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Annex 26:
Small company benefits

This appendix sets out analysis and evidence of additional national benefits to consumers and higher efficient costs incurred regionally of operating as a single licensee distribution network operator compared to a multi-licensee group model.

ENWL is the only single licensee area DNO Group.

December 2021

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Introduction

We, Electricity North West, are the only electricity distribution network operator (DNO) that operates in a single licensee area. We're proud of the essential role that we play and the investment we make locally and nationally to ensure we keep phones charged, TVs streaming and 2.4 million homes warm for our five million customers.

Our ED2 business plan builds on our proud track record in ED1. We have as part of our business plan development considered the impact of our single licensee status and how this translates into benefits to consumers, often felt nationally, as well as any potential additional efficient ENWL operating costs to ensure that we continue to be able to provide the high levels of service to our consumers.

To do this we commissioned Economic Insight, a leading economics consultancy firm, to undertake an independent assessment of the benefits and costs associated with a single licensee operating model. The assessment covers both a peer review of evidence collated to date by ourselves and by other independent experts on this subject matter, as well as new quantitative and qualitative assessment undertaken for this appendix by Economic Insight themselves.

The conclusion reached by Economic Insight is that the presence of Electricity North West and our unique operating model delivers benefits to all consumers through Great Britain as well as the consumers we serve in our licensee operating region. It further concludes that as a consequence of operating a single licensee model that there are some additional efficient costs that are incurred above those DNO's operating as part of a group model. It is summarised that these should be carefully considered and can be accommodated in the assessment and setting of regulatory allowances. The report considers this to be worthwhile given the substantial informational and monetary benefits that flow to all national DNO consumers as a consequence of our single licensee status.

We welcome the consideration of this evidence as part of our business plan and would be happy to discuss with Ofgem how our single licensee status can be appropriately accounted for in the assessment of, and allowances set, as part of our business plan determinations and settlement for the RIIO-ED2 period.

Full report - Benefits and costs of the single-licensee model, Economic Insight, April 2021

The full report is provided after this point.

Economic Insight

March 2021

Economic Insight Ltd

BENEFITS AND COSTS OF THE SINGLE-LICENSEE MODEL

Report for Electricity North West Limited Draft ED2 Business Plan

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1. Introduction and executive summary

Electricity North West Limited (ENWL) is unique, as it is the only single-licensee Electricity Distribution Network Operator (DNO) in Great Britain. The evidence set out in this report shows that the most significant benefits of the single-licensee model flow to customers across Great Britain, while the associated costs are incurred by ENWL and its customers.

We estimate that the aggregate benefits are sizeable, and have identified a range for quantifiable benefits of £34 million to £68 million per year. Accordingly, Ofgem should recognise the benefits of the single-licensee model and develop and apply its price control methodology in a way that allows ENWL to incur and recover the efficient costs associated with it, given the sizeable benefits that accrue to customers across Great Britain.

The evidence shows that the benefits of the single-licensee model are significant.

ENWL appointed Economic Insight to undertake an independent expert assessment of the social benefits and costs associated with its single-licensee model. Our work, which was undertaken in late 2020 and early 2021, involved a comprehensive review of a wide range of existing evidence as well as undertaking our own new analysis.

The evidence shows that the majority of the benefits of ENWL's single-licensee model accrue to all customers across Great Britain, while the material additional efficient costs are incurred by ENWL and its customers.

The benefits to customers across Great Britain are ultimately in the form of lower prices and higher service quality. ENWL's single-licensee model unlocks these benefits on a national basis by increasing the information available to Ofgem, and also by increasing ENWL's ability and incentive to innovate and facilitate competition.

The single-licensee model increases the information available to Ofgem.
As a single-licensee, ENWL provides an additional 'point of comparison' for Ofgem to use in its price control process. This additional information helps reduce the uncertainty associated with setting efficiency and other targets, and so increases Ofgem's ability to set suitably stretching ones. Chapter 2 sets out our assessment of the evidence for informational benefits.

The single-licensee model is associated with higher innovation.
Academic literature suggests that leaner and flatter organisational structures can increase innovation. ENWL's projects such as CLASS and Smart Street demonstrate its commitment towards deploying innovative techniques at scale, benefitting GB customers as well as ENWL's own customers. Chapter 3 sets out our assessment of the benefits associated with higher innovation.

The single-licensee model is associated with greater competition.
The evidence shows that ENWL is more effective at promoting competition within its distribution area than other DNOs. For example, based on the available evidence to date,[1] ENWL has the highest success rate of 'relevant market segment applications' for enabling competition in connections amongst all of the DNOs. Chapter 3 sets out our assessment of the benefits associated with greater competition.

We estimate that the quantifiable informational benefits associated with ENWL's single-licensee model amount to £34m - £68m per year, with additional benefits that we have not quantified associated with higher innovation and greater competition. These benefits accrue to customers across Great Britain.

ENWL faces additional efficiently incurred costs because of the single-licensee model

To maintain its single-licensee model and deliver these benefits, ENWL faces additional efficiently incurred costs that other DNOs do not.

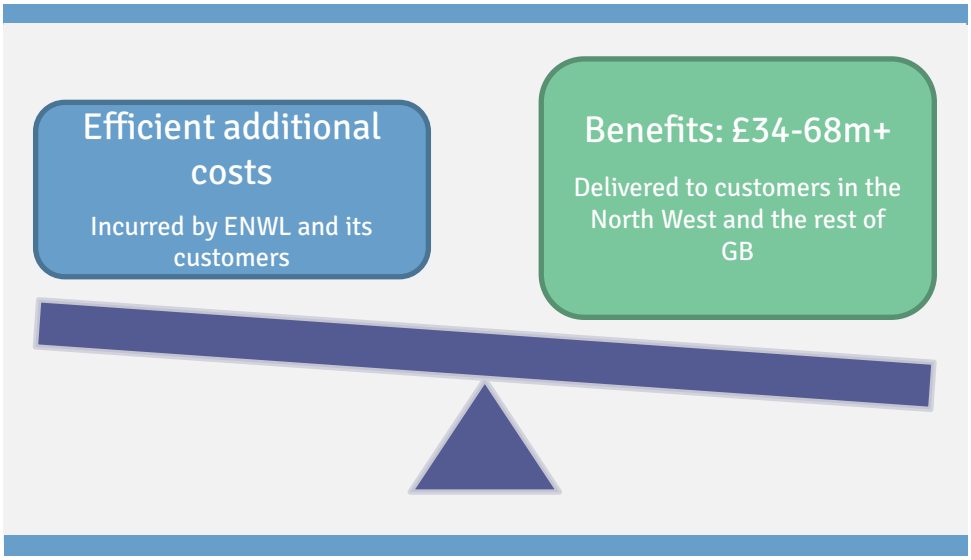
- Certain types of opex such as business support costs and closely associated indirects include a fixed component that, unlike other DNO groups, ENWL is unable to spread across multiple licensees.
- The relatively smaller scale associated with the single-licensee model means that the efficient level of some financing (debt and equity) costs are higher.

Unlike the benefits associated with the single-licensee model, these additional efficiently incurred costs are borne by ENWL and its customers. They are also material for a company with a single-licensee model, and should therefore be given due attention in the price control process. Chapter 4 sets out evidence on the additional efficient costs associated with ENWL's single-licensee model.

[1] *We use Ofgem's assessment of ENWL competition test submissions from 2011-2014.*

Whereas the bulk of the benefits associated with ENWL's single-licensee model flow to customers across Great Britain, the efficient additional costs associated are incurred solely by ENWL and its customers, as we summarise in the diagram below.

Figure 1: Benefits and costs of the single-licensee model



Source: Economic Insight

Ofgem should recognise the GB-wide consumer and regulatory benefits of ENWL's single-licensee business model and ensure efficiently incurred additional costs can be recovered.

The scale of the benefits accruing to customers across Great Britain means that there is a compelling public value case[2] for Ofgem allowing ENWL to recover the efficiently incurred incremental costs associated with a single-licensee model. This would ensure that the benefits of the single-licensee business model continue to flow to ENWL's customers and (through Ofgem) to customers across the country.

In practical terms, this requires Ofgem to recognise the benefits of the single-licensee model and apply its price control methodology in a way that allows ENWL to recover the efficient additional costs associated with it. Ofgem could address this through cost modelling within the cost assessment process, and/or through ex-post adjustments or bespoke arrangements. This should also be taken into account when Ofgem considers the financial policy aspects of its RIIO-ED2 price controls.

Structure of this report

The rest of this report is structured as follows.

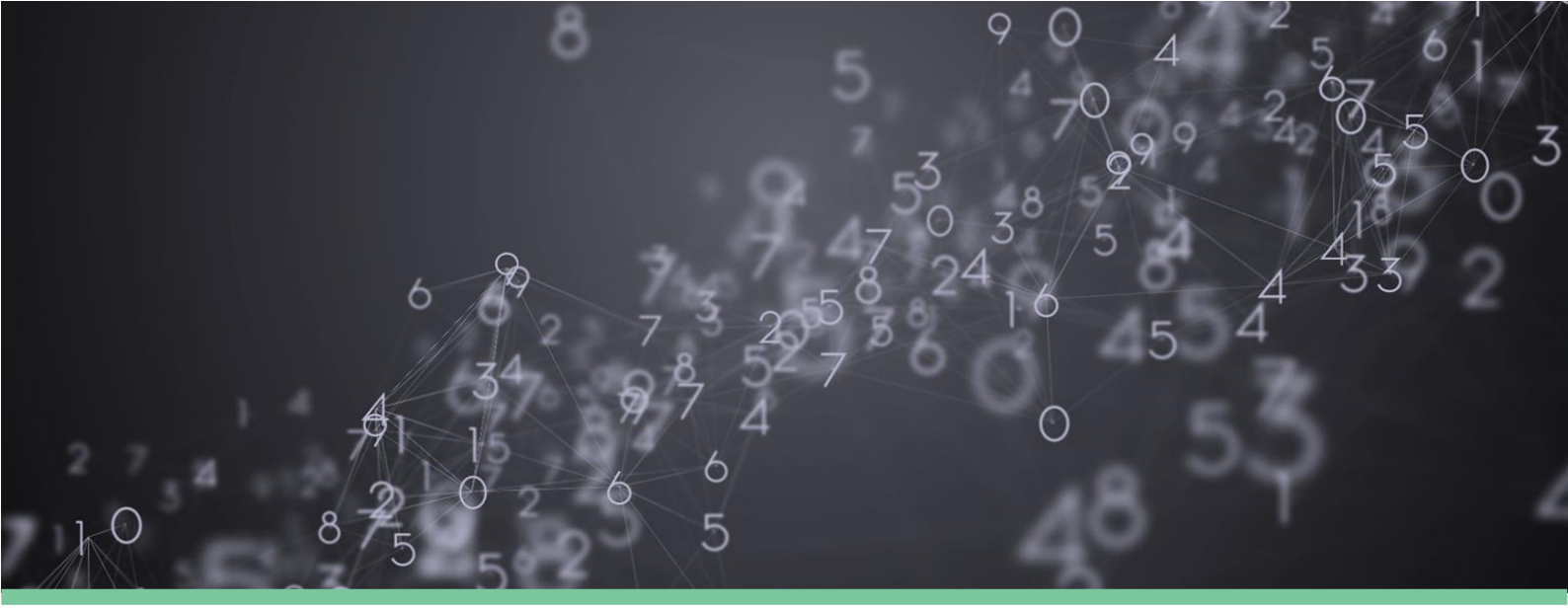
- Chapter 2 sets out the informational benefits associated with ENWL's existence as a DNO with a single-licensee model.

[2] *Value that ENWL contributes to the wider society in addition to its own customers.*

- Chapter 3 details benefits associated with ENWL's greater focus on actions that deliver benefits to customers than would be possible under a multiple-licensee model.
- Chapter 4 presents evidence on the additional efficient costs of ENWL's single-licensee model, focusing on fixed costs within totex, and additional finance costs.
- Chapter 5 sets out our conclusions on the benefits and costs of ENWL's single-licensee model.
- Chapter 6 provides an annex, which sets out further evidence from preceding chapters.

Click on blue boxes such as this one to see relevant supporting information in the annex.

Purple boxes at the end of each section set out our main conclusions.



2. A single-licensee model confers unique informational benefits

Informational benefits arise because, as a single-licensee that is independent of other DNO groups, ENWL provides information that would not otherwise be available. This information is relevant for the Electricity Distribution sector as a whole, supporting Ofgem in developing and applying its regulatory framework, meaning that associated benefits accrue to customers across Great Britain.

ENWL's strong cost efficiency performance also reveals additional information about the performance frontier. This means that ENWL helps to drive the efficiency challenge for the sector as a whole. We estimate that the quantifiable benefits outlined in this chapter, delivered to customers across Great Britain, could be in the region of £34 million to £68 million per year.

2.1 Benefits associated with an additional point of comparison

The benefits of having an additional point of comparison arise for three main reasons, as set out below.

'A merger will also result in a reduction in the number of opinions/views within the sector which can be very useful for making progress in introducing new ideas or generally in policy development itself.'

Ofgem merger policy statement

- The existence of ENWL as a single-licensee DNO **increases diversity in the Electricity Distribution sector and facilitates the sharing of best practice within the sector.** For example, Ofgem states that having several opinions and views in the industry "*can be very useful for making progress in introducing new ideas or generally in policy development itself*".[3] This benefit is likely to be especially significant for ENWL because, as we set out in section 3, the single-licensee model encourages ENWL to pursue a targeted approach to innovation and meeting its stakeholders' needs through the service levels provided.

[3] *See Ofgem merger policy statement: https://www.ofgem.gov.uk/ofgem-publications/50645/merger-policy-statement-pdf*

THE EXISTENCE OF ENWL AS AN INDEPENDENT DATA POINT REDUCES STATISTICAL UNCERTAINTY

- ENWL's independence from other DNO groups **increases competition within the Electricity Distribution sector.** Although firms do not compete for customers, management teams respond to reputational incentives and compete to be sector leaders in areas including innovation and cost efficiency.[4] This benefit is likely to be especially significant in ENWL's case because, as we set out in section 3, ENWL is a sector leader in areas including innovation and facilitating competition. The presence of ENWL as an independent data point also increases the effectiveness of regulatory incentives based on comparative performance (such as the Time to Connect incentive).

- ENWL's status as a single-licensee DNO means that it constitutes an additional, independent data point within the industry. This **mitigates the extent of uncertainty in regulation,** enabling revenue allowances to be set closer to the level that maximises customer benefits (if the regulatory framework is appropriately calibrated).

Our analysis indicates that excluding ENWL as an independent data point from econometric analysis of sector costs would increase standard errors (a measure of statistical uncertainty) by 20% (see section 6.2 for calculations). Uncertainty reduces regulators' ability to distinguish between genuine high performance and statistical noise, and so constrains their ability to set suitably challenging and robustly justified efficiency benchmarks. The impact of a less challenging benchmark could be significant. We calculate that a median benchmark (rather than upper quartile) for example would have increased ED1 slow track totex allowances by £540 million or 2.5%, over a period of 8 years (equivalent to £68 million per year). See section 6.1 for details.

For more details of our assessment of the benefits associated with an additional point of comparison, see section 6.1.

2.2 Information revealed about performance frontier

ENWL'S HIGH LEVEL OF COST EFFICIENCY REVEALS INFORMATION ABOUT THE PERFORMANCE FRONTIER

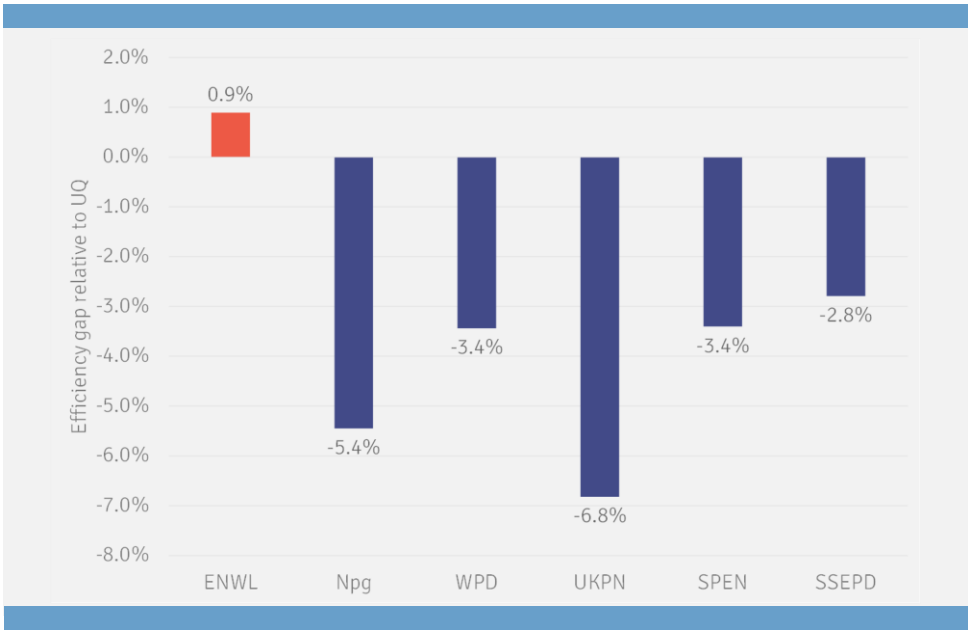
In addition to the informational benefits of having ENWL as an extra point of comparison within the Electricity Distribution sector, there are further benefits to customers associated with information that ENWL's strong overall cost efficiency position reveals about the performance frontier. While some of the benefits of having an additional data point occur irrespective of ENWL's own performance, ENWL's overall cost efficiency means that, along with other high performing firms, it drives the efficiency challenge for the whole sector.

To illustrate this point, Figure 2 below displays the average totex efficiency gap of DNO groups at ED1, generated using Ofgem's benchmarking models.[5] The figure shows that ENWL's performance is the strongest amongst all DNO groups. Namely, the average efficiency gap of other DNO groups relative to the upper quartile benchmark at ED1 is between 3% to 7% **below** the upper quartile, whereas ENWL is 1% **more efficient** than the upper quartile.

[4] *For example, Ofgem states that* "[t]he more independent management teams there are competing to be the leading company the fiercer this competition is and consumers benefit from this through improvements being made more quickly".

[5] *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Table 2.3. Note, modelled costs are pre-smart grid and RPEs adjustments.*

Figure 2: Totex efficiency gap of DNOs relative to upper quartile benchmark at ED1



Source: Economic Insight analysis of Ofgem RIIO-ED1 data

In addition, to illustrate the potential scale of the sector-wide benefits associated with ENWL's overall cost efficiency performance, we have therefore estimated what cost allowances would be if ENWL's cost performance were not sector-leading. We have done this by recalculating the level of ED1 totex allowances that would apply if ENWL were excluded from the upper quartile.

As shown in Table 1 below, total estimated efficient costs for DNOs (excluding ENWL) total £21,682 million when ENWL lies above the upper quartile, but this increases to £21,956 million if ENWL drops to an efficiency level below the upper quartile. This would result in an increase in slow track totex allowances of around £274 million over a period of 8 years (equating to £34 million per year).[6]

[6] *£21956m – £21682m = £274m. Note, this is pre-smart grid and RPE adjustments,*

Table 1: Comparison of efficient costs using the UQ benchmark, with and without ENWL in the upper quartile

DNO	Actual costs (£m totex)	Efficient costs (£m totex, ENWL in UQ)	Efficient costs (£m totex, ENWL below UQ)
NPgN	1,334	1,248	1,264
NPGY	1,752	1,674	1,695
WMID	1,931	1,818	1,841
EMID	1,945	1,942	1,967
SWALES	1,011	1,026	1,040
SWEST	1,583	1,437	1,455
LPN	1,892	1,729	1,750
SPN	1,796	1,691	1,712
EPN	2,663	2,503	2,535
SPD	1,495	1,556	1,575
SPMW	1,837	1,637	1,658
SSEH	1,145	1,084	1,097
SSES	2,343	2,337	2,367
Total	**22,727**	**21,682**	**21,956**

Source: Economic Insight analysis of Ofgem RIIO-ED1 final determinations

We note that, in principle, data would continue to be available on ENWL at the licensee level regardless of group structure. However, cost efficiency performance is a consequence of management decisions, and so is not independent of group structure. As illustrated in Figure 2 above, ENWL's high performance relative to other DNO groups highlights the risk that its strong cost performance would not persist if there were a change in group structure.

For more details on our assessment of the benefits of information revealed about the performance frontier, see Section 6.2.

Conclusion on the informational benefits of the single-licensee model

The single-licensee model provides informational benefits that accrue, through Ofgem, to customers across Great Britain. As a single-licensee DNO, ENWL provides information about the Electricity Distribution sector as a whole, that would not otherwise be available. ENWL's strong performance on cost efficiency reveals further information about the performance frontier. We estimate that these benefits could be worth in the region of £34 million to £68 million per year.

3. The single-licensee model confers innovation and competition benefits

A single-licensee model requires ENWL to pursue a more focused approach to certain aspects of its performance including innovation, the promotion of competition within its distribution area and ensuring that ENWL's actions align with its stakeholders' needs.

Importantly, while these benefits accrue initially to ENWL's customers in the North West, they also reveal additional information about company performance possibilities, underpinning benefits that accrue to all GB customers set out in section 2.

3.1 Benefits associated with maximising the value of innovation spend

THE SINGLE-LICENSEE MODEL ALLOWS ENWL TO PURSUE A MORE FOCUSED APPROACH TO INNOVATION, HELPING TO MAXIMISE THE BENEFITS OF INNOVATION SPEND.

The single-licensee model allows ENWL to pursue a more focused approach to innovation, thereby maximising the value of innovation expenditure, than would be possible under a multiple-licensee operating model.

- The single-licensee model allows ENWL to have a **flatter, less hierarchical structure** than would be possible as part of a multiple-licensee group. Economic literature indicates that such a structure can help to facilitate greater innovation. This is because a flatter structure can reduce bureaucracy, increase flexibility and result in less filtering of innovative proposals compared to a more hierarchical structure.[7] See section 6.3 for further details.

- As a result, ENWL is able to pursue a **phased approach to** innovation, that ensures it maximises the customer benefits associated with every pound of innovation expenditure. This is illustrated in case study 1 below, which sets out how ENWL built on the development of the Bidoyng to eventually be the only

[7] *See, for example, Vossen, R. W. (1998). Relative strengths and weaknesses of small firms in innovation. International small business journal, 16(3), 88-94.*

DNO to receive Innovation Rollout Mechanism (IRM) funding for Smart Street at ED1.

- This is matched by an **appetite to deliver innovative projects, in an efficient manner.** For example, as set out in case study 2, ENWL has consistently spent the highest percentage of its Network Innovation Allowance (NIA) funding since 2015-16. ENWL's phased approach to innovation, combined with its overall high cost efficiency (as described in section 2.2) helps to ensure that the value of this expenditure is maximised.

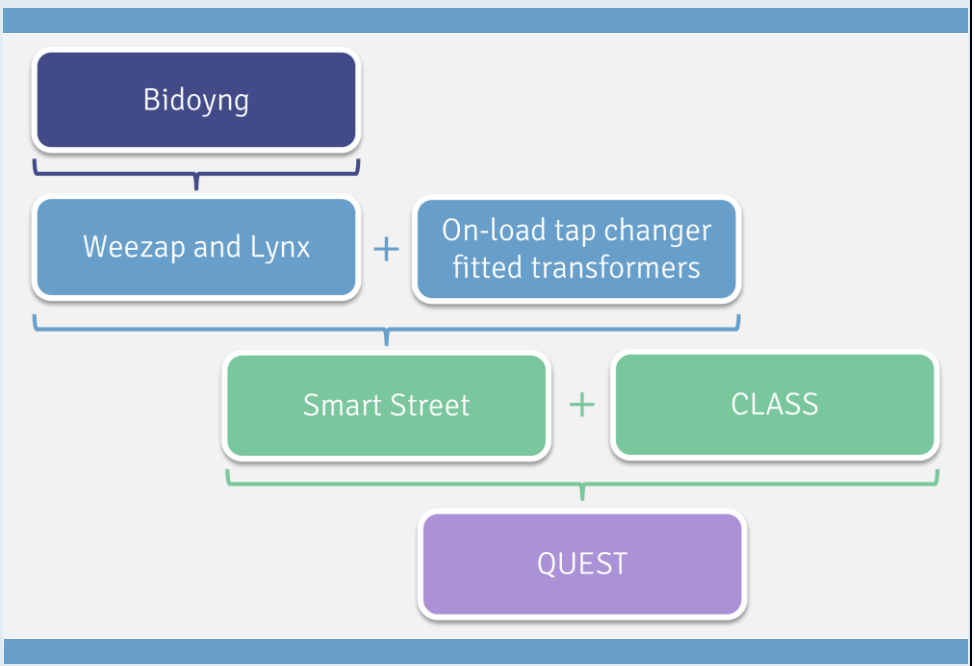
- The overall result is that ENWL continues to develop **innovative projects** that **maximise the value of innovation spending.** Some examples of innovative projects that ENWL is currently undertaking are set out in case study 3.

In a similar manner to the informational benefits detailed in section 2, the customer benefits associated with these projects flow not only to ENWL's customers, but also to customers across Great Britain. This is because the associated innovations generally have wider application outside of ENWL's distribution area.

Case study 1: Phased approach to innovation

To deliver innovative projects successfully and maximise the customer benefits associated with any particular innovation, ENWL pursues a phased approach which ensures that innovations are complementary and build upon previous achievements.

Figure 3: ENWL's phased approach to innovation (NIC projects)



Source: ENWL

For example, in relation to voltage reduction, ENWL developed the Bidoyng which laid down the foundations for the Weezap, which was developed in parallel with the trialling of on-load tap changing transformers at lower voltages. Following this, Smart Street and CLASS were implemented, with Smart Street operating on the low voltage (LV) network and CLASS operating on the high voltage (HV) network. The combination of these two projects resulted in QUEST, ENWL's most recent project

winner of NIC funding.[8] QUEST will investigate the concurrent operation of the Smart Street and CLASS together.

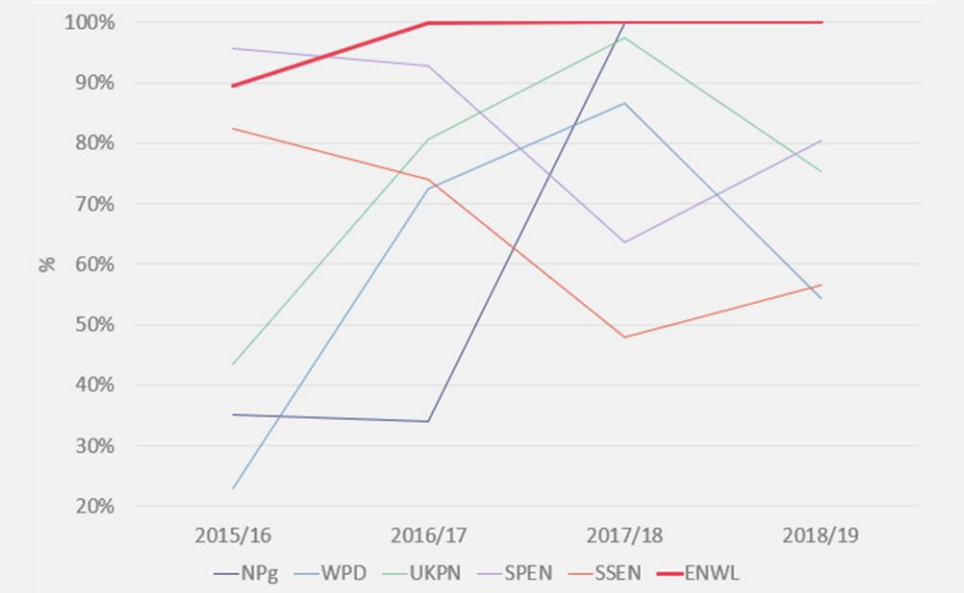
In addition, Ofgem awarded ENWL ~£18m of Innovation Rollout Mechanism (IRM) funding for Smart Street. ENWL was the only DNO to receive IRM funding in ED1, the purpose of which is to facilitate the rollout of proven innovations that are outside licensees' ordinary business arrangements. (Details of the project can be found in section 6.4.4 of the annex).[9]

Case study 2: Network Innovation Allowance funding

DNOs receive annual Network Innovation Allowance (NIA) funding for small scale innovation projects as part of their price control settlements. The NIA funds smaller scale research, development, and demonstration projects, and can cover all types of innovation, including commercial, technological, and operational. Unlike the Network Innovation Competition (NIC), the NIA is not focused solely on innovative projects with potential low carbon and environmental benefits.[10]

Consistent with ENWL's appetite to deliver innovative projects, the company has consistently spent the highest percentage of its NIA from 2015-16 to 2018-19, as we show in the figure below. Throughout this period of time, ENWL spent an average of 97% of its allowance, compared to the average DNO group only spending 74% of its allowance.

Figure 4: Percentage of Network Innovation Allowance spent per group



Source: Economic Insight analysis of Ofgem RIIO-ED1 data

Additionally, in ED1, ENWL's NIA was the highest percentage of base revenue among all DNO groups. This is illustrated in the table below.

[8] *QUEST was ENWL's most recent project winner of NIC funding at the time of drafting this report (January 2021)*

[9] *Ofgem's Decision on the 2019 Electricity Distribution Innovation Roll-out Mechanism, 18 October 2019*

[10] *https://www.ofgem.gov.uk/ofgem-publications/93559/elec-nia-v2-stat-con-clean-pdf*

Table 2: NIA as a percentage of base revenue

DNO	RIIO-ED1 NIA request (% of base revenue)	RIIO-ED1 NIA (% of base revenue)
ENWL	0.8	0.7
NPg	0.6	0.6
UKPN	0.5	0.5
SPEN	1.0	0.5
SSEPD	1.0	0.5
WPD	0.5	0.5

Source: RIIO-ED1 Final determinations for the slow track Electricity Distribution companies overview Ofgem's Price control update provisions for WPD and decision on WPD's Network Innovation Allowance

Case study 3: ENWL's innovation projects in progress (examples developed in conjunction with ENWL)

Network Management System (NMS)

ENWL is working with Schneider Electricity (SE) to deliver a new NMS radically changing the way its network works so that it can operate a smarter network allowing supply to meet demand. It combines telemetry, data, customer contact information and new technology platforms to deliver an automated network which could prove the technology for other larger companies to subsequently benefit from. The benefits of this new NMS are improving the speed and efficiency of restoring customers' electricity supply and improving the information that ENWL can provide to customers when they experience these problems. It will also allow ENWL to avoid the costs of interventions, which will in turn reduce customer costs and allow new supplies to be connected more quickly. Adopting this new technology and innovation is also to prime ENWL with the ability to cope with rising levels of low carbon technologies (such as wind and solar power) on the network. These outcomes are critical where the Government expects electricity consumption to at least double by 2050.

Adding these tools to deal with rising levels of electricity demand (and the associated network control issues this causes) will allow the distribution of electricity more efficiently and with less impact on the environment. NMS aims to provide future generations with a low carbon, sustainable and reliable electricity network throughout the region. This will ultimately assist in ENWL's goal to enable decarbonisation to happen sooner in line with the North West regions local Government's leadership ambitions on decarbonisation."

Sapient

ENWL working in collaboration with Kelvatek developed the innovation project 'Sapient' which saw the development of low voltage reclosing technology on the network. This IFI project (the precursor of NIA) started development in 2010/11 with continued evolvement to its deployment at scale in 2012/13. This ultimately concluded in the integration of the technology into the Sapient system (previously called the Fault Support Centre which was an earlier IFI funded initiative).

As a consequence, between 2013/14 and 2019/20, low voltage (LV) network service performance for North West customers has improved by 1.9 customer interruptions (CI) and 3.5 customer minutes lost (CML) per annum owing directly to the deployment of the Sapient system and the associated LV reclosers. Using the current IIS incentive rate for ENWL, the improvement represents an annual benefit of £3.3m. Though it is

challenging to approximate, it is estimated that Sapient has reduced national power supply interruptions by about 10% as other DNOs now use Sapient technology as a direct consequence of our work on this innovation project. When considered at a GB level the CI and CML the upper benefit bound is estimated at 26.6 and 49.0 and monetised at £46.2m per annum[11]."

Section 6.4 sets out more detail on the projects outlined in this section.

ENWL IS MORE EFFECTIVE IN FACILITATING COMPETITION IN ITS DISTRIBUTION AREA.

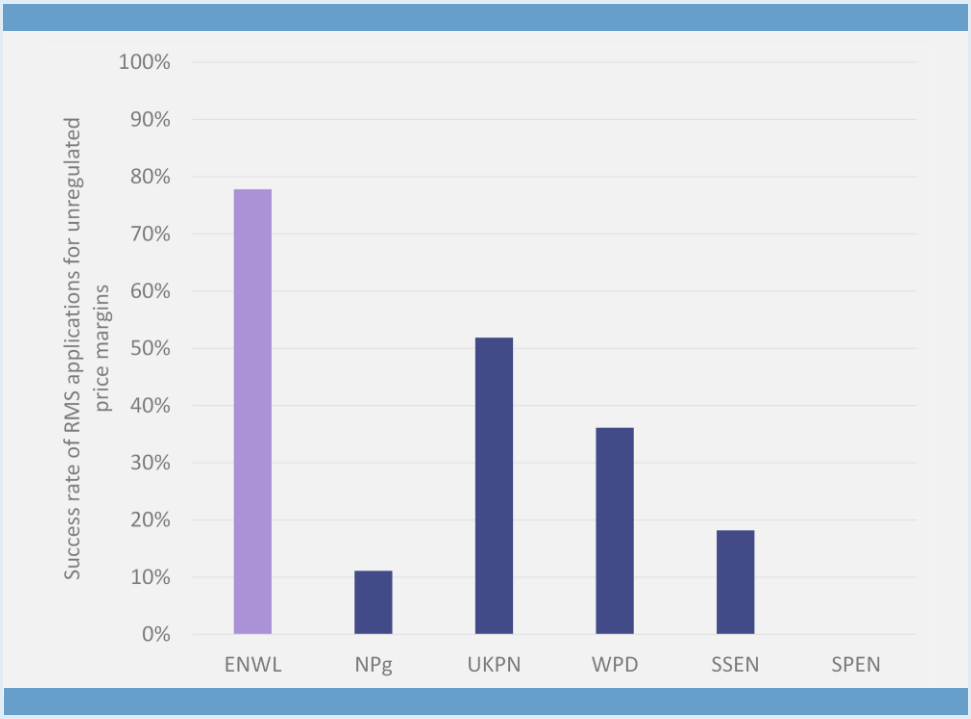
3.2 Benefits associated with increasing competitive pressure

The greater focus associated with a single-licensee model also helps ENWL to be more effective at facilitating competition within its distribution area, as ENWL is willing to encourage the use of alternative providers where this is the most efficient way of delivering a service. This can be illustrated with reference to ENWL's approach to Independent Connections Providers (ICPs), as set out in the case study below.

Case study 4: Independent Connections Providers

To encourage competition to develop in the electricity connections market, Ofgem introduced an incentive for DNOs to facilitate competition in connection services, in return for lifting price regulation. As we set out in the figure below, ENWL's success rate here was materially higher than any other DNO group. Not only has ENWL achieved a higher success rate of relevant market segments applications, but it also achieved these significantly earlier than other DNO groups. In addition to the direct benefits to ENWL's customers, there are therefore wider informational benefits, as ENWL's strong performance provides information about achievable success rates for the sector as a whole.

Figure 5: Success rate of relevant market segments applications for unregulated price margins in the connections market



Source: Economic Insight analysis of competition test submissions (2011 – 2014)

[11] *Based on a scale up of ENWL benefit by number of licensee DNO areas (i.e. 1/14th)*

3.3 Benefits associated with alignment with stakeholders' needs

THE SINGLE-LICENSEE MODEL ALLOWS ENWL TO FOCUS MORE CLOSELY ON ITS CUSTOMERS' AND STAKEHOLDERS' NEEDS.

The single-licensee model means that ENWL focuses on customers in a single operating area. This allows it to have a better understanding of, and pay greater attention to, its stakeholders' requirements. To illustrate the benefits associated with ENWL's greater alignment with its stakeholders' needs, the following case studies were developed in collaboration with ENWL.

Section 6.5 provides further details of ENWL's work with local stakeholders.

Case study 5: Benefits of ENWL's alignment with its stakeholders' needs (examples developed in conjunction with ENWL)

Engagement with Greater Manchester Combined Authority

Over a number of years, Electricity North West has developed a robust strategic engagement programme which started with Greater Manchester Combined Authority (GMCA) but with the blueprint rolled out at an operating region wide level in Lancashire and Cumbria in 2018. This close working relationship with all local authorities has been reinforced and strengthened by collaboration with their clear decarbonisation ambitions and ENWLs to lead the North West to Net Zero.

All three regions were invited to participate in ENWL's advisory panels with all attending at least one of the last two Regional Advisory Workshops. Because of its regional focus and single-licensee model, where these key regional stakeholders were unable to participate around strategic topics or on strategic working groups due to resource constraints or other issues, ENWL through its agility arranged bespoke and targeted bilateral meetings with the relevant executive directors at the County Councils or their reports."

Decarbonisation pathways[12]

Throughout 2020, Lancashire County Council (LCC) played an increasingly active part in ENWL's advisory panels, including involvement in Decarbonisation pathways. This included ENWL and LCC working closely together around the Samlesbury Enterprise Zone and other Economic Development opportunities. LCC's executive director, Stephen Young, contributed to ENWL's regional 'Powering up the North Lancashire' event, acting on behalf of the Council.

The Decarbonisation pathways were also presented to the External Scrutiny Committee in November 2020 and it reiterated its support for a Green summit and put forward the following motion:

"That relevant officers be requested to attend a future scheduled meeting of the External Scrutiny Committee to present on the Greater Lancashire Plan and progress made towards a green summit for Lancashire as previously agreed with the Cabinet Member for Economic Development, Environmental and Planning to bring together all councils, public sector, the Lancashire Enterprise Partnership and the private sector into a cohesive, planned effort."

Powering up events have been held across the region for Cumbria and Greater Manchester where the format has been tailored for those regions specifically.

[12] *See https://www.enwl.co.uk/go-net-zero/you-and-your-business/decarbonisation-pathways/*

Residents of multi-occupancy buildings and the Rising Lateral Mains programme

The Grenfell tragedy in 2017 brought greater scrutiny to safety in high rise multi-occupancy buildings (MOBs) throughout GB. This prompted many local authorities to accelerate tower block refurbishment programmes. ENWL through its regional and local focus understood that resident's trust of social landlords is a barrier to progressing electrical Rising and Lateral Mains (RLM) refurbishment schemes and they are reticent about installations within their homes. Additionally, ENWL's local and regional focus allowed it to understand that many MOBs are in deprived areas and house hard-to-reach communities with high proportions of vulnerability who can least cope with disruption to their supply. ENWL have refined a best practise model of local and regional stakeholder engagement that builds trust with residents by getting to know the community prior to, during and after works by:

- *Attending residents' meetings, maintaining a visible presence during works and returning to address feedback head-on.*
- *Setting up an installation in a vacant property on-site so that residents can drop in to have a look at the work involved and ask questions.*
- *Sourcing tailored trunking that is in keeping with customers' homes.*
- *Making every contact count by promoting registration to our Priority Services Register and provision of energy efficiency advice to reduce energy bills and tackle fuel poverty.*

ENWL embedded this approach across the 5,265 homes it serviced in 2019/20 in MOBs. Its risk-based approach saw ENWL invest £675,000 in the deployment of innovative Weezap circuit breakers (see section 6.4.4 for more details) to de-risk 2,259 of the highest-risk dwellings by enabling them to monitor communal electrical cables at these properties 24/7 (see section 6.4.2 on ENWL's Network Management System)."

Source: Electricity North West

Conclusion on innovation and competition benefits

The evidence set out in this chapter shows that there are additional benefits associated with ENWL's single-licensee model, associated with innovation, encouraging competition and greater local focus. Importantly, these benefits are likely to reinforce the informational benefits outlined in section 2, and thus bring benefits for customers across Great Britain, in addition to the ENWL customers that directly benefit in the first instance. This is because strong performance on innovation and competition provides additional information to Ofgem to enable better regulation, and helps to set the standard for the whole sector.

4. Additional allowances are required to support the single-licensee model

The single-licensee model has the potential to increase the level of some of ENWL's efficient costs. For example, certain types of opex include a fixed component that other DNO groups are able to spread across multiple licensees. In addition, the smaller relative size of a single-licensee group means that it may incur higher efficient financing (debt and equity) costs.

4.1 Business support costs and closely associated indirects

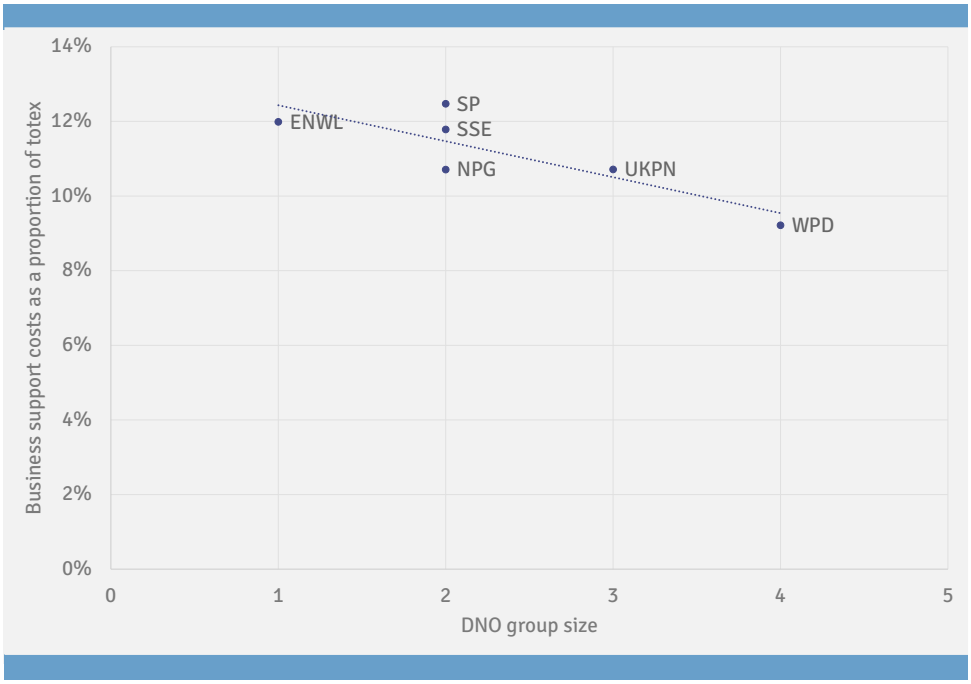
ENWL INCURS A HIGHER LEVEL OF EFFICIENT FIXED COSTS AS A SINGLE-LICENSEE DNO

Business support (BS) costs and closely associated indirects (CAI) are incurred at the group level and include a material fixed component. Ofgem recognises this, stating that *"a number of costs are carried out at group level rather than by individual DNOs, for example business support and closely associated indirect activities".*[13]

To illustrate this, Figure 6 shows the relationship between BS costs as a proportion of totex and DNO group size for 2015/16 to 2018/19. Where a cost category contains a significant proportion of fixed costs, it will fall as a proportion of totex as group size increases and fixed costs are spread over a larger cost base. The negative relationship in the figure below therefore indicates the existence of material fixed costs. A similar relationship holds between DNO group size and operational IT and telecoms costs as a proportion of totex, as we set out in Section 6.7.

[13] *'RIIO-ED1 business plan expenditure assessment – methodology and results.' Ofgem (December 2013); para 4.18.*

Figure 6: Relationship between business support costs as a proportion of totex and DNO group size



Source: Economic Insight analysis of Annual Performance Report data

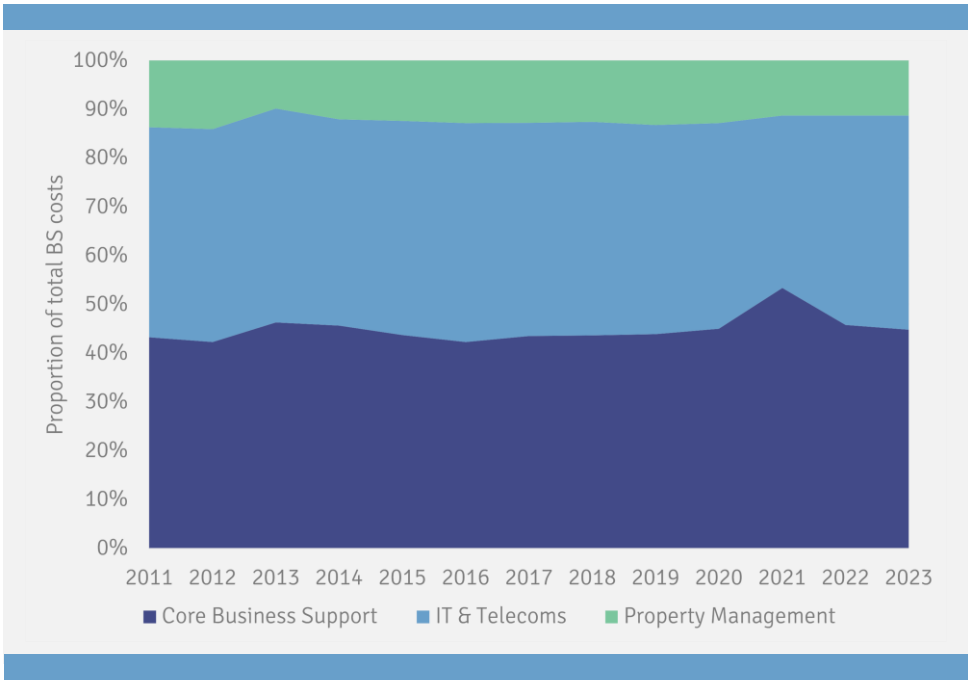
In principle, the additional efficiently incurred costs associated with the single-licensee model could be accounted for when efficient costs are modelled as part of the cost assessment process.[14] If not, suitable adjustments should be made to reflect that the additional fixed costs incurred are outside management control.

In 2013, KPMG estimated that this adjustment for ENWL would be in the region of £10.8 million per year over ED1. Our high-level review of the cost categories underlying KPMG's analysis indicates that their composition was broadly stable across DPCR5 and ED1 and are forecast to be stable towards the end of ED1.

For example, Figure 7 displays the proportion of total business support costs by core, IT&T, and property management costs. As shown, these cost categories are stable over time, including projected figures towards the end of ED1. This suggests that an updated efficient fixed cost uplift estimate would be of broadly similar magnitude, after adjusting for cost inflation.

[14] *To account for such costs, cost modelling would need to be done at the group level, using cost models with a functional form that is flexible enough to reflect the impact of fixed costs.*

Figure 7: Business support costs by function, 2011-2023



Source: ENWL data

For further detail on our analysis of the fixed costs associated with BS and CAI costs, see Sections 6.6 and 6.7.

4.2 Financing costs

THE SINGLE-LICENSEE MODEL MEANS THAT ENWL INCURS A HIGHER LEVEL OF EFFICIENT FINANCING COSTS

The single-licensee model means that ENWL may incur additional efficient financing costs over and above those incurred by multi-licensee DNO groups, as a consequence of its smaller size. In principle, smaller companies could have higher efficient financing costs for several reasons.

- Some of the costs associated with financial market transactions include a fixed component. Examples include debt **issuance costs**, such as fees to intermediaries and advisors. These costs will be proportionately higher for smaller market transactions.
- Smaller companies' financial instruments may be less liquid than those of larger companies. For example, their bonds may be traded less frequently, with investors finding it more difficult to identify willing counterparties. Less liquid assets therefore attract an **illiquidity premium.**
- Smaller companies may have constrained access to funding to manage their financial liabilities. Examples include cash requirements to manage the refinancing of maturing debt. This could lead to smaller companies having a higher **cost of carry.**

- Smaller companies may have **higher systematic risk**. This has been recognised in past regulatory determinations (e.g. by the CC/CMA in Bristol Water's PR09 and PR14 price control appeals).

We have reviewed regulatory precedent on uplifts to allowed efficient financing costs based on firm size, as summarised in Table 3 below. For example, precedent for uplifts to the allowed cost of debt, based on the additional transaction costs incurred by smaller companies that issue debt less frequently, include:

- Ofgem, in its RIIO-2 Gas Distribution and Transmission Final Determinations, gave "*an additional 6bps allowance for smaller companies that would be expected to issue less frequently*."[15]

- In its recent redetermination of NERL's price control the CMA stated that, "*we considered it likely that, as a smaller entity with fewer interactions with banking institutions and the financial markets, NERL might face slightly higher-than-average issuance costs when compared to regulated companies in other sectors*".[16]

In addition, we note that the CMA allowed Bristol Water an uplift to its cost of equity at PR09 and PR14, though not at PR19. This was on the grounds that Bristol's smaller RCV, relative to comparators, left it more exposed to cyclical fluctuations in profits, so is related to, but distinct from, company size.

15 *'RIIO-2 Final Determinations – Finance Annex'. p.10.*
16 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.156.*

Table 3: Regulatory precedent on uplifts to allowed finance costs

Regulator	Company	Decision	Basis
Issuance and liquidity costs			
Ofgem	SGN Scotland, NGN, WWU RIIO-2 FD	6bps on cost of debt	Smaller entity with fewer debt market interactions
CMA	NERL RP3 appeal	0.10-0.11% issuance and 0.06% liquidity costs (increment to 0.10%)	Smaller entity with fewer financial market interactions
Other finance costs			
CMA	Bristol Water PR19 appeal	10 bps of cost of embedded debt	Higher Artesian finance costs
Ofwat	Portsmouth Water PR19	30 bps on cost of debt	25-40 bps plausible range
CMA	Bristol Water PR14 appeal	37 bps to cost of debt; 14% asset beta	Higher Artesian finance costs; lower RCV than WaSCs
CMA	Bristol Water PR09 appeal	40 bps to cost of debt; 18% asset beta	Higher Artesian finance costs; lower RCV than WaSCs

Source: Economic Insight analysis of regulatory determinations

A more detailed review of regulatory precedent can be found in Section 6.9.

In this context, ENWL asked Frontier Economics to estimate the transaction costs associated with small company debt issuances.[17] Frontier's quantified the *additional* issuance, liquidity and cash carry costs for a hypothetical small company, by comparing cost estimates for hypothetical small and large companies, based on a small company profile involving a notional RAV of £1,800m, and a large company with a RAV of £7,000m, both with 60% gearing.

Frontier estimated that the additional issuance, illiquidity and carry costs amounted to 17 to 21 bps for a hypothetical small company that adopted a frequent issuance profile of £108m of debt each year, and 21 to 24 bps for a hypothetical small company that adopted an infrequent issuance profile of £324m of debt every three years compared to that of the notional larger company.[18] In monetary terms, for the company profiles in Frontier's scenarios, these additional costs amount to £0.2m to £0.3m on a debt issuance of £108m[19], and an additional £2m to £3m on a RAV of £1,800m, with 60% gearing.[20]

Again, we emphasise that these are additional (rather than total) issuance, liquidity and cash carry costs incurred by the hypothetical small companies described above.

[17] *'Transaction cost premium for infrequent debt issuers.' Frontier Economics Report for ENWL (2020); Sector Specific Methodology Consultation response.*
[18] *'Transaction cost premium for infrequent debt issuers.' Frontier Economics Report for ENWL (2020); Sector Specific Methodology Consultation response; p.25.*
[19] *Calculated as £108m multiplied by 17-24bps.*
[20] *Calculated as 60% times £1,800m, multiplied by 17-24bps.*

These estimates do not cover any other potential efficient additional financing costs incurred under the single-licensee model.

We set out further detail on transaction costs in Section 6.8.

Conclusion on additional allowances to support the single-licensee model

The single-licensee model potentially increases the efficient level of certain types of costs. These include some types of opex, which cannot be spread across multiple DNOs, and financing costs. In view of the benefits outlined in chapters 2 and 3, there are strong reasons to allow ENWL to recover efficiently incurred additional costs.

5. Ofgem should recognise the benefits of the single-licensee model and allow associated efficient costs

Our overall conclusion is that there are sizeable benefits associated with the single-licensee model, which accrue to customers across Great Britain. In contrast, the additional efficiently incurred costs associated with the model are borne by ENWL and its customers. In view of this compelling public value case for allowing ENWL to recover the associated costs, Ofgem should recognise the benefits of the single-licensee model and apply its price control methodology in a way that allows ENWL to recover these costs.

In summary, the evidence shows that the majority of the benefits of ENWL's single-licensee model accrues to customers across Great Britain. We estimate the quantifiable benefits to be around £34m-£68m per year. These benefits arise for the following reasons.

- **The single-licensee model increases the information available to Ofgem.** Customers across Great Britain benefit as the existence of ENWL as a single-licensee provides additional information, by increasing diversity in approaches in the sector (which allows Ofgem to set more effective regulatory benchmarks) and mitigates uncertainty over regulatory cost allowances (which enables Ofgem to set more stretching targets). We estimate these benefits to be in the region of £34m - £68m per year.

- **The single-licensee model is associated with higher innovation.** Economic literature indicates that there are benefits of flatter organisational structures with respect to encouraging innovation. ENWL combines an appetite to deliver innovative projects (evidenced by it spending the highest proportion of its Network Innovation Allowance of all DNO groups since 2015-16) with a phased

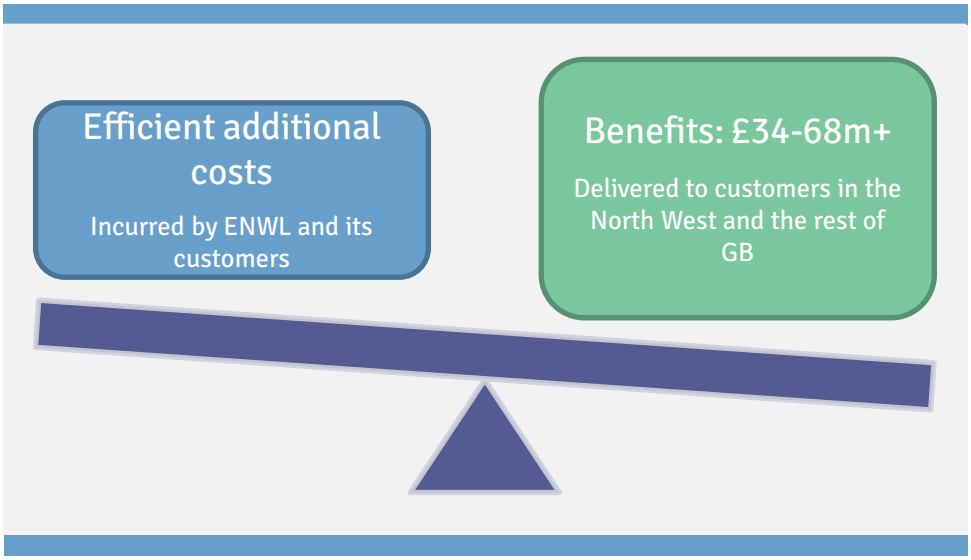
approach to maximise the benefits of its innovation spending for customers. These benefits are difficult to quantify, but would add materially to the informational benefits described above.

- **The single-licensee model is associated with greater competition.** ENWL is more effective at promoting competition within its distribution area than other DNOs. For example, ENWL has the highest success rate of 'relevant market segments' applications among DNOs, which helps to set the standard for the whole sector. Again, these benefits are difficult to quantify, but would add to those set out above.

To deliver these benefits, ENWL as a single-licensee faces higher efficiently incurred costs than other DNOs. These include fixed costs that are incurred at the group level that cannot be spread across multiple DNO license areas, and additional financing costs.

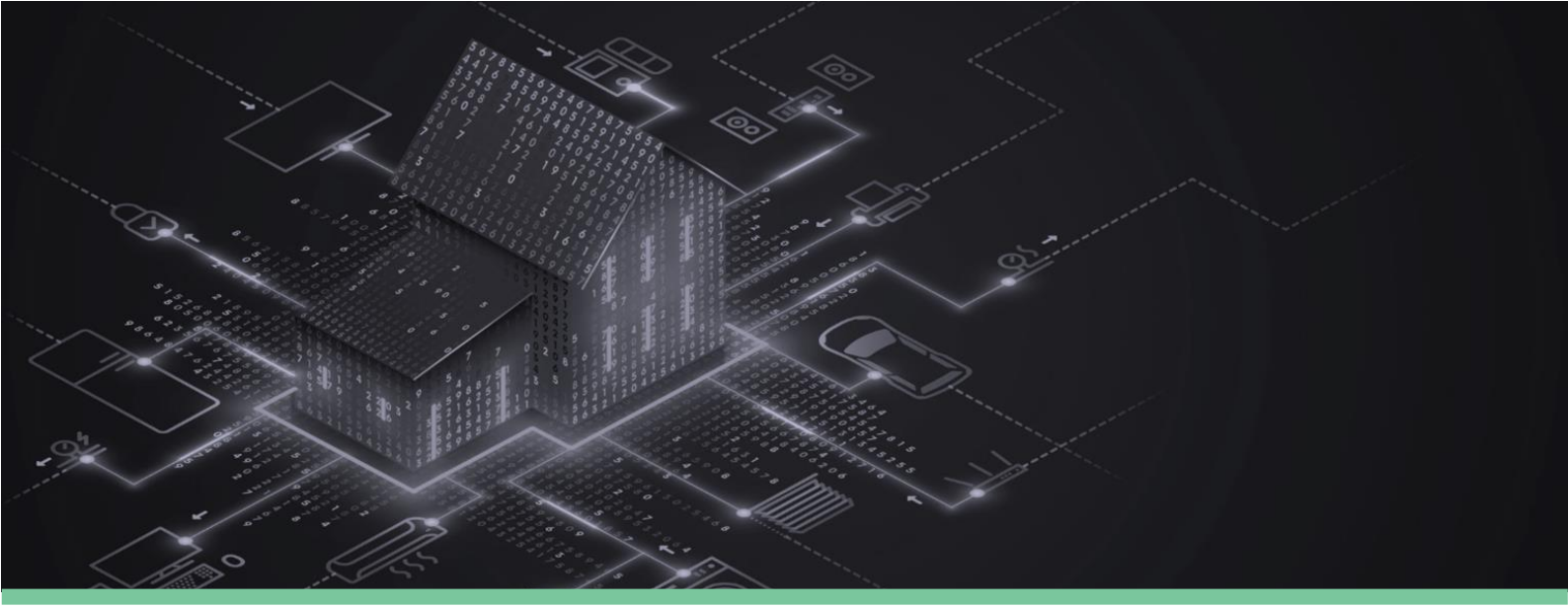
Whereas the bulk of the benefits associated with ENWL's single-licensee model flow to customers across Great Britain, the efficient additional costs associated are incurred solely by ENWL and its customers, as we summarise in the diagram below. Taking into account the scale of the estimated benefits, this implies that there is a strong public value case for Ofgem to allow ENWL to recover the efficiently incurred incremental costs associated with its single-licensee model.

Figure 8: Benefits and costs of the single-licensee model



Source: Economic Insight

In practical terms, Ofgem should recognise the benefits of a single-licensee model and apply its price control methodology in a way that allows ENWL to incur the efficient costs associated with it. Ofgem could address this through cost modelling within the cost assessment process, as well as through ex-post adjustments or bespoke arrangements. This should also be taken into account when Ofgem considers the financial policy aspects of its RIIO-ED2 price controls.



6. Annex

6.1 Statistical benefits of an additional data point

This section sets out further analysis of the statistical benefits of ENWL as an additional data point, detailed in Section 2.1.

At ED1, costs benchmarked at the group level included indirect costs such as business support (BS) costs and some closely associated indirect (CAI) costs.[21] For CAI costs, ratio benchmarking was utilised at the DNO group level (over 8 years of RIIO-ED1) for workforce renewal and non-workforce renewal costs.[22] For BS costs, again ratio benchmarking was calculated for aggregated categories for finance and regulation, HR and non-operational training, property management, and CEO and group management, as well as a separate estimate for business support IT&T costs.[23] Here, DNO groups were benchmarked against the industry median ratio for 2010-11 to 2022-2023.[24] Taking the example of BS costs, and abstracting from any other methodological questions as to the appropriate approach for benchmarking BS costs, the inclusion of an additional data point (i.e. six observations rather than five) means that the median unit cost estimated based on industry data is likely to be closer to its true level. To demonstrate this point, we have used industry data on BS costs over 2015/18 to illustrate the degree of uncertainty around the median and upper quartile level of unit costs.

Figure 9 provides the distribution of possible median and upper quartile unit costs, calculated with 6 DNO groups (i.e. 'with ENWL') and 5 DNO groups (i.e. 'without ENWL') under a population distribution generated from 2015-2018 DNO BS cost data.[25] In the figure below, the vertical black lines indicate the industry population median and upper quartile unit costs respectively. Without ENWL, there is a greater likelihood that the estimated median and upper quartile will be further away from the vertical line (as indicated by the flatter distribution). As such, this increases the

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21 *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Para 4.60.*

22 *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Para 10.9.*

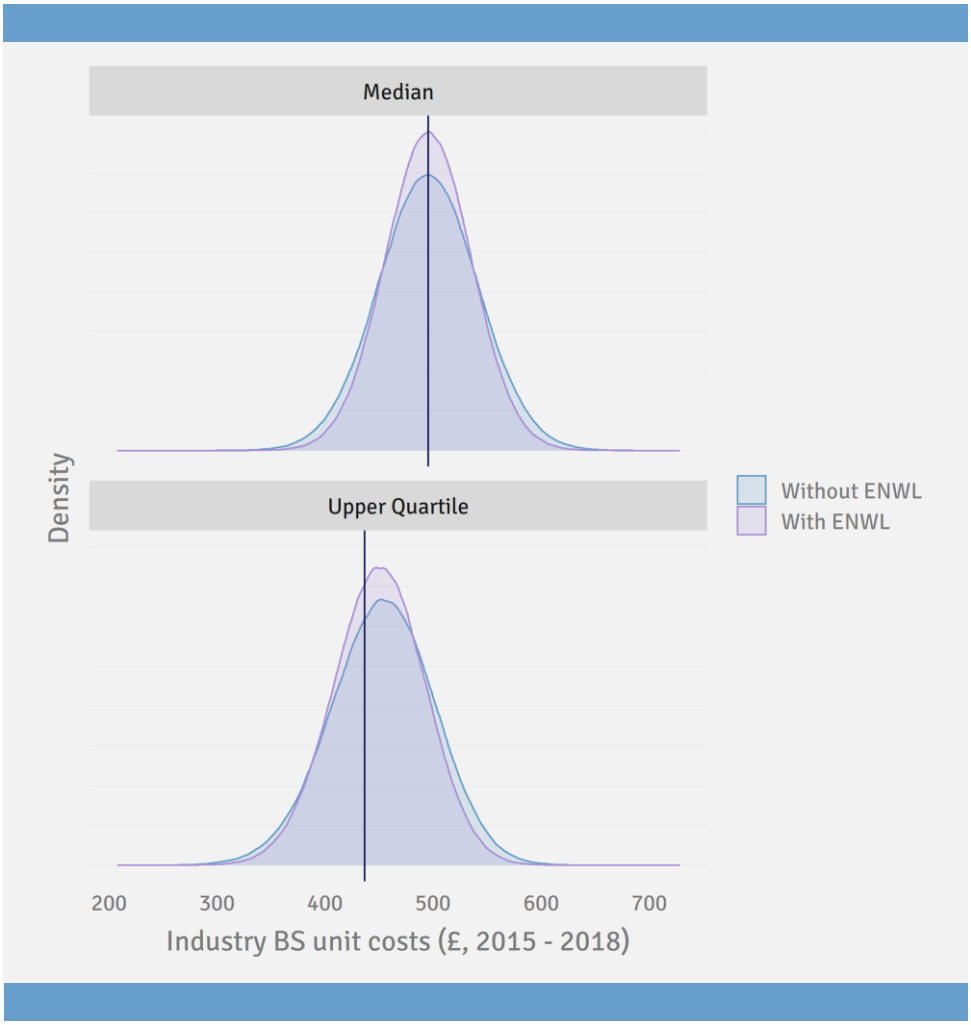
23 *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Para 10.48-10.49.*

24 *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Para 10.56.*

25 *BSC data is obtained from DNO annual performance reports. Unit costs are calculated by dividing business support costs by network length for each year. Values in the figure are generated from bootstrapping one million samples of the median and upper quartile respectively under a normal population distribution estimated from BSC data, 2015-2018.*

likelihood that benchmarked costs are estimated incorrectly. In practice, this means that cost benchmarks are estimated with greater uncertainty without ENWL as an additional data point.

Figure 9: Distribution of median and upper quartile unit costs with and without ENWL as an additional data point, 2015 – 2018



Source: Economic insight analysis of DNO annual performance reports

In addition, Table 4 illustrates the associated increase in standard errors when ENWL is omitted as a data point. When benchmarking BS unit costs against the industry median, standard errors increase by 16% when ENWL is omitted. Similarly, when benchmarking costs against the upper quartile, excluding ENWL results in an increase in standard errors by 13%.

Table 4: Standard errors of median and upper quartile unit cost distribution, 2015 – 2018

Benchmarking measure	With ENWL	Without ENWL	% increase
Median	40.0	46.2	15.6%
Upper quartile	42.6	48.1	13.0%

Source: Economic insight analysis of DNO annual performance reports

Should any group level econometric cost benchmarking techniques be used in the future, removing ENWL in these regressions as an additional data point, all else equal, (i) decreases the likelihood that estimates from group level regressions are plausible, and (ii) decreases the precision of cost benchmarking estimates. In ED1 for instance, some group level regressions were omitted because "*they did not give plausible results*"[26]. This is likely to be driven, among other reasons, by the limited number of observations (6 DNO groups) to establish a reliable relationship between costs and cost drivers. Removing ENWL as a data point therefore compounds this issue. To illustrate this point, we estimated group level econometric regressions for business support costs using data from the period 2015 to 2018, using network length as the cost driver[27]. Table 5 shows the standard errors calculated[28] under the scenarios where ENWL is included in regressions, and where ENWL is omitted. [29] This table shows that, without ENWL as a single-licensee, standard errors increase by 21% and 20% when including and excluding a time trend, respectively.

Table 5: Standard errors from econometric benchmarking regressions with and without ENWL, 2015 – 2018

	Standard errors with ENWL	Standard errors without ENWL	% increase
With time trend	0.69	0.83	20.7%
Without time trend	0.67	0.80	19.7%

Source: Economic Insight analysis of DNO annual performance reports and Ofgem RIIO-ED1 data

A consequence of reduced uncertainty is that regulators can be more confident that more challenging benchmarks, and therefore greater cost reductions, are achievable. As Ofgem recognises, *"the more information that we have from independent sources then the more confident we can be in our cost assessment work meaning that we do not need to err on the side of caution."*[30] To illustrate the benefits associated with the ability to set less conservative benchmarks, we compare ED1 totex allowances based on a UQ benchmark versus a median benchmark (excluding ENWL). Although we do not claim that the absence of ENWL as an independent data point would require the use of median benchmarking across the industry, this calculation is, nevertheless, useful to show the potential scale of the benefit from being able to set a more demanding benchmark. As set out in the table below, the use of a more demanding benchmark implies an additional £540 million of efficiency challenge over an 8 year period (or £68 million per year), over and above that implied by a median benchmark.

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26 *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Para 10.18.*

27 *Variables are used in logarithmic form, consistent with Ofgem's ED1 approach to econometric benchmarking. Business support cost data is obtained from company APRs. Network length is obtained from Ofgem data: https://www.ofgem.gov.uk/publications-and-updates/riio-1-electricity-distribution-annual-report-2018-19*

28 *Standard errors are clustered by DNO group.*

29 *In practice, should ENWL merge with another DNO group, business support costs and network length would change for this combined DNO group. This will likely affect regression outputs, including standard errors. However, all else equal, fewer data points increase the standard errors in regressions.*

30 *See Ofgem merger policy statement: https://www.ofgem.gov.uk/ofgem-publications/50645/merger-policy-statement-pdf*

Table 6: Comparison of totex allowances, median versus UQ benchmark

DNO	Submitted costs (£m totex)	Efficient costs (£m totex, median benchmark)	Efficient costs (£m totex, UQ benchmark)
NPgN	1,334	1,325	1,264
NPGY	1,752	1,752	1,695
WMID	1,931	1,930	1,841
EMID	1,945	1,945	1,967
SWALES	1,011	1,011	1,040
SWEST	1,583	1,525	1,455
LPN	1,892	1,835	1,750
SPN	1,796	1,795	1,712
EPN	2,663	2,657	2,535
SPD	1,495	1,495	1,575
SPMW	1,837	1,738	1,658
SSEH	1,145	1,145	1,097
SSES	2,343	2,343	2,367
Total	**22,727**	**22,496**	**21,956**

Source: Economic Insight analysis of Ofgem RIIO-ED1 final determinations

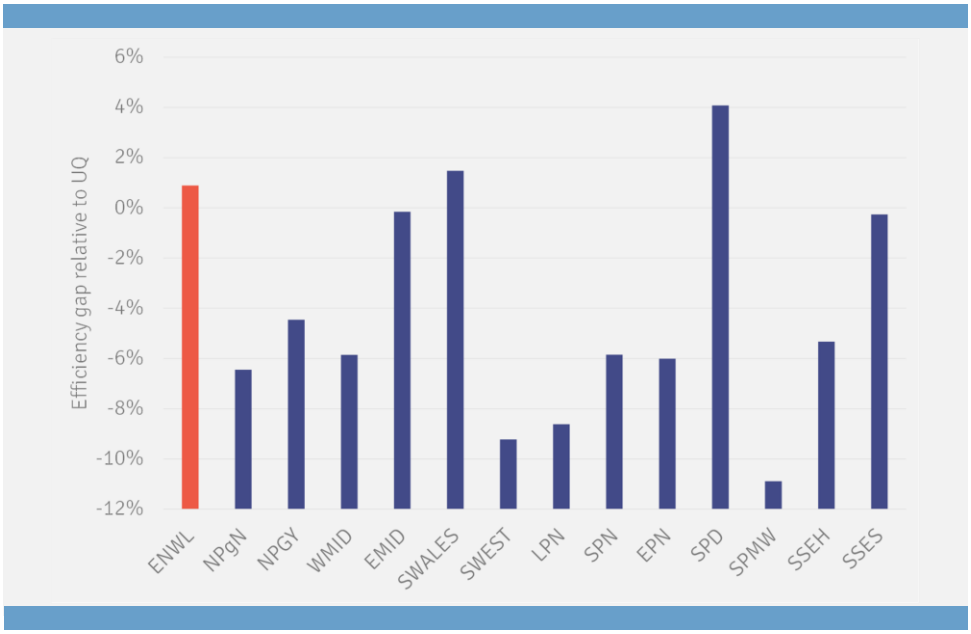
6.2 Information revealed about the performance frontier

This section sets out further evidence on the benefits associated with information revealed about the performance frontier, outlined in Section 2.2.

Figure 10 sets out the efficiency performance of all DNOs at ED1. The figure shows the totex efficiency gap of DNOs relative to the upper quartile benchmark at ED1. This is calculated using Ofgem's benchmarking model estimates.[31] As can be seen, Ofgem found ENWL to be among the most efficient DNO's.

[31] *'RIIO-ED1: Final determinations for the slow-track electricity distribution companies.' Table 2.3. Note, modelled costs are pre-smart grid and RPEs adjustments.*

Figure 10: Average totex efficiency gap of DNO groups relative to upper quartile benchmark at ED1



Source: Economic Insight analysis of Ofgem RIIO-ED1 data

6.3 Economic literature on innovation

This section sets out our review of economic literature on innovation, referenced in Section 3.1.

Economic literature indicates that a flatter, less hierarchical structure can help to facilitate greater innovation. This is because a flatter organisational structure can reduce bureaucracy, increase flexibility and result in less filtering of innovative proposals compared to a more hierarchical and multi-layered structure.[32]

Literature suggests that firms organised around small autonomous teams are much more agile than large hierarchies, and this makes it easier to respond to change.[33] In contrast, in a more hierarchical structure, with more people involved in the decision-making process and with a longer chain of command (a taller hierarchical organisational structure), there may be managerial co-ordination inefficiency and loss of flexibility.[34] In addition, technical manpower can become isolated from other corporate functions in these large firms.

A flatter organisation structure allows decision-making to occur at the staff level and is not held up by decision-making bottlenecks at the executive level, therefore innovative proposals are implemented quicker than would be in a firm with a more complex organisational structure.[35] Executives and staff members communicate directly with one another without having to go through intermediaries. This helps to

[32] *Vossen, R. W. (1998). Relative strengths and weaknesses of small firms in innovation. International small business journal, 16(3), 88-94.*
[33] *Kastell, T. (2013) Hierarchy Is Overrated. Harvard Business Review. Viewed 2 December 2020, <https://hbr.org/2013/11/hierarchy-is-overrated>*
[34] *Mansfield, E. (1968) Industrial Research and Technological Innovation: An Econometric Analysis. Norton, New York.*
[35] *Quain, S. (2019) The Definitions of Horizontal and Vertical Organizations. Chron, viewed 2 December 2020, <https://smallbusiness.chron.com/definitions-horizontal-vertical-organizations-23483.html>*

speed up communication and also makes it clear and understandable. [36] In contrast, in more hierarchical organisations, bureaucratisation, through rigid rules and less discretion, is hostile to innovation both directly by restricting experimentation and indirectly by screening out innovative personalities.[37]

Notwithstanding the above information, there are contrasting views regarding the effect of firm size on innovation. Earlier academic work generally supports the notion that due to behavioural factors within the firm, smaller size has a favourable effect on innovation, whereas more recent evidence demonstrated by large technology companies such as Apple and Google lends one to believe that innovation is not adversely affected by firm size. A regulated industry, however, provides unique market characteristics (such as competitive bids for innovation funding) which therefore make it questionable as to how applicable empirical evidence from other markets and industries is to a regulated market such as the one in which ENWL operates.

With the above limitation in mind, there is general, less market-specific empirical evidence suggesting that innovation is higher in small, less hierarchical, firms:

- Nooteboom and Vossen (1993) show that when small firms participate in R&D, they do so at a higher level of intensity (in relation to people employed or sales) than large firms.[38]

- Vossen (1998) states that most empirical findings suggest that small and medium-sized firms, rather than large firms, conduct R&D more efficiently and that small firms are disproportionately responsible for a significant number of innovations.[39] This is demonstrated by ENWL's access with QUEST winning the NIC in 2020.

- Acs and Audretch (1990) find on the basis of different US databases, that small firms contribute approximately 2.4 times more innovations per employee than their larger counterparts.[40] It was also found that the productivity of R&D falls along with firm size, which suggests decreasing returns to R&D expenditures in producing innovative output.[41] The fact that ENWL's NIA is restricted by the magnitude of its turnover, means that ENWL is required to maximise the output of each pound of NIA spent.

- Vossen's (1996) findings suggest that smaller firms are more profit/cost efficient in innovation compared to their larger equivalents.[42]

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[36] *Quain, S. (2019) The Definitions of Horizontal and Vertical Organizations. Chron, viewed 2 December 2020, <https://smallbusiness.chron.com/definitions-horizontal-vertical-organizations-23483.html>*

[37] *Holmstrom, B. (1989) Agency Costs and Innovation. Journal of Economic Behaviour and Organization , 12, 305-327.*

[38] *Nooteboom, B. (1993) Adoption, Firm Size and Risk of Implementation. Economics of Innovation and New Technology, 2(3), 203-216*

[39] *Vossen, R. W. (1998). Relative strengths and weaknesses of small firms in innovation. International small business journal, 16(3), 88-94.*

[40] *Acs, Z. and Audretsch, D. (1990) Innovation and Small firms, The MIT Press, Massachusetts.*

[41] *Zenger, T.R. (1994) Explaining Organisational Diseconomies of Scale in R&D: Agency Problems and the Allocation of Engineering Talent, Ideas, and Effort by Firm Size. Management Science, 40(60), 708-729*

[42] *Vossen, R. W. (1998). Relative strengths and weaknesses of small firms in innovation. International small business journal, 16(3), 88-94.*

6.4 Further case studies on innovation

This section provides further supporting evidence on the innovation case studies detailed in Section 3.1.

6.4.1 The Bidoyng Smart Fuse

ENWL has proven to be an innovative industry leader with projects such as the Bidoyng being widely deployed across all DNOs. What began as a simple concept for a low voltage auto-reclosing device has now grown into a significant business activity across a number of DNOs. The Bidoyng Smart Fuse has generated measurable financial benefits to DNOs and improved service to customers.[43]

The smart fuse was designed to automatically insert a secondary fuse into a circuit following a transient fault to restore supply to ENWL's customers and send an alarm to the control centre. The smart fuse reduces the restoration time for low voltage transient faults to less than three minutes and removes the need for an engineer to attend sites. ENWL have now installed several hundred smart fuses on their low voltage network as a standard means of addressing faults and restoring supply to customers.[44] The success of the Bidoyng is illustrated by the fact that all other DNOs have subsequently installed it as part of their fault response.

6.4.2 The Weezap and Lynx

The **Weezap** is a low voltage circuit breaker that can be installed in the place of a fuse without the need for modification to the fuse carrier. The **Lynx** device is a low voltage switch that can be installed in a standard link box to join together two feeders.[45]

6.4.3 On-load tap changers

Through the use of techniques such as distribution transformers with **on-load tap changers** and LV capacitors, voltages can be effectively managed on the LV systems to support the connection of increased low carbon technology.[46]

6.4.4 Smart Street

Net Zero is driving the adoption of LCTs such as electric vehicles (EVs) and heat pumps as well as the use of solar and photovoltaics. This poses a risk to the stable provision of electricity as these technologies tend to occur in clusters which have a dramatic effect on the network. EVs and heat pumps could cause the voltage to fall below statutory limits and photovoltaics exporting electricity to the network could cause the voltage to exceed statutory limits, as illustrated in Figure 11 below. If the voltage falls outside statutory limits, the way customer's appliances perform will be affected.

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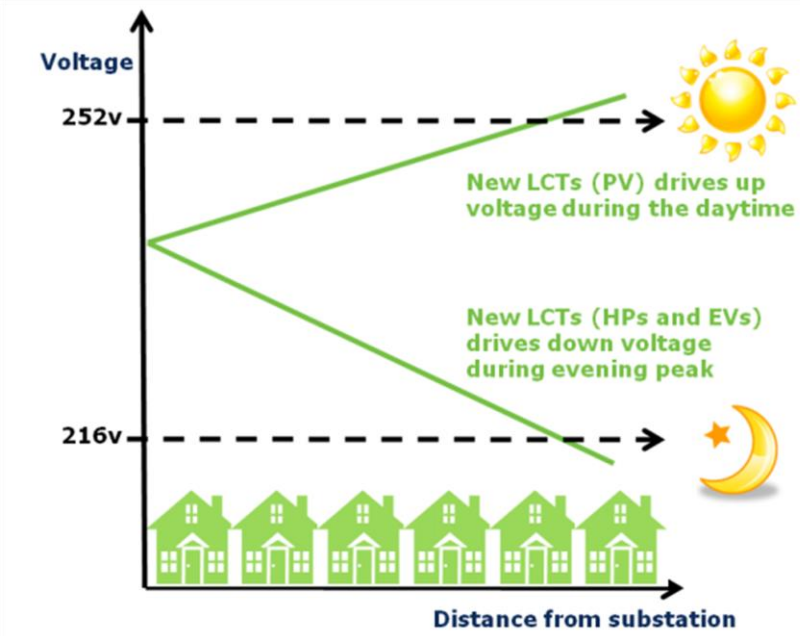
43 https://www.enwl.co.uk/globalassets/innovation/bidoyng/smart-fuse-closedown-report.pdf
44 https://www.enwl.co.uk/go-net-zero/innovation/smaller-projects/low-carbon-networks-fund/the-bidoyng-smart-fuse/
45 https://www.enwl.co.uk/globalassets/innovation/lvpac/lvpac-closedown-report.pdf
46 https://www.ofgem.gov.uk/ofgem-publications/114407

Figure 11: Stylised LV network voltage profiles



Source: ENWL Smart Street[47]

Smart Street solves this potential issue by stabilising voltage, and this avoids it falling above or below statutory limits. Supply voltage to customers is reduced to optimum levels so that network and customers' appliances work more efficiently.[48] It enables LCTs to be connected to the network more quickly, reduces costs and carbon emissions and helps get the most from the existing network.

Smart Street was trialled at 6 primary substations and 38 associated distribution substations serving a total of 67,000 customers in 4 areas. A series of customer focus groups were organised mid- and post-trial, in each trial region to help understand if the new project impacted the electricity supply in homes. The customers consulted as part of the investigation did not detect any degradation in the quality of their supply during the trials, demonstrating that Smart Street is indiscernible to all types of customers. These findings support the transferability of the method and suggest it can be applied across the wider network of Great Britain without customer impact.

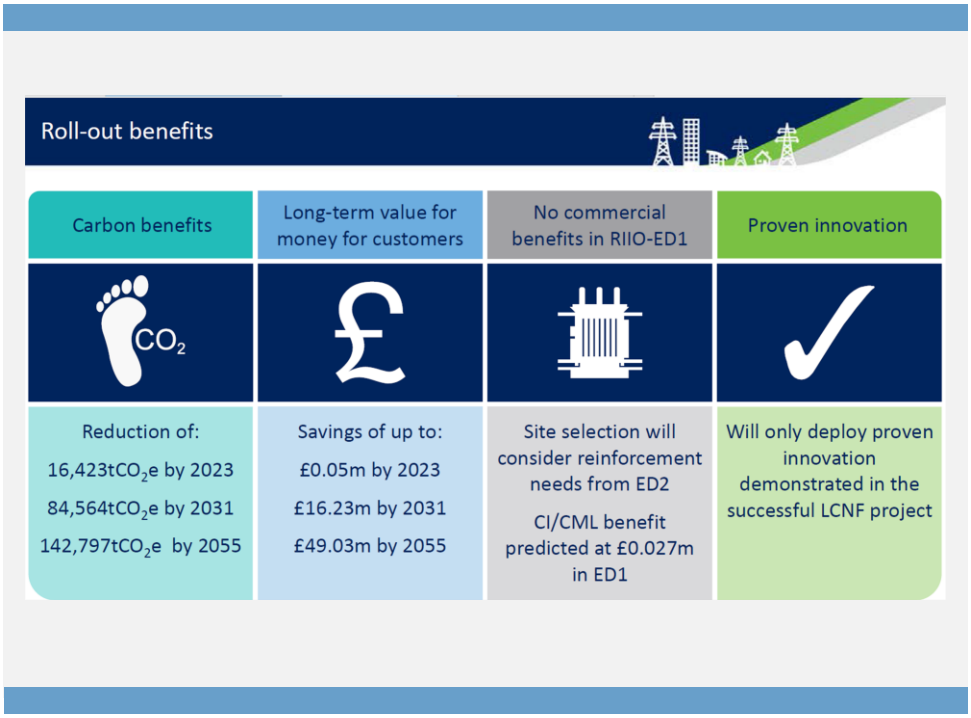
ENWL's Smart Street is the first practical demonstration of a DNO deploying innovative techniques at scale to deliver energy savings to some of the poorest customers in the region, and can be deployed at GB level to deliver incremental benefit. Smart Street delivers savings for customers by stabilising voltage without impacting the reliability and quality of the power network. As many as 45,000 customers, including some in areas with high levels of fuel poverty, benefit from the project, which sees innovative control devices being installed at substations across the ENWL electricity network. The project targets areas with high uptake of EVs, solar panels and other LCTs, particularly where these overlap with customers living in fuel poverty. This ensures that the energy savings are provided to those who will benefit from a reduction in their energy bills the most.

[47] https://www.enwl.co.uk/globalassets/innovation/smart-street/smart-street-key-docs/smart-street-closedown--report.pdf

[48] *A technique known as conservation voltage reduction.*

Customer benefits come directly through a reduction in energy consumption and indirectly through a reduction in costs associated with network reinforcement and losses. Smart Street has the potential to reduce annual energy consumption by between 5% and 8%, which equates to a total estimated financial saving for these customers of £2.74m per annum through increased energy efficiency. Additionally, Smart Street creates material network financial benefits, namely savings in network expenditure due to a reduction in network reinforcement. These benefits are also be reflected in customer bills through a reduction in DUoS. Smart Street also reduces carbon emissions. The financial value associated with this reduction is estimated at £7.09m, with the main contributors to this figure being carbon savings through avoided network reinforcement, reduced energy consumption and reduced technical losses.

Figure 12: Overall rollout benefits of Smart Street



Source: ENWL Smart Street – energy efficiency

In 2019, ENWL was awarded £18 million from the Innovation Rollout Mechanism (IRM) to install Smart Street technology at 180 substations across the North West. ENWL is currently the only DNO to access IRM.

For the rollout in ED1, Smart Street technology will be installed at 180 substations across the North West, aiming to stabilise voltage and avoid problems associated with low carbon technologies causing the voltage to fall outside statutory limits. Additionally, there are further expansion plans to roll the technology out even further in ED2.

6.4.5 CLASS

ENWL's Customer Load Active System Services (CLASS) demonstrated how the implementation of new and innovative technologies applied to existing network assets has the potential to defer traditional reinforcement by reducing peak demands and offers alternatives to the existing ancillary market services. The project consisted of four trials, carried out over a 12-month period, developed to challenge the hypotheses of the voltage/demand relationship, and demonstrate how voltage management techniques can provide demand response capabilities. The effects of CLASS were monitored through active customer engagement and feedback from customers in the trial area.

The project has produced significant learnings for DNOs, academics and the global industry in understanding the voltage/demand relationship and how the use of innovative voltage management technologies can be utilised to provide demand response for the benefit of Great Britain.

CLASS trialled the application of innovative voltage management technologies to provide demand response to reduce peak network demand, and to provide a new mechanism for frequency and voltage control to National Grid. The results from the project revealed information regarding customer load types, behaviour, and the method by which new technologies can be integrated to provide demand response.

It has shown that there is a potential to unlock up to 3.3GW of demand response and that there are possibilities to enter the frequency and enhanced reactive power markets, providing an alternative, low cost, carbon saving and flexible solution to National Grid for ancillary services when compared to the existing costly and carbon intensive methods.

CLASS demonstrated that it is possible to provide a demand response to reduce demand at peak times and it was proven to be low cost, highly transferable and readily implemented by DNOs across Great Britain.[49]

6.4.6 QUEST

ENWL was awarded NIC funding for QUEST in 2020. QUEST aims to create an overarching control system by designing a holistic voltage control methodology to co-ordinate techniques of Active Network Management (ANM) and voltage optimisation, optimising their use, and facilitating the increased use of LCTs. QUEST will ensure the network is running at its most efficient, while minimising losses, thereby maximising the benefits to consumers. QUEST plans to engage with stakeholders to ensure that the methodology developed can be transferred to all DNOs and will be applicable to all customer types.[50]

[49] https://www.enwl.co.uk/globalassets/innovation/class/class-documents/class-closedown-report-master.pdf

[50] https://www.ofgem.gov.uk/system/files/docs/2020/05/quest_isp_enwl.pdf

6.5 Further evidence on ENWL's work with local stakeholders

This section sets out additional evidence on ENWL's work with local stakeholders, as described in Section 3.3.

ENWL's single-licensee model allows it to provide a more targeted service that aligns more with customers' needs through its work with:

- **Local councils.** ENWL is especially active in its work with local councils in the North West. This is facilitated by ENWL's single-licensee model, allowing it to focus on one operating area. Bolton council, for example, have in the past, raised concerns as to the number of third-party utility damages (through prolonging the period sites were open for), and traffic management at times causing disruption. ENWL worked diligently to repair these concerns and responded flexibly to meet the council's needs.

- **Local organisations.** In the past, ENWL's partnerships with non-local organisations generated a low conversion rate – partnering with more local companies substantially improved conversion. One example is ENWL's partnership with Cozy Homes. Here, ENWL paid the company the entirety of its contract upfront to facilitate immediate funds to support vulnerable customers, including funding the installation of boilers and double glazing of consumers' awaiting council grants. Customers only awarded partial grants were paid the remainder through the fund.

- **Local societies.** ENWL also works with local societies through various channels of engagement. Three examples of these are:

  - **Energy Local Alton Moor (ongoing).** This project will investigate the feasibility of bringing a hydro scheme into community ownership. The business case will be developed using the 'Energy Local' model which helps communities get more value from small scale renewable generation by using the electricity locally. This will reduce the cost of the power generated for the local community and ensure the community-owned generator is paid a fair price for the energy it produces. This will help to generate and retain investment within the local community and help the fuel poor.
  - **Eco Warriors.** Communities were looking for better guidance for community energy projects, financial support for community energy projects, and engagement with stakeholders on regulatory issues. ENWL created the Powering Our Communities fund, which supports local energy projects. Eco Warriors is one such project where young people are taught how to reduce their carbon footprint and thus becoming 'eco warriors'.
  - **Kashmir Youth Project.** ENWL's Kashmir Youth project targeted an area with a high level of poverty as well as a language barrier and encouraged constituents to engage with and learn about the energy market. ENWL provided bi-lingual energy efficiency advice so that the communities could make better choices relating to energy.

6.6 KPMG fixed cost uplift estimates

This section sets out further detail on KPMG's estimates of the fixed costs associated with the single-licensee model, as described in Section 4.1.

KPMG set out high-level evidence of fixed costs in BS and CAI costs by showing that the costs of BS and CAI activities form a smaller proportion of total expenditure for other groups with multiple DNO licenses. To illustrate this point, it is shown that as the DNO groups increase in size, IT and Finance & Regulation costs are responsible for a smaller proportion of total expenditure. The proportion decreases from 5.5% of total expenditure for a DNO the size of ENWL to 4.8% of total expenditure for a DNO group double the size of ENWL.[51]

KPMG then utilised a 'bottom up' approach to evaluate the uplift that should be applied to ENWL's BS and CAI cost allowances. This was done by calculating the expected change in ENWL's BS and CAI costs which would arise if it were to double the size of its network. This approach identified the amount of fixed costs and semi-variable costs which are associated with ENWL's BS and CAI cost activities. The estimated fixed cost uplift was calculated as follows:

1. The BS and CAI costs of a DNO group twice the size of ENWL were estimated.
2. These costs were then divided by two and compared to ENWL's costs on a standalone basis.[52]
3. The difference, adjusted for the relative efficiency of ENWL, reflected the cost uplift applicable to ENWL.

Over half of ENWL's total BS and CAI costs consist of labour and pension costs. Therefore, a key focus of the analysis considered how the headcount across ENWL's BS and CAI activities would be likely to change if the network size doubled. Given the significance of Engineering and Management and Clerical support (21.9% of BS and CAI costs), IT and Telecoms (18.5% of BS and CAI costs) and Finance and regulation (12.5% of BS and CAI costs) the analysis focused on these functions.

KPMG assessed whether BS and CAI costs were variable, semi-variable or fixed.[53] KPMG estimates that the BS and CAI cost categories contain fixed and semi-variable costs totalling £32.8 million and that these costs would increase to £42 million as a result of doubling the size of its network.[54] After adjusting for non-price control costs and relative efficiency, KPMG estimates that the reasonable fixed cost uplift to apply to each year of RIIO-ED1 is £10.8 million.[55]

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[51] *DNO size is measured using Modern Equivalent Asset Values (MEAV)*

[52] *Assuming that the costs are equally spread across each DNO in the group*

[53] *Academic literature was reviewed for evidence in relation to economies of scale for each of the main BS and CAI cost categories. Business managers responsible for the BS and CAI cost categories across ENWL were interviewed and an in-depth analysis of ENWL's cost base in order to identify efficient fixed and variable costs was performed.*

[54] *Prior to any efficiency adjustment. The efficiency adjustment is based on an efficiency gap assumed to be reflected in 2011/2012 data, but which ENWL projections indicated would be closed by the time the RIIO-ED1 price control came into effect in 2015/2016. It is calculated as 4% reflecting the efficiency improvements ENWL expected to make over this period.*

[55] *For BS costs, in order to ensure that the cost uplift relates only to price control activities, an adjustment based on the ratio of gross and net (after re-allocation of costs to non-price control activities) costs was made. CAI activities can more easily be categorised into price control and non-price control activities and because the analysis focused on ENWL's 2011/12 cost data there may be some aspects of relative inefficiency reflected in that data. The efficiency adjustment was applied in this case and reduced the size of the estimated fixed cost uplift.*

Table 7: KPMG assessment of BS and CAI costs

Cost area	Single licence (£ 000)	Two licences (£ 000)	Additional costs (£ 000)	Additional costs (%)
Finance and regulation	£4,572	£5,596	£1,774	39%
IT & Telecoms	£13,538	£18,578	£4,249	31%
ECMS & network design & engineering	£2,809	£3,228	£1,195	43%
Customer directorate & call centre	£1,311	£1,311	£656	50%
Control Centre (CAI)	£1,449	£1,449	£725	50%
CEO	£2,618	£2,618	£1,309	50%
Property management	£268	£268	£134	50%
HR & non-operational training	£1,016	£1,070	£481	47%
Operational training	£274	£274	£137	50%
Other	£5,214	£7,942	£1,243	24%
Total	£33,069	£42,333	£11,902	36%

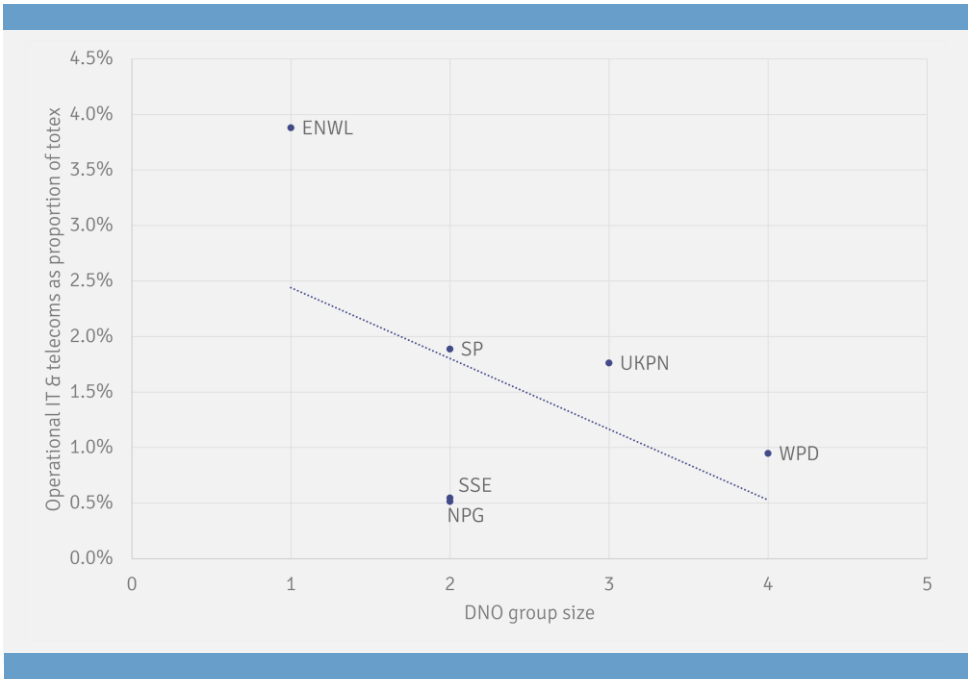
Source: KPMG report

6.7 Further analysis of fixed cost uplift

This section sets out our assessment of whether the broad conclusions of KPMG's analysis of fixed costs are likely to continue to hold, based on more recent data, as outlined in Section 4.1.

Figure 13 shows the relationship between operational IT and telecoms costs as a proportion of totex and DNO group size. There is, consistent with BS costs, a negative relationship between IT&T costs as a proportion of totex and DNO group size.

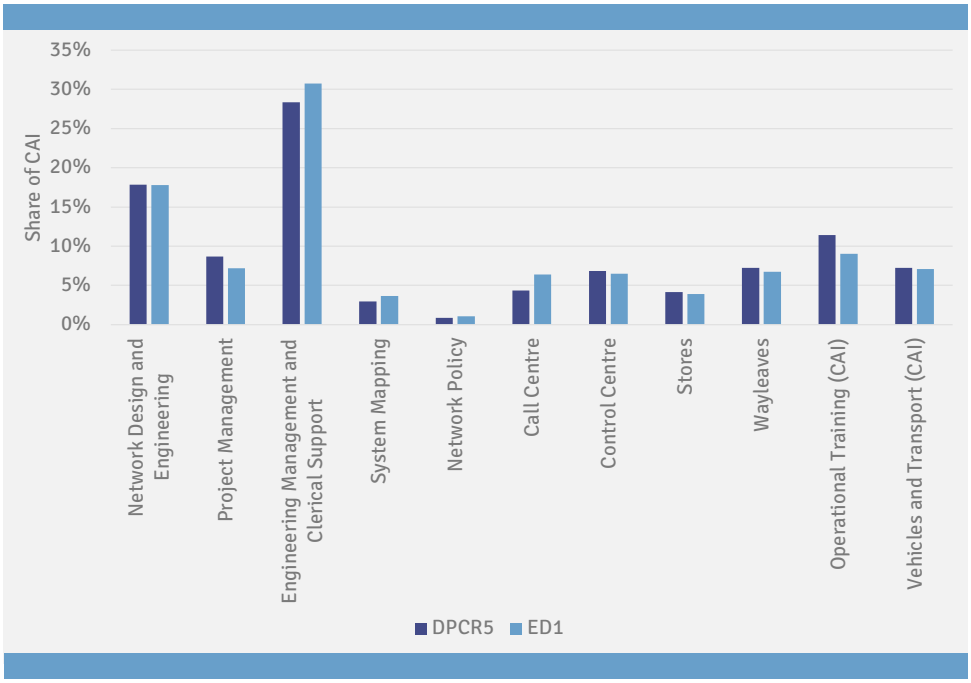
Figure 13: Relationship between operational IT and telecoms costs as a proportion of totex and DNO group size



Source: Economic Insight analysis of Annual Performance Report data

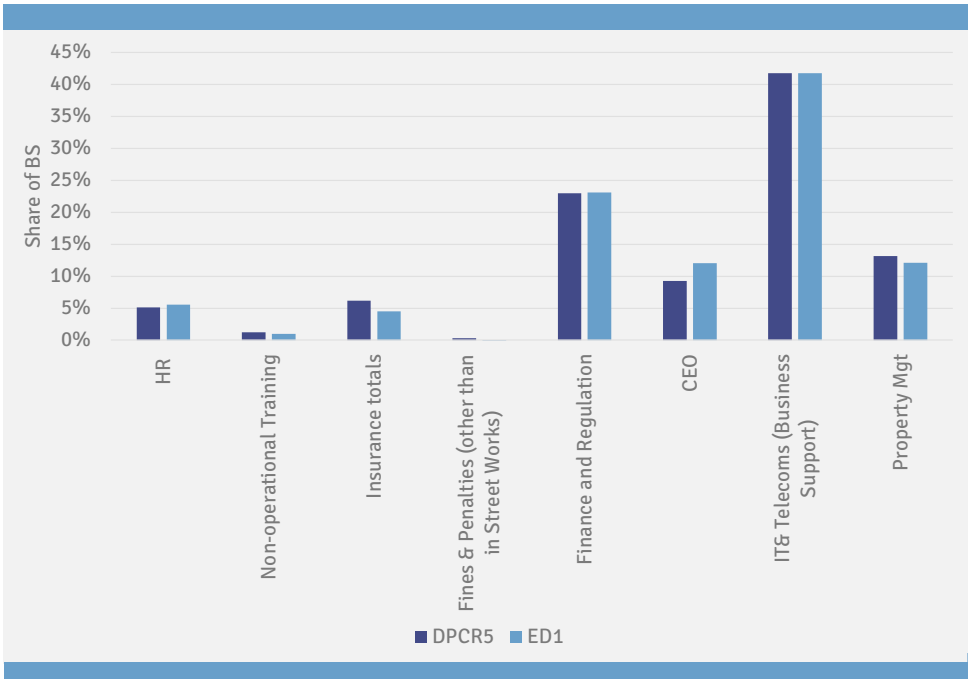
We have also analysed stability in the individual components of CAI and BS. The figures below set out the proportion of CAI and BS respectively accounted for by their individual sub-components for DPCR5 and ED1. Both figures show broad stability over time, and therefore the conclusions of the KPMG analysis are likely to remain broadly appropriate.

Figure 14: Comparison of components of CAI, DPCR5 versus ED1



Source: ENWL data

Figure 15: Comparison of components of BS, DPCR5 versus ED1



Source: ENWL data

6.8 Frontier Economics transaction cost premium estimates

This section sets out further detail on Frontier Economics' estimates of the additional transaction cost premium for infrequent debt issuers, referred to in Section 4.2.

Frontier Economics estimated the additional transaction costs incurred by small and infrequent debt issuers. This was based on comparing transaction costs incurred under three company profiles: (i) a small infrequent issuer, with debt issuances of £324m every three years; (ii) a small frequent issuer, with annual debt issuances of £108m every year; and (iii) a large frequent issuer, with annual debt issuances of £420m every year.

- Frontier estimated illiquidity costs based on bid-ask spreads. It estimated costs of around 15bps for the small frequent profile, and 6bps for the other profiles.
- Frontier estimated issuance costs based on the costs ENWL incurred in a 2020 bond issue, which it split between fixed and semi-variable costs. In annualised terms, these costs amounted to 15-18 bps for the small frequent profile, 7-8 bps for the small infrequent profile and 6-7 bps for the large frequent profile.
- Frontier estimated the cost of carrying excess cash based on the assumption that the small infrequent issuer would need to refinance by issuing new bonds in advance of existing bonds maturing, rather than through committed bank facilities. This implied costs of carry of 1bps for the small frequent and large frequent issuers and 21-23 bps for the small infrequent profile.

Together, Frontier's estimates imply a small company transaction premium in the region of 20 bps, with the small infrequent profile implying a slightly higher premium, as we set out in Table 8.

Table 8: Additional transaction costs on the cost of debt for small and large companies

Costs	Small (frequent)	Small (infrequent)	Large
Illiquidity costs	15bps	6bps	6bps
Issuance costs	15-18bps	7-8bps	6-7bps
Costs of carrying excess cash	1bps	21-23 bps	1bps
Total Transaction costs	**31-34bps**	**35-37bps**	**13-14bps**

Source: Frontier Economics - Transaction Cost Premium for Infrequent Debt Issuers

6.9 Review of regulatory precedent

This section provides further detail on our review of regulatory precedent, as set out in Section 4.2.

6.9.1 SGN Scotland, NGN and WWU RIIO-2

Ofgem, in its latest final determinations for Gas Distribution and Transmission, recognised that smaller companies bear higher efficient debt costs. Specifically, they decided to allow an additional 6bps allowance to SGN Scotland, NGN and WWU. Ofgem states: "*SGN Scotland and NGN provided estimates of these costs on two different bases but suggested the same additional allowance of 6bps. We consider this estimate is reasonable and have decided to err on the conservative side in allowing this additional provision for notional licensees expected to issue smaller size or less frequently than other networks due to their lower RAV size and RAV growth for RIIO-2.*"[56]

Ofgem recognised that companies are smaller and therefore greater efficient financing costs associated with less frequent participation in debt markets: "*an additional 6bps allowance for smaller companies that would be expected to issue less frequently, namely SGN Scotland, NGN and WWU.*"[57]

6.9.2 NERL RP3 Appeal

The CMA awarded NERL, following its appeal at RP3, an increase in issuance and liquidity costs. NERL questioned why combined issuance and liquidity costs should have fallen from the level set at RP2, and also argued that the CAA's analysis was based on 'rules of thumb' from regulatory decisions from water price controls, rather than smaller companies such as NERL.[58] Namely, it was argued by NERL that smaller companies generally need to hold additional cash at an additional cost[59]:

- NERL calculated that their issuance costs would be 0.11% per year;
- fees for its credit facility would be 0.10% per year;
- liquidity costs would be around 0.06% per year; and
- the higher than expected reserves in RP2 due to high traffic levels meant that liquidity risk management was to be funded using operating cash flows rather than other credit facilities- this would result in an overall allowance of 0.15% for issuance and liquidity costs.

The CAA on the other hand, allowed NERL an overall allowance of 0.10% on the basis of recent regulatory precedent in the water sector.[60]

While the CMA did not dispute the CAA's overall methodology for estimating the cost of debt[61], it did consider that as a smaller entity than water companies, NERL would face greater issuance and liquidity costs. Specifically, the CMA stated, "*we considered it likely that, as a smaller entity with fewer interactions with banking institutions and*

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56 *'RIIO-2 Final Determinations – Finance Annex'. Para 2.62.*
57 *'RIIO-2 Final Determinations – Finance Annex'. p.10. Note, while the 6bps figure may be materially incorrect, Ofgem nevertheless recognises the importance of this issue.*
58 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.142 - 13.143.*
59 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.144.*
60 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.156.*
61 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.151.*

the financial markets, NERL might face slightly higher-than-average issuance costs when compared to regulated companies in other sectors".[62] The CMA based its estimates on NERL's actual costs, stating that *"where we could be reasonably confident that costs have been incurred in an efficient manner, we considered it prudent to use actual cost experience as a guide to future potential costs. Accordingly, we placed more weight on NERL's experience in RP2 when calculating our estimate of issuance and liquidity costs".*[63] As such, it awarded issuance costs of 0.10-0.11% and liquidity costs of 0.06%, in line with NERL's experience at RP2.[64] The overall allowance for issuance and liquidity costs was 0.15%.[65]

6.9.3 Portsmouth Water PR19

Ofwat itself states that it sets a high bar with regard to company specific adjustments to the allowed return on capital.[66] While company adjustments for Bristol Water and SES Water were rejected, Portsmouth Water was successful on the basis that its small size meant that an uplift on company borrowing costs was necessary. As Ofwat states, "*[o]ur analysis of small company borrowing costs indicates that the appropriate uplift for a notional small company relative to our allowances is 35 basis points on embedded debt and 25 basis points on new debt, or 33 basis points on the overall cost of debt, at our notional 20% share of new debt*".[67]

Namely, Ofwat finds evidence for historical yield-at-issuance spreads for small water only companies (of around 10 bps, similar to that estimated by the CMA in 2015 of 11 bps).[68] This justified an uplift to the overall cost of debt, which in Portsmouth's case was 30bps.[69] Again, it is recognised by Ofwat that smaller companies require a specific company adjustment to reflect higher debt costs.

6.9.4 Bristol PR19

At the Final Determination stage of the process with the CMA, there was broad agreement between Ofwat and Bristol as well as regulatory precedent from the CMA, that "*smaller companies do have higher costs of debt on average and that this should be compensated by a CSA allowance".*[70] After assessing the evidence presented by Ofwat and Bristol, the CMA considered it appropriate to apply a CSA uplift to Bristol's embedded debt allowance versus the industry's embedded debt allowance.

When it comes to Bristol's ability to raise new debt, there did appear to be new evidence suggesting Bristol is able to access debt markets on a suitably flexible and competitive basis. Bristol was shown to be able to raise small scale financing at shorter terms and at lower prices than suggested by the CMA's proposed cost of new debt benchmark. Therefore, the CMA did not consider it appropriate to apply a CSA to Bristol's new debt allowance versus the industry's new debt allowance. In conclusion, the CMA believed that Ofwat's 10bps increased allowance was in line with previous

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62 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.156.*
63 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.157.*
64 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Para. 13.157.*
65 *'NATS (En Route) Plc / CAA Regulatory Appeal'. Table 13-13.*
66 *'PR19 Final Determinations: Allowed return on capital technical appendix'. p.94.*
67 *'PR19 Final Determinations: Allowed return on capital technical appendix'. p.95.*
68 *'PR19 Final Determinations: Allowed return on capital technical appendix'. p.100.*
69 *'PR19 Final Determinations: Allowed return on capital technical appendix'. p.101.*
70 *'Anglican Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Provisional findings'. Para 87*

CMA decisions and that it remains appropriate to reflect the additional embedded debt costs that may be faced by a notional smaller company.

6.9.5 Bristol PR14 Appeal

The CMA acknowledged the need for a small company premium (SCP) based on the assumption that smaller companies will face a higher cost of debt than larger companies. In PR14, Ofwat estimated the SCP as being 0.25%. This reflected a reduction since the 0.4% used in PR09. Ofwat's analysis was partly based on analysis by PwC, which compared the adjusted cost of the Artesian issuances for water only companies (WoCs) to the average iBoxx index. It concluded that the Artesian debt had an effective cost of 0.11% over the real iBoxx at the times of issuance. In estimating the size of the SCP, the CMA considered how this analysis of the cost of WoC bonds relative to the iBoxx index compared with an equivalent analysis of water and sewerage company (WaSC) issuance spread on fixed rate bonds vs the same index. The weighted average spread of these bonds was 0.26% below the iBoxx at the time of issuance. Adding the WoC premium compared against the iBoxx index of 0.11% to the WaSC spread against the iBoxx index of 0.26% would imply an SCP of 0.37%. This was consistent with the estimate of 0.4% that the CMA had used for their provisional findings and therefore this figure was used for the final determination. When deciding the appropriate allowance for the cost of debt via a benchmark methodology, the CMA cross-checked it against Bristol's actual cost of debt.

The CMA additionally considered that it was proportionate to assess whether any difference between Bristol's cost of capital and the wider industry should be reflected within the assumption for the asset beta. The CMA gave weight to consistency in their assessment of whether an amendment to the asset beta reflected the appropriate risks faced by Bristol. In the Competition Commission's 2010 determination for Bristol (CC10), they applied an uplift of 18% based on a measure of Bristol's operational gearing relative to comparator WaSCs. The CMA's review of the operational characteristics of Bristol compared to the observable comparators suggested that there had been no material change since CC10 and that Bristol continued to show higher operational gearing. In the CMA's provisional findings, they therefore proposed to follow the calculation applied in CC10, which indicated an uplift of 13% for Bristol Water.

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