoint of NERA, who provided efficiency advice on behalf of NIE Networks. As a result, while CEPA have run Ofgem's disaggregated tree cutting and faults model, we have decided to not rely on Ofgem's approach at RIIO-ED1 but instead use CEPA's independent model development to arrive at a preferred set of top-down and middle-up IMF&T and Indirect models, which are more appropriate for the benchmarking of NIE Networks with GB DNOs. This is different to the approach taken by NERA, on behalf of NIE Networks, who replicated Ofgem's disaggregated bottom-up benchmarking at RIIO-ED1 without undertaking any independent model development.
- 5.136 In NIE Networks' consultation response to the draft determination, the company and NERA disputed our arguments for why we decided not to follow NERA's approach to benchmarking. We have carefully considered these claims but have concluded that the majority of the arguments still hold, and have provided additional explanation below.

UR's reasons for not following NERA's benchmarking approach

- 5.137 NERA's approach fails to gain an understanding of whether alternative models and modelling approaches may be more appropriate for benchmarking NIE Networks. This is especially the case given additional historical data has become available since Ofgem conducted their RIIO-ED1 benchmarking, and cost allocations have also changed for some cost categories, for example, trouble call and asset replacement. Furthermore, many of Ofgem's models used forecast data from DNOs. In contrast, the UR considers that actual data is preferable as it will disclose DNO cost performance levels which are currently technically achievable. While we acknowledge that the relationships identified between costs and drivers by Ofgem at RIIO-ED1 may still hold when using an additional year of outturn data and historical data only, this does not rule out that other approaches may be more appropriate to assess the relative efficiency of NIE Networks compared with GB DNOs. In turn, we consider that the independent model development process conducted by the Utility Regulator has identified models that accurately and sufficiently capture exogenous factors that drive differences in costs between DNOs; avoids using cost drivers that risk capturing a firm's workload inefficiency rather than exposing efficient working practices; and capture the impact of economies of scale on DNO costs.
- 5.138 In addition, NERA have applied a 100% weight to Ofgem's disaggregated modelling while not attempting Ofgem's totex benchmarking, which Ofgem place a 50% weight on, recognising that it may not be appropriate to benchmark NIE Networks with GB DNOs with regards to capex.
- 5.139 It remains the case that NERA have only used a certain proportion of Ofgem's benchmarking / cost assessment approach at RIIO-ED1. As a result, NERA's disaggregated modelling approach ignores the potential benefits of more aggregate top-down/middle up IMF&T and Indirect benchmarking.
- 5.140 In particular, in contrast to disaggregated modelling, total IMF&T and Indirect cost modelling is not influenced by trade-offs between activities and reporting differences, and avoids 'cherry-picking' between different models. In addition, the cost drivers used in our top-down and middle-up models have the distinct advantage that are more exogenous in nature, and are not susceptible to the risk of capturing a firm's workload inefficiency, unlike in NERA's disaggregated models. In addition, the exogeneity of the cost drivers in UR's models mean that the choice of cost drivers should be fair to all DNOs. In contrast, given the potential endogeneity of the cost drivers used in NERA's disaggregated models, the choice of cost driver may be biased unfairly against certain DNOs.
- 5.141 Furthermore, the econometric models used within NERA's benchmarking approach cover a more limited proportion of IMF&T and Indirect costs than our top-down / middle-up benchmarking approach, with the remainder of IMF&T and Indirect costs being modelled using unit cost analysis. Specifically, NERA only use econometric models for

tree cutting, faults and CAI costs.³⁵ An additional point we consider important to make is that the fault model fails the pooling test when using our historical data set. This is an important part of CEPA’s model selection criteria and indicates that panel data methods may not be appropriate given that the relationship between fault costs and fault numbers appears to differ significantly over time.

5.142 Finally, we do not consider it appropriate to use MEAV as a cost driver when assessing the relative efficiency of NIE Networks compared to GB DNOs, which is used on a number of occasions by NERA in their disaggregated models. NIE Networks have found errors within their data submissions to the UR on a number of occasions, including the asset register which is used to calculate MEAV. This resulted in a resubmission of their asset register to the UR on 6th October 2016, which included new 2015/16 data as well as an updated asset register in previous years so that the “V1 – Total Asset Movement” and the “V5 – Asset Register – Age Profile” worksheets reconcile, which was not the case in NIE Networks’ previous submission to the UR.³⁶

5.143 The differences in NIE Networks’ MEAV depending on the source provided by NIE Networks are displayed in the table below. The UR have received three different versions of the “V1 – Total Asset Movement” worksheet from NIE Networks over the course of this process, all of which result in a significantly different MEAV for NIE Networks:

- Source 1: 2016_06_29 RP6 BPT Distribution Cost and Volumes V2.20.xlsx and 2016_06_29 RP6 BPT Transmission Cost and Volumes V2.20.xlsx.
- Source 2: NIEN data reporting template.xlsx prepared by NERA and included as part of NIE Networks’ June 2016 benchmarking submission.
- Source 3: 2016_10_14 Electricity Distribution Cost and Volume RIGs Reporting Workbook.xlsm and 2016_10_14 Electricity Transmission Costy and Volume RIGs Reporting Workbook.xlsx.

NIE Networks MEAV	2011/12	2012/13	2013/14	2014/15	2015/16
Source 1	4,925,554	4,913,648	4,901,742	4,889,837	
Source 2	5,387,215	5,428,979	5,466,603	5,514,343	
Source 3	5,269,343	5,317,012	5,359,317	5,416,391	5,475,725

Table 9: Differences in NIE Networks MEAV depending on source

³⁵ The issue is further exacerbated by the fact that NERA and Ofgem’s faults and CAI models only cover a proportion of trouble call and CAI costs.

³⁶ UR Query URQ056 to URQ061, 6th October 2016.

5.144 The percentage differences in NIE Networks' MEAV between sources are shown in the table below. On average, source 2 MEAV was approximately 11% higher than source 1 MEAV, and source 3 MEAV was approximately 2% lower than source 2 MEAV. These differences exacerbate our concerns with regards to the accuracy of the asset register data provided to the UR by NIE Networks, and in turn significantly reduce our confidence in the accuracy of NIE Networks' MEAV.

NIE Networks' MEAV (% changes between sources)	2011/12	2012/13	2013/14	2014/15
Source 1 to Source 2	+ 9.37%	+ 10.49%	+ 11.52%	+ 12.77%
Source 2 to Source 3	- 2.19%	- 2.06%	- 1.96%	- 1.78%

Table 10: NIE Networks' MEAV - % changes between sources

5.145 These changes resulted in significant changes to NIE Networks' asset register. While we understand and appreciate the manual nature of RIGs and the significant volume of data being managed, for the reasons mentioned above, the UR does not have complete confidence that the asset register data provided to the UR by NIE Networks is 100% accurate. The manual nature of the RIGs process magnifies our concerns regarding data quality further.

5.146 Given the importance of the accuracy of this data in determining MEAV, along with additional reasons presented above and in the draft determination,³⁷ we do not consider it appropriate to use MEAV as a means of assessing the relative efficiency of NIE Networks compared to GB DNOs for RP6. Instead, we rely on alternative cost drivers that are both exogenous and more reliable in terms of accuracy.³⁸

Changes in UR's modelling approach between draft and final determination

5.147 Based on the Utility Regulator's special factor analysis presented in Annex D, we consider that the most appropriate approach to take into account the potential impact of sparsity, rurality and network design (SR&ND) on IMF&T and Indirect costs is to test the inclusion of additional cost drivers in our chosen models selected at draft determination, that would accurately capture the impact on costs of having a high proportion of overhead lines. Specifically, the inclusion of a "proportion of overhead lines" explanatory variable in our models.

5.148 If we instead followed NERA's approach, and applied a special factor adjustment to NIE Networks modelled costs with regards to SR&ND and wayleaves, then this implies that

³⁷ MEAV is calculated based on expert views of unit costs from Ofgem's RII0-ED1 price control, and thus has some degree of discretion in how it is calculated. In contrast, while the weights of the CSV require discretion, their components have regulatory precedent and are individually reliable. In addition, the CC at RP5 opted to use a CSV instead of MEAV as a preferred cost driver in their benchmarking models.

³⁸ As NIE Networks continue to improve the accuracy of their asset register, MEAV may be a more robust explanatory variable in future benchmarking analyses (such as in RP7)

SR&ND do not affect other DNOs. In reality, however, factors such as SR&ND and wayleaves are also likely to affect other DNOs in the benchmarking sample, especially those who also have a high proportion of overhead lines, such as SSE Hydro. Therefore, applying a special factor claim for SR&ND and wayleaves to NIE Networks alone would disproportionately benefit NIE Networks in terms of their relative performance to GB DNOs in the benchmarking sample. We consider this would be an error.

5.149 We consider than an explanatory variable such as the proportion of overhead lines would capture the differences in the operating environments between companies that result in increases in costs that are outside of company control. This is similar to the approach taken by the Australian Energy Regulator (AER) when assessing the relative efficiency of the distribution network service providers (DNSPs), who included the proportion of each DNSP's network that is underground within their econometric benchmarking models to control for differences in operating environments.³⁹ They found the estimated coefficient to be negative and statistically significant, which implies that DNSPs with a high proportion of their network underground have lower costs. Conversely, in our case, by including the proportion of each DNO's network that is overground, we would expect the estimated coefficient to be positive, implying that DNO's with a high proportion of their network over ground incur higher costs for reasons outside company control.

5.150 Furthermore, we assume that as well as capturing differences in network design, a proportion of overhead lines variable would also capture any additional sparsity/ rurality effect that is not already being picked up by the explanatory variables included in the UR's models.

5.151 We define our overhead lines (OHL) variable as:

- $\text{OHL Length \%} = \text{Total OHL Length} / \text{Total Network Length}$

5.152 As discussed extensively in Annex D, having a high proportion of overhead lines in your network may increase IMF&T and Indirect costs for reasons that are, to some degree, outside the control of the company. For example:

- overhead lines require relatively higher amounts of I&M;
- overhead lines have relatively higher fault rates;
- overhead lines require relatively higher levels of tree spans inspected and cut; and
- a high proportion of overhead lines will result in an increase in the volume of wayleaves.

5.153 For these reasons, we expect the proportion of overhead lines variable to be a significant driver of costs in the top-down IMF&T and Indirect models and the middle-up NOCs and

³⁹ Australian Energy Regulator, 2015. Annual Benchmarking Report. Electricity distribution network service providers.

CAI models. There does not appear to be a clear rationale for why SR&ND may increase business support costs, therefore we expect the proportion of overhead line variable to be insignificant in the middle-up business support model.

- 5.154 In summary, our modelling results found our overhead line variable to be a statistically significant driver of IMF&T and Indirect costs, particularly with regards to NOCs and CAI. In addition, the magnitude of the estimated coefficient on 'OHL length %' in all top-down IMF&T and Indirect models and middle-up NOCs and CAI models appears sensible, and the explanatory power of the top-down IMF&T and Indirect models and the middle-up NOCs and CAI models increase significantly with the inclusion of the overhead line variable. However, we have decided to omit the overhead line variable from the middle-up business support model as our modelling results indicated that it was not a significant driver of business support costs. Detailed analysis of our modelling analysis, with and without the inclusion of our overhead lines explanatory variable, is included in Annex D.
- 5.155 As a result of these findings, we have made the informed decision to include the overhead variable in our top-down IMF&T and Indirect models and middle-up NOCs and CAI models, but omit the overhead variable from our middle-up business support model.
- 5.156 Our preferred set of models for this final determination are presented in the table below, alongside each models' performance against CEPA's model selection criteria. Importantly, all models either perform 'well' or 'very well' against CEPA's model selection criteria. A more detailed assessment of UR's models are presented in Annex N.

Model Number	Modelled cost	Cost Driver	Performance against selection criteria	
			Pre-allocation	Post-allocation
1	IMF&T and Indirects (CEPA Preferred)	<ul style="list-style-type: none"> • Network length • Network density • OHL Length % 	Performs very well	
2	IMF&T and Indirects (CC RP5 M4 Model)	<ul style="list-style-type: none"> • CSV • Time dummies • OHL Length % 	Performs well. Marginally fails RESET test but inclusion of OHL variable increases explanatory power of model significantly.	
3	IMF&T and Indirects (CC RP5 M6 Model)	<ul style="list-style-type: none"> • Length / customer numbers • Time dummies • OHL Length % 	Performs very well	
4	Network Operating Costs (NOCs)	<ul style="list-style-type: none"> • Network length • Network density • OHL Length % 	Performs very well	
5	Closely Associated Indirect Costs (CAI)	<ul style="list-style-type: none"> • CSV • OHL Length % 	Performs very well	
6	Business Support Costs	<ul style="list-style-type: none"> • CSV 	Performs correctly. Marginally fails the RESET test.	Performs well

Table 11: UR preferred set of models for final determination ⁴⁰

5.157 We consider that the models we have selected sufficiently take into account the impact of SR&ND on IMF&T and Indirects. As a result, we consider that no SR&ND or wayleaves special factor adjustment is required.

5.158 Furthermore, we consider the inclusion of an overhead lines variable in UR's models sufficiently and appropriately takes into account differences in the operating environments across DNOs that cause increases in the volume of wayleaves. As a result, we do not consider it necessary to assess wayleaves payment costs separately,

⁴⁰ While the UR refers to M4 and M6 Models as having the same specifications as the CC in RP5, the UR has amended the functional form slightly for RP6 final determination by adding the OHL Length % variable.

and maintain our view that it is appropriate and sufficient to include wayleaves payments costs within our benchmarking models.

IMF&T and Indirects modelling results

5.159 Shown in the tables and graphs below are UR's model estimation results for our three chosen IMF&T and Indirect cost models, on a pre- and post-allocation basis, and under the three different local labour assumptions described above.⁴¹

5.160 We also present the following statistical diagnostic test results for each estimated model:

- **Ramsay RESET:** under this test, the null hypothesis is that there are no omitted non-linearities in the model. If we reject the null hypothesis then this is an indication that the model is mis-specified. CEPA place a relatively high weight on the outcome of this test in their model selection process.
- **Normality test:** indicates whether the error term is normally distributed. CEPA placed a low weight on the outcome of this test.
- **Pooling test:** indicates whether the data is appropriate for pooling. If this test fails then this would be an indication that using panel data estimation methods is not appropriate.

5.161 The 2015 and 2016 time dummies are frequently not statistically significant at a 10% significance level. However, this is not detrimental to the model as this only means that the 2015 and/or 2016 model intercepts are not statistically significant from the 2013 intercept.

5.162 Furthermore, all estimated models presented pass all three of CEPA's statistical diagnostic tests, with the exception of Model 2 (CC M4), where the null hypothesis that there are no non-linearities is marginally rejected (Ramsay RESET). However, the explanatory power of the CC M4 model increases significantly with the inclusion of the 'OHL length %' variable; the estimated coefficient on the 'OHL length %' variable is statistically significant and of a sensible magnitude; the normality and pooling tests both pass; and the economic rationale for the inclusion of the 'OHL length %' is clear. For these reasons we deem that Model 2 performs well and is an appropriate model to use to benchmark NIE Networks with GB DNOs.

5.163 For thoroughness, we did test the inclusion of an 'OHL length %' quadratic variable and an 'OHL length %' and CSV interaction variable in the model to allow for varying returns to scale. We found that when we include a quadratic explanatory variable in the model the RESET test still failed and the resulting estimated coefficient on the CSV variable was above one. The latter implies that there are no economies of scale present, which we did not consider to be sensible given other model estimation results. Following on,

⁴¹ The third local labour assumption is where we apply Ofgem's local labour assumptions to GB DNO data only. We do not place any weight on these results, however we present the results to enable comparison between the draft and final determination.

when we included the interaction term in the model, the Ramsay RESET test passed but the resulting estimated coefficient on the CSV was above consistently 1.7 or higher, which we also did not consider to be sensible.

- 5.164 Therefore, taking everything into account, the Utility Regulator made the informed decision to include no non-linear terms in the model. It is important to note that the Utility Regulator's decision not to include either a quadratic or interaction term in the model is to the advantage of NIE Networks, and reiterates that we have been fair throughout our decision making process and not cherry picked models to the disadvantage of NIE Networks.
- 5.165 Further analysis of these model estimation results can be found in Annex N: Detailed Benchmarking Results for RP6.

Table 12: Pre-allocation POLS IMF&T and Indirect model estimation results. ⁴²

	No local labour adjustment			Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)			Ofgem Local Labour Adjustment (GB DNOs only)		
Model Number	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b	Model 1c	Model 2c	Model 3c
Length	0.746***			0.777***			0.778***		
Density	0.600***			0.595***			0.561***		
CSV		0.874***			0.894***			0.876***	
Length per Customer			0.487***			0.482***			0.515***
OHL Length %	0.046***	0.026***	0.022*	0.030**	0.013**	0.009	0.027**	0.014**	0.007
Time dummy (2014)		0.053***	0.048**		0.054***	0.048**		0.053***	0.048**
Time dummy (2015)		0.035**	0.024*		0.035**	0.024*		0.035**	0.024*
Time dummy (2016)		0.03	0.016		0.03	0.016		0.030	0.016
Constant	-5.298***	-5.162***	-7.811***	-5.642***	-5.415***	-7.852***	-5.534***	-5.200***	-7.734***
RESET	0.291	0.027	0.149	0.283	0.013	0.344	0.211	0.026	0.174
Normality Test	0.644	0.474	0.765	0.563	0.439	0.989	0.535	0.621	0.966
Pooling Test	0.972	1.000	1.000	0.949	1.000	1.000	0.948	1.000	1.000
N	60	60	60	60	60	60	60	60	60
R ²	0.877	0.855	0.705	0.895	0.878	0.702	0.891	0.877	0.722

⁴² * indicates statistical significance at a 10% level; ** indicates statistical significance at a 5% level; *** indicates statistical significance at a 1% level. Estimated parameters in bold are not statistically significant. Statistical diagnostic test results in bold indicate that we reject the null hypothesis at a 5% significance level (i.e. the test fails). All explanatory and dependent variables are in natural logarithm.

Table 13: Post-allocation POLS IMF&T and Indirect model estimation results. ⁴³

	No local labour adjustment			Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)			Ofgem Local Labour Adjustment (GB DNOs only)		
Model Number	Model 1d	Model 2d	Model 3d	Model 1e	Model 2e	Model 3e	Model 1f	Model 2f	Model 3f
Length	0.735***			0.764***			0.765***		
Density	0.705***			0.699***			0.668***		
CSV		0.924***			0.943***			0.926***	
Length per Customer			0.386***			0.382***			0.413***
OHL Length %	0.070***	0.037***	0.045***	0.055***	0.025***	0.033**	0.052***	0.026***	0.031**
Time dummy (2014)		0.071***	0.065***		0.071***	0.065***		0.071***	0.065***
Time dummy (2015)		0.042**	0.031*		0.042**	0.031*		0.042**	0.031*
Time dummy (2016)		0.021	0.007		0.021	0.007		0.021	0.007
Constant	-5.628***	-5.841***	-8.255***	-5.955***	-6.080***	-8.292***	-5.853***	-5.878***	-8.180***
RESET	0.381	0.022	0.217	0.375	0.017	0.278	0.337	0.020	0.220
Normality Test	0.877	0.406	0.823	0.648	0.474	0.979	0.771	0.597	0.935
Pooling Test	0.929	1.000	1.000	0.898	1.000	1.000	0.885	1.000	1.000
N	60	60	60	60	60	60	60	60	60
R ²	0.860	0.826	0.654	0.873	0.844	0.636	0.872	0.848	0.66

⁴³ * indicates statistical significance at a 10% level; ** indicates statistical significance at a 5% level; *** indicates statistical significance at a 1% level. Estimated parameters in bold are not statistically significant. Statistical diagnostic test results in bold indicate that we reject the null hypothesis at a 5% significance level (i.e. the test fails). All explanatory and dependent variables are in natural logarithm.

NOCs, CAI and Business Support disaggregated modelling results

5.166 CEPA's independent model development process found network length and density to be the most appropriate drivers of NOCs. However, the density variable was not statistically significant for the CAI and Business Support models. As a result, CEPA chose the CSV as the single cost driver in the CAI and Business Support models. However, CEPA do note that using MEAV as the cost driver in the CAI and Business Support models is also credible and robust. But they decided on using a CSV because of two reasons:

- Regulatory precedent from CC RP5, who also used models with the same CSV.⁴⁴
- The MEAV has been created based on expert views of unit costs from Ofgem's RIIO-ED1 price control, and thus has some degree of discretion in how it is calculated. In contrast, while the weights of the CSV require discretion, their components have regulatory precedent and are individually reliable.

5.167 Based on CEPA's reasoning, and our own reservations over using NIE Networks' MEAV for benchmarking in RP6 (outlined above), the Utility Regulator at draft determination decided to use the CSV as the sole cost driver in the CAI and Business Support models, and length and density as the cost drivers in the NOCs model.

5.168 As discussed above and in Annex D, for the final determination we have refined our model specifications to more effectively capture the impact of differences in network design on DNO costs. In the case of our middle-up models, we now include the overhead line variable in our middle-up NOCs and CAI models for this final determination. However, we do not include the overhead variable in our middle-up Business Support model.

5.169 All parameter estimates presented below are sensible in magnitude and statistically significant, and the inclusion of the overhead line variable significantly increases the explanatory power of our middle-up NOCs and CAI models. In addition, all models pass CEPA's statistical diagnostic tests, with the exemption of Model 6b, which marginally fails the RESET test, and the NOCs models, which fail the normality test. Overall, all of our middle-up models chosen for this final determination pass CEPA's model selection criteria. Further analysis of UR's NOCs, CAI and Business Support model estimation results can be found in Annex D of this final determination.

⁴⁴ The CSV applies a 50% weight to network length, a 25% weight to customer numbers, and a 25% weight to units distributed.

Table 14: Pre-allocation POLS NOCs, CAI and Business Support model estimation results. ⁴⁵

Cost category	No local labour adjustment			Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)			Ofgem Local Labour Adjustment (GB DNOs only)		
	NOCs	CAI	Business Support	NOCs	CAI	Business Support	NOCs	CAI	Business Support
Model number	Model 4a	Model 5a	Model 6a	Model 4b	Model 5b	Model 6b	Model 4c	Model 5c	Model 6c
Length	0.808***			0.816***			0.816***		
Density	1.122***			1.120***			1.113***		
CSV		0.762***	0.586***		0.784***	0.634***		0.765***	0.603***
OHL Length %	0.118***	0.027***		0.114***	0.012*		0.113***	0.014**	
Constant	-8.779***	-4.694***	-3.390***	-8.865***	-4.981***	-3.952***	-8.840***	-4.753***	-3.583***
RESET	0.758	0.520	0.077	0.750	0.502	0.043	0.762	0.629	0.083
Normality Test	0.013	0.401	0.059	0.014	0.590	0.119	0.013	0.369	0.212
Pooling Test	0.987	0.788	0.994	0.986	0.748	0.993	0.986	0.773	0.993
N	60	60	60	60	60	60	60	60	60
R ²	0.829	0.786	0.622	0.832	0.805	0.667	0.831	0.791	0.651

⁴⁵ * indicates statistical significance at a 10% level; ** indicates statistical significance at a 5% level; *** indicates statistical significance at a 1% level. Estimated parameters in bold are not statistically significant. Statistical diagnostic test results in bold indicate that we reject the null hypothesis at a 5% significance level (i.e. the test fails). All explanatory and dependent variables are in natural logarithm.

Table 15: Post-allocation POLS NOCs, CAI and Business Support model estimation results ⁴⁶

Cost category	No local labour adjustment			Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)			Ofgem Local Labour Adjustment (GB DNOs only)		
	NOCs	CAI	Business Support	NOCs	CAI	Business Support	NOCs	CAI	Business Support
Model number	Model 4d	Model 5d	Model 6d	Model 4e	Model 5e	Model 6e	Model 4f	Model 5f	Model 6f
Length	0.808***			0.816***			0.816***		
Density	1.122***			1.120***			1.113***		
CSV		0.821***	0.604***		0.844***	0.652***		0.824***	0.620***
OHL Length %	0.118***	0.045***		0.114***	0.031***		0.113***	0.032***	
Constant	-8.779***	-5.562***	-3.734***	-8.865***	-5.849***	-4.296***	-8.840***	-5.621***	-3.928***
RESET	0.758	0.269	0.225	0.750	0.270	0.191	0.762	0.359	0.221
Normality Test	0.013	0.961	0.135	0.014	0.952	0.293	0.013	0.999	0.250
Pooling Test	0.987	0.721	0.993	0.986	0.687	0.991	0.986	0.684	0.989
N	60	60	60	60	60	60	60	60	60
R ²	0.829	0.710	0.554	0.832	0.725	0.606	0.831	0.717	0.603

⁴⁶ * indicates statistical significance at a 10% level; ** indicates statistical significance at a 5% level; *** indicates statistical significance at a 1% level. Estimated parameters in bold are not statistically significant. Statistical diagnostic test results in bold indicate that we reject the null hypothesis at a 5% significance level (i.e. the test fails). All explanatory and dependent variables are in natural logarithm.

Chosen Benchmark

- 5.170 At the draft determination, in addition to providing model estimation results, we also asked CEPA to assess how NIE Networks perform in terms of efficiency for each model they estimated, and under different input sensitivities.
- 5.171 We asked CEPA to produce annual efficiency gaps for each year in the sample (2012/13 to 2015/16) but the UR acknowledges that the average efficiency gap of the period being examined should also be considered since there can be some volatility between years. This is reflected in the UR's approach to deriving a final catch-up efficiency factor that we apply to baseline costs in this final determination (see section below on triangulation).
- 5.172 Under the UR's advice, CEPA conducted their efficiency gap analysis for our draft determination by comparing the performance of NIE Networks with the fourth placed company in the sample (4 out of 15 companies), which is approximately equal to the upper quartile benchmark.⁴⁷ As a result, the efficiency gap is zero for the fourth placed company.
- 5.173 While the CC set the 5th placed company as the benchmark at RP5 they specified that this should not act as a limitation on future price controls.

*"Our choice of the cost benchmark reflects the specific circumstances of our inquiry and, in particular, the nature and limitations of the benchmarking analysis we have carried out. It also reflects the submissions made to us by parties in the course of our inquiry. It should not act as a constraint on the choice of cost benchmarks for any future price control reviews."*⁴⁸

- 5.174 Furthermore, regulatory precedent strongly suggests the use of a upper quartile benchmark or even more challenging benchmark. The upper quartile benchmark was adopted by Ofgem in RIIO-ED1 and RIIO-GD1 and by Ofwat in PR14. The Utility Regulator has adopted the upper quartile and frontier companies in its benchmarking of NI Water for capex and opex respectively, and also within its opex benchmarking of Northern Ireland's gas distribution companies (GDNs) for GD17.⁴⁹ Moreover, Monitor, the Regulator for health services, adopted the upper decile (90th percentile) in its assessment of the NHS Acute Sector; and Ofcom have benchmarked to upper decile in both the post and telecommunications sectors.⁵⁰
- 5.175 In addition, it should be noted that in the Utility Regulator's Corporate Strategy 2014-2019, we have set a Key Performance Indicator (KPI) for network utility costs and performance to measure favourably against the top quarter of appropriate comparable companies.⁵¹ We believe this is a reasonable and achievable ambition

⁴⁷ The upper quartile, or the 75th percentile, is equivalent to the 3.75 placed company. We have rounded this up to the 4th placed company for simplicity.

⁴⁸ Para 8.141 of CC RP5 determination.

https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

⁴⁹ 3rd ranked company out of 8 GDNs in sample.

⁵⁰ See page 12 of Deloitte LLP Report on Econometric Benchmarking in UK Postal Sector:

<http://stakeholders.ofcom.org.uk/binaries/consultations/royal-mail-review/annexes/benchmarking-report.pdf>

⁵¹ https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/UR_Corporate_Strategy_2014-2019.pdf

for a company such as NIE Networks, in keeping with the Utility Regulator's *Strategic Objective 1 - promoting effective and efficient monopolies*.

5.176 Respondents to the draft determination did not appear to express concern with the use of an upper quartile benchmark. Taking this and the regulatory precedent into account, we consider the upper quartile, or 4th placed company, to be an appropriate benchmark to apply at RP6 and provides adequate scope for the company to out-perform during RP6. The UR has therefore continued to adopt the upper quartile as benchmark for the RP6 final determination.

Special Factors

5.177 At draft determination, in reaching its modelling results for NIE Networks the Utility Regulator did not apply any special factor adjustments to NIE Networks' costs. Special factors are company specific circumstances, not taken into account in the data adjustments and model specifications, which cause costs to be materially different for that particular company relative to the comparator companies.

5.178 It should be noted the CC did not apply any special factors during its RP5 modelling of NIE. It should also be noted that Ofgem applied a 'high hurdle' for company-specific factors in RIIO-ED1.⁵²

Special factor assessment criteria

5.179 The Utility Regulator asked in the draft determination for respondents to consider whether they believe that there are any special factors that need to be applied with regards to the IMF&T and Indirect benchmarking models. The UR was keen to keep an open mind as to whether special factors may apply for NIE Networks as we are aware that econometric models may not take into account all differences between companies, especially if these circumstances are unique.

5.180 As stipulated to NIE Networks in its RP6 benchmarking guidance document⁵³, the means by which the Utility Regulator shall assess any special factor submissions will include examination of each claim against the following criteria:

- *What is different about the circumstances that cause materially higher cost claims which amount to greater than 1% of the total modelled costs in question?*
- *Why do these circumstances lead to higher costs?*
- *What is the net impact of these costs on prices over and above that which would be incurred without these factors? What has been done to manage the additional costs arising from the different circumstances and to limit their impact?*

⁵² See paragraph 4.43 of RIIO-ED1: Final Determinations for the slow-track electricity distribution companies. https://www.ofgem.gov.uk/sites/default/files/docs/2014/11/riio-ed1_final_determination_expenditure_assessment_0.pdf

⁵³ https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/2016_02_17_Benchmarking_Efficiency_Data_Submission_-_Guidance_Notes_v0200_0.pdf

- *Are there any other different circumstances that reduce the company's costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?*

5.181 Some special factors may only apply to certain models so respondents were asked to set special factors which are appropriate to each particular model and the cost categories being captured in the dependent variable. The UR has indicated to NIE Networks that it would adopt a “pragmatic approach” to the materiality threshold.

5.182 In addition, a special factor may not apply (or only partially apply) if the model already takes into account the company specific factor(s) in question – i.e. within its model specification/ functional form or data adjustment.

5.183 Respondents were asked to provide workings of how they arrived at the special factor figures in their proposal and provide accompanying commentary substantiating their claim for the special factor, taking into account the assessment criteria above.

Special factor submissions

5.184 The Consumer Council in their consultation response made reference to the fact that the UR at draft determination did not make negative special factor adjustments for the four areas (guaranteed standards, consumer engagement, innovation, ESQCR) which we identified NIE Networks’ policy and standards are lower than those applicable in GB.

“.....the RP6 DD identified four areas where NIEN’s policy and standards are lower than those applicable in GB. From a cost perspective this would mean that NIEN’s Inspection, Maintenance, Faults and Tree cutting (IMF&T) and indirect costs should be lower than GB DNOs.

Therefore we are surprised with UR’s decision in the RP6 DD against applying a negative special factor adjustment to the comparative benchmarking of NIEN’s IMF&T and indirect costs. Furthermore, the UR has not given any explanation to support the provisional decision.

Given that making a negative special adjustment would reduce costs for consumers, we ask the UR to apply this in the FD. We expect the UR to provide robust evidence or to support any decision to the contrary in the FD.”⁵⁴

5.185 NIE Networks within their consultation response submitted a number of special factor claims, which included:

- **Higher connection numbers compared to GB** - NERA argued that NIE Networks have undertaken more connection work in the past than the average GB DNO due to historical differences in the competitive environment.
- **Higher wayleave costs** – NERA argued that because NIE Networks has a higher share of OHL compared to other DNOs they will also have a higher volume of wayleaves. They argue that this effect is exacerbated due to the fact

⁵⁴ Paragraphs 6.6 to 6.8 of Consumer Council Response to the RP6 Draft Determination

that plots of land are relatively smaller in NI than GB, which increases the volume of wayleaves per km of network.

- **IMF&T** – NERA stated that NIE Networks have a higher share of OHL than other DNOs, which need to be inspected more than UG cables, have higher fault rates, and require tree cutting. As a result, NIE Networks' IMF&T costs will be higher, the company contend.
- **Guaranteed standards of performance** – GB DNOs faced an 18 hour standard during DPCR5 and face a 12 hour standard during RIIO-ED1. In contrast, NIE Networks only face a 24 hour standard during RP5. Hence, NIE Networks may face lower costs due to higher required supply restoration times.
- **ESQCR** – NIE Networks has not yet been subject to the ESQCR requirements that the British DNOs face. Therefore, NIE Networks are likely to have saved inspection and maintenance and closely associated indirect costs during RP5 that GB DNOs will have incurred during the same period as the result of ESQCR requirements.

Special factor assessment for final determination

5.186 Although the UR have taken account of *wage* differentials between DNOs and the regions in which they operate (by undertaking a RWA), we consider that other potential regional *cost* differences should also be considered.

5.187 According to the Department for the Economy's The Cost of Doing Business In Northern Ireland Report, Northern Ireland businesses typically experience a cost advantage over the rest of the UK. This is in relation to a number of cost inputs such as labour costs, property costs and some transport costs, with the Department for the Economy assessing that overall costs for a NI firm are around 84% of the UK average (i.e. a -16% differential).

5.188 Specifically relating to property costs, The Cost of Doing Business in Northern Ireland Report states the following:

*“Property costs are another area where NI can offer much lower prices than elsewhere. Rental prices for Grade A office space in Belfast are less than half the price found in other cities such as Manchester, Dublin, Birmingham and Edinburgh. Both industrial rental properties and land are also significantly cheaper in Belfast than elsewhere in the UK,.....”*⁵⁵

5.189 It is interesting to note, that NIE Networks, within their original special factors paper undertaken by NERA for the Business Plan did explore whether a special factor may be merited for property costs.

⁵⁵ Page 81 of The Cost of Doing Business Report:
<https://www.economy-ni.gov.uk/sites/default/files/publications/deti/Cost%20of%20Doing%20Business%20report.pdf>

“NIE faces lower costs related to office and site rental compared to GB DNOs. We have insufficient information to appraise whether this might constitute a special factor and to quantify the required adjustment.”⁵⁶

5.190 We do not know however, if NERA was aware of the relative cost comparisons undertaken in The Cost of Doing Business Report. However, the UR considers that in addition to our pre-modelling RWA, a special factor for property costs for NIE Networks is potentially warranted, given that property costs in Northern Ireland can be less than half of UK levels as shown by the table below.

Area	Measure	Compared with UK	
		NI	Year
Labour	Private sector wages	82%	2014
Labour	FDI role salaries	86%	2014
Energy	Electricity prices (v small users)	111%	2014
Energy	Electricity prices (large/v large users)	94%	2014
Property	Office rental values (grade a)	42%	2014
Property	Office rental values (grade b)	39%	2014
Property	Industrial rental values (prime big sheds)	89%	2015
Property	Industrial rental values (prime small sheds)	69%	2015
Property	Industrial land values (big sheds)	44%	2015
Property	Industrial land values (small sheds)	57%	2015
Transport	Petrol prices	100%	2015
Transport	Diesel prices	99%	2015
Transport	Air travel prices (within UK)	82%	2015
Transport	Air travel prices (outside UK)	103%	2015

Table 16: Relative property costs in Northern Ireland

5.191 Depending on the model assumptions used (pre-allocation, post-allocation, with local labour, no local labour etc), the UR calculates that a negative special factor for property costs for NIE Networks would pass the materiality threshold (1% of modelled costs) as outlined by the UR in previous documents.

5.192 According to the Department for the Economy, Northern Ireland property costs are approximately 63% of UK levels. The UR has used this differential (-37%) to quantify how much NIE Networks’ current property costs would be if the company paid UK level land and rent values. According to our final determination calculations we estimate a potential special factor in the region of £1.15m to £1.60m per annum,⁵⁷ depending on the model assumptions adopted in our triangulation.

⁵⁶ Page 12 of NERA Special Factors Paper (June 2016)

⁵⁷ Calculations based on unadjusted modelled costs.

5.193 In the table below we list NIE Networks' unadjusted real property management costs, reported between 2012/13 and 2015/16 that are included within the benchmarking.⁵⁸ This includes property costs attributable to non-op capex, which we reallocated to indirect costs as part of the benchmarking process.⁵⁹

5.194 For illustration, we use unadjusted costs in the calculations below because we do not want to 'double count' with the regional wage adjustment, which already makes a -12.3% adjustment for wage differentials between NI and UK. In the no local labour adjustment models the regional wage adjustment is not applied as property relates to business support, therefore a full -37% property adjustment may be warranted. However, a regional wage adjustment is applied to property costs for the no local labour adjustment models. Therefore, to make a full -37% adjustment in this case would involve an element of 'double counting'.

5.195 In the table below we also present the adjusted property management costs if we were to apply the regional property price adjustment factor identified by the Department for the Economy in Northern Ireland, and thus bring Northern Ireland property prices in line with the UK average.⁶⁰

Property Management Costs	Pre-allocation		Post-allocation	
	Unadjusted cost	Cost if increased to UK average	Unadjusted cost	Cost if increased to UK average
2012/13	2.72	4.31	2.10	3.34
2013/14	2.60	4.13	2.05	3.25
2014/15	2.64	4.20	1.99	3.16
2015/16	2.66	4.22	1.96	3.11

Table 17: NIE Networks' outturn property management costs included within UR's benchmarking (£m)

5.196 The negative special factor claim associated with property prices is equivalent to the difference between actual unadjusted property costs and adjusted property costs if we increased to UK average levels. These differences are presented in the table below.

5.197 It is important to note that the property special factor claims presented surpass the 1% materiality threshold. Therefore, we could justifiably apply this special factor claim

⁵⁸ At this final determination we have calculated a special factor adjustment based on property management costs. Going forward, however, we may potentially track any property special factor adjustment using total rental costs in IMF&T and Indirect costs, which would avoid any possibility of 'double counting' with the regional wage adjustment.

⁵⁹ See Annex B for more information.

⁶⁰ The Department for the Economy in Northern Ireland found Northern Ireland property costs are approximately 63% of the UK average. Thus to apply the adjustment, we multiply NIE Networks' property management costs by the factor $100/63 \approx 1.59$ to bring their property costs in line with the UK average.

by increasing NIE Networks' actual property costs that input into the efficiency gap calculations by the relevant amount presented.

- 5.198 All else being equal, this would result in an increase in NIE Networks' triangulated efficiency gap, which we apply to baseline IMF&T and Indirect costs, and result in a decrease in NIE Networks' IMF&T and Indirect allowance during RP6.

Property Management Costs	Pre-allocation	Post-allocation
	Estimated special factor	Estimated special factor
2012/13	-1.60	-1.24
2013/14	-1.53	-1.20
2014/15	-1.55	-1.17
2015/16	-1.56	-1.15

Table 18: Estimated NIE Networks' property prices special factor (£m).

- 5.199 However, after careful consideration, we have decided not to apply this special factor. In the Utility Regulator's special factors Annex (see Annex D), we have reiterated that while benchmarking analysis may be unfavourable to NIE Networks in relation to one category of costs, it is likely that other aspects of their analysis will be favourable for NIE Networks.
- 5.200 To ensure consistency with this view throughout the final determination, we have therefore decided not to apply a negative special factor to NIE Networks' modelled costs with regards to differences in property prices between Northern Ireland and GB.
- 5.201 The Utility Regulator has prepared a detailed response to NIE Networks' special factor claims, which can be found in Annex D. We provide a summary of our conclusions below.

Sparsity, rurality and network design (SR&ND)

- 5.202 We recognise that a high proportion of overhead lines in NIE Networks' network may result in an increase in IMF&T and Indirect costs for reasons that are to some degree outside NIE Networks' control. However, we do not agree with the approach taken by NERA to quantify the impact of having a high proportion of overhead lines on IMF&T and Indirect costs. We also do not consider that NERA tested alternative approaches sufficiently.
- 5.203 After consideration, we arrived at the conclusion that the most appropriate approach to taking into account the impact of having a high proportion of overhead lines on IMF&T and Indirect costs is to test the inclusion of additional cost drivers in our models that would accurately capture the impact on costs of having a high proportion of overhead lines. Specifically, the inclusion of a "proportion of overhead lines" explanatory variable in our models, which passed CEPA's model selection criteria (see above).

5.204 We consider that the models we have selected sufficiently take into account the impact of SR&ND on IMF&T and Indirects. As a result, we consider that no SR&ND or wayleaves special factor adjustment is required as these are taken into account in the new model specifications.

Connections (pre-allocation models only)

5.205 We consider that NIE Networks and NERA have not addressed our reasoning for why we decided to run models on a pre- and post-allocation basis, and in turn place 50% weight on the pre-allocation models and 50% weight on the post-allocation models. We have reiterated these reasons within Annex D.

5.206 In addition, we do not consider the reasoning for the CC placing a 100% weight on post-allocation models at RP5 in automatically valid for this price control.

5.207 As a result of the evidence presented above and in Annex D, we deem it:

- Appropriate to apply a 50% weight to pre-allocation models and a 50% weight to post-allocation models in this final determination.
- Not appropriate to apply a special factor claim for connections in this final determination.

ESQCR

5.208 In summary, the absence of a statistically significant relationship between ESQCR/ asset additions and IMF&T and Indirects indicates that increases in ESQCR capex requirements do not result in significant increases in IMF&T and Indirect costs.

5.209 For this reason, we do not deem it necessary to apply an ESQCR negative special factor, and following on, we do not deem it appropriate or necessary to provide NIE Networks with an additional IMF&T and Indirect allowance as a result of increasing ESQCR requirements during RP6.

Guaranteed Standards of Service (GSS)

5.210 Given that NIE Networks were approximately operating to an 18 hour standard during RP5, we consider that NIE Networks' approach is appropriate with regards to the costs associated with moving to an 18 hour standard.

5.211 On the other hand, we do not deem that NIE Networks' approach to quantifying the impact of moving to a 12 hour standard appropriate.

5.212 Based on evidence provided by NIE Networks, we calculated the following GSS special factor claims for the benchmarking period in real terms:

- 2012/13: £25,000
- 2013/14: £25,000
- 2014/15: £25,000
- 2015/16: £465,000

5.213 However, taking everything into account, we have made the decision not to apply this negative special factor. This decision works in the favour of NIE Networks, and demonstrates that we are being consistent, fair and transparent throughout our final determination.

Property prices

5.214 The Department for the Economy in Northern Ireland has found property prices in Northern Ireland to be approximately 37% lower than the UK average, which could arguably justify a special factor claim.

5.215 Throughout this final determination we have reiterated that while benchmarking analysis may be unfavourable to NIE Networks in relation to one category of costs, it is likely that other aspects of their analysis will be favourable for NIE Networks.

5.216 To ensure consistency with this view throughout the final determination, we have decided not to apply a negative special factor to NIE Networks' modelled costs with regards to differences in property prices between Northern Ireland and GB.

Special Factors Overall Summary

5.217 We consider that the inclusion of "proportion of overhead lines" as an additional explanatory variable in our final determination models sufficiently takes into account the impact of SR&ND on IMF&T and Indirects. As a result, we consider that no SR&ND or wayleaves special factor adjustment is required.

5.218 After careful consideration, we have decided not to accept any additional special factor claims prepared by NIE Networks. In addition, we have not applied any of the potential counterbalancing special factors identified by the UR.

5.219 Throughout this final determination we have reiterated that while our benchmarking analysis may be unfavourable to NIE Networks in relation to one category of costs or area of analysis, it is likely that other aspects of their analysis will be favourable for NIE Networks. These dynamics are demonstrated throughout this paper. For example, while we have not allowed positive special factor claims for connections activity, we have also not allowed negative special factor claims for GSS, consumer engagement and property costs.

5.220 Nevertheless, for completeness, we present the special factor claims we could justifiably have applied based on the evidence presented, in the table below (within the Potential Total line). It should be noted that these are illustrative and have not been applied in our models. We make **zero adjustment for special factors in our final determination** modelling results.

5.221 As can be seen, if the UR was to apply special factors in our final determination modelling, it is likely that the net impact of special factors would be negative. This would effectively increase the efficiency gap for NIE Networks.

Potential Special Factor	2012/13	2013/14	2014/15	2015/16
SR&ND ⁶¹	0	0	0	0
Wayleaves ⁶²	0	0	0	0
Connections	0	0	0	0
ESQCR	0	0	0	0
GSS	- 0.025	- 0.025	- 0.025	- 0.465
Consumer engagement	- 0.500	- 0.500	- 0.500	- 0.500
Property prices ⁶³	- 1.420	- 1.365	- 1.360	- 1.355
Potential Total	- 1.945	- 1.890	- 1.885	- 2.320

Table 19: Net position of UR special factor assessment (£m, 2015/16 prices)

Applied Special Factor	2012/13	2013/14	2014/15	2015/16
UR Applied Total Special Factor (in our econometric models)	0.000	0.000	0.000	0.000

Table 20: Special factors applied by UR at final determination (£m, 2015/16 prices)

Efficiency Gap Results and Triangulation

5.222 The UR has considered both the NIE Networks and Consumer Council responses with regards to our approach to triangulation at draft determination. The most significant issues raised include:

- CCNI recommended including UR's middle-up models in the triangulation process considering that the models have been proven to perform well according to CEPA's model selection criteria.
- CCNI recommended that the UR should determine the efficiency gap using data with no local labour adjustment or with the local labour adjustment applied to GB DNOs' cost data only.
- NIE Networks recommended placing 50% weight on top-down Indirect and IMF&T models, including the MEAV based model, and 50% weight in Ofgem's disaggregated models. In addition, the company also recommended placing 100% weight on post-allocation models, and 100% weight on models that adjust for the local share of labour.

5.223 We respond to these issues in detail below.

⁶¹ We consider that the model specifications (including the inclusion of an Overhead Line % variable for final determination) means that a special factor is not warranted for SR&ND.

⁶² We consider that the model specifications (including the inclusion of an Overhead Line % variable for final determination) means that a special factor is not warranted for wayleaves.

⁶³ Calculations based on unadjusted modelled costs.

Calculation of the efficiency gaps

5.224 The Utility Regulator has chosen to calculate the efficiency gap using the following approach:

- Run the model using POLS and obtain the predicted values for each DNO in each year.
- Calculate the efficiency score for each DNO, which is calculated as actual costs divided by predicted costs.⁶⁴ An efficiency score greater than 1 indicates the company is inefficient relative to the average performing company. Conversely, an efficiency score less than 1 indicates the company is efficient relative to the average performing company.
- Rank the efficiency scores in ascending order, and select the fourth lowest efficiency score, which is approximately the upper quartile benchmark.
- The efficiency gap between NIE Networks and the fourth placed company is calculated as one minus the efficiency score of the fourth placed company divided by the efficiency score of NIE Networks. This is equivalent to the percentage change in NIE Networks' efficiency score required to reach the efficiency score of the fourth placed company:

$$\text{NIE Networks efficiency gap} = 1 - \frac{\text{Efficiency score of the fourth placed company}}{\text{Efficiency score of NIE Networks}}$$

- As a result, an efficiency gap of greater than 0% indicates NIE Networks is performing worse than the fourth placed company. Conversely, if the efficiency gap is less than or equal to 0%, this indicates that NIE Networks is performing better than or as the fourth placed company.

5.225 For brevity, we only present the efficiency gaps for the final UR models presented in this final determination.⁶⁵

Efficiency gap findings

5.226 Presented below are the efficiency gaps the UR have derived for IMF&T and Indirect cost models 1, 2 and 3 on a pre-allocation basis, under the three different local labour assumptions, and for each year in the data sample (2012/13 to 2015/16).

5.227 Generally, if we compare the efficiency gap over time, the efficiency gap is largest in 2012/13 and smallest in 2013/14:

- 2012/13 efficiency gap range: 2% to 11%
- 2013/14 efficiency gap range: 0% to 8%
- 2014/15 efficiency gap range: 0% to 7%

⁶⁴ In this instance, when we refer to actual costs we refer to normalised adjusted real costs that are used as an input into the modelling by CEPA. These are actual DNO costs in real terms once all of the relevant aforementioned cost adjustments have been made.

⁶⁵ Detailed efficiency gap analysis is available in Annex N of the final determination.

- 2015/16 efficiency gap range: 0% to 12%

5.228 Furthermore, if we compare the efficiency gap across the three different local labour assumptions, the efficiency gap tends to be smallest when we apply the local labour adjustment in full (i.e. GB DNOs and NIE Networks) and largest when we do not apply any local labour adjustment. When we only apply the local labour adjustment to GB DNOs, the efficiency gap generally falls in between the other two options.

	Model 1				Model 2				Model 3			
	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16
No Local Labour Adjustment	9%	8%	6%	6%	6%	3%	1%	4%	11%	8%	7%	12%
Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)	6%	3%	3%	2%	2%	0%	0%	0%	4%	2%	3%	6%
Ofgem Local Labour Adjustment (GB DNOs only)	9%	7%	6%	6%	8%	4%	3%	4%	10%	6%	6%	10%

Table 21: efficiency gaps - pre-allocation models

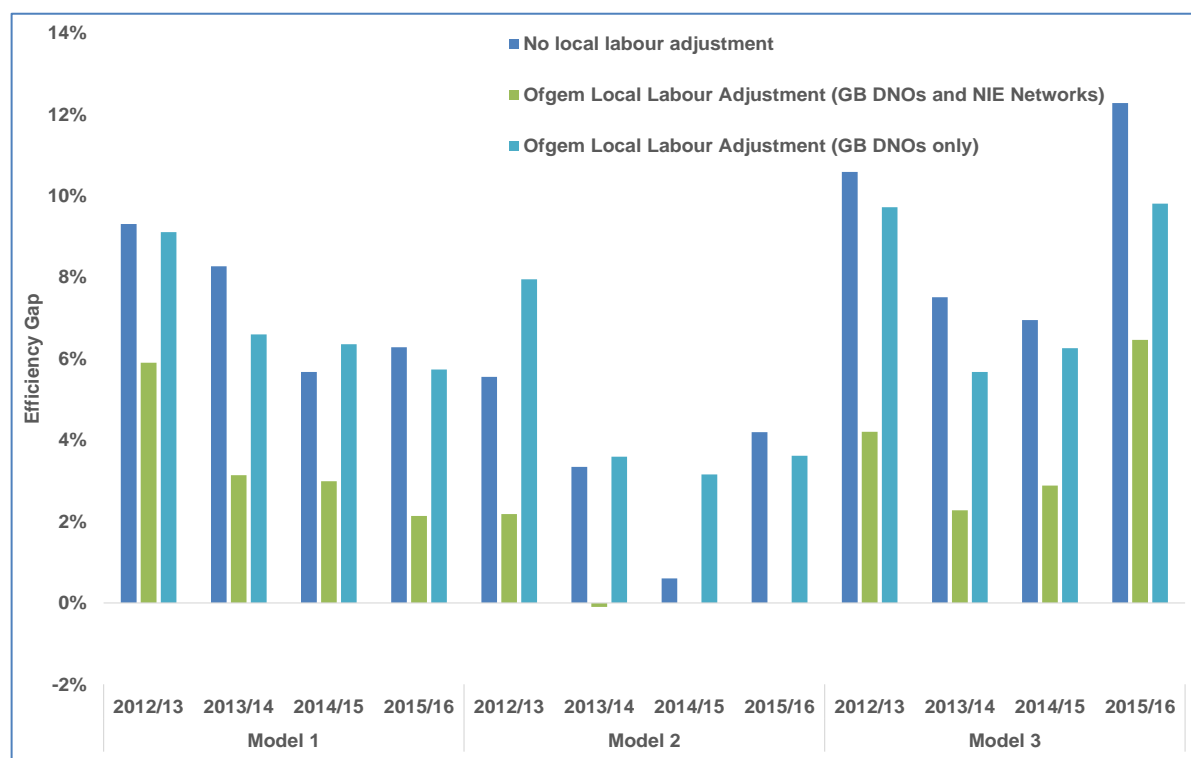


Figure 12: IMF&T and Indirect model efficiency gaps (pre-allocation)

5.229 Presented in the table and graph below are the efficiency gaps CEPA have derived for IMF&T and Indirect cost Models 1, 2 and 3 on a post-allocation basis, under the three different local labour assumptions, and for each year in the data sample (2012/13 to 2015/16).

5.230 Generally speaking, NIE Networks' efficiency gap is smaller on a post-allocation basis than on a pre-allocation basis. This is likely to be because NIE Networks allocate a relatively larger proportion of indirects to connections than most GB DNOs.

	Model 1				Model 2				Model 3			
	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16
No Local Labour Adjustment	9%	4%	0%	4%	1%	-5%	-2%	0%	8%	5%	0%	4%
Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)	6%	-1%	-2%	0%	0%	-11%	-8%	-2%	4%	-1%	-1%	0%
Ofgem Local Labour Adjustment (GB DNOs only)	9%	3%	0%	4%	1%	-6%	-3%	0%	7%	2%	0%	2%

Table 22: Efficiency gaps - post-allocation models

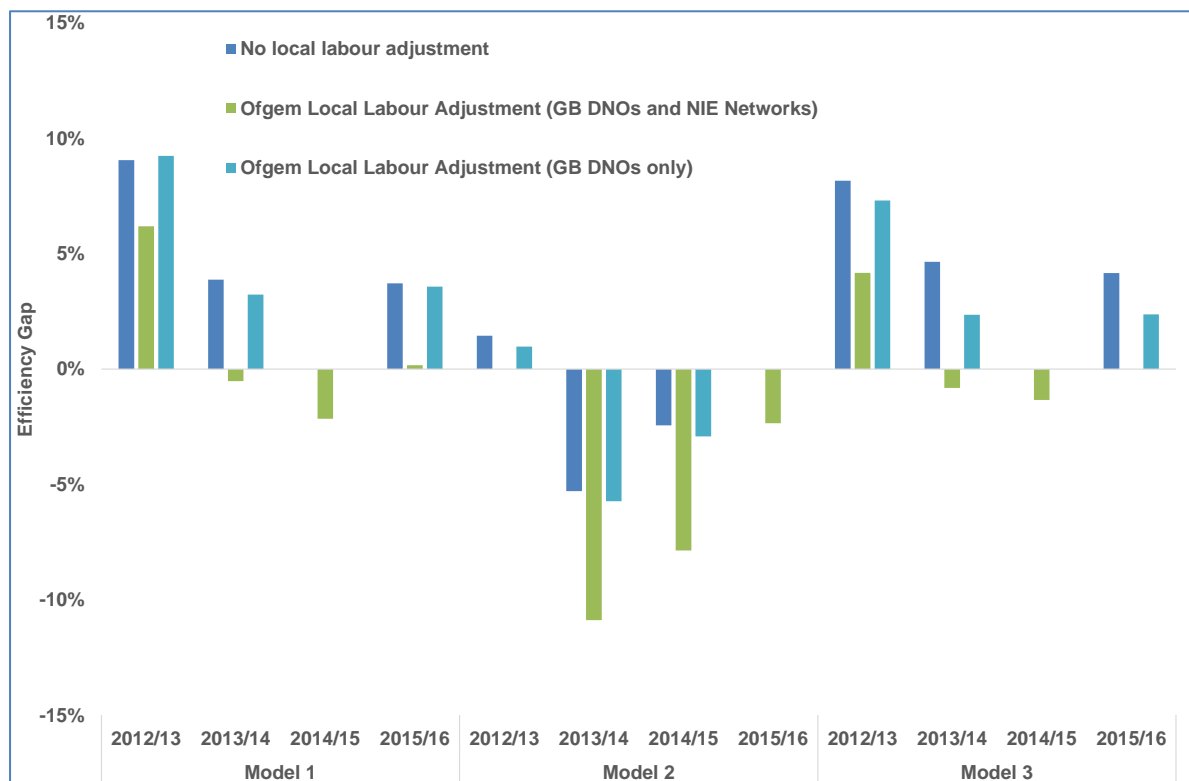


Figure 13: IMF&T and Indirect model efficiency gaps (post-allocation)

5.231 In combination, the NOCs, CAI and Business Support models cover the same costs as in our IMF&T and Indirect models. Hence, we can use the results of these models to gain an indication of what is causing the efficiency gaps from the IMF&T and Indirect models above.

5.232 The tables and charts below present NOCs, CAI and Business Support model efficiency gaps on a pre-allocation basis, under the three different local labour assumptions, and for each year in the data sample (2012/13 to 2015/16). Also shown are the equivalent efficiency gap data but on a post-allocation basis.

5.233 NIE Networks are relatively efficient in NOCs but are relatively inefficient in CAI and Business Support. As expected, NIE Networks generally appear more efficient in terms of CAI and Business Support on a post-allocation basis due to the fact they tend to allocate a relatively large amount of indirect costs to connections compared to other DNOs.

5.234 Furthermore, estimated efficiency gaps from the CAI and Business Support models are relatively more volatile over time than from the NOCs model. This is reflected in the ranges presented below:

- The NOCs efficiency gap on a pre- and post-allocation basis ranges from -6% to 8%.
- The CAI efficiency gap ranges from 7% to 22% on a pre-allocation basis, and between -4% and 23% on a post-allocation basis.
- The Business Support efficiency gap ranges from -2% to 18% on a pre-allocation basis, and ranges between -14% and 11% on a post-allocation basis.

	NOCs: Model 4				CAI: Model 5				Business Support: Model 6			
	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16
No Local Labour Adjustment	5%	-4%	7%	8%	19%	21%	12%	12%	15%	3%	7%	11%
Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)	4%	-6%	6%	7%	18%	17%	9%	7%	10%	-2%	-2%	8%
Ofgem Local Labour Adjustment (GB DNOs only)	5%	-5%	7%	8%	22%	21%	13%	12%	18%	3%	5%	16%

Table 23: NOCs, CAI and Business Support model efficiency gaps (pre-allocation)

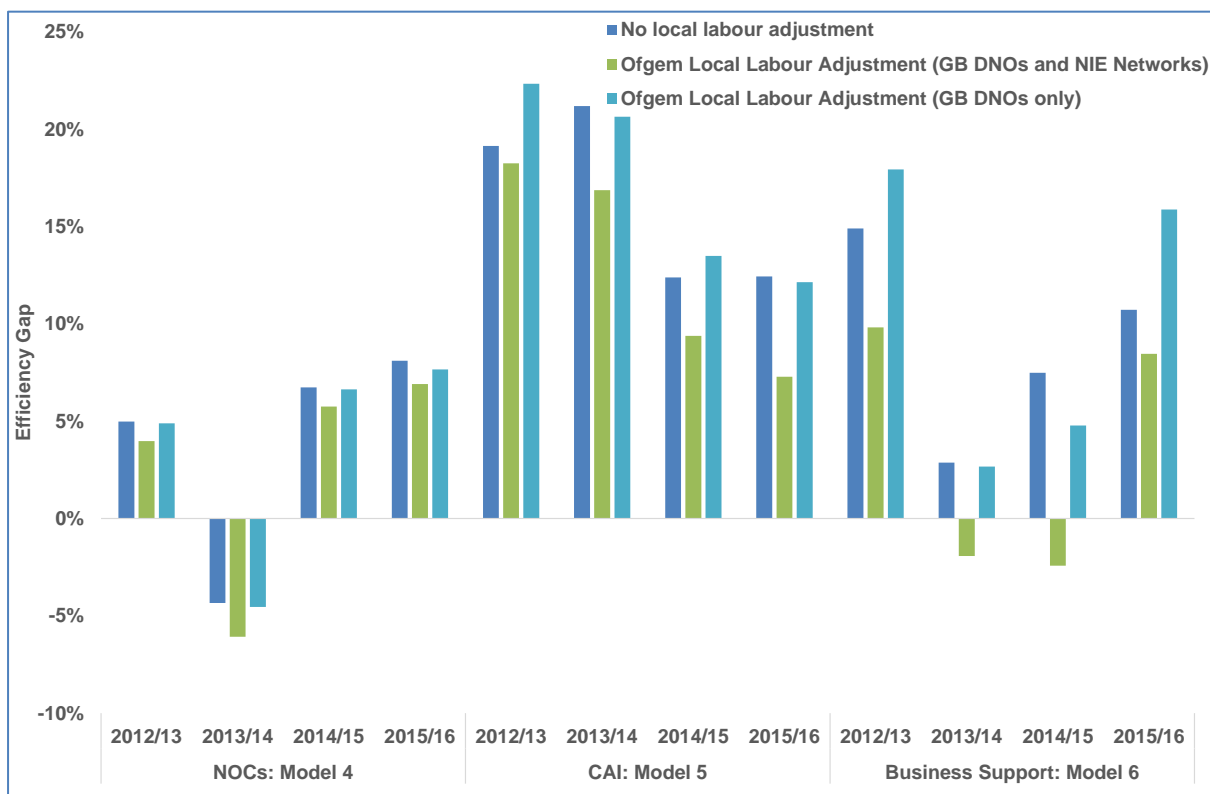


Figure 14: NOCs, CAI and Business Support model efficiency gaps (pre-allocation)

	NOCs: Model 4				CAI: Model 5				Business Support: Model 6			
	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16	2012 /13	2013 /14	2014 /15	2015 /16
No Local Labour Adjustment	5%	-4%	7%	8%	20%	16%	0%	7%	10%	-4%	-6%	0%
Ofgem Local Labour Adjustment (GB DNOs and NIE Networks)	4%	-6%	6%	7%	18%	13%	-4%	5%	3%	-11%	-14%	-1%
Ofgem Local Labour Adjustment (GB DNOs only)	5%	-5%	7%	8%	23%	17%	2%	9%	11%	-2%	-6%	3%

Table 24: NOCs, CAI and Business Support model efficiency gaps (post-allocation)

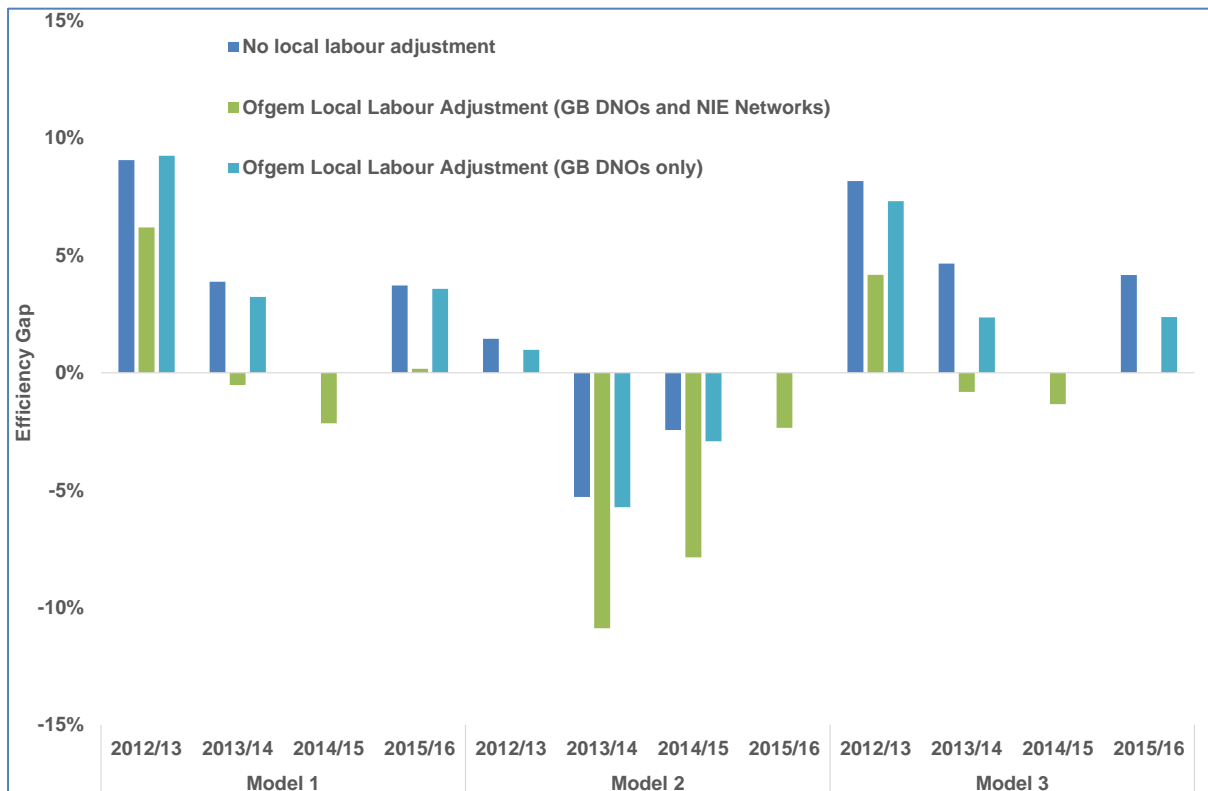


Figure 15: NOCs, CAI and Business Support model efficiency gaps (post-allocation)

Triangulation of Model Results

- 5.235 The Utility Regulator's approach to triangulation across the different options is presented below. Triangulation allows the UR to make use of multiple methodologies to establish a single value for cost assessment.
- 5.236 The Utility Regulator acknowledges that NIE Networks' efficiency results are somewhat volatile across years, which may be caused by factors outside of the company's control, such as the use of POLS as the primary econometric estimation method.
- 5.237 To take into account the volatility in efficiency across years, the average efficiency gap of the period being examined should also be considered.
- 5.238 We also consider it appropriate for the final determination to triangulate across our set of preferred models and across different input assumptions, acknowledging that there is no perfect model or perfect set of input assumptions.
- 5.239 In the previous section we outlined the advantages and disadvantages of conducting benchmarking on a pre- and post-allocation of indirect costs to connections basis. Taking this into account, we consider it appropriate to triangulate across our preferred models (Model 1, 2, 3 and Middle-Up) on a pre- and post-allocation basis (50% weight to pre-allocation models, and 50% weight to post-allocated models). In NIE Networks consultation response, the company recommended that the Utility Regulator place 100% weight on post-allocation models. We have carefully considered the arguments presented by NIE Networks, and these are discussed in

Annex D: Special Factors. However, our approach at Final Determination is to continue to apply a 50% weight to pre-allocation models and 50% weight to post-allocation models.

- 5.240 We also consider it appropriate to triangulate across different local labour adjustments, which we discuss further below.
- 5.241 Taking these points into account, the Utility Regulator considers it appropriate to triangulate across our preferred models, and under the following data input assumptions:
- Pre-allocation of indirect costs to connections.
 - Post-allocation of indirect costs to connections.
 - Without Ofgem's local labour adjustment (CEPA Baseline).
 - With Ofgem's local labour adjustment (Local labour sensitivity 1).
- 5.242 We consider this approach effectively and appropriately manages the trade-offs between conducting comparative benchmarking on a pre- or post-allocation of indirect costs to connections basis, and with or without the application of Ofgem's local labour adjustment.

Accounting for the proportion of labour that is located locally

- 5.243 At draft determination, CEPA in their regional wage adjustment (RWA) paper⁶⁶ recommended applying the regional labour adjustment to all labour costs to avoid potentially spurious accuracy.
- 5.244 However, we acknowledged NIE Networks' concerns with this approach with regards to how certain business support functions could in theory be located anywhere in the world. As a result, all DNOs could locate certain support services in the lowest cost region of the world, meaning that DNOs in low-wage areas do not enjoy cost savings relative to other DNOs for these employees. If this assumption is truly correct, then applying the RWA to DNOs' labour costs that are not incurred locally would penalise those DNOs in low-wage regions and reward DNOs in high-wage regions.
- 5.245 Ofgem attempted to address this issue at RIIO-ED1 by only applying their RWA to a certain proportion of labour costs, which differed depending on the cost area being examined. The strongest assumptions were for business support costs, where Ofgem applied the RWA to 0% of business support labour costs, and closely associated indirect costs (CAI), where Ofgem applied the RWA to 40% of CAI labour costs.
- 5.246 While the Utility Regulator understands the logic behind Ofgem's approach, without having access to the detailed underpinning of how Ofgem have arrived at these percentages, we cannot be certain that these assumptions hold for a Northern Ireland

⁶⁶ See CEPA Regional Wage Adjustment paper in Annex A.

based network utility. CEPA have raised a number of these factors in their RWA paper:

- There is likely to be an asymmetric effect. Companies operating in relatively expensive areas would have incentives to acquire these services outside of their area, while those operating in cheaper areas are less likely to go to other markets where they would face higher costs.
- The decision to relocate business support and CAI activities will not only be the result of differences in wages but there could be other considerations such as:
 - i. the existence of cheaper regions inside of the area served by the DNO;
 - ii. joint provision of services across DNOs in the same group;
 - iii. political pressure to keep jobs in the area; and
 - iv. degree of control required by the company over the provision of these services.

5.247 In addition, while labour costs will be an important factor in determining where DNOs locate certain support functions, the quality of service provided by different locations will also be a significant consideration when making decisions on where to locate certain support services. For example, in GB there is a customer service incentive in place that encourages DNOs to manage the trade-off between costs and the quality of customer service effectively and appropriately. Recent evidence published by Ofcom on customer satisfaction and preferences highlighted that customers preferred speaking to people in UK call centres rather than call centre staff based overseas.⁶⁷ As a result of these findings BT made the decision to invest £80m to improve its customer service, which included the recruitment of 1,000 additional UK call centre staff to answer calls from their customers. This investment increased the number of customer calls answered in the UK from 50% to over 80%.

5.248 This evidence highlights the significant impact that factors such as customer satisfaction and reputation has on a firm's decision with regards to where they should locate their support services. If customer satisfaction or reputation were not significant issues in BT's decision process then they would have continued to locate a large proportion of their call centres overseas. However, in reality they take customer satisfaction and customer service very seriously, and as a result have decided to locate the majority of their call centres locally. Taking this evidence into account, the risk of damaging their reputation and/or delivering poor customer service, in addition to the financial gains available from delivering good quality of service through the incentive, may be sufficient to incentivise DNOs to locate their support services locally rather than simply locating their support services in the low cost region of the world. This is reflected in the evidence we have obtained on the location of DNO call centres and customer service centres.

⁶⁷ <https://www.theguardian.com/business/2016/jan/18/bt-hires-1000-uk-staff-after-complaints-indian-call-centres>.

5.249 These factors indicate that DNOs, may have limited incentive to obtain support services from the global market or even from the low cost labour region in the UK (i.e. Northern Ireland). This would reduce the adjustment required, and mean the Ofgem local labour adjustment applied at RIIO-ED1 is too strong for our modelling inputs.

5.250 This is evidenced when we consider where GB locate their customer service centres. All GB distributors appear to locate their customer service and new connection centres within the region they operate, and none appear to be located either in Northern Ireland or outside of the UK more generally.

- **Scottish and Southern Electricity Networks** – all customer service contact centres are GB based, with sites located in Perth (Scotland), Cumbernauld (Scotland), Cardiff (Wales) and Havant (South West England).⁶⁸
- **SP Energy Networks** – both customer contact centres are located within their region. The first customer contact centre provides support to their customers in Scotland and is located in Kirkintilloch, Scotland. The second customer contact centre provides support to their customers in Merseyside, Cheshire, North Wales and North Shropshire and is located in Prenton, Merseyside. They also have two addresses to deal with customer connections queries which are also located locally.⁶⁹
- **Northern Power Grid** – their customer contact is operational 24 hours a day and is located locally in Penshaw, Tyne and Wear. The company also has a customer connections contact centre located locally at Middlesbrough.⁷⁰
- **Electricity North West** – customer contact centre is located locally in Warrington, Cheshire.⁷¹
- **Western Power Distribution** – the company's information centre that deals with customer complaints is located locally in Bristol.⁷² Furthermore, their new connections customer service teams are also located locally in Tipton (West Midlands), Swansea (South Wales) and Cornwall (South West).⁷³
- **UK Power Networks** – the company's customer care centre is located locally in Ipswich (East of England)⁷⁴, and their head office is also located locally in London, which is the high cost region in the UK.⁷⁵

5.251 NIE Networks have informed the Utility Regulator that they locate 100% of their workforce (relating to IMF&T and Indirect) and 100% of their costs (relating to IMF&T and Indirect) within the region of Northern Ireland. This is not surprising given that Northern Ireland is a low cost region - there would not normally be a strong cost incentive to locate staff in a more expensive region of the UK. Furthermore, there is

⁶⁸ Source: <http://sse.com/careers/customerservice/>

⁶⁹ Source: https://www.spenergynetworks.co.uk/pages/contact_us.aspx

⁷⁰ Source: <http://www.northernpowergrid.com/asset/0/document/1665.pdf>

⁷¹ Source: <http://www.enwl.co.uk/docs/about-us/electricity-north-west-customer-strategy-brochure.pdf?sfvrsn=2>

⁷² Source: <https://www.westernpower.co.uk/Contact-us/Complaints.aspx>

⁷³ Source: <https://www.westernpower.co.uk/Connections/Contact-us.aspx>

⁷⁴ Source: <http://www.ukpowernetworks.co.uk/internet/en/contact-us/>

⁷⁵ Source: <http://www.ukpowernetworksservices.co.uk/contact-us/>

no evidence to suggest that any GB DNOs locate their support services in Northern Ireland.

- 5.252 Taking these factors into account we do not feel it is appropriate to apply Ofgem's local labour assumption in full in our benchmarking of NIE Networks. In theory, and if cost was the only factor to consider, we recognise that DNOs would locate support services in the low cost regions of the world. But for the reasons outlined above, this is not the case in reality as there are many other factors that DNOs have to consider, and as a result often locate support services within the region they operate.
- 5.253 NIE Networks and their consultants NERA described these findings as anecdotal, in their response to the draft determination. However, we refute this claim. Firstly, it is important to note that NIE Networks were unable to find substantive evidence to disprove our analysis. Secondly, we consider that the majority of business support and CAI activities are likely to take place with a DNO's headquarters, call centre or customer service centre. As a result, we consider the fact that all DNOs headquarters, call centres and customer service centre are located in the region which each DNO operates in is not simply "anecdotal" evidence. Furthermore, the only "practical" evidence that NIE Networks have been able to find which suggests that GB DNOs locate services outside of their region is one line in UKPN's business plan which states that they have relocated many aspects of its administrative and back-office operations to other areas of the country. We do not consider this one piece of anecdotal evidence provided by NIE Networks is substantive enough to warrant placing a 100% weight on our local labour adjustment models.
- 5.254 Furthermore, the Consumer Council stated that the UR's decision to apply the full local labour adjustment was not justified. Detail of their reasoning was provided by their Consultants ECA, but is summarised by the Consumer Council in their response to the draft determination. In summary, the Consumer Council and ECA argued that a sufficient case had not been made to apply a local labour adjustment, and therefore recommended that the UR should determine the efficiency gap using data with no local labour adjustment or with the local labour adjustment applied to GB DNOs' cost data only.
- 5.255 Overall, while we have some acceptance for the logic of a company in a very high cost region such as London locating some of its labour in a lower wage region, there is no substantive actual evidence at all to suggest that DNOs locate a significant proportion of their services outside of the region they operate.
- 5.256 Furthermore, CCNI and their consultants ECA are very strong in the opinion that without any substantive evidence the UR should change its approach from the draft determination and apply a 100% weight on "no local labour adjustment" models. This standpoint was echoed by our consultants, CEPA, in their regional wage paper (see Annex A).
- 5.257 Taking into account the consultation responses by NIE Networks and CCNI on the issue of making a local labour adjustment, and the recommendations made by our consultants CEPA, the UR has reconsidered our approach to applying a local labour adjustment for final determination. We acknowledge that there is a significant and

substantive case for the Utility Regulator to apply a 100% weight on “no local labour adjustment” models given that there is very limited evidence that DNOs actually locate support services outside of the region they operate in. However, we have some acceptance of the logic and theory put forward by NIE Networks that suggests that DNOs operating in high cost regions could potentially locate general / non-specialised support services outside of the region they operate in if it is profitable to do so. Therefore, the Utility Regulator has not decided to place a 100% weight on “no local labour adjustment” models but have instead made the decision to place a 75% weight on “no local labour adjustment” models and 25% weight on “local labour adjustment models”. We consider that this approach is more than fair to NIE Networks given that the majority of actual evidence available and the recommendations of two consultancy firms (CEPA and ECA) arguably justifies placing a 100% weight on “no local labour adjustment” models.

Approach to combining efficiency across NOCs, CAI and Business Support models

- 5.258 In combination, NOCs, CAI and Business Support benchmarking models cover total IMF&T and Indirect costs. Hence, we can combine estimated efficiency from the NOCs, CAI and Business Support models to arrive at an overall IMF&T and Indirects efficiency estimate. We refer to this as our middle-up IMF&T and Indirects efficiency estimate.
- 5.259 In our draft determination, we provide this middle-up IMF&T and Indirects efficiency estimate to support, reinforce and sense check the findings from our top-down IMF&T and Indirects benchmarking analysis.
- 5.260 However, in their consultation responses to the draft determination, CCNI and NIE Networks criticised the Utility Regulator for not placing weight on any form of disaggregated modelling. While we do not consider Ofgem’s disaggregated modelling is appropriate for assessing the relative efficiency of NIE Networks with GB DNOs (as discussed above), we do consider that our middle-up models perform well and are able to robustly assess the relative efficiency of NIE Networks compared to GB DNOs. Furthermore, CCNI recommended introducing the Utility Regulator’s middle-up models into the mix of models that we use to calculate an overall catch-up efficiency gap. As a result, the Utility Regulator has made the informed decision at this final determination to include our middle-up IMF&T and Indirects efficiency estimate into the set of models that are used to assess the relative efficiency of NIE Networks compared to GB DNOs. In turn, we have decided to place 25% weight on Model 1, 25% weight on Model 2, 25% weight on Model 3 and 25% on our middle-up IMF&T and Indirects model.
- 5.261 When combining the results from the three middle-up models we have to take into account the weight of each cost category in total IMF&T and Indirect costs. This is reflected in our approach described below:
- Run NOCs, CAI and Business Support models and obtain predicted costs (in natural logarithm).

- Take the exponential of predicted costs to reverse the natural logarithm transformation.
- Sum up predicted costs from NOCs, CAI and Business Support models to obtain total IMF&T and Indirect predicted costs.
- Calculate company efficiency scores and efficiency gaps as described above to obtain the Utility Regulator's middle-up IMF&T and Indirects efficiency estimate.

Approach to averaging efficiency across time for each individual model

5.262 The Utility Regulator's approach to averaging efficiency across time for each individual model is described below:

- Run individual models and obtain predicted costs (in natural logarithm).
- Take the exponential of predicted costs to reverse the natural logarithm transformation.
- Sum up the predicted costs across time (2012/13 to 2015/16) and divide by the number of years in the sample (i.e. 4 years) to obtain average predicted costs across the historical period being assessed. Conduct the same procedure for outturn costs.⁷⁶
- Calculate the efficiency scores and efficiency gaps, as described above.

5.263 The average efficiency gaps for Model 1, 2 and 3 and our Middle-Up IMF&T and Indirect models, under the different input assumptions we have discussed, are presented in the table below.

⁷⁶ In this instance, when we refer to actual costs we refer to normalised adjusted real costs that are used as an input into the modelling by CEPA. These are actual DNO costs in real costs once all of the relevant aforementioned cost adjustments have been made.

		Weighted time average (2012/13 to 2015/16)			
		No local labour adjustment	Full local labour adjustment	No local labour adjustment	Full local labour adjustment
Model	Drivers	Pre allocation		Post allocation	
1	Length, Density, OHL Length %	5.7%	2.5%	2.8%	-0.6%
2	CSV, Time Dummies, OHL Length %	1.7%	0.0%	0.0%	-3.9%
3	Length / Customers, Time Dummies, OHL Length %	6.8%	2.4%	0.0%	0.0%
Middle -up		7.8%	2.6%	0.1%	-3.2%
<i>NOCs</i>	Length, Density, OHL Length %				
<i>CAI</i>	CSV, OHL Length %				
<i>Business Support</i>	CSV				

Table 25: Weighted time average efficiency gaps across different options

5.264 The Middle-up IMF&T and Indirect efficiency gaps; obtained by combining the results from the NOCs, CAI and Business Support models; are of a similar magnitude to the efficiency gaps obtained from Models 1, 2 and 3. This gives us additional confidence in the top-down IMF&T and Indirect models the Utility Regulator have selected for this final determination.

5.265 While these individual results are helpful in providing an indication of how the efficiency gap differs depending on the model and/or input assumptions chosen, it is necessary to triangulate across these different options to arrive at an overall catch-up efficiency factor that we apply to base year IMF&T and Indirect costs.

5.266 The Utility Regulator's approach to triangulation across the different options is presented below. It is important to note that it is not appropriate to simply take the arithmetic average of the different efficiency gaps presented in the table above as this does not take into account:

- The weights the Utility Regulator has chosen to apply to the different options.
- The underlying data differences between the different options that we need to take into account before triangulation to ensure we are comparing like-for-like.

5.267 The Utility Regulator has taken the following approach to obtain an overall catch-up efficiency factor when triangulating across different options:

- Run individual models and obtain predicted costs (in natural logarithm) for each year in the sample (2012/13 to 2015/16).
- Take the exponential of predicted costs to reverse the natural logarithm transformation.
- Multiply predicted costs from Model 3 by customer numbers to obtain total predicted IMFT and Indirect costs, for each year in the data sample.⁷⁷
- Sum up predicted costs from the NOCs, CAI and Business Support middle-up models to obtain total predicted IMFT and Indirect costs, for each year in the data sample.
- Sum up predicted IMFT and Indirect costs across time (2012/13 to 2015/16) for each model, and divide by the number of years in the sample to obtain the average over the period (i.e. 4 years).
- Multiply the predicted costs from the pre-allocation models by the ratio of “time average normalised adjusted real IMF&T and Indirect costs on a post-allocation basis” and “time average normalised adjusted real IMF&T and Indirect costs on a pre-allocation basis”. This ensures that all predicted IMF&T and Indirect costs we are comparing are on a like-for-like post-allocation basis. This ratio can differ depending on the company being examined and the local labour adjustment applied (i.e. no local labour adjustment (CEPA Baseline) or full local labour adjustment (Local Labour Sensitivity 1)).
- Sum up outturn IMF&T and Indirect costs across time (2012/13 to 2015/16) on a post-allocation basis, and divide by the number of years in the sample to obtain the average over the period (i.e. 4 years).⁷⁸
- Multiply the predicted costs from each option by each respective weight chosen by the Utility Regulator, ensuring the weights add up to one. The weights we have chosen for this final determination are presented in the table below.
- Sum up the weighted predicted costs to obtain total predicted IMFT and Indirect costs on a post allocation basis.
- Calculate the efficiency score for each company by dividing “average outturn IMF&T and Indirect costs on a post-allocation basis” by “weighted average predicted IMF&T and Indirect costs on a post-allocation basis”. We then obtain the triangulated catch-up efficiency factor using the approach described above.

⁷⁷ Model 3 is a unit cost regression model, and the dependent variable is IMF&T and Indirects per customer.

⁷⁸ In this instance, when we refer to outturn costs we refer to normalised adjusted real costs that are used as an input into the modelling by CEPA. These are actual DNO costs in real costs once all of the relevant aforementioned cost adjustments have been made.

		Weighted time average (2012/13 to 2015/16)			
		No local labour adjustment	Full local labour adjustment	No local labour adjustment	Full local labour adjustment
Model	Drivers	Pre allocation		Post allocation	
1	Length, Density, OHL Length %	9.38%	3.13%	9.38%	3.13%
2	CSV, Time Dummies, OHL Length %	9.38%	3.13%	9.38%	3.13%
3	Length / Customers, Time Dummies, OHL Length %	9.38%	3.13%	9.38%	3.13%
Middle -up		9.38%	3.13%	9.38%	3.13%
<i>NOCs</i>	Length, Density, OHL Length %				
<i>CAI</i>	CSV, OHL Length %				
<i>Business Support</i>	CSV				

Table 26: Utility Regulator chosen final determination model weights

5.268 The model weights the Utility Regulator has chosen in the table above reflects the decisions we have made throughout this final determination. In particular:

- 50% weight on pre-allocation models; 50% weight on post-allocation models.
- 75% weight on models that adjust for the local share of labour; 25% weight on models that adjust for the local share of labour.
- 25% weight on Model 1; 25% weight on Model 2; 25% weight on Model 3; and 25% weight on the Middle-Up IMF&T and Indirects model results. As discussed above, we do not consider it appropriate to include the MEAV based models in our final model selection at this final determination.⁷⁹

5.269 Using this approach we arrive at a triangulated estimated catch-up efficiency gap of **2.31%** for NIE Networks in this final determination.

5.270 However, it is important to note that based on CCNI's and CEPA's recommendations the Utility Regulator could have justifiably applied a 100% weight on models that did not apply a local labour adjustment, or applied a 100% weight on models that only applied a local labour adjustment for GB DNOs.

⁷⁹ However, we do not rule out the use of MEAV to assess the relative efficiency of NIE Networks at RP7.

- i. If the UR had made the decision to apply a 100% weight on models that did not apply a local labour adjustment; as was recommended by CCNI and CEPA, and conducted by the CC at RP5; we would have arrived at a triangulated catch-up efficiency gap of 3.99%.
- ii. If the UR had made the decision to apply a 100% weight on models that only applied a local labour adjustment to GB DNOs data; as recommended by CCNI; we would have arrived at a triangulated catch-up efficiency gap of 2.94%.

5.271 Both of these catch-up efficiency factors are greater than the estimated catch-up efficiency gap of 2.31% we have arrived at for this final determination.

Future annual reporting and benchmarking

5.272 The Utility Regulator aims to undertake a relative efficiency analysis of NIE Networks after each reporting year of RP6 and report its findings in an annual Cost and Performance Report (CPR). This report will be similar to the Utility Regulator's annual CPR for Northern Ireland Water,⁸⁰ as well as Ofgem's RIIO-ED1 Annual Reports, which covers the performance of the 14 DNOs in Great Britain.⁸¹

5.273 To facilitate this annual benchmarking, it is likely that in addition to its RIGs submission, a benchmarking data submission will also be required from NIE Networks after each reporting year.

5.274 The UR will use the same or a similar methodology which ascertained our 2.31% efficiency gap in this RP6 final determination, for monitoring and tracking company performance through the six and a half year price control period.

5.275 Building upon the analysis undertaken in RP6, and the benchmarking undertaken in the annual CPR, it is likely that the Utility Regulator will undertake further relative efficiency analyses in the next electricity distribution price control of RP7.

Unit cost comparisons (distribution)

5.276 As indicated in our RP6 Final Approach Document and our RP6 Benchmarking & Efficiency Data Submission Guidance Notes we have undertaken unit cost analysis in addition to comparative benchmarking.⁸² This compares NIE Networks to the 14 GB DNOs on a per customer, per unit of electricity distributed and per length of line basis across a range of aggregated and disaggregated costs. We also examined unit costs for tree-cutting on a workload basis (i.e. per spans cut).

5.277 However, while unit cost analyses can be informative, they would not typically be regarded as sophisticated as econometric analysis which can take into account

⁸⁰ <https://www.uregni.gov.uk/sites/uregni/files/media-files/Final%20Cost%20and%20Performance%20Report%20for%202015-16.pdf>

⁸¹ https://www.ofgem.gov.uk/system/files/docs/2017/02/riio-ed1_annual_report_2015-16.pdf

⁸² Not presented in this draft determination due to data confidentiality.

economies of scale considerations etc. As a result, we have used our unit cost analysis as a sense check to our comparative benchmarking but not to inform the resulting catch-up efficiency factor we apply to NIE Networks base IMF&T and Indirect expenditure.

- 5.278 Taking this into account, we consider that the unit cost results concur with the findings of the top-down benchmarking (IMFT and Indirect models) and the middle-up models (NOCs, CAI and Business Support).

Transmission IMF&T and Indirects Benchmarking

- 5.279 CEPA's benchmarking included IMF&T and Indirect costs associated with NIE Networks' 132kV transmission network. Hence, we only have to consider how to deal with IMF&T and Indirect costs associated with NIE Networks' 275kV transmission network.
- 5.280 The Utility Regulator asked CEPA for advice on assessing options for benchmarking electricity transmission IMF&T and Indirect expenditure. In particular, the Utility Regulator aimed to evaluate whether it was viable to conduct international benchmarking in transmission. CEPA concluded that international benchmarking of transmission IMF&T and Indirects was not viable at RP6. It is fair to say that there are only a small number of transmission comparator companies in Great Britain, with which to potentially benchmark NIE Networks against.
- 5.281 Taking CEPA's recommendation into account we have not undertaken benchmarking of NIE Networks' transmission IMF&T and Indirect costs. The Utility Regulator has decided that the most pragmatic approach is to apply the resulting triangulated catch-up efficiency factor from our comparative benchmarking analysis (110kV or less) to IMF&T and Indirect base costs (2015/16) associated with the NIE Networks' 275kV network. Given that NIE Networks operate as one business we consider this is the appropriate approach to take.
- 5.282 The underlying principles of this approach was undertaken by the CC in their RP5 determination.

IMF&T and Indirects RP6 allowance

- 5.283 The Utility Regulator's methodology for setting an efficient IMF&T and Indirects allowance for RP6 follows a traditional RPI +/- X regulatory approach, as undertaken by the UR in its NI Water price controls and by the CC in RP5.
- 5.284 In keeping with this principle, for RP6 we assess an efficient IMF&T and Indirects allowance for RP6 in the following way:

- We set what we consider a fair and representative baseline cost position for IMF&T and Indirects from outturn company data. This baseline encompasses a larger spectrum of cost categories than was used for modelling purposes;⁸³
- We assess whether to apply our triangulated efficiency gap results (efficiency catch-up) to this baseline figure, which would be rolled forward for the six and a half years of RP6;
- We assess whether additional expenditure allowances are warranted due to changes in the scope of work which will be undertaken during the RP6 period, or for other reasons.

5.285 Separately, we make a frontier shift adjustment to take into account real price effects and productivity during the RP6 period. Further details are in Chapter 10.

Baseline Adopted for RP6

5.286 At draft determination, the UR determined a baseline allowance of £62.229 for IMF&T and Indirects, which it considered was based upon 2015-16 outturn costs (i.e. a single year (2015-16) as its baseline).

5.287 Our baseline IMF&T costs are a wider spectrum of costs than those used within our modelling, as modelled costs have some exclusions to ensure a more like-for-like comparison. Our IMF&T and Indirect baseline includes costs relating to the 275kV network and STEPm costs for example.

5.288 The Utility Regulator decided not to include STEPm in the benchmarking exercise as we considered it was difficult to compare STEPm across DNOs. However, we do consider it appropriate to apply the triangulated catch-up efficiency factor to STEPm base costs. As a result, we leave STEPm expenditure in NIE Networks' base 2015/16 IMF&T and Indirect costs taken from the Financial RIGs data. Hence, there is no requirement to produce a separate assessment of STEPm base expenditure for RP6.

5.289 Atypical severe weather, rates, pension deficit costs and non-op capex IT and Telecoms are excluded and are assessed separately.

5.290 In their consultation response to the draft determination, NIE Networks stated that they considered that the UR's baseline figure of £62.299m was understating NIE Networks' baseline for IMF&T by £2.756m

5.291 This means NIE Networks consider a *higher* figure of £65.056m to be the appropriate baseline. A short summary of NIE Networks' reasoning for this is as follows:

- The UR's baseline at DD used 2015-16 forecast data as opposed to outturn (including for transmission tree cutting).
- There were some errors identified in the 2015-16 outturn dataset which have been rectified by NIE Networks - a revised dataset has been submitted to the UR.

⁸³ Some costs were excluded for modelling purposes to ensure a better like-for-like comparability with GB DNOs (such as costs relating to 275kV network). However, these costs are included in the IMF&T and Indirects baseline.

- According to NIE Networks, instead of using a single year (2015-16) as the baseline, a four-year average should be adopted instead.

5.292 The UR acknowledges that it is imperative for figures adopted for baselining future expenditure to be based on as accurate and representative a dataset as possible. Accordingly, for final determination the UR has decided to take account of data revisions made since NIE Networks submitted their business plan.⁸⁴

5.293 It is important to note the CC also indicated at RP5 that 2015-16 would be the base year for RP6, when they discussed the introduction of the RIGs reporting regime for NIE. According to the CC, a 2015-16 base year would be beneficial as it would mark a more accurate set of reported information than an earlier year:

“We found that the availability of RIGs reporting in 2015/16, the base year for the next price control, was very important and in the public interest. We considered it was important that both NIE and the Utility Regulator had one year of exposure to RIGs reporting before the base year, even if that first year of reporting (2014/15) had a number of areas with low confidence grading or had some gaps, which would be agreed with the Utility Regulator.”⁸⁵

5.294 In our final determination we have decided not to adopt a four-year average and to continue with the adoption of a single year (2015-16) as our baseline for IMF&T and Indirects. Amongst other reasons, the fact that even 2015-16 data allocations themselves have been subject to revision, merely reinforces our view that earlier years are potentially likely to be less accurate than 2015-16, which has been subject to a more intense company ‘scrutiny’ due to the price control process. In any case, it is fair to say the difference between adopting a four-year historical average and using the single base year of 2015-16 is relatively small.⁸⁶

5.295 It is interesting to note that the CMA in the Firmus Energy referral, as a matter of regulatory principle, did not find issue with using a single base year (to set opex):

“.....a single representative base year is a viable alternative to taking an average over more than one year when setting a charge control and indeed such an approach has been taken in past cases.

FE has referred to the CMA’s decision in the Bristol Water case, in which more than one year was used. However, in our view, the fact that a different approach was taken in another case is not sufficient to prove that the UR was wrong in the present case. There is a range of options open to the UR in selecting its base period, for example a single base year or a combination of different years. The option which is most appropriate will depend on the circumstances of the case.

⁸⁴ This higher baseline has in turn led to higher modelled costs for NIE Networks for 2015-16. All things being equal, this will have the effect of increasing the efficiency gap on the company.

⁸⁵ From paragraph 18.75 of CC RP5 determination:

https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

⁸⁶ A single base year is consistent with the UR approach to the PC10, PC13, PC15 price controls for NI Water as well as the bottom-up assessment at GD17, our recent gas distribution price control.

Therefore, as a matter of regulatory principle, we do not find issue with using a single base year to set Opex and consider that in doing so the UR was within its margin of appreciation in exercising its regulatory judgment.”⁸⁷

- 5.296 In summary, in the final determination the UR has increased the baseline used at draft determination for the 2015-16 year by £2.756m. This gives a total baseline figure of £65.056m for IMF&T and Indirects.⁸⁸
- 5.297 Furthermore, moving into RP6 and as previously highlighted above, it is imperative that NIE Networks improve their data assurance significantly and through submission of a new Data Assurance Plan.

Application of Triangulated Efficiency Gap

- 5.298 Once a baseline has been established, it is necessary to consider whether this represents an efficient level of spend for the IMF&T and Indirects category based on comparisons with the industry benchmark company.
- 5.299 Our approach to catch-up efficiency was explicitly detailed in the Utility Regulator’s RP6 approach document and Benchmarking & Efficiency Data Submission Guidance document (February 2016) and the Utility Regulator’s associated workbook.

“In the Utility Regulator’s Approach to RP6 document, it was outlined how we expect NIE Networks to provide information which would enable the benchmarking of NIE Networks’ costs against peer enterprises operating in the rest of the UK and Europe. If NIE Networks’ costs are higher than the benchmark company(s), we will consider applying catch-up efficiency factors to the firm’s baseline costs.”⁸⁹

- 5.300 The approach of applying efficiency results to a base year is standard in RPI +/- X regulation and was followed by the Utility Regulator in PC10, PC13, and PC15 where we applied findings from our econometric and unit cost results to NI Water’s base opex. The principle was also adopted by the CC in its RP5 of NIE, where the CC applied its efficiency model results to a base year’s costs (namely 2011/12) to derive its RP5 allowance:

“..... we took the following approach for our final determination:

“(a) For indirect and IMF&T costs, our RPE and productivity estimate was from 2011/12 until the end of our revenue control. This was because we set an efficient allowance for NIE’s indirect costs based on benchmarked GB DNO cost data from

⁸⁷ Paragraphs 4.173 to 4.175 of CMA’s Firmus Energy Final Determination <https://assets.publishing.service.gov.uk/media/5953bfd8e5274a0a69000079/firmus-final-determination.pdf>

⁸⁸ This differs slightly to the £2.830m figure above as £0.003m of the difference in proposed baseline is attributable to using a four-year average instead of a single base year of 2015-16.

⁸⁹ https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/2016_02_17_Benchmarking_Efficiency_Data_Submission_-_Guidance_Notes_v0200_0.pdf

2011/12 (see paragraphs 8.30 to 8.36). This benchmarked allowance represented an estimate of the indirect costs of an efficient firm in 2011/12.....”⁹⁰

- 5.301 For final determination we have ascertained a triangulated estimated efficiency gap figure of 2.31%. However, the Utility Regulator has decided not to apply this efficiency discount to NIE Networks’ base costs for 2015-16. This provides NIE Networks with significant headroom during the six and a half years of RP6.
- 5.302 The UR notes that this headroom addresses the risk that the individual assumptions within the UR analysis may produce an overly challenging target for NIE Networks. More importantly we expect that NIE Networks will use this headroom to address challenges as they arise in a more incisive and efficient manner. Given this flexibility the Utility Regulator will take a firm line in requests by NIE Networks for additional funding to deal with new challenges during RP6 which are not of a large magnitude.

UR’s Assessment of Additional Costs

- 5.303 Various additional IMT&T and Indirect costs were identified by NIE Networks within its RP6 Business Plan (for cost increases associated with ESQCR, IT opex costs for enhanced Network Management System Infrastructure, and increases in tree-cutting expenditure in the low voltage network) alongside a limited number of instances where such operational costs were expected by the company to reduce over the RP6 period.
- 5.304 Compared to the 2015/16 base year (£65.056m), NIE Networks forecasted IMF&T and Indirect costs to be approximately £3.6m (in 2015/16 prices) higher on average per annum through RP6. At draft determination the Utility Regulator determined that these additional costs were not justified on the basis they mirror such costs already incurred by comparator DNOs in GB.⁹¹
- 5.305 NIE Networks, in their consultation response criticised the approach taken by the Utility Regulator on this aspect of IMF&T and Indirects. The company questioned whether the UR had followed its own proposed ‘twin test’ approach of ‘newness’ and ‘exogeneity’ referred to in the UR’s RP6 Final Approach document. NIE Networks have referred to the following passage within the UR’s RP6 Final Approach document (December 2015):

“We will ask the company to establish its baseline operating costs and identify foreseeable reductions or increases in costs for future years. Our approach to baselining of operating expenditure will ensure:

⁹⁰ From paragraph 11.8 of CC RP5 determination:

https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

⁹¹ As discussed, the baseline at the draft determination was lower. As a result, the additions to the baseline at draft determination proposed by NIE Networks in their business plan appeared higher than those set at this final determination. This is not due to revised forecasts by NIE Networks but solely caused by the revised 2015/16 baseline.

- adoption of our twin tests of ‘newness’ and ‘exogeneity’ to establish the need for increased operational spend before we allow increased costs to be borne by consumers as part of the RP6 regulatory contract; and
- consumers do not pay for investments that might already have been funded under previous price controls”⁹²

5.306 NIE Networks stated that they considered that the UR made an error in the draft determination by disallowing the additional costs as discussed above. The company submitted further information on the following:

Distribution tree cutting costs in RP6 (£0.7m per annum)

5.307 NIE Networks have forecasted an increase in tree cutting costs of approximately £0.7m per year as a result of an increase in requirements to address tree cutting on the low voltage network.

5.308 We queried the reasoning behind this forecasted increase given that NIE Networks already operate to the ENA TS 43-8 standard required by ESQCR.

5.309 NIE Networks responded to our query by arguing that the forecasted increase in tree cutting activity is largely due to “the requirement” to move from a 5 year tree cutting cycle to a 3 year tree cutting cycle on the 11 kV network.

5.310 After careful consideration, we do not consider it appropriate in this final determination, to provide NIE Networks with any additional tree cutting allowance above our baseline during RP6. Our reasons behind this decision are presented below:

- The forecasted increase in tree cutting activity is not related to ESQCR but is instead related to NIE Networks’ decision to move from a 5-year tree cutting cycle to a 3-year tree cutting cycle. Thus, this is not an exogenous decision by NIE Networks, and therefore does not automatically meet our “newness” and “exogeneity” twin criteria.
- Furthermore, given the transition from a 5-year to a 3-year tree cutting cycle is an endogenous decision by the company, it also does not appear that NIE Networks have assessed the benefits of the change either in service or safety. If the company wishes to make this change then a cost / benefit analysis would be required at a very minimum to demonstrate how consumers are going to benefit from this decision, and why consumers should fund the decision, to move to a 3-year cycle.
- It appears that 6 GB DNOs are currently operating to a 3-year tree cutting cycle; 3 DNOs operate to a 4-year tree cutting cycle; and 4 DNOs operate to a 5-year tree cutting cycle. As a result, our benchmarking already takes into account the costs associated with moving to a 3-year tree cutting cycle for 6 out of 14 DNOs in the tree cutting cycle. Thus, the predicted tree cutting costs from our benchmarking models somewhat captures the increase in tree cutting costs associated with moving to a three-year cycle. Similarly, if we assume the move to

⁹² Utility Regulator -RP6 Final Approach Document:
https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/2015-12-22_RP6_Final_Approach_Document_-_final.pdf

a three-year tree cutting cycle is an efficient decision ⁹³, it may therefore have been appropriate to apply a negative special factor to tree cutting costs of DNOs who do not operate to a 3-year cycle, which would likely have increased NIE Networks' efficiency gap (everything else being equal).

GB DNO	Cycle	Since
1	5	2011
2	3-5	2011
3	3	2011
4	3	2011
5	3	2011
6	3	2011
7	3	2013
8	3	2011
9	4	2011
10	4	2011
11	5	2011
12	5	2011
13	5	2011

Table 27: GB DNOs' 11kV Tree Cutting Cycle

- Following on, an accelerated cycle of tree cutting could reduce the probability that vegetation will encroach within the safety clearance of the conductors before the next cut. This has the potential to reduce outages when tree cutting occurs, which will reduce planned customer interruptions (CI) and customer minutes lost (CML). If this is the case, NIE Networks should fund the accelerated cycle of tree cutting from the CML incentive, assuming that the change is cost effective. Otherwise, the company would arguably be funded twice: initially for the forecast increase in tree cutting volumes; and secondly through the outcome of lower CML from the reliability incentive.

Additional Core CAI costs in RP6 (£3.3m per annum)

5.311 Firstly, it is important to note that indirect expenditure associated with innovation (investing for the future) is being assessed separately in Chapter 6 of this final determination, and therefore we do not cover this here. This decision is due to the

⁹³ We do not know if this is the case for NIE Networks as they have not conducted any cost / benefit analysis to highlight the benefits to consumers of making this change and paying for this change.

fact that costs associated with innovation are included in a separate column in the C1 matrix, and are therefore not included in the benchmarking.

- 5.312 We therefore focus on the remaining forecast increases in core CAI costs during RP6, presented by NIE Networks in their consultation response to our draft determination.
- 5.313 Through careful consideration, we do not consider it appropriate to allow NIE Networks any additional core CAI allowance during RP6.
- 5.314 Our reasoning for this decision is presented in significant detail in Annex D: Special Factors. However in summary, we conclude that the absence of a statistically significant relationship between ESQCR/ asset additions and IMF&T and Indirects indicates that increases in capex requirements do not result in significant increases in IMF&T and Indirect costs. For this reason, we do not deem it necessary to apply an ESQCR negative special factor, and following on, we do not deem it appropriate or necessary to provide NIE Networks with an additional IMF&T and Indirect allowance as a result of increasing ESQCR or growth in general capex during RP6.
- 5.315 In turn, we deem the company is adequately funded in RP6 without the need for an addition to our core CAI allowance included within the baseline IMF&T and Indirect allowance.
- 5.316 It is also worth noting that the differences in forecasts between NIE Networks and NERA are more significant than the company suggest in their consultation response. While it is correct that NERA have forecasted higher core CAI costs associated with ESQCR and the 33kV network than NIE Networks, we are not confident with the identified relationship between CAI and asset additions used by NERA to arrive at these forecasts. Furthermore, when NERA use the same approach to identify the impact on CAI costs of increased general capex requirements during RP6, they only arrive at an estimate of £0.9m per annum compared to NIE Networks' implied forecast of approximately £1.98m per annum for increased general capex requirements (£3.3m (core CAI total) - £1.22m (ESQCR, 33kV) - £0.097m (innovation) = £1.98m per annum). This is a significant difference, and exacerbates our concerns further with regards to NIE Networks' forecasts and the approach taken by NERA to identify the relationship between capex and core CAI costs.

Additional vehicles and transport costs (£0.3m per annum)

- 5.317 In NIE Networks' consultation response to the draft determination, they state that by using 2015/16 as the baseline, the UR needs to consider a modest increase of £0.3m per annum with regards to vehicles and transport as a result of a ramp up of the RP5 capex programme at the end of the period. As a result, the increase in vehicles and transport costs are not exogenous (outside the control of the company).
- 5.318 We have carefully considered NIE Networks' claim but have concluded that NIE Networks are adequately funded in RP6 without the need for an addition to our vehicles and transport cost allowance. Our reasoning for this decision is presented below.

- 5.319 Firstly, the fact that the forecast increase in vehicles and transport costs are as a result of a ramp-up in general capex means that the forecasted increase is not exogenous, and therefore does not automatically meet out “newness” and “exogeneity” criteria.
- 5.320 Secondly, NIE Networks have not presented any cost / benefit analysis to explain why vehicles and transport costs are scheduled to increase as the result of the capex programme ramping up at the end of RP5. As a result, we have no indication whether the amount determined by NIE Networks is efficient, in customers’ best interests, or necessary given the vehicles and transport allowance we have allowed in our baseline.
- 5.321 Thirdly, the analysis presented in Annex D: Special Factors demonstrates that the absence of any statistically significant relationship between asset additions and IMF&T and Indirects indicates that increases in capex requirements do not result in significant increases in IMF&T and Indirect costs (including vehicles and transport costs).

Additional wayleave costs (£0.5m per annum)

- 5.322 NIE Networks have forecasted an increase in wayleave costs by approximately £0.5m per annum during RP6 as a result of an ongoing review of wayleave payments being carried out in GB.
- 5.323 We explain in detail why we have decided not to allow NIE Networks’ forecasted increase in wayleave costs in Annex D: Special Factors.
- 5.324 Nevertheless, in summary, while we agree that the proportion/ volume of overhead lines are arguably exogenous,⁹⁴ we consider that the wayleave compensation rates set by NIE Networks are controllable by the company (i.e. endogenous) and therefore do not pass our “newness” and “exogeneity” twin test.
- 5.325 For the same reasons, we do not feel it necessary to introduce a wayleaves uncertainty mechanism during RP6. As discussed in detail in Annex D: Special Factors, we consider strongly that wayleave rates are within the control of the company. In turn, there is no reason for why NIE Networks have to follow the wayleave rates used by SSE Hydro. This argument becomes even more significant if SSE Hydro do in fact increase their wayleave rates significantly during RP6 because the potential benefit from moving away from the wayleave rates set by SSE Hydro will become even greater. For this reason, we do not consider it appropriate or necessary to introduce a wayleaves uncertainty mechanism during RP6.

⁹⁴ We consider that including the proportion of overhead lines as a driver in UR’s models sufficiently and appropriately takes into account differences in the operating environments across DNOs that cause increases in the volume of wayleaves.

Additional IT & Telecoms costs (£1.53m)

- 5.326 The UR considers that no additional IT & Telecoms indirect expenditure is required in addition to the allowance included in NIE Networks' base IMF&T and Indirect allowance for RP6.
- 5.327 IT & Telecoms indirect expenditure is included within our IMF&T and Indirect benchmarking, which justifies the 2015/16 base roll forward. As a result, we deem the company is adequately funded in RP6 without the need for an addition to our IT & Telecoms Indirects base allowance.
- 5.328 The exemption being the case of the 'Optel – BT21CN' and 'Optel RAD' costs, which are not included in the benchmarking as they are classified as operational IT & Telecoms. We were notified of this issue by NIE Networks in their consultation response to the Draft Determination, who have since provided a reconciliation between IT & Telecoms indirect costs in the IMF&T and Indirect benchmarking data set and IT & Telecoms indirect costs in the Non Network IT business plan.
- 5.329 As a result, we have accepted the recommendations by Gemserv regarding these costs, and have provided NIE Networks with an allowance of £1.53m in total over RP6 for costs relating to 'Optel – BT21CN' and 'Optel RAD' costs in this final determination.

Change of law costs (£1.83m)

- 5.330 NIE Networks also stated that UR's proposals at draft determination did not provide for cost recovery of two further items which they subsequently identified, totalling £2.847m over the RP6 period. These items were:
- Changes relating to the abolition of contracting out for salary related schemes which NIE Networks estimate will cost £0.280m per annum.
 - An apprenticeship levy of 0.5% of the pay bill, which NIE Networks estimate will cost £0.158m per annum.

NIE Networks stated that the UR's proposals in the draft determination were in error and they considered these to be legitimate costs which the company has no option but to incur. NIE Networks stated they need to be considered separately and an appropriate allowance granted by the UR.⁹⁵

- 5.331 After consideration, we consider it appropriate in this final determination to allow the change of law costs associated with the abolition of contracting out for salary related schemes. As a result, we have increased NIE Networks' IMF&T and Indirect allowance accordingly by approximately £1.83m in total over RP6.
- 5.332 However, we have made the decision not to provide an allowance for the apprenticeship levy at this final determination, and instead propose that this cost item is considered throughout RP6 under the change of law re-opener (once we all have

⁹⁵ NIE Networks – Response to the Draft Determination - page 88 (para 5.81)

clarity around the extent to which the company might benefit from government apprenticeship programmes).

Summary of UR's IMF&T and Indirect Allowance for RP6 FD

- 5.333 It is the Utility Regulator's considered view that scope remains for NIE Networks to outperform the RP6 allowances on IMF&T and Indirects. This is especially the case as the UR has provided significant headroom in not applying and catch up and increased the baseline by a material amount (+£2.756m) since the draft determination. In addition, our extensive efficiency analysis, estimating a 2.31% catch-up gap, indicates that NIE Networks has some modest opportunity for cost improvements before it can be considered an upper quartile company in terms of efficiency performance.
- 5.334 The Utility Regulator notes that this headroom addresses the risk that the individual assumptions within the UR analysis may produce an overly challenging target for NIE Networks. More importantly we expect that NIE Networks will use this headroom to address challenges as they arise in a more incisive and efficient manner. Given this flexibility the Utility Regulator will take a firm line in requests by NIE Networks for additional funding to deal with new challenges during RP6 which are not of a large magnitude.
- 5.335 The chart below presents NIE Networks' IMF&T and Indirect allowance for RP6.^{96 97} RP5 allowances,⁹⁸ RP5 outturns and NIE Networks' own RP6 IMF&T and Indirect forecasts are also presented for comparison purposes. We have excluded indirects associated with innovation and the apprenticeship levy from NIE Networks' forecasts, as these are being assessed separately – the former in Chapter 6 and the latter via the change of law re-opener. We have also added change of law costs associated with defined benefit pension schemes and Optel IT&T costs onto our base IMF&T and Indirect allowance.
- 5.336 RP5 allowances are presented on a post productivity and RPEs basis to enable a comparison with RP5 outturn data between 2012/13 and 2015/16. Whereas, both NIE Networks' IMF&T and Indirect forecasts from 2017/18 onwards and the Utility Regulator's draft and final determination allowances are presented on a pre-productivity and RPEs basis.
- 5.337 It can be seen that the total IMF&T and Indirect allowance over the six and a half years of RP6 has increased by approximately £29m between the draft and final determination (pre RPEs and productivity). Our RP6 allowance (before RPEs and productivity) is higher in real terms than the allowance the CC made for the final years of RP5.⁹⁹ It should be noted that outperformance revealed by NIE Networks over RP6 is to be shared 50:50 with customers and the company.

⁹⁶ Distribution plus transmission IMF&T and Indirect expenditure, including tree cutting.

⁹⁷ 2017/18 only relates to the second half of the financial year (i.e. 1 October 2017 to 31 March 2018). We have multiplied by two, to aid comparability with future full financial years.

⁹⁸ 2017/18 only relates to first half of the financial year i.e. 1 April 2017 to 30 September 2017.

CC allowance is multiplied by two, solely to aid comparability with previous full financial years.

⁹⁹ However, each price control has a new P₀ assessment based on latest available industry data.

5.338 In addition, we also present a table which compares NIE Networks IMF&T and Indirect cost forecasts during RP6 with the Utility Regulator’s IMF&T and Indirects allowance during RP6. As outlined above, we have made some exclusions to NIE Networks’ forecast costs for RP6 as these are assessed separately.¹⁰⁰

5.339 Overall, our final determination allowance (£426m) for IMF&T and Indirects (pre productivity and RPEs) is around **2.8% lower** than NIE Networks’ business plan forecasts (£439m).

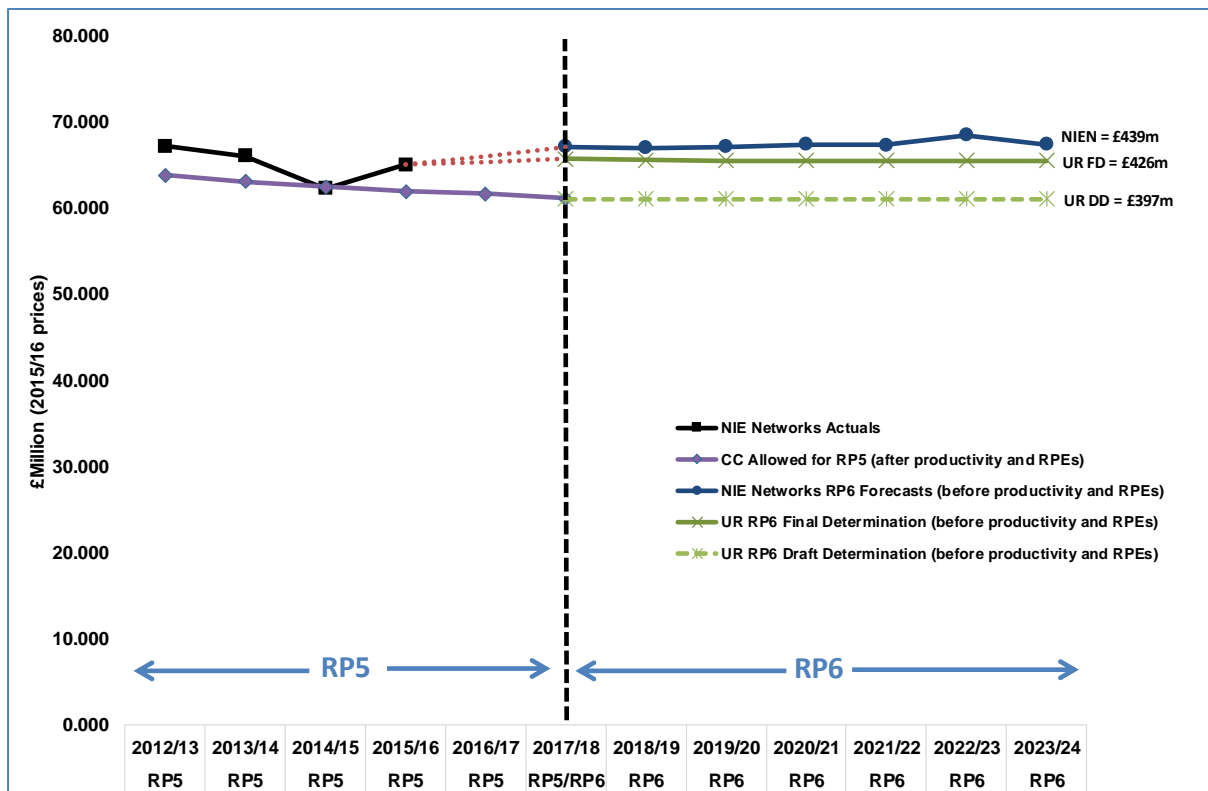


Figure 16: RP6 IMF&T and Indirects allowance (pre RPEs and productivity)

¹⁰⁰ 2017/18 only relates to the second half of the financial year (i.e. 1 October 2017 to 31 March 2018).

RP6 Comparison (£million in 2015/16 prices)	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	2023/ 2024
NIE Networks RP6 forecasts (including innovation)	33.715	67.309	67.439	67.679	67.654	68.772	67.703
Minus innovation indirects	-0.048	-0.097	-0.097	-0.097	-0.097	-0.097	-0.097
Minus apprenticeship levy	-0.079	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158
NIE Networks RP6 forecasts (excluding innovation)	33.588	67.054	67.184	67.425	67.400	68.517	67.448
Utility Regulator 2015/16 baseline IMF&T and Indirects	32.528	65.056	65.056	65.056	65.056	65.056	65.056
UR additions (Optel)	+0.225	+0.300	+0.200	+0.200	+0.200	+0.200	+0.200
UR additions (Change of Law - Defined Benefit Scheme)	+0.140	+0.281	+0.281	+0.281	+0.281	+0.281	+0.281
Utility Regulator final determination allowance, including additions	32.893	65.637	65.537	65.537	65.537	65.537	65.537
Difference between UR allowance and NIE Networks' forecasts (£m)	-0.695	-1.418	-1.647	-1.888	-1.863	-2.981	-1.912
% Difference between UR allowance and NIE Networks' forecasts	-2.07%	-2.11%	-2.45%	-2.80%	-2.76%	-4.35%	-2.83%

Table 28: RP6 IMF&T and Indirects Allowance - Pre Productivity and RPEs

6 Other Operating Costs

Severe Weather Allowance

Changes from draft to final determination

- 6.1 We have carefully considered and taken into account NIE Networks' and CCNI's responses to our draft determination and have refined our approach to determining an atypical severe weather allowance accordingly.
- 6.2 Importantly, we now take into account the size of a DNO's network and network topology when setting an atypical severe weather allowance.
- 6.3 Further details are provided in the subsections below.

Introduction

- 6.4 We consider that costs associated with atypical severe weather costs are somewhat outside of NIE Networks' control and are by definition not incurred every year by every DNO. Hence, CEPA did not include expenditure attributable to atypical 1-in-20 severe weather events within their benchmarking of NIE Networks' IMF&T and Indirect costs.
- 6.5 It is therefore required that we conduct a separate assessment on the level of costs associated with 1-in-20 atypical severe weather events that should be allowed during RP6. This was the approach taken by CC at RP5.
- 6.6 Ofgem defines a 1-in-20 atypical severe weather event as an event that gives rise to more than 42 times the mean incidents at HV and above. Therefore, the threshold is specified separately for each company. Any costs associated with severe weather that do not meet this threshold are included in trouble call, and are assessed as part of NOCs.
- 6.7 On the basis that NIE Networks followed this definition, it appears that NIE Networks experienced three 1-in-20 atypical severe weather events in the first 4 years of RP5. However, the costs associated with 1-in-20 severe weather costs in 2014/15 are very small. The costs associated with atypical severe weather events are presented below:

Year	2015/16 prices
2012/13	£1.869 million
2013/14	£0.757 million
2014/15	£0.002 million
2015/16	£0.000 million

Table 29: atypical severe weather expenditure between 2012/13 and 2015/16

- 6.8 These events are in addition to the 1-in-20 atypical severe weather events identified as part of the RP5 price control review, in 2003/04 and 2007/08.¹⁰¹ Therefore, since 2003/04, NIE Networks have experienced six 1-in-20 severe weather events, albeit the costs associated with the 2003/04 and 2014/15 are small in magnitude.
- 6.9 As suggested by CC at RP5 and NIE Networks, these figures do suggest that severe weather events according to Ofgem's definition do occur with greater frequency in Northern Ireland than 1 in 20 years.
- 6.10 The remainder of this section is organised as follows:
- Approach to severe weather costs taken in RP5.
 - Outlines NIE Networks' atypical severe weather allowance proposal for RP6.
 - Describes the Utility Regulator's proposal for an atypical severe weather allowance during RP6.

Approach to setting an atypical severe weather allowance at RP5

Context

- 6.11 AT RP5, our definition of a major storm event was a severe weather event that costs more than £1 million.
- 6.12 Both NIE Networks and ourselves had similar views on how costs associated with major storm events that pass this threshold should be treated:
- NIE Networks: Did not ask for an ex ante allowance for major storm events but proposed instead that storms that gave rise to costs above £1 million should be subject to a force majeure arrangement under which the Utility Regulator could make adjustments to NIE Networks' maximum regulated revenue during the price control period.
 - Utility Regulator: Proposed an ex post adjustment to provide NIE Networks with additional revenue to cover the costs of atypical storm events.
- 6.13 Both approaches would result in costs associated with major storm events that pass the £1 million threshold being passed straight through to consumers. CC did not agree with this approach due to two main reasons:
- CC argued that wherever possible you should avoid cost pass-through which could expose consumers to unnecessarily high costs; and
 - The definition of a major storm event could give rise to perverse incentives when considered alongside treatment of normal or typical expenditure. For example, if storms costing more than £1 million are passed through but storms costing less than £1 million are subject to an ex ante allowance, NIE Networks would face an incentive to increase the cost of storm events to the £1 million pass-through threshold.

¹⁰¹ In 2015/16 prices, the costs associated with 1-in-20 severe weather events were £210,000 in 2003/04 and £4,510,000 in 2007/08.

- 6.14 Taking into account these reasons, the CC decided that it was not in the public interest to pass through costs associated with major storm events that pass the £1 million threshold. As a result, the CC decided it was appropriate to set an ex-ante allowance, while recognising the difficulties in setting the allowance.

CC RP5 Provisional Determination

- 6.15 CC's first step involved considering GB DNO data on gross costs associated with severe atypical weather over the period 2009/10 to 2011/12.
- 6.16 This data showed that no GB DNOs reported costs in this category in 2009/10 or 2010/11 and one GB DNO reported costs in this category in 2011/12 (£5.3 million).
- Over the three year period, the average cost per GB DNO was £126,000.
 - For 2011/12, the average cost per GB DNO was £378,000.
- 6.17 Ofgem define atypical severe weather events as one-in-20-year events. CC used this definition by taking the atypical severe weather event cost reported in 2011/12 (£5.3 million), dividing by the number of companies whom incurred atypical severe weather costs in 2011/12 (1 company), and then dividing by 20 to reflect a 1-in-20-year event. This calculation resulted in annual allowance of around £265,000.
- 6.18 However, the CC noted that this figure would be higher or lower depending on the magnitude of the event being considered. For example, an event costing £1 million would imply an annual allowance of £50,000 (i.e. £1 million divided by 20).
- 6.19 As a result, the CC considered that a plausible annual allowance for severe storms was in the range of £50,000 (assuming a £1 million severe weather cost as previously defined) to £378,000 (average 2011/12 atypical severe weather cost per GB DNO).
- 6.20 Based on this analysis, the CC provisionally decided on an allowance of £200,000 a year, or £1,100,000, for RP5.¹⁰²

CC RP5 Final Determination

- 6.21 In response to CC's provisional determination, NIE Networks stated that severe weather events by the definition used by Ofgem had occurred with greater frequency in Northern Ireland than 1 in 20 years.
- 6.22 There had been three such events in the period 2003/04 to 2012/13 which cost £6.3 million in total.
- 6.23 NIE Networks argued that this implied an annual cost of £0.63 million and an RP5 allowance of £3.5 million.¹⁰³
- 6.24 The company also argued that the fact that NIE Networks had experienced three 'Severe Weather 1 in 20 events' in the period 2003/04 to 2012/13 meant that the CC

¹⁰² 2009/10 price base.

¹⁰³ 2009/10 price base.

should not base its allowance on the assumption that NIE Networks would experience only one atypical severe weather event in 20 years.

- 6.25 The CC considered that the frequency of NIE Network's experience of severe weather events since 2003/04 was relevant evidence to consider, and decided that NIE Network's experience in the last 10 years meant they should give a higher allowance than in CC's provisional determination.
- 6.26 However, the CC did not want to base an allowance on NIE Network's experience alone, and therefore decided to also take into account GB data.
- 6.27 As a result, the CC arrived at annual allowance for atypical severe weather of £0.36 million, or £2 million over the entire RP5 period.¹⁰⁴

NIE Networks' approach to setting an atypical severe weather allowance for RP6

- 6.28 NIE Networks are seeking an allowance of £4.6 million for RP6. This was calculated by considering the costs associated with 1-in-20-year severe weather events for the period April 2012 to December 2015 (3.75 years).
- 6.29 Total 1-in-20-year severe weather event costs for this period came to approximately £2.6 million which equates to approximately £0.7 million per annum (£2.6 million divided by 3.75). The total RP6 allowance was then calculated by multiplying £0.7 million by 6.5 to reach £4.6 million. This approach is similar to the approach taken in RP5 by NIE Networks in their response to CC's RP5 provisional determination.
- 6.30 However, for RP6 the company has decided to ignore costs associated with 1-in-20-year events incurred between 2003/04 to 2011/12, which were considered as part of RP5. In addition, NIE Networks have also decided to ignore 1-in-20-year event costs incurred by GB DNOs, which the CC considered to be an important part of the assessment of NIE Networks' 1-in-20-year atypical severe weather event costs at RP5.
- 6.31 Taking the above into account, we consider that an alternative approach to setting an allowance for 1-in-20-year severe weather events during RP6 is more appropriate.
- 6.32 Firstly, we consider it is appropriate to analyse the longest historical time series available with regards to setting an atypical severe weather allowance as the first four years of RP5 may not be reflective of every four year period in recent history given the unpredictability and relatively low probability of atypical severe weather events.
- 6.33 A prime example of the unpredictability of atypical severe weather costs is the four year period 2008/09 to 2011/12. In this period NIE Networks did not incur any atypical severe weather costs. As a result, if we used this four year period and NIE Networks' approach to setting an atypical severe weather allowance we would not give NIE Networks an atypical severe weather allowance for RP6.
- 6.34 Furthermore, following CC's approach at RP5, we also consider it appropriate to take into account historical GB data as well as NIE Networks own historical data on atypical

¹⁰⁴ 2009/10 price base.

severe weather expenditure when setting an allowance for NIE Networks. This approach incentivises NIE Networks' to be as efficient as possible when reacting to atypical severe weather events, and is therefore in the public's best interest.

6.35 We have access to atypical severe weather expenditure for NIE Networks between 2003/04 to 2015/16. In addition, we have access to atypical severe weather expenditure for GB DNOs between 2010/11 to 2015/16. Taking it account the above, we deem it appropriate to use both of these time series to arrive at an atypical severe weather allowance for NIE Networks during RP6.

Utility Regulator's approach to setting an atypical severe weather allowance at the Draft Determination

6.36 At the draft determination, we decided to take a similar approach to the CC at RP5 in setting NIE Networks' atypical severe weather allowance for RP6.

6.37 To arrive at an annual allowance we took the following steps:

- Converted all atypical severe weather expenditure for GB DNOs (2010/11 to 2015/16) and NIE Networks (2003/04 to 2015/16) to a common price base (2015/16 prices). We used the ONS Chaw RPI all items index.
 - i. GB DNO expenditure data was taken from Ofgem RIIO-ED1 RIGs.
 - ii. NIE Networks expenditure data was taken from the company's C1 matrices, included as part of their RP6 business plan submission, and through CC's RP5 final determination.
- Calculated the average GB DNO atypical severe weather expenditure over the period 2010/11 to 2015/16 (6 years of data):
 - i. Sum up expenditure across DNOs (14 DNOs) and time (6 years). In total there are 84 observations (14 DNOs x 6 years).
 - ii. Divide by the number of years in the sample (6 years).
 - iii. Divide by the number of DNOs (14 DNOs).

6.38 Calculate the average NIE Networks atypical severe weather expenditure over the period 2003/04 to 2015/16 (13 years of data):

- i. Sum up expenditure over time (13 years).
- ii. Divide by the number of years in the sample (13 years).

6.39 Weighted together the average GB DNO atypical severe weather expenditure and the average NIE Networks atypical severe weather expenditure by summing together:

- "GB DNO average atypical severe weather expenditure over the period 2010/11 to 2015/16" multiplied by the number of GB DNOs divided by the number of UK DNOs" (i.e. 14/15); and

- “NIE Networks average atypical severe weather expenditure over the period 2003/04 to 2015/16” multiplied by one divided by the number of UK DNOs (i.e. 1/15).
- 6.40 By taking this approach we arrived at an annual atypical severe weather allowance of approximately £324,389 (2015/16 prices):
- GB DNO average expenditure over the period 2010/11 to 2015/16 was £307,315;
 - NIE Networks’ average expenditure over the period 2003/04 to 2015/16 was £563,419;
 - Weighted average = $[\text{£}307,315 * (14/15)] + [\text{£}563,419 * (1/15)] \approx \text{£}324,389$
- 6.41 Therefore, the total proposed NIE Networks atypical severe weather allowance for the entire RP6 regulatory period at draft determination was approximately £2.11 million (£324,389 multiplied by 6.5 years).

Consultation responses in relation to the setting of the severe weather allowance

- 6.42 NIE Networks and CCNI have both responded to our draft determination with regards to the setting of the severe weather allowance. We summarise these in turn below.

NIE Networks Consultation Response

- 6.43 NIE Networks’ claim that the fundamental flaw in the UR’s approach is that it fails to take account of the increased probability of a severe weather event in Northern Ireland. The company argue that this is in stark contrast to the benchmarking approach by Ofgem at RIIO-ED1, which took into account three factors in determining the severe weather allowance for the GB DNOs:
- actual expenditure during DPCR5;
 - the probability of a severe weather event occurring during RIIO-ED1; and
 - DNO’s forecast expenditure for RIIO-ED1.
 - OHL and Plant MEAV.
- 6.44 The latter is used to allocate the total atypical severe weather allowance across DNOs based on the scale of the DNOs’ network and proportion of OHL in the network. This is based on the expectation that the level of expenditure required to respond to an atypical severe weather event increases with the scale of the network covered by the DNO and the proportion of OHL in the DNO’s network.
- 6.45 NIE Networks also state that Ofgem excluded LPN from their analysis given the fact that the vast majority of their network is underground and therefore significantly less susceptible to severe weather events. In turn, the company argue that the inclusion of LPN in our analysis alone accounts for an error of approximately £0.15 million.
- 6.46 The company follow on by arguing that Ofgem’s approach to calculating an atypical severe weather allowance would lead to a much higher allowance of £6.46 million

over RP6 for NIE Networks, or approximately £1 million per annum. In turn, NIE Networks argue that the Utility Regulator should accept their proposed allowance of £4.6 million in the Final Determination.

Consumer Council Northern Ireland (CCNI) Consultation Response

- 6.47 CCNI argue that, on average, GB DNOs serve more customers and have more length of lines than NIE Networks, as well as more dense networks.
- 6.48 Consequently, CCNI suggest that, other things equal, the costs of a GB DNO in responding to a severe weather event can reasonably be expected to be greater than for NIE Networks.
- 6.49 Thus, by not adjusting for the difference in scale, UR's use of GB DNO data in the draft determination could result in overstating NIE Networks' severe weather allowance.

Utility Regulator's approach to setting an atypical severe weather allowance at the Final Determination

- 6.50 We have carefully considered NIE Networks' and CCNI's consultation responses regarding the setting of an atypical severe weather allowance, and have refined our approach accordingly for the final determination.
- 6.51 Firstly, we agree with NIE Networks' that LPN should be excluded from the analysis. Secondly, we also agree with NIE Networks and CCNI that the scale of the network as well as network topology (proportion of OHL in the network) should be taken into account when setting an atypical severe weather allowance.
- 6.52 However, we consider that the use of forecast data to set an allowance (as in the Ofgem approach) is inappropriate as it can perversely incentivise companies to increase their forecasts, knowing that this action is likely to result in a higher atypical severe weather allowance.
- 6.53 Nevertheless, we do maintain our view that it is appropriate to use GB historical data in addition to NIE Networks historical data when setting an atypical severe weather allowance. This approach will incentivise NIE Networks' to be as efficient as possible when reacting to atypical severe weather events, and is therefore in the public's best interest.
- 6.54 We also deem it appropriate to analyse the longest time series available with regards to setting an atypical severe weather allowance as the first four years of RP5 may not be reflective of every four year period in recent history given the unpredictability and relatively low probability of atypical severe weather events. For this reason, we rely on atypical severe weather expenditure data between 2003/04 to 2015/16 (13 years of data) for NIE Networks and atypical severe weather expenditure data between 2010/11 to 2015/16 (6 years of data) for GB DNOs.

6.55 The decisions above are reflected in the approach we have decided to take to set an atypical severe weather allowance at this final determination. For completeness we have calculated the allowance using four different approaches, which are discussed in detail below.

i) Approach 1: Draft Determination approach but with the exclusion of LPN

6.56 Approach 1 follows the same approach as at the draft determination but with the exclusion of LPN from the analysis.

6.57 Using this approach leads to an annual allowance of £0.348 million and a total RP6 atypical severe weather allowance of approximately £2.26 million. This is compared with a total RP6 allowance of approximately £2.1 million proposed in the draft determination.

6.58 However, we acknowledge that this approach does not take into account the scale or topology of each DNO's network. Hence, we do not consider it appropriate to use approach 1 to set an atypical severe weather allowance during RP6.

ii) Approach 2: Using NIE Networks' historical data only

6.59 Approach 2 is similar to the approach taken by NIE Networks' whereby we only use NIE Networks' historical atypical severe weather cost data to set an allowance for RP6.

6.60 However, as mentioned, we consider it appropriate to analyse the longest time series available with regards to setting an atypical severe weather allowance, which is in contrast to the company who only use atypical severe weather expenditure in the first four years of RP5.

6.61 This approach leads to an annual allowance of £0.563 million, and a total RP6 atypical severe weather allowance of approximately £3.66 million. This is compared with a total RP6 allowance of approximately £2.1 million proposed in the draft determination.

6.62 However, as mentioned, we consider it appropriate and necessary to take into account GB historical data in addition to NIE Networks own historical data on atypical severe weather expenditure when setting an allowance for NIE Networks. Hence, we do not consider it appropriate to use approach 2 to set an atypical severe weather allowance during RP6.

iii) Approach 3: Ofgem's approach to setting an atypical severe weather allowance at RIIO-ED1

6.63 As discussed, when setting an atypical severe weather allowance at RIIO-ED1, Ofgem accounted for:

- actual expenditure during DPCR5;
- the probability of a severe weather event occurring during RIIO-ED1;

- the DNO's forecast expenditure for RIIO-ED1; and
 - differences in OHL and Plant MEAV across DNOs to take into account network scale and topology.
- 6.64 As discussed extensively in Chapter 5 and Annex D: Special Factors, we do not consider it appropriate at this price control to use MEAV to assess costs. For this reason, we use OHL weight and total network length to allocate costs across DNOs. We consider this approach effectively takes into account the impact of network scale and topology on the expenditure required to respond to an atypical severe weather event. This is discussed in more detail below.
- 6.65 In addition, we have also introduced NIE Networks historical data and forecasts into the analysis; used UR's regional wage adjustment factors; and extended GB DNOs' forecasts to run to the end of RP6 (i.e. 2023/24).
- 6.66 The approach we have taken to replicate Ofgem's approach at RIIO-ED1 is summarised below.¹⁰⁵

¹⁰⁵ As mentioned, LPN have been excluded from the analysis.

Table 30: Approach 3 to setting an atypical severe weather allowance

<p>Upper quartile cost multiplied by probability</p>	<ul style="list-style-type: none"> •Over the historical period, upper quartile spend on atypical severe weather events was £9.6 million (after taking into account regional wage differences). •The probability of a 1 in 20 event occurring in RP6 is approximately 28% ($=1-(1-(1/20))^{6.5}$). •Thus, £9.6 million multiplied by 28% is £2.72 million (total RP6 period).
<p>DNO forecast expenditure</p>	<ul style="list-style-type: none"> •Using 6.5 years of forecast data (2017/18 to 2023/24), and adjusting for regional wage differences between regions, we obtain a total atypical weather expenditure spend of approximately £106.28 million.
<p>Apply 50% weight to historical and 50% weight to forecasts</p>	<ul style="list-style-type: none"> •Historical: £2.72 million multiplied by 14 = £38.12 million. •Forecasts: £106.28 million. •50% historical + 50% forecast = £72.20 million. •The unweighted allowance over the 7 year period per DNO is approximately £5.16 million.
<p>Re-allocation of allowances by OHL weight and total Network Length</p>	<ul style="list-style-type: none"> •We calculated adjustment factors based on OHL weight and total network length. The average adjustment factor across the 14 DNOs is one. •Apply a 50% weight to the OHL weight factor and 50% weight to the total network length factor. •This results in an overall adjustment factor for NIE Networks of approx. 1.25.
<p>Reversal of the regional wage adjustment</p>	<ul style="list-style-type: none"> •The regional wage adjustment is then reversed to obtain a total atypical severe weather allowance for each DNO over a 6.5 year period. •We divide NIE Networks' total allowance by 6.5 to obtain the annual allowance over RP6.

6.67 This approach leads to an annual allowance of £0.892 million, and a total RP6 atypical severe weather allowance of approximately £5.79 million. This is compared with a total RP6 allowance of approximately £2.1 million proposed in the draft determination.

6.68 However, we do not deem this approach is appropriate to use to set an atypical severe weather allowance during RP6 given the large reliance on forecast data. We consider that the use of forecast data to set an allowance is inappropriate as it can perversely incentivise companies to increase their forecasts knowing that this is likely to result in a higher atypical severe weather allowance.

iv) Approach 4: UR’s approach to setting an atypical severe weather allowance at Final Determination

6.69 We have combined individual elements of approaches 1 and 3 to arrive at an atypical severe weather allowance for NIE Networks during RP6, which we consider to be appropriate and sufficient.

6.70 This approach uses the unweighted allowance identified through approach 1 of approximately £0.348 million per annum, and multiplies by the OHL weight and network length adjustment factor identified in approach 3. We consider this approach effectively takes into approach the impact of network scale and topology on the expenditure required to effectively and efficiently respond to an atypical severe weather event.

6.71 We summarise this approach in the table below.

DNO	Unweighted allowance (£)	Adjustment factors			Weighted allowance (£)
		OHL weight adj. factor	Total length adj. factor	Weighted adj. factor	
NIEN	347,679	1.676	0.833	1.254	436,137
EMID	347,679	0.753	1.260	1.007	349,992
ENWL	347,679	0.560	1.001	0.781	271,406
EPN	347,679	0.880	1.685	1.282	445,878
NPGN	347,679	0.909	0.709	0.809	281,423
NPGY	347,679	0.624	0.928	0.776	269,837
SPD	347,679	0.819	1.041	0.930	323,469
SPMW	347,679	1.088	0.835	0.961	334,289
SPN	347,679	0.591	0.916	0.753	261,956
SSEH	347,679	1.632	0.834	1.233	428,528
SSES	347,679	0.882	1.341	1.112	386,488
SWALES	347,679	1.270	0.617	0.944	328,145
SWEST	347,679	1.387	0.881	1.134	394,292
WMID	347,679	0.928	1.118	1.023	355,665

6.74 The table above shows that this approach increases NIE Networks’ atypical severe weather allowance from £0.348 million per annum (approach 1) to £0.436 million per annum. Under this approach, NIE Networks receive the second highest atypical severe weather allowance out of all 14 DNOs included in the analysis.¹⁰⁶

6.75 To ensure our approach is appropriate we have compared GB DNO rankings between Ofgem’s approach at RIIO-ED1 and the UR’s approach at RP6 in terms of the atypical severe allowance received. A ranking of 1 indicates the DNO received the highest allowance and a ranking of 13 indicates the DNO received the lowest

¹⁰⁶ LPN are excluded from the analysis.

allowance. For comparative purposes we have excluded NIE Networks from this analysis as they were not included within Ofgem’s analysis at RIIO-ED1.¹⁰⁷

Table 31: GB DNO rankings under UR and Ofgem approaches

GB DNO	Ranking using UR’s approach	Ranking using Ofgem’s approach	Difference
EMID	6	6	0
ENWL	11	11	0
EPN	1	1	0
NPGN	10	10	0
NPGY	12	12	0
SPD	9	9	0
SPMW	7	8	-1
SPN	13	13	0
SSEH	2	4	-2
SSES	4	3	1
SWALES	8	7	1
SWEST	3	2	1

- 6.76 As the table above shows, the rankings obtained through both approaches are very similar, which gives us confidence in the approach we have taken to set an atypical severe weather allowance at RP6.
- 6.77 In fact, SSE Hydro have the second highest proportion of OHL in their network, very close behind NIE Networks. However, Ofgem at RIIO-ED1 only gave SSE Hydro the fourth highest atypical severe weather allowance, which reflects the fact that SSE Hydro’s network is small in scale relative to the other GB DNOs. In contrast, UR’s approach gives SSE Hydro the second biggest atypical severe weather allowance out of GB DNOs. Taking these findings into account, there may have been a justification to place a larger weight on the total network length adjustment factor than the OHL weight adjustment factor, which would have resulted in a lower atypical severe weather allowance for NIE Networks.
- 6.78 For example, placing a 40% weight on the OHL weight adjustment factor and a 60% weight on the total network length adjustment factor would lead to annual atypical severe weather allowance for NIE Networks of £0.407 million. This compares to an annual allowance of £0.436 million in our chosen approach when using a 50:50 weighting.
- 6.79 Taking everything into account, we consider the 50:50 weighting approach to setting an atypical severe weather allowance is fair, appropriate and sufficient to allow NIE

¹⁰⁷ Ofgem’s atypical severe weather allowances at RIIO-ED1 and corresponding analysis was provided by Ofgem to the Utility Regulator.

Networks to effectively and efficiently respond to atypical severe weather events during RP6.

Conclusion

6.80 In developing our approach to setting an atypical severe weather allowance during RP6, we have carefully considered regulatory precedent from the CC at RP5 and Ofgem at RIIO ED1, in addition to consultation responses from NIE Networks and CCNI.

6.81 In the table below we summarise the different atypical severe weather allowances set under the four approaches discussed in this final determination.

Approach	Annual RP6 Atypical Severe Weather Allowance	Total RP6 Atypical Severe Weather Allowance
1	£347,679	£2,259,913
2	£563,419	£3,662,224
3	£891,528	£5,794,931
4	£436,137	£2,834,889
Allowance given by UR at DD	£324,389	£2,108,527
NIE Networks' Proposals	£702,409	£4,565,658
CC RP5 Allowance (2015/16 prices)	£432,856	£2,813,567

6.82 Approach 4 is our chosen and preferred approach for the following reasons:

- Appropriately and effectively takes into approach the impact of network scale and topology on the expenditure required to efficiently respond to an atypical severe weather event.
- Utilises the longest historical time series available with regards to setting an atypical severe weather allowance given the unpredictability and relatively low probability of atypical severe weather events by definition.
- Takes into account historical GB DNO data, as well as NIE Networks own data, on historical atypical severe weather expenditure, which incentivises NIE Networks' to be as efficient as possible when reacting to atypical severe weather events, and is therefore in the consumer's best interest.
- Avoids using DNO forecast data, which we consider is inappropriate as it can perversely incentivise companies to increase their forecasts, knowing that this action will likely result in a higher atypical severe weather allowance.

6.83 It is important to note, that the annual allowance we have set at final determination is slightly greater than annual allowance set by the CC at RP5.

6.84 Taking everything into account, we consider we have arrived at an atypical severe weather allowance that is fair, appropriate and sufficient to allow NIE Networks to effectively and efficiently respond to atypical severe weather events during RP6.

Rates

Summary of Key Changes from Draft Determination to Final Determination

- 6.85 Following our RP6 Draft Determination, we have considered consultation responses received. We have extensively discussed key Rating aspects with LPS including the current and future Rates framework, the impact of non domestic rating aspects and future revaluations with specific reference to the Northern Ireland context. We have considered the key representation made by NIE Networks that Rates allowances should be pass through. After careful consideration, our approach to Business Rates in this Final Determination remains the same as our position outlined in the draft determination, since we are not persuaded by evidence or representations by the company to modify our approach or allowances.
- 6.86 For our Final Determination we are setting RP6 Business Rates allowances as follows:

	6 mths to Mar 2018 (£m)	2018-19 (£m)	2019-20 (£m)	2020-21 (£m)	2021-22 (£m)	2022-23 (£m)	2023-24 (£m)	RP6 Total (£m)
Distribution	6.9	13.9	13.9	14.0	13.9	14.0	14.0	90.5
Transmission	2.1	4.2	4.2	4.2	4.3	4.2	4.2	27.5
Total	9.0	18.1	18.2	18.2	18.2	18.2	18.2	118.1

(£m in 2015-16 prices- figures may not add due to rounding)

Table 32: UR Final Determination for Business Rates

Consultation responses received

- 6.87 Following our Draft Determination consultation we received three responses in relation to Business Rates; these responses were from the Consumer Council of Northern Ireland, Manufacturing Northern Ireland and NIE Networks (refer to Annexes Q and R for more detailed consideration of Consultation responses for NIE Networks and other consultation respondents respectively). We outline key aspects of these consultation responses below, along with the UR's consideration of same.

Consumer Council Northern Ireland- Consultation response on Rates

- 6.88 The CCNI stated in its response: *'The Consumer Council agrees with the UR assessment that Rates are not wholly uncontrollable. Therefore we support the UR provisional determination against allowing rates as a passthrough item in RP6.'*

Manufacturing Northern Ireland- Consultation response on Rates

- 6.89 In its response to the RP6 draft determination, MNI responded: *'In no other part of business (nor indeed domestic budgeting) would customers accept a supplier simply passing through additional costs. None of MNI's supporters, for instance, could*

simply pass through additional energy to their customers. Increased costs need to be off-set by increased efficiency. The Regulator's approach on this matter is already more than advantageous to NIEN.'

UR response to CCNI and MNI Consultation Responses on Rates

- 6.90 We note that both the CCNI and MNI responses were in favour of Business Rates not being treated as pass through expenditure items. We welcome these responses in support of Rates not being treated as pass through.

NIE Networks' Consultation response in relation to Rates

- 6.91 In its RP6 draft determination response, NIE Networks made a number of observations which we present below. In addition, we subsequently present the UR's consideration of NIE Networks' consultation response.

Proposed Treatment of Rates- NIE Networks' Response

- 6.92 NIE Networks stated that it considered that its Business Rates were not controllable and should be treated as Pass Through. NIE Networks also stated that the UR was incorrect in the draft determination application of Rates.
- 6.93 NIEN cited the example of Ofgem who allow Rates as pass through, provided the DNO can demonstrate that it has taken action to minimise liabilities. NIE Networks also stated that since the 2015 revaluation, NIE Networks' Rating valuation mechanism has moved in line with that in the UK and a similar approach should be used for its Rates as that applied to UK utilities.

NIE Networks' response on Capital projects and Uncertainty in Rates

- 6.94 NIE Networks also referred to the North South Interconnector and the impact of capital expenditure on Rating. NIE Networks stated that the UR were incorrect in its interpretation of the impact of the North South Interconnector on Rates.

UR consideration of NIE Networks' response on Rates

- 6.95 We present our detailed response to NIE Networks' consultation response in Annex Q to our final determination.
- 6.96 The UR does 'fundamentally understand' NIE Networks' role in the Rating process. We are familiar with the methodology used in setting of Rates which is utilised by LPS and it may be accessed at: <http://www.rics.org/uk/knowledge/professional-guidance/guidance-notes/receipts-and-expenditure-method-of-valuation-for-non-domestic-rating/>. We consider the role of NIE Networks in a tax representation to HMRC and that in relation to Rates with LPS are incomparable and markedly different. The UR has met with LPS and we maintain that the setting of Rates does include some element of negotiation between LPS and NIE Networks (or its agents), particularly at a Revaluation and NIE Networks has a legal right to appeal the LPS Rates setting at the Rates revaluation and indeed at any time. We note that NIE Networks and other Network Operators have used a 3rd party to interact and

negotiate with LPS on their behalf. In view of this, Rates cannot be considered to be wholly uncontrollable and should therefore not be treated as pass through.

- 6.97 By making Rates a pass through line of expenditure would mean that NIE Networks has no incentive to reduce this cost item and take action to reduce Rates bills for the benefit of consumers. Other businesses including utilities are required to manage their Rates liabilities and NIE Networks is no different. We consider that making Rates a pass through element would not incentivise the company to reduce its costs.
- 6.98 We note that the Rates setting methodology was changed by LPS at the 2015 Revaluation and moved in line with GB Rating methodologies. We understand that the methodology applied is based on the guidance at: <http://www.rics.org/uk/knowledge/professional-guidance/guidance-notes/receipts-and-expenditure-method-of-valuation-for-non-domestic-rating/> and that there is also negotiation between NIE Networks (or its advisors) and LPS to determine a final Rateable Value. We also consider that this change in rating methodologies introduced in 2015 is not entirely unsurprising, given that it is was already adopted by GB counterparts.
- 6.99 There is clear regulatory precedent for not passing through Rates. As well as the CC RP5 Determination, the UR does not allow pass through in GD17 or PC15.
- 6.100 We also note that the CC in its RP5 Determination discounted this approach for NIE as it considered that it would be difficult to assess whether the company had taken appropriate actions to minimise Rates liabilities and it was unable to identify a way that such an assessment could be performed well. The CC concluded that, rather it was more appropriate to include an annual allowance for Business Rates and Rates could be subject to the 50:50 Cost sharing mechanism.
- 6.101 We conclude that it is not appropriate for rates to be pass through and have continued with the approach determined by the CC in RP5.

UR consideration of NIE Networks' response on capital projects and uncertainty in Rating

- 6.102 We note that NIE Networks observes that it has not provided any estimate of allowances for Rates in relation to major capital projects including the North South Interconnector in its Business Plan since it considered Rates should be pass through and therefore did not make any request for allowances. We requested and received additional information in relation to Rates as part of the Business Plan query process as we required all relevant facts and material available, based on the impact major capital projects would have on Rates.
- 6.103 However, since the Rates methodology is based on an Income and Expenditure mechanism, the impact of large projects such as the North South Interconnector would not be expected to have a direct or immediate impact on Rates bills. After engagement with LPS we are not of the opinion that, at this stage it is necessary to include additional allowances in respect of future occurrences which are so uncertain in terms of timing and magnitude.

6.104 However given the level of uncertainty we have concluded that it would be appropriate to signal that the UR would be open to NIE Networks putting forward evidence, with regard to the North South Interconnector, which directly gives rise to material increases in the Rates bill via the D5 mechanism. We would furthermore expect the licence holder to demonstrate that there has been adequate challenge on Rates assessments to justify the allowance of such Rates. Where such compelling evidence is provided, the UR would consult on licence modifications to provide appropriate allowances.

Concluding statement to NIE Networks' Consultation response

6.105 Since the draft determination the UR has undertaken a comprehensive review of Rates. This has included extensive engagement with LPS to understand the Rating process, methodology, wider regulatory considerations and outlook. We wish to have stability for the company in relation to Rates allowances, whilst encouraging the company to take steps to manage its Rates liabilities. We also recognise there may be uncertainties in the setting of Rates going forward; however we consider such risks may be managed with the 50:50 cost sharing mechanism and the potential to provide further evidence on rates linked to the North South Interconnector.

Our approach to Business Rates for RP6 Final Determination

6.106 This section provides background to our approach to Business Rates (also referred to as 'Rates') for the Final Determination. Rates are effectively a tax on the occupation of property.

6.107 The Rates liability is determined by reference to (a) the net annual valuation (NAV); and (b) the district and regional Rates (poundage Rates) which are applied to the NAV by the ratings office. The regional Rate is set annually by the Northern Ireland Executive and is applied to each district council area in Northern Ireland. The district rate is set annually by each district council in Northern Ireland. Additional detail on the setting of Rates may be accessed at:

<http://www.rics.org/uk/knowledge/professional-guidance/guidance-notes/receipts-and-expenditure-method-of-valuation-for-non-domestic-rating/>

NIE Networks' RP6 Business Plan Submission

6.108 NIE Networks requested circa £118m for Rates in its RP6 BP submission. The Business Plan Rates profile is as shown in the table below and the split between the Transmission and Distribution businesses is based on the respective business RABs.

	6 mths to Mar 2018 (£m)	2018-19 (£m)	2019-20 (£m)	2020-21 (£m)	2021-22 (£m)	2022-23 (£m)	2023-24 (£m)	RP6 Total (£m)
Distribution	6.9	13.9	13.9	14.0	13.9	14.0	14.0	90.5
Transmission	2.1	4.2	4.2	4.2	4.3	4.2	4.2	27.5
Total	9.0	18.1	18.2	18.2	18.2	18.2	18.2	118.1

(£m in 2015-16 prices- figures may not add due to rounding)

Table 33: NIE Networks' RP6 Business Plan submission for Business Rates

Rates in Previous Price Controls

6.109 The approach to Rates has differed across previous price controls, with different approaches adopted by different regulators. There is no established regulatory precedent in this area and each company should be examined on a case by case basis to establish what is in the best interests of consumers. Therefore each price control should be evaluated based on its specific circumstances.

RP4

6.110 In RP4 the Utility Regulator specified that Business Rates should be treated as pass through costs as at that time they were considered to be uncontrollable opex and should be passed through in full to consumers.

CC Final Determination for RP5

6.111 The CC examined the treatment of Rates in its RP5 Final Determination (https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf). It set upfront allowances for RP5 in line with the table below. In addition, the CC stated that Rates were one of the cost items which could be subject to a 50:50 sharing mechanism between consumers and the company – whereby if costs deviated from set allowances the deviation – either positive or negative, they could be shared between company and consumer.

6.112 The CC argued that setting the treatment of Rates as 'uncontrollable' and recoverable on a full cost pass through basis may expose consumers to excessively high charges that reflect unnecessary expenditure or missed opportunities for cost reductions. It considered that NIE may have some influence over these costs.

	2012-13	2013-14	2014-15	2015-16	2016-17	6 mths to Sept 2017	RP5 Total
£million (2009-10 prices)	12.6	12.7	12.7	12.8	12.9	6.45	70.15

Table 34: CC RP5 Allowances for Rates (2009-10 prices)

RP5 Rates Performance

- 6.113 NIE Networks has already made several representations to the Utility Regulator to state that its Rates liabilities have increased following the 2015 Rates revaluation from £15m to £18m per annum leaving them with a 'shortfall' for the last 2.5 years of RP5 in the region of £3m per annum.
- 6.114 However, we note that as Rates is one of the cost items which is subject to the 50:50 sharing mechanism meaning the 'shortfall' is actually not £3m per annum, rather it is £1.5m per annum.

Utility Regulator's consideration of Rates for the Final Determination

FD Rates approach

- 6.115 At the draft determination we stated that we would consider the area of Rates in greater detail and conduct a comprehensive review between the draft determination and FD, before coming to a final decision. We have considered NIE Networks' submission and the information provided via Business Plan queries and additional submissions. In addition, we have engaged with Land and Property Services and NIE Networks and considered other relevant material in formulating our final decision.
- 6.116 The CC in its RP5 determination stated that it was inappropriate for Rates to be pass through in the manner adopted by Ofgem, since it would be difficult to evidence that the Ofgem criteria that the company had taken appropriate action to limit its Rates liability.
- 6.117 We consider it appropriate to follow the precedent set by the CC in the RP5 Final Determination and set allowances for RP6 with the option to apply the 50:50 sharing mechanism between the company and consumers for any over/ under recoveries.
- 6.118 We note that other companies, including utilities, are not shielded from the impact of Rates fluctuations and it is a typical business cost element. This approach has been endorsed by MNI and the CCNI in their respective consultation responses (see Annex R).

2020 Rates revaluation

- 6.119 NIE Networks has stated that there are uncertainties around the 2020 Rates revaluation – whether it will occur and the potential impact of this on NIE Networks' Rates bill- it may have no significant impact or alternatively it could result in a reduction or conversely an increase on the level of Rates to be paid. It is currently not certain as to whether the 2020 revaluation will actually occur or whether it will be delayed to some point in the future. Therefore, without firm evidence we do not propose to take any account of changes to Rates as a consequence of a revaluation in 2020.

North- South Interconnector

- 6.120 We have also considered the impact of the North-South Interconnector construction on Rates. However, there are uncertainties including: the timing of completion and also the timing and magnitude of any Rates impact as a consequence. In addition,

we note that NIE Networks is currently rated using an Income and Expenditure basis so any N-S Interconnector coming on board would not be expected to have an immediate impact.

6.121 However, given the level of uncertainty we have concluded that it would be appropriate to signal that the UR would be open to NIE Networks putting forward evidence, with regard the North South Interconnector, which directly gives rise to material increases in the Rates bill via the D5 mechanism. We would furthermore expect the licence holder to demonstrate that there has been adequate challenge on rates assessments to justify the allowance of such Rates. Where such compelling evidence is provided, the UR would consult on licence modifications to provide appropriate allowances.

Final Determination Rates allowances

6.122 We have considered all consultation responses and relevant factors since the draft determination and for the purposes of this Final Determination we are setting the allowances below for RP6 Business Rates. These remain unchanged from the levels set at the Draft Determination and are also in line with NIE Networks' Business Plan submission for RP6. We also note that, in the absence of any contradictory evidence, we will use the Transmission and Distribution business splits as for Rates presented by NIE Networks – which are based on the respective Business RABs.

	6 mths to Mar 2018 (£m)	2018-19 (£m)	2019-20 (£m)	2020-21 (£m)	2021-22 (£m)	2022-23 (£m)	2023-24 (£m)	RP6 Total (£m)
Distribution	6.9	13.9	13.9	14.0	13.9	14.0	14.0	90.5
Transmission	2.1	4.2	4.2	4.2	4.3	4.2	4.2	27.5
Total	9.0	18.1	18.2	18.2	18.2	18.2	18.2	118.1

(£m in 2015-16 prices- figures may not add due to rounding)

Table 35: RP6 Final Determination allowances for Business Rates (2015-16 prices)

6.123 In addition, to the set allowances, we note that Rates are one of the cost elements which is subject to the 50:50 cost sharing mechanism- where costs deviate from set allowances.

7 Information and Communication Technology (ICT)

Key changes from draft to final determination

- 7.1 The following section is a result of an extensive “bottom-up” analysis of NIE Networks’ business plan costs, which included extensive workshops and queries between both company and ourselves, a site visit as well as complete access to company records, contracts and costing with which we base this determination.
- 7.2 The various and complex changes between draft and this final determination are detailed in our Annex E – RP6 Gemserv review of NIE Networks’ IT proposals – report for Final Determination.

RP6 business plan submission

- 7.3 In total, including the proposed allocation to the Connections business, NIE Networks are proposing the following for inclusion within the RP6 allowances:
- £41.88m Non Network IT capex;
 - £8.87m additional Non Network opex totalled over the price control period; and
 - £34.13m Enduring Solution opex totalled over the price control.
- 7.4 Relative to the figures available for RP5 expenditure, these proposals would represent the following changes if permitted in their entirety:
- A £16m increase in Non Network IT capex levels, if we assumed an RP5 average level of capital investment across RP6,
 - An average per annum increase of £1.37m Non Network IT opex on the existing “base” Non Network IT opex; and
 - An average decrease of approximately 10% in annual Enduring Solution Opex.

Company representations and consultation responses

- 7.5 The following section builds upon the detailed company responses to our draft determination (see Annex - Annex Q – NIE Networks consultation responses) and subsequent site visit (to observe their current ICT reality) as well as their submission of the Managed Service Provider contractual documentation. The full and final Gemserv report can also be viewed at Annex E – RP6 Gemserv review of NIE Networks’ IT proposals – report for Final Determination.
- 7.6 During the Gemserv assignment, NIE Networks repeatedly emphasised the importance of their RP6 IT Strategy within their submission and its intent seemed to

be expressed in their choice of projects for RP6. Gemserv was contracted to review those projects from a “bottom up” perspective with each project requiring justification on its own merits. While the IT Strategy did not seem to conflict with NIE Networks’ licensed obligations, Gemserv did not consider it to be a material consideration for the UR in reaching its Final Determination.

- 7.7 Gemserv recommended and we have determined the following allowance reductions in relation to the Managed Service Provider Agreement: £896.3k capex and £179.9k total opex. This reflects Gemserv’s estimation of the savings attainable on the estimated figures within NIE Networks’ original submission. Significant savings should be attainable through current best technological practice. The project durations within their submission are well provided for, suggesting scope for reductions there also.
- 7.8 Gemserv previously questioned the requirement for three Tibco upgrades during RP6. NIE Networks provided data showing Tibco components reaching the end of support; those end of support windows appeared to align with the proposed upgrades. As the upgrades seem to be driven by refresh requirements, Gemserv recommended the inclusion of £250.3k within the RP6 allowance which we have included in this determination.
- 7.9 On the available evidence, it does not appear that NIE Networks Market Operations functions will differ significantly between RP5 and RP6. This consistency and the fact that the systems associated with Market Operations are now mature led Gemserv to conclude that no additional Market Operations Non Network IT opex should be permitted over RP6. Gemserv recommended £656k opex be excluded from the allowance and we have included this reduction in our determination.
- 7.10 Having reviewed NIE Networks’ proposals for Enduring Solution Opex over RP6, Gemserv recommended the following:
- As the IT Support Costs are driven by the Managed Service Provider costs, a 10% reduction should be applied to the NIE Networks’ proposed figures in order to be consistent with the other MSP recommendation. This finding would result in £1.71m not being included in the price control;
 - Having modelled a range of inputs, Gemserv recommended £59.9k of Market Entry Costs should be disallowed from RP6; and
 - Gemserv developed a bottom-up assessment of the resource requirement for the Market Services staff function. Gemserv recommended 23 FTE would be appropriate, resulting in £772.5k being excluded from the Enduring Solution Opex allowance.
- 7.11 By rating the proposed efficiency investment projects by efficiency category, weighting them across four scenarios, and modelling the outputs, Gemserv made the following recommendation: pooling the efficiency investments within an allowance and disallowing £1.37m capex and £278.7k opex. We emphasise Gemserv’s statement that NIE Networks should decide as to how and which of the projects they implement within the total allowances determined here. For example, the CBRM project is expected to be delivered from within the overall RP6 allowances and we

shall expect to see evidence of NIE Networks delivering on CBRM type information within an overall asset management development objective in time to inform the RP7 business plan.

- 7.12 It is important that the Utility Regulator can follow, understand and assess the development and analysis being carried out by the company on asset management including CBRM. To this end, the company should ensure that it can provide the necessary software and data to allow the Utility Regulator carry out any work necessary on the Utility Regulator's IT systems and should make such arrangement and obtain such licences as are necessary to allow this.
- 7.13 Modelling a range of weightings across the optional projects (having graded them by optionality level), Gemserv recommended an allowance for these projects of £7.66m capex and £1.07m opex with corresponding disallowances of £1.37m capex and £448.8k opex. Gemserv also recommended the inclusion of an operational datastore and regulatory reporting automation projects. We have determined in favour of the Gemserv recommended allowances.
- 7.14 Across two projects NIE Networks proposed a set of ongoing enhancements, estimated at a potential £210k capex. Gemserv viewed these enhancements as being more accurately described as opex and recommended we should reallocate to opex and not capitalise them.
- 7.15 Similarly, there is a proposed Small Projects capex allowance. These projects appear to be driven more by operational requirements and would more appropriately be designated opex. In addition, there does not appear to be an objective reason why the proposed annual allowance should be higher than during RP5. Gemserv have therefore recommended the exclusion of £379k of the Small Projects proposed allowance and we have determined same.
- 7.16 Across two projects¹⁰⁸, there are proposals for projects towards the end of RP6 that are intended to prepare for a migration to SAP-HANA that would continue into RP7. NIE Networks have not sufficiently substantiated the requirement for the expenditure during RP6 and Gemserv recommended the exclusion of the proposed £1m from the RP6 allowance and we have determined same.
- 7.17 NIE Networks proposed a set of programme and change management costs during RP6. The proposal appears to be inconsistent with UR price control precedent. Gemserv do not view this proposal as being sufficiently evidenced. The proposal seems to involve the creation of an additional management structure outside of the NIE Networks IT department/MSP relationship, which raises questions as to the scoping of the Managed Service Provider agreement. Gemserv therefore recommended £2.45m of proposed programme and change management costs should not be permitted within the RP6 Non Network IT capex allowance and we have determined likewise.

¹⁰⁸ RP6-018 – SAP ECC6 Upgrade and RP6-048 – SAP IS-U/HANA

- 7.18 In correcting the RP5 to RP6 Non Network IT comparison to account for the Enduring Solution, the proposed annual increase on the base opex becomes 24% rather than the 13% within NIE Networks' submission.
- 7.19 The following section further quantifies and consolidates the impact of Gemserv's recommendations upon NIE Networks' proposals.

Movement from draft determination to final determination

- 7.20 Table 36 shows the changes in Gemserv capex recommendations between the draft determination and the final determination. The draft determination conclusions were not directly additive (i.e. they could not be simply summed), as the approach of screening out projects interacted with the other recommendations. Adding them would have double counted proposed reductions to NIE Networks' proposals.

	DD	FD	Variance
Non Network IT			
Managed Service Provider	-£896,290	-£896,290	£ -
Ongoing Enhancements	-£690,000	-£210,000	£ 480,000
Programme management	-£2,449,000	-£2,449,000	£ -
Optionality projects	-£1,897,863	-£1,365,830	£ 532,033
Efficiency projects	-£2,128,325	-£1,368,928	£ 759,397
SAP HANA	-£1,000,000	-£1,000,000	£ -
Small Projects	-£2,225,000	-£2,225,000	£ -

Table 36: Change in capex from draft to final determination

- 7.21 Table 37 portrays the shifts in Gemserv recommendations between the draft determination and the final determination in relation to proposed opex.

	DD	FD	Variance
Non Network IT			
Managed Service Provider	-£179,912	-£179,912	£ -
Ongoing Enhancements	£690,000	£210,000	-£ 480,000
Optionality projects	-£215,000	-£448,763	-£ 233,763
Efficiency projects	-£843,000	-£278,675	£ 564,325
Qlik application	-£40,000	-£40,000	£ -
Hardware Maintenance	£ -	-£149,500	-£ 149,500
Small Projects	£ 1,950,000	£ 1,843,636	-£ 106,364
Enduring Solution			
IT Support Costs	-£ 1,707,000	-£ 1,707,000	£ -
Market Entry Costs	-£ 59,929	-£ 59,929	£ -
Market Services Staff	-£ 1,673,750	-£ 772,500	£ 901,250

Table 37: Change in opex from draft to final determination

7.22 Table 38 consolidates and summarises the impact of these updates upon Gemserv recommendations in the draft determination. While reducing our proposed Non Network IT opex allowance, determined allowances for Non Network IT capex and Enduring Solution opex increase from the position at draft determination.

	DD	FD	Variance
Non Network IT			
Capex	-£9,949,553	-£ 9,515,048	£434,505
Opex	£837,440	£ 300,825	- 536,615
Enduring Solution			
Opex	-£3,453,179	-£ 2,539,429	£913,750

Table 38: Consolidated changes since draft determination

7.23 Table 39 shows the net impact of these recommendations upon NIE Networks proposals. It then strips out the Connections allocation to arrive at the overall recommended IT allowances for RP6 (net of connections).

Category	NIE Networks Proposed	Net Recommendation	Outturn	Connections Allocation	Proposed Allowance	Change from DD
Non Network IT						
Capex	£41,882,046	-£9,515,048	£32,366,998	-£3,992,866	£28,374,132	£736,612
Opex	£8,887,000	£300,825	£9,187,825	-£3,562,509	£5,625,316	£440,832
Enduring Solution						
Opex	£34,133,500	-£2,539,429	£31,594,071	£ -	£31,594,071	£913,750

Table 39: Final determination allowances

7.24 The outcomes of this calculation are the following determined allowances: £28,374,132 for Non Network IT capex, £5,625,316 for Non Network IT opex, and £31,594,071 for Enduring Solution opex.

Next steps

7.25 Gemserv also recommended we batch the components of NIE Networks' proposed IT expenditure for monitoring purposes. The batches would align with the recommendations in Gemserv's report and with important categories of proposed expenditure within the NIE Networks' business plan. The groupings would be defined by project boundaries and/or clear categories of proposed expenditure so they are reasonably straightforward to monitor against RP6 price control allowances.

7.26 Table 40 defines the proposed batches by setting out the scope of each batch and the indicator/output that NIE Networks would be expected to report on to the Regulator to allow us to monitor performance against each batch on behalf of the consumer.

7.27 We intend introducing the above into our RP6 Monitoring Plan and will further discuss and agree the detail regarding precise batching, timelines and milestones towards successful delivery and implementation with the company once this determination is accepted. Further reference to ICT batching is included in Annex J – Outcomes, Outputs and KPIs.

BATCH	SCOPE	INDICATOR/OUTPUT
Non Network IT capex	All Non Network IT capex in Appendix A6 Non Network Business Plan	Outturn annual total Non Network IT capex
Infrastructure projects	Following projects from Non Network IT Business Plan: RP6-001, RP6-002, RP6-003, RP6-004, RP6-005, RP6-006, RP6-007	Total outturn annual capex for the sum of all projects under "Scope"
Telecoms projects	Following projects from Non Network IT Business Plan: RP6-008, RP6-008, RP6-009	Total outturn annual capex for the sum of all projects under "Scope"
SAP Projects	Following projects from Non Network IT Business Plan: RP6-017, RP6-018, RP6-019, RP6-044, RP6-045, RP6-046, RP6-047, RP6-048	Total outturn annual capex for the sum of all projects under "Scope"
Optionality projects	Following projects from Non Network IT Business Plan: RP6-015, RP6-022, RP6-023, RP6-024, RP6-026, RP6-027, RP6-035, RP6-036, RP6,037	Total outturn annual capex for the sum of all projects under "Scope"
Efficiency projects	Following projects from Non Network IT Business Plan: RP6-025, RP6-028, RP6-029, RP6-030, RP6-031, RP6-032, RP6-033, RP6-034	Total outturn annual capex for the sum of all projects under "Scope"
Non Network IT opex	All Non Network IT opex in Appendix A7 Non Network Business Plan (if UR determine an allowance in the FD)	Outturn annual total Non Network IT opex
Enduring Solution Operating Costs	Enduring Solution Opex as per the Market Operations Business Plan	Outturn annual total Enduring Solution Opex

Table 40: Batched ICT projects for inclusion in RP6 Monitoring Plan

8 Pension Deficit Repair

Key changes from draft to final determination

8.1 We have updated this chapter following on from the RP6 Draft Determination, following due consideration of the responses received to same, representations from NIE Networks and other relevant factors since the draft determination. Our approach remains similar to the draft determination proposed approach and the key changes made in this context are:

- Amending the Pension Monitoring Framework thresholds at which NIE Networks and the UR will engage in relation to pension aspects. We are revising these values to 75% for the lower threshold and 105% for the upper threshold (see section 8.87).
- Removing the additional £0.8m pension scheme funding associated with setting the Regulatory Fraction to 100% going forward. We are therefore allowing the amounts requested in NIE Networks Business Plan for RP6. However, we will monitor the Regulatory Fraction and review the issues around treatment of Article 75 debt payments. We may make future adjustments in RP7 to reflect the outcome of this review and the position in this determination in relation to these debt payments should not be considered final.

8.2 For our Final Determination we are setting pension deficit repair allowances as follows:

	RP6 BP Request (£m)	RP6 FD (£m)
Pension Deficit Contribution	114.5	114.5
Pension ERDC disallowance	(30.5)	(30.5)
Net Amount Requested	84	84

Table 41: UR FD pension deficit recovery allowances (2015-16 prices)

Consultation responses and the UR's consideration of responses

Overview of Consultation responses received

8.3 In response to the RP6 draft determination consultation we received two responses in relation to pension deficit proposals. These were from the CCNI and NIE Networks. We will address the key points of each response individually along with our considered reasoning of the response. We present our detailed response to CCNI and NIE Networks in Annex R and Q respectively.

CCNI Consultation Response

8.4 In its consultation response the CCNI submitted a supporting report authored by its Consultants ECA. CCNI/ ECA commented on two aspects of the pension deficit allowances- the regulatory fraction and the pension allowances granted. We present the key points of its response below followed by the UR's considerations.

8.5 The CCNI observed in relation to pension scheme allowances for RP6:

“The Consumer Council accepted the outcome of the CC RP5 FD to fund NIEN's pension deficit for the period running to 2022, but we did not support it. We remain of the opinion that regulators ought to minimise where possible allowed revenues in respect of deficits linked to pension schemes...”

8.6 In addition we note that CCNI/ ECA were not in favour of the UR's proposal to set the regulatory fraction to 100% and stated that they could not see strong justification to increase NIE Networks' Business Plan request by £0.8m to account for that difference.

UR's response to CCNI consultation response

8.7 We considered the CCNI/ ECA response in coming to a view on our final determination approach and allowances and outline our considered response below.

8.8 In relation to pension allowances, we highlight that the vast majority of NIE Networks' pension scheme members are protected pensions which limits the amount by which pension scheme aspects can be curtailed. We have followed established regulatory practice in this area, including that of Ofgem and that prescribed by the CC in RP5. We note the outcome of the Ofgem recent pension decision¹⁰⁹.

8.9 In this decision Ofgem maintains that deficits should be repaid over a period of up to typically 15 years. There is regulatory precedent for repaying the deficit over a long period and the CC set allowances to 2022. However, the deficit has continued to grow since that time and we are proposing to permit allowances to 2024. We are not proposing a review after the next triennial valuation since we could not simply examine pensions in isolation at that time and this would effectively be a reopener of the price control as we would have to consider other aspects e.g. WACC, etc. which we would not view as proportionate. Therefore, we will examine the pension scheme performance at RP7 and make any required adjustment(s) at that time, including clawing back any payments where the scheme is in surplus.

8.10 At the draft determination we proposed setting the Regulatory Fraction to 100% with an associated cost of £0.8m above the Business Plan requested amounts. However, upon consideration of consultation responses and further review of pensions we are not proposing to include this additional uplift at this time and have retained the Business Plan assumptions.

¹⁰⁹ Refer to:

https://www.ofgem.gov.uk/system/files/docs/2017/04/decision_on_policy_for_funding_pseds.pdf

- 8.11 While we have included the NIE Networks' submission within this final determination, this should not be taken as acceptance of its treatment of the Article 75 debt payment. We are not convinced that it is appropriate to ask NIE Networks' customers to pay for a share of the deficit which is greater than 100%. We plan to engage further with NIE Networks on the justification for such a proposals and will reflect our decision within any adjustments that are made the pension deficit figure in RP7.

NIE Networks' Consultation response

- 8.12 In its consultation response NIE Networks made a number of observations. We outline these below and present the UR's considered response subsequently.

Regulatory Fraction – NIE Networks' consultation Response

- 8.13 NIE Networks stated that it supported the UR's approach of removing the Regulatory Fraction and setting it to 100%

ERDC- NIE Networks consultation Response

- 8.14 NIE Networks commented in relation to ERDC allowances:

'The DD includes a disallowance of £4.7 million per annum in respect of early retirement deficit contributions ("ERDC"). Depending on pension scheme performance, the ERDC liability may be fully funded before the end of RP6 and the ERDC disallowance should cease at that point.'

Admin costs – NIE Networks' consultation Response

- 8.15 NIE Networks said that the information used was of a small sample and NIE Networks considered that their costs were similar to other schemes.

Pension Monitoring Framework Thresholds- NIE Networks' consultation Response

- 8.16 NIE Networks made the suggestion that the pension scheme trigger points should commence at levels of 80% and 100% for the lower and higher threshold limits respectively.

Ofgem approach to pensions – NIE Networks' consultation response

- 8.17 NIE Networks referred to the April 2017 pension decision paper produced by Ofgem and NIE Networks observed that, following a triennial valuation, the funding allowance is revised by Ofgem taking account of the payment history allowance.

UR Consideration of NIE Networks' consultation response

ERDC- UR consideration of NIE Networks' consultation response

- 8.18 We will monitor pension scheme performance and ERDC funding accordingly and make any required adjustments at RP7 in a NPV neutral manner together with any other required pension scheme adjustments.

Pension scheme expenses- UR consideration of NIE Networks' consultation response

8.19 NIE Networks has stated that the UR's sample is comprised of 40% of the sample data and as such is of limited usefulness. We consider 40% to be a reasonable sample size of available pension scheme data and are not persuaded by NIE Networks' arguments. NIE Networks has observed that investment manager fees for 2015-16 represented 0.2% of scheme assets- however this is a significant sum when the scheme assets represent a value of around £1bn. We observe that evidence suggests that circa £2 million of admin fees is relatively high and the company should take steps to reduce this cost going forward and in subsequent price controls or we may consider reducing allowances granted as consumers should not be liable for inefficiently incurred costs. We note that pension scheme admin costs are at the discretion of NIE Networks and Scheme Trustees and mechanisms should be explored to reduce such costs.

Regulatory Fraction – UR consideration of NIE Networks' consultation response

8.20 We note NIE Networks' acceptance of the UR's proposal to remove the Regulatory Fraction and set it to 100% going forward. Our views on this point are set out above.

PMF thresholds- UR consideration of NIE Networks' consultation response

8.21 In our Draft Determination we proposed a Pension Monitoring Framework (PMF) to ensure that NIE Networks only approaches the Utility Regulator when it is clear that there has been a substantial fall in the NIEPS funding position at triennial valuations during RP6, which in turn could lead to the possibility of materially higher deficit contributions (refer to section 8.87 for additional details). We proposed a 'downside' PMF may be appropriate at a level of 70% and a converse 'upside' PMF of 110%. At these levels the Utility Regulator would consider funding levels and pension scheme characteristics and future outlook to determine whether or not any adjustment is required. We welcome that NIE Networks agrees with the introduction of the Pension Monitoring Framework in principle. We note that the set trigger points could be refined to address the less extreme events, however, recent funding considerations have resulted in the UR addressing the applicability of this decision and its' objectives.

8.22 We have considered NIE Networks' response and consider a threshold of 80% funding may be too high and consider 75% to be more appropriate as it would represent a more extreme funding position which would be less likely to be breached. In addition, we also consider the threshold of 100% may be too low and 105% is more appropriate as a point to initiate discussions. It is important to be clear that the purpose of these thresholds is to provide guidance for when it would be sensible to begin discussions on options for dealing with scheme deficits/surpluses. The thresholds do not provide any commitment that UR will take a particular action at that time.

8.23 We also note the 'True Up' mechanism outlined by Ofgem in its April 2017 Pension Scheme decision paper and the possibility of amending Schedule of Contributions following triennial pension reviews. The PMF should provide additional assurance to the company as it is not dependent on the outcome of triennial reviews which may not be completed until 15 months after the period end. In addition, we will be

implementing a mechanism similar to the Ofgem True up at the end of the RP6 price control and making any required pension scheme adjustments.

Ofgem approach to pensions- UR consideration of NIE Networks' consultation response

- 8.24 We are aware of the recent Ofgem decision and consider it has provided additional clarity on the timings of dealing with pension deficits and welcome that the approach is similar to the UR approach to same. Ofgem have outlined the possibility of changing pension payments in the Schedule of Contributions following a triennial review as an option. The UR has considered this approach; however, it would cause difficulty mid-price control, unless the scheme has entered into critical extremes of funding positions. We consider that this would effectively be a price control reopener as pension scheme adjustments could not be considered in isolation and we would have to consider other adjustments e.g. WACC.
- 8.25 The Pension Monitoring Framework (discussed subsequently) does not reopen a Price Control determination, but rather provides an opportunity for discussion without interfering with the Schedule of Contributions. We will additionally be making any required pension adjustments at RP7 or a subsequent price control, which is in line with NIE Networks' suggestion.

Pension approach for RP6

- 8.26 This section provides an overview of our decisions and allowances for RP6 in relation to pension deficit aspects. Our Pensions Annex F provides additional detail on our review of pension aspects. In addition, ongoing pension contributions and benchmarking are discussed in section 5 of the final determination.
- 8.27 The NIEPS is a multi-employer scheme. This means that other companies (both regulated and non-regulated) are also members of the scheme. Current employers that participate in the NIEPS are: Northern Ireland Electricity Networks Ltd (referred to as NIE Networks throughout this paper) and Capital Pensions Management Ltd.
- 8.28 The pension scheme operates two sections as follows:
- Defined Benefit (DB) section, referred to as the 'Focus' plan; and
 - Defined Contribution (DC) section, referred to as the 'Options' plan.
- 8.29 In March 1998, NIE (now NIE Networks) closed the DB section of the pension scheme to new entrants. Since then, new joiners are instead offered membership in the DC section of the scheme.¹¹⁰ This is consistent with general trends in UK private sector pensions.
- 8.30 In the DB section of the scheme an employee's pension is based on the number of years of service and final salary with sponsoring employer(s). The level of future

¹¹⁰ See [Northern Ireland Electricity Limited: Transmission and Distribution RP5 Price Control, Statement of Case to the Competition Commission, 10 May 2013](#).

pension benefit and employee will receive is set; the investment risk lies with the employer(s).

- 8.31 The Electricity (Protected Persons) Pensions Regulations (Northern Ireland) 1992 protect certain employees' pension benefits in respect of past and future service. This protection restricts the extent to which the NIEPS's benefits and member contribution rates can be changed.
- 8.32 In the DC section of the scheme an employee's benefits will be dependent on the contributions to, and growth of, the fund and the fund manager's investment and other attributable costs. There is no guarantee on the level of future pension benefit an employee will receive; the investment risk lies with the employee.
- 8.33 The main difference between DB and DC provision relates to risk: in a DB scheme the employer bears the risk of adverse future experience through the possibility of deficiency contributions being required, whereas in a DC arrangement the risk of adverse future experience rests with the member through lower than expected benefits. Conversely, members benefit from favourable experience in a DC arrangement, whereas in a DB scheme the employer may benefit (depending on the scheme rules).
- 8.34 The table below provides an overview of the number of active members (members who are currently working) in both the DB and DC sections of the NIE Networks' pension scheme at 31 March 2014.

Scheme Section	Defined Benefit membership (Focus)	Defined Contribution membership (Options)
Actives	586	687
Deferred pensioners	752	752
Pensioners and dependents	4,391	56
Total	5,729	1,495

Table 42: NIE Networks' pension scheme membership breakdown as at 31 March 2014

- 8.35 NIE Networks' pension scheme is managed by a Board of Trustees who act separately from the employer and hold assets in trust for the beneficiaries of the scheme. Trustees are responsible for ensuring that the pension scheme is run properly and that members' benefits are secure. The Trustees negotiate pension aspects for the benefit of members with NIE Networks – for example deficit payments, contributions, etc and the company makes appropriate payments.

Trustees are ultimately responsible for the operation of the pension scheme. Trustees take into account the financial position and the strength of their covenants when forming a view of a deficit recovery plan for the scheme.

- 8.36 Advisers, including actuaries, lawyers, and investment consultants are engaged by the Trustees to advise them on the financing and funding of the *pension* scheme by considering the relative risks of investment and funding approaches.
- 8.37 The NIEPS is subject to various statutory obligations and will need to provide information to the Pensions Regulator (TPR) to ensure and demonstrate compliance. TPR is the UK regulator of work- based pension schemes and its objectives are set out in legislation (for additional information refer to: <http://www.thepensionsregulator.gov.uk/about-us/our-objectives.aspx>)
- 8.38 NIE Networks makes contributions to its pension fund on behalf of current employees who are members of the pension scheme. Since privatisation, the pension scheme has moved from a surplus to a deficit position (where the assets of the scheme are less than the liabilities).
- 8.39 NIE Networks' pension deficit arises from the defined benefit section of the pension scheme. A deficit is the amount by which the present value of the pension fund liabilities exceeds the value of the assets. Deficit repair payments are cash amounts, agreed with the pension scheme trustees, which the company pays to reduce a pension fund deficit.
- 8.40 NIE Networks makes several types of payment to the scheme including principally:
- Ongoing pension payments to represent the cost of additional benefits being accrued by existing employees who are still members of the scheme (which are both DC and DB costs);
 - Annual deficit repair payments which aim to bring the scheme into balance over a period of time (which are DB associated costs); and
 - The Cost of insured risk benefits (which are DC related costs).
- 8.41 We commissioned the Government Actuary's Department (GAD) to provide expert advice on pension aspects including investment strategy, actuarial assumptions and pension scheme valuation and funding. This Final Determination section is complemented by a Technical Annex produced by GAD (Annex G) which deals with more detailed pension aspects and may be read in conjunction with this document.

NIE Networks RP6 Business Plan Submission

- 8.42 NIE Networks populated the business plan templates submitted by us, which follows the OFGEM approach on data capture.
- 8.43 NIE Networks proposed an allowance of £84m (in 2015-16 prices) for pension deficit recovery costs during the RP6 period. This sum is to cover the cost of repairing a

deficit in the defined benefit scheme to ensure that accumulated liabilities for both current and past employees are met.

	RP6 Request £m (6.5 years) in 15-16 prices
Pension Deficit Contribution	114.5
Pension ERDC disallowance	(30.5)
Net Amount Requested (£m)	84.0
Average annualised amount (£m)	12.9

Table 43: NIE Networks RP6 Business plan Submission 2017-2024

- 8.44 The RP6 request is based on the Triennial Actuarial Valuation of the 31 March 2014. This Actuarial Valuation takes up to 15 months to conclude, before a full assessment of the scheme funding is known. The results of this valuation led NIE Networks to reforecast its pension scheme funding requirements on the 27 May 2015- when it produced an updated '**Schedule of Contributions**' which covers contributions to the pension scheme for the period 1 April 2014 – 31 March 2022.
- 8.45 However, NIE Networks has requested additional funding in its Business Plan up until the end of RP6 in 2024, which is different to the target date set of 2022, as set by the CC for RP5. This represents additional requested funding for the period 2022-2024. This request has been made as NIE Networks consider deficit recovery payments are required for additional years beyond the 2022 stated by the CC.
- 8.46 In making our assessment of RP6 allowances we have considered NIE Networks submissions, CMA (and CC) determinations, regulatory precedents and other relevant material including draft determination consultation responses and the pension outlook.

RP5 Decision - The CC Determination and Principles

- 8.47 On 30 April 2013 the RP5 price control determination was referred to the CC (now the CMA). In its final determination, the CC ruled that the treatment of pension deficits as part of the RP5 price control should be consistent with Ofgem's treatment of pension deficits of distribution businesses in GB¹¹¹.
- 8.48 In the RP5 CC final determination the following key decisions were made in the DB area:

¹¹¹ See [Competition Commission: Northern Ireland Electricity Limited price determination, Final determination, 26 March 2014](#), paragraph 12.80.

- With regard to the **scheme deficit**, in which the current scheme has insufficient assets to cover its liabilities it was split into 2 areas, between an **established deficit** (represents the difference between assets and liabilities attributable to pensionable service up to 31 March 2012 and 100% funded by consumers) and **incremental deficit** (represents the difference between assets and liabilities for pensionable service from the 1 April 2012 and 100% funded by shareholders;). This is similar to the approach used by OFGEM;
- The Deficit repair allowances, to recover the costs in relation to the established deficit, were set to the 31 March 2022. This reflected a 10 year period from the commencement of RP5. This also matched the payment profile between the company and the trustees;
- The Early Retirement deficit contribution liability (ERDCs), which was an enhancement to pension benefits with no additional funding, due to the scheme being in surplus between 1997-2003. Based on the evidence and payment profile, it was decided that 30% of the historic deficit repair allowance would be disallowed and be funded by shareholders.
- An in period adjustment Mechanism which makes changes to the payment schedules, normally after an actuarial valuation, to reflect the scheme needs, is deferred to the start of the next price control on the basis that NIE and consumers are kept NPV neutral due to timing;
- With regard to the Deficit repair payment from RP4 in excess of RP4 allowance - not to provide any allowance for costs incurred in RP4 in excess of those allowances provided in RP4.

8.49 The CC in its determination ruled that the established deficit repair allowance for RP5 should match the deficit repayment profile that NIE had agreed with the trustees of the pension scheme (that is £13.7m per annum during RP5 in 09-10 prices with a reduction for ERDC (refer to Annex F on Pensions for additional detail)). The established deficit repair allowances were set for ten years from the start of RP5 to 31 March 2022- this was similar to the approach used by Ofgem. The CC allowances for RP5 were as follows:

	RP5 FD (2009-10 prices) (5.5 years) £m (Per CC)
Pension Deficit Contribution	75
Pension ERDC disallowance	(22)
Net Amount Requested (£m)	54
Average annualised amount (£m)	9.8

Table 44: CC RP5 FD allowances for NIE Networks Pension Deficit Recovery Payments

8.50 We stated in our final approach for the RP6 price control, published in December 2015, the following: '[... we] consider that the pension principles we apply in setting pension-related price control allowances should be consistent across all NI regulated energy businesses with defined benefit schemes as well as, in so far as reasonable

and practical, also with the pension principles used by Ofgem. [...] For RP6, we therefore propose to build on the pension principles used as part of RP5. We may consider reviewing our pension principles in the future as part of a roll-out and alignment of pension principles across all NI regulated energy businesses with defined benefit schemes¹¹².

Historic Deficit Repair Responsibility

- 8.51 The CC made a decision in RP5 that the historic deficit, pre April 2012 should be 100% funded by consumers. The following extract outlines the CC's approach:
- 8.52 'Based on our view that NIE is likely to have a limited ability to mitigate the historic scheme deficit, we decided that in principle (and before considering any special items) 100 per cent of historic deficit repair costs should be passed through to consumers during RP5.'
- 8.53 This principle is similar to the one Ofgem has in place for GB DNOs. We note that the reasons the CC gave for this decision have not changed and we do not propose to change this principle in RP6.
- 8.54 In addition, the CC set a regulatory fraction of 99.26% - this was deemed to be the proportion allocated to the regulatory business and the CC adjusted deficit allowances accordingly.
- 8.55 Following on from the CC recommendations and as part of its Business Plan submission for RP6, NIE Networks were required to complete a Pension Deficit Allocation Methodology spreadsheet (PDAM) and accompanying commentary document (which may be found at: <https://www.uregni.gov.uk/publications/rp6-documentation-group-1>). The PDAM is based on the Ofgem methodology and shows the methods used by the company to allocate the pre and post cut-off assets and liabilities. This allows collection of data between the pre cut-off fund – before 31 March 2012 (consumers' responsibility) and the post cut-off fund (post 31 March 2012 (shareholder responsibility)).

Historic Deficit Repair Allowance

- 8.56 The CC set a deficit repair allowance to remove the deficit over 10 years. NIE indicated in its comments to the CC that having a notional "Stop dead date" was not appropriate as circumstances outside their control may increase the deficit.
- 8.57 The CC said (12.36) '*In our view, this would be a matter for UR to decide at subsequent regulatory determinations.*' The CC in a footnote indicated the following '*the deficit repair period might be extended by the UR in order to protect different generations of consumers.*'
- 8.58 In NIE Networks' Business Plan submission the company has continued to profile deficit recovery contributions for the two final years of RP6 to 2024, beyond the RP5 CC decision of ending by 2022. In its response to a UR query NIE Networks stated

¹¹² [Utility Regulator: Northern Ireland Electricity Networks Ltd Transmission & Distribution 6th Price Control \(RP6\), Final Overall Approach, December 2015](#), paragraphs 128 and 129.

that it considered that current contributions would be insufficient to reduce the deficit at September 2016 of £262.8m by 2022 and that it considered that the recovery plan would continue beyond 2022, but at higher levels.

- 8.59 Our position in relation to the Pension Deficit remains similar to that proposed in our Draft Determination document. The UR is not minded to allow extra contributions, recognising the worsening of the funding position. However, it is not certain that deficit contributions will be required beyond 31 March 2022 and we highlight that the allowances for 2022-2024 are **not** additional allowances and the UR will adjust for any excess amounts at the next Price Control, if appropriate. We will assess whether the decisions and actions taken in relation to pension scheme funding and investment were reasonable, justified and necessary in determining the level of adjustment.
- 8.60 We also note that should the pension scheme be in surplus at the time of the RP7 review, we will make a negative adjustment to the allowances granted for 2022-24.

Approach taken by other Regulators in relation to pension deficit recovery

- 8.61 Ofgem has consulted on its approach to pensions twice in recent years (May 2015 and March 2016). The decision document in relation to its latter consultation was published in April 2017 https://www.ofgem.gov.uk/system/files/docs/2017/04/decision_on_policy_for_funding_pseeds.pdf. Ofgem had previously envisaged pension scheme deficits being repaid over a fixed 15-year period. However, having identified some potential issues with the use of a fixed 15-year period, Ofgem's has included more flexibility by not specifying what the *recovery period* should be, provided it is funded over a reasonable period and encouraging trustees to run pension schemes in an efficient manner. Ofgem is also requesting companies to submit regulatory returns following triennial valuations and may consider a change to Schedule of Contributions following a review of same.
- 8.62 In contrast to the Ofgem approach, Ofwat disallowed 50% of deficit contributions as it believed this would create a stronger alignment between the shareholders and consumer interests. Ofwat has also stated that it will allow no more deficit contribution payments beyond the end of the recovery plans agreed in 2009. The end dates for these recovery plans typically range from 2019 to 2025.
- 8.63 A different approach was adopted by Ofcom which disallowed all deficit contributions in determining pension cost allowances for BT.
- 8.64 We observe that there are a variety of potential approaches in relation to deficit recovery allowances as demonstrated by the range of approaches adopted by Regulators. Each scheme must be considered based on its individual characteristics considering scheme funding, level of deficit, strength of Employers' Covenant, scheme management, level of controllable and uncontrollable variables and other relevant aspects.

RP5 adjustments

8.65 Before setting RP6 allowances we have considered whether any adjustment is required in respect of previous price controls – RP5 in particular. Our review indicates that contributions during RP5 (and RP4) have been payable as expected in the CC final determination and in line with the set schedule of contributions and therefore we do not believe that any adjustments are required in respect of contributions for service accrual or deficit recovery, which account for the majority of NIE Networks RP5 contributions. Therefore, we are not making any adjustment in respect of RP5 (or RP4).

RP6 Final Decision

Introduction

8.66 In determining price control allowances we have considered:

- the appropriate deficit amount to be considered;
- a deficit recovery period;
- the regulatory fraction which can be applied to NIE Networks to ensure that consumers only fund the element of pension costs which apply to the regulated entity;
- any disallowance to be attributed to the employers' contribution for deficit recovery in respect of the ERDC;
- the split of pension deficit recoveries between the Transmission and Distribution businesses; and
- the strength of the employer's covenant.

8.67 We are not aware of any areas which have markedly changed since the draft determination which merit a change to our approach to the pension scheme deficit and NIEN have not raised concerns to the UR regarding funding issues.

8.68 NIE Networks completed pension returns for the Business Plan including the Pension Deficit Allocation Methodology (PDAM) submission. The PDAM captures the scheme position up to the 31 March 2012 and from the 1 April 2012 onwards and it is modelled on the Ofgem approach, following the recommendations made in the CC final determination for RP5.

8.69 We have mainly used the pension scheme valuation as at the 31 March 2014 as it provides the latest formal valuation before the start of the RP6 period and also considered funding updates. The 2014 valuation is the valuation used by the Trustees in setting the current Schedule of Contributions. The 31 March 2014 formal actuarial valuation reported a deficit of £110.7m. We have used this valuation and also the latest funding information to inform our decision. We note that we will review subsequent changes in funding position, investment strategies and other relevant pension aspects at RP7, including determining the appropriate level of adjustment in respect of allowances for the 2022-24 period. We note that should the pension

scheme be in surplus at RP7 we will make a negative adjustment to the deficit allowances for the 2022-24 period.

- 8.70 The strength of the employer's covenant is imperative in making an assessment of any pension scheme, its financeability and investment strategy and we outline our considerations below.

Employer Covenant

- 8.71 An *Employer Covenant* relates to the extent of the legal obligation and financial ability of the employer to support the funding requirements and investment risks associated with its pension scheme. (Additional details on the Employer Covenant are included within the Pensions Annex F including a definition of same). A major consideration affecting the trustees' choice of valuation assumptions, and in particular the degree of *prudence* incorporated, is the trustees' view of the *employer's covenant*. The greater the trustees' perceived risk of the sponsoring employer's insolvency, the more *prudence* they are likely to apply.
- 8.72 We have requested the Employer Covenant from NIE Networks; however, this request was not forthcoming as the Trustees would not provide this to the Regulator. We are concerned that we have not been in receipt of this Covenant and would hope that we will receive it in the future to facilitate a holistic review of the NIEPS. NIE Networks has stated that the NIEPS's trustees' view of its covenant is 'tending to strong'. Therefore, we have accepted this view in the absence of any verifiable material. We would expect this to be available for the time of the next price control, to enable a full assessment to be made, when undertaking the next review.

Regulatory Fraction

- 8.73 The regulatory fraction was set as 99.26% at RP5 by the CC based on pro-rating scheme liabilities according to members' regulated service periods. However, the CC also considered two alternative methods which would have produced significantly different fractions and any of these methods might arguably have been viewed as reasonable.
- 8.74 In the RP6 Business Plan NIE Networks have included an adjustment to the Regulatory Fraction (leading to a factor in excess of 100%) which has been used as a tool to reallocate a certain amount of surplus (e.g. in respect of the article 75¹¹³debt payment). We have concerns that a Regulatory Fraction of over 100% may not be appropriate in other contexts (for example if it was being used as a post cut-off date Regulatory Fraction).
- 8.75 In view of the above and the fact that there are various possible methods for calculating the Regulatory Fraction at the draft determination we proposed setting the Regulatory Fraction to 100% for RP6 and going forward. This was to be a one-off

¹¹³ NIE Networks have included a 3.7% adjustment in respect of an *article 75 (of the Pensions Act) payment* (as Powerteam Electrical Services (UK) Ltd (PES) ceased to participate in the scheme on the 24th December 2013). The total scheme deficit has been split according to regulated or non-regulated status. NIE Networks have adjusted the *Regulatory Fraction* so that the surplus emerging in respect of the PES *article 75 payment* is treated as non-regulated surplus (and so increases the RP6 allowances).

adjustment to effectively remove the requirement to adjust for the proportion allocated to regulatory activities. This would result in an increased pension deficit repair allowance in the range of £0.8m as compared to NIE Networks' Business Plan submission. However, following further analysis of pensions and consideration of consultation responses for this final determination we are not including an additional allowance to uplift the regulatory fraction to 100% going forward. We consider this area requires further review to determine whether the calculations and assumptions are still appropriate. We are therefore including the amounts proposed in NIE Networks' Business Plan submission. However, we intend conducting further analysis in relation to the appropriateness of the treatment of Article 75 debt payments and the impact on the Regulatory Fraction. We are not convinced that it is appropriate to ask NIE Networks customers to pay for a share of the deficit which is greater than 100% - which is the practical effect of the NIE Networks figures. We plan to engage further with NIE Networks on the justification for such a proposal and will reflect our decision within any adjustments that are made to the pension deficit figure in RP7. (For additional detail on our evaluation of the Regulatory Fraction, refer to Pension Annex F.)

Final Determination approach to Deficit Recovery Payments for RP6

- 8.76 For the Draft Determination we proposed including deficit recovery payments to 2022 and allowances for 2022-24. Our position in this regard remains unchanged from the Draft Determination since there has been no supporting evidence provided or become apparent to support a different approach.
- 8.77 However, we are not including the additional £0.8m proposed in the draft determination to set the regulatory fraction to 100% for RP6 and going forward (see section above). Therefore the final determination allowances are as per the NIE Networks Business Plan submission.
- 8.78 The RP6 allowances for 2022-2024 will be reviewed for RP7 upon consideration of the outcome of the triennial reviews at 2017 and 2020 (also 2023, if available). At RP7 we will make a more informed decision as to whether these deficit recovery payments are required or should be adjusted. We note that, should the pension scheme be in surplus at RP7, we will make a negative adjustment to allowances granted for 2022-24. Any adjustment will be in NPV neutral terms.

Early Retirement Deficit Contribution (ERDC) disallowance

- 8.79 Between 1997 and 2003, when the NIEPS was in surplus, early retirement benefit enhancements were granted which increased the scheme's liabilities; however, no additional contributions were paid into the scheme at the time. At RP5, following extensive consideration, the CC decided that shareholders should fund part of these unfunded liabilities by disallowing 30% of deficit repair contributions (from a potential range of between 23% and 45%) allocated to the 'Early Retirement Deficit Contribution' (ERDC) element.
- 8.80 We note that NIE Networks requested allowances in their RP6 Business Plan included a negative adjustment of 30% to reflect the ERDC proportion and NIE Networks explained the rationale for this in the Business Plan.

8.81 No further information has become available to present a robust case that a 30% allocation is inappropriate. Accordingly, we believe that it is reasonable to retain the 30% allocation.

Transmission and Distribution split

8.82 The CC set a split between pension costs of the business at the rate of 92/8 to the distribution and transmission businesses respectively. In its Business Plan submission and the PDAM methodology NIE Networks have adopted a split in the range of 76-77% to 23-24% approximately, which is dependent on the RAB allocation of the Transmission and Distribution businesses. We are content to apply NIE Networks' proposed allocations based on the respective RABs of the Transmission and Distribution businesses as being reflective of the costs involved.

Pension allowances and FD Approaches

8.83 We have considered responses to our draft determination RP6 consultation, pension scheme funding and other relevant factors in setting our final determination approach and allowances for pension deficit funding and summarise our approach to Pensions below:

- **Deficit separation** - We will maintain the CC methodology of allocating a deficit cut-off date of 31 March 2012 and the principle that the established pre cut-off fund is consumers' responsibility and the incremental post 31 March 2012 fund is shareholders' responsibility.
- **ERDC disallowance**- we will retain a 30% ERDC disallowance set by the CC to deficit recovery payments.
- **Regulatory Fraction**- we are retaining NIE Networks' approach to the Regulatory Fraction. However, we will review this value and may make adjustments to reflect our decisions on treatment of Article 75 debt payments should we consider it to be appropriate.
- **Transmission and Distribution splits** – we will apply the approach used by NIE Networks in its business plan and allocate costs between the Transmission and Distribution businesses based on the RABs.
- **Allowances to 2022**- we will apply the allowances set by the CC in respect of deficit recovery payments from 2017 to 2022 in line with the amounts outlined in the CC final determination, with inflationary amounts added.
- **Allowances 2022-24**- we will include requested funding allowances in the last two years of RP6. These amounts will be considered at RP7, when they may be removed in NPV neutral terms, dependent on recent triennial valuations and deficit funding requirements.

RP6 FD allowances

8.84 We present our Final Determination allowances as compared to NIE Networks' Business Plan requested amounts in the table below. Our final determination allowances are as per the NIE Networks Business Plan and reflect the draft

determination allowances with no additional adjustment of £0.8m associated with setting the Regulatory Fraction to 100%. The allowances are based on the above assumptions and we highlight that the allowances for 2022-24 are subject to review at RP7.

	RP6 Request (£m)	RP6 FD (£m)
Pension Deficit Contribution	114.5	114.5
Pension ERDC disallowance	(30.5)	(30.5)
Net Amount Requested	84	84

Table 45: UR FD pension deficit recovery allowances (2015-16 prices)

8.85 This results in an annual profile as follows:

	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024
Pension deficit funding	8.804	17.609	17.609	17.609	17.609	17.609	17.609
Less ERDC disallowance (£m)	-2.3	-4.7	-4.7	-4.7	-4.7	-4.7	-4.7
Proposed RP6 pension allowance	6.504	12.909	12.909	12.909	12.909	12.909	12.909

Table 46: RP6 Pension FD allowances Annual Allowances (2015-16 prices) with ERDC adjustment

8.86 This allowance will be allocated to the transmission and distribution businesses in the same manner as that proposed by NIE Networks in its Business Plan, in the proportions indicated in the table below:

	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024
Transmission	23.64%	23.52%	23.47%	23.54%	23.46%	23.35%	22.82%
Distribution	76.36%	76.48%	76.53%	76.46%	76.54%	76.65%	77.18%

Table 47: Allocation of pension deficit recovery amounts between the distribution and transmission businesses

Pension Monitoring Framework

8.87 In our draft determination consultation we welcomed consultation responses in relation to our proposal to introduce a 'Pension Monitoring Framework' (PMF) to ensure that NIE Networks only approaches the Utility Regulator when it is clear that there has been a substantial fall in the NIEPS funding position at triennial valuations

during RP6, which in turn could lead to the possibility of materially higher deficit contributions. Conversely, to ensure a symmetric approach, this framework should also include an 'upside' PMF when the pension scheme funding has improved. At the draft determination we proposed a 'downside' PMF at a level of 70% and a converse 'upside' PMF of 110% and welcomed feedback from respondents in this regard. NIE Networks, in its Consultation response has stated that the range should be 80% for the downside PMF and 100% for the upside PMF. We have carefully considered these limits and believe there is merit in adjusting the range slightly and present our considered review of NIE Networks' suggestion in section 8.21 above. We consider 80% may be too high a downside range and have decided to apply a level of 75%. In relation to the upside we consider 105% may be more appropriate. We have decided to apply these limits for commencing discussions on pension funding between the UR and NIE Networks. On reaching these limits – either the downside or upside limits - the Utility Regulator will consider funding levels and pension scheme characteristics. We will consider the future outlook to determine whether or not any adjustment is required to e.g. funding levels, deficit recovery payments (either up or down), bill adjustments, etc. We include additional detail on this PMF within our Pension Annex F.

Areas of significance

- 8.88 In reviewing NIE Networks' pensions we are highlighting several areas we consider merit further attention by NIE Networks. These relate to pension scheme administration and expenses costs and potential pension scheme surpluses in the future. We outline our observations below.
- 8.89 We maintain our draft determination position that pension administration and investment expenses costs are higher than those for comparable companies and we would like to see NIE Networks work collaboratively with pension scheme trustees to streamline and reduce such costs going forward. We expect to see a marked reduction in such costs and may consider reducing allowances for such costs at future price controls. We have discussed this area in greater detail in the Pensions Annex at Annex F.
- 8.90 NIE Networks' pension scheme is currently in deficit. However, it is possible that the pension scheme may become a surplus in the future- for example if market conditions and / or gilts rates improve. NIE Networks should take appropriate action in the event of the pension scheme becoming into surplus and ensure the consumer benefits from any surplus. NIE Networks should indicate to the UR in a timely manner should the pension scheme be in surplus or that they consider it will be in surplus in the foreseeable future and make appropriate proposals to benefit the consumer.
- 8.91 We note that the pension arena is evolving and schemes are becoming increasingly innovative in terms of their approach and funding and note the recent developments

in the UK. ¹¹⁴ We encourage Pension Scheme Trustees to examine the area of pension innovation to reduce the deficit balance and consequently schedule of contributions going forward for the benefit of consumers but recognise the relationship between risk and contributions. For RP7 we expect NIE Networks and/or the Pension Scheme Trustees to demonstrate to the UR the action(s) being considered or undertaken in this area to achieve efficiencies and savings with a quantification of same.

- 8.92 We may also review the treatment of Article 75 debt payments (including historic payments) and will make appropriate adjustments resulting from this consideration in RP7.

¹¹⁴ http://pwc.blogs.com/press_room/2016/10/pwc-team-sparks-750m-pension-deficit-cost-cutting-drive-at-western-power-.html

9 Direct Network Investment

Key changes from draft to final determination

- 9.1 The key changes from the draft to final determination, in respect of direct network investment are as follows.
- The determination of additional direct capital allowances of £17.7m as a result of reviewing issues raised by the company in its response to the final determination.
 - The reduction in some capital allowances included in the draft determination to reflect updated RP5 outcome data provided by the company to the amount of £1.8m.
 - A determination of pre-funded costs of £0.4m due to deferral of investment from RP5 to RP6.
 - An increase in the direct capital allowance for trials to inform future investment decisions from £5.31 to £6.36 in response to issues raised by the company in its response to the draft determination. However, we have concluded that the company has not yet provided sufficient information to justify the selected trials and to set out a clear trial design. Therefore, we have included this category of investment in the re-opener mechanism.

Direct Network Investment – Introduction

- 9.2 In this section of the final determination, we assess NIE Networks proposals for direct network investment which forms part of the overall capital investment proposed by the company for RP6.
- 9.3 Direct network investment covers activities which involve physical contact with network system assets such as replacement or reinforcement of existing assets and the creation of new assets. There are other strands of investment which are not covered in this section as follows:
- Indirect expenditure associated with network investment covered in Section 5.
 - Metering investment covered in Section 11.
- 9.4 Direct network investment is treated in one of three ways in this Price Control:
- investment for which an ex-ante allowance is included in this determination;
 - investment carried out under the re-opener mechanism where an estimate has been included for costs which will be determined at a later date when the need for the project has been confirmed and the scope, cost and programme developed (see Section 13 beginning at paragraph 13.36 for a detailed description of the re-opener mechanism); and,
 - investment which is subject to a volume driver.

- 9.5 In its business plan, NIE Networks proposed direct investment of £342.1m in the distribution network and £104.4m in the transmission network, a total of £446.5m over RP6 in 2015/16 prices. This included an estimate of the cost of three major transmission maintenance projects for which the allowances will be determined at a later date under the re-opener mechanism.
- 9.6 This proposed investment is summarised by category in Table 48 and Table 49 for distribution and transmission respectively.

	RP5 Average per year	RP6 Average per year	RP6 Total
Distribution reinforcement	5.8	9.5	62.1
Distribution asset replacement	26.5	26.9	174.6
ESQCR	1.9	9.2	60
Other non-load	3.7	5.7	36.8
Network access and commissioning	1.5	1.3	8.7
Total distribution direct network investment	39.4	52.6	342.1

Table 48: NIE Networks proposed distribution direct network investment¹¹⁵

	RP5 Average per year	RP6 Average per year	RP6 Total
Transmission reinforcement	9.2	0.2	1.0
Transmission asset replacement	13.7	15.7	102.1
Network access and commissioning	0.2	0.2	1.3
Total transmission direct network investment	23.2	16.1	104.4

Table 49: NIE Networks proposed transmission direct network investment¹¹⁶

- 9.7 The summary information above is prior to the application of a frontier shift which takes account of the impact of real price effects on the rate of inflation experienced by NIE Networks and the potential for on-going productivity efficiencies, consistent with the presentation of proposals in the company's business plan.

Direct Network Investment Appraisal

- 9.8 Our detailed assessment of the company's proposed investment is set out in Annex O. The following section summarises key points from the appraisal. In line with the company approach, we have made our assessments before the application of a frontier shift which is then applied to the aggregated figures to arrive at the determined amounts.

Variance in run-rate of investment from RP5

- 9.9 In its business plan submission, NIE Networks compared the average annual rate of direct network investment in RP5 with that planned for RP6. Average annual

¹¹⁵ Source NIE Networks RP6 business plan 2017-2024, Table 9

¹¹⁶ Source NIE Networks RP6 business plan 2017-2024, Table 34

expenditure in RP5 was estimated at £62.6m, increasing to £68.7m in RP6 (an increase of £6.1m or 9.7%). Much of the variance in expenditure from RP5 can be explained by five key areas identified in Table 50.

	Annual average variance £m/a	Notes
Distribution reinforcement	3.7	The key drivers for increased distribution reinforcement are investment to cater for increasing use of low carbon technology (LCT such as electric vehicles) and to release capacity on the 33kV network for generation connections.
Distribution ESQCR	7.3	In RP5 NIE Networks carried out surveys to identify the parts of the network that did not comply with the Electricity Safety Quality and Continuity Regulations (ESQCR) introduced in 2012. In RP6 the company will begin to implement the compliance solutions.
Transmission reinforcement	-9.0	This comprises investment in D5 projects to address transmission system capacity or capability and generation cluster connection. The RP6 Business Plan only identified carry over investment for the completion of D5 projects begun in RP5. Further investment is expected in RP6 under the D5 mechanism including the North South Interconnector which is not included in this assessment (see section 13 for further details).
Transmission asset replacement		
Major maintenance projects	6.8	Investment in three major transmission network maintenance projects is planned for RP6. A preliminary estimate is included in the determination which will be replaced by an allowance determined under the D5 mechanism when the need, scope, programme and cost have fully assessed. Investment in RP5 was limited to preliminary development work on these projects.
General transmission assets	-4.7	NIE Networks has identified a reduction in refurbishment and replacement of general transmission assets in RP6.
Explained variance	4.1	
Other	2.0	
Total variance	6.1	

Table 50: Variance in annual average investment from RP5 to RP6

- 9.10 Much of the variance in the annual rate of expenditure between RP5 and RP6 can be explained by changes relating to new legislative and social drivers and specific major projects. The fact that the underlying annual rate of investment in refurbishment and replacement of the assets is relatively constant between RP6 and RP5 provides broad comfort as to the reasonableness of the company's proposals.

NIE Networks response to the draft determination

- 9.11 In the draft determination, we proposed a reduction of £47.2m in funding to the proposals made by the company. In its response to the draft determination, the company accepted £26.1 m of the reduction we proposed to direct capital allowances. However, the company asked that we reverse £21.1m of the reductions and set out its reasons why it thought this was the result of errors in our assessment.

Our response to the issues raised by the company is given in detail in Annex O and summarised in Annex Q (NIE Networks consultation responses).

- 9.12 We also undertook a review of the unit rates used in the draft determination to take account of the latest information on RP5 out-turn. We made adjustments to the final determination where this review revealed material changes in unit rates. We did not increase rates unless the company had identified an error in its response to the draft determination.
- 9.13 Finally, we reviewed the latest estimate of RP5 outturn to determine if any outputs had been deferred from RP5 to RP6 (see section on RP5 deferral beginning paragraph 3.23 above). We identified one item of output deferral relating to permanent flood protection at substations, resulting in a deduction of £369k in RP6 due to deferral of outputs from RP5. We will further review this assessment when the final out-turn figures for RP5 are available.
- 9.14 The combined change of these three areas of review from the draft determination to the final determination is summarised in Table 51 below.

Change to allowance	Adjustment £m
Issues raised by NIE Networks in response to the draft determination	17.774
Review of unit rates on latest information	-1.818
Pre-funded investment on account of deferrals	-0.369
Total	15.588

Table 51: Summary of changes to direct capex investment from the draft determination

UR appraisal of direct network investment

- 9.15 Our detailed assessment of the company's proposed investment is set out in Annex O. The annex includes sections for each category of work which consider:
- The type and scope of work covered.
 - NIE Networks proposals for investment including the volume and cost of work.
 - The Utility Regulator's final determination, including any challenge made to the volume of work proposed by the company or its estimated cost of the work.
- 9.16 During RP5 we introduced annual cost reporting against Regulatory Instructions & Guidance (RIGs) to provide information on delivery of the current price control and to provide information to benchmark and challenge future business plans. In respect of direct network investment these reports include:
- Network Investment RIGs reporting which report costs and outputs against the allowances identified by the Competition Commission in its final determination for RP5.
 - Cost & Volume RIGs report costs and volumes of the replacement and refurbishment of individual work items such as transformers, switchgear, poles,

towers and conductors further divided by voltage. These Cost & Volume RIGs are structured to reflect data collected on GB DNOs by Ofgem with a view to benchmarking NIE Networks costs.

9.17 The Cost & Volume RIGs submitted to date have been heavily qualified by NIE Networks in relation to the level of retrospective allocation necessary to complete reports back to 2012-13. In addition, the company was not able to provide a robust allocation of its estimated costs for network investment in RP6 against Cost & Volume categories. As a result, we have relied on reported costs and outputs reported in the Network Investment RIGs in the first five years of RP5 as the basis of challenging costs for RP6. Where possible we have attempted to test the efficiency of NIE Networks proposed investment using cost and volume reporting but the qualifications placed on these reports has limited this type of analysis. We expect the company to develop and present a comprehensive assessment of Cost & Volume reports to support comparative efficiency analysis from 2017/18 and to be capable to include a Cost & Volume submission in its RP7 business plan submission cross referenced to the Network Investment RIGs submission.

9.18 The outcome of our assessment of direct network investment is summarised in Table 52, Table 53 and Table 54. Table 52 shows the direct network investment included by NIE Networks in its Business Plan. Table 53 and Table 54 show the final determination pre and post frontier shift. The values in Table 52 and Table 53 are both pre frontier shift and therefore comparable. Table 53 and Table 54 are further subdivided between categories of expenditure which relate to the various mechanisms which drive the capital allowances:

- determined sums;
- allowances which will be determined under the various reopener mechanisms at a later date when the need is confirmed and the solution and cost better defined; and,
- allowances determined from volume drivers multiplied by determined unit rates.

	6 months to Mar-18	18/19	19/20	20/21	21/22	22/23	23/24	Total RP6
<i>NIE Networks direct network investment (pre frontier shift)</i>								
Distribution	29.1	52.1	52.2	52.2	52.2	52.2	52.3	342.1
Transmission	10.2	17.5	17.2	19.2	16.0	16.0	8.5	104.4
	39.3	69.6	69.4	71.4	68.2	68.2	60.8	446.5

Table 52: NIE Networks proposed direct network investment.

	6 months to Mar-18	18/19	19/20	20/21	21/22	22/23	23/24	Total RP6
UR final determination of direct network investment (pre frontier shift)								
<u>Distribution</u>								
Determined distribution investment	21.8	43.5	43.5	43.5	43.5	43.5	43.5	282.9
Managed service charge	0.4	0.8	0.8	0.8	0.8	0.8	0.8	5.2
ESQCR tree cutting	0.2	0.5	0.5	0.5	0.5	0.5	0.5	3.0
Investing in the future (reopener)	0.5	1.0	1.0	1.0	1.0	1.0	1.0	6.4
Load related LCT (reopener)	0.0	0.0	0.0	0.0	3.5	3.5	3.5	10.5
Nominated distribution projects (reopener)	0.3	0.7	0.7	0.7	0.7	0.7	0.7	4.3
Undereaves service replacement (volume driver)	0.6	1.3	1.3	1.3	1.3	1.3	1.3	8.2
Distribution total	23.8	47.7	47.7	47.7	51.2	51.2	51.2	320.5
<u>Transmission</u>								
Determined transmission costs	3.4	6.8	6.8	6.8	6.8	6.8	6.8	44.0
Managed service charge	0.1	0.2	0.2	0.2	0.2	0.2	0.2	1.3
Nominated asset replacement projects (reopener)	0.3	8.0	15.9	14.5	7.5	7.5	0.0	53.6
Transmission capacity and capability (reopener)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Transmission total	4.8	14.9	22.9	21.4	14.5	14.5	7.0	99.9
	28.6	62.6	70.6	69.1	65.7	65.7	58.2	420.3

Table 53: Determination of direct network investment pre frontier shift

	6 months to Mar-18	18/19	19/20	20/21	21/22	22/23	23/24	Total RP6
Frontier shift factor	0.98309	0.9747	0.9665	0.9583	0.9501	0.9421	0.9341	
UR final determination of direct network investment (post frontier shift)								
<u>Distribution</u>								
Determined distribution investment	21.4	42.4	42.1	41.7	41.4	41.0	40.7	270.6
Managed service charge	0.4	0.8	0.8	0.8	0.8	0.7	0.7	4.9
ESQCR tree cutting	0.2	0.4	0.4	0.4	0.4	0.4	0.4	2.9
Investing in the future (reopener)	0.5	1.0	0.9	0.9	0.9	0.9	0.9	6.1
Load related LCT (reopener)	0.0	0.0	0.0	0.0	3.3	3.3	3.3	9.9
Nominated distribution projects (reopener)	0.3	0.7	0.6	0.6	0.6	0.6	0.6	4.2
Undereaves service replacement (volume driver)	0.6	1.2	1.2	1.2	1.2	1.2	1.2	7.8
Distribution total	23.4	46.5	46.1	45.7	48.6	48.2	47.8	306.4
<u>Transmission</u>								
Determined transmission investment	3.3	6.6	6.5	6.5	6.4	6.4	6.3	42.1
Managed service charge	0.1	0.2	0.2	0.2	0.2	0.2	0.2	1.2
Nominated asset replacement projects (reopener)	0.3	7.7	15.4	13.8	7.1	7.1	0.0	51.4
Transmission capacity and capability (reopener)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Transmission total	4.7	14.5	22.1	20.5	13.7	13.6	6.5	95.8
	28.2	61.0	68.2	66.2	62.4	61.8	54.3	402.1

Table 54: Determination of direct network investment post frontier shift

- 9.19 In respect of distribution investment above, only the 'determined distribution investment', the 'managed service charge' and 'ESQCR tree cutting' are determined by this final determination. In respect of the transmission investment above, only the 'determined transmission investment' is determined as a result of this final determination. The remaining values are estimates of work which will be determined at a later date through the reopener mechanisms or allowances which will be determined from volume drivers using determined unit rates. The allocation of the investment above between these different categories is shown in below.

	6 months to Mar-18	18/19	19/20	20/21	21/22	22/23	23/24	Total RP6
Distribution RAB_DN	21.8	43.2	42.8	42.5	42.1	41.8	41.4	275.5
Distribution 5YR RAB	0.2	0.4	0.4	0.4	0.4	0.4	0.4	2.9
Transmission RAB_TN	3.4	6.8	6.7	6.7	6.6	6.6	6.5	43.3
Distribution re-opener mechanism	0.8	1.6	1.6	1.6	4.9	4.8	4.8	20.1
Distribution volume driver	0.6	1.2	1.2	1.2	1.2	1.2	1.2	7.8
Transmission reopener mechanism	1.3	7.7	15.4	13.8	7.1	7.1	0.0	52.4
Total	28.2	61.0	68.2	66.2	62.4	61.8	54.3	402.1

Table 55: Determination of direct network investment post frontier shift

9.20 The change in network investment from the business plan submission to the final determination before the application of frontier shift is summarised in Table 56. This table has been amended from the draft determination to align with our conclusions on categories of re-opener mechanisms and volume drivers.

	Distribution	Transmission	Total
NIE Networks Business Plan submission	342.1	104.4	446.5
Less nominated distribution projects (re-opener)	-4.3		-4.3
Less transmission asset replacement (re-opener)		-49.3	-49.3
Less load related LCT (reopener)	-10.5		-10.5
Less investing in the future (reopener)	-6.6		-6.6
Less undereaves volume driver	-10.0		
Business plan core investment net of estimates	310.7	55.1	365.8
UR adjustments to the core investment plan	-19.6	-9.8	-29.4
Final determination of core investment plan	291.1	45.3	336.4
Add back nominated distribution project estimate	4.3		4.3
Add back transmission asset replacement estimate		54.6	54.6
Add back for load related LCT reopener estimate	10.5		10.5
Add back investing in the future estimate	6.4		6.4
Add back undereaves volume driver estimate	8.2		8.2
Final determination estimate compatible with the company business plan submission.	320.5	99.9	420.3*

* Does not total due to rounding differences

Table 56: Change in direct network investment from the business plan submission to the final determination

9.21 In NIE Networks' business plan the company included £376.0m of direct network investment net of projects which will not be covered by the re-opener or volume driven mechanisms of this final determination. The final determination represents a reduction of £39.6m from the business plan submission for these activities. A revised unit rate used in the volume driver for undereaves service replacement will deliver a further saving of £1.8m from the business plan submission for the assumed number of replacement. This is a combined saving of £41.4m (14%) on determined capital allowances and volume driven work.

9.22 The majority of reductions are as a result of unit cost adjustments based on RP5 outturn costs. We have also adjusted some of the RP6 volumes to reflect RP5 run-

rates and, in some cases, due to insufficient justification in the RP6 Network Investment Plan.

‘Optional’ Investment Plan

9.23 In its business plan, the company identified a further £45.4m of investment which is categorised as ‘optional’ which it did not include in its plans for RP6. This investment is summarised in Table 57.

	Optional investment £m	Notes
Investment to strengthen the 11kV overhead line network.	25.6	Phased replacement of 25mm conductors on the spine of the 11kV overhead line network with 50mm conductors to address capacity and potential failure under ice loads.
Additional investment to improve flood resilience.	2.6	Improved flood resilience at 200 sites which serve 4000 consumer.
Accelerated resilience tree cutting.	0.7	Resilience tree cutting will reduce the risk of falling trees causing damage to the network. The optional investment is to accelerate resilience tree cutting over a period of 20 years rather than the planned 25 years.
Further investment to reduce unplanned power cuts.	16.5	The company suggested that investment in additional generators (£1.0m) and investment in additional dedicated resources available for fault and emergency response (£11.5m) would reduce the 5000 homes and businesses experiencing an power cut of over 10 hours by 25%. Investment of a further £5.0m improving circuits serving worst served customers would (those affected by 6 or more power cuts in an 18 month period) by 20%.
Total 'optional' investment	45.4	

Table 57: Optional network investment proposed by NIE Networks

9.24 The company presented these programmes of investment as optional¹¹⁷:

“because the investments received mixed levels of support during our customer and stakeholder engagement process. Domestic customers surveyed were generally supportive of the programmes and willing to pay for improvements, whilst business customers supported improvements in principle but the majority were not willing to pay for these improvements.”

“given other competing priorities in our core plan, we have decided to include these projects as optional.”

9.25 In the draft determination for RP6, we noted the company’s view that this investment is optional because they are not fully supported by consumer engagement and because of the other competing priorities in the core plan. We set out our view that it is for the company to assess the needs of its consumers including their willingness to

¹¹⁷ Source NIE Networks RP6 business plan 2017-2024, 8.2 and 8.3

pay and the balance of competing priorities in its business plan. In view of this, we did not include this investment in the draft determination.

9.26 In its response to the draft determination NIE Networks:¹¹⁸ said that it considered that the statement made in our draft determination (as above) were an incorrect representation of NIE Network's position. It does consider that these projects offer benefits to consumers and it is for the Utility Regulator to decide whether the benefits associated with these projects are in the consumers' interest when considering the tariff impact of these projects as part of the overall Network Investment Plan. The company asked that the Utility Regulator explained to consumers its views on these schemes. The company also pointed out that there was no reference to proposed changes in GSS standards in the Utility Regulator's consideration of these schemes.

9.27 Our response to the representations and observations made by the company is set out below:

- It is clear from the company's response that it considers the projects proposed have clear benefits to consumers. It included the investments as optional because it believes that it is for the Utility Regulator to decide whether the benefits associated with these projects are in the consumers' interest when considering the tariff impact of these projects. We disagree with this statement. It is for the company to assess the needs of its consumers including their willingness to pay and the balance of competing priorities in its business plan.
- We agree with the company that a decision on whether the benefits associated with these projects are in the consumers' interest should be considered in the light of tariff impact. In effect, a cost-benefit analysis. While a cost benefit analysis can seem to be a remote process, and can be rendered more so by attempts to achieve precision from uncertain data and valuations, it is at its simplest, a means of weighing tangible and intangible benefits against the costs of the proposed work. Otherwise decisions are simply a matter of opinion.
- The company only submitted a cost benefit analysis for one of the optional investment schemes proposed (the 11kV upland network). This concluded that the scheme was not economic but noted that the analysis had not taken account of the benefits to consumers. Rather than evaluate the benefits, the company preferred to substitute its opinion that the work is necessary and leave it for the Utility Regulator to make a decision in the absence of information.
- A key part of the consumer engagement process was the collection of willingness to pay data. In fact this work absorbed a significant part of the survey time with individual consumers. Willingness to pay is an estimate of the value that consumers place on benefits offered by the company. Having elicited this information, the company did not make any use of it in determining whether the individual schemes were cost beneficial.
- It is also clear from the consumer engagement for RP6 that willingness to pay related to ability to pay. That is that there are groups of domestic consumers not willing to pay for the investment the company is promoting because they have other priorities. When this is combined with the fact that the majority of business

¹¹⁸ For a full statement of NIE Network's views see its Response to the Utility Regulator's Draft Determined, Chapter 4.

consumers were not willing to pay for the improvements, it is not clear that they have broad consumer support.

- 9.28 In summary, our approach to this issue takes due account of the outcome of the consumer engagement process and the balance of views that consumers expressed. The company has not presented a compelling case for the investment and, in particular, has not completed a cost benefit analysis which would balance the benefits associated with these projects against the impact on consumers' tariffs.
- 9.29 The company has also asked the Utility Regulator to conduct its assessment of the Optional Investment programme taking account of the impact it would have on the proposed changes to GSS. In this respect GSS as a measure of frequency and duration of power cuts. GSS is covered in detail in Chapter 4 of this paper. If the company can demonstrate that there is an investment need to meet a future GSS standard, including any of the 'optional' investment programme above, then these could be considered through the change of law mechanism in the Licence. However, it would still be for the company to make the case in terms of costs and benefits to show that the work is cost beneficial.
- 9.30 The Consumer Council's response to our draft determination noted that *this issue is one that would benefit from further and more detailed consumer engagement and research. It could be the case that investment decisions in this area could be deferred for later in the RP6 period, with the possibility of substituting them for other projects if they become a higher priority.*
- 9.31 The potential to consider this issue again through the introduction of new GSS standards would provide an opportunity for it to be revisited with any new information and a clear commitment to enhanced standards of consumer service in advance of the RP7 price control.

Investing for the future

- 9.32 In its business plan NIE Networks proposed investment of £10.48m under the heading "investing for the future". The underlying justification of this investment is the trialling and integration of technologies which could offer an economic solution if network load is increased by the uptake of low carbon technology.
- 9.33 Within this overall package of investment, the company proposed to replace all sub-station RTUs with more modern units at a cost of £3.90m. This will provide for two-way communication between its control systems and its assets which is necessary to implement active management of the network through new processes and technologies. Half this activity was allowed for in the draft determination. Following further review of the company's proposals it has been allowed in full in the final determination.
- 9.34 The remaining investment of £6.36m was proposed to undertake six projects which build on the results of general industry development and specifically on innovation projects being undertaken in GB through the Ofgem Electricity Network Innovation Competition. A common theme of these projects is the use of communication

technology and automated control systems to manage load, voltage levels and network configuration in real time. This is a significant departure from a 'static' network where the capacity is set at pre-defined limits determined on the most onerous design conditions and the network configuration can only be varied manually.

9.35 We understand that the company's intent is not to undertake leading edge innovation but to trial successful innovation which could have widespread application and ensure that:

- It can successfully integrate the technology in its network, identifying and addressing interface issues and product specification.
- Obtain or develop the systems and software necessary to receive and analyse information from the network and manage the network in real time.

9.36 We have reviewed the company's proposals and concluded that much of the work proposed has potential. Following a review of the costs of this work, we initially concluded that that a reasonable allowance would be £5.31m.

9.37 However, as set out in our draft determination, we concluded that there is further work to do to confirm that the projects proposed will deliver value and that the company should complete this work and submit the results to us before embarking on the procurement of assets and systems and the trials themselves. For example:

- The cost benefit analysis submitted by the company to support the work proposed addressed the application of the technology in a single case assuming that the trial had been successful. The company should assess the potential application of each type of technology it proposes to trial, take account of the risk of the trial not being successful and consider the net-present value of the costs and benefits over the life of the relevant assets.
- In its submission, the company has highlighted technical issues which arose in some of the innovation projects carried out in GB which do not appear to have been resolved. The company should show how these technical issues can be resolved either within or outwith the proposed trial.
- The scope of works which the trials will deliver should be confirmed. For example, whether all software and systems necessary to manage information flow will be procured during the trials or whether additional procurement will be required. This should be built into the cost benefit analysis described above.
- The company has noted that the trials will be carried out on assets which are not at the limit of load because the company cannot yet confirm that the solution being trialled will work. Where an immediate solution is necessary a 'traditional' asset replacement or reinforcement is planned. However, the company should show that the trials it plans to carry out can fully test the equipment and systems over a full range of operating conditions allowing them to be applied in practice.
- While the company does not plan to use the trial work as a means of delivering RP6 planned network investment outputs, we expect the company to deliver the solutions outlined in the programme of work as permanent solutions which could provide benefit in the long term.

- The company should set out the programme for the trials. We would expect the trials to inform the assessment of the LCT load reopener set out in Section 13 beginning paragraph 13.110.
- In general, the trials should be sufficient to inform future application. It should address the generic technology (as opposed to the specific type tested). It should be complete in that any recommendations for further research necessary to implement the trials should be carried out under the RP6 allowance subject to the cost risk sharing mechanism.
- The design of the trial and the proposal for an allowance should address the opportunities for working with other bodies keen to be involved in innovation trials such as suppliers and research bodies who may be able to commit staff and funding to support the work.

9.38 In response to our draft determination, NIE Networks suggested that it was wrong for the Utility Regulator to ask for further information in advance of the trials in that the purpose of the trials is to determine the feasibility and benefits from each technology. The company did not provide any further information on the design of the proposed trials. Other stakeholders also made a similar point that the success of innovation project cannot by their nature be guaranteed before the work is done.

9.39 We understand that the outcome of innovative trials are not certain and that some may fail. However this is not the point we are making. Innovation funding carries risks and one of those risks is the failure to deliver the outcome that was hoped for. This can be useful if it demonstrates that the outcome is not possible. However, even in these circumstances there is a loss of opportunity. This loss of opportunity is greater when:

- the desired outcome is demonstrated but there are few areas it can be applied;
- the project fails because it has failed to address issues known at the start of the work and simply reconfirms that they are issues; or,
- the project runs out of time or budget and ends with a report that concludes that further research is required.

9.40 These are matters of good trial design. Are we doing the right trials in the first place? Are the trials adequately scoped to provide a definitive outcome? It is not an expectation that success is guaranteed, rather that failure is not built in from the start. Any efficient private company, spending its own money on innovation, in the hope that it would enhance future market share or enhance profitability, will ensure that its scarce innovation funds are applied only after careful project design which maximise the opportunities for success. For a private company, any failed or inconclusive innovation investment will deplete the company's value. NIE Networks is asking for innovation funding on the basis that if it fails or is inconclusive consumers bear the cost. In these circumstances, the question is how to apply the same level of incentive and scrutiny to innovation investment in a regulated company as would apply if the company bears the cost of failure? We believe that our proposals above in relation of project design go some way to addressing this issue. Therefore we have determined a value of innovation investment in RP6 subject to a re-opener up to

a limit of £6.36m. This will provide an opportunity for the company to develop its trial design in the way outlined above and set out success and failure criteria for the trials in advance of efficient levels of funding being confirmed.

- 9.41 The basis of the funding in RP6 is the suite of trials proposed by NIE Networks in its business plan. The capped and ring-fenced allowance in RP6 is for the delivery of at least the trials outlined in its business plan or similar once it has been confirmed that the projects are cost beneficial and the trial design has been developed. It is open to the company to propose changing projects within this allowance with trials or innovation work which will deliver greater benefits to consumers, and we will give due consideration to such proposals when we make decisions on capital allowances for trials and innovation work.
- 9.42 The company shall carry out the work necessary to develop a trial design for each project it proposes within the determined allowances for indirect costs in this final determination. The additional capital allowances which may be provided under the proposed licence term ACDR or ACTR will be limited to undertaking the trials.
- 9.43 We recognise that the company and other stakeholders are keen that the company maximises the trials and innovation work which can be carried out in RP6. We also recognise that the company may have difficulty in accurately estimating the cost of work in advance. Therefore, we have concluded that the innovation funding should not be subject to gain-share under the 50:50 cost risk sharing mechanism. Any aggregated out-performance on this programme of work should be applied by NIE Networks to additional trials. If not, it will be considered as deferral leading to a pre-funded allowance in the next Price Control. This will ensure that the trials and innovation work funded by consumers is not constrained by conservative estimates. Conversely, the company will be required to complete the trials and innovation work agreed for RP6 and any over-run of cost will be subject to the 50% cost risk sharing mechanism. This asymmetric approach to risk reflects something of the risk undertaken by other companies who fund trials and innovation out of their own resources.
- 9.44 Finally, it is worth noting that direct capital allowances are not the only source of innovation funding:
- NIE Networks will benefit from 50% of any cost savings through the cost risk sharing mechanism which provides an opportunity for NIE Networks to carry out innovation projects at risk;
 - the CI/CML incentive in the price control provides an opportunity for NIE to carry out innovation at risk funded from the expected revenue from the incentive mechanism; and
 - there are opportunities for NIE Networks to leverage its Investing in the Future Funding by working with other including equipment suppliers, academic organisations, and research bodies.

- 9.45 We look forward to NIE Networks reporting on the full range of innovation funding it carried out to across the Price Control in addition to those carried out under direct capex allowances.

Summary of investment covered by RP6 uncertainty mechanisms

- 9.46 In Table 56 above we have summarised how we have moved from the company business plan submission to the final determination taking account of the uncertainty mechanisms which apply to the RP6 final determination as described in Sections 13 and 14 below. These are a **volume driver** for undereaves service replacement and **re-opener mechanisms** for:

distribution investment:

- any nominated distribution project;
- trials undertaken to assess and demonstrate innovative future investment in the Distribution System;
- any project to address load growth due to the introduction of low carbon technologies; and,
- any project to address congestion on the 33kV network for purposes relating to generation connections.

transmission investment:

- any project to address transmission system capacity or capability;
- any project to address major transmission system replacement requirements; and
- trials undertaken to assess and demonstrate innovative future investment in the transmission system.

- 9.47 The first two categories under transmission investment above continue the ‘D5 Mechanism’ defined by the Competition Commission defined in its final determination for RP5.

- 9.48 The treatment of each of these categories of investment in the company’s business plan submission and to the extent that estimates were made for the purpose of the final determination are described below.

Distribution undereaves service replacement volume driver

- 9.49 Because there is uncertainty over the total number of undereaves services it will be necessary to replace in RP6, we have introduced a volume driver whereby the allowance for this work will be determined by the volume of units replaced multiplied by a pre-determined unit rate.
- 9.50 In its business plan submission, NIE Networks proposed a total volume of 19,500 units at a unit rate of £513.00 (pre-frontier shift) a total investment of £10.0m. In the final determination we have determined a rate of £418.94, an investment of £8.2m (both pre-frontier shift) assuming the full 19,500 units are delivered.

Nominated distribution projects

- 9.51 In its business plan submission NIE Networks identified two distribution load related reinforcement projects, Armagh Main and Airport Road, where the scope and cost of the distribution project could be materially impacted by potential transmission capacity projects which might be carried out under the reopener section of the transmission licence (D5 projects).
- 9.52 The company has advised us that the scope of distribution reinforcement works which would be necessary if the transmission capacity project does not proceed could be materially different to that included in its estimate.
- 9.53 We have therefore decided that the allowances for the distribution load related elements of these projects will be determined under the nominated distribution project re-opener irrespective of whether they are integrated with the delivery of a transmission capacity project or independent of it.
- 9.54 While the allowance for these nominated distribution projects will be determined at a later date, we have included an indicative allowance of £4.3m for these projects within the RP6 determination as shown in Table 58, consistent with the approach adopted by the company in its Business Plan submission. During RP6, these allowances will be replaced with the actual allowances determined under the major asset replacement re-opener mechanism.

Project	Indicative investment for RP6 (£m)
Armagh Main distribution reinforcement	1.6
Airport Road distribution reinforcement	2.7
	4.3

Table 58: nominated distribution projects

Distribution trials to test innovative future investment

- 9.55 In its business plan submission, NIE Networks included £10.47 m under a category of investing for the future. This consisted of two strands of work:
- £3.9m to replace RTUs to enhance information flows on the network and adopt emerging information and control technologies which will allow it to more actively manage the network;
 - £6.57m to undertake trials and test opportunities for innovative future investment.
- 9.56 Capital allowances for the replacement of RTUs have been included in the final determination and are not subject to a re-opener mechanism.
- 9.57 However, we have concluded that the economic case for and the design of the various trials proposed by the company to inform future investment strategies is not yet adequately developed. We have therefore included a re-opener mechanism to allow capital allowances for this work to be determined once sufficient information is available, up to a limit of £6.36 m.
- 9.58 While the capital allowance will be determined later, we have included an estimate of £6.36m for trials in RP6 in the data tables above to allow comparison of various figures on a like for like basis.

Distribution projects to address load growth due to the introduction of low carbon technologies.

- 9.59 In its business plan submission, the company made an estimate of the investment required to address growth in low carbon technologies (such as electric cars) and the impact they will have on the distribution network.
- 9.60 We have included an allowance in our determination to cover the investment to address low carbon technologies up to the end of 2020/21. However, because technology uptake rates and impact they have on the distribution network remain highly uncertain, we have not determined investment for the last three years of RP6 (Apr 2021 to March 2024). Instead we have included a re-opener to allow an efficient level of investment for this period to be determined in 2020/21. This re-opener covers £10.5m of investment included in the company's business plan for the same period which is not included in the determined values above.
- 9.61 While the capital allowance for this work will be determined in 2020/21, we have included an estimate of £10.5 for this period in the data tables above to allow comparison of various figures on a like for like basis.

Distribution projects to address congestion on the 33kV network due to generation connections

- 9.62 The RP6 final determination includes capital allowances to address congestion on specific areas of the 33kV network identified by NIE Networks. The capital allowance for this work is already determined and is not subject to this re-opener mechanism.

- 9.63 The re-opener mechanism makes provision for any additional capital allowances necessary to connect further generation in line with the connections policy where there is not sufficient capacity on the 33kV.
- 9.64 NIE Networks did not include any investment under this category in its business plan submission and we have not made any estimate of the future cost of these works.

Transmission system capacity or capability investment (D5) RP5 project carry over

- 9.65 An allowance for one network investment project was determined in RP5, the Omagh Tamnamore 3rd circuit at £21.865m in 2015/16 prices. This allowance has been profiled in proportion to the current estimated expenditure profile reported by the company in response to a query on the business plan.
- 9.66 The company's current estimate is that £1.0m of this investment will be made in the first year of RP6. This has been taken into account in our analysis for RP6 pending confirmation of actual expenditure which will be used in the calculation of future tariffs.
- 9.67 For the sake of clarity, this £1.0m figure is an element of a previous published decision by the Utility Regulator and does not constitute an additional allowance.

Transmission capacity and capability investment (D5)

- 9.68 In its business plan, NIE Networks listed 15 potential transmission network reinforcement projects identified by SONI with an estimated total value of £250m. These were not included in the £446m of planned investment in the company's business plan for RP6 and would represent an increase of 56% over the planned network investment.
- 9.69 The company highlighted the uncertainty over this investment which is subject to further assessment by SONI to confirm need and allow the development of a solution, scope and cost estimate. To highlight this uncertainty, the potential investment of £250m in RP6 should be compared with investment of £22m in one project determined under the D5 mechanism in RP5 to date.
- 9.70 We also sought the advice of SONI in respect of this potential investment. SONI provided a lower bound estimate of potential investment of £230m. However, SONI also highlighted the need for future work to confirm the need, scope and cost of this work.
- 9.71 While we recognise the uncertainty associated with D5 investment, we considered it prudent to estimate how this type of investment might affect tariffs in RP6 so that consumers could be aware of its impact. In doing so we have taken account of the fact that D5 investment might include the North-South Interconnector pending the outcome of the on-going public inquiry. We have taken account of the list of projects and estimates of potential investment provided by NIE Networks and SONI and our own high level estimates. Based on this we concluded that it is appropriate to test

tariffs in RP6 for £200m of additional investment under the D5 mechanism. The outcome of this analysis is shown in paragraph 12.78.

Transmission major asset replacement requirements (D5)

9.72 In principle, the D5 mechanism was developed for additional projects required to increase the capacity or capability of the transmission system, in effect, projects which will be promoted by SONI as the Transmission System Operator. However, in its determination for RP5 the Competition Commission extended this approach to two major transmission refurbishment projects for which the scope, cost and programme had not been well defined: Ballylumford Switchboard and Coolkeeragh - Magherafelt transmission line refurbishment. Neither of these projects have been undertaken in RP5 and NIE Networks now plans to undertake the work in RP6.

9.73 In RP6 we propose including the following transmission asset replacement projects or major distribution projects described below within the scope of this category of re-opener mechanism.

- The Ballylumford switchboard replacement included by the Competition Commission in RP5.
- Coolkeeragh-Magherafelt transmission line refurbishment included by the Competition Commission in RP5.
- The Ballylumford to Castlereagh transmission line refurbishment project. The company provided an estimate for the refurbishment of this circuit in its business plan submission but has since identified a major risk associated with the existing foundations following similar investigations on the Coolkeeragh-Magherafelt transmission line refurbishment project. In addition, the refurbishment project may be subsumed into a transmission capacity project.

9.74 While the allowance for these maintenance projects will be determined at a later date, we have included an indicative allowance of £53.6m for these projects within the RP6 determination as shown in Table 58, consistent with the approach adopted by the company in its Business Plan submission. During RP6, these allowances will be replaced with the actual allowances determined under the major asset replacement re-opener mechanism.

Project	Indicative investment for RP6 (£m)
Ballylumford Switchboard	16.0
Coolkeeragh - Magherafelt	25.8
Ballylumford - Eden - Cammoney - Castlereagh	11.8
	53.6

Table 59: Defined major transmission asset replacement projects

9.75 However, we note our concern that these projects, two of which were identified for delivery in RP5, are still not sufficiently well developed to allow us to determine an efficient ex-ante allowances in this determination. While there is a case of determining allowances at a later date under the re-opener mechanisms where the

scope, cost and programme are not well defined, this should not be viewed as the norm. It is for the company to plan development work on this type of project to ensure that, where possible, ex-ante allowances can be included in the Price Control determination rather than delayed to a later date.

Transmission trials to test innovative future investment

9.76 While the company has not proposed any work to test innovative future investment on the transmission network, we have allowed for the possibility that it may wish to do so in the proposed Licence amendments for RP6. Our conclusions on the trials to test innovative future investment on the distribution network are described above, beginning at paragraph 9.55. Should the company conclude that any investment of this type should be carried out on the transmission network, the combined investment over distribution and transmission should remain within the cap defined in paragraph 9.57 above.

10 Frontier Shift

Key changes from draft to final determination

- 10.1 Where data and publication updates have been made available in time for publication we have incorporated these in our analysis.
- 10.2 The latest data has increased the frontier shift slightly from draft determination for the 2016/17 year we have not applied the CC's determination for frontier shift at RP5. Rather we have calculated the appropriate number from latest available data.
- 10.3 While we are content that the arguments provided in response to the draft determination are not sufficient to overturn the individual assumptions set out above, the final decision needs to take account of a more high level view of ensuring we arrive at a balanced position on the frontier shift, and indeed on the overall price control.
- 10.4 In our financial calculations we apply a more moderate frontier shift for both opex and capex, from 2015-16 base year to the end of RP6.
- 10.5 However we would highlight that we plan to monitor carefully the frontier shift over the course of RP6 against the final determination. We will use this, and other relevant information, to consider the appropriate approach to determining frontier shifts in future price controls. This would include assessing real price effects and frontier shift assumptions against actual figures.

Real price effects

- 10.6 The price of a company's various inputs may differ over time. Price controls have normally been indexed by the Retail Prices Index (RPI) to account for broad changes in prices. However, being a measure of general inflation, not all types of cost changes will be reflected in the range of prices used to calculate the RPI.
- 10.7 To account for this it has become common regulatory practice to calculate and make adjustments for the difference, either positive or negative, between particular input price changes for a company or industry and the general (RPI) measure of inflation. This adjustment is described as *real price effects* (RPEs).
- 10.8 RPEs are designed not to be straight pass through of costs but rather a proxy of cost pressures expected. They also sit within the context of the wider efficiency challenge of the company subject to price control.

Productivity change

- 10.9 A company can become more efficient over time and so close the gap between its efficiency level and that of the economic frontier. Equally, the industry's overall

efficiency or frontier can change over time. It is possible the most efficient company in an industry can find new or improved ways of using less input volumes to maintain current output levels.

- 10.10 In addition to the real price effects described previously, it is necessary to apply a productivity assumption to opex and capex so as to take account of continuing efficiencies which the industry can achieve over the price control period. This is a base level of efficiency which even frontier companies would be expected to achieve as they continually improve their business over time. For example with the use of new technologies, new working practices or other means to enable their businesses to run more efficiently.

Frontier shift profile at RP6

- 10.11 The frontier shift in real terms is calculated by applying the average annual productivity figure (1.0%) to the real price effects result. The real price effect figure is computed from discounting RPI from the weighted impact of nominal input prices.¹¹⁹ The net impact of frontier shift for opex and capex is shown in Table 60: Opex Frontier Shift and Table 61: Capex Frontier Shift below. Please note numbers may not sum due to rounding.
- 10.12 For the RP6 draft determination we are assuming a cumulative frontier shift of 6.3% for opex in total over the RP6 price control. This is calculated from yearly frontier shift assumptions that are relatively higher in the first 2 years but then more moderate, tailing off for the rest of RP6.
- 10.13 For capex we estimate a similar profile of frontier shift change, starting relatively higher then tailing off after the first 2 years. This gives a cumulative frontier shift of 6.8% for capex in total for the RP6 period. The impact of the frontier shift on NIE Network's opex and capex cost base is shown at the last line of each table.
- 10.14 In summary, the frontier shift process combines nominal input price forecasts with productivity expectations and RPI inflation. The frontier shift in real terms can be represented in a simple way as follows:

$$\begin{aligned} \text{Frontier shift in real terms} &= \text{input price increase} && \text{minus} \\ & && \text{forecast RPI (measured inflation)} && \text{minus} \\ & && \text{productivity increase} \end{aligned}$$

¹¹⁹ For example for 2016/17 the opex frontier shift is calculated as follows: $(1.026/1.022) * (1 - 0.01) - 1 = -0.6\%$. When applied to gross opex and capex these numbers are transformed into a *frontier shift multiplication factor* by subtracting from 100% i.e. the cumulative 6.3% becomes $(100\% \text{ minus } 6.3\%) = 93.7\%$ or a factor of 0.937.

		Opex								
UR final determination		RP5			RP6					
Opex	Weight	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Labour	77.3%	2.8	2.7	2.7	3.1	3.3	3.7	3.9	3.9	3.9
Materials	7.7%	2.5	2.3	2.5	3.0	3.5	3.9	3.9	3.9	3.9
Equipment/Plant	0.0%	1.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Other	15.0%	1.1	2.2	3.9	3.4	3.1	3.1	3.2	3.2	3.2
Total nominal input price inflation		2.5	2.6	2.8	3.2	3.3	3.7	3.8	3.8	3.8
RPI		1.1	2.2	3.9	3.4	3.1	3.1	3.2	3.2	3.2
Productivity growth		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Frontier shift (forward look)		0.0	-0.6	-2.0	-1.3	-0.8	-0.5	-0.4	-0.4	-0.4
Frontier Shift (%)		0.0%	0.6%	2.0%	1.3%	0.8%	0.5%	0.4%	0.4%	0.4%
Frontier Shift (Cumulative %)		0.0%	0.6%	2.6%	3.8%	4.6%	5.1%	5.5%	5.9%	6.3%
Efficiency effect on cost base - opex		100.0%	99.4%	97.4%	96.2%	95.4%	94.9%	94.5%	94.1%	93.7%

Table 60: Opex Frontier Shift

		Capex								
UR final determination		RP5			RP6					
Capex	Weight	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Labour	52.8%	2.8	2.7	2.7	3.1	3.3	3.7	3.9	3.9	3.9
Materials	30.2%	2.5	2.3	2.5	3.0	3.5	3.9	3.9	3.9	3.9
Equipment/Plant	5.9%	1.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Other	11.1%	1.1	2.2	3.9	3.4	3.1	3.1	3.2	3.2	3.2
Total nominal input price inflation		2.4	2.5	2.7	3.1	3.3	3.6	3.7	3.7	3.7
RPI		1.1	2.2	3.9	3.4	3.1	3.1	3.2	3.2	3.2
Productivity growth		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Frontier shift (forward look)		0.0	-0.7	-2.1	-1.3	-0.8	-0.5	-0.5	-0.5	-0.5
Frontier Shift (%)		0.0%	0.7%	2.1%	1.3%	0.8%	0.5%	0.5%	0.5%	0.5%
Frontier Shift (Cumulative %)		0.0%	0.7%	2.8%	4.1%	4.9%	5.4%	5.8%	6.3%	6.8%
Efficiency effect on cost base - capex		100.0%	99.3%	97.2%	95.9%	95.1%	94.6%	94.2%	93.7%	93.2%

Table 61: Capex Frontier Shift

- 10.15 In our financial calculations we apply a more moderate frontier shift for both opex and capex, from 2015-16 base year to the end of RP6.
- 10.16 However we would highlight that we plan to monitor carefully the frontier shift over the course of RP6 against the final determination. We will use this, and other relevant information, to consider the appropriate approach to determining frontier shifts in future price controls.
- 10.17 A more detailed explanation of our real price effects and productivity analysis can be found in Annex C – Frontier Shift: real price effects & productivity.

	RP6						
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Effect on Cost Base - Opex	98.3%	97.5%	96.6%	95.8%	95.0%	94.2%	93.4%
Effect on Cost Base - Capex	98.3%	97.5%	96.6%	95.8%	95.0%	94.2%	93.4%

Table 62: Applied Frontier Shift for RP6

11 Market Operations and other activities

Key changes from draft to final determination

11.1 There have been a number of changes to the metering allowances from those proposed in the draft determination to those presented in this final determination. A comparison of these allowances is set out below in Table 63: Summary of Utility Regulator Draft and Final Determination and NIE Networks Market Operations Business Plan Submission. Table 63 also includes NIE Networks' business case submission plus their additional submission for costs relating to credit meter procurement.

11.2 The following tables in this section are all pre-RPEs and productivity.

TOTALS COMPARISON, £m	NIEN	UR DD	UR FD
Metering Capex	49.39	42.98	48.85
-Direct Costs	40.88	39.64	40.06
-Indirect Costs (allocated to capex)	8.52	3.34	8.78
Metering Overheads (allocated to Capex)	8.09	5.54	6.01
-Metering Services: Allocation of overhead and admin	5.18	2.63	2.63
-Market Opening: Allocation of NIE T&D overhead and administrative costs	0.87	0.87	1.33
-Meter Reading: Allocation of NIE T&D overhead and administrative costs	2.04	2.04	2.05
Metering services: Allocation of administrative costs	6.89	8.37	7.43
Market Opening: Allocation of administrative costs	1.36	1.36	1.98
Meter Reading: Allocation of administrative costs	3.16	3.16	3.16
Meter Reading	24.63	22.88	23.67
Metering maintenance	4.42	3.73	3.92
Other operating costs relating to keypad meters	1.14	0.68	1.88
Revenue Protection Services costs	3.19	3.06	3.06
Revenue Protection Services income	-2.12	-2.23	-2.16
Transactional Charges	1.93	1.93	2.33
Transactional Income	-4.64	-4.62	-4.62
TOTAL	97.45	86.83	95.49
Additional submission for credit meter procurement risk	2.15	0.00	0.00
REVISED TOTAL	99.60	86.83	95.49

Table 63: Summary of Utility Regulator Draft and Final Determination and NIE Networks Market Operations Business Plan Submission

11.3 The allowances presented in Table 63 reflects our decision to adopt the principle of applying a consistent approach to the use of the Financial and Metering RIGs and also consideration of NIE Networks' response to the draft determination. In summary the main changes include:

- consistent use of the Financial and Metering RIGs
- provision of allowances where there are differences between work programmes in RP6 compared to RP5
- a change to the allocation of indirect costs to capex following clarification from NIE Networks

There are some further changes that are discussed in the relevant metering sections below.

Consistent use of Financial and Metering RIGs

11.4 A key change from the draft determination to the final determination is that we have adopted the principle of using the financial and metering RIGs consistently across the metering activities. Whereas with the draft determination we used a mixture of the lower of the RIGs¹²⁰ and NIE Networks' business case submission. However amending our approach to only using the RIGs data to determine an allowance for the metering activities is more consistent.

11.5 With this approach it is inevitable that there will be different metering activities where costs will rise and fall compared to the averaged RIGs data. It is up to NIE Networks to effectively manage these fluctuations between the various metering activities with the allowances that are provided. On balance this approach should result in minimal change overall.

11.6 We do not want to adopt a more detailed line-by-line approach as we would need to isolate specific cost lines and make the relevant adjustments on the basis of robust evidence. If we were to make adjustments to the RIGs data, without such evidence, this could lead to an asymmetrical outcome where the overall allowances are higher than required to operate the business efficiently.

Additional allowances for RP6

11.7 We have provided additional allowances to the RP5 actual costs where NIE Networks have provided robust evidence to support an adjustment. The allowances provided relate to areas where additional work is planned in RP6 compared to RP5 such as incremental costs for meter reading and arrangements for meter inspections.

11.8 Also since the recertification programme only commenced in the last year of RP5, we considered that one year's worth of RIGs data was not sufficient and that this initial year may not accurately reflect the total costs of the programme before it ramped up to full capacity. As such we have used NIE Networks' submission for this work programme. This allowance is the same as the draft determination but under the final

¹²⁰ Financial RIGs data was averaged over 4 years from 2013-2016 to determine a base figure

determination we have allocated these indirect costs fully to capex rather than splitting between opex and capex. The following section provides the rationale for this change.

Allocation of indirect costs to capex

- 11.9 Within their response NIE Networks has presented the allocation of indirect costs adopted in the draft determination (39% of associated indirect costs to capex and the remainder to opex) as an error in the UR's methodology. However the capex and opex splits were those used by NI Networks in a response to a query raised by the UR. We find it surprising that NIE Networks highlight their own methodology as an error.
- 11.10 NIE Networks have subsequently submitted a correction which allocates 100% of indirect costs to capex. As noted above, our approach for the final determination is to apply the RIGs data where appropriate to do so. The RIGs data allocates 100% of indirect costs to capex which now aligns with NIE Networks' corrected submission. This correction has made significant difference to the capex allowance.
- 11.11 We have used the RIGs data to set the allowance for the indirect costs of the meter installs/updates programme. Since this metering programme is applicable to both RP5 and RP6 we can use an average of the RIGs data in RP5 to set an allowance for RP6. However the recertification programme only commenced in the final year of RP6. Therefore the Financial RIGs data for the recertification programme only include the first year and may not reflect the full costs of the programme. To cater for this we have adopted NIE Network's submission of costs for this programme of work.

Metering

Smart Metering

- 11.12 In their response to the draft determination, NIE Networks requested that the UR records explicitly in its final determination that any introduction of smart metering during RP6 would be dealt with under the Change of Law provisions.
- 11.13 As noted in the draft determination, currently there is no plan to implement smart metering in Northern Ireland. This decision lies with the Department and is dependent upon an economic assessment of the benefits and costs of smart metering.
- 11.14 If the Department were to decide to implement smart metering, at this stage we do not know the legislative arrangements that may be adopted to put this decision into effect. Therefore, it is not really possible at this stage to say whether or not the introduction of smart metering will be through the form of new legislation or whether, if there is new legislation, that new legislation will itself place any obligations on NIE Networks.
- 11.15 The Change of Law provisions within the licence apply if there is a new 'Provision of Law' as that term is defined within the proposed licence modifications accompanying this final determination. If the approach taken to implement the smart metering decision falls within the definition of a Provision of Law then the Change of Law

licence condition is the appropriate mechanism to address the costs of the smart metering programme. Should the Change of Law provisions not apply we will consider other mechanisms to address the costs of smart metering.

Utility Regulator Approach

- 11.16 As set out in the key changes section above we have adopted the approach of using the financial and metering RIGs consistently across the metering activities rather than using a mixture of the lower of the RIGs and NIE Networks' business case submission.
- 11.17 When applying the RIGs data we have averaged the historic costs between 2013 and 2016 for the relevant metering activity and uplifted this to 15/16 prices. This is the same approach we used in the draft determination where we used the RIGs data.

Meter Installs/Changes Programme

- 11.18 Meter Installs/Changes relates to the metering services for installing, exchanging and alteration of electricity meters at the request of electricity suppliers. The capital costs of the Meter Installs/Changes programme are addressed in this section.
- 11.19 The key change from the draft determination is that 100% of the indirect costs have been allocated to capex, rather than 39% as used in the draft determination. This is explained in the key changes section above. We have used the RIGs data for the indirect costs allocated to metering capex under the meter installs programme (see section Indirect Costs allocated to Capex).
- 11.20 There has been no changes made to the unit rates for meter/installs. As such the direct costs remain the same as that set out in the draft determination.

Meter Installs/Changes Direct Costs	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 £m
Meter Installs/Changes	1.42	2.85	2.85	2.85	2.85	2.85	2.85	18.50

Table 64: Utility Regulator Final Determination for Meter Installs/Changes Programme

Meter Recertification Programme

- 11.21 Meter Recertification relates to NIE Networks' statutory obligations to use meters that remain within a certified period. As such NIE Networks are required to replace a meter when it reaches the end of its prescribed certification life.
- 11.22 The key change from the draft determination is that 100% of the indirect costs have been allocated to capex, rather than 39% as used in the draft determination. This is explained in the key changes section above. We have used NIE Networks' submission for the indirect costs allocated to metering capex for the meter recertification programme (see Indirect Costs allocated to Capex).

11.23 Following clarification from NIE Networks we have changed the unit rate for meter recertification from £28.50 to £31.98.

11.24 There has been no change in the allowance for the meter replacement for theft programme. Our response to NIE Networks' comments on this programme is set out in the following section.

	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
Meter Recertification & Theft Direct Costs	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	£m
Meter Recertification:	2.81	4.13	3.11	2.99	2.64	2.54	2.45	20.66
Meter Replacement for Theft	0.450	0.450	0.000	0.000	0.000	0.000	0.000	0.90

Table 65: Utility Regulator Final Determination for Meter Recertification and Theft

Meter Replacement for Theft Programme

11.25 The meter replacement programme for theft programme was initiated to address the spike in electricity theft within certain areas of the electricity network for a limited period of time.

11.26 NIE Networks have commented that they expect the 20,000 meter limit set out in the draft determination to be completed within the first year of RP6 and that the meter replacement for theft programme should be treated the same as the other meter programmes by having a meter volume driver without a limit.

11.27 The UR has been proactive in addressing the spike in electricity meter theft by providing additional funding for the meter replacement for theft programme in RP5 and extending this programme into RP6. We could have taken no action and adopted the view that the responsibility lies with NIE Networks to install meters that are fit for purpose. However we considered that it was in consumers' best interests to address the issue both in terms of safety and reducing costs by initiating the meter replacement programme for theft.

11.28 Once the programme has taken effect, the expectation is that revenue protection activities will return to normal levels. As such we view meter replacement for theft as a limited metering programme, different to the meter installs/updates, recertification and meter replacement for theft for normal levels of theft programmes which will run throughout RP6.

11.29 However we have left some flexibility to re-visit the programme should it be required in the future. To put this into effect we have made provisions within the RP6 licence modifications to include the meter replacement for theft programme within the volume driven meter allowance.

11.30 However in order to provide some control over the volume of meters installed under this programme we have added arrangements that require NIE Networks to submit a

request to the UR for volumes of meters above 20,000¹²¹. NIE Networks would need to provide evidence supporting their request.

11.31 The proposed licence modifications are included in the licence consultation paper and draft licence accompanying this final determination.

Indirect Costs allocated to Capex

11.32 As noted above, our approach for the final determination is to apply the RIGs data where appropriate to do so. The RIGs data allocates 100% of indirect costs to capex which now aligns with NIE Networks' corrected submission for indirect costs.

11.33 As presented in the draft determination (Annex N: Table 6) NIE Networks provided a breakdown of the indirect costs incurred for each of the metering programmes carried out in RP5. We have used this data for the Meter Installs and Overheads and Admin allowances.

11.34 However we have not used the re-certification figures provided in the RIGs for indirect costs as they only covered a single year. As such we have accepted NIE Networks submission which is the same as our draft determination allowance.

11.35 The change of law entry refers to costs that NIE Networks expect to incur as a result of the abolition of contracting out of salary related schemes, which came into effect in April 2016.

11.36 NIE Networks have requested a further allowance of £49k per annum to reflect this change in law. We have included these costs within the indirect costs.

	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
Indirect Costs allocated to capex	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	£m
Meter Installs	0.436	0.873	0.873	0.873	0.873	0.873	0.873	5.67
Meter Recertification	0.119	0.238	0.238	0.238	0.238	0.238	0.238	1.55
Overheads and Admin	0.096	0.192	0.192	0.192	0.192	0.192	0.192	1.25
Change of Law costs	0.0245	0.049	0.049	0.049	0.049	0.049	0.049	0.32
Second Metering Fixed Allowance	0.676	1.351	1.351	1.351	1.351	1.351	1.351	8.78

Table 66: Indirect costs allocated to capex

11.37 The allowances presented in Table 66 have been allocated to the Second Metering Fixed Allowance as set out in the licence modification consultation accompanying this final determination.

¹²¹ The 20,000 meter limit is the number of meters installed under this programme across RP5 and RP6.

Metering Overheads

11.38 Metering Overheads are the operating costs that support the delivery of metering services which have been allocated to capex. They comprise the following: Fault and Emergency; IT, Stores and Safety; and Finance and HR costs.

11.39 These costs are apportioned to:

- Metering – Allocation of overhead and admin
- Market Opening – Allocation of overhead and admin
- Meter Reading - Allocation of overhead and admin

11.40 As per our approach we have applied the Financial RIGs data to the three business areas allocated to overheads rather than a mixture of the RIGs and NIE Networks' submission.

Metering Overheads	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	£m
Metering – allocation of overhead and admin	0.202	0.404	0.404	0.404	0.404	0.404	0.404	2.63
Market Opening – Allocation of overhead and admin	0.102	0.204	0.204	0.204	0.204	0.204	0.204	1.33
Meter Reading – Allocation of overhead and admin	0.158	0.316	0.316	0.316	0.316	0.316	0.316	2.05
First Metering Fixed Allowance	0.462	0.924	0.924	0.924	0.924	0.924	0.924	6.01

Table 67: Utility Regulator Final Determination for Metering Overheads

11.41 The allowances presented in Table 61 have been allocated to the First Metering Fixed Allowance as set out in the licence modification consultation accompanying this final determination.

Allocation of administrative costs

11.42 Allocation of administrative costs refers to the operating costs that support the delivery of metering services which have been allocated to opex. They comprise the following: Fault and Emergency; IT, Stores and Safety; and Finance and HR costs.

11.43 The key changes from the draft determination is that there are no indirect costs included within the opex allowances. The indirect costs are fully included within the capex for the relevant metering programme.

11.44 Also, as per our approach we have applied the Financial RIGs data to the three business areas allocated to overheads rather than a mixture of the RIGs and NIE Networks' submission.

Administrative Costs	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total £m
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
Metering Services: Allocation of administrative costs	0.572	1.144	1.144	1.144	1.144	1.144	1.144	7.43
Market Opening: Allocation of administrative costs	0.152	0.304	0.304	0.304	0.304	0.304	0.304	1.98
Meter Reading: Allocation of administrative costs	0.243	0.486	0.486	0.486	0.486	0.486	0.486	3.16
Total								12.57

Table 68: Utility Regulator Final Determination for administrative costs

Meter Reading

11.45 NIE Networks collect and process meter reading data for all c. 860,000 customer premises throughout Northern Ireland. A small proportion of this data can be obtained remotely from meters at c. 10,000 commercial and industrial premises. However the vast proportion of meters is read manually by NIE Networks meter reading staff.

11.46 We have continued with using the RIGs data for meter reading as adopted in the draft determination, however we have also applied a 0.8% year-on-year increase to reflect the forecasted increase in the number of meter reads over the RP6 period. NIE Networks submitted further evidence in their response to the draft determination to support a proposed increase in meter reading costs as their customer base increases.

Meter Reading	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total £m
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
<i>Meter Reading</i>	1.774	3.577	3.605	3.634	3.663	3.692	3.722	23.67

Table 69: Utility Regulator Final Determination for Meter Reading

Metering Maintenance

11.47 Metering maintenance covers the following activities:

- **Faults and emergency work** which relates to NIE Networks staff reports of meter faults, in particular to faults that have led to an interruption of supply.
- **Meter inspection** costs

11.48 We have applied the RIGs data for meter inspections and fault/emergency allowances rather than a mixture of the RIGs and NIE Networks' submission as adopted in the draft determination.

11.49 As with the draft determination, we have not included an allowance for additional meter inspectors. NIE Networks have proposed to train a small number of meter readers to carry out minor repairs. NIE Networks note that carrying out these

activities would reduce their capability to obtain the same volume of meter readings as before. The requested allowance for additional meter inspectors is required to maintain the same volume of meter reading activities.

11.50 NIE Networks note that the introduction of trained meter inspectors will reduce costs within the meter installs/changes programme. It makes sense therefore for the ongoing costs of employing the additional meter inspectors to be covered from this programme also.

11.51 We have adopted the approach that, if a meter is repaired by a meter inspector this can be assigned to the meter installs/changes volume driven allowance. This will ensure that there is no further cost incurred for the additional meter inspectors.

11.52 To monitor the progress of the introduction of meter inspectors carrying out this new role, we request that the number of repairs that is carried out by this team is recorded so that the success of the initiative can be assessed. We consider that this should be included within the RP6 Monitoring Plan.

Meter Maintenance	Oct 17- Mar 18	Apr18- Mar19	Apr19- Mar20	Apr20- Mar21	Apr21- Mar22	Apr22- Mar23	Apr23- Mar24	RP6 Total
Meter Inspection RP5 actual	0.033	0.067	0.067	0.067	0.067	0.067	0.067	0.435
Fault and Emergency	0.268	0.536	0.536	0.536	0.536	0.536	0.536	3.484
Total								3.92

Table 70: Utility Regulator Final Determination for Meter Maintenance

Other operating costs relating to keypad meters

11.53 Other operating costs relating to the costs incurred for operating the IT infrastructure supporting keypad meters.

11.54 The data relating to keypad meter opex that we used in the draft determination was provided by NIE Networks. However the spreadsheet provided by NIE Networks contained an error which omitted £70k per annum of labour costs under the 'Other operating costs relating to keypad meters cost' line but included the costs within the 'ER Shift, Ops and Outage, DSC' line.

11.55 For the final determination we have used the information that has been provided within the Financial RIGs rather than NIE Network's corrected submission. The allowance provided is higher than NIE Networks' submission which reflects our argument that some costs will rise and fall compared to the averaged RIGs data but overall the total costs to operate metering services are expected to be similar.

Other operating costs relating to keypad meters	Oct 17- Mar 18	Apr18- Mar19	Apr19- Mar20	Apr20- Mar21	Apr21- Mar22	Apr22- Mar23	Apr23- Mar24	RP6 Total
Other operating costs relating to keypad meters	0.145	0.290	0.290	0.290	0.290	0.290	0.290	1.88

Table 71: Utility Regulator Final Determination for operating costs to keypad meters

Revenue Protection Services

- 11.56 NIE Networks carry out revenue protection activities to prevent, detect and investigate energy theft.
- 11.57 Our draft determination was based on the actual costs incurred presented in the RIGs and we have continued with this approach in the final determination. However we have corrected an error in the Revenue Protection Income line.

Revenue Protection Services	Oct 17- Mar 18	Apr18 Mar19	Apr19 Mar20	Apr20 Mar21	Apr21 Mar22	Apr22 Mar23	Apr23 Mar24	RP6 Total
Revenue Protection	0.24	0.47	0.47	0.47	0.47	0.47	0.47	3.06
Revenue Protection Income	-0.17	-0.33	-0.33	-0.33	-0.33	-0.33	-0.33	-2.16

Table 72: Utility Regulator Final Determination for Revenue Protection Services

- 11.58 Our response to NIE Networks' comments to our position on the revenue protection incentive arrangement proposed by NIE Networks is set out in Chapter 14 - RP6 Incentive Mechanisms.

Transactional Services

- 11.59 Transactional Services refers to the provision by NIE Networks of services to suppliers in support of the competitive retail market. These charges apply to metering fieldwork services and to a range of non-fieldwork activities.
- 11.60 For the final determination we have used the RIGs data rather than a mixture of the RIGs and NIE Networks' submission.

Transactional Services	Oct 17- Mar 18	Apr18 Mar19	Apr19 Mar20	Apr20 Mar21	Apr21 Mar22	Apr22 Mar23	Apr23 Mar24	RP6 Total
Transactional Charges	0.179	0.358	0.358	0.358	0.358	0.358	0.358	2.33
Transactional Income	-0.356	-0.711	-0.711	-0.711	-0.711	-0.711	-0.711	-4.62

Table 73: Utility Regulator Final Determination for Transactional Services

Credit Meter Procurement Risk

- 11.61 In February 2017 NIE Networks provided an additional submission relating to credit meter procurement costs. The submission requested a higher unit rate for credit meters for the installs/changes and recertification programmes. NIE Networks explained that the material costs of such meters was likely to rise further during RP6 due to a change in market conditions. The change in market conditions were driven by advances in metering developments elsewhere, in particular the rollout of smart metering in other jurisdictions.
- 11.62 NIE Networks noted that, due to the expected changes in market conditions, it is less likely that meter manufacturers will continue to offer meters with more basic

functionality such as the single rate credit meters assumed in the RP6 plan. As a result NIE Networks argue that they will be required to pay a significant premium to maintain the more basic Northern Ireland specific requirement.

11.63 The original and revised submission for the unit cost of the credit meters is set out in Table 74 below:

Credit meter unit costs	Oct 17- Mar 18	Apr18 Mar19	Apr19 Mar20	Apr20 Mar21	Apr21 Mar22	Apr22 Mar23	Apr23 Mar24
<u>Original Business Case Submission:</u>							
Credit meter installs/changes	£21.11	£21.11	£21.11	£21.11	£21.11	£21.11	£21.11
Credit meter recertification	£33.59	£33.59	£33.59	£33.59	£33.59	£33.59	£33.59
<u>Revised Business Case Submission:</u>							
Credit meter installs/changes	£21.11	£22.26	£22.26	£29.64	£29.64	£29.64	£29.64
Credit meter recertification	£33.59	£36.58	£36.58	£55.79	£55.79	£55.79	£55.79

Table 74: NIE Networks credit meter unit costs

11.64 In this final determination we have provided a unit cost of £21.11 and £31.98 for the meter installs/updates and recertification programmes respectively for all years of RP6. These unit rates are in line with the Metering RIGs data and this is consistent with our overall approach of applying RIGs data where appropriate.

11.65 We have engaged with NIE Networks on the future credit meter procurement risk following their revised submission and also throughout the query process following the publication of the draft determination.

11.66 As noted in the draft determination (Annex N, section 2.13-2.14) our reasoning for not accepting the revised unit rates was that we considered that NIE Networks should manage the business risk and that this should not be shouldered by NI consumers. We noted that there were other significant markets that were not adopting smart metering and that NIE Networks were not in a unique situation.

11.67 In our discussions with NIE Networks we highlighted that the European Commission had issued a report¹²² on the deployment of smart metering across the 27 EU countries. The report notes that for seven Member States (Belgium, the Czech Republic, Germany, Latvia, Lithuania, Portugal, and Slovakia), the CBAs for large-scale roll-out of electricity meters by 2020 were negative or inconclusive. We consider that these countries represent significant markets that are not implementing smart meters and that Northern Ireland is therefore not in a unique situation.

11.68 Furthermore, this report only addresses European markets. We expect that there are other significant global markets that are not adopting smart meters.

11.69 Also as noted in the key changes section above, we have adopted the principle of using the financial and metering RIGs consistently across the metering activities.

¹²² <http://ses.jrc.ec.europa.eu/smart-metering-deployment-european-union>

With this approach it is inevitable that there will be different metering activities where costs will rise and fall compared to the averaged RIGs data. It is up to NIE Networks to effectively manage these fluctuations between the various metering activities, including the direct unit costs, with the allowances that are provided.

- 11.70 Again, as noted in the key changes section, if we were to make adjustments to the RIGs data, without robust evidence, this could lead to an asymmetrical outcome where the overall allowances are higher than required to operate the business efficiently.
- 11.71 As such our position with regards NIE Network's request for additional future costs for credit meters has not changed in this final determination.

Contestability

Introduction

11.72 We have been taking steps to introduce contestability in electricity network connections. In 2015 we asked NIE Networks to prepare for the introduction of contestability and a project was set up. In May 2016, NIE Networks implemented contestability in connections for customers with a capacity of more than 5MW. It plans to introduce contestability for remaining customers by the end of March 2018. NIE Networks has asked for an allowance of £5.994m to introduce contestability IT systems and employee working practices.

Key changes from draft to final determination

11.73 In the draft determination we decided that an allowance of £4.764.3m is sufficient. We said that this should be treated as capital expenditure and should be allocated to a 5 year Distribution RAB. We also said would make an opening RAB adjustment for those costs incurred in RP5. After considering responses, we are maintaining our draft determination position.

Decision

11.74 The following table summarises the analysis.¹²³ It sets out NIE Networks proposed allowance, and our counter-proposal (including the breakdown of our proposed allowance relating to costs incurred in RP5 and costs expected in RP6).

11.75 We have decided that costs (both capital expenditure and operational expenditure) should be treated as capital expenditure and should be allocated to a 5 year Distribution RAB. We will make an opening RAB adjustment for those costs incurred in RP5 (and are also consulting today on a licence modification to this effect).

11.76 We note NIE Networks response to the draft determination. It says that further allowances should be allowed (at a minimum for legal support – £84k - and programme assurance – £72k). It says that to do otherwise will risk operability of the programme, and it will have to reduce expenditure in some categories to off-set the reduction in the overall allowance. Our detailed response on particular cost items which NIE Networks has raised is set out in the Technical response annex, but we summarise our overall position below.

11.77 We have carefully re-considered the activities and their related costs to deliver contestability for connections. We conclude none of the points raised by NIE Networks make a persuasive case for a change to the proposed allowance. In summary, the allowance in the draft determination, of £4,764m, is adequate to enable NIE to fully introduce contestability in connections.

¹²³ We plan publish our consultancy report analysis during the RP6 draft determination consultation period.

Cost category	NIE proposal total	UR proposal total (RP5 + RP6)	UR proposal: RP5	UR proposal: RP6 (Oct 2017 – Mar 2018)
	£k	£k	£k	£k
External Resources	2841	2592.3	1995.6	596.7
IT Expenditure	2327	1877	1402	475
Miscellaneous	426	295	169	126
Total External Costs	5594	4764.3	3566.6	1197.7

Table 75: IT contestability

- 11.78 First, NIE Networks asks for further allowances for a number of activities which our proposed allowances already account for. For example, our allowance already factors in the reviewing/making of licence modifications to introduce contestability. We have not seen any new evidence to suggest additional funding is required.
- 11.79 Second, NIE also asks for additional funding for things which we consider are not essential to deliver contestability. For example, we are of the view that, as for the >5MW market, only one additional internal audit is required for the <5MW market. We have not seen any new evidence to suggest additional funding is required.
- 11.80 Put simply, allowances are already provided for NIE Networks to efficiently introduce contestability. Therefore, it is hard to envisage how reductions of scope in some other categories will be required to deliver all aspects of the service.
- 11.81 In any event, it is worth noting that, we have given allowances for certain cost categories to provide new and upgraded systems which, while being triggered by contestability, arguably have wider business benefits. In particular, they could enable NIE Networks to make saving in other areas.
- 11.82 Ultimately it is up to NIE Networks to decide how the proposed allowance is used. But we are firmly of the view that there is sufficient flexibility for NIE to implement the revised service without sacrifices in any areas which it considers to be core.

12 Financial Aspects

Summary of Key Changes from Draft Determination to Final Determination

- 12.1 There are only minor changes to our calculation of NIE Networks' allowed rate of return. The final determination allowance is 3.18%.
- 12.2 We have updated our allowances for the cost of debt to reflect the latest available market data and inflation forecasts and to take account of NIE's comments on the assumed credit rating.
- 12.3 We have amended the proposed RP6 cost of debt adjustment mechanism so that it references the prevailing value of BBB rated debt, rather than the A and BBB average that we proposed in the draft determination.
- 12.4 We have updated our financeability analysis and have concluded that an efficient licensee will be able to finance its licence activities during the RP6 period.
- 12.5 Revenues, tariffs and customer impact analysis has been updated to reflect changes throughout all chapters in this final determination.

Detailed Approach – UR Proposals

Overview

- 12.6 This chapter sets out the financial inputs into the UR's price control calculations.

Rate of Return

- 12.7 The financial model provides for NIE to earn a return on its RABs. The value of this return is calculated as a weighted average of the costs of the equity and debt finance that NIE takes from investors.
- 12.8 In calculating the allowed cost of equity, the UR, like most economic regulators, uses the framework of the Capital Asset Pricing Model (CAPM) to determine the returns that shareholders require in exchange for their equity investments. CAPM estimates the required return to be a function of the risk-free rate (R_f), the expected return on the market portfolio (R_m) and a firm-specific measure of risk (beta of β_e) as follows:
- 12.9 Return on equity = $R_f + \beta_e \cdot (R_m - R_f)$
- 12.10 In paragraphs 12.25 to 12.42 we explain how we have arrived at an estimate of the cost of equity.
- 12.11 The interest that NIE pays on its debts is directly observable, and in the first instance we propose to align the allowed cost of debt to the actual interest rates that NIE pays. However, NIE will need to refinance some of its existing debt during the RP6 period; it may also choose to raise new debt to finance new investment. These things mean

that there is some uncertainty about the full interest costs that NIE will pay over the next six and a half years.

- 12.12 In assembling the new price control, we have considered whether we should factor a fixed forecast of the company's financing costs into the RP6 allowed return. We note that there is an inevitable uncertainty about what these costs will be and that over- or under-estimating future interest payments will result in NIE earning excess returns or sub-normal returns for several years until the RP7 reset of price controls. Elsewhere in the UK's regulated industries, there have been criticisms of such 'windfall' gains and losses, with the likes of the National Audit Office and the UK government highlighting that it is unfair for regulation to be set up in such a way as to produce outcomes in which prices are likely to be significantly higher or significantly lower than they need to be in order to cover companies' actual costs of debt.
- 12.13 Against this background, we explained in the draft determination that we consider that it is in the best interests of both consumers and investors that we should provide for the allowed rate of return to adjust up or down in line with prevailing interest rates at the point(s) when NIE takes out new debt. NIE indicated its support for this kind of approach.
- 12.14 We evaluated a number of possible designs for an adjustment mechanism during the recent GD17 review of gas distribution price controls. Our decision in this review is that we should apply the final GD17 design to NIE, so as to align our approach across the sectors. In its submissions, NIE suggested a number of possible ways in which the GD17 mechanism could be improved. Our assessment is that there are not compelling reasons for making the changes that NIE proposed and that it aids outsiders' understanding of the regulatory regime in Northern Ireland if we apply a common design across price controls. The design is detailed in annex H.
- 12.15 NIE's allowed revenues at the start of RP6 need to contain a 'holding assumption' about the cost of new debt. This calculation is set out in paragraphs 12.43 to 12.50.

Financeability

- 12.16 In carrying out its functions, the Utility Regulator is required to have regard to the need to secure that the licence holder is able to finance their activities. This duty has underpinned our approach to the whole of our cost of capital assessment, and to the assembly of NIE's price control more generally, but we also give a self-contained assessment of financeability in paragraph 12.55 to 12.67.

UR Proposals

Rate of Return

12.17 The value that the Utility Regulator proposed for the RP6 allowed rate of return in its draft determination is set out in Table 76.

	RP6
Gearing	0.45
Post-tax cost of equity	4.45%
Cost of debt	1.87%
Overall rate of return	3.29%

Table 76: Allowed rates of return – draft determination

12.18 NIE said in its response to the draft determination that the above rate of return is too low. A detailed review of the arguments that NIE made is set out in appendix Q. Key points include:

- gearing – NIE highlighted that 45% gearing is a relatively lowly geared capital structure in comparison to other regulated networks. NIE suggested that the cost of capital should be calibrated to a licensee with gearing of 50%;
- cost of equity – the UR sought in its draft determination to align NIE’s return on equity to the return allowed by Ofgem in its recent RIIO-ED1 review. NIE argued that this was out of line with the CC’s assessment in its 2013/14 inquiry and that NIE should be seen as a riskier company. NIE also argued that the latest empirical evidence on betas for listed companies points towards a higher allowed return than has been factored into other recent price control decisions; and
- cost of debt – NIE considered that the UR was wrong not to build an ‘illiquidity premium’ into the calculation of the allowed cost of debt and that the UR had understated the level of debt-related transaction costs.

12.19 Conversely, CCNI considered that the UR might have over-stated NIE’s cost of capital. CCNI drew attention, in particular, to what it saw as generous estimates of the risk-free rate and expected market return feeding into the cost of equity calculation.

12.20 In reaching this final determination, we have paid careful attention to these representations and sought to address the points that have made either in this chapter or in appendix R.

12.21 We also asked UKRN to undertake a review of our draft determination and received a number of helpful points in feedback. The UKRN report is attached as appendix S to this document.

12.22 Our final determination of allowed returns for the RP6 period is set out below.

Gearing

12.23 The weights that are accorded to equity and debt within the allowed rate of return calculation typically reflect a notional or efficient level of gearing. Other regulatory

determinations have provided for gearing of between 45% and 65%. We use a point estimate of 45% to be consistent with the 'exit rate' of gearing in the Competition Commission's 2014 modelling.¹²⁴

12.24 We note that the final WACC figure is not especially sensitive to gearing and that we have also considered the issue of gearing levels in our financeability analysis.

Cost of equity

12.25 The 4.45% return on equity that we provided for in our draft determination is comparable to the level of return that Ofgem factored into its recent RIIO-ED1 slow-track determinations. It is broadly consistent with a risk-free rate of 1.25%, an expected market return of 6.5%, an asset beta of 0.38 and a debt beta of 0.1.

12.26 As noted, in paragraph 12.18 and 12.19 respondents to the draft determination tended to focus on selected individual inputs into the CAPM calculation, rather than the full range of judgments that inevitably feed into the rate of return calculation. The UR's approach in making this final determination has once again been to look at the return on equity 'in the round'. The key judgments that the UR has made are as follows.

Risk-free rate and expected market return

12.27 CAPM triangulates the allowed return on equity against the return that is available on risk-free assets and the return that investors expect to earn on an average stock market investment. In using the RIIO-ED1 cost of equity calculations as a benchmark for NIE, the UR in its draft determination was assuming that the risk-free rate of return in the RP6 period will be 1.25% and that the expected market return is 6.5% (both figures after RPI inflation).

12.28 These figures are in line with wider regulatory precedent from recent price control reviews, but the UR continues to take the view that values of 1.25% and 6.5% are very much at the top end of plausible ranges in current market conditions.

12.29 In the case of the risk-free rate, yields on government index-linked gilts have been negative since 2011. To think that investors will be able to earn a positive real (i.e. after RPI inflation) return on riskless assets during the RP6 requires one to believe that there will be a major shift in financial markets. This is not implausible. But the UR does not consider that it is a central case scenario.

12.30 In the case of the expected market return, there is a range in the judgments one can make about the returns that investors will earn on equity investments. A figure of 6.5% would be consistent with historical stock market performance. But the UR is also aware of voices that consider that expected equity returns have moved down in tandem with lower interest rates. Again, this makes 6.5% a top of the range number.

12.31 The UKRN peer review (annex S) highlights a growing feeling among regulators that it might be appropriate to look again at the generic assumptions feeding into regulators' CAPM calculations and highlights the "danger that giving much weight to

¹²⁴ See table 17.8 in the CC's final inquiry report.

regulatory precedent ... could risk perpetuating a situation where regulatory decisions are increasingly out of kilter with market evidence". UKRN is commissioning an academic study in this area, but the results of this work will become available only later in the summer.

12.32 Pending the completion of the UKRN study, the UR has concluded that it would be premature to explicitly factor a lower risk-free rate and/or a lower expected market return into this price control decision. However, when assessing how NIE's return should be positioned against Ofgem's RIIO-ED1 rate of return, the UR does consider that it is necessary to give recognition to an over-arching sense that regulatory precedent in this area could potentially be in need of an update and, hence, that simply setting NIE's return in line with the RIIO-ED1 rate of return might, all other things being equal, present a degree of headroom to NIE.

Relative risk

12.33 The other key determinant of the positioning of NIE's return on equity is the UR's assessment of the risk that NIE presents to investors.

12.34 In the draft determination, the UR explained its view that the NIE network and the GB electricity networks are very similar. All networks nowadays have revenues caps, which limit companies' in-period exposure to unforeseen changes in volumes. There is also a similarity between the overall strength of opex/capex/totex incentives and the amounts of money that are tied to output or service quality schemes across different price controls, even if the detailed design of such incentives differs from price control to price control.

12.35 Ultimately, our analysis has not identified any intrinsic structural factor that distinguishes the riskiness in NIE's returns in a material way from the GB electricity distribution networks. We also note that NIE has not suggested any such factor in its submissions.

12.36 NIE did, however, highlight that the Competition Commission in 2014 opted to position NIE's asset beta slightly above the betas that Ofgem has factored into recent price control decisions, as set out in Table 77 . The Competition Commission's rationale for this positioning was that the GB comparators are "not an exact match for NIE and its regulatory framework".

Regulator / company	Asset beta
Ofgem, electricity distribution networks (debt beta = 0.1)	0.38
CC, NIE (debt beta = 0.05)	0.40

Table 77: Asset beta estimates

12.37 Our assessment is that such differences should not be overstated. Looking across this determination, and, indeed, back at the Competition Commission's 2014 decision, there is clear read-across to Ofgem in our approach to many of the price control building blocks. e.g. length of control period, the design of totex sharing rules, the treatment of pension costs. It is also noteworthy in this context, that the insertion of a cost of debt adjustment mechanism for RP6 further aligns the UR regulatory

framework with GB comparators. More fundamentally, absent any intrinsic structure differences in risk profiles, it is unclear why a sophisticated investor should consider the systematic risks around NIE's future equity returns to be materially different from the systematic risks around GB DNO returns or why such an investor would require a higher return on equity.

- 12.38 We are therefore not persuaded by NIE's arguments that it should be assumed to have a higher beta and, hence, be given a higher return on equity relative to the GB DNOs. Insofar as we are giving NIE the benefit of the doubt on the risk-free rate and the expected market return, we are especially unpersuaded that we need to give NIE the benefit of doubt a second time and aim up from a rate of return that, as at 2017, looks like it is at the high end of the plausible range of estimates for a GB regulated energy network company.

Overall cost of equity

- 12.39 Our determination is that NIE's allowed return on equity for the RP6 period should be 4.45%, unchanged from our draft determination.
- 12.40 Table 78 shows how this level of return compares to other recent regulatory determinations. (NB: because these other determinations all provided for slightly different levels of gearing, we show in the final row of the table how the calculations would compare if all regulators were to have used a common 65% gearing ratio.)

Parameter	NIE, RP5	GB electricity DNOs	FE and PNLG, GD17	NIE, RP6
Risk-free rate	1.5%	1.5%	1.25%	1.25%
Expected market return	6.5%	6.5%	6.5%	6.5%
Asset beta	0.40	0.38	0.40	0.38
Cost of equity @ 45% gearing	5.0%	-	-	4.45%
Cost of equity at 55% gearing			5.3%	
Cost of equity at 65% gearing	6.3% *	6.0%	6.3% *	6.0% *

Note: an asterisk indicates a recalculated value. The figure for NIE is taken from table 13.13 of the CC inquiry report.

Table 78: Calculation and comparison of allowed cost of equity

- 12.41 This determination deliberately positions NIE's allowed return to be no higher than the return that Ofgem gave to the GB electricity distribution networks in its determination at the end of 2014. It also sits below the GD17 costs of equity given our decision in that review to give recognition to the unusual features of the GD17 price control framework.
- 12.42 We are content that this is a logical picture to present, when the cost of equity is looked at 'in the round'. We note, in particular, that NIE would have us select a higher beta, but has stayed silent on the risk-free rate. Conversely, CCNI has argued for lower risk-free rate and expected market return assumptions, but has not commented

on beta. As regulator, we have to look at all parts of the calculation and not repeatedly opt for inputs into the calculation that sit at the very top or very bottom of plausible ranges. The allowed return on equity has to be looked at as a package of inter-linked judgments and we consider that a return on equity of 4.45% is an appropriately balanced assessment, having regard to the full range of arguments that there are for figures both below and above this point estimate.

Cost of debt

12.43 In line with the methodology set out in paragraphs 12.11 to 12.15, our 'baseline' allowed cost of debt is the current best estimate of the average interest rate that NIE will pay over the RP6 period, plus an allowance for transaction costs.

12.44 The calculations start with the interest that NIE will pay on its existing debt. NIE currently has two outstanding bonds: a £175m bond with a coupon of 6.875% that matures in September 2018; and a £400m bond with a coupon of 6.375% which matures in June 2026. This is equivalent to an average embedded debt cost of approximately 6.4% over the RP6 period. We add an annualised amount of 20 basis points to cover fees that the company incurred when entering into its borrowing arrangements, giving an all-in embedded cost of debt of 6.6%.

12.45 NIE has indicated that it intends to raise the new debt it requires for RP6 in one go at the end of 2018. We build up an estimate of the cost of this new debt as follows:

- first, we observe that current yields on BBB rated debt in secondary markets are approximately 3.0%;
- we allow for a small move up in interest rates of 0.3% by the end of 2018, consistent with forward gilt market rates; and
- finally, we again allow for debt-related fees of 20 basis points.

12.46 Table 79 brings these calculations together into an overall forecast of the nominal cost of debt. The 48:52 weights reflect the size of the RP6 borrowing requirement that NIE will encounter, including on the allowed amount of investment it will undertake during RP6 (including £200m of forecast D5 expenditure), and assuming a constant 45:55 mix of debt and equity financing.

Company	Average nominal cost of debt, RP6			
NIE	Current market rates 3.0%			
	Average interest costs	6.4%	Forward rate adjustment	0.3%
	Transaction costs	0.2%	Transaction costs	0.2%
		<hr style="width: 50px; margin: 0 auto;"/>		<hr style="width: 50px; margin: 0 auto;"/>
	Embedded debt	6.6%	Cost of new debt	3.5%
	Weighted average cost of debt = 4.99%			

Table 79: Cost of debt calculations

12.47 We convert the nominal costs of debt in Table 79 into their real equivalents by adjusting for forecast RP6 inflation as projected by the Office for Budget Responsibility's in its latest published forecasts. This is consistent with the approach taken in previous reviews. The projected average rate of inflation is 3.3% and the resulting real cost of debt is 1.63%.

12.48 Table 80 compares this figure to other recent regulatory decisions.

	GB GDNs, 2017/18	NIE, RP5	GB electricity DNOs, 2017/18	PNGL and FE, GD17 starting values	NIE, RP6 starting value
Allowed cost of debt	2.22%	3.1%	2.29%	2.4%	1.63%

Table 80: Calculation and comparison of the allowed cost of debt

12.49 Our estimate of NIE's cost of debt is lower than the other allowed costs of debt. This reflects the opportunity that NIE has to raise new debt at historically low rates of interest towards the start of the RP6 period, whereas other companies will have to go on servicing more in the way of legacy debt at comparatively higher rate of interest for several more years. Indeed the estimate could have been lower if we had taken into account, as Ofgem has previously, the potential for regulated companies to outperform the reference rate – referred to as the halo effect.

12.50 It should also be noted that Ofgem's indexed costs of debt for the GB GDNs and electricity DNOs are likely to fall in the coming years. If we apply current debt market trends they would start to fall below 2% by as early as 2018/19 or 2019/20.

Overall rate of return

12.51 Table 81 combines our calculations of the cost of equity and the cost of debt into an overall rate of return for the RP6 period.

	NIE, RP6
Gearing	0.45
Pre-tax cost of equity	4.45%
Cost of debt	1.63%
Overall rate of return	3.18%

Table 81: Completed rates of returns

12.52 Based on these calculations, we factor a rate of return of 3.18% into NIE's price controls at the outset of the RP6 period.

12.53 Our starting rate of return is lower than the figure put forward by NIE principally because we have:

- positioned NIE's return on equity to be no higher than Ofgem's estimated RIIO-ED1 cost of equity;
- updated NIE's February 2016 cost of debt calculation for the latest market evidence; and
- used the OBR's inflation forecast to translate the forecast nominal cost of debt into its real, RPI-stripped equivalent, in preference to NIE's lower inflation forecast.

12.54 As noted in paragraphs 12.13 and 12.14, the return may subsequently be adjusted up and down within period in light of any changes in market interest rates. Annex I provides a worked example on the assumption that the prevailing market rates increase at the point in time when the company raises new debt – e.g. assuming an IBoxx reference rate at the time of issuance of 3.8 %, the cost of debt would change to 1.84% and overall rate of return would become 3.27%.

Financeability

12.55 Article 14 of the Energy (Northern Ireland) Order 2003 requires us to carry out our functions in the manner we consider is best calculated to further our principal objective having regard to the need to secure that licence holders are able to finance their licence obligations¹²⁵ (amongst other things).

12.56 This duty is framed similarly to the financing duties of other UK regulators and can broadly be taken to mean that the price control ought to be set at a level which would allow an efficient company to finance its licensed activities. It is therefore necessary for us to consider financeability as an integral part of a price review.

¹²⁵ Activities which are the subject of obligations imposed by or under Part II of the Electricity (Northern Ireland) Order 1992 or the Energy (Northern Ireland) Order 2003.

- 12.57 In assessing whether our determination leaves NIE in a position where it will be able to finance their activities during the RP6 period, we have considered the ability that the business will have to utilise both equity and debt finance.
- 12.58 The key determinant of the company's ability to access equity finance is the allowed return on equity. As noted in paragraphs 12.39 to 12.42, we have built returns by considering the level of returns that investors are likely to be able to get from other equity investments and by positioning the return offered by NIE logically against these alternative investments. Our proposed return is aligned to the return that Ofgem factored into its recent RIIO-ED1 price control calculations. Accordingly, we are satisfied that NIE ought to be capable of securing equity finance on an ongoing basis throughout the next control period.
- 12.59 As far as borrowing is concerned, it will be important for NIE to maintain investment-grade credit quality.¹²⁶ One determinant of the business's credit worthiness in the eyes of lenders will be the level of cashflows that the networks generate under our price control proposals. A second key factor will be the amount of borrowing that the company attempts to take on. We influence the first of these things, but the second is firmly in the hands of NIE's management and owner.
- 12.60 In Table 82 we present the results of some modelling that we have produced to understand the projected level of four financial ratios if NIE selects a gearing that is in line with the 45% figure that we use in our cost of capital calculations. These are the same metrics that the Competition Commission considered in its RP5 work, although we recognise there are other ratios that lenders and rating agencies consider
- 12.61 The modelling incorporates costs and revenues based on the other decisions set out in this document.

	2017	2018	2019	2020	2021	2022	2023
Adjusted interest cover	1.32	1.27	1.27	1.27	1.27	1.27	1.28
FFO interest cover	3.74	3.96	3.96	3.98	4.00	3.92	3.90
FFO to net debt	13.07%	13.28%	13.63%	14.07%	14.56%	14.46%	14.69%
Gearing	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%

Table 82: Modelling results

- 12.62 The Competition Commission in NIE's RP5 review and Ofgem in its RIIO-ED1 review assessed the ability to access new investment-grade borrowing by reference to values for adjusted interest cover, FFO interest cover and FFO to net debt of 1.4 times, 2.5-3.5 times and 8-10% respectively, and a maximum level of gearing of 70-80%.

¹²⁶ NIE has a licence condition to maintain an investment-grade rating. An investment-grade credit rating is a rating of BBB- or above (Fitch or Standard & Poor's) or Baa3 (Moody's). We are not prescriptive on which credit rating agency is used by NIE

- 12.63 The modelling shows that three of the four ratios are within threshold, the adjusted interest ratio is slightly below 1.4 times. Our understanding, on the basis of the conversations that we have had with rating agencies, is that this need not cause undue alarm, given the relative strength of NIE's other ratios (NB: NIE has indicated that FFO interest cover is the key ratio for its business) and the qualitative factors that rating agencies take into account when assigning ratings.
- 12.64 The UR also notes the assessments made by the rating agencies themselves in response to the draft determination. S&P currently rates NIE at BBB+ with a standalone credit profile of a- and stated in a research update published on May 26 2017 that "We believe that NIE NETWORKS' credit ratios will deteriorate but would likely remain consistent with its 'a-' current stand-alone credit profile at least for part of the new regulatory period, with tight headroom. We will review the final determination and the impact on the company after June 28, 2017 when it will be finalized."
- 12.65 Fitch also rates NIE with a BBB+ Issuer Default Rating and senior unsecured rating and BBB standalone. In a note published on 2 June 2017 they noted that a "tough RP6 draft determination puts pressure on NIE Networks standalone rating". However, this is partly a function of assumed cost under-performance and Fitch explicitly identifies that the "negative guideline" on adjusted interest cover is 1.2 times. The modelling set out in Table 82 above shows that the efficient licensee would have headroom against this threshold and so should not expect to see any downgrade to its stand-alone rating.
- 12.66 The rating agency assessments therefore serve to support the view that an efficient licensee that maintains a 45:55 debt:equity capital structure will have a solid investment-grade credit rating and be able to raise a significant amount of new debt finance during the RP6 period. We further note that the appropriate response to any rating pressures that the licensee encounters would be for the business to seek to finance more of its RP6 investments with equity capital and take on a smaller amount of new borrowing. The allowed rate of return in this determination is capable of supporting a range of capital structures – e.g. the calculated weighted average cost of capital at 40% gearing and 45% gearing would be virtually identical – meaning that NIE's overall revenues need not be viewed as being dependent on any particular forecast on the UR's part about NIE's future levels of gearing.
- 12.67 Our assessment, therefore, is that NIE is capable of financing itself through the RP6 period with the revenues provided in this determination so long as it selects a prudent mix of equity and debt capital.

Revenues, tariffs and customer impact

12.68 NIE Networks recovers its revenue through charges for the use of distribution system to electricity suppliers. Transmission charges are recovered from SONI.

RP6 REVENUE

12.69 NIE distribution revenue request for RP6 amounts to £1,284.3m in 2015/26 prices as shown in the Table 83.

Distribution Use of System (DUoS)	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024	Total
Return	22.0	45.0	46.0	46.9	47.6	48.4	49.2	305.1
Depreciation	34.2	70.6	72.2	74.2	76.4	75.1	75.7	478.3
Tax	3.6	7.5	7.7	7.0	7.3	6.9	6.8	46.9
Opex	29.4	59.1	59.3	59.6	60.1	61.1	61.1	389.6
Pension	4.9	9.9	9.9	9.9	9.9	9.9	10.0	64.5
Total	94.2	192.0	195.0	197.5	201.3	201.4	202.8	1,284.3

Table 83: RP6 NIEN distribution revenue request

12.70 Our proposals for distribution revenue for RP6 are shown in Table 84.

Distribution Use of System (DUoS)	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024	Total
Return	17.0	34.5	34.9	35.2	35.5	35.8	36.1	229.0
Depreciation	35.4	69.7	70.5	71.6	72.8	70.3	69.9	460.3
Tax	3.7	6.7	76.9	6.3	6.5	6.0	5.8	41.9
Opex	30.0	59.2	58.7	58.2	57.7	57.2	56.8	377.74
Pension	5.0	9.9	9.9	9.9	9.9	9.9	10.0	64.3
Total	91.0	180.0	180.9	181.2	182.4	179.2	178.6	1,173.3

Table 84: RP6 Utility Regulator proposals for distribution revenue

12.71 NIE transmission revenue request for RP6 (excluding transmission network reinforcement projects expenditure of £200m) amounts to £278.2m, as shown in the Table 85.

Transmission Use of System (TUoS)	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024	Total
Return	6.6	13.7	14.0	14.3	14.5	14.7	14.7	92.4
Depreciation	7.7	16.0	16.4	16.8	17.2	17.6	17.8	109.5
Tax	0.5	1.3	1.4	1.2	1.3	1.4	1.6	8.8
Opex	3.6	7.3	7.3	7.3	7.4	7.4	7.5	47.9
Pension	1.5	3.0	3.0	3.0	3.0	3.0	2.9	19.5
Total	20.0	41.4	42.1	42.7	43.5	44.1	44.5	278.2

Table 85: RP6 NIE transmission revenue request (excluding transmission network reinforcement projects expenditure of £200m)

12.72 Our proposals for transmission revenue for RP6 (transmission network reinforcement projects expenditure of £200m) are also shown in Table 86: RP6 Utility Regulator proposals for transmission revenue (excluding transmission network reinforcement projects expenditure of £200m).

Transmission Use of System (TUoS)	10/2017-03/2018	04/2018-03/2019	04/2019-03/2020	04/2020-03/2021	04/2021-03/2022	04/2022-03/2023	04/2023-03/2024	Total
Return	5.2	10.4	10.6	10.9	11.0	11.0	10.9	70.0
Depreciation	7.8	15.5	15.9	16.3	16.8	17.1	17.2	106.4
Tax	0.7	1.1	1.1	1.0	1.1	1.3	1.4	7.7
Opex	4.1	8.2	8.1	8.0	7.9	7.9	7.8	51.9
Pension	1.5	3.0	3.0	3.0	3.0	3.0	2.9	19.6
Total	19.3	38.1	38.6	39.2	39.9	40.2	40.3	255.6

Table 86: RP6 Utility Regulator proposals for transmission revenue (excluding transmission network reinforcement projects expenditure of £200m)

RP6 Tariffs and Consumer Impact

12.73 In 2015/16 total network charges accounted for approximately 21% of the final electricity bill. This percentage varies each year depending on the electricity wholesale prices and other costs which make up the final bill such as system operator costs and supplier costs.

12.74 The percentage of the final electricity bill also varies depending on the customer group. Network charges account for approximately 25% of the final bill for domestic and 22% for small business customers. For large energy users and small to medium enterprise customers, network charges account for between 5% and 18% of the final electricity bill.

12.75 The annual increase in customers' bills is summarised in Table 87: NIE's average annual increase in customers' bills compared to Utility Regulator's proposed average annual decrease in customers' bills.

Customer group	NIE proposed Average annual increase in network charges (2016/17 to 2023/24)		Utility Regulator proposed Average annual increase in network charges (2016/17 to 2023/24)	
	Increase in network charges, £/annum	Increase in retail bill, %/annum	Increase in network charges, £/annum	Decrease in retail bill, %/annum
Domestic	1.5	0.28	(0.8)	(0.16)
Small business	7	0.25	(3.9)	(0.14)
SME > 70k VA	109	0.21	(60.4)	(0.12)
LV & HV LEU > 1MW	855	0.12	(399.3)	(0.06)
33kV LEU >1 MW	2,293	0.07	(703.7)	(0.02)

Table 87: NIE's average annual increase in customers' bills compared to Utility Regulator's proposed average annual decrease in customers' bills.

12.76 Table 88 shows a comparison of NIE's proposed average network charges at the end of RP6 (2023/24) compared to the Utility Regulator's proposed average network charges at the end of RP6 (2023/24)

Customer group	Number of customers	NIE proposed Average network charges at the end of RP6			UR proposed Average network charges at the end of RP6		
		D £/annum	T £/annum	Total £/annum	D £/annum	T £/annum	Total £/annum
Domestic	790,000	123	17	140	109	15	124
Small business	65,000	579	83	662	510	76	586
SME > 70k VA	5,000	8,807	1,485	10,292	7,763	1,345	9,107
LV & HV LEU > 1MW	172	58,358	19,667	78,025	51,435	17,807	69,242
33kV LEU >1 MW	18	103,902	91,441	195,343	91,576	82,793	174,369

Table 88: RP6 NIE Transmission and Distribution forecast average network charges

12.77 In summary, our proposals would result in a small decrease over the six years of RP6 on the network charges paid by consumers. It is important to remember that these figures all exclude RPI inflation, which is applied to NIE Transmission and Distribution allowed revenue each year.

12.78 The NIE Networks business plan excluded costs associated with potential load related projects which are uncertain and have not yet been approved. These project are referred to as transmission network reinforcement projects and are explained in more detail in paragraph 9.71.

12.79 Given it likely many of these projects will proceed we regard it as appropriate to model this impact and have included £200m of additional transmission network investment in RP6. These projects will deliver benefits which significantly outweigh the impact on network tariffs but we only set out here the impact on network tariffs. The results of this comparison are shown in Table 89 and Table 90 .

Customer group	End of RP5	End of RP6		
	Current	NIE Networks (excl additional investment)	Utility Regulator Final determination (excl additional investment)	Utility Regulator Final determination (incl additional investment)
Domestic	130	140	124	128
Small business	613	662	586	605
SME > 70k VA	9,530	10,292	9,107	9,448
LV & HV LEU > 1MW	72,037	78,025	69,242	73,756
33kV LEU >1 MW	179,295	195,343	174,369	195,358

Table 89: RP6 effect on NIE network charges with the inclusion of the transmission network reinforcement projects work

	NIE Networks (excl D5) £m	Utility Regulator Final determination (excl additional investment) £m	Utility Regulator Final determination (incl additional investment) £m
Distribution	1,284.3	1,173.3	1,173.3
Transmission	278.2	255.6	292.6
Total	1,562.5	1,428.9	1,465.9

Table 90: RP6 effect on NIE network charges with the inclusion of the transmission network reinforcement projects work

12.80 The effect of including the projects is naturally to increase revenue and network charges although we note overall revenues would still remain below the RP6 business plan submission. Network charges are also expected to be largely below RP6 business plan levels although we would caveat that the figures above are indicative and the spread across customer groups could change when further detail is considered as part of the normal annual tariff approval process.

13 RP6 Uncertainty Mechanisms

Key changes from draft to final determination

- 13.1 The key changes from the draft to final determination, in respect of RP6 uncertainty mechanisms, are:
- Having established a case in the draft determination for a substitution between direct capital allowances, we have concluded that this should be subject to a limit of about 10% of relevant investment categories. For the sake of clarity, we have determined a limit of £25m in 2015/16 prices.
 - The categories of investment described under the D5 mechanism have been separated into three separate categories to align with the three categories in the re-opener mechanism in the proposed licence modifications.
 - An additional mechanism has been introduced to allow the determination of additional capital allowances to address emerging congestion on the 33kV network caused by future generation connections at low voltage level.
 - An additional mechanism has been introduced to allow the determination of capital allowances to undertake trials and innovation to inform future investment. The final determination includes a cap on the allowances which will be determined for this work.

Introduction

- 13.2 All price controls need to set out clearly under what circumstances, if any, the figures set in the final determination can change. We refer to this generally as the Uncertainty Mechanism.
- 13.3 Our RP6 uncertainty mechanisms have been built upon both the Competition Commissions determination of RP5 and our experience in developing the RP5 Licence Modifications.
- 13.4 We have set out below how different areas of the price control might be adjusted as part of the RP6 process. This ranges from:
- some costs which are pass through so determined allowances will be adjusted to reflect actual costs;
 - ring fenced items which will require a further regulatory approval before it becomes a formal part of the RP6 allowances;
 - pass-through of unit costs subject to volume drivers; and
 - substitution mechanisms subject to a limit on the value of outputs which can be substituted between capital allowances to support emerging pressures in other areas of the capital programme.

- 13.5 Where we are of the view that certain RP5 uncertainty mechanisms ought to be retained we state as such, making references to how the RP5 mechanisms might be developed further to meet the need for transparency, providing the right balance between giving the company risk mitigation and protecting the consumer.

Licence fees

- 13.6 The Utility Regulator's licence fees are calculated each year and allocated across licence holders. The company assumed fees would remain at the same level as those incurred in 2015/16 across RP6 and allocated between distribution and transmission on the basis of headcount.
- 13.7 The company seeks a pass through of the Utility Regulator's licence fees and we agree with this and have decided to continue the previous RP5 licence mechanism regarding such costs.

Direct network investment allowance substitution

Introduction

- 13.8 In its business plan submission, NIE Networks highlighted the uncertainty inherent in estimating planned volumes of network investment in RP6 which will run until 31 March 2024. Over this period, it is likely that changes in the rate of deterioration of different types of assets will change and the rate and/or extent which assets will require refurbishment or replacement will vary, either up or down.
- 13.9 To deal with this uncertainty, the company proposed that the Utility Regulator introduce a new mechanism in RP6 which will allow it to substitute higher priority outputs for lower priority outputs which are then deferred to a future price control without a financial penalty to NIE Networks. In its business plan submission, the company proposed a cap on substitutions equal to 15% of the overall RP6 asset replacement programme (excluding rolling programmes).
- 13.10 In a subsequent update to its proposals the company suggested that it should be free to undertake whatever substitution it thought fit against the planned outputs to allow it to deliver the correct asset management intervention in response to new information.
- 13.11 A similar substitution mechanism for network investment was proposed by the company for the RP5 price control. This was considered by the Competition Commission which concluded that there was sufficient flexibility in the planned network investment to allow the company to deliver its obligations without a substitution mechanism. Part of this flexibility is the opportunity to substitute outputs within any allowance but not between allowances.
- 13.12 Throughout RP5, NIE Networks has highlighted a concern that, in the absence of a substitution mechanism:

- the Utility Regulator would conclude that any shortfall in output volume delivered in RP5 was deferral of investment which would be treated as a pre-funded cost for RP6; but,
- the delivery of any volume of output in excess of the planned investment or investment to address any emerging pressure would be funded by the company from its own resources or from out-performance in other areas.

13.13 From our assessment of the current and forecast information on the delivery of network investment and outputs in RP5 it appears that the company has generally kept closely to the planned network investment outputs for each allowance. While the company has applied substitution within individual allowances, it has not generally carried out additional work over and above that envisaged in the planned network investment for RP5.

13.14 We understand the point made by the company and believe that additional flexibility is necessary to allow it to respond to changes in priorities and emerging pressures by substituting one type of work for another without either suffering a financial penalty or requiring a separate decision from the Utility Regulator to do so. However, this must be balanced by:

- a need to maintain an incentive on the company to prepare a robust plan for network investment at each price control; and,
- a need to ensure that consumers are not disadvantaged by a high degree of change between planned and actual delivery of network investment which complicates a future assessment of pre-funded costs.

13.15 In view of this, we concluded that an open ended substitution mechanism for network investment is not in the interests of consumers in the long term. However, we concluded that the company should have some flexibility to substitute investment between allowances to deal with changing priorities and emerging pressures subject to reasonable safeguards on the assessment of deferral pre-funded costs to protect the interest of consumers.

13.16 This mechanism would apply only to substitution between allowances for which an activity volume has been defined in Annex P

13.17 In the draft determination we proposed to set a limit of 20% on the value of outputs which can be substituted out of any single allowance to support emerging pressures in another area. Over a 6.5 year price control this is equivalent 1.3 years' worth of planned outputs at a constant run rate. The fact that much of the planned investment consists of the on-going refurbishment and replacement of assets which continues from price control to price control provides a sound basis for planned volumes in the investment plan. Any sustained reduction in delivery against planned volumes is therefore likely to lead to an increase in the volume necessary in a subsequent price control and increase risk to consumers in the meantime.

13.18 We are conscious of the views expressed by the Competition Commission in respect of a substitution mechanism in its final determination in RP5. We note the risk that any substitution mechanism could be a source of complexity that limits our ability to

assess the outcome of a price control period effectively and make a robust assessment of any potential double funding of outputs across price controls. Limiting the extent of substitution is one way of addressing this risk. In addition, we will assess whether substitution has been undertaken on a fair value basis and we will consider the impact of substitution on the revealed unit costs and volumes when we assess deferral and determine pre-funded costs for the subsequent price control. We have set out general principles in Section 14 which will inform this assessment.

NIE Networks' response to the draft determination

13.19 In its response to the draft determination NIE Networks welcomed the introduction of a substitution mechanism in RP6 but suggested that the Utility Regulator should give further consideration to the following:

- the exclusion of new reactive programmes of work from the substitution mechanism;
- the suggested application of a 20% cap on the value of the outputs which can be substituted out of a single allowance as opposed to an overall cap on the level of substitution.

13.20 The company made further observations and suggestions on the outline description of the principles that the Utility Regulator might apply in the application of a substitution mechanism which were set out in Section 14 of the draft determination. We have responded to these points in Section 14 of this final determination.

13.21 We accept that the proposed substitution mechanism excludes new reactive programmes of work which might emerge during a Price Control. This exclusion may create challenges for the company in that it will either have to manage any emerging pressures through operational intervention or fund additional work out of its own resources. To be clear, the exclusion of any emerging reactive programmes of work from the substitution mechanism is not a reason for the company not to take such steps as are necessary to maintain the functionality and safety of its network.

13.22 The company raised the same issue of unforeseen developments with the Competition Commission before it made its final determination of RP5. The Competition Commission considered the points made by the company and concluded that:

- the opportunities for NIE to enjoy a financial upside from departing from the investment plan we used to determine its capex allowance are at least sufficient to offset the potential financial downsides from the costs of unforeseen developments; and,
- the determination would provide NIE with sufficient flexibility and sufficient revenue.

13.23 The mechanism proposed in the draft determination would provide NIE Networks with additional flexibility over and above that included in the CC final determination for RP5. The Competition Commission concluded that, even with a more onerous

deferral mechanism than now proposed, there was sufficient flexibility to accommodate unforeseen developments.

- 13.24 In setting out our proposal for a substitution mechanism we also noted the need to ensure that consumers are not disadvantaged by a high degree of change between planned and actual delivery of network investment which complicates a future assessment of pre-funded costs. Any decision to allow the definition of new outputs during the course of a Price Control runs the risk of moving the company's focus from delivery of an inclusive package of outputs to definitional disputes over individual items. It leads to a risk that the additional outputs defined are a subset of the original outputs the company was expected to deliver. Not allowing emerging issues to form part of a substitution package avoids these risks and maintains focus and incentives for delivery.
- 13.25 In view of the fact that the Competition Commission had considered and rejected the arguments put forward by the company, we have decided that we should not provide further flexibility by allowing substitution into new reactive programmes of work.
- 13.26 The company has challenged the 20% limit on substitution out of any allowance proposed in the draft determination and suggested that there should be an overall cap on the level of substitution instead.
- 13.27 Our reasons for setting a limit on the amount that could be substituted out of any one allowance are those set out above:
- a need to maintain an incentive on the company to prepare a robust plan for network investment at each price control; and,
 - a need to ensure that consumers are not disadvantaged by a high degree of change between planned and actual delivery of network investment which complicates a future assessment of pre-funded costs.
- 13.28 We expect the company to have prepared a robust plan based on reasonable estimates for the activities it will carry out in the Price Control period. Many of these outputs continue from Price Control to Price Control and there is little advantage to consumers of reducing work in any one period. The experience of RP5 is that the company was able to deliver the outputs it planned without a need for substitution between allowances. To move to a process of open substitution would imply that the purpose of the business planning process was to arrive at a total sum of investment with no commitment or link to the underlying activities. While this may be a potential route forward in the future, it would need to be underpinned by clear high level outcomes with a clear link to investment which are not available at present. Because of this, we consider that a cap should be retained on the substitution out of any one allowance at a level of 20%.
- 13.29 CCNI also asked that we explain how we determined that a 20% cap on the value substituted out of any one allowance was appropriate. This is a matter of judgement. But to inform whether this judgement is reasonable we would note that the company prepared its business plan submission in 2015/16 when it was necessary to project workload up to eight and a half years into the future. If we assume that the

inaccuracy of this workload projection is 3% for the first year (2016/17), increasing by a further 3% per annum for each subsequent year, this would equate to a potential inaccuracy over RP6 of 20%. At 2% per annum, this would equate to 12% over RP6 and at 4% per annum it would equate to 26% over RP6. In view of the duration of RP6, we consider a 20% cap on substitution for any one allowance to be reasonable.

Other changes since the draft determination

13.30 In the draft determination we concluded that substitution should be limited to allowances which have an activity volume defined in Annex P.

13.31 Since the draft determination we have come to the conclusion that some allowances should be excluded from the scope of work which can be substituted out, even where a volume driver exists. In particular allowances related to safety, allowances relating to investing in the future and any allowance with a volume driver should not be open to substitution, as follows:

- Allowance D43, work necessary to achieve ESQCR compliance.
- Allowance D50, relating to flood protection.
- Allowance D602, relating to investing in the future including the determined allowances for substation RTU replacement.

13.32 In the draft determination we set a cap of 20% for the amount substituted out of any one allowance. This could lead to a total substitution of approximately £62m in RP6. While we consider that 20% is a reasonable cap on the amount substituted out of any one allowance, we would expect a greater degree of accuracy in the aggregated projections. As part of our engagement with the company and with CCNI on the draft determination we discussed the possibility of a cap on the substitution as a whole. To determine a possible total cap on substitution between allowances we considered:

- The ability of the company to deliver the outputs of RP5 without the need for a substitution mechanism between allowances. This would suggest that the aggregated limit on substitution should be low.
- The level of emerging pressure which NIE Networks identified when the Competition Commission was considering its determination of a D3 mechanism for RP5. NIE Networks identified emerging pressures of £3.7m over 3 years and suggested that an allowance of £10m should be made for a 5.5 year price control. While this is not strictly analogous to substitution, it does point to the accuracy of the business plan submissions.
- The level of emerging pressures identified by the company in our engagement on the substitution mechanism for RP6. In its response to the draft determination, the company identified pressures of £5 m which might emerge in RP6. Again, while this is not strictly analogous to substitution, it does point to the level of accuracy in the submissions.

13.33 We have decided to set an overall limit on substitution of 10% of the value of the relevant allowances. For the sake of clarity, and given the level of judgement in the assessment we have determined that the total limit on substitution should be £25m. In view of the observations above, we believe that this provides more than ample

headroom for the company to make substitutions in RP6 and avoid the risk that it must fund any additional outputs delivered while under-delivery is treated as deferral. It is not an invitation to increase substitution which should only be made on the basis of need where the company is able to demonstrate that the substitution has clear benefits.

Final determination decision

13.34 For the final determination we have:

- Confirm that substitution between allowances for which an activity volume has been defined in Annex P will be permitted in RP6, but excluding allowances related to safety, allowances relating to investing in the future and any allowance with a volume driver which are itemised above.
- Confirm that the total which can be substituted out of any one allowance before consideration of the deferral mechanism will be 20% by value.
- Determined that the total value of substitution between allowances before consideration of the deferral mechanism shall be £25m.

13.35 We also expect the company to be able to provide a brief explanation to consumers of the substitutions it carried out and demonstrate the each substitution has clear benefits and was made at value.

Mechanism to determined additional capital allowances

Introduction

13.36 For RP5, the Competition Commission made provision for the UR to adjust NIE's maximum revenue and RAB, during the price control period, to allow for additional investment projects to increase the capacity and capabilities of NIE's transmission system. This is known as the D5 mechanism.

13.37 In its business plan submission, NIE Networks proposed that this mechanism continues during RP6.

13.38 In the draft determination, we proposed to continue this mechanism in RP6 for projects required to increase the capacity and capability of the transmission network.

13.39 While this mechanism was established for projects to increase the capacity or capability of the network, it will also to be applied to other defined projects where there is material uncertainty about the scope and cost of work.

Key changes from DD to FD

13.40 We have maintained the same approach in the final determination as the draft determination. However, for the sake of simplicity and clarity we have amended the licence to include three categories of investment which will be address through the D5 mechanism established by the CC in its final determination for RP5;

- Transmission system capacity and capability projects.

- Major transmission asset replacement projects.
- Nominated distribution projects.

Transmission system capacity and capability projects.

- 13.41 The primary purpose of establishing the D5 mechanism in RP5 was to address the uncertainty over transmission system capacity and capability projects which could only be resolved at a later date when the Transmission System Operator had confirmed the need and the solution had been developed. We will continue the D5 mechanism for this category of investment in RP6.
- 13.42 The proposed licence amendments for RP6 include a generic category for this type of work whereby an allowance can only be determined for a project which has been requested by the relevant system operator in line with the Transmission Interface Arrangements. The Utility Regulator is keen that NIE Networks and SONI work together to update the TIA as necessary to facilitate smooth delivery of projects. However UR is also considering taking action to deal with these issues and plans to consult shortly.

Major transmission asset replacement projects.

- 13.43 In its final determination for RP5, the Competition Commission identified a number of major transmission asset replacement projects for which the scope, cost and programme had not been well defined. Further information on these projects and the reason for including them in an uncertainty mechanism in RP6 is provided in Section 9 above, beginning at paragraph 9.72.
- 13.44 The proposed licence amendments for RP6 include a generic category for this type of work whereby an allowance can only be determined for a project identified in the RP6 final determination. For the sake of clarity, the major transmission asset replacement projects for RP6 are the projects identified in Table 59 of this final determination.

Nominated distribution projects.

- 13.45 The category of nominated distribution projects has been introduced for RP6 to ensure that capital allowances can be determined for two distribution load related reinforcement projects where the scope and cost of the distribution project could be materially impacted by potential transmission capacity projects. Further information on these projects and the reason for including them in an uncertainty mechanism in RP6 is provided in Section 9 above, beginning at paragraph 9.51.
- 13.46 The proposed licence amendments for RP6 include a generic category for this type of work whereby an allowance can only be determined for a project identified in the final determination. For the sake of clarity, the nominated distribution projects for RP6 are the projects identified in Table 58 of this final determination.

Treatment of indirect costs associated with the delivery of additional major investment.

- 13.47 It may be necessary to consider the impact of indirect costs associated with such projects as part of this mechanism. As noted in Chapter 5, while our initial view is that

there is no robust evidence linking higher direct costs to higher indirect costs we have concluded that it would be appropriate to signal that the UR would be open to NIE Networks putting forward evidence, with regards the North-South Interconnector for example, which directly gives rise to material increases in indirect costs via the D5 mechanism. Where such compelling evidence is provided, having passed our twin tests of newness and exogeneity, the UR would use the existing re-opener licence provision to allow the incremental costs of investment not already covered by determined allowances.

The impact of additional delivery on Business Rates and other operating expenditure

13.48 It may also be necessary to consider the impact of Business Rates associated with such projects as part of this mechanism. As noted in Chapter 6 there may be additional Rates associated with the North- South Interconnector coming on board. However, given the level of uncertainty we have concluded that it would be appropriate to signal that the UR would be open to NIE Networks putting forward evidence, with regards the North South Interconnector for example, which directly gives rise to material increases in the Rates bill via the D5 mechanism. We would furthermore expect the licence holder to demonstrate that there has been adequate challenge on rates assessments to justify the allowance of such Rates. Where such compelling evidence is provided, having passed our twin tests of newness and exogeneity, the UR would use the existing re-opener licence provision to allow the incremental costs of investment not already covered by determined allowances.

Changes to Transmission protection philosophy

- 13.49 In its business plan NIE Networks noted that SONI is in consultation with NIE Networks on a revision to the current transmission protection philosophy. The company asked that we include a reopener mechanism in RP6 to allow additional funding if any changes result works beyond that which are funded under the RP6 determination.
- 13.50 We have concluded that any such changes in the requirements placed on NIE Networks can be determined under the D5 mechanism whose scope includes changes to improve the capability of the transmission system.
- 13.51 NIE Networks has noted that SONI will be required to provide the business case for any enhanced works beyond those already planned by NIE Networks and funded under the RP6 price control. We expect the company to review this business case in the broader interest of its consumers during its consultations with SONI. We will consider the SONI business case and NIE Networks D5 submission on completion of this consultation.

Connections charge pass-through

Introduction

- 13.52 The difference between connection customer contributions (connection charges) and expenditure (NIE Network's spend on connection) on capex and opex for distribution and transmission connection work is currently passed-through to the RAB (on a yearly basis as a deduction or an addition). We refer to this as the connections charge pass-through.
- 13.53 This sub-section discusses whether the connections charge pass-through of capex and opex costs should be removed for distribution and transmission connections.

Key changes from DD to FD

- 13.54 We consulted on two options in the draft determination. Under Option 1 the pass-through for housing sites with 12 or more housing dwellings would be retained, but removed for all other types of connections. Under Option 2 the pass-through would be removed for all types of connection (Option 2).
- 13.55 After considering responses, we have now decided to implement Option 1. We have also decided that the pass-through for cluster type connections should be retained. Therefore, our decision is that the pass-through for housing sites with 12 or more dwellings and clusters should be retained, but removed for all other types of connections.
- 13.56 We also asked whether any adjustment to the opening RP6 RAB would be necessary as a consequence of our proposals, to account for any over or under-recovery of costs incurred in RP5. After considering NIE Networks response we understand that this impact would be relevant if we were to remove the pass-through for housing sites with 12 or more dwelling connections. As we are not removing the pass-through for this type of connection, this issue is not relevant.

Decision

- 13.57 In RP5 years 2012/13 to September 2017 total expenditure on all connections is c£10m greater than total customer contributions for distribution and transmission connections. NIE Networks has explained that the main reason behind this is that there are timing differences between the receipt of monies from customers and actual costs being incurred. We would expect that these costs and revenues balance out over time. During RP6, total expenditure is forecast to be c£2m greater than total customer contributions during this period.
- 13.58 As explained in the DD, removing the pass-through capex and opex costs for all types of distribution and transmission connection may bring the following benefits:
- First, removing the pass-through gives NIE Networks better incentives to minimise the connection costs. The costs and activities are largely within NIE Networks control. Exposing it to the full risk of recovery is likely to better

incentivise NIE Networks to be more efficient in the provision of connections than the status quo.

- Second, we note that costs and activities are caused by connecting customers. Removing the pass-through and recovering the costs from the customer seeking the connection is likely to, on balance, support better effective price signals to connecting customers compared with the status quo.
- Third, removing the pass-through is more likely to support contestability. For example, where contestability is likely to be effective, there is a risk that a pass-through encourages NIE Networks to under-estimate connection charges.¹²⁷

13.59 These benefits may also be relevant for housing sites with 12 or dwellings, in the event it is removed for these connections. However, we are also conscious of stakeholder concerns (from the Construction Employer Confederation) that other benefits derived from the certainty which the current standard connections charging structure brings would be lost for these customers if the pass-through were to be removed. This is because removing the pass-through would necessitate the removal of standard connections charges.

13.60 NIE Network's has said that retaining¹²⁸ the pass-through would prevent competition from developing in this market segment. The extent to which competition is effective in this segment will, in part, depend on the potential value of competition to customers. For example, those customers who are represented by the CEF who is currently opposed to the removing the pass-through. We note that in GB competition is not yet fully effective yet for these connection types in the majority of areas, despite being opened for a long time.¹²⁹ We will monitor developments in NI through RP6 and consider whether the pass-through should be removed for RP7.

13.61 With respect to clusters we are proposing to retain the existing arrangements for funding in RP6, and also the methodology for charging (see our recent decision on connection charging as part of our May 2017 electricity connections review). This approach means that with prior approval of the UR, the net cost of a cluster substation (i.e. the difference between costs incurred and contributions received from connecting generators) would be added to the RAB. These are later deducted from the RAB when further contributions are received. Retaining the pass-through for cluster connections supports this approach.

13.62 For the reasons above, we have decided to remove the connections charge pass-through for all distribution and transmission, capex and opex, connection costs, with the exception of those which relate to clusters and housing sites with 12 or more dwellings. We are also consulting today on a licence modification to reflect the changes.

¹²⁷ NIE Networks has the ability and incentive to recover any shortfalls in contributions being made from the RAB.

¹²⁸ We note that we have revised the version of the FD published on 30 June 2017 to correct a typo. The word "removing" has been replaced with the word "retaining", within the first line of this paragraph 13.60 of the FD.

¹²⁹https://www.ofgem.gov.uk/sites/default/files/docs/2014/06/competition_in_connections_call_for_evidence.pdf

Clusters

- 13.63 NIE Networks "clusters" generation connections together so that they will share network infrastructure. The purpose is to reduce the number and length of new overhead lines needed for the connections and lessen the environmental and visual impact of connections infrastructure build. It has said that it has spent just under £31m and received £32.5m in contributions towards these costs during RP5.
- 13.64 NIE Networks has sought approval from us, in its business plan, to build clusters on a project by project basis during RP6. In doing so it notes that the closure of the Northern Ireland Renewable Obligation (NIRO), contestability, changes to connection application procedure and less available network capacity may affect demand for clusters. As set out in our draft determination, we note NIE Networks reasoning. We have decided to maintain our draft determination position.
- 13.65 We note Manufacturing NI's concerns that costs should be exclusively paid by developers. We have published our decision on connections policy.¹³⁰ We have decided to maintain the connections cluster charging methodology. Our RP6 decision will ensure that NIE Network's will not incur any expenditure in relation to new cluster developments without the Utility Regulator's approval on a project by project basis. This mitigates against NI consumers picking up an unacceptable level of risk from cluster investment.

Public Realm and large scale road schemes

Introduction

- 13.66 In its business plan submission NIE Networks proposed that an additional mechanism should be included in the RP6 price control to adjust the maximum revenue and RAB to cover unpredictable but potentially large public realm schemes and NIRAUC¹³¹ road schemes. NIE Networks initially proposed that this should apply to schemes which required contributions from the company of greater than £100k but amended this threshold to £500k during subsequent engagement. In its submissions and in discussion, the company has highlighted major schemes which might be implemented in the RP6 period.
- 13.67 We recognise that individual road schemes could require large contributions from NIE Networks. However, we have based our assessment of investment in RP6 on historical run-rates of investment and allowed the company the full allowance requested in its Business Plan submission. NIE Networks has provided us with information on completed and current public realm schemes which suggests that historical investment includes individual schemes up to £0.5m.
- 13.68 In addition, we note that public realm work and major road schemes are funded by the NI Executive. Major schemes must compete for funding with each other and

¹³⁰ <https://www.uregni.gov.uk/sites/uregni/files/media-files/Electricity%20Connections%20Decision%20FINAL.pdf>

¹³¹ NI Road Authority and Utility Committees

within the overall Executive budget. In the current economic climate, there are on-going pressures on government investment and there is no indication of any general increase in investment in roads compared to recent years. While there may be some large individual schemes in the future, this may be at the expense of smaller schemes.

13.69 In view of this, our draft determination was that it is not appropriate to establish a new mechanism to address changes in requirements for public realm or major road schemes which is one of many risks and opportunities within the planned network investment programme.

NIE Networks response to the draft determination

13.70 In its response to the draft determination NIE Networks asserts that the Utility Regulator's draft decision failed to take account of

- the possibility of additional funding becoming available for specific major developments;
- the finite level of funding being targeted by the NI Executive at areas where the network infrastructure is much denser and older resulting in a disproportionate requirement for associated investment by NIE Networks.

13.71 NIE Networks highlighted two such areas in its RP6 business plan, Belfast Streets Ahead and York Street interchange. It noted that, should such major projects be commissioned by the NI Executive, which would be beyond NIE Networks' control, the UR's approach would put a disproportionate burden on NIE Networks' existing allowances for other investment categories. In particular there is a risk of overspend in asset replacement, load related or alteration investments which could not be adequately funded via NIE Networks' regulated revenue.

13.72 For the sake of clarity, we note that the allowance for public realm work in RP6 is for all work it is necessary for the company to undertake. We are not precluding the possibility the company will find it necessary to invest more or less than the allowance. Indeed the 50:50 cost risk sharing mechanism specifically envisages this possibility within the sum total of allowances granted. So for example, in RP5 NIE Networks had an allowance of £16.4m for network alterations of which it spent £13.6m. This suggests that the level of work or the risks which materialised in RP5 was less than the company had envisaged. It may be the case that some major schemes did not materialise or that the work was targeted in less dense areas than expected.

13.73 The company is wrong to assert that we have failed to take account of the possibility that there will be a different balance of work in the future than the past. Our position is not that the future will be identical to the past, but that the risk identified by the company existed in the past and that past expenditure is a reasonable guide to the level of risk which has materialised. We recognise the potential impact of specific major schemes, but take some comfort that their aggregated impact is likely to be constrained by overall government budgets.

13.74 We also note that 'Network Alterations' is a lump sum allowance which is not subject to the D3 deferral mechanism. In this respect, it does not stand alone. The portfolio

effect within the sum of all lump sum allowances provides a further risk mitigation for the company whereby material risks might be realised in one area in a Price Control and in another in a subsequent Price Control. In these circumstances we are cautious about introducing changes to risk allocation between price controls which limit the company's risk but offer no similar protection on consumers' exposure to risk of out-performance in this or other areas.

Final determination decision

13.75 Having considered the company's arguments, and for the reasons set out above, we have decided not to include an uncertainty mechanism in RP6 in respect of Public Realm and large scale road schemes.

A volume driver for undereaves service connections

13.76 In its RP6 business plan NIE Networks identified a volume of work to complete the replacement of undereave wiring insulated with PolyButylJute (PBJ). The company then plans to continue this type of work by replacing undereave wiring with single layer PolyVinylChloride (PVC) insulation. While the company assumed that this work would continue at the same number of annual outputs delivered in the past, it was not able to provide sufficient evidence and information to support its assumption that the number of defective outputs in existence will be at least the number it proposed to carry out in RP6.

13.77 In these circumstances we did not consider it appropriate to include a fixed unitised direct capital allowance and expected volume in the final determination which we have commonly used when the company has a reasonable expectation that it can deliver up to the defined volume. We have therefore decided to include an additional volume driver to cover undereaves wiring replacement work. This will ensure that the company can be funded for the volume of work it plans to carry out and also ensure that consumers are protected if further survey work does not reveal the volume of defective undereaves wiring assumed by the company in its plans.

13.78 Because a volume driver mechanism has been put in place we have not determined an allowance for this work. Instead we have determined a unit rate for the work, which declines from year to year to take account of the application of the frontier shift. In each year of the RP6 a capital allowance will be determined for undereaves work which is the product of the number of properties addressed and the determined unit rate for that year. The allowance is subject to a cap of 19,500 properties over the RP6 period which is the volume proposed by the company in its business plan submission.

13.79 The mechanism by which the volume driven allowance is adjusted for inflation and flows through to the calculation of the capex incentive amount and the annual RAB adjustment is set out in the proposed licence modification with further explanation provided in the licence consultation.

13.80 Because this activity is subject to a volume driver, it should not be available for substitution out under the scope for substitution in relation to the deferral mechanism.

The volume driver will allow the company to undertake the right amount of work. Since the work is necessary to meet safety requirements, it should not be possible to substitute out to other areas.

- 13.81 There may be circumstance where the company will want to exceed the 19,500 output cap by substituting an allowance in from other investment areas. If this is the case, we would consider such a request and it would be open to the Utility Regulator consider further licence modifications to allow such a change.

Undertaking trials and innovation to inform future investment

- 13.82 In its business plan submission the company identified a strand of investment to allow it to undertake trials and innovation to inform future investment. In particular, this is intended to trial technologies which would provide smart solutions to increasing demand from low carbon technologies as an alternative to continuing network reinforcement.
- 13.83 While the Utility Regulator agrees that there is a need for this type of work the trial designs included in the business plan submission did not provide sufficient information and evidence for an upfront allowance to be determined in the RP6 final determination.
- 13.84 As a result we have not determined an ex-ante allowance for this work in RP6. In the absence of an ex-ante allowance it is necessary to include a re-opener mechanism to allow additional capital allowances to be determined when there is sufficient information to justify the investment. This will be achieved by introducing a category covering trials and innovation to inform future investment in the general re-opener mechanisms in the transmission and distribution licences. These allow additional capital allowances determined in a published decision by the Utility Regulator to contribute to the general terms ACDR and ACDT in the respective licences. The mechanism by which these additional capital allowances flow through to the calculation of the capex incentive amount and the annual RAB adjustment is set out in the proposed licence modifications with further explanation provided in the licence consultation.
- 13.85 This mechanism excludes investment to replace substation RTUs in RP6 for which an ex-ante allowance has been provided.
- 13.86 While we have not determined an ex-ante allowance for undertaking trials and innovation, we have assessed the proposals made by the company and used this amount to determine a cap for the allowances determined for this type of work in RP6. It is possible to argue that a cap should not be imposed on this work to allow all opportunities which are economic to be carried forward. However, a cap does send a clear signal that funds for trials and innovation, which always carry a risk of failure, are scarce and that any decision to proceed is at the loss of other opportunities. A cap should encourage the company to make choices on the best opportunities to take forward; to carefully consider the cost of the work it proposes and minimise

these costs in delivery; and to encourage collaboration with and contributions from other organisations including suppliers and academic organisations.

- 13.87 It would be possible to amend the cap on capital allowances to undertake further trials and innovation through a future licence modification if there is a compelling need to do so. Before taking such a step the company should be able to demonstrate that it was successfully delivering its trials and innovation programme including maximising opportunities for collaboration and contributions from other bodies.
- 13.88 While the company only suggested investment of this type in the distribution licence, the mechanism has been created in both the distribution and transmission licences. This will allow the company to undertake trials and investigations on the transmission network if opportunities arise. However, this is at the company's behest within the determined cap for this work. Any trials necessary to improve the capacity or capability of the transmission system would be considered through the D5 mechanism under the relevant category of the re-opener mechanism described above.

Metering

- 13.89 There is no change with the uncertainty mechanisms set out in the draft determination compared to that adopted in the final determination with respect to metering. The approach taken for the RP6 metering programmes continues with a volume driven allowance and a set unit cost for each type of meter installation as adopted in RP5. This has been applied to all metering programmes in RP6.

I-SEM

- 13.90 New wholesale electricity market arrangements are currently being designed to replace the existing Single Electricity Market (SEM), which applies across the island of Ireland. The introduction of I-SEM is a requirement arising from changes to European legislation designed to harmonise cross border trading arrangements across all European electricity markets. The I-SEM market will take effect from 2018.
- 13.91 The company contend changes to any of its market operations systems and processes would be outside NIE Networks' control. As such, the company proposes any costs they incur with the development of I-SEM or other market developments during RP6 should be allowed through the price control.
- 13.92 The company further states it is difficult at the present time, indeed even as far forward as the final determination 28 June 2017, to pinpoint whether new requirements might emerge after the "go live" date. If any new requirements emerge NIE Networks states it shall seek further funding during the RP6 period.
- 13.93 For the purposes of benchmarking, either in the run up to RP7 as we produce annual cost and performance reports on NIE Networks or to inform the RP7 price control, the Utility Regulator would be minded to consider any approach by the company around

the RP7 price control, to treat I-SEM costs as possibly atypical costs for the purposes of efficiency benchmarking.

- 13.94 We are minded to continue the previous RP5 licence mechanisms regarding uncertainties and consider the current change of law provision provides adequate risk mitigation for the company and consumers. There is no change to our draft determination.

Costs associated with injurious affection

- 13.95 In the RP5 draft decision the Utility Regulator noted that the costs associated with injurious affection were uncertain due to the pending outcome of the Lands Tribunal determination. In the final determination by the CMA for RP5 they considered possible approaches to deal with efficiency, cost recovery and incentivising NIE Networks.
- 13.96 The CMA landed on a solution such that there will be no upfront allowance for costs relating to injurious affection, but a provision for the Utility Regulator to make an allowance in the future following the Lands Tribunal determination. They also stated that we should consider giving weight to data from GB DNOs and also take account of any differences between the Lands Tribunal determination and relevant precedent from GB.
- 13.97 The CMA made a provision in the price control formulae for an opex allowance and RAB additions for licence modifications in respect of injurious affections claims in RP5.
- 13.98 As far as injurious affection is concerned for RP6 there is no change in circumstances from the time of the CMA determination, in that we still await the outcome of the Lands Tribunal. Thus uncertainty continues and the rationale adopted by the CMA remains the same. We therefore propose to adopt the same approach in RP6.
- 13.99 There will be no upfront allowance for costs relating to injurious affection but a provision to amend the revenue control on NIE Networks to include an upfront allowance. We will determine an allowance in light of submissions from NIE Networks and consultation with stakeholders once the Lands Tribunals decisions are known.
- 13.100 The existing licence modifications from RP5 providing for opex allowance and RAB additions will remain with a provision for any necessary licence changes to be made dependent on the final approach to be adopted.

Wayleaves

- 13.101 In its business plan submission, the company proposed a new uncertainty mechanism which would make provision for the UR to adjust NIE's maximum revenue and RAB during the price control period, to allow changes in the cost paid

for wayleaves if these change by more than 10% in RP6 for reasons outside NIE Network's control.

13.102 We note that wayleave costs form part of the indirect costs which have been determined by benchmarking with GB DNOs (see paragraphs 5.86., 5.148, 5.157, 5.185, 5.204 and 5.325) We are not aware of a mechanism for varying the maximum revenue or RAB of GB DNO's in response to changes in wayleave costs.

13.103 Wayleave costs are one item of a general basket of indirect costs for which no specific outputs or output volumes have been specified. The company has the ability to manage the future opportunities and risks inherent in this broad basket of works. In view of this we do not consider it appropriate provide a specific mechanism to mitigate the risk of increase costs in one particular element within the overall basket of works. In this respect, the company bears the same level of risk as GB DNO's and this is reflected in the return on capital.

13.104 Whilst we agree that the proportion/ volume of overhead lines are arguably exogenous,¹³² we consider that the wayleave compensation rates set by NIE Networks are controllable by the company (i.e. endogenous) and therefore do not pass our "newness" and "exogeneity" twin test.

13.105 For the same reasons, we do not feel it necessary to introduce a wayleaves uncertainty mechanism during RP6. As discussed in detail in Annex D: Special Factors, we consider that wayleave rates are within the control of the company. In turn, there is no reason for why NIE Networks have to follow the wayleave rates used by SSE Hydro. This argument becomes even more significant if SSE Hydro do in fact increase their wayleave rates significantly during RP6 because the potential benefit from moving away from the wayleave rates set by SSE Hydro will become even greater. For this reason, we do not consider it appropriate or necessary to introduce a wayleaves uncertainty mechanism during RP6.

13.106 There is no change from the draft determination.

Corporation Tax

13.107 We do not propose making any changes to the applicable tax rate used within the calculation of NIE Networks' revenues. For clarity this means it will continue to be the rate applicable in Northern Ireland as specified from time to time by HMRC.

Change of Law

13.108 We do not propose making any amendments to the change of law provisions. There is no change from the draft determination.

¹³² We consider that including the proportion of overhead lines as a driver in UR's models sufficiently and appropriately takes into account differences in the operating environments across DNOs that cause increases in the volume of wayleaves.

GSS

13.109 GSS is included in the base costs within RP6 which are benchmarked against GB DNOs, who are already implementing the Electricity (Standards of Performance) Regulations 2015. Whilst we have chosen not to introduce any uncertainty mechanism in relation to GSS (GSS is discussed further from paragraph 4.31) any application under the change of law mechanism at time of new regulations coming into force shall be considered, alongside any other changes of law, upon its merits.

Load re-openers

Introduction

13.110 In its final determination for RP5, the Competition Commission set an ex-ante allowance for load related investment, subject to the 50:50 cost risk sharing mechanism only.

13.111 In its RP6 submission, NIE Networks proposed that an ex-ante allowance be set for load related investment subject to a reopener mechanism at the mid point of the price control period to manage uncertainty in the estimates. The re-opener would be triggered if the planned expenditure in RP6 was expected to be 20% less or 20% more than the ex-ante allowance. The company noted that this approach is similar to the approach adopted by Ofgem to manage load related investment uncertainty for GB DNO's.

13.112 Load related investment has three major components:

- On-going increase in demand from new connections or changing consumption from existing consumers.
- Investment to address 'congestion' on the 33kV network to facilitate distributed generation connections.
- Potential for increasing load from 'low carbon technologies' such as electric vehicle recharging or heat pumps which displace carbon based fuels at the expense of increasing electricity demand.

13.113 In the draft determination we concluded that the key uncertainty in this bundle of investment is the rate of uptake of low carbon technologies and the impact it might have on peak loads. We concluded that it was reasonable to set an ex-ante allowance for on-going demand from new connections or changing consumption from existing consumers based on the long term growth projections and the company's technical assessment of need. We recognised that there has been a short term peak in the demand for new distributed generation connections driven by subsidies to promote wind and solar power. However, these subsidies have reduced in recent years and the company has been able to consider the demand for generation connections in its business plan. We therefore concluded that it was reasonable to set an ex-ante allowance for 33kV 'congestion' in the draft determination. The key risk remained the impact which the uptake of low carbon technology will have.

13.114 For the business plan submission, the company adopted the TRANSFORM model to predict the impact of low carbon technology uptake on the load related investment. While it is not asset specific, this model aims to represent the types of circuits and current loading of NIE Networks distribution network. It makes assumptions about low carbon technology up-take – a low uptake assumption was used to formulate the business plan. It then estimates how low carbon technology will impact peak loads on the networks including assumptions about how uptake will be clustered and peak unit loads and diversity of peak load (for example how consumers will chose to charge electric vehicles). Using this approach, the company estimated the load growth investment driven by low carbon technology in RP6 would be £13.1m of which £6.0m would occur in the last three years.

13.115 Because the impact of low carbon technology is uncertain and the impact is expected to accelerate over RP6, we proposed that investment driven by low carbon technology should be subject to a reopener at the mid-point of RP6 as follows:

- The draft determination includes an ex-ante allowance for low carbon technology load growth of £2.6m.
- The draft determination includes an additional ring fenced allowance of £10.5m for low carbon technology load growth. This will be replaced by an ex-ante allowance to be determined on the basis of assessment of low carbon technology load growth at the midpoint of RP6.
- The company shall make a submission setting out its assessment of low carbon technology uptake for the last three years of RP6 by the 1st September 2020. This should include:
 - i. A statement of the profile of low carbon technology uptake to date.
 - ii. An estimate of the impact this has had on peak network load and the investment that NIE Networks has had to make to address this.
 - iii. A forecast of the uptake of low carbon technologies over the last three years of RP6, setting out the basis for that forecast.
 - iv. Its latest best estimate of the impact of forecast low carbon technology uptake on peak loads and an estimate of the additional investment required to address this increase including all supporting calculations.

13.116 We will review the company's forecasts and estimates and make a preliminary determination of an ex-ante allowance by the 15 December 2020 and make a final determination by the 1 March 2021.

NIE Networks response to the draft determination

13.117 In its response to the draft determination NIE networks made two key points:

- That the ex-ante allowance for low carbon technology impact included in the draft determination for the period up to the 31 March 2021 was inadequate because it assumed a one year delay on the investment predicted by the TRANSFORM

model to allow for load growth to be recorded (typically at the end of the calendar year) and investment decisions to be made and implemented.

- That the draft determination did not include a suitable allowance or suitable mechanism to allow the recovery of costs to account for the uncertainty associated with connection of future generation beyond December 2015.

13.118 The issues raised in respect of the ex-ante allowance to cover the impact of low carbon technology uptake up to 31 March 2021 are addressed in Annex O. In summary we have concluded that the approach we have taken to phasing of investment is realistic and we have confirmed our draft determination of an ex-ante allowance of £2.6m for this work.

13.119 Following further engagement with the company, we agree that a further mechanism is required in the RP6 final determination to address the uncertainty associated with future generation connections leading to congestion on the 33kV network.

13.120 The company has advised us that generation connections can lead to 'congestion' when the potential backflow of current from the aggregate total of generation, less the minimum demand on the network exceeds the capacity of network to carry that current. The company has advised us that this has been exacerbated by the potential erosion of minimum loads by zero export connections and the potential of loss of demand.

13.121 In its business plan the company proposed investment to improve the capacity of selected 33kV circuits which had been affected by load erosion. The final determination allows for the completion of these schemes. The company has advised us that the connection offers it has subsequently made will not cause further congestion on the 33kV network. However, it is possible that future connections may drive further investment.

13.122 In this context, the focus on the 33kV network reflects the 'two voltage rule' in respect of distribution connections, whereby connectees can pay for any necessary reinforcement at the connection voltage and one voltage upstream. As a result, only connections to the LV network should result in connections which lead to congestion on the 33kV network which would be funded by the wider consumer base and would require additional funding. Connections at 11kV and 33kV should be able to fund any necessary reinforcement work at 11kV and 33kV level. Any reinforcement required for the transmission network due to the aggregated impact of generation connections can be addressed under the D5 re-opener mechanism in respect of transmission system capacity and capability.

Final determination decision

13.123 The re-opener mechanism in relation to the impact of low carbon technology uptake in the last three years of RP6 set out in the draft determination and reproduced in the introduction to this section will be applied.

13.124 In view of the fact that the final determination makes no allowance for future 33kV congestion due to LV generation connections, we have concluded that it is necessary to introduce an additional mechanism to allow such reinforcement to take place in

respect of future connection offers. The section of the proposed distribution licence amendment for RP6 relating to **additional allowed capex – ACDR_X_t** includes a generic category covering congestion on the 33kV network due to future LV generation connection offers.

13.125 We note that for connections where there is insufficient capacity on the 33kV network, we would expect NIE Networks to confirm the reasons for making such an offer linked to broader economic or policy requirements before seeking additional capital allowances to address congestion on the 33kV network.

13.126 For the sake of clarity, the re-opener mechanism relates to the impact of LV generation connections only. It does not relate to new demand connections which should be facilitated within the connection policy under the general load related allowance. It does not relate to generation connections at 6.6kV, 11kV and 33kV level which can fund the costs of any necessary reinforcement works.

Uncertainty spreadsheet

13.127 In a break with the draft determination proposal for an uncertainty spreadsheet and mechanism, we do not foresee any need for such during RP6. Instead, we intend introducing a single licence term to reflect a reliability incentive (rewards and/or penalties subject to a pre-defined cap and collar). The licence term will be separate to ordinary fast pot opex and will therefore not be subject to the 50:50 sharing mechanism for any out/under-performance, which would otherwise dilute the reliability incentive.

13.128 We have introduced a reliability incentive spreadsheet to calculate rewards/penalties during RP6 around planned and unplanned CML performance against their corresponding targets.

14 RP6 Incentive Mechanisms

Key changes from draft to final determination

- 14.1 The key changes from the draft to final determination, in respect of RP6 incentive mechanisms, are:
- some changes to the detail of the Reliability Incentive
 - further detail on measures to tackle risk of deferral of planned network investment projects

Introduction

- 14.2 The Utility Regulator applies both financial and reputational incentives to the monopoly network utilities it regulates by price controls. This ensures that companies can expect to be called to account over their delivery of investment, service levels and efficiencies, both in financial terms and RP6 outcomes, outputs and KPIs.
- 14.3 The following incentives formed the basis of the RP5 regulatory framework:
- underspending capex and opex allowances;
 - reducing electricity theft;
 - avoiding inefficient spending; and
 - guaranteed standards
- 14.4 Our RP6 Approach Document identified the following (non-exhaustive) list of financial incentives which could potentially be introduced in RP6:
- the electricity losses incentive;
 - quality of supply incentive e.g. frequently measured as customer interruptions (CI) or customer minutes lost (CML);
 - asset health or load indices incentive;
 - customer service incentive;
 - worst served customers incentive;
 - reducing carbon from network operation incentive; and
 - timely delivery of major projects incentive.
- 14.5 The company stepped up to the challenge of identifying its own long list of potential incentive mechanisms for RP6, including the above items, and discussed the pros and cons of each, prior to submitting its proposals.

- 14.6 As stated in our RP6 Approach Document, reputational incentives remain largely supported by our intended publication of NIE Networks' progress against RP6 targeted outcomes / outputs and KPIs as included within the RP6 Monitoring Plan. The annual Cost and Performance Report of NIE Networks will form part of our normal monitoring and enforcement activity.
- 14.7 The following sub-sections to this chapter detail our considered views on the company's proposals alongside our own final determination proposals.

50:50

- 14.8 The CC for RP5 determined that a cost- risk sharing mechanism under which certain cost categories could be subject to a 50:50 sharing mechanism and any over/under recovery in a particular financial year from set price control allowances could be shared 50:50 between the company and consumers¹³³.
- 14.9 We did not consult on any proposal to amend the precedent set by the CC and consider it appropriate to use this mechanism for relevant adjustments in RP6. There is already a licence mechanism in place for the operation of this 50:50 sharing mechanism and we have retained this for RP6.

Inefficient spend clause

- 14.10 The RP5 price control introduced a provision which enables the UR to make adjustments to the price control to protect customers from exposure to any cost that are found to be demonstrably inefficient or wasteful.
- 14.11 We have not amended this approach for RP6.

Measures to tackle risks from deferral of planned network investment projects

- 14.12 In its final determination for RP5, the Competition Commission established a D3 mechanism – measures to tackle risks from the deferral of planned network investment.
- 14.13 In its business plan submission NIE Networks supported retaining this mechanism during RP6 as part of a suite of uncertainty and incentive mechanisms.
- 14.14 We have concluded that the RP5 D3 mechanism should continue to apply during RP6.
- 14.15 For RP6, we have concluded that it is necessary to provide additional flexibility to allow the company to substitute investment and outputs between allowances to

¹³³ Refer to the CC Final Determination on RP5 (https://assets.publishing.service.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf).

address changes in priorities and emerging pressures during the course of the price control. This is described in Section 14 from paragraph 14.6.

14.16 In the following sub-paragraphs we note some of the key characteristics of the D3 deferral mechanism established by the Competition Commission in its final determination for RP5:

- The intention is to incentivise NIE Networks to make economic deferral of investment yet protect consumers from the paying for the same investment in a subsequent price control (a policy of no double funding of deferred investment).
- This is achieved in practice through a clear specification of volumes of planned investment included in the forecasts used to set the price control, regular reporting of volumes and potential deductions of pre-funded costs as part of a subsequent price control. For RP6 a specification of volumes of planned investment is set out in Annex P. These planned investments provide a reference point for the estimation of pre-funded costs in the next price control.
- To allow for the assessment of pre-funded costs in RP7, NIE Networks would be asked to submit to the Utility Regulator two pieces of information:
 - i. *Forecast network investment.* This is NIE Network's estimate of its expected network investment requirements for the RP7 price control period.
 - ii. *Pre-funded costs.* This is an estimate of the value of network investment in the forecast network investment which does not need to be included as part of the network investment requirements in the calculations and the network investment strategy that was assumed for the purpose of setting the RP6 price control.
- For RP7 a preliminary assessment of pre-funded costs will be made on the basis on the best available forecasts submitted with the NIE Networks business plan. Because this will continue to include estimates of future investment we will review the assessment of pre-funded costs on the basis of the final out-turn figures for RP6 and take account of our updated analysis in the setting the subsequent (RP8) price control.
- The assessment of pre-funded costs is not a purely mechanistic exercise of comparing volumes of different types of network investments. It is partly a qualitative exercise, drawing on information on how NIE Networks has adapted its investment and asset management over time.

Application of deferral and substitution to output volumes

14.17 Much of the planned network investment in RP6 delivers the refurbishment or replacement of existing assets and the expected outputs are defined by volumes as opposed to specific assets. Much of this activity is not unique to a single price control, but is expected to continue at similar rates in future price controls. In these circumstances, the application of substitution within a price control and the mechanism to defer investment between price controls could give rise to three key risks to consumers:

- A company might decide to reduce the volume of assets refurbished or replaced during the Price Control period, carry out the work early in a subsequent period and manage the risk in the meantime. This type of short term deferral is not necessarily in the interest of consumers. It might also create a perverse incentive for the company to inflate the activity volumes proposed in a Price Control to then benefit through the deferral mechanism. Since the assets to be refurbished or replaced are not itemised, consumers risk paying for the same work twice.
- A company might decide to refurbish or replace items with a low unit cost in one price control and defer the replacement of higher unit cost items to a subsequent price control. The company would obtain a financial benefit through the cost risk sharing mechanism and then make a case for an increase in the unit cost for work which is carried out in a subsequent price control. Consumers might be equally well served if the company delivered at an average unit cost rate over the medium term rather than at a lower unit rate in the short term.
- Through the substitution mechanism, a company might decide to substitute out items whose likely cost is higher than the unit rate implied in Annex P to fund additional items where the likely cost is expected to be lower than the unit rate implied in Annex P. This could suggest that the price control outputs have been delivered at lower cost while maintaining the value of unit rates to inform the determination of subsequent price controls. However, consumers may have been better served if the substitution had not taken place.

14.18 Overall, a future assessment of deferral and pre-funded costs could be made more complex by the introduction of a substitution mechanism.

14.19 In the draft determination we set out some principles we would apply when determining the outcome of the substitution and deferral mechanisms at the end of RP6. In its response to the draft determination NIE Networks raised a number of points on the approach we had set out with particular emphasis on:

- the use of the lower of the unit costs provided for in Annex P and out-turn unit costs in assessing 'fair value' in substitutions;
- the expectations with regard to volumes and unit costs in RP7;
- the approach to the treatment of substituted volumes of work as pre-funded costs; and,
- the approach to the assessment of substituted expenditure at the end of the RP6 period.

14.20 We have considered the feedback by the company and CCNI and have had the opportunity to carry out further analysis and testing of potential scenarios which combine substitution and deferral to identify and highlight some of the issues we would consider when we review substitution and deferral at the end of RP6.

14.21 The over-riding principle underpinning our approach is that out-performance which is shared between the company and consumers should also reveal sustainable unit cost reduction and/or activity reductions from which consumers benefit when establishing the allowances in subsequent price controls.

14.22 For example, we would generally expect lower unit costs rates revealed for an activity in one Price Control Period to be the starting point for the determination of unit cost rates in a subsequent price control. There may be good reason for the company to select low unit cost items during a Price Control. But unless this was also explicit in the business plan and accounted for in the determination of unit costs, it is not out-performance. An example of this can be seen in the determination of allowances for LV network OHL refurbishment including ESQCR improvements in RP6. The company based its estimates on the average cost of a sample of work carried out in RP5, a proposal we accepted. That sample used to calculate the average unit rate reveals a range of unit costs for different circuits. Based on the assumption that the distribution of unit costs in the sample is representative as a whole, the figure below shows the opportunity to out-perform the average unit rate by selecting the cheapest circuits. With a target of 15% in RP6, there is an opportunity to deliver the outputs for 40% of the allowance which equates to an out-performance of 60%.

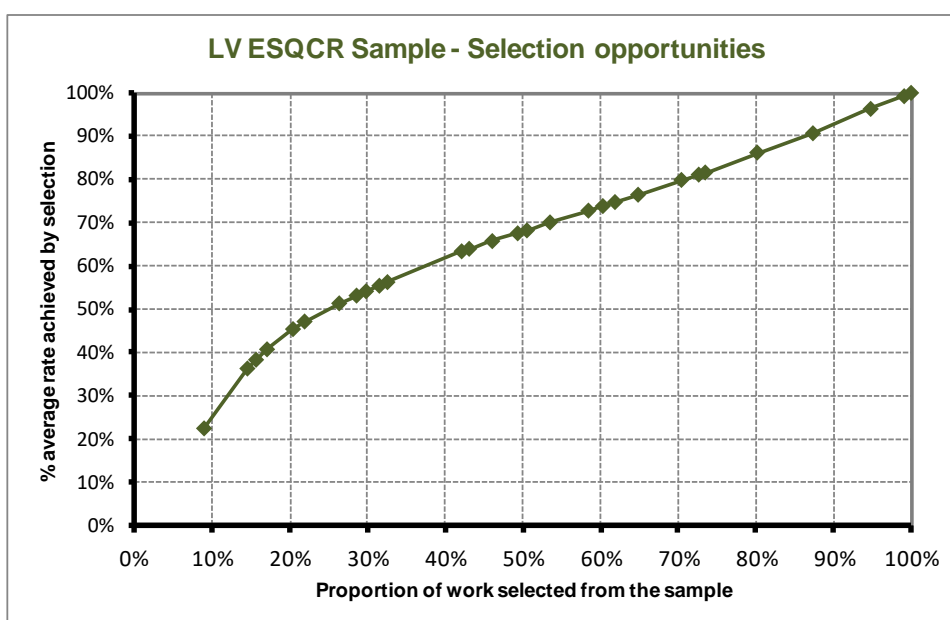


Figure 17 – Opportunities for out-performance by selection

14.23 We understand that NIE Networks will select the work undertaken on the basis of need and not opportunity and the costs will tend towards the average unit rate. However, the theoretical opportunity for out-performance by selection means that it would be difficult to determine whether a cost saving in RP6 was due to out-performance or from the choice of work undertaken. In the absence of evidence to the contrary, it would be open to the Utility Regulator to base its determination of a unit rate for similar work in RP7 on the rate revealed in RP6. If the company argued for a higher rate in RP7, it would be open to the Utility Regulator to conclude that this must reflect some element of selection in RP6 which resulted in higher unit rate work being deferred to RP7. We would then consider whether this should result in an adjustment for pre-funded costs in RP7.

14.24 In its response to the draft determination the company expressed its concern about the statement that we would use the lower of the revealed unit rate or the determined unit rate as a starting point for determining fair value in substitution. The NIE

Networks suggested that this would be unworkable as it required the company to make informed decisions on future out-turn prices which could only be known at a later date. The company suggested that this might result in NIE Networks being unable to avoid unintentional deferral of asset replacement or over delivery of outputs.

- 14.25 We recognise that we will carry out our review of substitution and potential deferral at the end of RP6 when we have a knowledge of out-turn costs. We recognise that the company must make its decisions on substitution in advance of this when it will have to make estimates of future costs. However, the driver for substitution is need and not cost. As a result, we would not expect to endorse any individual substitution decisions or unit costs at the time the decision is made by the company, but we would expect the company to provide an explanation of substitutions in its RIGs reporting.
- 14.26 The company's feedback suggests that it sees the substitution mechanism as a stand-alone mechanism that requires the active intervention of the Utility Regulator to confirm decisions at the time they are made. This is not the case. The substitution mechanism is a part of the D3 deferral mechanism which mitigates some of the company risk when faced with the need to carry out more planned network investment than envisaged in the final determination. In line with the rest of the D3 deferral mechanism, the Utility Regulator's decisions will be made at the end of the Price Control period taking account of out-turn costs.
- 14.27 The substitution mechanism will not cause the company to over deliver on outputs or create unintentional deferral. The objective is to undertake the work which is necessary. The outcome will then be subject to the mechanisms of the Price Control and the revealed unit costs and rates of asset replacement will inform our determination of the subsequent Price Control.
- 14.28 In our draft determination we noted that we would expect the company to demonstrate that it had delivered fair value in the substitution of investment and associated volumes within sub-allowances and between allowances. That is not to say that the absolute number of outputs should be maintained through the substitution process, but that the trade between sub-allowances and allowances due to substitution should be at fair value.
- 14.29 Since the draft determination, we have had the opportunity to consider further the calculation of 'fair value' substitution, analysing and testing potential scenarios which combine substitution and deferral. From this we have made some broad observations which, in the absence of evidence to the contrary, we will consider when we reach conclusions on substitution and deferral at the end of RP6:
- When the company decides to substitute out from an item whose unit cost of delivery is higher than the allowance, we would consider doing so at the (higher) revealed unit rate. This would keep the company and consumers in the position they would have been in had the substitution not taken place. It would remove any incentive to reduce delivery to avoid an activity where the unit rate is higher than the allowance.

- When the company decides to substitute into an item whose unit cost of delivery is lower than the allowance, we would consider doing so at the lower revealed unit rate. This would ensure that the company benefits from the out-performance revealed in RP6 up to the original out-put volume. It would allow consumers to benefit from the lower revealed unit rate for the additional outputs. It would also remove any incentive to increase activity volumes just because the company is outperforming the allowed unit rate for the Price Control.
- 14.30 In its response to the draft determination the company expressed its concern about the statements we made on how changes in volumes in one Price Control following substitution might inform our view of volumes in a future Price Control or our view of whether substitution was deferral. Having given further consideration to the concept of substitution at fair value, we have concluded that we do not need to make any observations on how we might take account of volumes of work in determining deferral and pre-funded allowances at the end of RP6. Information revealed in one Price Control will inform the decisions we make in a subsequent Price Control. It will be open to the Utility Regulator to make such decisions as it considers reasonable in pursuit of its duties and, when considering the impact of substitution, we will be guided by the principles of delivering fair value to consumers and that revealed information is a key starting point for future decisions.
- 14.31 We concur with the statement made by the Competition Commission when it established the deferral mechanism in the final determination for RP5: the assessment of the substitution mechanism and the determination of deferral for RP7 will not necessarily be a mechanistic process. A preliminary assessment will be undertaken for the draft and final determinations for RP7. The final determination of deferral for the RP6 Price Control period will be made once final out-turn figures for the period are available. It will be taken into account in the determination of revenues as soon as is practical, adjusted to be NPV neutral. The decision will be confirmed in the final determination decision for RP8.
- 14.32 The overall programme of planned network investment presented by the company in its business plan was distributed uniformly across the RP6 period. Our final determination is also based on a uniform rate of direct network investment over the price control period. It would be possible for the company to delay investment yet deliver all the planned investment within the price control period. However, this can only be done at some increased risk to consumers whether or not that risk is realised or whether or not it has a material impact on service in any one year within the background fluctuation in service year on year. In the draft determination, we noted that we will consider the option of retrospectively re-profiling the allowances for planned network investment in RP6 to reflect the profile of investment delivered if delivery is back-end loaded and set out our conclusions on this issue in the final determination. We have concluded that this is a reasonable step to take to ensure that the consumers do not receive the benefit of the investment they have funded later than planned while carrying the risks of a lower level of service in the short term.

Reliability incentive and Customer Minutes Lost (CML)

Introduction

- 14.33 For RP6 we propose to introduce a reliability incentive scheme.
- 14.34 Reliability incentives have been introduced by many regulators of electricity distribution and transmission, both in the UK and internationally. For example, Ofgem in GB currently have in place the Interruption Incentive Scheme (IIS), which provides a financial incentive to DNOs to improve reliability based on the number of customer interruptions per 100 customers and the average minutes without power per customer.
- 14.35 Focusing on reliability can help balance other regulatory objectives, most notably low prices for customers. While we expect NIE Networks to be efficient and ensure that prices are no higher than necessary, through regulatory mechanisms such as benchmarking, this may adversely encourage NIE Networks to reduce reliability, which would be at the detriment of customers.
- 14.36 Therefore, by introducing reliability standards and incentives, we can ensure that NIE Networks manage the trade-off between costs and reliability appropriately and in the best interest of customers.
- 14.37 At RP5, we had in place a guaranteed standards of service requirement of 24 hours which NIE Networks must meet but not a reliability incentive scheme.¹³⁴
- 14.38 For RP6, we have conducted a comprehensive review of regulatory precedent¹³⁵ and designed a reliability incentive which follows regulatory best practice. We have also refined the reliability incentive design since the draft determination to take into account consultation responses.
- 14.39 Further details on our reliability incentive and consultation responses can be found in Annex M.

Regulatory best practice

- 14.40 Based on our review of regulatory precedent we have come to a set of “best practices” that we use to develop our proposed reliability incentive:

Reliability incentive design

- 14.41 NIE Networks already reports on its performance in terms of CML and CI. Ongoing performance reporting should be complemented with an incentive scheme with financial implications (i.e. bonuses / payments).
- 14.42 While it is useful to report performance at a disaggregated level (i.e. by LV, HV and EV sub-systems), performance targets should be set a more aggregate level.

¹³⁴ Although a reliability incentive was proposed in our RP% draft and final determinations but was not followed through by CC.

¹³⁵ See Annex E.

Target setting

- 14.43 Targets should provide distributors with a challenge but at the same time should be realistic and achievable.
- 14.44 Regulators tend to set targets based on benchmarking distributors with one another and historical averages. The weighting applied to benchmarking and historical averages can differ across sub-systems.
- 14.45 It is important that we set reliability targets in a transparent manor so that NIE Networks are provided with a degree of long term certainty regarding what targets they will be asked to achieve.

Willingness to pay studies (WTP)

- 14.46 Reliability targets and incentive rates should be set using WTP studies where available. These studies will provide an indication of the value customers put on reliability.

Two-sided symmetric incentive

- 14.47 A two-sided symmetric incentive ensures that there is no cliff-edge effect. This is where NIE Networks may not invest in reliability when they are performing close to the target, even if it could lead to an increase in reliability, if they are not able to recover the costs of the investment through an incentive reward.
- 14.48 This approach also offers impartiality between the financial implications for customers and distributors.

Revenue exposure

- 14.49 Revenue exposure tends to fall in the region of 1.5% to 7% across the case-studies studies examined.

Updating of historical averages using new outturn data

- 14.50 At the draft determination, we proposed the inclusion of a deadband within the incentive design to protect NIE Networks and consumers alike from any small fluctuations in unplanned and planned CML over the regulatory period.
- 14.51 However, in NIE Networks' consultation response to the draft determination, the company recommended the removal of the deadband to avoid a cliff-edge effect and to remain consistent with the Ofgem approach at RIIO-ED1.
- 14.52 We have considered this response carefully, and have since made the informed decision to remove the deadband from the reliability incentive design.¹³⁶
- 14.53 In response to the removal of the deadband, and in order to minimise risk for NIE Networks and consumers, we will re-calculate NIE Networks' historical unplanned

¹³⁶ See Annex M for more details.

and planned CML averages over the course of RP6 based on new outturn data.¹³⁷ This approach is recommended by Meyrick and Associates (2002) to take into account uncertainty, fluctuations and asymmetric information within the reliability incentive design in place of a deadband.¹³⁸

- 14.54 As historical averages contribute to the unplanned and planned CML targets (25% and 100%, respectively), unplanned and planned CML targets will move over time.

NIE Networks' RP6 reliability incentive proposal

- 14.55 NIE Networks have proposed a reliability incentive based on CML, where 1.25% of annual distribution revenue is exposed. We discussed NIE Networks' proposal in detail in the draft determination and therefore we do not include here for brevity.
- 14.56 However, our review of regulatory precedent highlighted that there are a number of areas where NIE Networks' reliability incentive is not in accordance with best practice, and can therefore be improved upon. As a result, the Utility Regulator has designed its own reliability incentive that we believe is transparent, offers a challenging yet realistic target for NIE Networks over the course of RP6, and is in accordance with best practice.

Consultation responses

- 14.57 We have received consultation responses regarding the reliability incentive presented in the draft determination from NIE Networks and the Consumer Council of Northern Ireland (CCNI), which are summarised in Annex M.
- 14.58 The UR have considered NIE Networks and CCNI's consultation responses very carefully, and were we deem it appropriate to do so, we have adapted the design of our reliability incentive to reflect their comments.
- 14.59 All of the changes we have made for the final determination are explained in detail in Annex M, and are also reflected in our reliability incentive design described below.

RP6 Reliability Incentive

- 14.60 We have designed a reliability incentive that we believe is transparent, offers a challenging yet realistic target for NIE Networks over the course of RP6, and is in accordance with best practice.
- 14.61 We have calculated separate unplanned and planned CML targets, which is in line with Ofgem's approach at RIIO-ED1. Severe weather events have been excluded from CML as these events are outside the control of NIE Networks.

¹³⁷ However, the benchmarking analysis, which forms 75% of the unplanned CML target, will not be updated throughout RP6, and will therefore remain fixed.

¹³⁸ Meyrick & Associates, 2002. Electricity Service Quality Incentives Scoping Paper. Queensland Competition Authority.

14.62 An event is classified as a severe weather event when a minimum, verified, number of incidents affecting the distribution high voltage network linked to severe weather conditions has occurred within a 24 hour period.

- In Northern Ireland, the “commencement threshold number” means 13 times the average daily fault rate experienced by NIE Networks’ distribution high voltage network.
- In GB, severe weather events that cause the daily higher voltage fault rate to go beyond the category 1 threshold of eight times each DNO’s daily average higher voltage fault rate are excluded from CML and CI figures.

14.63 As a result, there is a slight divergence between the definition of a severe weather event in GB and Northern Ireland.¹³⁹ We mitigate for this by moving the benchmark from the upper quartile company, as used by Ofgem at RIIO-ED1, to the average performing company (as discussed below).

14.64 In addition, NIE Networks argued in their consultation response that there are other potentially exogenous factors that result in NIE Networks’ unplanned CML being higher than in GB, such as: network topology; sparsity of customer base; and that GB DNO performance data is a result of incentives being in place from DPCR3. We mitigate for these factors by moving the benchmark from the upper quartile company, as used by Ofgem at RIIO-ED1, to the average performing company. We consider the movement in the benchmark from the upper quartile to the average performing company sufficiently takes into account any exogenous differences between NIE Networks and GB DNOs that may result in GB DNOs reporting lower CMLs on average than NIE Networks (or vice versa). This decision is discussed in great detail within Annex M.

A symmetric incentive around a set target

14.65 The reliability incentive is structured as a symmetric incentive. While a deadband zone was included in the draft determination, we have decided to remove the deadband zone from the reliability incentive design for the final determination.

14.66 In response to the removal of the deadband, and to minimise risk for NIE Networks and consumers, we will re-calculate NIE Networks’ historical unplanned and planned CML averages over time based on new outturn data. The first update will occur ahead of the 2019/20 financial year.

The unplanned CML target has been set based on historical average and benchmarking with GB DNOs

14.67 We have taken the approach Ofgem decided to take at RIIO-ED1 by applying a 75% weight to the benchmark CML target and 25% to the historical average. Given customer WTP for unplanned outages is greater than planned outages, we have allocated two thirds (2/3) of total distribution revenue exposure to unplanned CML.

¹³⁹ Going forward, in collaboration with NIE Networks, the UR will consider whether it is beneficial in the long run to align the definition of a severe weather event in Northern Ireland with GB. We will also discuss with NIE Networks the possibility of reporting CML and CI figures based on both definitions during RP6 for comparative purposes.

Our approach to calculating historical averages and benchmarking is discussed below.

- **Historical averages**

- (i) The historical averages have been calculated based on the approach taken by Ofgem at RIIO-ED1.
- (ii) For LV and HV we take a four year historical average, and for EHV we take a 10 year historical average.
- (iii) A 10 year average is chosen for EHV faults to reflect the fact that there are relatively few incidents each year at the 132kv and EHV voltages, which can lead to greater volatility relative to HV and LV faults.
- (iv) Historical averages for NIE Networks will be updated on an annual basis based on outturn CML data.

- **Benchmarking**

- (i) Ofgem consider that CML per CI offers a good metric for benchmarking as this provides an average restoration time for each CI, which DNOs can influence.
- (ii) Ofgem calculate a separate CML per CI benchmark for HV, LV and EHV. For HV they choose the upper quartile; for LV they choose the average; and for EHV they choose the lower of each DNO's own CML per CI and the industry average CML per CI.
- (iii) We have been in contact with Ofgem in an attempt to gain access to disaggregated unplanned CML data for GB DNOs by sub-system but unfortunately have not received this data yet. However, this is something we will ask Ofgem for going forward into RP6. As a result, we have opted to assess CML per CI on an aggregate basis, and use the average distributor performance as the benchmark.¹⁴⁰
- (iv) Given HV outages are the largest contributor to CML and CI we believe this is a fair way to calculate the benchmark given that Ofgem use the upper quartile benchmark for HV.
- (v) Furthermore, by using the average benchmark instead of the upper quartile benchmark we also mitigate for any exogenous factors that may potentially result in NIE Networks unplanned CML being higher than if they were a GB DNO, as discussed above and in Annex M.
- (vi) Following on, to calculate the overall CML benchmark target for NIE Networks we multiply the average CML per CI across distributors by

¹⁴⁰ We use the 5-year average CML per CI for each distributor over the period 2011/12 to 2015/16 to derive the benchmark.

NIE Networks' 5-year average CI over the period 2011/12 to 2015/16. The use of a 5-year average CML per CI, and CI, is to reflect the differences in our approach to historical averaging (discussed above) across different distribution sub-systems - HV (4 year average), LV (4 year average) and EHV (10 year average).

Planned CML target is based on a 5 year historical average¹⁴¹

- 14.68 Given planned CML will be correlated with the level of capital investment, which will vary across distributors, benchmarking with GB DNOs would not be appropriate in this instance.
- 14.69 We have chosen a 5 year historical average to reflect the differences in our approach to historical averaging across different distribution sub-systems - HV (4 year average), LV (4 year average) and EHV (10 year average).
- 14.70 Given customer WTP for planned outages is less than unplanned outages, we have allocated one third (1/3) of total distribution revenue exposure to planned CML.

Target

- 14.71 Both planned and unplanned CML targets are challenging but also realistic and achievable.
- 14.72 We have applied the target over a glide path rather than as a P^0 adjustment to reflect the fact that there is likely to be a lag between the implementation of the reliability incentive and improvements in CML. This approach is in accordance with regulatory precedent.
- 14.73 As discussed, the unplanned and planned CML targets will be automatically updated on an annual basis. This is to reflect the updating of historical averages to take into account new outturn data. See Annex M for more details.

VOLL based on WTP studies.

- 14.74 We have set the VOLL, used to derive the cost of CML, using the most recently published estimate of VOLL for domestic customers in Northern Ireland of £15.3 per kWh.¹⁴² For the purposes of this final determination, we are labelling this "Networks VOLL".

Revenue exposure and risk.

- 14.75 Given the reliability incentive will be implemented for the first time in Northern Ireland during RP6 we have set the annual distribution revenue exposure to 1.5%, which is towards the lower end of the range identified in our regulatory review and in accordance with the draft determination.

¹⁴¹ With further more recent data we may be in a position to update for the final determination.

¹⁴² Reckon, 2012. Desktop review and analysis of information on Value of Lost Load for RIIO-ED1 and associated work. £14 per KWh is published in the report, which we have increased in line with RPI inflation. See Annex M for more details.

14.76 Furthermore, to manage uncertainty for both NIE Networks and customers, historical averages will be updated on an annual basis once the reliability incentive commences in 2018/19, with the first update applying to 2019/20. As a result, NIE Networks' unplanned and planned CML targets will also be updated on an annual basis to reflect changes in historical averages. See above and Annex M for more details.

NIE Networks' 2018/19 unplanned and planned CML targets

14.77 NIE Networks' unplanned and planned CML targets, which will be in place for the 2018/19 financial year, are displayed in the table below. As mentioned, we propose to introduce the reliability incentive in 2018/19 to avoid any seasonal effects, and will be updated on an annual basis to reflect changes in historical averages.

14.78 The unplanned CML target decreases by approximately 8.4% from the company's current average CML, which we believe is both challenging yet realistic and achievable. This target is significantly less challenging than many of the CML targets set by Ofgem at RIIO-ED1. For example, SPN's unplanned CML target at the end of the RIIO-ED1 period is approximately 38% less than their current average.

DNO	Current Average	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Unplanned CML target	58.68	57.86	57.05	56.23	55.42	54.60	53.79
Planned CML target	57.87	57.87	57.87	57.87	57.87	57.87	57.87

Table 91: NIE Networks' unplanned and planned CML targets during RP6

14.79 To calculate the incentive rate we have used WTP studies to arrive at an estimate of average VOLL across Northern Ireland electricity customers. VOLL can be used as an indicator of the average willingness of electricity consumers to pay to avoid an additional period without power. Four potential WTP/VOLL estimates have been identified:

- NIE Networks' proposed VOLL of £17.5 per KWh based on an ESRI report. This is an estimate for domestic customers only and does not take into account the varied WTP/VOLL across different types of customers (i.e. domestic versus non-domestic). However, this VOLL estimate appears to be over inflated.
- Reckon advised Ofgem at RIIO-ED1 on VOLL by conducting a desk-top review of information on the VOLL.¹⁴³ This study reviewed a paper by Tol et al. (2010), which produced an estimate of the VOLL for the Republic of Ireland and Northern Ireland, and is the same source used by NIE Networks (see above). Reckon converted Tol et al.'s estimate into pound sterling and found the VOLL for residential customers to be £14 per KWh; for commercial customers was £10.10 per KWh; and for industrial customers was £3.1 KWh (January 2012 prices). This

¹⁴³ Reckon, 2012. Desktop review and analysis of information on Value of Lost Load for RIIO-ED1 and associated work.

VOLL estimate increases to £15.30 per KWh in 2015/16 prices once RPI inflation is taken into account.

- Ofgem used a single WTP/VOLL measure for all DNOs and transmission companies at RIIO-ED1 and RIIO-T1 of £16 per KWh. This is based on a number of WTP studies and learning over time given the IIS in GB has been in place for many years. This increases to approximately £17.9 KWh once RPI inflation is taken into account.
- SEM committee publish an annual VOLL estimate, which is based on a 2007/08 study. The study identified a VOLL of €10 per KWh, which was valid for the period 1st November 2007 to 31st December 2008. Converting to pound sterling using the average November 2007 to December 2008 exchange rate (£1 ≈ €1.28) produces a VOLL of approximately £7.82 per KWh. Increasing in line with RPI produces a VOLL estimate of approximately £9.48.

14.80 Based on these estimates of VOLL we propose to take the Reckon VOLL estimate of £15.30 per KWh to derive CML incentive rates, which the Utility Regulator is labelling the Networks VOLL. This estimate provides the most recent estimate of VOLL in Northern Ireland. This estimate falls below the estimate of WTP/VOLL used by Ofgem at RIIO-ED1 and RIIO-T1, which recognises that the WTP by Northern Ireland customers for increased reliability is less than in GB.

14.81 While we did consider using the SEM committee's measure of VOLL, this measure of VOLL is used when setting capacity payments in the SEM, and is based on the fixed and variable costs of a peaking plant and not the willingness to pay of consumers for improved reliability. As a result, we deemed it more appropriate to use the Reckon VOLL estimate to set the CML incentive rate, which we are labelling Networks-VOLL for this final determination.

14.82 We have used this estimate of VOLL to arrive at a cost estimate for unplanned CML of approximately £241,031. The cost estimate of planned CML is 50% of this amount at £120,516 to reflect the fact that customers assign less value to pre-arranged outages.

14.83 Using these figures and total annual exposed revenue we calculate the CML cap and floor of approximately +/- 7.31 CML either side of the unplanned and planned CML targets.

14.84 The assumptions and calculations we have used to arrive at these estimates are presented in the table below:

Table 92: Input assumptions and calculations used to calculate the CML incentive rate

Input Assumptions		
Variable name	Figure / Calculation	Source
Annual electricity consumption	7,820,605,400 kWh (2014/15)	Department for Business, Energy & Industrial Strategy, 2016.
Number of meters installed	837,710 (2014/15)	Department for Business, Energy & Industrial Strategy, 2016.
Customer numbers	889,212	NIE Networks
Value of lost load (VOLL)	£15.3 per kWh	Reckon RIIO-ED1 review report ¹⁴⁴
% of total distribution revenue exposed	1.5% = £2.71 million	Based on average annual distribution revenue over the RP6 period, in 2015/16 prices ¹⁴⁵

Calculations		
Variable name	Calculation	Details
Average consumption per customer per hour	1.07 kWh	Annual electricity consumption / number of meters / total hours in a year
Cost per hour per customer	£16.26 per kWh	VOLL * Average consumption per customer per hour
Cost of customer hour lost	£14,461,879	Customer numbers * cost per hour per customer
Cost of customer minute lost (unplanned)	£241,031	Cost of customer hour lost / 60
Cost of customer minute lost (planned)	£120,516	Cost of unplanned CML * 0.5
Unplanned CML cap/floor	7.49 CML	(i) Unplanned CML revenue exposed = total exposed revenue * 2/3 = £1.81 million (ii) Unplanned CML cap/floor = unplanned CML revenue exposed / cost of unplanned CML = 7.49
Planned CML cap/floor	7.49 CML	(i) Planned CML revenue exposed = total exposed revenue * 1/3 = £0.90 million (ii) Planned CML cap/floor = Planned CML revenue exposed / cost of planned CML = 7.49

¹⁴⁴ Reckon, 2012. Desktop review and analysis of information on Value of Lost Load for RIIO-ED1 and associated work. Increased in line with RPI.

¹⁴⁵ Final determination figure.

14.85 The UR's reliability incentive is summarised in the two charts below for unplanned and planned CML. It is important to note that these diagrams will change year-on-year throughout RP6, with the first update occurring ahead of the 2019/20 financial year to reflect updated historical averages, as discussed.

14.86 In accordance with NIE Networks, we have set the reliability incentive scheme to commence in 2018/19 to avoid any seasonal effects:

- The cap and floor are illustrated by the solid green lines.
- The solid blue line shows historical outturn CML up until the end of 2016/17, and target CML through the RP6 period.

Figure18: UR's unplanned CML reliability incentive

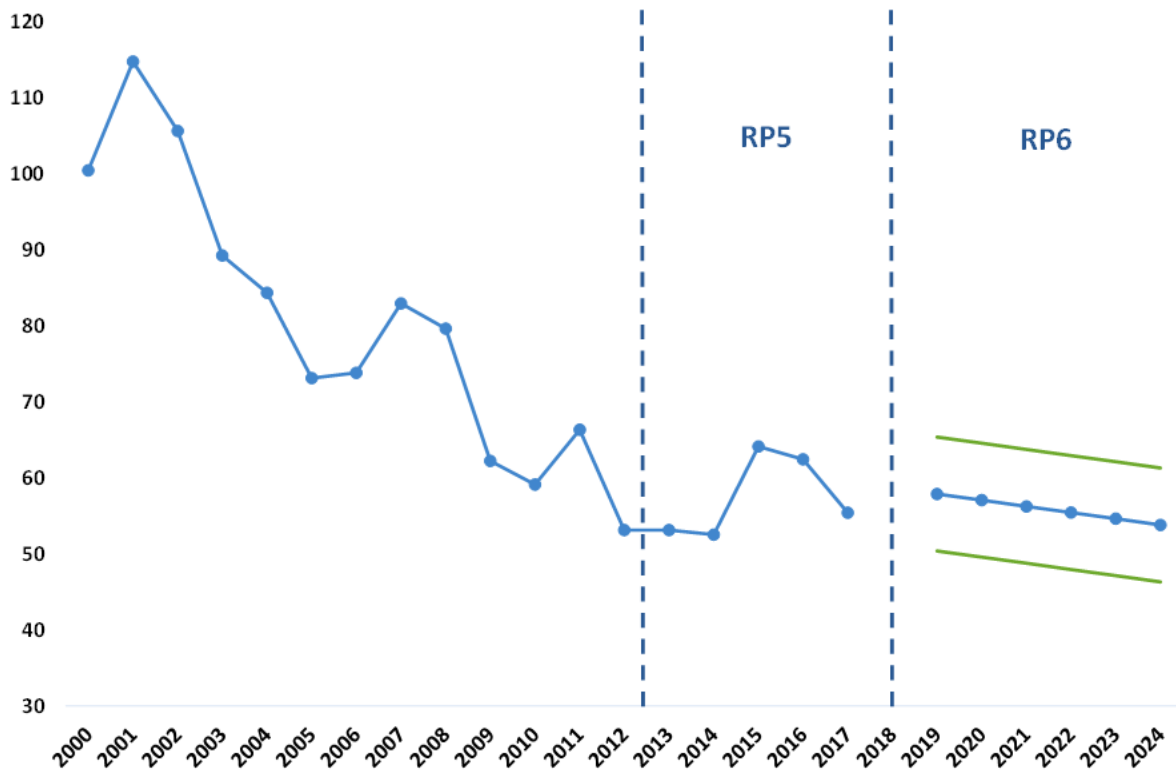
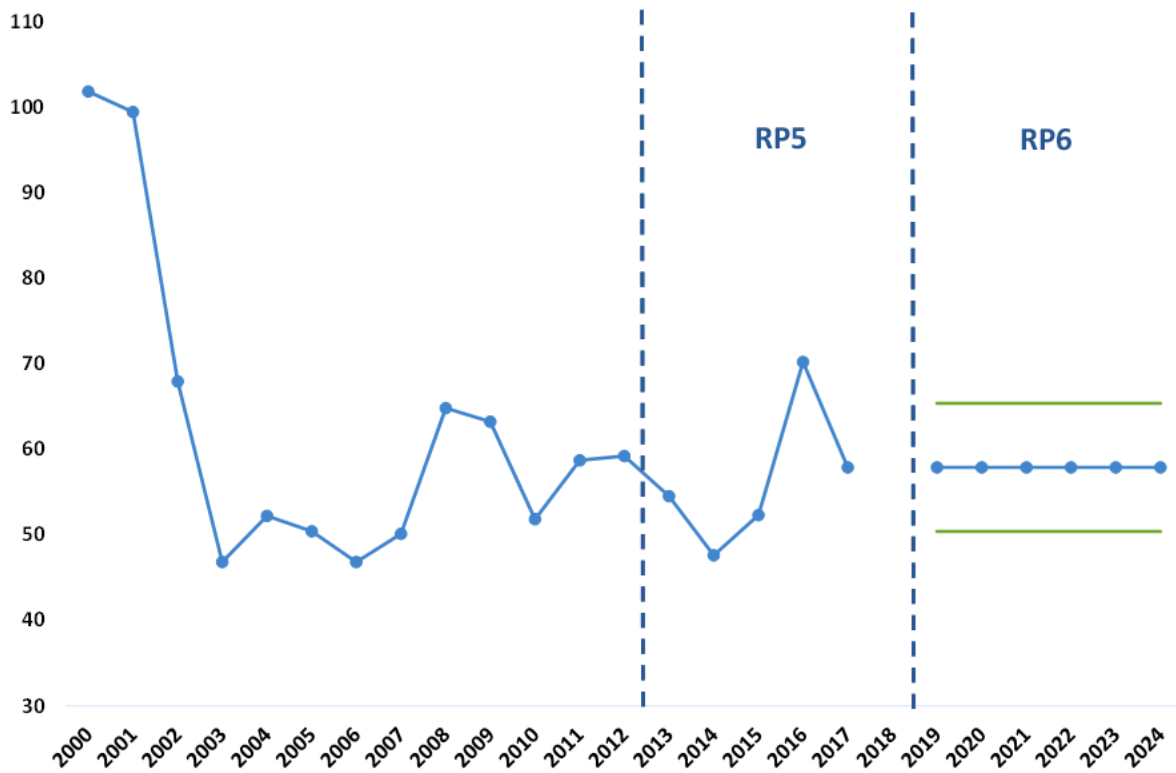


Figure19: UR's planned CML reliability incentive



Next steps

- 14.87 As mentioned previously, the reliability incentive we propose will be not be introduced until 2018/19 to avoid any seasonal effects caused by the initial 6 month period.
- 14.88 Unplanned and planned CML targets will be updated yearly to reflect changes in NIE Networks' historical averages. We shall invite the company to discuss their eventual annual reporting of unplanned and planned CML, success or otherwise as against our targets and our subsequent revision of targets for more recent CML performance, using our moving averages approach.

Conclusion

- 14.89 The design of the reliability incentive mechanism has been formerly added as a modification to NIE Networks' licence. We are introducing this reliability incentive on a trial basis for RP6 given we wish to test how the incentives perform first, before we consider any further incentives at RP7.

Revenue protection

- 14.90 Our position for the final determination has not changed from that of the draft determination with regards to revenue protection incentive. As noted in the draft determination (Annex N, paragraph 10.13) we are in agreement that it would be ideal to have an incentive that worked to incentivise NIE Networks to keep losses from theft as low as possible. However under the proposed arrangement it is our view that NIE Networks would not be incentivised to actively deter theft.
- 14.91 Rather NIE Networks would only be incentivised to identify and stop theft once it has already occurred. We consider that the design of an incentive mechanism to deter theft would be complex. This was the case in GB where there was difficulty in developing an appropriate incentive mechanism for energy theft.
- 14.92 Rather than designing a new arrangement we consider that the arrangements already in place, or planned work in this area, are sufficiently adequate for NIE Networks to address electricity theft, namely the:
- current incentive arrangement where NIEN continue to keep 50% of the revenues recovered from premises that are not supplied with electricity from a registered supplier.
 - Keypad Meter Replacement for Theft programme (as discussed in Chapter 11)
 - Energy Theft Codes of Practice
- 14.93 We expect that the working group set up to develop the procedures under the Electricity Theft Code of Practice will make further recommendations and promote industry best practice.

14.94 Also, in terms of reporting progress against electricity theft, the second Energy Theft Codes of Practice Consultation paper proposes that licensees would be required to provide a retrospective Energy Theft Compliance Report. We will consider how this would best be monitored in our discussions with stakeholders, including consideration of reporting and commentary against losses.

Customer service incentive

14.95 As discussed above at paragraph 4.23 NIE Networks has expressed a desire to continue to work with the Utility Regulator to develop its existing customer surveys, perhaps to facilitate the consideration of a RP7 incentive around customer satisfaction scores.

14.96 Rather than rush to introduce a customer service incentive at RP6 without any accompanying time series of NIE Networks' performance, we have included new customer advocacy and survey metrics within our RP6 developmental objectives.

14.97 The next stage in developing and evolving the nature of reporting on NIE Networks will be the development of the RP6 Monitoring Plan. With regards the development and trialling of new consumer metrics, the collaborative partnership vehicle or Consumer Engagement Advisory Panel (CEAP) is expected to provide the necessary oversight and scrutiny prior to our commenting on company progress within our Annual Cost and Performance Reports.

14.98 Once we have established a reliable time series of customer service performance, especially around such fundamentals as customer satisfaction and customer advocacy, we intend to review the need for a customer service incentive around RP7.

Distribution losses incentive

14.99 The company does not believe it would be appropriate to introduce a loss of electricity incentive during RP6, since NIE Networks believes it would be very difficult to establish a baseline for a losses incentive during RP6.

14.100 The Utility Regulator agreed with the above and there is no change since the draft determination although as noted we consider there is merit in monitoring and reporting against on losses.

15 Future reporting requirements

Key changes from draft to final determination

15.1 The key change from our draft has been our focus on ensuring the company improve data assurance throughout RP6.

Data assurance

15.2 During the latter stages of our benchmarking of Indirects and IMF&T costs, NIE Networks informed us that it had audited its data systems and discovered a number of material errors (both positive increases and negative reductions), resulting in significant changes to the 2015/16 Indirects baseline.

15.3 This has given rise to concerns over the quality of data assurance within NIE Networks and we view it as appropriate to address this in future reporting requirements.

15.4 Unless data assurance is improved during RP7, the Regulator will consider the appropriate next steps which may include similar data undertakings to those previously applied NI Water during its early years as a regulated company.

15.5 During RP6 we shall expect the following to be both included in our RP6 Monitoring Plan for development and eventual submission, well in advance of preparing for the company's next price control at RP7:-

- examination and review of NIE Networks' own audit reports, both internal and external
- Director level sign-off of any further and future regulatory reports
- Data Assurance Plans and milestones to achieve reliable, actionable data, including but not limited to the following:
 - iii. CML (feeding the new Reliability Incentive);
 - iv. consumer satisfaction ratings and surveys (new development objective for RP6);
 - v. ICT investment, payback from efficiencies and benefits (such as enhanced reliability and automatic data assurance); as well as an
 - vi. Data Assurance Plan to include milestones for improved data assurance and audit across the RP6 period

Worst Served Customers (WSC) definition

- 15.6 See paragraph 4.46 where the WSC is included alongside other important developmental objectives for the RP6 period.

Asset management development

- 15.7 See paragraph 4.52 where we have identified a development objective in respect of asset management. We expect this to include the development of reporting on Asset Health indices.

CML / Reliability Incentive

- 15.8 See paragraph 14.33 where we detail our proposed reliability incentive and its introduction during the RP6 period.

Annual Cost Reporting

- 15.9 We expect to review the performance of NIE Networks for the entire RP5 period and produce a Cost and Performance report towards the end of 2018. We expect that the report will review NIE Networks' performance on opex, capex and outputs for the RP5 period.
- 15.10 We plan after the review of RP5, to produce an Annual Cost and Performance report each year for RP6, to monitor progress of performance against regulatory allowances, to enable better transparency for all stakeholders. This process has been in place for a number of years for Water reporting and there are established reporting templates in place which feed into reporting the Cost and Performance reports for annual and price control performance.
- 15.11 As RP6 commences mid-way through the normal reporting cycle, which is normally at the end of March, we will need to consider whether it is appropriate to review and report on either a ½ year or 1½ years performance.
- 15.12 We will be considering the format of RP6 RIGs reporting templates for NIE Networks to populate to enable performance against Price Control objectives, allowances and performance in the near future. The RP6 RIGs template will inform our annual Cost and Performance report and we will be able to monitor and compare financial year and price control performance going forward. We intend working in conjunction with NIE Networks and relevant stakeholders to develop suitable reporting templates. We expect that the annual and price control period Cost and Performance reports may cover, but may not be limited to the areas documented below:

Operational Costs and Efficiencies

- 15.13 We will report how NIE Networks has performed in terms of its cost and levels of efficiency against price control allowances and targets, using the benchmarking

approach we developed with CEPA during this price control. We intend measuring NIE Networks' relative efficiency from year to year, using their latest outturn data.

- 15.14 It is anticipated that this area will also cover key financials including gearing, financial indicators, RAB aspects, operational performance and relative level of efficiency. The performance in key areas would be compared against price control allowances and targets.
- 15.15 We will also update real price effects assumptions against actual figures, especially important when establishing whether any out-performance of the RP6 determination represents real efficiencies rather than any fortuitous cost movements.

Capital Expenditure

- 15.16 This area would cover key areas of capital expenditure by nature and purpose against price control allowances and targets.

Outputs

- 15.17 It is expected that this section would cover performance against key performance metrics and indicators and we expect to work in conjunction with the company and relevant stakeholders to develop suitable reporting metrics.

Uncertainty

- 15.18 This would be expected to report on any areas of uncertainty which have arisen during the price control and / or financial year which was not anticipated or entirely certain and/ or measurable at the determination point. This would be expected to cover areas where funding has been allocated/ removed from price control allowances and may include areas such as the D mechanism and 50:50 cost sharing mechanisms and other suitable mechanisms in place for such scenarios.

Customer Service

- 15.19 This area would be expected to cover customer service performance over the period as compared to historic and/ set performance targets in this remit.

GSS

- 15.20 We would expect to receive information annually on payments made to customers under the existing GSS regime (including ex gratia payments), together with information on how long it takes the Company to get customers back on supply following a fault or severe weather incident.

Conclusion and recommendations for future reporting

- 15.21 This would be expected to cover key conclusions on costs and performance against price control allowances, targets and metrics and recommendations for future reporting. We would consider areas where there is merit in altering future reporting and/ or monitoring mechanisms, areas of significance, areas for improvement and may include lessons learnt.

16 Licence implications

Licence modifications and appeals (LMA) process

- 16.1 The relatively new LMA process requires we consult regarding the RP6 licence using a 2-stage process. The first stage shall end x28 days after our final determination publication and Licence Modification Notice issue on 28 June 2017. The second stage ends 29 September 2017 exactly x56 days after our Licence Notice of decision on how to proceed is published on 4 August 2017.
- 16.2 Our second stage ends just prior to 1 October 2017, just in time to ensure the RP6 licence (assuming NIE Networks accepts our final determination) is in place to ensure the RP6 effective date begins on the first day of the new RP6 regulatory period.
- 16.3 With the above end date in mind, there is a small period to allow due consideration of responses to our licence consultation of the RP6 licence modifications. As stated previously at paragraph 2.25, we consulted with the company and stakeholders concerning our amended RP6 timetable (see Figure 1 above).
- 16.4 The Regulator's web-link to the licence modifications can be found at <https://www.uregni.gov.uk/rp6-licence-modifications>

Annexes

[Annex A – CEPA Regional Wage Adjustment](#)

[Annex B – CEPA Efficiency Modelling](#)

[Annex C – Frontier Shift: real price effects & productivity](#)

[Annex D – GEMSERV Market Ops Non-Network IT Assessment](#)

[Annex E – GEMSERV Non Network IT Assessment](#)

[Annex F – Pensions Annex](#)

[Annex G – GAD report on Pensions](#)

[Annex H – Rate of Return Adjustment Mechanism](#)

[Annex I – Rate of Return Adjustment Mechanism Model](#)

[Annex J – First Economics report](#)

[Annex K – RP5 financial model \(latest position\)](#)

[Annex L – RP6 financial model](#)

[Annex M – Reliability Incentive](#)

[Annex N – Metering](#)

[Annex O – Assessment of Network Investment Direct Allowances](#)

[Annex P – Planned Network Investment Volumes and Allowances](#)