

SSEN Distribution Response to RIIO ED2 - Draft Determination`

SSEN Annex, 4. Adjusting baseline allowances for uncertainty

Question ID	SSEN-Q8.
Question	What are your views on our proposals for SSEN’s bespoke UMs?
Associated Evidence	
Title	Link to Evidence
Annex 10 - North of Scotland	n/a
Response	
<p>In the response below, we provide our views on Ofgem’s Draft Determination in relation to the following bespoke UMs:</p> <ul style="list-style-type: none"> • Wayleaves and diversions • Subsea cables • OpEx adjustor • DG monitoring • Ash dieback <p>We provide views on other bespoke UMs through our responses to specific questions elsewhere in the consultation:</p> <ul style="list-style-type: none"> • Hebrides and Orkney re-opener views are covered in response to SSEN-Q9 • Shetland views are covered in response to SSEN-Q10 • Strategic Investment views are covered in response to CORE-Q4 and CORE-Q5. • Polychlorinated Biphenyls (PCB) views are covered in response to CORE-Q16. <p>We provide views on the common UMs which are being consulted on in our response to questions related to the RIIO-ED2 Draft Determinations Overview Document. Our response to points on the materiality threshold is set out in our response to Q6 of the Overview Document. In our response to questions SSEN-FQ30 and SSEN-FQ31 in the RIIO-ED2 Draft Determinations – Finance Annex A we set out our response to issues related to the capitalisation rate for re-openers and volume drivers. Broader points on establishing a fair cost of capital in context of the level of uncertainty we need to manage are also set out in Finance Annex A.</p> <p>In addition to our response to this question, our consultation response includes a strategic narrative annex on our North of Scotland investment strategy (Annex 10 – North of Scotland). This annex provides further detail on the fit of our proposed Subsea cable and Hebrides and Orkney UMs within our North of Scotland plan. The annex should be read in conjunction with this response.</p> <p>As a general theme we are concerned that Ofgem has not recognised our credible consumer-centric approach to managing risk and uncertainty in the round. We have taken an approach that is aligned with best practice and is rooted in the precedent established across economically regulated sectors. In the course of operating a distribution network we are required to manage both diversifiable and non-diversifiable risks and uncertainties.</p>	

Non-diversifiable risks are correlated with the wider economy. They are managed through agreeing an efficient cost of capital, specifically setting the asset beta.

Diversifiable risks and uncertainties are specific to SSEN, or to our sector, and our starting point is always that we should not seek to diversify all risks and uncertainties we face. We draw an important distinction between internal risks and external uncertainties.

Internal risks include risks associated with delivering many of our projects and investments. These can be influenced by both inside and outside effects, for example the performance of contractors, but they remain risks we can and must manage.

External uncertainties are 'known unknowns' outside our direct control, which drive a significant change in investment scale. This could be a change in policy from government or areas of our expenditure which have a high variance driven by factors clearly outside our control. We propose UMs to manage some of our external risks where there is significant probability of variance from the baseline and a high likelihood of this occurring.

We acknowledge the argument that proposing UMs in some areas can remove an efficiency incentive on DNOs to minimise costs. This is true in areas where the variance to baseline and probability of this variance is negligible. However, each UM is context specific, and UMs have many advantages to consumers, especially in areas where variance and probability of this variance to baseline is significant. The driving cause of this variance is often timing, or information uncertainty linked to the actions of third parties or natural events.

Timing uncertainty exists in cases such as subsea cable failures. It would be wrong to overload the ex-ante baseline allowance with the costs of managing faults which are yet to happen, especially when the costs for managing these specific types of faults can be significantly greater than onshore cable faults. Putting these costs in our ex-ante baseline and then not spending the money would not be in the interests of existing and future consumers. It is more appropriate to only allow these costs following a fault through a UM.

Information uncertainty exists in cases such as Ash dieback diseased tree removal. These costs are likely to be significant, but we need better information on the proximity of diseased trees to our network assets and information is also required on the extent of disease near different parts of our network because this will vary the tree removal costs. It would be wrong for consumers to bear these costs in the ex-ante baseline allowance because the quality of information to justify a proposal would be too high-level. In this case it is better to use a UM to allow us to return at the appropriate time to Ofgem with allowance proposals once better information is available, in our proposal this is post undertaking a detailed survey of diseased trees in proximity to our network.

In the sections below we provide specific information which addresses Ofgem's concerns raised in the Draft Determination and communicated to us via bilateral meetings and SQ responses. We also outline our expected counterfactual case of how we expect baseline allowances to be increased if Ofgem continues to reject our proposals.

Overall, we consider that in the cases outlined below, Ofgem has failed to consider the impact of its proposals on existing and future consumers, including in terms of maintaining security of supply, and reducing carbon emissions.

Wayleaves and diversions

We disagree with Ofgem's position to reject our UM proposal. Below we set our response to Ofgem's concerns raised in rejecting this UM and why it is critical this is reversed in the Final Determination. It is essential we have a UM with:

- A re-opener for wayleave terminations
- A close-out mechanism for injurious affection claims

We refer to the following documents in relation to wayleaves and diversions as part of this response:

- Ofgem Engineering Justification Paper Review tracker (provided bilaterally to SSEN with the cost models) – row: 321/SSEPD/NLR/DIVERSIONS
- RIIO-ED2 Draft Determinations WPD Annex, Table 28 - row for EJP016
- RIIO-ED2 Draft Determinations SSEN Annex, table 29
- SSEN Engineering Justification Paper: Investment Reference No: 321_SSEPD_NLR_DIVERSIONS, Tables 2, 3, 15 & 16
- OFGEM DD DISAGG MODEL VOLUMES for Table CV5 – Diversions. Provided as part of the Draft Determinations model suite
- Final Business Plan submitted BPDT for CV5 – Diversions for all DNOs. Shared between DNOs to assist with Draft Determination review
- SSEN's response to SSE022 SQ Form_M13 data request SSEN, 28th January 2022
- SSEN reverse SQ SSEN003, 7th July 2022
- SSEN reverse SQ SSEN042, 3rd August 2022
- Land Rights and Consents for Electricity Network Infrastructure – A Call for Evidence, Department for Business, Energy, and Industrial Strategy, 4th August 2022
- RIIO-2 Final Determinations - Core Document
- SSEN Distribution RIIO-ED2 Final Business Plan, Customer Engagement Group Report, 17th January 2022
- RIIO-ED2 Draft Determinations – Core Methodology Document, para 7.254

The forecasting risk

Extracted from our Engineering Justification Paper (321) we show in the figures below the total volume of cases received for injurious affection claims for RIIO-ED1 in SHEPD and SEPD respectively and the volumes of termination cases received for RIIO-ED1. These figures clearly show there is a forecasting risk in using historic data to estimate future expenditure need for wayleaves and diversions.

This forecasting risk has additionally been recognised by Ofgem and Government, for example:

- **RIIO-ED2 Draft Determinations WPD Annex, Table 28 - row for EJP016:** *“Wayleaves and diversions are inherently subject to a high degree of uncertainty.”*
- **Ofgem Engineering Justification Paper Review tracker (provided bilaterally to SSEN with the cost models) – row: 321/SSEPD/NLR/DIVERSIONS:** *“The need case, optioneering and*

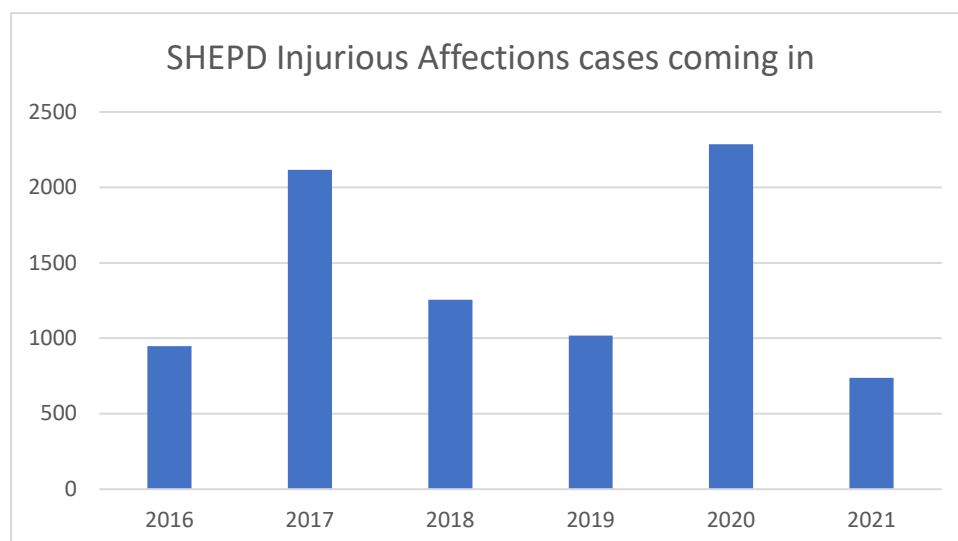
preferred solution with the above mechanisms [Uncertainty Mechanisms] is judged to be proportionate and deliverable.”

- **Land Rights and Consents for Electricity Network Infrastructure – A Call for Evidence, Department for Business, Energy, and Industrial Strategy:** *“The cost and timescales associated with negotiating these voluntary agreements can be unpredictable, as they are dependent on a number of factors including the value of the land, the type of equipment housed on the land, and the relationship between the network operator and the landowner.”*
- **RIIO-ED2 Draft Determinations – Core Methodology Document, para 7.254:** *“We propose to retain the RIIO-ED1 re-opener mechanism for rail diversions for RIIO-ED2”*

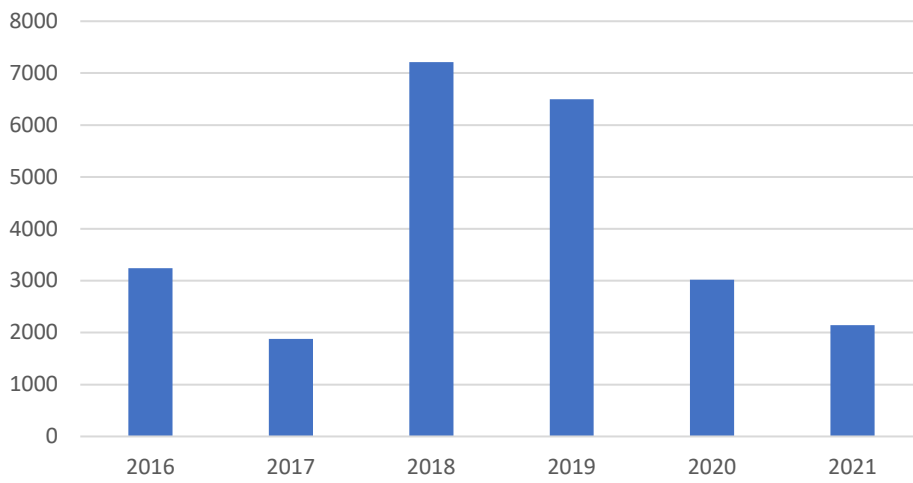
Ofgem’s response to our SQ SSEN003 is not credible and we note Ofgem’s comments on WPD’s and SSEN’s EJPs *“reflect an engineering view ... rather than being our consultation position on wayleaves and diversions overall encompassing a cost and policy assessment of uncertainty.”* All statements within the Draft Determination should be reflective of Ofgem’s view, and contradictory statements put into question the robustness of Ofgem’s analysis and basis to reject our proposal for a UM.

We also point out that Ofgem is prepared to retain a re-opener mechanism for rail diversions in RIIO-ED2. We see no reason in principle why forecasting risk for diversions for rail infrastructure is any different to diversions for highway infrastructure. Under Ofgem’s current proposals, highway infrastructure, and that of other assets would be treated differently to rail. This is inconsistent and should be rectified.

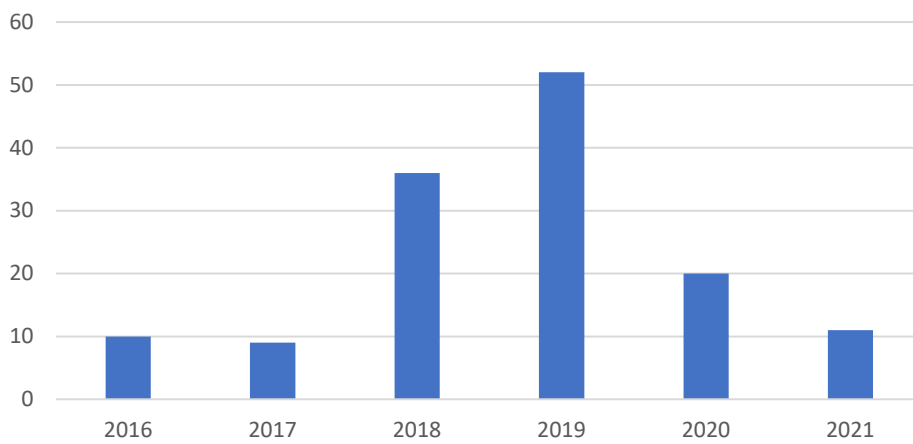
Whilst central Government have issued a ‘Call for Evidence on Land Rights and Consents for Electricity Network Infrastructure’, this is not a guarantee of any change in legislation to limit or change the number of claims companies receive. Further if any change in legislation is introduced, it is unlikely that it would take effect within the RIIO-ED2 period. Therefore, the challenge remains for the foreseeable future.

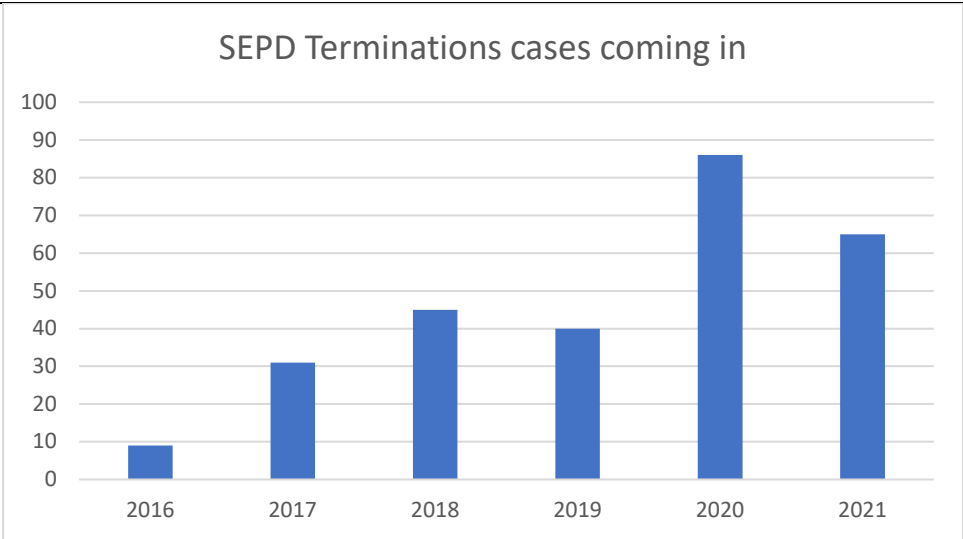


SEPD Injurious Affections cases coming in



SHEPD Terminations cases coming in





The need for a UM

In Annex 17.1 to our final business plan, we set out a clear rationale for our UM which continues to hold true. We draw attention to the fact that a re-opener for wayleave terminations would not reduce our incentive to minimise costs because: (a) there are broader incentives and licence obligations which continue to achieve this aim; and (b) a re-opener would still afford Ofgem the right to disallow any inefficient costs submitted by SSEN during the RIIO-ED2 period, meaning customers remain protected from unjustified cost increases.

We note Ofgem’s feedback on the reason to reject the proposed UM where it has stated:

“We also want to ensure that DNOs are incentivised to minimise diversions costs, and we consider ex ante funding to be the best approach to do this”

Where our assets have been built on land with unsecure land rights, landowners are legally entitled to request that the assets on their land are diverted. Without appropriate funding mechanisms there is a risk of a growing backlog of claims.

We have well established processes in place to manage requests from the landowners to minimise the disruption and costs of diversions to our network customers. These processes have reduced claims by 66% through negotiation. The negotiated value saved against initial worse case network impacts has achieved savings in excess of £26m. We would continue to operate as we have with an Uncertainty Mechanism in place to ensure that we limit any costs for consumers.

Our proposal for an UM is also supported by our CEG: *“We accept that a reopener for diversion costs may be needed, with Ofgem paying close attention to efficiency in the costs when the mechanism is triggered.”*

More broadly, Ofgem has established a precedent in RIIO-T2 of managing the uncertainty faced by network companies. The ‘RIIO-2 Final Determinations - Core Document’ notes in paragraph 7.106: *“we believe that we have addressed the impact of uncertainty within our Final Determinations by including one or more of the following measures where we have good evidence to support them:*

- *Baseline Totex allowances with a true-up mechanism at the end of the RIIO-2 period (i.e. Wayleave review / Landowner compensation)”*

Noting that 132kV is a transmission voltage in Scotland but a distribution voltage in England and Wales, not allowing a UM for RIIO-ED2 could create a discriminatory position for customers in England and Wales.

We note Ofgem’s comments in response to our SQ SSEN003 that:

“SSEN’s proposal for a physical diversions re-opener and close-out mechanism for IA compensation claims did not sufficiently justify that the benefits of a mid-period re-opener would outweigh the drawbacks of increased bill volatility for customers and did not sufficiently justify why a re-opener would be best suited for physical diversions but a logging-up mechanism is better suited for IA compensation claims.”

The benefits of a re-opener versus any bill volatility can be mitigated through the cost materiality threshold to submit a re-opener application and by limiting the proposed application windows in period, for example only one mid-way through. Moreover, a re-opener ensures that consumers avoid loss of wider output deliverables should we be forced to incur significant additional wayleave termination costs, even after extensive attempts to negotiate these downwards with third parties.

A logging-up mechanism is preferable for injurious affection compensation claims due to the higher volume of cases received and the higher level of churn in the negotiation process. This is shown clearly in the figures above. Whilst a logging up mechanism would still allow Ofgem to assess the efficiency of additional costs incurred for wayleave terminations, a re-opener process is better suited for more detailed examination of cost efficiency of these higher cost claims, which is in existing and future consumers’ interests. However, we remain open to discussing alternative mechanisms with Ofgem.

The counterfactual if the UM is not approved

Should Ofgem not be able to approve our proposed UM within its Final Determination then this must be reflected in an increase in our baseline allowances to accommodate the risk faced in claim variance. As a starting point we note from ‘Ofgem DD Disaggregated model volumes’ that all DNOs, except for ENWL, had their business plan submitted volumes allowed in full at the Draft Determination, see figure below:

			ENWL	WMTD	EMTD	NPdY	NPdN	LPN	SPN	EPN	SWALES	SWEST	SPD	SPNIW	SSEH	SSES
			#	#	#	#	#	#	#	#	#	#	#	#	#	#
ACTUAL SUBMITTED BPDT VOLUMES																
Diversion (non-fully rechargeable)																
Conversion of wayleaves to easements, easements, injurious affection																
Conversion of wayleaves to easements, easements, injurious affection	LY	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	HW	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	EHV	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	120V	Claims settled														
Total																
Diversion due to wayleave terminations																
Diversion due to wayleave terminations	LY	Diversion completed														
Diversion due to wayleave terminations	HW	Diversion completed														
Diversion due to wayleave terminations	EHV	Diversion completed														
Diversion due to wayleave terminations	120V	Diversion completed														
Total																
Diversion (non-fully rechargeable)																
Conversion of wayleaves to easements, easements, injurious affection																
Conversion of wayleaves to easements, easements, injurious affection	LY	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	HW	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	EHV	Claims settled														
Conversion of wayleaves to easements, easements, injurious affection	120V	Claims settled														
Total																
Diversion due to wayleave terminations																
Diversion due to wayleave terminations	LY	Diversion completed														
Diversion due to wayleave terminations	HW	Diversion completed														
Diversion due to wayleave terminations	EHV	Diversion completed														
Diversion due to wayleave terminations	120V	Diversion completed														
Total																

In ENWL's case it appears Ofgem's rejection of its proposal for an UM has resulted in an increase in baseline volumes post Draft Determination. The increase represents volumes ENWL had set within the scope of its proposed UM. The response provided by Ofgem to our SQ SSEN042 did not provide sufficient evidence to contradict this view.

Despite also having our UM proposal rejected we have not seen our baseline volumes increase post Draft Determination. If Ofgem does continue to reject the proposal for an UM at Final Determination, then a consistent treatment on volumes proposed in the UM for Wayleaves and Diversions should be applied to all DNOs. This would mean our baseline volumes would increase by an amount equivalent to the data we submitted in response to SSE022 on 28th January 2022, see figures below for SHEPD and SEPD respectively, and a re-submission of Business Plan Data Tables required.

SHEPD

Wayleaves and Diversions	Cost category or Asset class within sheet	Cost line / name	Sub-category 1	Sub-catg Voltage	Units
C/CV - Diversions	Diversion due to wayleave terminations			LV	Diversion completed
C/CV - Diversions	Diversion due to wayleave terminations			HW	Diversion completed
C/CV - Diversions	Diversion due to wayleave terminations			EHV	Diversion completed
C/CV - Diversions	Diversion for highways (funded as detailed in NRSWA)			LV	Diversion completed
C/CV - Diversions	Diversion for highways (funded as detailed in NRSWA)			HW	Diversion completed
C/CV - Diversions	Diversion for highways (funded as detailed in NRSWA)			EHV	Diversion completed
Total					

SEPD

Wayleaves and Diversions	Cost category or Asset class within sheet	Cost line / name	Sub-category 1	Sub-catg Voltage	Units
C/CV - Diversions	Diversion due to wayleave terminations			LV	Diversion completed
C/CV - Diversions	Diversion due to wayleave terminations			HW	Diversion completed
C/CV - Diversions	Diversion due to wayleave terminations			EHV	Diversion completed
C/CV - Diversions	Diversion due to wayleave terminations			120V	Diversion completed
C/CV - Diversions	Diversion for highways (funded as detailed in NRSWA)			LV	Diversion completed
C/CV - Diversions	Diversion for highways (funded as detailed in NRSWA)			HW	Diversion completed
Total					

Subsea cables

We do not support Ofgem's view to reject our fix-on-fail UM proposal. Below we set out our reasons with additional evidence on why it is critical we have a UM with:

- A volume driver for subsea cable replacement following damage or faults
- A re-opener for additional remote backup generation fuel costs

We refer to the following documents in relation to subsea cables as part of this response:

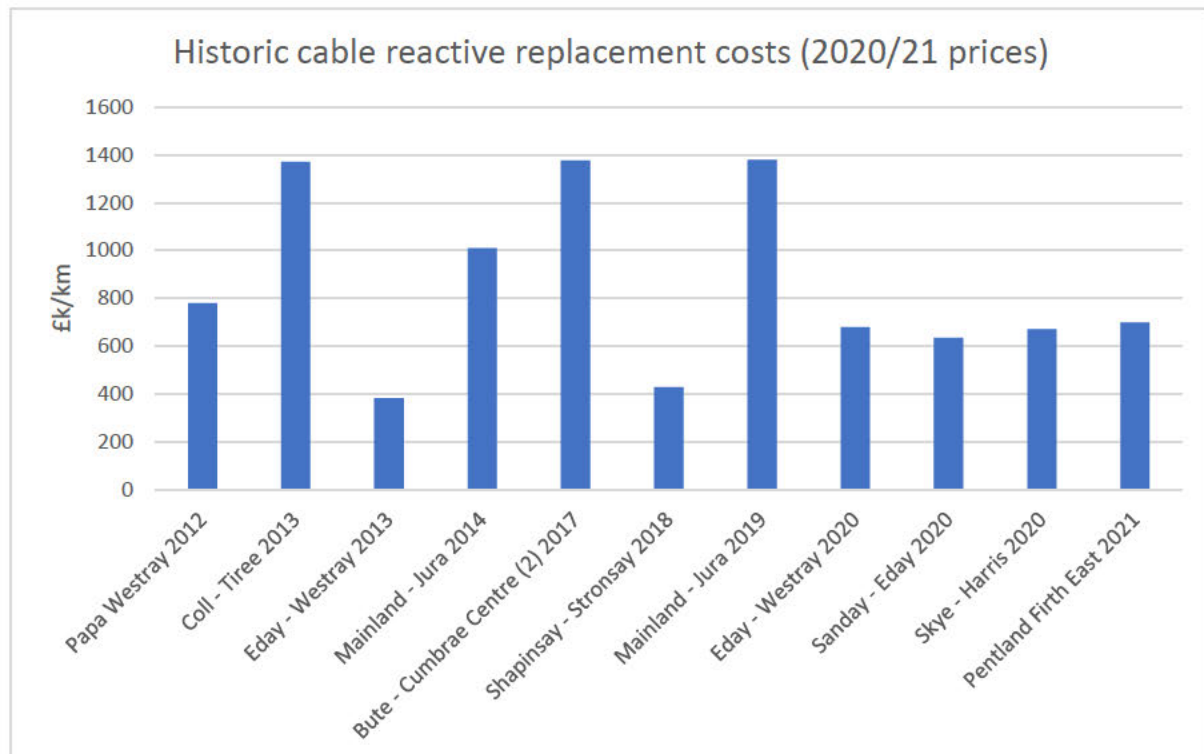
- RIIO-ED2 Draft Determinations SSEN Annex, Table 29.

- SSEN DISTRIBUTION RIIO-ED2 UNCERTAINTY MECHANISMS RIIO-ED2 Business Plan Annex 17.1, section 6.3, and Appendix A.
- Scottish and Southern Electricity Networks (SSEN) re-submission of RIIO-ED2 business plan for Scottish Hydro Electric Power Distribution (SHEPD) investments in the Scottish Islands, letter dated 29th April 2022, paragraph 12.
- RIIO-2 Final Determinations – SHET Annex (REVISED), paragraph 4.6
- SSEN Distribution RIIO-ED2 Final Business Plan, Customer Engagement Group Report, 17th January 2022

Historic subsea cable replacement cost variability

In the figure below, we show historic subsea cable replacement costs (in 2020/21 price base) post fault for the past 10 years on a £k per km basis. This chart highlights the variance in rates we are uniquely exposed to in our network for reactive replacement decisions. The range of costs are driven by factors outside our control such as:

- Availability of vessels, equipment, and specialist personnel at short notice to undertake work
- Spares availability (N.B. limited spares held by SSEN) and shipping costs from outside UK
- Costs of holding boats and crew whilst awaiting suitable weather conditions. Faults in winter can have longer lead times
- Competition with transmission and offshore wind developers for cables, crew, and equipment
- Requirement for subsea protection or subsea cable stabilisation
- Stakeholder and statutory licence obligations (e.g., emissions constraints)



In the table below we show the cable length (km) for the cables in figure above.

Cable	Length (km)
Papa – Westray	3.91
Coll – Tiree	4.28
Eday – Westray	8.54
Mainland – Jura	8.09
Bute – Cumbrae	4.92
Shapinsay – Stronsay	14.64
Sanday – Eday	4.32
Skye – Harris	32.14
Pentland Firth East	36.25

In the table below we show the unit costs for proactive subsea cable replacement in our RIIO-ED2 plan.

Component	Classification	£k/km (2020/21 prices)
Fixed (all cables)	All	██████████
Band 1	0-3km	██████████
Band 2	3-20km	██████████
Band 3	20km+	██████████

The figures and tables above highlight that for cables in Band 2, which make up most cables in our portfolio, our proactive replacement unit cost (██████████ £ per km) would not be an accurate reflection of our reactive replacement unit costs. For cables in Band 3, there is more limited comparison data and while the nature of the faults in the graph are closer to the proactive replacement unit cost of 705,405 £ per km, this is more coincidence driven by favourable market conditions and limited weather downtime when replacing more recent longer length cables.

In our business plan, we proposed a volume driver for reactive replacement, rather than a re-opener. A volume driver acts as a protective hedge for consumers against fluctuations in unit costs, such as those seen in the graph above. Rather than us submitting a re-opener allowance ex-post for each cable replacement and consumers potentially being exposed to the full cost of uncertainties outside our control, a fixed unit cost is awarded for replacement which means consumers are protected against higher cost fluctuations, and we are incentivised to minimise costs.

In our final business plan Annex 17.1, we proposed unit costs for the volume driver at ██████████ £/km for all cable bands, which strikes a reasonable balance considering the range of uncertainty faced, including the risk premium of purchasing as a distressed buyer in a competitive marketplace. An explanation of supporting econometric modelling for this value is provided in Annex 17.1 Appendix A.

For each of the cables in the RIIO-ED1 period in graph above, we show in the table below the Health Index score at the point for failure. We also show a range of other cables in the table that are not featured in graph. These additional cables are either still being replaced (Corran Narrows South) or were repaired rather than replaced.

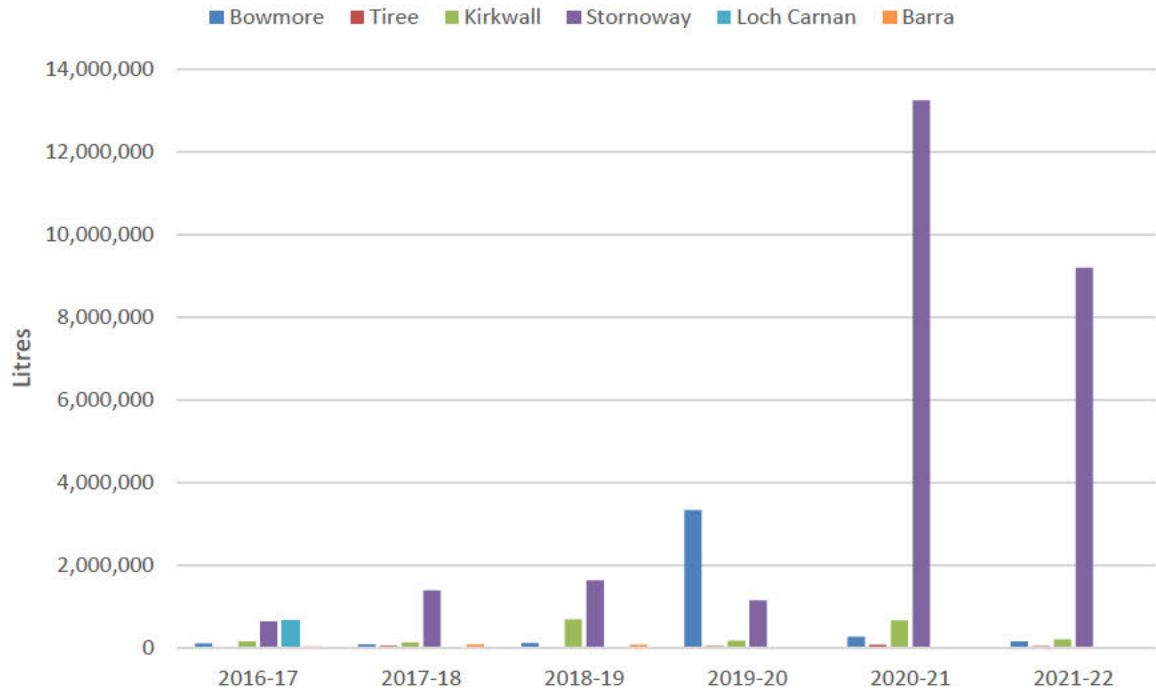
The table below highlights many cables which are much younger or appear in good health through inspections can fail ahead of their anticipated end of life, which should be at around HI5. The marine environment can destroy cables quickly as the cable is subjected to several external factors which standard underground cables are not.

Cable	HI @ time of fault
Pentland Firth East (TS1)	HI1
Pentland Firth East (1)	HI5
Skye - Harris	HI5
Sanday - Eday	HI5
Eday - Westray	HI3
Mainland - Jura	HI3
Bute - Cumbrae	HI5
Corran Narrows South	HI3
Islay - Colonsay	HI1
Eriskay - Barra 1	HI1
Shapinsay - Stronsay	HI5
River Oich - Fort Augustus	HI3

Historic remote island generation fuel usage

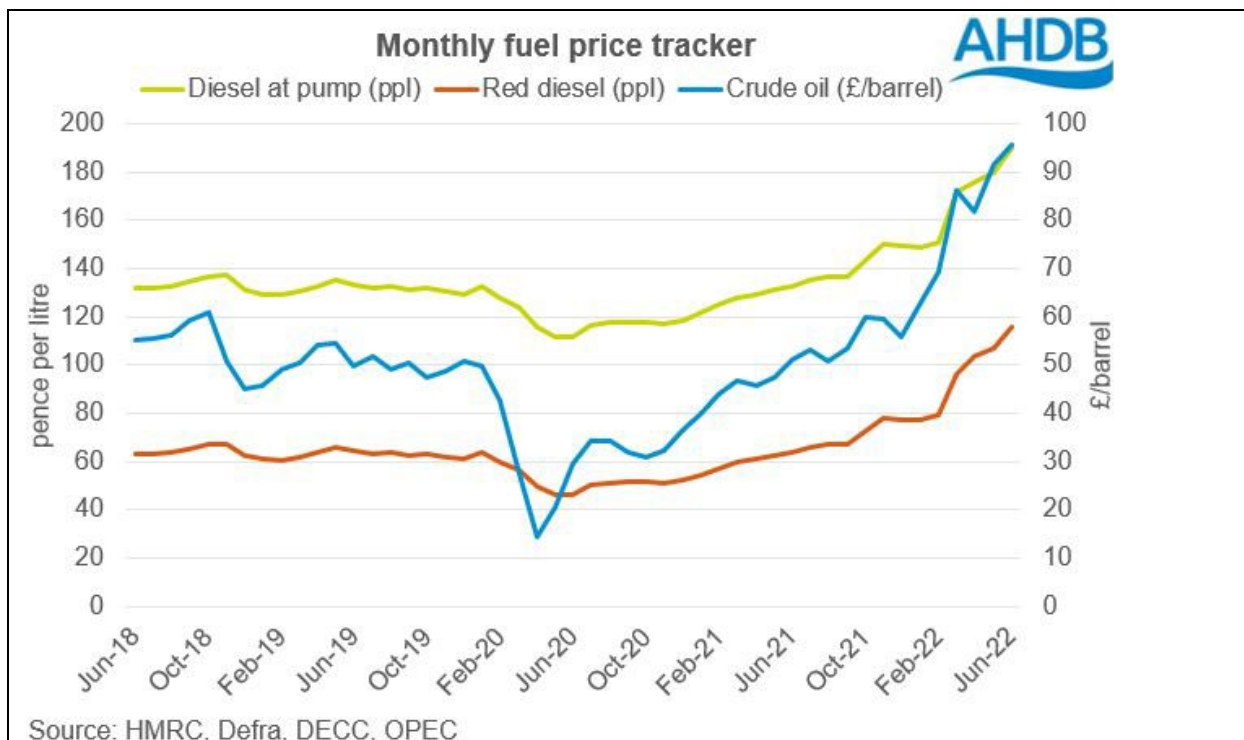
In the chart below, we show actual fuel usage in litres across six of our remote island generation sites (excluding Shetland and mobile diesel generation) resulting from cable faults. The chart demonstrates the impact long duration outages from subsea cable faults can have on our fuel usage. The 2019/20 spike at Bowmore was caused by the Mainland - Jura subsea cable fault, which had significant waiting on weather time to repair. Similarly waiting on weather, cable procurement and vessel availability resulted in the spike at Stornoway in 2020-21 and 2021-22. These are all factors outside of our control.

Fuel used in remote island generation fixed sites



The variability in fuel usage at our remote island generation sites is compounded by fluctuations in fuel (diesel) prices, which in the last year have also risen significantly. When we set our plan, we used an assumed diesel price of ████ p/litre; the latest spot prices is ████ p/ litre. Again, a factor outside our control.

In the figure below we highlight this variability fuel costs (N.B. we currently use red diesel, however our ability to use this in remote island generation sites will cease prior to RIIO-ED2).



Future likelihood of subsea cable faults

Subsea cable faults are not easy to predict, and we are exposed to incurring significant costs outside of the baseline allowance for proactive replacement. Our proactive subsea cable intervention strategy delivers management of network risk for known highest risk cables, by intervening on those circuits which are showing the poorest health indicators and/or the highest network risk to customers.

The aim of component (i) of the uncertainty mechanism is to ensure that we can strike a balance between cost to consumers for proactive investment and network risk management. Without this, we would require additional baseline allowance for more proactive interventions to reduce the risk of unplanned faults and unplanned costs. Component (i) ensures costs are not passed onto consumers immediately and are only recovered for works that are essential should a fault occur, and replacement is required following detailed optioneering.

In the table below, we set out a list of cables either deemed ‘unjustified’ in the Draft Determination EJP recommendation or cables which will reach Health Index 5 (HI5) by the end of RIIO-ED2 (2028), and which we did not include in the ex-ante baseline plan submission.

For each cable in the table, we provide commentary on why a full cable replacement would be most likely required rather than a repair in the event of a fault in RIIO-ED2. In many instances repairing a faulted cable would likely be inadequate, and the allowances awarded in CV26 and CV31 for repairs would be insufficient to cover replacement works required.

The purpose of the table (for cables marked without *) is to highlight how through our business plan we have reduced consumer exposure to higher baseline costs by not having all possible HI5 cables funded ex-ante. Rather we used the assumption that we would be allowed a RIIO-ED2 subsea cable

fix- on- fail UM proposal and so could allow some cables to fail before we act. This overall reduces the consumer baseline costs.

Without an uncertainty mechanism we would require additional baseline funding allowances for faults in CV26 to cover the risk we would need to bear for the cables in the table below.

Cable	Proactive replacement costs	Reasons not to repair cable
Mainland - Kerrera 2*	Total: █████	See business plan submission EJPs.
Hoy – Flotta*		
Loch A'Choire North*		
Loch A'Choire South*		
Skye - South Uist*		
Mainland – Kerrera*		
North Uist - Benbecula East	█████	Unlikely to be able to get sufficient dry weather window to perform jointing due to this being a tidal cable. Most likely cheaper and easier to replace end- to- end with plough or surface lay with post lay burial in the event of a fault.
Otter Ferry	█████	Older EPR type and potential for issues with jointing to modern cable, such as water ingress in the event of repair. Meaning replacing is likely course of action.
Mainland Orkney - Graemsay	█████	
Loch Sligachan, Skye East (1)	█████	Cable found in poor condition in 2021 inspections. Has previously faulted. In event of future fault, we would replace.
Mossbank - Yell North (1)	█████	Older EPR type and potential for issues with jointing to modern cable, such as water ingress in the event of repair. Meaning replacing is likely course of action.
Kames – Bute South	█████	Age of cable around 60- years old, unlikely to survive repair operation.
Mainland Orkney - Holm of Grimbister	█████	
River Oich - Fort Augustus	█████	Cable has failed and been repaired previously. Given length we would probably replace in the future
Shapinsay - Stronsay	█████	Cable has previous fault, which is driving higher HI score, but this was on the Transition joint. Given length and value of replacement repair would be considered. Depth across route of circa 30m.
Benbecula - South Uist East	█████	Unlikely to be able to get sufficient dry weather window to perform jointing due to this being a tidal cable. Most likely cheaper and easier to replace end- to- end with plough or surface lay with post lay burial in the event of a fault.
Rousay - Egilsay	█████	Cables in critical condition from 2018 inspections with armour missing. Cable not likely to survive lifting operations.
Sanday - North Ronaldsay	█████	
Loch Sligachan, Skye West (2)	█████	Cable in critical condition in 2021 inspections, broken and missing armour. Short length. Unlikely to survive repair operations
Shetland - Whalsay	█████	Cable in critical condition with armour missing. Cable not likely to survive lifting operations.
Islay - Orsay	█████	Cable is already operating on two cores, after single core failure. Cable would not be suitable for repair.
Mull - Calve Island	█████	Cable is very taught from inspections, may struggle to lift cable for repair or cause further damage making cable unrepairable.
Bute - Ardyne South	█████	Older EPR type and potential for issues with jointing to modern cable, such as water ingress in the event of repair. Meaning replacing is likely course of action.
Lochaline - Mull	█████	Cable already critical from recent inspections in 2021. Unlikely to survive repair operations
Shetland - West Linga	█████	Cable in critical condition with armor missing. Cable not likely to survive lifting operations.

* Cable deemed 'unjustified' from our original business plan submission.

A credible approach for consumers in the event of subsea cable failure

From the additional evidence above, it is clear we face significant cost and volume uncertainties outside of our control through our unique role of running network serving the Scottish Islands. These will continue to exist into the RIIO-ED2 period. The evidence also shows that our proposed volume driver approach to managing uncertainty would act as a sensible hedge to protect existing and future consumers from the variability in subsea cable replacement costs, and a re-opener on additional fuel

costs would give us the ability to discuss additional allowances with Ofgem but places no obligation on the regulator.

If Ofgem continues not to support our balanced funding approach proposal utilising baseline and UMs then we would expect our allowances for faults costs (CV26) to be increased for Final Determination by between £109m and £199m. This would be necessary to account for the additional risk we would be taking through our baseline plan, which was not in our original business plan submission because we based the plan on the assumption of using an UM to shift additional costs to cover cable failure risk to be event driven rather than ex-ante funded.

The range covers the additional risk we would be required to manage for replacing subsea cables and the fuel costs of running remote island generation sites. It is based on an historic average fault rate of 3.2 per annum for subsea cables; our submitted replacement unit rates for cables between 3-20km long; and an average cable length of 3km for all subsea cable not included in our baseline plan which will be Health Index 5 by the end of RIIO-ED2. For additional fuel costs we have based this on a worst-case scenario of data from RIIO-ED1. We used the volume of fuel used at Battery Point power station to cover the 2020 Sky- Harris fault as a proxy and assume this is repeated every five years. The variability in our range is driven by fluctuations seen in fuel prices over the last few years.

We also point Ofgem to its previous decision for Scottish Hydro Electricity Transmission RIIO-T2, where Ofgem approved a re-opener to *“seek funding for efficient costs associated with resolving unexpected subsea cable faults, or for mitigating the risk of these faults occurring.”* Unexpected subsea cable faults on the distribution network can also occur with impacts that can be equally harmful to consumers. There is no reason for Ofgem to apply a different approach.

Furthermore, our CEG have also signaled their support for a UM for failed cables: *“The CEG accepts that the UM will allow SSEN to speed up the replacement of a failed cable and to restore resilience and reduce back-up generation sooner than would be otherwise achieved. We believe it is in the interests of customers.”*

It would be regrettable if Ofgem did not recognise the need for this credible risk transfer in the event of continuing to reject the UM. In the event of Ofgem continuing to adopt the position set out in the Draft Determination and not accepting additional fault costs in CV26, we would be forced to make difficult decisions in RIIO-ED2 between our baseline allowance and the agreed outputs Ofgem is funding. Our baseline would need to stretch to cover subsea cable faults and our ability to deliver agreed outputs may be impacted. This would not be in existing and future consumers’ interests and underlines the need for a UM.

OpEx adjustor

We disagree with Ofgem’s position within the Draft Determination to reject our UM proposal. Below we set our response to Ofgem’s concerns raised in rejecting this UM and why it is critical that this is included within the Final Determination.

We refer to the following documents in relation to the OpEx Adjustor as part of this response:

- RIIO-ED2 Draft Determinations SSEN Annex, Table 29.
- Decision on RIIO-ED1 Green Recovery Scheme, paragraph 2.2

- Notice of decision to revise allowed expenditure for Subsea Cable Costs under special licence condition CRC 3F, page 2.
- RIIO-2 Final Determinations Electricity Transmission System Annex (REVISED), Chapter 4

We do not accept the view that the balance between variant and non-variant expenditure does not warrant the introduction of a re-opener mechanism in RIIO-ED2. With the drive to net zero there is a significantly increasing proportion of Load Related Expenditure required by DNOs. The introduction by Ofgem of a new Load Related Expenditure Uncertainty Mechanism for example, sets a clear need to account for proportional changes in indirect expenditure. The additional indirect expenditure related to the variant Load Related Expenditure has not been included within our baseline.

The established precedent

There is a strong precedent and parallel with the position adopted by Ofgem in electricity transmission final determination for RIIO-T2. Our proposed approach is based on a similar mechanism design. There is also precedent for including indirect expenditure within the scope re-opener decisions, for example, in two recent Ofgem decisions on Green Recovery Scheme and Subsea Cable Costs in RIIO-ED1.

These decisions establish a clear case for DNOs to include indirect expenditure within the scope of future re-opener allowance adjustment applications. It is now therefore necessary that indirect expenditure is included within the scope of volume driver unit rates.

The principles of our method

The OpEx Adjuster method we propose will ensure DNOs are funded through an automatic adjustment for varying operational costs associated with specific capital investments delivered through volume drivers. It will provide DNOs with OpEx allowances when CapEx allowances are funded through the relevant volume driver and ensures that those OpEx allowances are consistent with those set for baseline allowances.

Our proposed OpEx Adjustor method is a calculated co-efficient that enables Closely Associated Indirect (CAI) spend per £1 of volume driver CapEx to be calculated and applied to specified volume drivers. An example calculation is shown in the table below.

The outputs per Cost and Volume category at ED2 total Net after Allocation are input to calculate the co-efficient: = CAI / (Load + HVP + Non-Load + NOC)

We propose that the methodology is used to allow the Opex Adjuster method co-efficient to be calculated following Final Determination.

SSEN ED2	23/24	24/25	25/26	26/27	27/28	ED2
Load	125.2	116.1	122.2	53.9	38.5	455.9
HVP	0.0	0.0	7.4	28.6	18.2	54.2
Non-Load	214.2	257.6	280.1	300.6	269.9	1,322.4
NOC	141.0	149.3	144.0	139.4	161.2	734.8
Total	480.4	523.0	553.7	522.5	487.7	2,567.4

CAI	150.0	154.9	159.2	158.6	158.5	781.2
Co-efficient	0.31	0.30	0.29	0.30	0.33	0.30

Based on Dec Submitted BPDT (Net after allocation)

This co-efficient can then be applied to specified volume driver (by multiplying the co-efficient by the volume driver unit rate x volume value) to enable an allowance for indirect costs.

This straightforward approach enables indirects to be funded for specific volume drivers at a level in line with the assessed baseline cost level. For the avoidance of doubt, we are now not proposing a new standalone OpEx adjustor Uncertainty Mechanism, but a method to adjust indirect allowances when CapEx allowances are adjusted by volume drivers. This approach will ensure DNOs will have allowances particularly for volume driven UMs to enable design, planning and other indirect activities associated with capital delivery which are not part of the unit rate.

We provide further details on how this method could be applied to various proposed volume drivers in our responses to questions CORE Q4 and CORE Q16.

For re-openers, we believe the precedent established through the RIIO-ED1 Green Recovery Mechanism and the subsea cable re-opener establishes a clear case to continue to include indirect costs within future re-opener allowance submissions.

DG Monitoring

We believe Ofgem's rationale to 'reject' this UM and include the provision of additional DG monitoring, if necessary, within RIIO-ED2 within the scope of the new Digitilisation UM is sensible.

Ash dieback

We do not support Ofgem's view to reject our UM proposal. Below we set out our reasons with additional evidence on why it is critical we have a UM for managing the risks associated with Ash dieback.

We refer to the following documents in relation to the Ash dieback as part of this response:

- RIIO-ED2 Draft Determinations SSEN Annex, table 29
- SSEN DISTRIBUTION RIIO-ED2 A SAFE AND RESILIENT NETWORK RIIO-ED2 Business Plan Annex 7.1, Appendix D
- RIIO-ED2 SSMD Annex 1
- SSEN reverse SQ SSEN013, 11th July 2022
- RIIO-ED2 Methodology Decision: Annex 1 - Delivering value for money services for consumers

Volume uncertainty associated with managing ash dieback disease tree removal

In Annex 7.1 of our final Business Plan, Appendix D we shared an independent report from consultants ADAS, which outlined the current and future extent of Ash dieback and the increasing threat to our overhead line network. The report is clear that Ash dieback is a growing threat to Ash

trees across the country, but the threat is greater in the south of the country especially in our SEPD licence area. The figure below, extracted from the report, highlights this.

However, it is also clear that better data needs to be gathered by DNOs on the proximity of diseased trees to our networks. Not all trees are our responsibility to manage. In our business plan submission, we did not include costs in the baseline plan for Ash dieback diseased tree removal, and expose consumers to unnecessary intervention, rather we proposed waiting until we had better data on proximity of diseased trees to our network. As such, we proposed undertaking an extensive survey in the first two years of RIIO-ED2 to validate the volume of trees which are our responsibility to manage. We propose submitting the results of this survey as part of a re-opener application to underpin our needs case for investment. We proposed that a standard materiality threshold would apply.

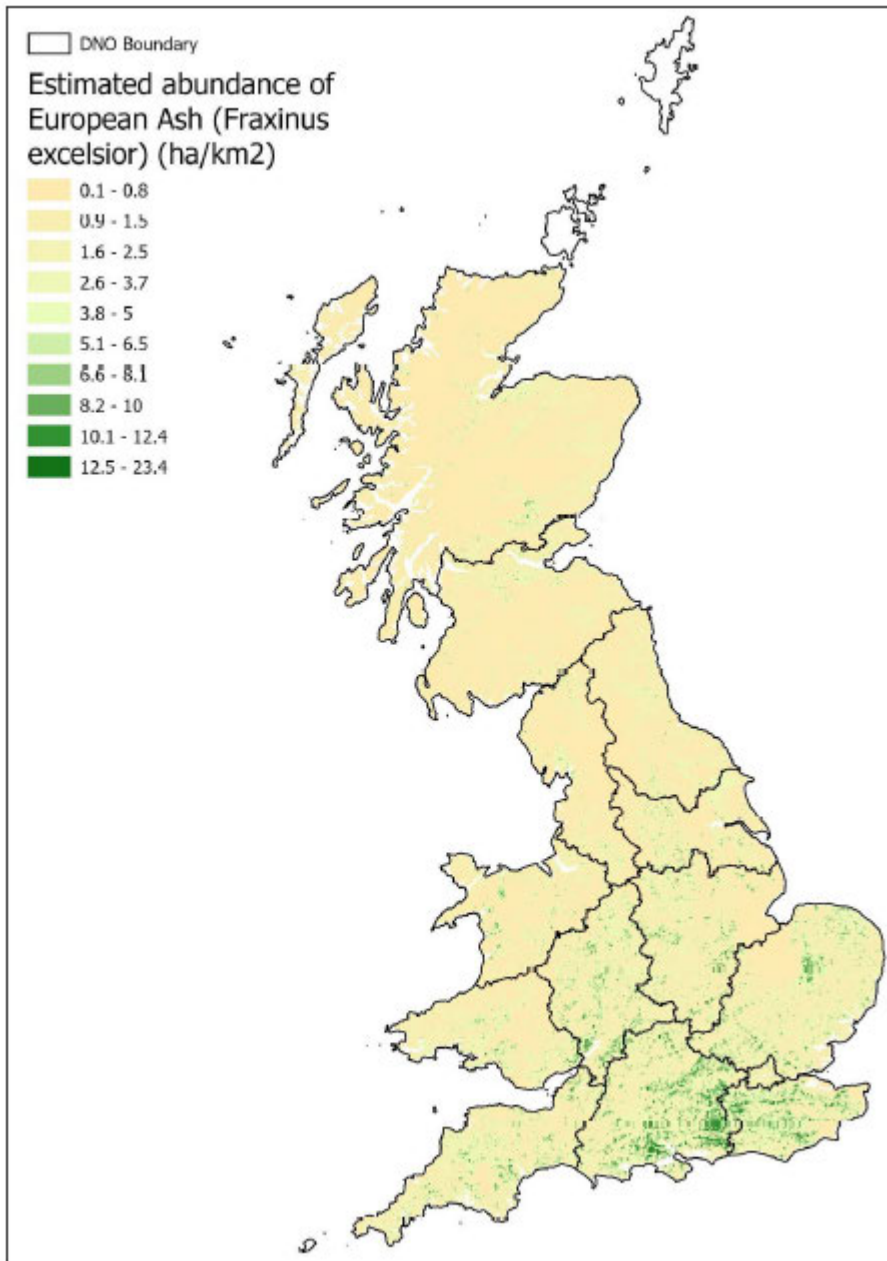


Figure 32. Map showing estimated abundance of European Ash (*Fraxinus excelsior*) (ha/km²). From (Hill et al., 2017).

Cost uncertainty associated with managing Ash dieback diseased tree removal

In the table below we show our working estimates of the incremental costs over and above the normal ENA TS 43-8-unit cost if Ash dieback is present amongst a tree span. The table shows several scenarios of felling which are context specific to the state of disease in the tree. It highlights the component parts of the incremental cost range and shows clearly that a single span may cost £5,300 more than the baseline unit cost for vegetation management.

In our business plan we did not propose allowances to manage these additional costs because, as outlined above, additional data is required to ascertain the volume of diseased trees in proximity to our network through a survey. This survey must also determine the cost scenario of each tree and the frequency that each scenario will occur, so that we can determine the costs for removing diseased trees. It would have been inappropriate to include a generic scenario cost in our business plan given that the range of additional costs must be validated by inspection.

An added advantage of undertaking a survey early in the RIIO-ED2 period prior to commencing work is that we can identify trees earlier in the disease cycle and intervene at an earlier stage. This should minimise the volume of higher cost ‘scenario’ trees for removal in future price controls.

Ash Dieback Scenario	Scenario Description	Days		Rates					Incremental Cost Range	
		Lower Est	Higher Est	Labour no.	Labour	MEWP	Machine hire	Transport	Lower Est	Higher Est
Scenario 1	Manual fell stable semi-mature tree									
Scenario 2	Manual fell unstable semi-mature tree									
Scenario 3	Crown reduce stable semi-mature tree									
Scenario 4	Crown reduce unstable semi-mature tree									
Scenario 5	Pollard stable semi-mature tree									
Scenario 6	Pollard unstable semi-mature tree									
Scenario 7	Machine harvest unstable semi-mature tree									
Scenario 8	Manual fell stable mature tree									
Scenario 9	Manual fell unstable mature tree									
Scenario 10	Crown reduce stable mature tree									
Scenario 11	Crown reduce unstable mature tree									
Scenario 12	Pollard stable mature tree									
Scenario 13	Pollard unstable mature tree									
Scenario 14	Machine harvest unstable mature tree									

A credible consumer centric approach

The additional evidence presented above sets out clearly demonstrates the benefits to consumers from this UM. It is clear there is volume and cost uncertainty, and that our SEPD network is uniquely impacted.

We acknowledge Ofgem’s response to our SQ SSEN013 that: *“As we set out in the RIIO-ED2 SSMD Annex 1 paragraphs 8.109 to 8.112 “DNOs will be required to manage the risks associated with new or emerging challenges such as Ash dieback”.*

Our approach to managing the uncertainty ensures that consumers are only exposed to reasonable risks and costs and it is therefore in the interests of existing and future consumers to provide for this UM in the Final Determination. Undertaking a detailed survey will allow us to determine proximity of trees to our network and determine the cost ‘scenario’ each tree fits within. We can then use that as clear evidence through a re-opener application to ensure consumers are only exposed to reasonable risks and costs. The principle of the approach proposed is like the one set out by Ofgem for PCB replacement, which also uses an inspection programme to determine intervention need.

Our CEG have signaled their support for a mechanism: *“The CEG is supportive of the baseline survey costs and at this stage a UM would seem appropriate.”*

Should Ofgem not accept our UM, our baseline tree cutting costs in CV29 must be increased to accommodate the ongoing risk we would be expected to manage. We have set out in the table below the additional cost range we would use as a starting point for a further conversation with Ofgem if

our UM is rejected. Our range is reflective of the increased survey work we have undertaken since the submission of the final business plan.

£m	Current M13 value	Very low	Low-mid	Mid-high	High	Very high
SEPD	██████████	██████████	██████████	██████████	██████████	██████████
SHEPD	██████████	██████████	██████████	██████████	██████████	██████████
SSEN	██████████	██████████	██████████	██████████	██████████	██████████

Diseased trees present a resilience and safety threat to the network. We must deal with this threat in a timely manner to avoid catastrophic impacts to our network, people, and the public. Should Ofgem continue to reject additional costs then we be forced to re-examine the delivery of funded baseline outputs in other areas of our plan so that we can continue to meet our safety and resilience obligations.

Question ID	SSEN-Q9.
Question	What are your views on our proposal for a re-opener? Do you think this is the most suitable mechanism to mitigate investment decision risks in this area?
Response	
<p>We are fully supportive of the Hebrides and Orkney Whole System re-opener set out by Ofgem. As outlined in our business plan submission, Annex 17.1 and subsequently in our re-submission, letter dated 29th April 2022, undertaking a whole system assessment prior to undertaking investment decisions is vital so that impacts of key third party decisions can be accounted for.</p> <p>We do however ask Ofgem to void Engineering Justification Paper review status awarded at Draft Determinations to the five subsea cable projects we removed from our baseline in the April 2022 re-submission. As acknowledged in response to Reverse SQ SSEN030 the engineering review on these cables, if applicable, should be done through the re-opener submission review, which will be during the RIIO-ED2 period, not the ongoing RIIO-ED2 business plan determination process.</p> <p>In our re-submission letter, 29th April 2022, we set out our proposal to use the Hebrides and Orkney re-opener to allow for submission of costs associated with Pentland Firth East. This was further discussed in a bilateral meeting on 1st August 2022.</p> <p>The Pentland Firth East cable is planned to be in service from summer 2023 at the latest. However, there are no direct regulatory routes available in RIIO-ED1 or RIIO-ED2 to consider allowance adjustments. We have examined a range of options (see letter 29th April 2022) and we believe the Hebrides and Orkney re-opener is the most appropriate means to fund requirements for Pentland Firth East. We acknowledge Ofgem’s concerns that having two separate submissions – one for Pentland Firth East and one for whole system analysis outcome – is not ideal, and that the High Value Project re-opener may be better suited for Pentland Firth East. However, we note the choice of funding route will make little difference to the work and time involved in submitting and assessing a funding case.</p> <p>As acknowledged in the 1st August 2022 bilateral further engagement is required prior to the RIIO-ED2 Final Determinations to confirm the regulatory route for funding appraisal.</p>	

Question ID	SSEN-Q10.
Question	What are your views on our proposal for a re-opener to deal with the uncertain costs associated with Shetland? Do you think this is the most suitable mechanism to mitigate investment decision risks in this area?
Associated Evidence	
Title	Link to Evidence
Annex 4 - Interactions with Ofgem	n/a
Response	
<p>We agree that a re-opener is the most suitable mechanism for costs incurred in preparing, implementing and running a standby solution for Shetland. This is because we are currently carrying out a tender process for the provision of a standby solution service and until this process is completed there remains uncertainty on the level of costs.</p> <p>However, as set out in our April resubmission dated 22nd April 2022, and as discussed in the bilateral with Ofgem on 1st August 2022, the initial reopener window should be in Year 1. We intend to place a contract for the standby solution early in 2023 once the tender process is complete. From this point we will have more certainty of the costs that we will incur in providing the standby solution. If a contract is placed, we will also start to incur costs with the service provider at that stage as the standby solution is further designed, developed and implemented. We propose a second reopener window at the end of the price control period to allow for any adjustment required if the actual costs associated with the standby solution are +/-10% of our allowances.</p> <p>In addition to this new Shetland reopener, we also require two of the existing RIIO-ED1 Shetland reopeners to be retained for the RIIO-ED2 period. These reopeners are detailed in the table below.</p>	
RIIO-ED1 Shetland UM to be retained for RIIO-ED2	Description
Shetland Extension Fixed Energy Costs	Costs: Third party contracts for Power Purchase Agreements with Sullom Voe; capital and operating costs for Lerwick Power Station; and operating the ANM system. Materiality threshold: +/-10% allowed expenditure
Shetland Variable Energy Costs	Costs: Fuel costs and environmental permit costs for Shetland Materiality threshold: None – these items are treated as pass through.
<p>We will continue to work with Ofgem over the coming months as the project for implementing a standby solution for Shetland progresses.</p>	