Annex 20: Costing and benchmarking our plan

Ensuring our plan is efficiently priced & scoped to ensure best value for customers

December 2021

Contents

1 Executive Summary

We aim to deliver a leading level of service and reliability at a competitive cost for our customers. This drives us to continually seek new and innovative ways of solving current and future challenges.

Our RIIO-ED2 (ED2) plan is based on a high level of current operational efficiency which is evidenced through comparisons to the other DNOs and builds on our position as having been assessed as the most efficient DNO at the RIIO-ED1 price control assessment.

This annex sets out the detail behind our costing & benchmarking approach and includes recently commissioned expert external analysis where appropriate.

2 Establishing an efficient baseline

We have sought to establish and confirm the relative efficiency of our current costs as these provide the basis on which our RIIO-ED2 Business Plan has been built. To do this, we have primarily replicated the process that Ofgem undertook at ED1, using external expertise where required, and also supplemented this with a detailed review of our unit costs where appropriate comparative data exists.

2.1   RIIO-ED1 analysis

As part of the RIIO-ED1 (ED1) cost assessment process, Ofgem published a view of comparative efficiency at three stages of the process;

- Fast-track determination in November 2013;
- Slow Track Draft Determination (DD) in July 2014; and
- Slow Track Final Determination (FD) in November 2014.

This view looked at total expenditure ('totex') and was blended from a range of assessment techniques;
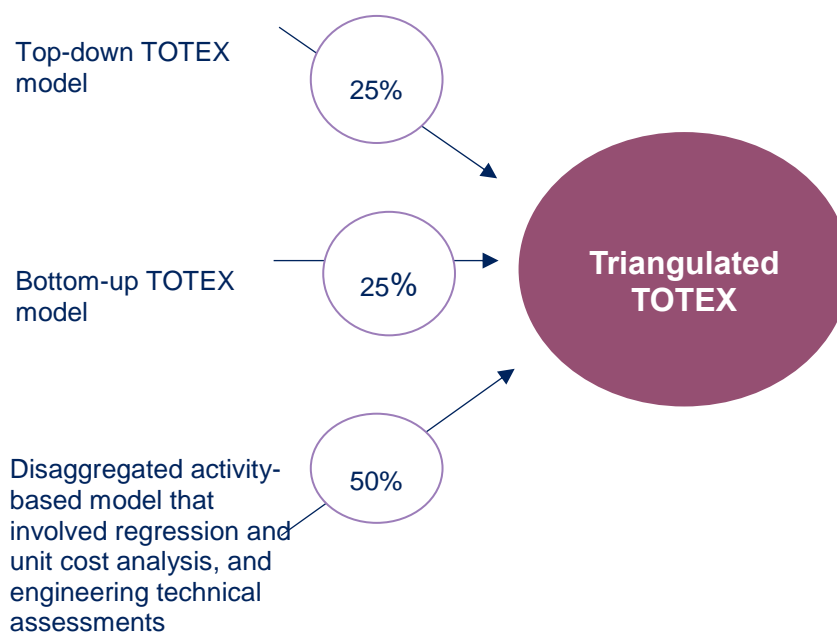

Figure 2-1   Representation of Ofgem's totex assessment approach for RIIO-ED1

The results at each stage were as follows, showing that we were assessed as the most efficient DNO at the time of ED1 allowance setting;

Ranking	Fast-track November 2013	Draft Determination July 2014	Final Determination November 2014
1	SWALES	SPD	ENWL
2	WMID	ENWL	SPD
3	EMID	SSES	SSES
4	SSES	EMID	SWALES
5	SWEST	NPgY	EMID
6	ENWL	SWALES	NPgY
7	SSEH	SPN	SSEH
8	NPgN	EPN	NPgN
9	SPN	NPgN	SPN
10	NPgY	SSEH	EPN
11	SPD	WMID	LPN
12	LPN	LPN	WMID
13	EPN	SPMW	SWEST
14	SPMW	SWEST	SPMW

Table 2-1   Relative DNO ranking through ED1 cost assessment

As set out in section 3.7 of our Business Plan, subsequent to the setting of ED1 allowances, we have worked hard to deliver our programme of commitments at a more efficient overall cost, delivering outperformance of allowances which we have shared with our customers. This outperformance is net of reinvestment to meet emergent challenges within ED1 and positions us as the top ranking DNO Group for efficient delivery within ED1;

DNO Group	Out/(Under) Performance £m	Out/(Under) performance %	Rank
ENWL	141	7.5%	1
UKPN	310	5.1%	2
WPD	22	0.3%	3
NPg	(0)	0.0%	4
SSE	(127)	-3.4%	5
SPEN	(127)	-3.9%	6
Total GB	**219**	**0.9%**	

* Data based on ED1 forecasts provided as part of the 2020/21 RIGs datashare (Table M17 post EV basis).

Table 2-2   Forecast outperformance of ED1 allowances by DNO Group*

2.2 Macro-level benchmarking

There are many different potential cost benchmarking methods, and the identification of the specific approaches to be adopted is a key discussion at every price control. For ED1, Ofgem conducted both high-level and detailed modelling to provide a rounded view of overall DNO efficiency.

High-level, macro modelling generally takes the entire cost base (often termed 'totex', ie total expenditure) and compares it to some measure of company size and/or other drivers. This gives a holistic view of cost efficiency which eliminates any cost classification or boundary issues but often struggles to include any qualitative measures in the analysis. The choice of model and drivers for ED2 is an ongoing discussion with Ofgem and we set out our early views on this in section 4.1.

2.2.2   Re-running the ED1 totex assessment

In order to benchmark our current operational delivery performance, we commissioned economic consultancy Oxera to re-run the totex assessments (top-down and bottom-up) conducted at ED1, replacing ED1 forecasts with actuals and applying sensitivities for different time periods (six years vs eight years) and the application (or not) of the same regional cost adjustments as at ED1.

Their report is included as Appendix A.

Their report concludes that;

- *ENWL typically maintains its efficient position (relative to the upper-quartile benchmark) when ED1 models are updated with the latest data*

- *In the models where ENWL is ranked outside of the upper quartile, it has a small efficiency gap (c. 0–2%)*

In the analysis, we rank fourth of the DNOs with regional adjustments applied, second with them removed. This places us around the upper quartile efficiency level which is typically used by Ofgem to indicate benchmark efficiency.
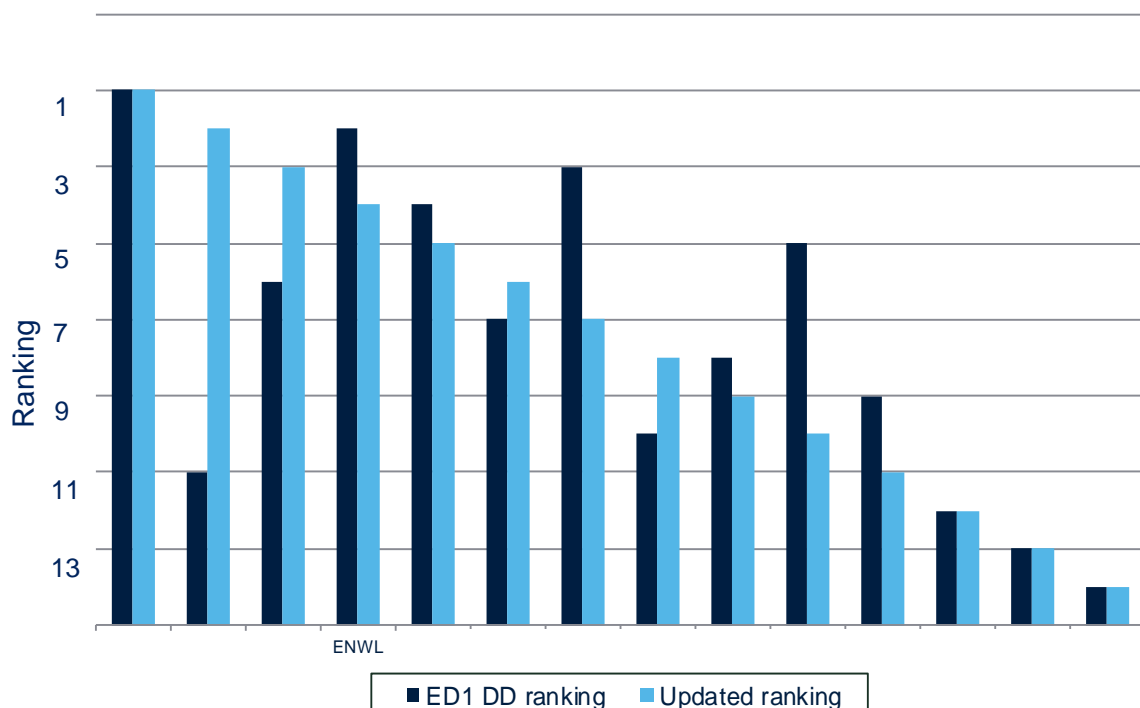
Figure 2-1   Top-down totex modelling outcome based on six-year actuals data (2016-21) with regional adjustments applied

In the corresponding bottom-up totex model (also 25% of the cost assessment approach at ED1), our overall ranking is also fourth on the same basis, improving to third with the regional cost adjustments removed;
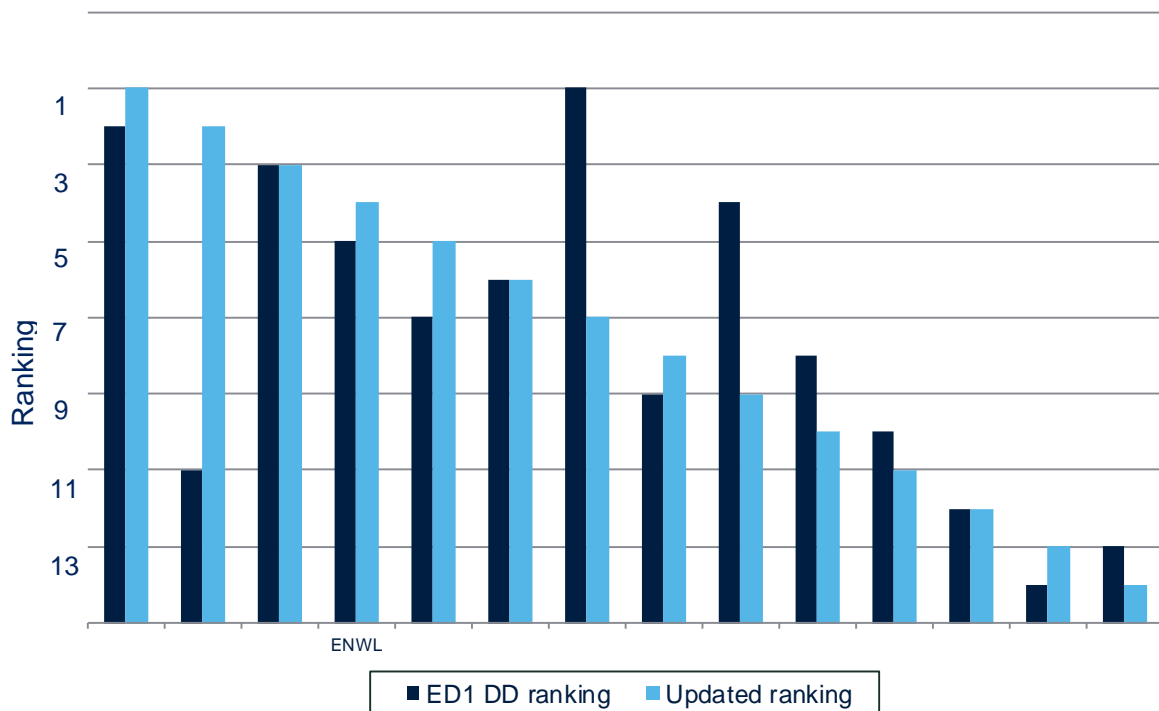
Figure 2-2   Bottom-up totex modelling outcome based on six-year actuals data (2016-21) with regional adjustments applied

This analysis demonstrates that we are delivering at an efficient level that remains around the benchmark level for the sector when assessed through a direct representation of the approach use for ED1.

2.3   Disaggregated benchmarking

2.3.1   ED1 re-run

The bottom-up, or 'disaggregated' cost analysis conducted by Ofgem for ED1 comprised the remaining 50% of the overall cost assessment process. This approach essentially splits up the cost base into its component parts and builds a model for each element. This allows some very specific modelling to take place which reflects the cost drivers of each particular activity, however it is blind to the trade-offs that can be made across different cost activities and also any differences in how DNOs present their costs (eg reflecting insourcing vs outsourcing models etc.).

Given the need for very detailed data, we asked Oxera to re-run those models where it was viable to do so, to complement our own internal analysis (see section 2.3.2. below). This focused on the models which used regression analysis and found that for the three areas assessed (representing 1/3rd of the cost base), our position was consistently at or better than the upper quartile level, giving further evidence of our overall efficiency level;

Activity	Assessment approach	Share of expenditure in TOTEX	ENWL updated ranking
Tree cutting	Regressed	3.2%	3rd
Troublecall	Regressed + non-regressed	9.4%	4th
Closely Associated Indirects (CAIs)	Regressed + non-regressed	22.4%	1st

2.3.2   Other DNO comparisons (internal via datashare)

Each year all DNOs are required to complete sets of data tables collectively known as the RIGs (Regulatory Instructions and Guidance) which detail all aspects of the activities that the DNOs undertake. DNOs share the non-price sensitive elements of these tables, which gives us the ability to compare our performance against the other DNOs across most of the activities that we undertake.

Using similar techniques to those used by Ofgem in the disaggregated assessment at the Slow Track Final Determination for RIIO-ED1 we have assessed our performance against the other DNOs in four major areas of expenditure using the data for the first six years of RIIO-ED1, which are:

- Closely Associated Indirects
- Business Support
- Faults
- Non-load network investment

We have not attempted to recreate Ofgem's modelling of efficient volumes but have concentrated on the costs of delivery.

For each identifiable activity we have calculated the average unit cost for each DNO in the first five years of RIIO-ED1 and from this identified the median for all DNOs. We then applied this median cost to the reported activities to calculate the costs that an 'efficient' DNO would deliver.

To account for regional and company-specific factors we have used the same factors that Ofgem used in their dis-aggregated assessment for the Final Determination. This is used to 'normalise' DNOs costs so that they can be compared on a 'like-for-like' basis. We did this to ensure accurate replication of the RIIO-ED1 approach; this should not be construed as meaning that we agree that these adjustments should be made in the RIIO-ED2 equivalent approach.

The results of our analysis are shown in the following tables. The columns show the following:

- The 'Normalised costs' are what we actually spent, adjusted for regional factors

- 'Assessment' is what we judged the 'efficient company' would have spent
- The 'adjustment' is the increased allowance we would have been given to deliver these activities; and
- 'Change' shows the percentage difference between the Assessment and the actual spend.

	Normalised costs	Our assessment	Adjustment	Change
Asset Replacement	215.0	236.9	21.8	10.1%
Operational IT and telecoms	42.9	30.8	-12.1	-28.1%
Refurbishment	49.3	46.8	-2.5	-5.1%
Civil Works (all)	33.4	30.3	-3.1	-9.3%
Diversions	21.0	25.3	4.3	20.5%
Legal & Safety	17.5	30.4	12.9	73.4%
Other Network Investment	83.8	83.8	-	-
Total - Network Investment	**463.1**	**484.4**	**21.3**	**4.6%**
Faults	143.0	147.9	4.9	3.4%
Business Support excluding IT	122.0	110.1	-11.9	-9.8%
Business Support IT Only	87.1	67.6	-19.5	-22.4%
Total Business Support	**209.2**	**177.7**	**-31.5**	**-15.0%**
Core CAI	205.0	259.9	54.9	26.8%
Wayleaves	10.9	12.5	1.6	14.9%
Vehicles (CAI & Non-Op Capex)	34.7	45.7	11.0	31.8%
Operational Training	28.7	27.5	-1.2	-4.3%
Total Closely Associated Indirects	**279.2**	**345.5**	**66.3**	**23.7%**
All assessed areas	**1,094.5**	**1,155.5**	**61.0**	**5.6%**
Non-assessed areas	**139.9**	**139.9**	**-**	**-**
All Price Control Spend	**1,234.5**	**1,295.4**	**61.0**	**4.9%**

The areas where we have assessed costs account for around 80% of our expenditure and we have calculated that for those areas we have spent £61m or 5% less than an 'efficient company' would have spent.

We have also compared our performance against that of the other DNOs for each of these four areas using the same methodologies. The tables below show our costs and our assessment of what our allowances would be and the percentage difference between them.

We have repeated the calculations for all DNOs but in the tables below only show our assessment of the difference between spend and the assessment of efficient spend, together with the ranking for each category. The results are:

	Non-Load Network Investment			
	Normalised Spend	Assessment	Percentage increase	Rank
ENWL	463.1	484.4	4.6%	3
NPgN			7.6%	1
NPgY			1.8%	6
WMid			2.0%	5
EMid			-3.1%	10
SWales			4.5%	4
SWest			-2.4%	9
LPN			-12.9%	14
SPN			-12.3%	13
EPN			-3.1%	11
SPD			0.7%	8
SPMW			4.8%	2
SSEH			1.3%	7
SSES			-9.1%	12
Industry	**5,566.2**	**5,536.2**	**-0.5%**	

	Faults			
	Normalised Spend	Assessment	Percentage increase	Rank
ENWL	143.0	147.9	3.4%	7
NPgN			-17.5%	14
NPgY			-3.8%	9
WMid			-10.1%	12
EMid			-4.8%	10
SWales			25.3%	2
SWest			16.6%	3
LPN			14.9%	4
SPN			-16.5%	13
EPN			-6.0%	11
SPD			12.6%	5
SPMW			1.7%	8
SSEH			28.5%	1
SSES			5.3%	6
Industry	**2,057.5**	**2,062.5**	**0.2%**	

	Business Support			
	Normalised Spend	Assessment	Percentage increase	Rank
ENWL	209.2	177.7	-15.0%	12
NPgN			1.5%	8
NPgY			0.8%	9
WMid			4.0%	6
EMid			3.9%	7
SWales			4.1%	4
SWest			4.1%	5
LPN			4.7%	1
SPN			4.3%	3
EPN			4.4%	2
SPD			-28.3%	14
SPMW			-28.2%	13
SSEH			-6.9%	11
SSES			-6.4%	10
Industry	**2,327.5**	**2,211.9**	**-5.0%**	

	Closely Associated Indirects			
	Normalised Spend	Assessment	Percentage increase	Rank
ENWL	279.2	345.5	23.7%	2
NPgN			4.5%	5
NPgY			30.3%	1
WMid			-7.3%	11
EMid			2.9%	6
SWales			-7.3%	12
SWest			-15.2%	13
LPN			-32.3%	14
SPN			0.4%	7
EPN			-5.3%	10
SPD			7.6%	3
SPMW			0.1%	8
SSEH			-4.9%	9
SSES			6.0%	4
Industry	**4,560.1**	**4,528.1**	**-0.7%**	

	All assessed costs			
	Normalised Spend	Assessment	Percentage increase	Rank
ENWL	1,094.5	1,155.5	5.6%	2
NPgN			2.1%	4
NPgY			7.7%	1
WMid			-2.5%	10
EMid			-0.5%	6
SWales			2.7%	3
SWest			-2.8%	11
LPN			-15.7%	14
SPN			-6.0%	13
EPN			-3.2%	12
SPD			-1.5%	7
SPMW			-2.3%	9
SSEH			0.6%	5
SSES			-1.7%	8
Industry	**14,511.3**	**14,338.7**	**-1.2%**	

This set of results reassures us that, using assessments based on Ofgem's disaggregated analysis, we are delivering efficiently in most areas of expenditure.

We recognise that we perform poorly against Ofgem's methodologies for assessing Business Support costs, but we do have concerns that the RIIO-ED1 disaggregated methodology of comparing costs for the DNO group against a measure of the size of the DNO group is not appropriate. Business Support costs largely reflect the costs of the 'corporate centre' so we believe that there should be consideration of an element of fixed costs in the RIIO-ED2 cost assessment. Section **Error! Reference source not found.** includes further details on our assessment of the magnitude of these costs and Annex 26 of our Final Business Plan - Small Company benefits - gives further details of the wider benefits of having a single company within the distribution sector.

2.3.3   Unit cost modelling

For our routine investment activities, we maintain a database of target unit costs which we use for pricing future projects and programmes. These are reviewed annually to account for:

- Any changes in contract arrangements since the last review;
- Recent experience of delivering the activity under consideration;
- Changes to equipment specifications or supply;
- Impacts of any innovation programmes or projects;
- Latest analysis of other DNO delivery; and
- Any other factors that may be relevant to the particular activity (eg legislative changes).

As detailed within section 6.2.3 of our Business plan, we seek to find the most competitive rates for the goods and services we require using a variety of different contract management approaches. Each year, a number of equipment, service or construction contracts come up for review and we take this into account in our forward unit costs.

As noted, we undertake a review each year of the reported outturn costs from the other DNOs. In a number of cases, the data is not directly comparable due to having a low number of comparators for example, but for widespread, routine activities, we compare our outturn costs against those reported by other DNOs to ensure we are setting appropriately stretching targets.

The results of this benchmarking activity have been embedded into the unit costs in our Business Plan where relevant.

As part of the validation of our costs for ED2, we commissioned WSP to undertake a broader analysis of unit costs in those activity areas where comparative annually reported data is available. In order to do this, they looked at representative volumes of work and the outcome when costed using each of the DNO's reported unit costs.

This looked at the main reported activities with significant volumes and costs over the RIIO-ED1 to date time period (six years), focusing on Asset Replacement, Faults and Occurrences Not Incentivised (ONIs).

The research found a higher than expected level of volatility in the reported unit costs, both between years and across activities. The chart below shows the spread in unit costs around an average efficiency level (0%) for Asset Replacement activities;
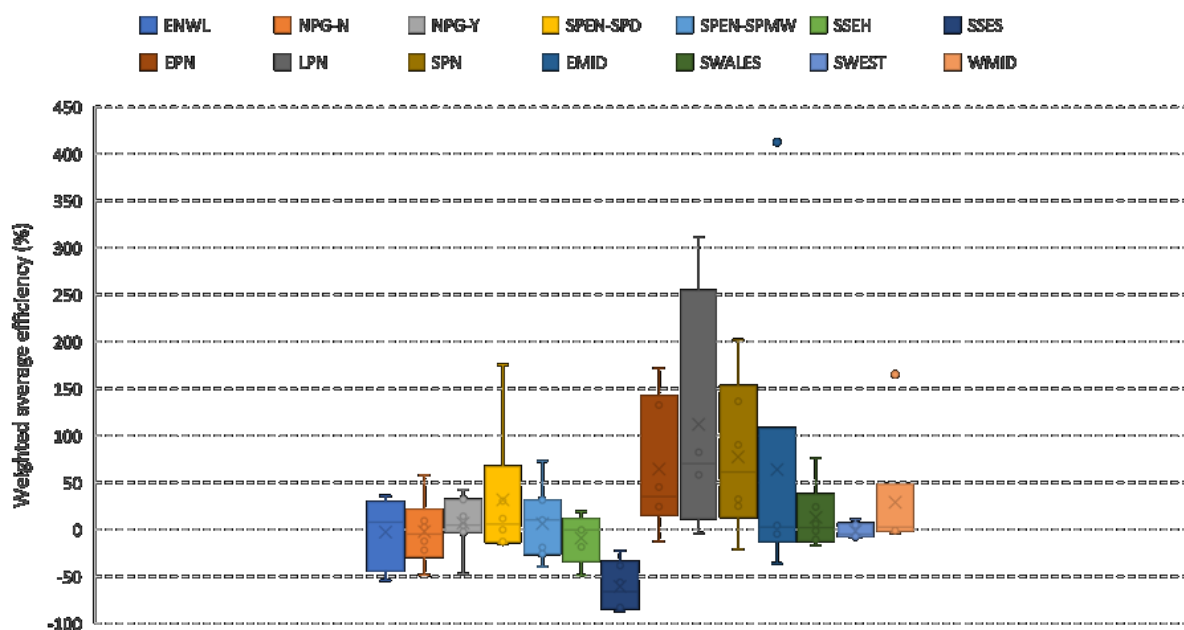

Figure 2-3 Unit cost spread compared to average efficiency level for replacement activities by DNO

The ENWL spread is tightly clustered and mainly below the zero level, indicating better than average unit cost efficiency. The combination of these efficient unit costs and our efficient programme scope leads to our overall costs being around the benchmark level, as correlated by the higher level totex benchmarking discussed in section 2.2.2.

As a consequence of the volatility, WSP carried out a further stage of review looking at programme pricing using different methods (eg DNO A's programme priced using DNO B's unit costs etc.). Due to variations in company reporting through the RIIO-ED1 period, this did not deliver meaningful results for the areas tested. Full analysis can be found in their report which is presented as Appendix B.

3 Efficient Forecasting

3.1 How we ensure future costs are efficient

Having established our track record on efficiency, we need to consider how we use this to ensure our forward plans are efficient; both in terms of their scope and their pricing.

ED2 signifies a significant increase in investment as we look to enable the Net Zero transition and deliver a range of programmes and outcomes that have been strongly supported by customers and stakeholders.

Our challenge is to firstly ensure that these additional outcomes are efficiently scoped, and then to deliver them at a level of efficiency that is even higher than the levels we have achieved in ED1. To do this, we have had the proposed scope of our programme reviewed in technical detail and have forecast future efficiencies on top of our already efficient position beyond the top end of the range recommended through recent externally-commissioned work.

3.2 Expert input to future scope

3.2.1 High level modelling of replacement requirements (Arup)

In 2019, ENWL was sold to a new group of investors. As part of the sale process Arup carried out an independent analysis of ENWL's totex, including a review of historical cost breakdown and efficiencies, as well as a forecast of various totex sub-categories up to the end of ED2 (2028) as part of due diligence. The investigation reviewed totex according to cost categories reported in Ofgem's Price Control Financial Model (PCFM): load related capex, non-load related capex, faults, tree cutting, controllable opex.

As part of the review, Arup provided a summary of three key considerations impacting non-load related capex (NLRC) spend, an overview of the expected cost make-up for ED1 and an independent forecast for ED2.

Arup reported that NLRC is a significant proportion of ENWL's totex, making up around 41% of total ED1 totex spend forecasted at the time. In ED2, Arup forecast greater NLRC spend at a level of £118m on average per annum, up from £82m on average per annum in ED1, owing primarily to increases in asset replacement volumes. This represented a 44% increase on ED1 forecast levels.

Their review also noted that ENWL's asset management strategies were in line with industry best practice and that innovation plays a key role in enabling cost efficiencies. Arup also noted that assets are generally maintained in good condition.

Their detailed findings included:

- Arup found ENWL's approach balances the provision of a reliable network and ensuring safety of operators and the general public, while delivering cost efficiencies and affordability;
- Health and criticality indexation are recorded and used to produce risk matrices and support investment planning;

- Arup noted ENWL's innovation strategy forms an integral part of the business plan, supporting Ofgem's assertion that innovation is key to test and transform new ideas into BaU;
- From Arup's independent totex analysis, asset replacement makes up the majority of totex spend from 2024 onwards, driven by an increase in replacement volumes;
- Asset replacement capex forecasts are based on increased volumes compared to ED1; and
- Arup also forecast considerable growth in non-load related capex, driven by increased investment in asset replacement and refurbishment.

The Arup report is included as Appendix C.

3.2.2   External review of specific ED2 investment proposals (WSP)

As part of our ED2 Final Business Plan, we have extensively documented the details behind the major projects and programmes we have included. In Annex 1 to our Business Plan, we track each proposal's journey through our detailed customer and stakeholder engagement process, and the triangulation that has led to the proposed form of each one. In addition, our extensive range of Engineering Justification Papers (EJPs) sets out the technical scope and details, together with our options assessment process that has led to the proposed scope of work. Annex 18 gives a detailed listing of these, and their referencing to the main Business Plan data tables.

We commissioned industry experts WSP to review every EJP proposal using their experience from other price controls and understanding of the RIIO process. This has ensured that we have the appropriate technical rigour in our detailed plans and have appropriately articulated both the need for and solution to the challenges set out in the EJPs.

Their Technical report is included as Annex 33 to our Business Plan.

3.2.3   IT services (Gartner)

In the specialist area of IT expenditure, we commissioned specialists Gartner to undertake a series of benchmarking assessments on our IT Capital Plan. These included:

- An initial IT Capital Plan Assessment to review the current state of our IT Capital Plan, with recommendations to guide us towards a robust IT Capital Plan and ensure follow up benchmarking exercises were supported by quality investment descriptions and estimating data;
- Completing a benchmarking assessment reflecting our comparative performance to similar industry peers, based on the development and population of a dedicated IT Budget assessment tool; and
- Completing a review and 'sense-check' comparing our software, capital and maintenance spend against market averages and other utilities and reviewing our technology roadmaps and plans against forecast innovations.

The review also compared our plans against 'market expectations', investment levels and technology forecasts to provide a position on fair investment, future timing and opportunities. It also included an assessment of capex for any assumed increases in Opex as a result of investment

Gartner provided an initial assessment on the current status of investment planning, an IT Budget assessment using a dedicated Budget tool, and a detailed report reviewing capital investments including recommendations, commentary and a value statement, with references to supporting research as necessary to evidence support for our proposals. These have been used in the

development of our IT proposals, further details of which can be found in Annex 23 of our Business plan.

3.2.4   Specialist inputs where required

We hold extensive data on our equipment and network, however where appropriate, we have commissioned specialist expert input to identifying the scope of specific programmes. For example, Wood Ltd provided an updated report and assessment of potential environmental risks (contaminated land, flooding, groundwater sensitivity etc.) associated with our portfolio of electrical substations and depots. This report followed previous updates in 2008 and 2011 and informed our proposals for Contaminated Land remediation for ED2.

Similarly, we engaged a consultant, JBA Consulting Ltd, to carry out flood risk assessments for our portfolio of 524 grid and primary substations in line with the Engineering Technical Recommendation (ETR138) and our own Code of Practice 355. This assessment incorporated the revised and updated flood data from the Environmental Agency, the National Flood Resilience Recommendations for assessing primary substations supplying more than 10,000 customers to a higher 1/1000 flood risk, and the remedial and mitigation works we have already completed at some of our sites.

Their assessment identified 35 sites (15 grids and 20 primaries), that would require flood mitigation between 2023 and 2028 which form our programme for ED2. This includes both the Fluvial flood zone and risk of surface water flood risk as a 30, 100 and 1,000-year event.

3.3 Ensuring we use the best data

Having quality data on which to make decisions is critical for effective asset management. As well as focusing on efficient costs, we have also ensured that the underlying data that inputs to our decisions on scope is appropriately validated and checked.

3.3.1   Validation of NARMs models (WSP)

As detailed in our Network Asset Risk Measures, or NARMs Annex (17), we are the only DNO to use the Arcadis Enterprise Decision Analytics (EDA) platform for our Common Network Asset Indices Methodology (CNAIM) models. CNAIM has been updated to v2.1 for ED2 which involves a change in the prime outcome to that of lifetime risk, and extensive re-calibration of input values amongst other changes.

As a result, we have rebuilt our CNAIM model suite to the new version in EDA and commissioned WSP to ensure the validity of the new models. They did this by building their own parallel models using the published algorithms in CNAIM v2.1. When tested with a representative data set, the review concluded alignment to the fourth decimal place, validating the new build as fit-for-purpose for ED2 modelling.

Further details of this validation exercise are included in their technical report as Annex 33 to our Business Plan.

3.3.2   LiDAR Validation (Fugro)

Along with the other DNOs, we are proposing extensive programmes on our overhead line network in ED2, relating to reliability improvements, safety programmes, and resilience enhancements etc. Given the significance of this area, we have validated our existing inspection-derived data with that which is available via broad area spatial surveys such as LiDAR.

We have conducted two sample surveys comparing LiDAR and inspection data. The second of these was commissioned expressly for the purpose of supporting the ED2 submission and covered over 20,000 woodpoles, or 1/8th of our total inventory.

This concluded that there was a 97% match in terms of ground clearances and an 85% match for vegetation management issues. In terms of the latter, we have conducted follow-up spot checks on highlighted discrepancies and generally found that the inspection record is more accurate due to LiDAR resolution issues (eg it can't always discern the smallest branches).

On this basis we have not included costs of future LiDAR data acquisition in our submission as we do not believe it generates any better outcomes for customers.

3.4 Ongoing Efficiency & Real Price Effect (RPE) assumptions

Having established an efficient baseline, we need to consider how these costs will change in the future. The two main approaches used to do this relate to Ongoing Efficiencies (OE), ie the extent to which we will progressively get more efficient in the future compared to current levels of productivity, and Real Price Effects (RPEs). These are the specific inflationary factors not accommodated within general inflation indices.

3.4.1 NERA report & analysis

Given the complexities of this area of analysis, we and the other DNOs collectively commissioned NERA to review current research and data on productivity analysis. This looked at a range of indices and utilised different analysis techniques to identify representative outcomes in order to consider different comparator sectors, time period and techniques.

The summary table from their report is shown below;

Table 1: Summary of the Evidence

Evidence	Captures trends in productivity for DNOs	Separates OE and catch-up	Objective and stable over time	Does not distort incentives	Range of estimates	Mean of estimates
EU KLEMS					0.3-0.8%	0.5%
Törnqvist					-0.1-0.4%	0.2%
Long-Term GAA					0.3-0.5%	0.4%
Post-GFC GAA					0.1-0.3%	0.2%
Forecasts					0.0-0.3%	0.1%

Notes: Each criterion is assessed on a four-point scale from worst (quarter-full red) to best (full dark green).
Source: NERA analysis.

One of their key findings was that productivity trends are significantly different following the global Financial Crisis of 2008 and as such, historic assumptions which may have been substantially based on pre-2008 data are no longer valid.

Although their triangulated conclusion was that an estimate of 0.3% Ongoing Efficiency per annum was appropriate from the range of approaches explored, we set ourselves the target of 0.5% which represented the top of the recommended range in our Draft Business Plan in July 2021. For our Final Business Plan, we have gone further and set ourselves a more ambitious future efficiency target of 1% per annum, on top of our efficient starting position.

NERA's report is included as Appendix D.

3.4.2   RPEs (NERA)

Real Price Effects (RPEs) essentially represent price impacts not covered by general inflation indices. Given our reliance on specific commodities (eg copper), we could experience inflationary pressures which are not picked up and appropriately recognised through a general inflation index such as CPI.

Ofgem have signalled that RPEs will be indexed in ED2 rather than recognised in the form of up-front allowances. We agree that this is an appropriate approach to manage the risk of future price increases above inflation, but it is critically dependent on the selection of the appropriate representative indices.

In order to advise us on this, the DNOs also collectively commissioned NERA to review the different indices available and the extent to which they represent the external influences on our cost base. We will continue to work with Ofgem and the other DNOs to ensure that an appropriate framework of indices is developed to manage this future risk.

NERA's report is included as Appendix E, including the October 2021 addendum following update of the original study. We have used these recommendations in completing the relevant elements of our Final Business Plan submission.

3.5 Role of Innovation

Innovation is at the heart of our business and we have focused our efforts in ED1 on finding ways of solving future challenges at a lower cost than would have been possible using traditional approaches. Further details on the projects we have progressed, and their benefits can be found in section 3 of Annex 24 – Our Innovation Delivery Plan.

3.5.1   Discounting incorporated in the submission

Business-as-usual innovation is generally short-term, lower risk innovation which is funded by our base revenue allowance and our rollout of proven innovation. Our Innovation Delivery Plan (Annex 24) details the deployment of sizable BAU innovation across our programme delivering £111 million in quantifiable savings to customers during RIIO-ED2 in addition to significant improvements in safety, customer service and resilience.

Figure 6.6 of that document (excerpt below) provides a summary of these along with the amount to be invested.

Figure 6.6: High level view of RIIO-ED2 BAU innovation investment

Primary Theme	Areas for innovation	Amount to be invested (£m)
Consumer Vulnerability	Provision of a fund to address how we can remove barriers that prevent the uptake of low carbon technologies.	1.25
Net Zero and the Energy System Transition	Deploy the innovative advanced monitoring solution, PreSense, to provide information on the use and available capacity of the LV distribution network.	20.6
	Deploy the innovative solution, Smart Street, to reduce customers energy consumption and bills.	78
Optimised Assets and Practices	Deploy the innovative actuator, Reflex, to provide automation at reduced cost.	2
	Deploy innovative overhead line fault passage indicators to improve fault response and thereby reduce fault costs.	0.25
	Deploy the innovative solution, Sentinel, to improve detection of low hanging conductors.	36.0
	Deploy the use of enhanced switchgear ratings to allow a targeted investment programme.	-
Flexibility and Commercial Evolution	Deploy the use of flexibility and innovation to facilitate the transition to DSO.	-

During ED2, the Innovation Delivery Plan ascribes the value from innovation to two distinct activities: Our rolling out of proven innovation (i.e. BAU innovation, as described above) and our performing new innovation (eg our proposed £25m NIA programme). It is the combination of these two that is presented below to be £126m. However, as in RIIO-ED1, much of the benefits/value of our ED2 new innovation will be from our rolling out this innovation as proven innovation in RIIO-ED3. We estimate this to be in the region of £150m.

In the Innovation Delivery Plan, we list the BAU innovations linking each to the source of the innovation in ED1 (i.e. NIA or NIC) and the benefits/value we expect it to deliver during ED2 together with a brief summary of the assumptions made to derive the value in section 6.7.5 of that document.

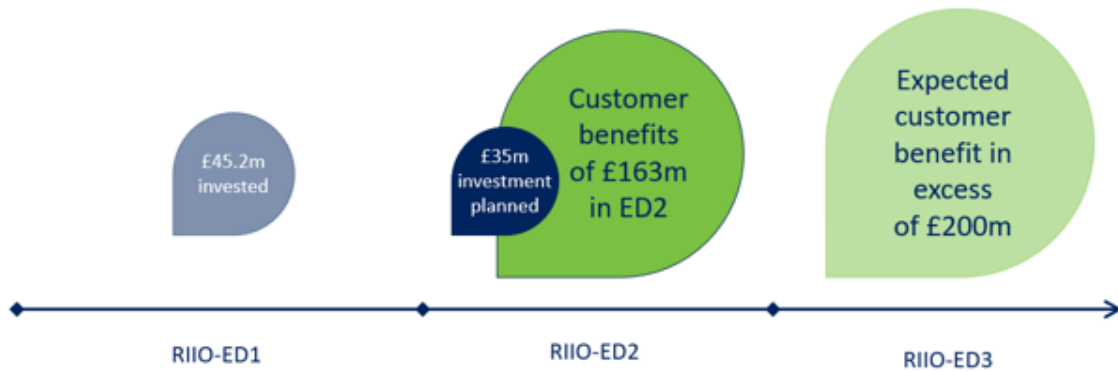Figure 6.9: Our investment and forecast customer benefits for RIIO-ED1, **RIIO-ED2** and RIIO-ED3

Figure 6.10: Our forecast customer benefits for RIIO-ED2 and RIIO-ED3

	RIIO-ED2	RIIO-ED3
BAU Innovation benefits	£148m	Embedded
NIA, NIC, SIF benefits	£15m	£200m
Total	£163m	£200m

As an example, for our reinforcement programme, the total value is £17.7m based on obtaining a 20% discount on all relevant EHV schemes and a 5% discount across all relevant HV schemes. Relevant schemes are those associated with thermal or fault level load-related network interventions. We have included these reductions as discounts in our plan.

4 Cost assessment in ED2

4.1 Cost drivers for ED2

High level modelling relies on the choice of cost driver against which to compare the associated costs. These typically relate to a high-level metric such as the number of customers or total length of circuit. In some models, these are combined into a composite variable.

In ED1, the measure given the greatest weight was that of Modern Equivalent Asset Value (MEAV). This represents the cost of replacing the entire current network and is based on the assumption that it is the current assets and equipment that drive the majority of future costs being assessed.

In order to review these assumptions ahead of ED2, Oxera were commissioned by all the DNOs to identify and evaluate cost drivers for ED2. This included interviews with all DNOs to identify changes to the operating environment, a retrospective study of regulatory precedents, followed by econometric analysis and regression and activity-based modelling to produce a shortlist of cost drivers suitable for ED2.

This report is included as Appendix F.

We support the key conclusion of this report that MEAV remains the main driver for costs and should be the primary variable in any future totex assessment. We also emphasise their points on consistency of data quality and presentation to ensure that such assessments are carried out on validated DNO data.

We look forward to continuing these discussions with Ofgem through the cost assessment process in 2022.

4.2 Bespoke adjustments for ED2

Historically, Ofgem have considered applications for bespoke cost adjustments which reflect very specific factors affecting single DNOs or groups.

We have included two specific programmes as Bespoke activities in our ED2 Business Plan as these reflect the rollout of unique ENWL-developed innovation – Smart Street & LineSIGHT. As such, they should be excluded from any high level totex benchmarking as non-comparable activities.

In both cases, the costing of these programmes is based on widescale initial rollout programmes in ED1 which themselves build on the original technology trials. These programmes have enabled us to refine the scope of each, work with the supply chain to reduce equipment costs and collaboratively develop efficient installation and commissioning methods to ensure an efficient overall cost. We have shared the details of both programmes with the sector and are happy to receive any scrutiny of our proposed costings for each programme.

Both programmes are detailed in accompanying Engineering Justification Papers (EJPs) and Smart Street is additionally presented as one of our two Consumer Value Propositions (CVPs) – see Annex 15A.

4.3 Single company premium

As noted in section 2.3.2, we are the only single company in terms of ownership structure across the 14 DNOs. As set out in Annex 26, this enables us to operate differently and also provides Ofgem with a valuable comparator to the reported costs of the other, larger DNO groups.

Given our singleton status however, we are not able to share common or fixed costs across a number of licensees hence our support costs (eg 'head office'-type costs) often look high in comparison based on historic benchmarking approaches.

For RIIO-ED2, we have asked Oxera to make an assessment of the level of costs which we absorb through our inability to share with other licensees. In summary, they concluded that there is a single licensee effect, noting that "*ENWL cannot make the same economies of scale savings on direct and indirect expenditure as larger DNO groups can*". Oxera also concludes that "*If these economies of scale are not robustly accounted for (directly or indirectly) in Ofgem's cost assessment framework, […] the resulting cost allowances could be biased against small DNO groups, such as ENWL*".

We understand that cost assessment modelling and cost benchmarking is an important aspect of the business plan assessment process. In undertaking these assessment activities, it is crucial that costs compared are on a like for like basis so as not to skew the view of comparative efficiency. A company specific adjustment that addresses the issue identified by Oxera is, therefore, critical and necessary to ensure that our costs are comparable to those of the other large DNO groups.

The Oxera report identified a range of impacts which we have valued at £23m per annum and have included these as our Company-Specific Costs in our Final Business Plan, to highlight the need for appropriate adjustments in cost benchmarking to enable a like-for like comparison. This is analogous to some of the claims submitted by other DNOs for consideration for regional factors and represents the level of cost reduction that is estimated to result if we were able to share fixed costs with another licensee.

Oxera's report is included as Appendix G.

5 Conclusions

We were assessed as the most efficient DNO in Ofgem's final RIIO-ED1 benchmarking analysis and we have subsequently outperformed these benchmarked allowances by more than any other DNO group.

We have used this efficient outturn operational performance as the starting point for our ED2 pricing and as discussed in section 2.3.3 we have validated our unit costs through analysis of our own spending and comparisons with the costs of the other DNOs

The scope of our ED2 programme has been reviewed by technical experts, as has our key data & models.

We have baked the benefits of previous innovation into our forward plan and have also assumed a level of ongoing efficiency beyond the top end of the range identified in recent industry studies.

We agree with the indexation of RPEs and will continue to work with Ofgem to identify the most appropriate indices. We are proposing bespoke cost adjustments in regard of two unique programmes representing the rollout of proven ENWL innovation.

We will engage with Ofgem in the development of the cost assessment framework for ED2 and are of the view that the ED1 approach should be used as a starting point with primacy given to MEAV as a totex cost driver, subject to appropriate data validation. Our unique Bespoke programmes need to be assessed separately from any top-down totex approach and due consideration needs to be given to the additional costs resulting from our single-company status within the benchmarking framework.

6 Appendices

A. Oxera report – ENWL's updated cost performance under Ofgem's RIIO-ED1 cost assessment methodologies

B. WSP report on RIIO-ED1 unit cost analysis

C. Arup report on replacement requirements

D. NERA report on Ongoing Efficiency

E. NERA report on RPEs

F. Oxera report on Cost Drivers for ED2

G. Oxera report on single company premium.