ED3 NETWORK ASSET MANAGEMENT STRATEGY

ED3-S12

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EXECUTIVE SUMMARY

Our plan

Electricity is becoming more important to every household, business and critical service. Our ED3 Network Asset Management Strategy therefore proposes £1,962.55m (2025/26 prices) to renew, refurbish and safeguard the existing network and maintain reliability above 99.98%. Investment can longer be deferred, to do so would mean an undeliverable plan in ED4/5 (as per our LINP) with escalating levels of network risk.

The core of the plan is £1,747.37m for asset replacement and refurbishment. It is data led, driven by observed condition, deterioration, likelihood of failure and network criticality, using CNAIM v3.0 and portfolio engineering justification. As a result of our ED2 investments to strengthen our asset data, we have the clearest understanding we have ever had of future network and customer needs. We have retained ED2 intervention thresholds: the 61% increase in the equivalent renewal programme reflects more assets reaching those thresholds, not a weaker risk appetite or blanket replacement based on age. Our plan is organised around four strategic pillars: Circularity sits at the heart of our strategy. Rather than defaulting to replacement, we will increasingly extend asset lives through refurbishment, reuse and redeployment where this provides the best whole-life value for customers.



Our key commitments

- We will remove 23% of network risk in the south of England and 12% in North of Scotland versus a do-nothing baseline
- We will maintain overall 99.98% network reliability by the end of ED3, despite more challenging climate conditions.
- We will refurbish 8% of renewed switchgear and transformers in ED3, up from 3% in ED2, extending asset lives with cost and carbon efficiency

Investment required and supporting evidence

The table shows the complete £1,962.55m strategy expenditure and the supporting IDPs:

Investment component	ED3 investment	BPDT / CV table	Key supporting IDP / EJP
Asset replacement	£1402.14m	CV7a £957.70m; CV7b £361.31m; CV7c £82.84m	NARM portfolio EJPs; non-NARM cable, overhead line and substation asset EJPs; associated civils EJPs
Asset refurbishment	£126.48m	CV9 £46.69m; CV8 £79.78m	NARM refurbishment portfolios; protection and other non-NARM refurbishment EJPs
Condition, safety and compliance	£144.55m	CV10 £44.46m; CV14 £31.45m; CV17 £26.17m plus £7.42m UIOLI; CV18 £35.10m	Condition-driven civils and RAAC; Legal & Safety; Rising and Lateral Mains; overhead-line clearances
Diversions and land rights	£229.79m	CV5 £174.29m; C10 £55.50m	Wayleaves and Land Rights EJP and diversions evidence
Operational technology and security	£59.59m	CV11 £54.21m; C5 £2.45m; CV15 £2.93m	Operational IT & Telecoms DJPs/EJPs; depot security; embedded-generation RAAC justification
Total	**£1962.55m**		

Why intervention is required

Without ED3 intervention, monetised network risk is forecast to rise by 38% in SEPD and 25% in SHEPD. Age is only an indicator: investment is triggered by our assessment of asset health deterioration combined with the consequences of failure. The regional differences reflect the differences in condition data, the nature of the network in terms of number of assets and voltage levels and forecast renewal volumes. The plan renews assets forecast to reach intervention thresholds, integrates load and non-load drivers (as per our LINP) to avoid double counting, and coordinates work so that we touch the network once. Our plan is integrated; if our load plan changes, so will our resilience investments to deliver the same outcomes to customers. Deferral would increase failure exposure, customer disruption, reactive cost and the volume that must be delivered in later price controls.

The principal outputs across our pillars include 847 Grid and Primary and 5,125 Secondary Substation NARM assets, 51,000+ poles, 410km of HV cable and 520km of LV mains. We will also renew 196.9km of >=33kV underground cable, 11 submarine cable circuits, 2,870 LV non-substation assets and 2,465 protection schemes. Priority interventions include the [redacted] HV cable programme, [redacted] LV cable and service programme, £13.2m RAAC programme, [redacted] site-security programme and £5.7m operational-restrictions programme.

Our ED2 track record and readiness for ED3

Our ED2 evidence demonstrates both delivery capability and the lessons required to scale. SHEPD is forecast to exceed its 191.5m risk-reduction target; SEPD is forecast to finish close to its 685.3m target after a slower mobilisation and a strong final two-year pipeline. ED2 also established multi-year project design, improved contract-partner relationships, standardised equipment, and an Asset Data Domain whose maturity improved from 2.0 in April 2025 to 3.2 in September 2026, with 4.0 targeted by March 2028.

Delivery is supported by early procurement, framework and manufacturing allocations, supplier mobilisation, standard designs and a design-once-build-many approach. Primary-transformer standardisation has already reduced prices by 6-8%, further information can be found in our (ED3-S05) Deliverability strategy.

Key delivery risks and mitigations

Key risk	Mitigation and control
Workforce and outage capacity	Resource and authorisation plans with delivery partners; phased annual trajectories; integrated outage planning and touch-the-network-once work packages.
Transformers, switchgear, cables and materials	Early procurement, long-term frameworks, manufacturing allocations, capacity reservation, supplier diversity and increased refurbishment/reuse.
Volume step-up and programme maturity	Standardised specifications, repeatable designs, portfolio delivery, early design and monthly/quarterly monitoring against asset-class trajectories.
Data and model uncertainty	Annual IGP audits, Asset Data Quality Reports, sensitivity testing and additional inspection before material intervention; new CNAIM v3.0 models and enhanced monitoring.
Cost, scope or benefit variance	Each commitment has a named owner; variance triggers a corrective plan, DAMSG/BPI review and escalation to the Distribution Executive Committee where required.

Outcomes and accountability

Consumer priorities research told us **reliability and resilience are the top customer priorities for both households and businesses**, although that is closely followed by **value for money**. The result is an ED3 plan that balances affordability, network performance, sustainability and long-term customer value.

This strategy represents the most ambitious asset stewardship programme SSEN has undertaken. It is justified by clear evidence of asset need, supported by customers and stakeholders, and underpinned by a credible delivery model developed with our supply chain and delivery partners in a long-term profile that allows them to scale. Through risk-based investment, robust governance and a circular approach to asset management, we will enable societal electrification through balanced and efficient delivery.

OUR NETWORK ASSET MANAGEMENT STRATEGY COMMITMENTS AND OUTPUTS

Commitment Level	Name	Description	By When
First Pillar: Responsibly for Investing Network Integrity and Resilience			
Business Plan Commitment Metric	**Proactive Risk Reduction**	Manage network risk through responsible asset stewardship, removing 23% of network risk in our south of England licence area and 12% in our North of Scotland licence area compared to a 'do-nothing scenario'	2033
NAMS Regulatory Output	**Strategic Asset Management Plan**	We will demonstrate and further develop leading practice in intelligent and sustainable asset stewardship in the UK. By operating a robust Strategic Asset Management Plan that provides a clear, evidence-based direction for asset stewardship and sets out circular lifecycle strategies to ensure safe, reliable and efficient network performance throughout ED3.	Throughout ED3
NAMS Regulatory Output	**Asset Health Models**	We will utilise and develop asset health models for new parts of our network in ED3, with additional areas of investment led by data on asset criticality and likelihood of failure. The new models reported on will include: ■ Pole Mounted Transformers ■ Pole Mounted Switchgear ■ 132kV & EHV Switchgear Other (ground mounted) We will achieve this by expanding our Information Gathering Plan to support the development of more health models in the future and conduct annual audits on the Information Gathering Plan for new CNAIM V3 models in ED3.	Throughout ED3, via annual reporting
Second Pillar: Maintaining a Safe and Compliant Network			
NAMS Regulatory Output	**Network Safety & Integrity Framework**	By April 2029, we will implement a Network Safety and Integrity Framework that reduces controllable incidents, including injuries, public safety events, and unplanned environmental failures, compared to our 2027/28 baseline. We will apply predictive monitoring and risk-based maintenance across all high-criticality assets by end of ED3.	2033
NAMS Regulatory Output	**Reduce Operational Restrictions**	We will proactively intervene to permanently remove seven active Operational Restrictions, restoring our ability to fully maintain and operate the network assets as intended and permanently removing hazards to our workforce. We will also replace of all remaining 73 RAAC roofs in our Primary & Grid substations.	2033
NAMS Regulatory Output	**Asset Class Strategies**	We will deliver clear asset-class strategies and strengthened assurance processes that improve equipment selection, specification, installation, maintenance and operation across the network. This will ensure assets consistently perform as intended over their whole operational life, helping customers benefit from efficient investment and a safer, more reliable electricity network over the long term.	April 2028
NAMS Regulatory Output	**Digital Pathways (Network Innovation allowance)**	We will embed the findings from our Digital Pathways NIA project into business-as-usual delivery from ED3, applying IEC 61850 where appropriate to new substation installations, to continue support more efficient, resilient and future-ready network operation for customers.	2033

Commitment Level	Name	Description	By When
Third Pillar: Upholding Reliability Performance			
Business Plan Commitment Metric	**We will manage unplanned power cuts**	Maintain our current high levels of reliability despite worsening conditions, with the network at 99.98% reliability.	Throughout ED3
Fourth Pillar: Creating a Circular Approach to Asset Management			
Business Plan Commitment Metric	**Refurbishment for Asset Life Extension**	Increase the proportion of switchgear and transformers that are renewed by refurbishment, rather than full replacement, to 8% in ED3, up from 3% in ED2. By maximising asset operating lives, we strengthen our circular asset management, improving sustainability through cost and carbon efficiency while operating a reliable network.	2033
NAMS Regulatory Output	**Circular Approach**	We will embed circular economy principles into our asset management decision-making throughout ED3, ensuring capital and operational investments prioritise circular options where viable, supporting a more sustainable and cost-efficient electricity network for customers.	Throughout ED3
NAMS Regulatory Output	**Increase Recycled Content**	We will work with suppliers to increase recycled and recoverable content, improve refurbishment pathways and reduce the environmental footprint of our asset base across its full lifecycle.	Throughout ED3

1. OUR ASSET MANAGEMENT STEWARDSHIP

1.1 PURPOSE OF THE NETWORK ASSET MANAGEMENT STRATEGY

Our distribution network is the foundation on which the transition to a low-carbon, electrified future depends. As customer needs evolve and demand for electricity grows, our first responsibility remains to get the essentials right: operating, maintaining, improving and renewing the network we have today to deliver safe, reliable and affordable services for all customers.

This Network Asset Management Strategy (NAMS) sets out how we will do that through ED3. It is a critical part of our ED3 Business Plan, demonstrating how we are responding to current needs from regulators and stakeholders, while addressing the technical challenges and opportunities ahead as we exit ED2.

The NAMS integrates our mature SSEN asset management system and its policy, governance, and planning, with the upcoming regulatory period, linking our investment planning as part of a long-term approach to consumer outcomes.

Our ED3 investment plan is vital to delivering on the needs of our customers, both now and in the future. The NAMS will explain:

- why we have chosen the investments – and level of investment – we have
- how we derived these needs from robust data and credible evidence
- how we have prioritised our investments, or accepted trade-offs
- the governance associated with our decision-making that assures alignment with our strategic priorities
- why we have a credible plan for delivery in ED3

Investment decisions outlined within the NAMS are supported by proportionate engineering justification and, where it provides meaningful differentiation between credible options, Cost Benefit Analysis (CBA). For discrete schemes and materially different options, CBA is used alongside engineering justification to compare costs, benefits, residual risks and whole-life outcomes. For programmatic NARM investment, CNAIM provides the common monetised-risk basis for assessing intervention benefits across asset populations, supported by portfolio EJPs that demonstrate asset need, proposed volumes and expected risk reduction.

Our investment needs have been developed through integrated planning across load and non-load investment drivers. The NAMS sets out how our ED3 non-load expenditure supports the continued resilience of the existing network, including how we manage the impacts of asset age and condition through risk-based inspection, maintenance, refurbishment and replacement, and physical security risks through targeted, risk-led investment in site security. It works alongside our wider ED3 strategies and plans to provide an integrated response to the risks and requirements facing the network.

Our (ED3-S05) Delivery Strategy supports the capacity required to deliver our ED3 investment programme. The (ED3-S02) Long-term Integrated Network Plan (LINP) incorporates non-load expenditure for ED3 and beyond, with this NAMS represents the crucial investment stepping stone required in delivering the long term needs of the network. Load related investment is addressed through the (ED3-S01) Load-Related Expenditure (LRE) Annex, and our (ED3-S04) Reliability Strategy sets out our approach to improving specific customer reliability outcomes.

Our (ED3-S14) Environmental Action Plan (EAP), (ED3-S03) Climate Resilience Strategy and (ED3-S07) Targeted Customer Storm Support Strategy complement the NAMS, setting out the outcomes and investments required to reduce our environmental impacts and manage network resilience to extreme weather and a changing climate.

Enabling asset management investments are set out within the (ED3-S11) Information Technology and Telecoms (IT&T) Strategy, (ED3-S13) Data and Digitalisation Annex, (ED3-S15) Cyber Resilience Overview Document and associated Digital Justification Papers (DJPs), supporting improved asset management capability and resilience to cyber risks. Together, these plans complement the NAMS to ensure that our ED3 Business Plan provides an integrated approach to maintaining the resilience, safety and security of our network.

1.2 SSEN ASSET MANAGEMENT SYSTEM AND POLICY

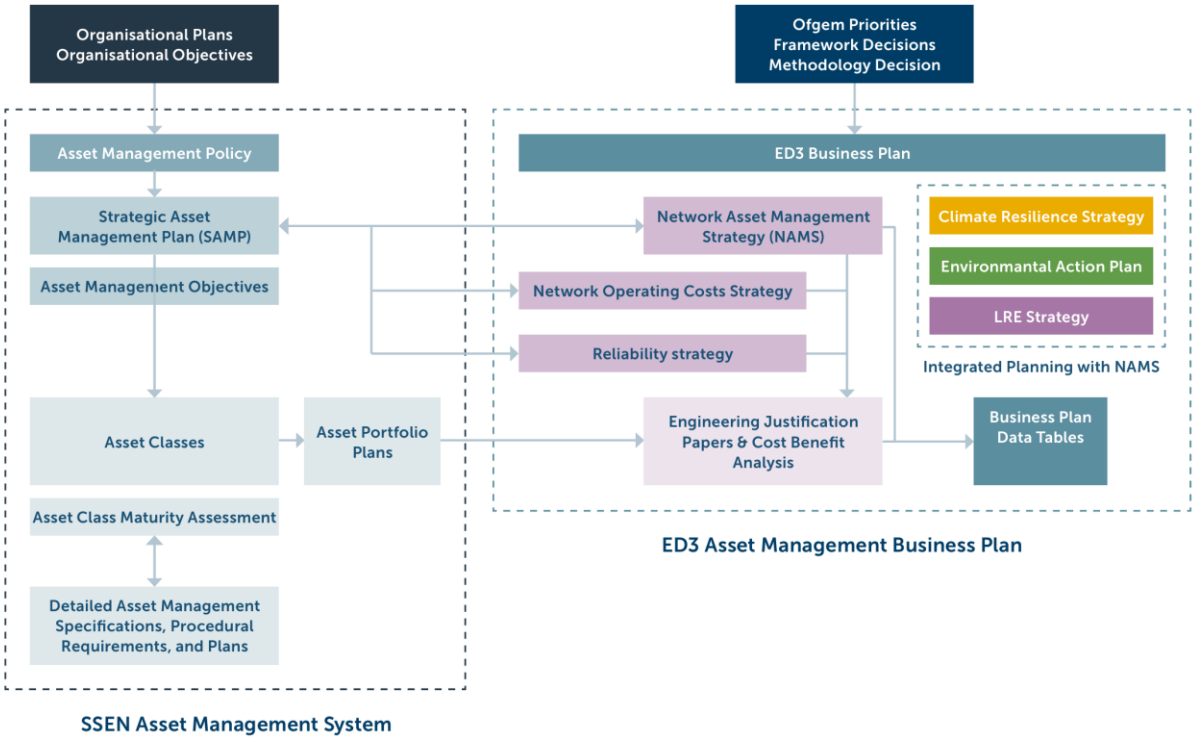
As an ISO 55001-accredited organisation, we operate a structured Asset Management System that provides clear governance from our Asset Management Policy through to our Strategic Asset Management Plan (SAMP). This framework translates our organisational objectives into a long-term asset management approach and provides the foundation for this ED3 Network Asset Management Strategy. In turn, this strategy establishes the asset management interventions, outputs and deliverables that underpin our ED3 Business Plan, ensuring a clear line of sight between our internal asset management practices and regulatory commitments.

Our Asset Management Policy sets the principles for responsible stewardship of our assets, while the SAMP defines how these principles are applied to deliver value for customers and stakeholders over the short, medium and long term. The SAMP aligns asset management activities with organisational priorities, establishes our approach to managing risk and performance, and provides assurance that decisions are made through consistent and robust governance. It also embeds industry-leading methodologies, including the Common Network Asset Indices Methodology (CNAIM), to support evidence-based decision-making and long-term optimisation of network investment.

The SAMP further considers organisational capability, asset management maturity and opportunities for continuous improvement. Innovation, digitalisation and new technologies play an important role in reducing residual risk, improving decision quality and enhancing asset performance over time.

Figure 1 illustrates the interdependent relationships between our ED3 Network Asset Management Strategy and our SSEN Distribution Asset Management System. Any delivery performance and learning feedback directly to the SAMP.

Figure 1 SSEN Asset Management System



This Network Asset Management Strategy represents the ED3 implementation of these principles and plans. It sets out how we will operate, maintain, refurbish, replace and invest in our network assets to deliver safe, reliable, sustainable and affordable services for customers. It also explains how our asset management governance, risk assessments and investment decision-making have shaped our ED3 approach, ensuring that the commitments within our Business Plan are grounded in a robust and transparent asset management framework.

1.3 OUR ASSET MANAGEMENT GOVERNANCE AND DECISION MAKING

1.3.1 PRINCIPLES IN DECISION MAKING

Effective asset management decision-making and governance are critical to delivering the best value ED3 Business Plan for our customers. Balancing risk, performance and affordability across a geographically diverse network requires a consistent, evidence-based and assured approach to investment and intervention.

All asset management investment is driven by clearly defined strategic needs established through our Asset Management System and Strategic Asset Management Plan (SAMP). These needs are often long-term in nature, extending across multiple price controls, and are supported by strategies and policies that consider whole-system impacts, risks and opportunities rather than individual asset needs in isolation.

Our ED3 approach has been informed by ED2 delivery experience, network performance, stakeholder feedback and regulatory requirements. Using established methodologies, intervention criteria, forecasting models, engineering justification and cost-benefit analysis, we identify where investment is required and ensure that interventions are proportionate, targeted and deliver long-term value.

This process establishes the technical need that underpins our ED3 investment programme and informs the long-term network requirements reflected in our **(ED3-S02) LINP**, **(ED3-S05) Delivery Strategy**, **(ED3-S01) Load-Related Expenditure Annex** and wider Business Plan. Through robust governance and strategic decision-making, we have

ensured investment is focused where it delivers the greatest benefit for customers, maintains network resilience and supports the transition to a more electrified future.

Before looking at individual investment drivers and needs, we have applied five top level principles that apply across our NAMS expenditure:

1. **Our ED3 plan will be a continuation of our long-term pathway for responsible asset stewardship**, steered by our existing strategy and implemented through our internal policy and procedures. We will change if we have new options or opportunities, including from innovation and continuous improvement.
2. **Our plan asset risk tolerance will be policy controlled.** We will maintain or improve our risk mitigation and will actively reduce as much technically justified risk as possible within constraints of affordability, deliverability, and any other limitation.
3. **We will clearly evidence the need for investment,** using mature data, meaningful analysis, real-life evidence and best practice. We will ensure our optioneering is expansive, challenges previous ways of working and considers novel ways of managing risk.
4. **We will implement learnings from our ED2 Delivery**. Our ED3 plan will be built on technical need but with a credible plan for delivery. Where we have fallen short in ED2, we will adjust to address that delivery rather than accept increased network integrity or performance risk.
5. **We will balance the needs of now with those we anticipate in the future**. We will balance the long-term network needs by considering intergenerational fairness and offsetting future challenges on delivery. We will imbed whole life costs in our investment decisions.

These principles are overarching and have been used to test the outcomes we have sought through all our investment types. We will demonstrate in our EJPs the value outcomes we will realise for our consumers and what trade-offs are necessary.

1.3.2 GOVERNANCE IN INVESTMENT PLANNING

All the investments created within this NAMS have been developed in a shared investment planning process with other core strategies including **the (ED3-S01) LRE Annex**, **(ED3-S04) Reliability Strategy**, **(ED3-S03) Climate Resilience Strategy**, **(ED3-S02) Long Term Integrated Network Plan** and the **(ED3-S14) Environmental Action Plan**. The (ED3-S04) Reliability Strategy and the (SSEN_ED3_NOCs) Network Operating Costs Strategy have been published in support of the NAMS.

All investment needs have been determined in a whole plan view, to create a whole plan integrated view. This has been crucial to ensure that the full outcomes and demands across all our asset expenditure were available through ED3 development. This has fully informed our position on affordability engagement with stakeholders and allowed thorough assessments of deliverability risks across the plan.

Our NAMS has been developed within our SSEN asset management governance procedures, ensuring that our investment plan is aligned to what we need to achieve in the long term. Specific risks and opportunities identified through our Distribution Asset Management Steering Group (DAMSG), chaired by the Asset Management Director, have an agreed course of action developed within our NAMS. Similarly, ED3 plan outcomes and the shape and size of investment have been demonstrated through the DAMSG forum during iterative development of the plan.

1.3.3 GOVERNANCE IN INVESTMENT DELIVERY

Our Distribution Governance and Investment Framework (DGIF) has been implemented within ED2 to assure project outcomes from the early stages of planning. It will be an important part of delivering consumer benefits in ED3.

The DGIF provides a robust, proportionate, and transparent approach to investment governance. It ensures that all network investment decisions are founded on clear evidence of need, rigorous option assessment, and a demonstrable commitment to delivering long-term value for customers. Through a structured series of decision gates, the framework embeds challenge, assurance, and accountability throughout the investment lifecycle, from initial concept through to benefits realisation.

The principal benefit of the framework is that it drives better investment outcomes. By requiring projects to demonstrate strategic alignment, customer benefit, affordability, deliverability, and whole-life value at each stage, the framework helps ensure that resources are directed to the areas of greatest need and that investment proposals remain proportionate to the risks and outcomes being addressed. This reduces the likelihood of inefficient spend, strengthens cost control, and promotes delivery of the right solution at the right time.

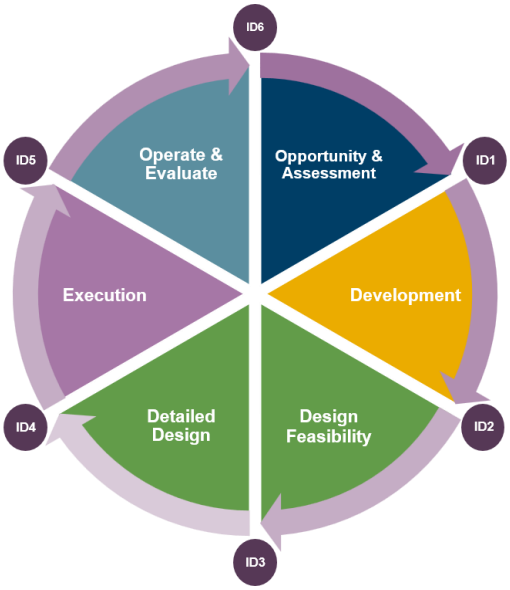


Figure 2: Stages of the DGIF

The framework also creates a consistent and repeatable decision-making process within SSEN, bringing together engineering, planning, finance, asset management, and delivery functions to support balanced, evidence-based investment choices. Its risk-based and scalable approach ensures that governance effort is matched to project complexity and materiality, allowing resources to be focused where they add greatest value while maintaining appropriate oversight across the portfolio.

Ultimately, the DGIF provides confidence that investment decisions are subject to effective scrutiny, informed by robust analysis, and focused on delivering measurable customer and network benefits. It strengthens stewardship of customer-funded investment by improving transparency, demonstrating accountability, and ensuring that expected benefits are tracked and realised throughout the asset lifecycle.

Each NAMS commitment will have a named business owner and an agreed annual delivery trajectory. Material variance from delivery, expenditure, risk-reduction or benefit expectations will be investigated and supported by a corrective-action plan. Issues that cannot be resolved within the relevant delivery forum will be escalated through (Business Planning & Investment Committee) BPI to (Distribution Executive Committee) DEC. Any material change to scope, timing or investment will be subject to established change control and reassessed for its impact on customer outcomes, network risk and regulatory commitments.

1.4 OUR DELIVERY TRACK RECORD

1.4.1 TRACK RECORD

Learnings from ED2 have directly shaped our ED3 strategy.

- First, we learned that maintaining network integrity requires sustained and deliverable investment supported by realistic workforce and supply chain planning.
- Second, improved asset data, condition monitoring and health modelling enable more targeted and efficient interventions.
- Third, we learned that effective asset management must reflect regional differences in network characteristics, asset condition, customer needs and environmental risks across SHEPD and SEPD. This has strengthened our ability to target investment where it delivers the greatest value while maintaining consistent asset stewardship principles.

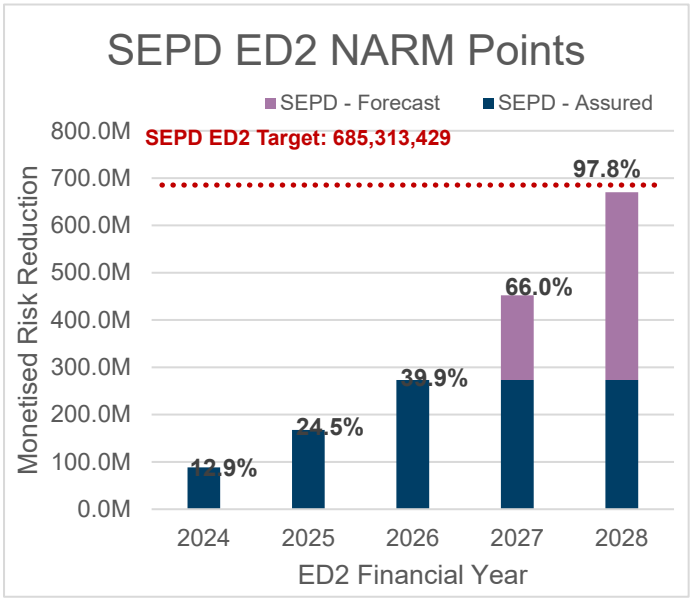
Our experience reinforced the importance of integrating asset health, reliability, resilience and network growth decisions, together with refurbishment, life extension and reuse opportunities, to maximise whole-life value and reduce future cost pressures. These lessons have informed the increased emphasis on risk-based decision making,

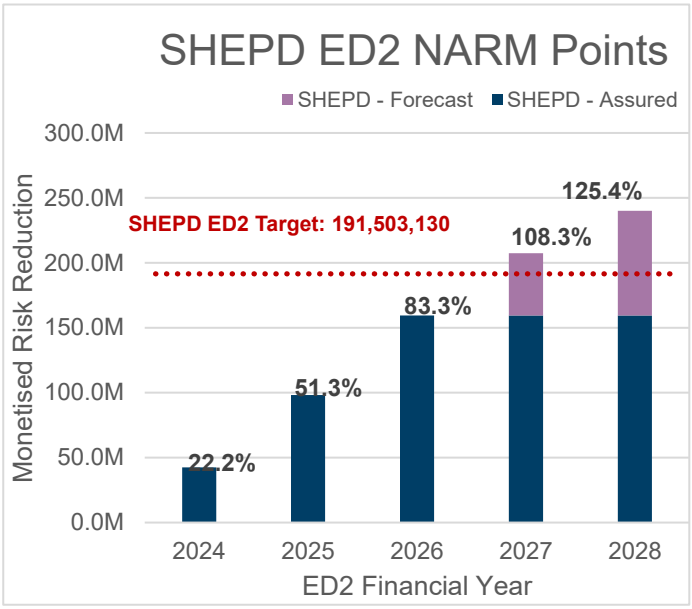
deliverability, integrated planning and circular asset management throughout our ED3 Network Asset Management Strategy.

1.4.2 BUILDING ON ED2 SUCCESS STORIES

Delivering our Risk-Based Asset Renewal Plan in ED2

Our ED2 plan was determined and justified using CNAIM and our asset risk models, with a total risk reduction target to be delivered in each license area. We are currently forecast to deliver the ED2 target in SHEPD and close to meeting our total in SEPD.





There is a different story of ED2 delivery in each of our license areas. In SEPD, assured NARM points were low at the start of the price control as we scaled up detailed design for multi-year projects and programmes, whilst also ramping up workforce mobilisation and leveraging improved contract partner relationships. This means that we will reap the benefits of projects in the last two years of ED2 and will be very close to meeting our ED2 target. Full delivery of our project pipeline is critical as we finish ED2, as this rate of asset renewal is indicative of how we will deliver an increased volume in ED3.

In SHEPD, we delivered a significant amount of risk points removed early in the price control and got to halfway to our target by the end of year two. We are forecast to overdeliver on the target, so late ED2 works will be prioritised to critical interventions where they are needed on our network for safety and resilience. Part of our risk reduction in SHEPD is associated with us delivering more volumes than forecast in our plan, with more defects discovered during inspections – something that has factored into our ED3 investment plan optioneering.

Each of our license areas presents unique challenges to manage, but our ED2 track record and continuous improvement demonstrates our commitment to delivering network safety and resilience through renewal.

Asset Renewal – Arnewood

132/33kV A1MT and A2MT: refurbishment versus replacement

Arnewood substation sits in the New Forest National Park and feeds circa 32,000 customers. Its two 132kV 60MVA transformers date from 1963 (commissioned 1964), inspection and maintenance evidence identified the two transformers as requiring replacement, with health scoring reaching intervention thresholds. The scheme was therefore included in ED2 asset replacement programme which considered refurbishment but favoured replacement on age and the assessed poor internal and external condition.

Decision pathway

1 Refurbishment assessed

The review rejected refurbishment of both units due to age, condition inside and out, and industry-standard intervention criteria.

2 Replacement selected

Replacement covers the main transformers, auxiliary equipment and civils, with site upgrades to meet current environmental standards.

3 Delivery scope refined

Heavy-plant access, local connection alignment and upgraded bunding to updated environmental requirements.



Arnewood: existing plant, access road and installation

Final Solution

Maintenance, inspection and oil results indicated internal insulation degradation. Cost and quantified life-extension comparisons supported replacement of both units as the lowest whole-life-cost option. The environmental assessment also considers oil containment, updated bunding requirements and protection of the National Park setting.

- Replacement addresses the condition of both ageing units
- Retain the condition-based risk management and technical evidence behind the decision
- Include access, civils and ancillary plant in the option cost
- Separate asset replacement from changing reinforcement needs
- Improved bunding contains oil leaks and reduces pollution risk
- Enhanced protection of soil, water and nearby National Park habitats

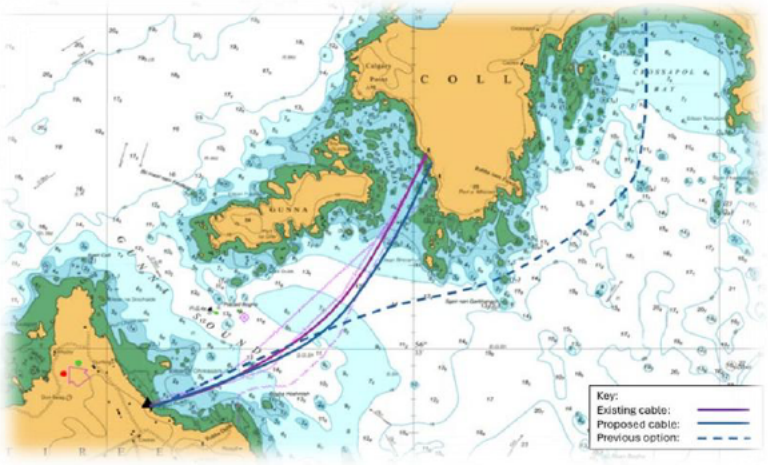
ED3 Learning:

Compare refurbishment's credible life extension and residual risk with replacement on a common whole-life basis, including enabling works.

Coll–Tiree Submarine Cable | Energised November 2025

The 11kV Coll–Tiree connection supplies approximately 865 customers and supports 1.9MW of connected generation. Inspection evidence identified the existing cable as HI5, C2 criticality on a route with a history of abrasion-related faults. The scheme was therefore included as a named RIIO-ED2 baseline asset replacement.





Final solution

The project installed a 33kV-rated, 185mm² double-wire-armoured cable operated at 11kV. Post-installation evidence was then used to focus additional protection only where required, with split pipe installed across four priority locations during May and June 2026.

- Lower environmental impact and construction complexity
- Existing cable retained to maximise remaining asset value
- Improved security of supply through a second available connection
- Future proofed cable with ability to operate at 33kV
- Delivered and energised, with learning carried forward into ED3 planning

ED3 Learning:
We will continuously challenge the preferred option as further evidence emerges. Feasibility and detailed design are decision points; not simply stages of delivery.

1 Business plan optioneering

Six options were tested through EJP and CBA. Augmentation was selected to retain the existing asset and introduce a second available connection.

2 Deliverability challenges

The initial ~8km route would have required horizontal direction drilling (HDD), greater stabilisation and more environmental impact. Surveys supported a return to the shorter crossing.

3 Detailed design optimised scope

A revised 4.3km route with a future proofed 33kV rated 185mm² cable and targeted protection delivered the same desired outcome and removed unnecessary risk.

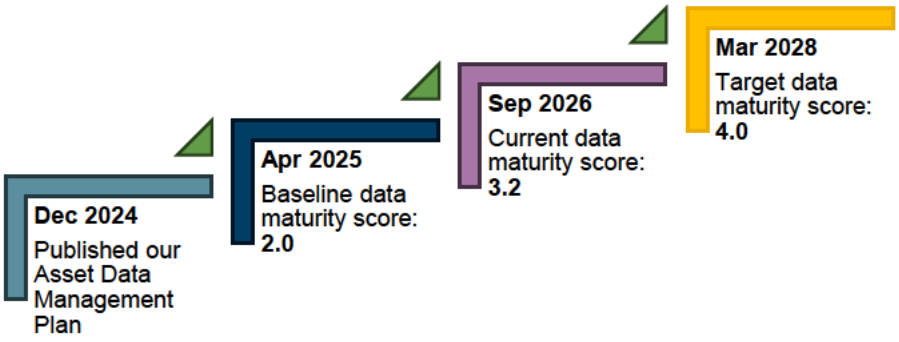
Establishing an Asset Data Domain

We established an Asset Data Domain in 2024, which underpins our ability to monitor and govern our asset information, which then allows us to improve network safety and performance through effective data-driven decisions.

The foundational document was the Asset Data Management Strategy, outlining our baseline maturity, and ambition to achieve “Managed” maturity (4.0) by the end of ED2. This was followed by annual Data Management Plans, outlining the data quality metric targets and cleansing plan to achieve these objectives. In-year progress is then tracked through our quarterly Asset Data Quality Reports and monthly Asset Data Domain meetings, aligning us with our overall Asset Management and Asset Planning strategic objectives and that of our key stakeholders in the Asset Management, System Planning, Regulatory Finance and Technology, Digital and Data (TD&D) teams.

Timeline and progress

Outlined below is the journey of our Asset Data Domain implementation, and the target data maturity we’ve set ourselves for the start of ED3.



Benefits

1 Data Governance is proactive and strategic

We now have a holistic overview of our asset data across core systems, a defined asset data strategy and a regular cadence of governance to review progress against targets.

2 Data Quality is measured and defined

With key data quality KPIs in place, we have incrementally cleansed our data and removed duplicate work items, reducing unnecessary work from delivery teams and manual data handling.

3 Embedded Continuous Improvement

By tracking key metrics, deploying targeted data cleansing and implementing system improvements, we have a pathway to achieving our in-year and regulatory period objectives.

By establishing a data domain and a governance framework, we have reaped the benefits of proactive, data-driven management of key data sets within our asset information systems. This has reduced the need for reactive, time-consuming, manual responses to emerging data issues on our systems, and we can now plan and action data cleansing activities and initiatives from a portfolio perspective.

ED3 Learning:
We will build on our foundational asset data governance and increase maturity within our domain and across SSEN Distribution. We will also acquire better enterprise data management tools that manage our schemas, glossaries and data lineage to drive transparency and accountability.

1.4.3 SCALING AND IMPROVING IN ED3

Deliverability and Supply Chain Readiness

Delivering our ED3 Network Asset Management Strategy requires more than identifying investment need. It requires confidence that the workforce, specialist capability, plant, equipment and materials will be available when required. Our deliverability approach therefore integrates investment planning, workforce planning, supply chain management, engineering resources and programme delivery into a single coordinated model. Long-term visibility of demand enables suppliers, delivery partners and manufacturers to plan recruitment, training, facilities, production capacity and investment ahead of need, reducing the risk of future delivery constraints.

We have already begun translating our ED3 work programme into procurement activity, framework arrangements, manufacturing allocations and supplier mobilisation plans, with frameworks and contracts I place for activities already to help transition between Price Controls. Early procurement, strategic partnerships, capacity reservation and long-term framework arrangements are being used where market constraints and lead times justify earlier commitment, particularly for transformers, switchgear, cables and other critical network assets. This provides confidence that capacity is being secured ahead of need rather than relying on future market availability.

Workforce readiness is being addressed alongside supply chain readiness. We are working closely with delivery partners to develop the resources required to deliver ED3. Earlier visibility of workload enables recruitment, training, competence development and authorisation activities to take place before mobilisation, creating a stronger and more resilient delivery capability throughout the price control period.

Our approach also recognises that global demand for raw materials, manufacturing capacity and specialist equipment is expected to remain high throughout ED3. Asset replacement alone is therefore neither the most resilient nor sustainable solution. Refurbishment, life extension and reuse will play an increasingly important role in our asset

management approach, reducing demand for virgin materials, improving supply chain resilience and lowering environmental impacts while continuing to manage network risk. This supports our wider circular economy ambitions and helps maximise whole-life value from network assets while reducing the resources required from the planet.

Taken together, these arrangements provide confidence that our ED3 programme is supported by a credible delivery model, secured supply chain capacity, a growing skilled workforce and a proactive approach to resilience, allowing us to deliver the largest and most ambitious asset risk reduction programme in our history.

Asset Standardisation and Repeatability

A key enabler of our ED3 (ED3-S05) Delivery Strategy is the continued standardisation of asset designs, specifications and delivery approaches. During ED2, we reduced complexity across several asset categories by rationalising specifications, limiting unnecessary variation and adopting repeatable engineering solutions.

Standardisation delivers benefits across the entire asset lifecycle. It simplifies design and procurement, improves purchasing leverage, increases manufacturing efficiency, strengthens forecasting accuracy and enables suppliers to invest against a more stable and predictable demand profile. It also supports our "design once, build many" philosophy, improving productivity, consistency and delivery efficiency.



Importantly, standardisation also benefits our workforce. Reducing unnecessary asset variation allows engineers, field staff and contractors to develop deeper familiarity with fewer equipment types, improving the effectiveness of training, competency development, installation, inspection, maintenance and fault response activities. This supports both productivity and safety while enabling knowledge and best practice to be shared more consistently across our licence areas.

Our approach does not seek uniformity at the expense of resilience. We will continue to maintain appropriate supplier diversity, alternative technologies and multiple sourcing routes where required to protect network integrity and mitigate supply chain risks. Standardisation will therefore be applied where it creates value for customers and improves deliverability, while preserving the flexibility and resilience required to operate a reliable electricity network.

Table 1: Case Study - Primary Transformer Standardisation

CASE STUDY: PRIMARY TRANSFORMER STANDARDISATION	
Design ambient temperature was standardised	Compact transformers and a price reduction of 6 – 8%.
Standardised the tanks to allow easy switching between integral and separate cooling configurations.	Increase operational flexibility, supports circular economy.
HV neutral cable box standardised	Elimination of surge arrestor costs
Top cover personnel safety system standardised	Safety to personnel enhanced
Painting protection standardised to C5VH	Improved durability, reduced maintenance costs
Oil pumps standardised	Improved cooling efficiency
Fan exercising standardised	Reduction in failure probability by preventing moisture electric motors.
Standardised factory acceptance test documentation	Improved operational efficiency
Design review section added for first-of-type units	Ensures compliance and alignment with SSEND specs
Secondary systems standardised under Asset Technology portfolio	Ensures compliance and alignment with SSEND specs

Reduced size and weight	Reduced draw from the earth materials (steel), lower carbon related to transportation and reduced concrete for plinths, reduced lead times to enable delivery

Standardisation is a core asset stewardship principle that improves efficiency, strengthens resilience, supports workforce capability which not only ensures we look after the Network we have but also enables more effective delivery of our ED3 investment programme.

Scaling to Network Needs

In ED3 we know we must deliver a higher volume of asset renewal to uphold the network integrity and reliability. We will also see an increase in certain asset categories where we must deliver more replacement to responsibly manage aging network and rising fault trends.

LV & HV Cable both require substantially more renewal to prevent an unaffordable and undeliverable volume of assets accruing that are beyond their serviceable life. While cable replacement work can be justified for age and improving interruptions performance, delivery of high volumes is challenging practically. Being enabled through our unit rate in ED3 starts with strong evidence in our justification. We will deliver 520km of LV Mains replacement, 3.7 times more than ED2, and 410km of HV cable, double our delivery in ED2.

As part of our ambitious environmental management, in our asset health plan we will replace 247 km of oil filled cable with solid types as part of a long-term strategy to remove these assets from our network. This represents a significant increase on ED2, with only 26km of cable delivered as part of our health plan. Our ED3 target volumes are also supplemented by a risk-based volume addressed for environmental management.

We will be replacing and refurbishing more assets at substations in ED3, with one challenge being primary transformers. Without changing our criteria for intervention from ED2, we will need to replace 134 primary transformers compared to 78 in ED2 (a 72% increase). This increase in work volumes demonstrates that ED2 performance must scale with a clear forecast to manufacturers and contract partners on our expectations for ED3.

2. OUR ED3 DEVELOPMENT APPROACH

2.1 STAKEHOLDERS SHAPING OUR PLAN

2.1.1 STAKEHOLDER ENGAGEMENT OVERVIEW

We shaped our Network Asset Management Strategy through a structured programme of stakeholder engagement comprising consumer insights, broad engagement and targeted and deliberative engagement.

- **Consumer insights** provided evidence on customer priorities, expectations and willingness to support investment.
- **Broad engagement** captured perspectives from network users, consumer representatives, local authorities, critical infrastructure operators, industry bodies, regulators, supply chain partners and environmental stakeholders.
- **Targeted and deliberative engagement** enabled deeper exploration of key strategic choices, trade-offs and investment priorities with customers, stakeholders and subject matter experts.

Together, this evidence base informed the development of our ED3 asset management approach and was subject to independent challenge and assurance from our Independent Stakeholder Group (ISG), which reviewed our engagement approach, tested our strategic rationale and challenged how stakeholder feedback was translated into decisions and commitments.

2.1.2 WHAT WE HEARD AND HOW STAKEHOLDER FEEDBACK SHAPED OUR STRATEGY

Table 2: Stakeholder Impacts on NAMS

Theme	*Stakeholder insight*	*Our response*	*Impact on the strategy*
Reliability and resilience	Customers and stakeholders prioritised a safe, reliable and resilient network. **68% supported a high level of asset health investment**, with proactive asset management receiving an average support score of **4.48 out of 5**.	We adopted a proactive, risk-based asset management approach that considers the asset health (probability of failure) with the asset criticality (the consequence of failure).	Increased focus on asset health investment, network resilience and anticipatory risk reduction.
Affordability and value for money	Customers supported investment where the benefits were clear but expected affordability and long-term value to be considered.	We applied whole-life value and long-term risk assessments when selecting and prioritising interventions.	A balanced ED3 investment programme that addresses current needs while reducing long-term risk and costs for customers.
Data and transparency	Stakeholders wanted decisions to be informed by better asset data, monitoring and forecasting.	We increased our focus on data quality, asset health modelling, condition monitoring and evidence-led forecasting.	Greater use of transparent, evidence-led and condition-based decision-making throughout the asset lifecycle.
Circular asset management	**87% supported our circular asset management approach**, provided network reliability and safety are maintained.	We embedded refurbishment, reuse, life extension and circular design principles throughout the asset lifecycle, while retaining safety and reliability as core requirements.	Circular economy principles became a core strategic pillar of the NAMS, rather than a standalone environmental initiative.
Deliverability	Stakeholders challenged us to ensure that the plan was realistic and deliverable given workforce and supply chain constraints.	We incorporated deliverability considerations into investment prioritisation, programme planning and sourcing decisions.	Increased emphasis on phased delivery, equipment standardisation, workforce capability and supply chain resilience.

Diverging views and continued trade-offs

The engagement highlighted three areas where stakeholders' views required careful balancing. These trade-offs have shaped the choices made in our ED3 Business Plan:

- **Affordability vs anticipatory investment:** Stakeholders broadly support investing early to avoid future constraints, disruption and higher long-term costs, but affordability and value for money remain key concerns. There is very limited support for deferring investment to a future generation. Our plan therefore balances timely investment in future network needs with the need to keep costs manageable for customers. *Asset investment and refurbishment (ET3)*
- **Sustainability vs reliability:** Stakeholders strongly support refurbishment, reuse and waste reduction where practical, but are clear that safety, reliability and resilience must not be compromised. Our plan embeds circular asset management where it is safe and adds value, while retaining targeted replacement where needed to maintain network performance. *Circular asset management (RN6)*
- **Asset condition vs customer impact:** Stakeholders support using asset health and risk data to guide investment decisions but recognise that the poorest condition assets are not always those whose failure would have the greatest impact. Our plan balances asset health with customer impact, network criticality and consequences of failure, prioritising investment where it delivers the greatest customer and resilience benefit. *Asset investment prioritisation (RN2)*

Detailed stakeholder research, consultation findings, engagement outputs, evidence sources and the full stakeholder learning log are provided in Appendix A.

2.2 DATA LEAD DECISION MAKING

2.2.1 AN INTEGRATED AND OPTIMISED PLAN FOR ED3 AND BEYOND

As the energy system evolves, the complexity of investment planning continues to increase. Growing requirements for network capacity, alongside greater investment in asset health, resilience and environmental performance, require a fully integrated approach to network planning and delivery. To maximise value for customers, we have considered all investment drivers together, recognising that a single intervention can often deliver benefits across multiple strategic objectives.

Our investment plans are developed at a whole-network level, ensuring that asset health, network growth, resilience and environmental needs are considered collectively. For example, load-related investment can significantly reduce asset risk and defer the need for stand-alone asset health interventions. Understanding these interactions allows us to optimise investment, avoid duplication and ensure expenditure remains proportionate to network need.

Where assets are eligible for investment under multiple drivers, we have applied a structured driver selection process to ensure interventions are funded appropriately and volumes are not double counted.

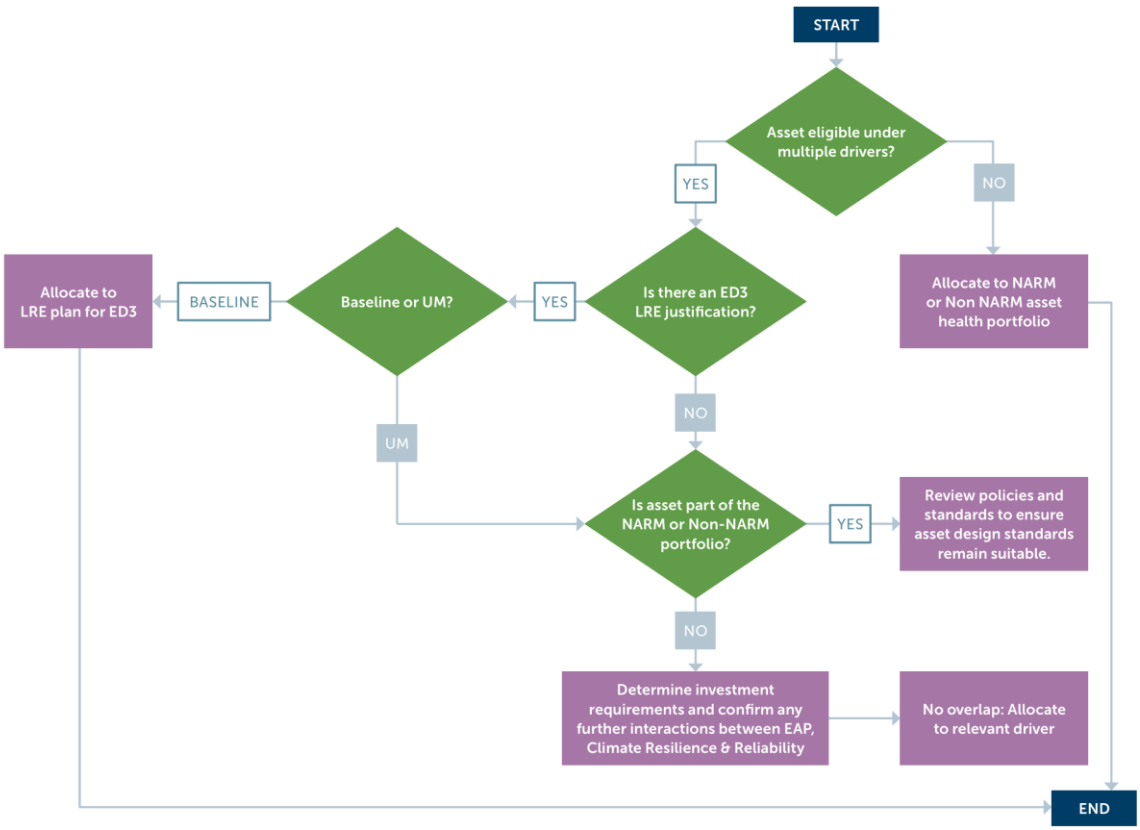


Figure 3: Multiple Driver Asset Candidate Integration Process

1. Load related expenditure will be selected over non-load where it sits within ED3 baseline of ED3. This ensures that a full scheme justification can guarantee the scope and outcomes for network planning.
2. Load related expenditure included within an uncertainty mechanism will not include assets that would be otherwise part of the ED3 health plan or another investment driver.
3. Some asset categories that may be replaced or refurbished for another purpose other than health, for example as part of storm resilience or as part of environmental action plan. The needs for these investments have been developed “over and above” our health plan to ensure that additional volumes sought are in the context of the whole plan need.

Load related expenditure that has been discounted during ED3 plan development has been readopted under any non-load investment where required.

Regardless of the primary driver assigned, asset specifications and design standards are developed to deliver the outcomes required across multiple strategies. For example, an asset replaced due to condition may also be specified to support future demand growth, improve resilience or reduce environmental impacts.

During ED3, we will further enhance this approach using our Investment Optimiser, enabling us to target investment where it delivers the greatest overall value. By considering network capacity, asset integrity, resilience, sustainability and customer outcomes within a single decision-making framework, we will maximise the benefits delivered from each pound invested and ensure our Business Plan provides the best long-term value for customers.

2.2.2 A RISK MANAGEMENT STRATEGY DRIVEN BY MATURE DATA MANAGEMENT

SSEN's asset information systems bring together inspection, condition, age and location data to create a single view of network asset health. This data feeds the industry-standard Common Network Asset Indices Methodology (CNAIM), which converts engineering information into consistent health, criticality and monetised risk scores, allowing asset risk across the network to be compared on a consistent basis. We use these health scores to forecast how assets will deteriorate over time and identify the optimal time to intervene, demonstrating prudentially network risk management to Ofgem and delivering the best value for our customers.

The Network Asset Risk Metric (NARM) is the total network risk and committed risk reduction that we commit to in a regulatory period, and accounts for the overall risk movement on our network due to different drivers, such as load investments, asset deterioration, data cleansing and revised network information. This demonstrates that we are aware of the effectiveness of asset interventions and where future growth areas of risk are on the network, informing us where future investment should be directed to manage future network risk.

While not all assets or investment types are supported by modelling, we can still utilise our asset and performance data to create justified outcomes from investment. Gathering more meaningful data is integral to our asset management system maturity and development.

As part of our licence condition for ED2, we submitted our inaugural Information Gathering Plan (IGP) to Ofgem in 2023, which detailed the data population for our NARM asset models and our plan to remediate data quality issues like completeness, consistency and accuracy. This is updated and audited internally on an annual basis, and we are on track to deliver on our data quality targets by the end of ED2.

Concurrently, we've published an Asset Data Management Strategy, annual Asset Data Management Plan, plus quarterly Asset Data Quality Reports to define, track and manage our asset data quality across our core information systems, and in turn increasing our data governance maturity score, using the SSEN data maturity framework from 2.0, to 3.2 currently, with a target maturity of 4.0 by the end of ED2. This is important as it integrates our IGP data improvement initiatives with our holistic strategy to incrementally increase our overall asset data quality.

In our ED3 plan, we have been cautious to ensure that assets without a strong modelling of health (and associated investment justification) still receive and appropriate and ambitious level of renewal that will succeed in managing reliability performance now and renewal in the long term. Asset types such as LV and HV cable, where we cannot easily assess condition for the purposes for health modelling, still need suitable investment to deliver benefits to our consumers.

Data confidence and uncertainty are considered alongside asset health, criticality and consequence of failure. Where confidence is lower, we apply proportionate engineering judgement, sensitivity testing and additional inspection or condition assessment before committing to material intervention. Uncertainty does not automatically justify replacement: it informs the level of assurance required, the timing of the decision and whether monitoring, maintenance, refurbishment or replacement provides the most proportionate response.

To bridge this gap, we are making investments through our (ED3-S13) Data and Digitalisation Annex to improve the assessment and monitoring of our assets' deterioration, faults and failures. We will invest in enhanced condition monitoring capability and system integrations to provide improved reporting, recording and analysis of assets and locations involved in faults and failures. This will be an enabler for risk-based maintenance in the future and provide the basis for creating health-based models for our remaining non-NARM assets, with the intention of moving them all to NARM-compliant models by 2050.

2.3 THE ASSET MANAGEMENT STRATEGIC PILLARS FOR ED3

To support our ED3 Business Plan Priorities, we have established four strategic pillars that underpin our Network Asset Management Strategy and shape our ED3 investment decisions.



Figure 4: The Strategic Pillars within our Network Asset Management Strategy

Table 3 defines these pillars and reflects the priorities identified through stakeholder engagement and the key challenges facing our network.

While investments are typically driven by one primary objective, many deliver benefits across multiple pillars. Our Circular Approach to Asset Management sits at the heart of the strategy, informing every investment decision and helping us maximise value from existing assets and materials while maintaining the safe, reliable and resilient network that customers expect.

Table 3: Our NAMS Strategic Pillars

First Pillar: Responsibly Investing for Network Integrity and Resilience *Deliver a safe, resilient and future ready network through targeted investment that manages risk, supports growth, enables flex, and reduces long term costs.*	We will deliver a network that remains safe, reliable and resilient as customer demand grows and electrification accelerates. Our investment programme will reduce asset-related risks, improve network resilience to changing operational and environmental conditions, and ensure our network is ready and available to support new connections and low-carbon technologies.	**Key outcomes:** • Reduced asset health and network risk. • Increased network resilience, operability, and readiness. • Improved network capability to support electrification and flexibility. • Reduced whole-life costs through timely intervention. • Sustained levels of reliability and customer service.
Second Pillar: Maintaining **a Safe and Compliant Network** *Maintain a high-performing network that consistently meets safety, environmental and regulatory obligations.*	We will ensure our network continues to operate safely, reliably and in compliance with all regulatory and engineering requirements. Through effective stewardship of our assets, we will sustain network performance, manage emerging risks and maintain the foundations needed to support future growth. We will optimise our network management to ensure we have maximum efficiency in delivering these outcomes.	**Key outcomes:** • Continued compliance with safety and environmental obligations. • Reduced operational and asset-related risk. • Sustained network performance and availability. • Improved asset condition and longevity. • Maximised asset value. • Greater confidence that the network is managed efficiently and responsibly.
Third Pillar: Upholding Reliability Performance *Uphold the baseline interruptions performance for customers and use targeted investment to benefit those*	We will uphold the reliability of supply experienced by customers by investing to mitigate the frequency and duration of interruptions. Our portfolio investment will maximise current and future reliability performance by prioritising investment based on risk. We will proactively invest in monitoring to improve visibility of faults, enabling enhanced asset risk assessments and quicker restoration.	**Key outcomes:** • Availability above 99.98%. • Fewer customer interruptions for Worst Served Customers. • Improved reliability for customers who experience worse than average performance. • Reduced customer disruption from planned and unplanned outages.

experiencing worse than average performance	We will create targeted projects for improving outcomes for customers who currently experience poorer levels of service, helping to reduce the range of reliability performance experienced across our licence areas. *Our (ED3-S04) Reliability Strategy sets out how we will identify, prioritise and deliver targeted interventions for customers who experience worse than average performance.*	• More consistent reliability outcomes across our network.
Fourth Pillar: Creating a Circular Approach to Asset Management *Maximise value from existing assets and materials by embedding circular economy principles across asset management decisions.*	We will embed circular economy principles across asset management and investment decisions to maximise the value obtained from existing assets. We will take a whole-system approach to investment planning, optimising the capital required for renewal without compromising on safety or network performance. Through asset life extension, refurbishment, reuse, remanufacture, material recovery and sustainable procurement, we will increase resource efficiency across our network and reduce reliance on virgin materials. By increasing the reuse and recovery of materials we will reduce embodied carbon, strengthen our supply chain resilience and minimise environmental impacts without compromising network reliability and performance.	**Key outcomes:** • Increased asset reuse and life extension. • Optimised spend on network renewal • Greater coordination between load-driven and health-driven investment programmes. • Reduced need for asset replacement through strategic redeployment of serviceable assets. • Lower consumption of virgin materials and reduced waste. • Reduced embodied carbon associated with network investment. • Improved asset utilisation and whole-life value. • Increased supply chain resilience and resource security. • A more sustainable and affordable network for customers and communities.

3. OUR ED3 PLAN

3.1 NETWORK ASSET MANAGEMENT INVESTMENT PROFILE

The investment profile presented in Table 4 demonstrates how our ED3 Network Asset Management Strategy translates into a targeted and deliverable programme of interventions across our asset base. The proposed investment reflects the need to maintain network health, manage asset-related risks, improve reliability and resilience, and meet evolving safety and compliance obligations as customer dependence on electricity continues to grow.

The spend spans across all our Pillars - the largest area of investment remains asset health renewal and refurbishment. Across ED3, we propose increased investment in both NARM and non-NARM asset classes to address ageing infrastructure, manage growing network risk and responsibly manage the asset outlook in the long-term. This reflects both a larger volume of assets requiring intervention and improved visibility of network needs through enhanced asset data, condition information and risk modelling.

Alongside asset health investment, we are increasing expenditure on reliability, resilience and operational capability through greater investment in operational technology, telecommunications and monitoring systems. These investments will improve network visibility, support data-led decision making and strengthen operational resilience.

The plan also responds to stakeholder priorities around safety and compliance. Increased investment in operational restrictions, rising and lateral mains, overhead line clearances and other safety-driven interventions will address known risks and support compliance with legislative and engineering obligations.

Together, the investments set out in Table 4 represent a balanced but essential programme that combines immediate network needs with long-term stewardship. While individual investments align to specific drivers, many deliver benefits across multiple strategic pillars, improving reliability, resilience, safety and customer value through a risk-based, data-led and increasingly circular approach to asset management.

Table 4: NAMS Investment Overview (figures in pounds, 25/26 prices, millions)

	Investment Driver	Reporting Table	ED3 Business Plan
NAMS: Principal Drivers *(Full investment table attributable to NAMS)*	Diversions*	CV5	[redacted]
	Wayleaves (CAI)*	C10	[redacted]
	Asset Health Replacement - NARM	CV7a	[redacted]
	Asset Health Replacement. - Non-NARM	CV7b	[redacted]
	Asset Health Replacement. - Associated Civils	CV7c	[redacted]
	Asset Health Refurbishment - NARM	CV9	[redacted]
	Asset Health Refurbishment - Non-NARM	CV8	[redacted]
	Civils Work Condition Driven	CV10	[redacted]
	Legal & Safety	CV14	[redacted]
	Rising & Lateral Mains	CV17	[redacted]
	OH Clearances	CV18	[redacted]
NAMS: Supporting Drivers *(stated values applicable to NAMS)*	Physical Security at Depots	C5	[redacted]
	RAAC investments at Embedded Generation Stations	CV15	[redacted]
	Asset Technology - Op IT & Telecoms	CV11	[redacted]
	Total Network Asset Management Strategy expenditure:		**1,962.55**

** As an atypical form of expenditure, this addressed in full within our (NLRE_2) Wayleaves and Land Rights EJP.*

3.2 FIRST PILLAR: RESPONSIBLY INVESTING FOR NETWORK INTEGRITY AND RESILIENCE

Proactively invest to ensure a safe, reliable, and resilient network for customers in the near- and long-term future

3.2.1 MANAGING ASSET HEALTH – NARM ASSETS

Introduction to NARM & CNAIM

The Network Asset Management Strategy determines how we will renew assets that pose a risk to our network performance before an unplanned failure happens. Asset renewal, including replacement and refurbishment for asset health, is the largest category of capital expenditure across all non-load related investment drivers.

The Common Network Asset Indices Methodology (CNAIM) is a modelling approach for all DNOs which sets out how to calculate the health, criticality and monetised risk of certain network assets on the electricity distribution system. Those assets covered by the methodology are classed as Network Asset Risk Metric (NARM) assets. CNAIM is a fundamental tool for how we manage a huge volume of investment where health factors are complex and criticality is variable on different parts of the network.

The Final Business Plan submission utilises the latest version of CNAIM (v3.0) which was approved for use as a standard in ED3 by Ofgem. Modelling inputs are supported across DNOs by the ENA Best Practice Guide[1].

Our use of asset health modelling and the associated regulatory framework is a vital capability within our organisation for informing the investment approach. However, asset intervention models in themselves do not determine the

[1] We expect that a NARMs restatement exercise may be required between submission of Final Business Plans and Draft Determinations to apply updated financial impacts in the consequence of failure calculations. Any restatement would be limited to the relevant BPDTs and would not require updates to Business Plan narrative, EJPs or other supporting documentation unless otherwise specified by Ofgem.

requirements directly; it is our responsibility as the asset steward to create a price control investment plan that is appropriate for the latest regulatory requirements and that is led by well-developed priorities from customers and broader stakeholders.

When using NARM, we do not seek absolute reductions in risk levels; our network is growing, which adds risk even with new assets, and assets in the middle of their operational life will increase in risk throughout ED3 without action becoming necessary. Any intervention – or portfolio of interventions – we make must be well informed on the technical need and support the outcomes expected from our stakeholders. We do not assume the priorities of stakeholders to be static, and although we have developed our investment approach for the long-term need, we have justified our ED3 plan based on our latest stakeholder engagement.

NARM is a key facet for SSEN to deliver long-term consumer outcomes for network integrity, and its continued development is vital. In ED3 we will provide continuous improvement around the NARM framework by expanding our modelling capability to additional types of assets. We will provide further assurance on the outputs of existing models by independent reviews on model inputs and the utilisation of the methodology. Deeper understanding of asset health through technology and innovation will inform the modelling for even better outputs.

ED3 Plan Needs

Our investment plan for ED3 is formed on both the basis of the clear emerging need for the immediate future and what we must deliver for our network in subsequent price control periods. Our objective in our ED3 plan is to make decisions now which prevent a future scenario where the choice is removed because of outsized costs or undeliverable work volumes.

We must insure we do not defer investment too far, resulting in an accumulation of network risk and poor safety and service outcomes. Failing to manage the existing network risk will also jeopardise electrification and the net zero transition for customers and the country. To uphold our societal contract, we must maintain a non-negotiable level of investment to guarantee the positive outcomes expected of our asset management.

In planning for the long term there is a need to balance the intergenerational fairness for consumers in different price controls. Early investment may shorten asset lives and will not yield benefit until later, while deferred investment may create larger and more expensive problems for future bill payers. To ensure we have struck the correct balance, viable investment options to manage our network risk have been tested through deliberative engagement.

Learning from our Stakeholders

Our early stakeholder engagement told us that there was majority support for trying to balance the ED3 and ED4 forecast investment needs, with 57% of respondents favouring this approach. Despite acknowledging the difficulties involved in asking customers to pay more now during a cost-of-living crisis, many felt that delaying investment would lead to a less stable and unreliable network over time and subsequent sharper bill increases in ED4.

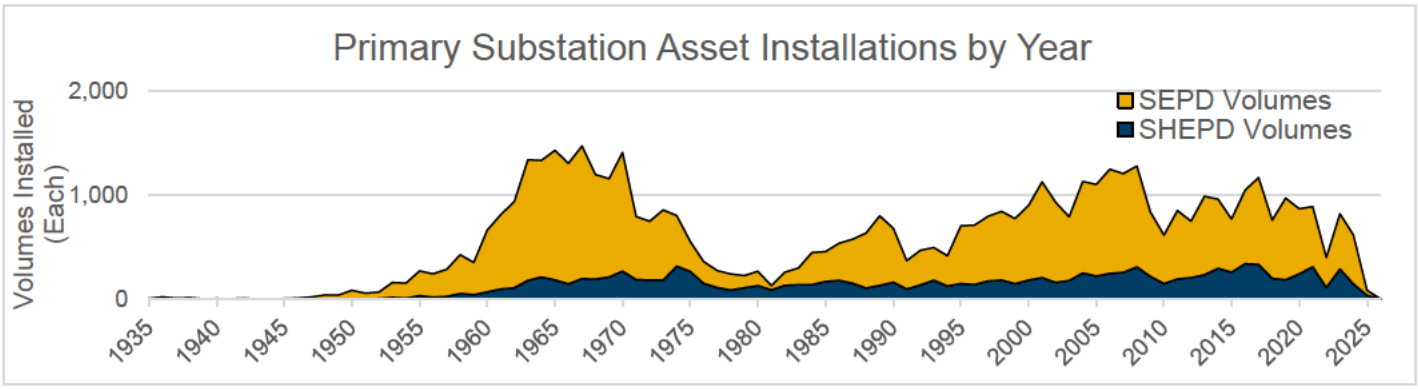
Conversely, 36% of respondents indicated a preference for more investment in ED3 to reduce costs for future consumers and maximise the risk reduction on the network. Some thought that this was a vital step, as the next generation should not be made to take on all this burden and would not be able to afford the increases in bills involved.

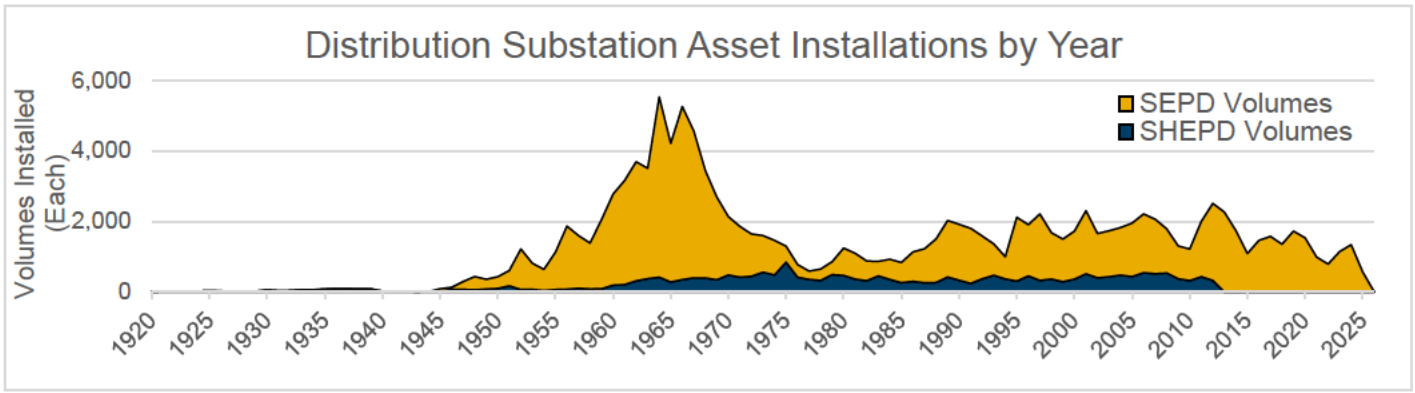
The Network Risk Forecast

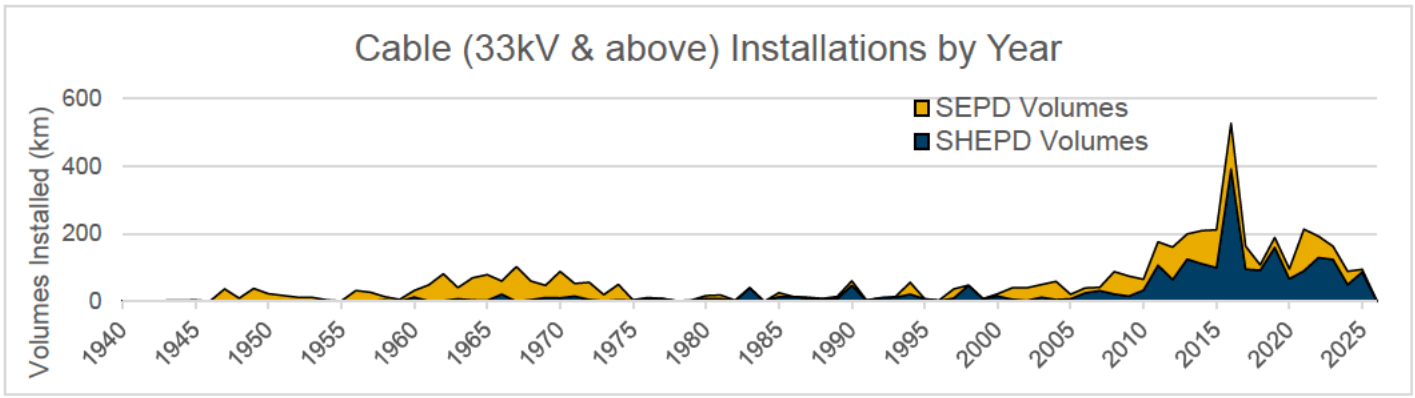
Our ED3 Network Asset Management Strategy is driven by a simple reality: the risks facing our network are increasing as key asset populations age and deteriorate. With more of the network moving beyond operational life and higher pressure placed on the network though climate and weather conditions, there is an increasing challenge for us to uphold the performance expected by our customers.

Through ED2 we have strengthened our asset data, condition assessment and forecasting capabilities, giving us the clearest understanding we have ever had of future network needs. This evidence demonstrates that sustained intervention is required to manage asset risk, maintain network integrity and deliver reliable services for customers.

The age of the network is only one factor within this forecast. However, considering how long assets have been operating can give an indication of what renewal trends may be needed in the future. The profiles show the age of different parts of the network.


Primary Substation Asset Installations by Year
Volumes Installed (Each)
2,000
1,000
0
SEPD Volumes
SHEPD Volumes
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025


Distribution Substation Asset Installations by Year
Volumes Installed (Each)
6,000
4,000
2,000
0
SEPD Volumes
SHEPD Volumes
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025


Cable (33kV & above) Installations by Year
Volumes Installed (km)
600
400
200
0
SEPD Volumes
SHEPD Volumes
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025

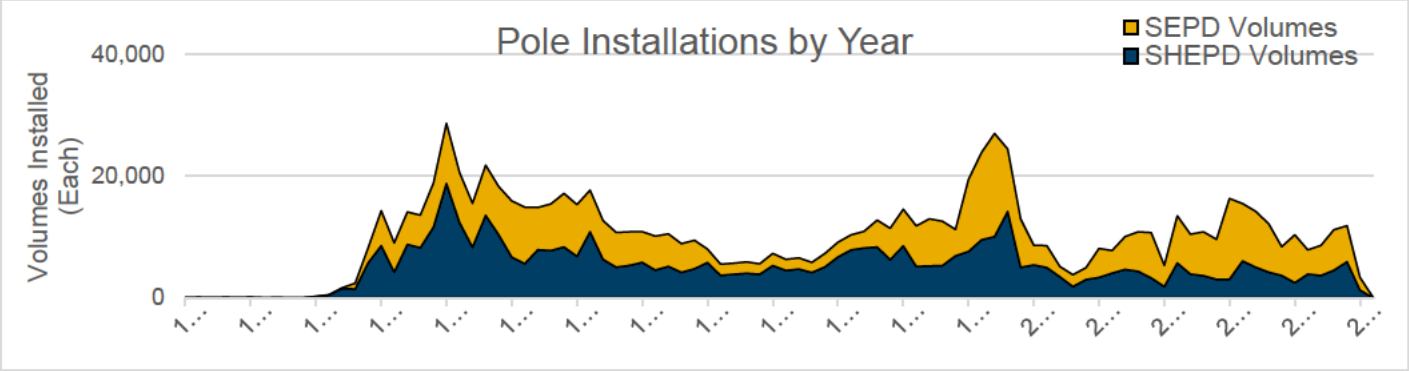
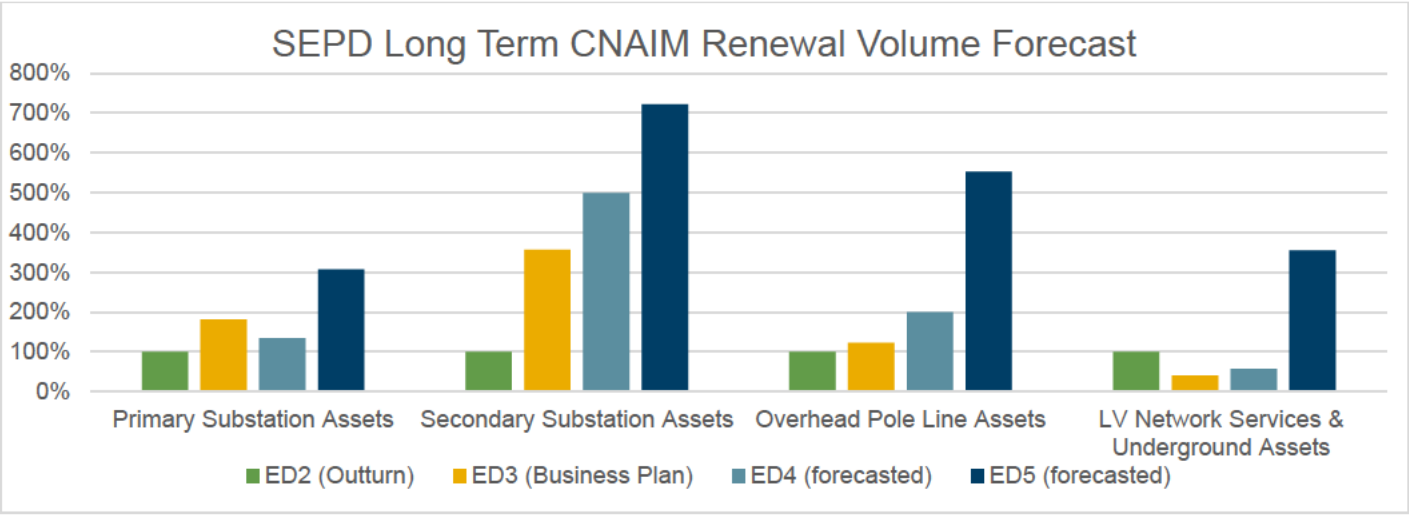


Figure 5: Age Profile of NARM Asset Categories

Where we have spikes in the charts above, we have high numbers of assets that are of similar ages, deteriorating at the same rate. This will be an indicator of where we will need to increase renewal in the future, though we must also maximise consumer value by operating assets as long as possible. In-depth health modelling represents best practice for balancing the investment needs between performance and efficient expenditure.

Our asset health models can be used to tell us what renewal works are needed now, and when interventions are forecast to be necessary due to deterioration. By maintaining our investment criteria constant, it is possible to see how much asset work would be required in the future. Figure 6 shows the level of asset renewal required for both license areas in ED3, ED4 and ED5, compared to our ED2 outturn (ED4 & ED5 forecasts are not optimised for delivery).



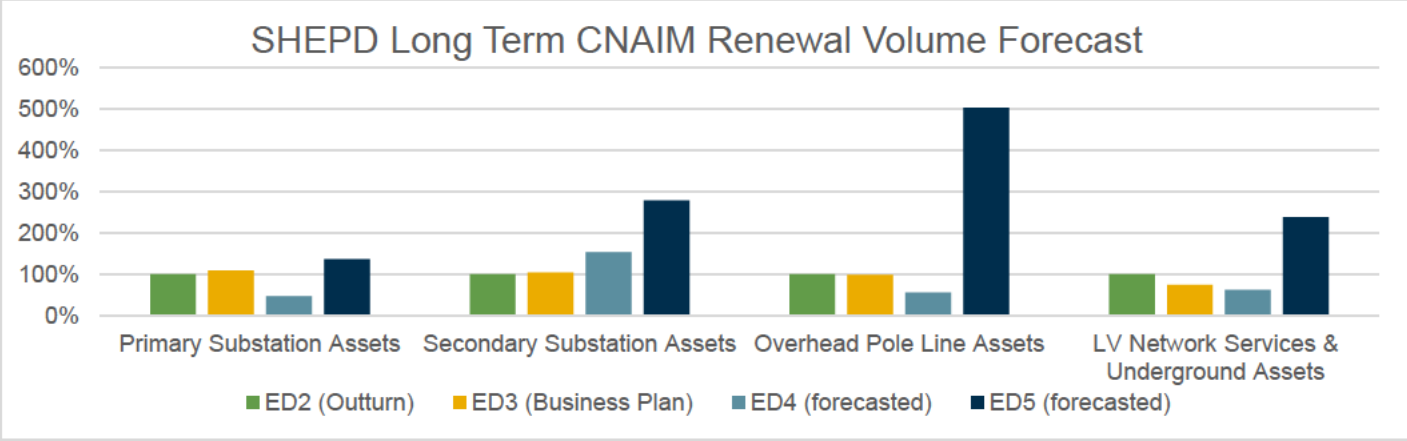


Figure 6: CNAIM Long Term Investment Forecast

While longer term forecasts are inherently less certain, we can see that generally our longer term forecasted volumes are increasing – and these are predicated on full delivery of our ED3 plan. This is especially acute in our SEPD license area.

Delivering our ED3 plan in full is vital. It will ensure we will not be left with future challenges on both deliverability and affordability in asset renewal, as this would consequently force more network risk acceptance, operating assets at a worse health score, and jeopardising performance outcomes.

Our NARM Assets Methodology

The intervention thresholds adopted for ED3 are the same as our ED2 plan in a continuation of our long-term asset health management strategy. We have chosen to keep the intervention thresholds as we haven't seen significant changes in our NARM asset failure rates and will review them based on improved asset fault performance analysis through our ED3 digital investments and adjust them for ED4 if warranted. Some EJPs will consider potential investment scenarios with a change in intervention criteria, to support the optioneering. Our thresholds for intervention are included in Appendix B.

NARM modelling is used to inform our investment plan but does not determine what is right for stakeholders or what is practical to fulfil. The outputs from the modelling have undergone significant iterative refinement to form our ED3 specific plan. That refinement has:

- Assured the asset intervention targets identified, to ensure health and condition inputs are accurate and drive the correct assessment
- Considered the need for consequential replacement on other substation or circuit assets (NARM or non-NARM) to enable the principal replacement. Examples include (but are not limited to):
  - full replacement of integrated switchgear
  - protection upgrades at the substation and remote ends
  - Replacement of telecontrol (SCADA) and/or the provision of new telecommunications
  - replacing obsolete equipment to integrate new assets
- Aligned the asset selections in the plan and created phasing that ensures cost and planned outage efficiency in a "touch the network once" approach
- Integrated load (and other non-load) related asset expenditure across our plan, to understand the true value outcomes possible for consumers
- Assessed how our ED3 asset volumes and selection will succeed in managing and improving asset monetised risk in a long-term outlook to 2050.
- Prioritised all investments appropriately under a total expenditure view.

Mature asset volumes from this refinement informed the selection carried forward into EJPs. At this stage, specific risks in the context of that asset intervention were considered and we can implement any further requirements for our strategic outcomes. Such considerations may include environmental performance, carbon benefits, losses improvements, or increased climate resilience. This may mean adjustments to proposed investment volumes, or it could result in further development of optioneering and cost benefit analysis.

Optioneering in NARM investments, which are programmatic and proportional for our whole asset portfolio, will be different from other forms of investment which are focussed on a specific project or scheme. Accordingly, a conventional CBA is applied where it supports a meaningful choice between options, rather than mechanistically where CNAIM and monetised risk already provide the appropriate basis for demonstrating intervention value

Investment drivers which affect NARM category assets but are not for the primary purpose of asset health renewal are considered within our whole plan risk movements. They do not however contribute to the risk targets derived from NARM replacement and refurbishment activities.

Our NARM Investment in ED3

NARM investments reduce the risk on the network by lowering the likelihood of unplanned faults and failures occurring. Our investment plan is presented against what would happen in a “do nothing” scenario so we can demonstrate what benefit our asset renewal plan brings in terms of risk reduction – as opposed to choosing no further replacement or refurbishment investment.

Understanding how our ED3 plan will offset risk through investment is predicated on a clear view of where we anticipate we will start ED3 in terms of network risk points and delivery of work volumes and risk point targets in ED2. Through our internal monitoring of risk point delivery across asset groups and categories, we can demonstrate both what has been delivered to date, as well as our forecast outturn for ED2. Assets anticipated to be replaced or refurbished before the end of ED2 are discounted from our sought investment for ED3.

The figures 7 and 8 below show three scenarios:

- **Do Nothing**: Our anticipated risk point position starting ED3, and the subsequent increase in risk points that will accumulate to the end of ED3 if we choose not to undertake any asset renewal
- **ED3 Proposed Run Rate:** The benefit seen through the reduction in risk points accumulated with our proposed NARM asset renewal plan (not including further risk reduction from other asset expenditure)
- **Current ED2 Trajectory**: The risk reduction we would observe if we continued to offset risk at the same rate we have achieved with our ED2 expenditure and delivery.

The reduction in risk is achieved by renewing the proportion of the asset population which are at (or will degrade to) the higher health bands during ED3 and reducing their health score.

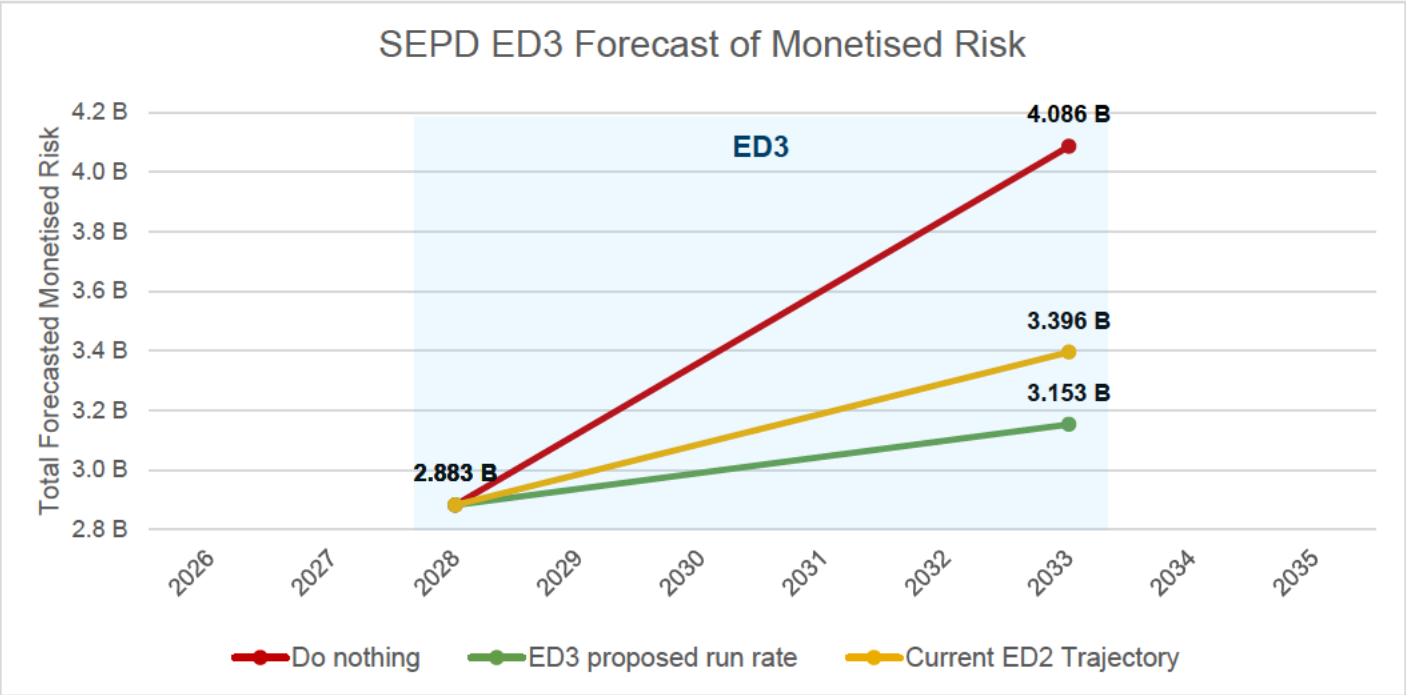


Figure 7: SEPD Forecast of Monetised Risk

In SEPD, we are removing 933m of monetised network risk, a 23% reduction from the total network risk at the end of ED3 based on our do-nothing scenario

The risk growth in a "do nothing" scenario is 38% over the course of ED3 - indicating a significant need to renew on assets due to need in ED3, before considering longer-term trends. Our overall risk on the SEPD network is higher than SHEPD because of the network size and volume of assets.

In ED3 we will have the larger overall risk reduction in SEPD from our NARM asset replacement and refurbishment plan. Our NARM plan consists of £686.9m of asset replacement and £44.9m refurbishment.

For NARM asset classes, our SEPD plan will renew:

- **635** Grid & Primary Substation assets, representing **5.72%** of our network total
- **4,112** Secondary Substation assets **3.61%** of our network total
- **151.9 km** of underground cables (>=33kV), representing **1.60%** of the full network length
- **35,700 poles**, representing **8.93%** of our network total
- **105.46km** of tower line conductor, representing **1.29%** of the full network length
- **2,618** LV assets not at substations, representing **7.30%** of our network total

In SEPD, we forecast that we will still accumulate risk points over the course of the price control, although less than if we continued with an ED2 rate at of asset renewal. With a large proportion of our network in the middle of its operating life these assets are not yet deteriorated to a point of intervention though will still model an increase in risk over time – leading to the risk growth.

If we were to continue our ED2 rate of risk reduction, we would have to accept a policy change on when we intervene at an asset level. This would mean accepting a higher probability of failure. Our modelling tells us to do more in ED3 compared to ED2, with more renewal work being identified through assets meeting (or being forecasted to meet) intervention criteria in ED3.

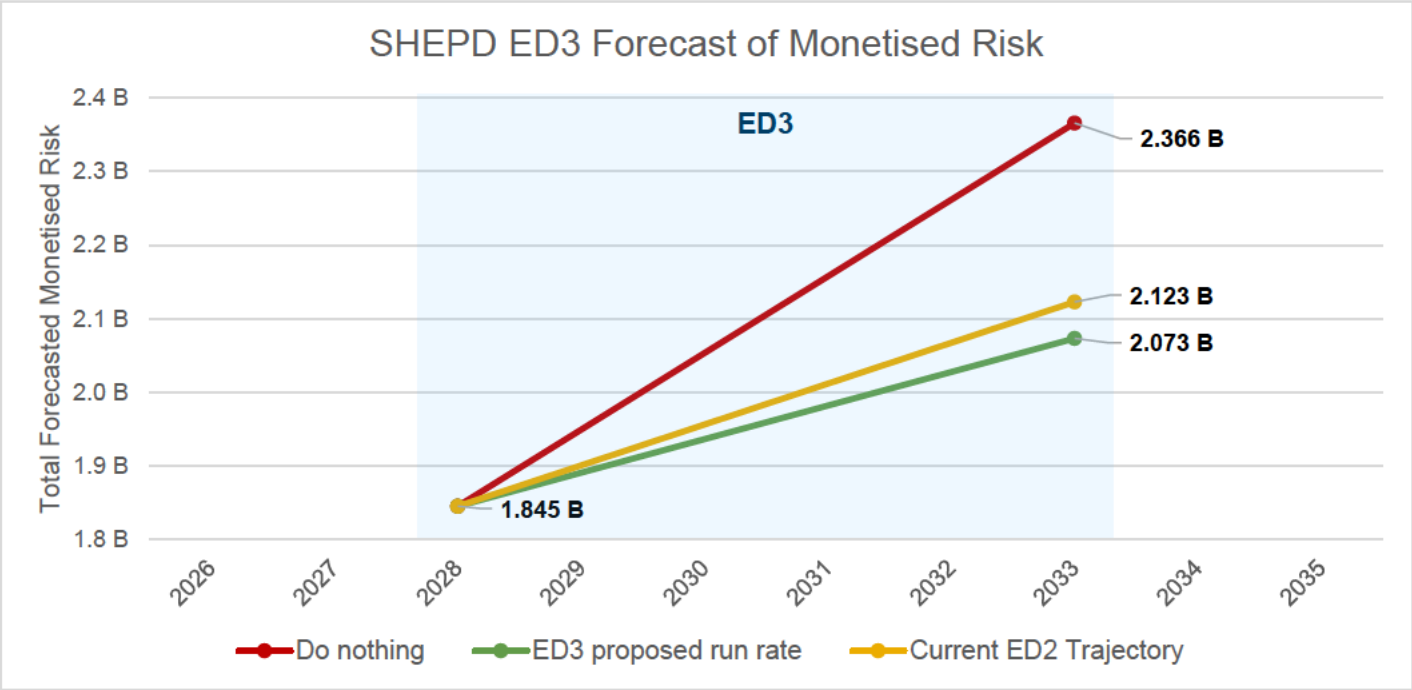


Figure 8: SHEPD Forecast of Monetised Risk

We are removing 293m of monetised network risk, a 12% reduction from the total network risk at the end of ED3 based on our do-nothing scenario

The risk growth in a "do nothing" scenario is 25% over the course of ED3 - indicating a need for continual renewal in ED3, though less than seen in SEPD.

The SHEPD NARM consists of £270.79m of asset replacement and £1.75m refurbishment.

For NARM asset classes, our SHEPD plan will renew:

- **312** Primary Substation assets, representing **6.06%** of our network total
- **1,013** Secondary Substation assets **3.65%** of our network total
- **45 km** of underground cables (>=33kV), representing **0.65%** of the full network length
- **11** subsea cables with **ten** new cables. Representing **9.7%** of our network submarine circuits
- **15,900 poles**, representing **3.38%** of our network total
- **252** LV assets not at substations, representing **2.58%** of our network total

Like SEPD, our SHEPD ED3 plan will offset more risk than we are currently achieving in ED2, based on the needs of our network. There will still be an accumulation of risk through the price control, although this is also attributable to risk growth on assets in the middle of their operating life.

Given 132kV is not a Distribution voltage in SHEPD, there is reduced refurbishment compared to SEPD.

In both license areas, there will be further asset risk reduction through load-related reinforcement, though this will not be recognised in our NARM targets. Equally, as our network expands with new assets for capacity and connections, the risk on the network will also increase, even with brand new installations.

The risk movements calculated from our investment have informed the commitments we have made for ED3 in our business plan. These commitments can only be realised by the delivery of the asset volume allowances within our plan.

When delivering in the price control, the ability to move allowances between asset targets and even between asset categories is crucial to ensure that we can address any emerging need and deliver the maximum value per intervention. For this reason, NARM risk point targets are set for a DNO license area as an overall output. However, there are certain asset interventions we must fulfil to ensure that the risk for that individual asset is managed. Through

balanced delivery of risk mitigation across all asset categories in our plan, we will ensure that there is no concentration of risk in certain categories. In ED3 we will continue to report our progress on risk reduction within different parts of our network.

Our asset health plan includes excel portfolio EJPs, which allow us to report all the asset-level detail of our renewal plan for the first time. This will increase the transparency of our technical justification and give asset, substation, circuit and portfolio level indications of where we intend to spend in ED3.

Learning from our Stakeholders

Our stakeholders told us during early engagement that there was majority support for addressing as much as we could within our health-related investment plan:

- 68% of respondents felt "we should have a high level of investment and remove as much risk as we think we can deliver"
- 28% felt "we should have a moderate level of investment and risk tolerance"
- only 4% felt "we should develop a small level of investment and accept more risk of asset failure".

Generally, stakeholders have assessed and supported the need for investment identified through the NARM modelling and support a credible plan which we can deliver. This also supports the view that reliability and resilience are the top ranked priority for both domestic and commercial customers.

Long-term investment plans to deliver these baseline outcomes were preferred over short-term targeted investments, which were assessed to carry the potential to be less effective and carry higher costs. This aligns with our internal prioritisation, to deliver network integrity for steady or ramped renewal, with a long-term forecast supporting delivery.

3.2.2 MANAGING ASSET HEALTH – NON-NARM

LV, HV and EHV Overhead Pole Lines

Our investment on overhead line networks addresses the growing asset health risks associated with ageing poles, conductors and pole-mounted equipment that are critical to maintaining a safe, reliable and resilient electricity network. While poles are a NARM asset, we have completed our engineering justification together with all aspects of the overhead line network at each voltage level and are included in the summaries below.

Table 5: OHL Expenditure

	Non-NARM expenditure Conductors, Services, and Pole Mounted Transformers and Switchgear (& pole refurbishment)	NARM expenditure Pole Replacements
LV overhead lines	£8.24m	£46.40m
HV (6.6/11kV) overhead lines	£26.71m	£131.03m
EHV (33kV) overhead lines	£6.8m	£33.23m

Through this investment we will deliver 19,623 LV pole replacements, 25,743 HV pole replacements and 5,443 EHV pole replacements, alongside targeted conductor renewal, transformer, switchgear and service replacement programmes.

In the absence of asset-level health, criticality and monetised risk modelling available to poles through CNAIM, most overhead line asset categories do not currently have asset-level risk models equivalent to those used for poles. In practice, many of these assets requiring intervention are identified through the programmatic inspection of circuits rather than predictive methods. As a result, intervention volumes are intentionally linked to the expected number of circuit inspections, refurbishment activity and conductor renewals, ensuring that replacement volumes reflect observed condition requirements. However, pole mounted assets are part of new asset health models that will be reported during the ED3 period for the first time.

Our investment programme represents a proportionate and efficient response to identified asset health needs, ensuring customers continue to receive reliable network performance while avoiding both premature replacement and the long-term consequences of underinvestment.

LV & HV Cable

LV and HV cables are critical part of our electricity distribution network and have a high volume across both our license areas. Obtaining data about their installation and current operating condition is challenging, though we know these assets are aging and increasingly, more cables are operating beyond their typical life. We are observing and responding to faults associated with these cables, particularly in challenging weather conditions such as high rainfall.

Renewing cable network involves re-laying the route with a new cable, of a modern type and with suitable capacity. Delivery of this work is challenging due to the cost and the disruption caused, particularly at low voltage where cables are in urban areas serving residential and commercial properties. Our ED3 plan maximises the volume of cable renewals we can deliver, with consideration to the other work we are also expected to undertake within network capacity investments. Our delivery rates are fully informed by the current market in ED2.

We are investing [redacted] during ED3 to replace 410 km of ageing HV cable, addressing assets that are reaching the end of their operational life and becoming increasingly susceptible to failure. By proactively replacing these deteriorating cables, we will improve network reliability and resilience, reduce customer interruptions and reactive maintenance costs, and mitigate the growing operational risks associated with an ageing asset base. This investment also enables us to install modern, higher-capacity cable systems that support future demand growth.

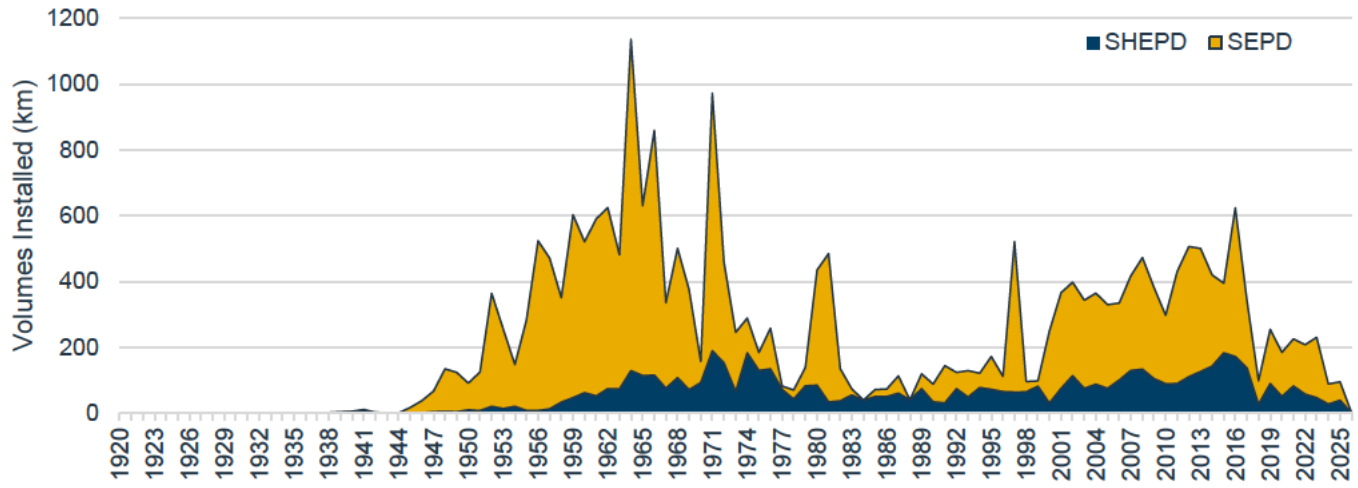


Figure 9: HV Cable Age Profile

[redacted] will also be spend on LV cable and service renewal, including 520km of LV mains. Like our HV network, large proportions of cable were installed between 1950 and 1970 and now is aging beyond operable life, particularly in SEPD. LV consac cable also continues to be associated with a disproportionate volume of faults, and we must continue to replace these with plastic. While we will not intervene to renew pilot cables, we are required to relay these assets while renewing EHV cable.

Protection

We are investing in the ongoing refurbishment of protection schemes because modern electronic protection equipment has a significantly shorter service life than the primary assets it protects. Many protection relays are now obsolete and unsupported, difficult to maintain and retain cybersecurity vulnerabilities. Failure of these systems can result in faults not being cleared correctly and wider customer interruptions, with increased safety risks and potential non-compliance with ESQCR requirements. Electronic protection assets typically have a service life of 15-20 years, creating the need for a continuous replacement programme rather than waiting for associated primary plant to reach end of life.

Our ED3 proposal is a targeted protection refurbishment programme under non-NARM refurbishment that will deliver 2,465 standalone protection scheme refurbishments. This programme supplements the protection benefits already delivered through load-related reinforcement and primary asset replacement programmes, helping us achieve an overall protection renewal rate of approximately 6.8% of the fleet per annum across ED3. We will prioritise interventions using our asset health and obsolescence methodology, targeting schemes with the greatest operational and reliability risk while retaining serviceable assets where appropriate. The investment will maintain dependable fault detection and clearance, reduce reliance on obsolete protection technology, support long-term network resilience, and establish a sustainable renewal cycle for an increasingly electronic protection fleet.

3.2.3 MANAGING ASSET HEALTH – CIVILS

In ED3 we intend to further increase our investment on civils assets for condition and resolve known defects. We will address high risk issues including those relating to concrete support structures, preventing challenges that have been observed with other electricity network operators for these asset types.

We will also go further in addressing the safety and resilience risks associated with reinforced aerated autoclaved concrete (RAAC) roofs by replacing these at primary substations, with £13.2m of ED3 investment across our operational estate.

Through extensive inspection and structural assessment completed during ED2, we have identified 73 known RAAC roofs at Primary and Grid substations that are at or beyond their serviceable life and require ongoing monitoring, access restrictions and, in some cases, temporary mitigation measures. Our proposed investment will permanently remove this known risk through the replacement of all 73 primary and grid RAAC roofs and fund targeted structural surveys at 50 secondary substations to identify and assess any previously unknown RAAC structures. As well as protecting the safety of our workforce and contractors, this programme will protect critical network assets, avoid carrying a known end-of-life asset population into ED4, and provide a stronger evidence base for future investment decisions.

Our RAAC approach also considers our investment needs at our distribution embedded generation sites within our SHEPD license area.

3.3 SECOND PILLAR: MAINTAINING A SAFE AND COMPLIANT NETWORK

Operate and maintain the network in a smart, efficient, and sustainable way, delivering on standards that ensure compliance and support network growth.

3.3.1 OPERATING OUR NETWORK

Operating and maintaining the network is critical to ensuring a safe, secure and resilient network. Our distribution network will play a key role in the energy transition and supporting our customers electrify. It is essential that the day to day running of the network is done safely and efficiently. Our Network Operating Costs (NOCs) activity is critical for delivering electricity to homes and businesses 24/7 365 days a year.

Operation of the network also provides us with critical information about the status and health of the network, through our inspections and maintenance regime. We use this information in planning proactive intervention on the network. We regularly work across the organisation to ensure sharing of knowledge and data to make efficient decisions for the network.

We have set out in our (SSEN_ED3_NOCs) Network Operating Costs Strategy our approach to delivering this critical activity. Our approach is to:

- **Do the essentials right** – deliver a robust inspections and maintenance, defect resolution and repair plan in line with our asset management policies and industry best practice
- **Targeted risk-based resilience activity** – we will undertake proactive interventions on the network to improve safety, reliability and asset health where appropriate.
- **Building on ED2 delivery** – we have considered lessons learnt from ED2 and have a clear delivery model and plan to delivering ED3.
- **Delivering efficiently** – we implement continuous improvement and innovative operational techniques to improve output and minimise costs.

3.3.2 RISING AND LATERAL MAINS

Rising and Lateral Mains (RLM) are safety-critical low-voltage assets located inside multi-occupancy buildings such as flats and tower blocks. It is important that the condition of these assets is maintained adequately for safety, especially as their location within high-rise residences presents additional risk from fires associated to electrical faults.

[redacted]

For ED3, have established a program of inspections, covering more than 31,000 dwellings, as part of a prioritised long-term pathway to resolve these issues across all portfolios. We have prioritised this activity to maximise the understanding of asset condition and management obligations. We propose a *use it or lose it* (UIOLI) allowance which will account for any asset maintenance or replacement spend required upon completion of these inspections. This means we are fully enabled to deliver the inspection work vital to managing this risk, while only drawing on increased asset expenditure at the uncertainty of asset condition and ownership is resolved.

3.3.3 OVERHEAD LINE CLEARANCES

Overhead lines must maintain appropriate clearances from the ground, roads, buildings and other structures to ensure their safe operation. Any changes nearby to our overhead line network, or deterioration or damage to our assets, may mean that clearances are reduced and therefore present a risk to the public and to reliability. Managing this is part of our continuous obligation under the Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002 and other requirements.

To understand where we may have to undertake remedial spend, we assess potential infringements through a mixture of Light Detection and Ranging (LiDAR) analysis and through routine patrols of the network. Utilising LiDAR means we can get precise measurements and consistently assess all aspects of our network in a highly efficient way – we can access more of our network than on foot, and we can also assess our whole network within a single year.

In ED2 we have observed fewer sites that required remediation than our initial LiDAR assessment identified. This was associated with “false positives”, that required engineering and on-site review to resolve. This has led to an underspend of OHL allowances. In preparing our ED3 investment plan, we have established new data quality requirements for our LiDAR assessment and improved our methodology from that which informed ED2. This has increased the credibility and confidence of our investment need in ED3. Our investment in our overhead line assets will be delivered on a basis of assessed risk determined form our revised methodology, and delivering these investments remains crucial to maintain the safety and integrity of our network.

3.3.4 OPERATIONAL RESTRICTIONS

We intend to complete further replacement and refurbishment work on assets which are currently affected by an Operational Restriction (OR). Doing so will restore operability and prevent accumulation of further risk incurred when we currently cannot fully inspect, maintain or repair the asset. It will also permanently remove the hazard which required a restriction in the first place, improving the safety for those who operate and maintain the network.

Our £5.7m investment will refurbish or replace assets and permanently remove seven active operational restrictions on our network, leaving it safer and easier to operate and maintain.

3.3.5 SITE SECURITY

[redacted]

[redacted]

3.3.6 DEMONSTRATING ASSET MANAGEMENT EXCELLENCE

Engineering and Process Safety

In ED3 we will demonstrate leadership by further developing systems, processes and people to understand and effectively manage asset safety risks as part of our mission to continuously improve in engineering safety. This initiative will support our efforts to mitigate the likelihood and impacts of rare, but potentially dangerous or damaging, network failures.

We will achieve this by:

- Enhancing our risk by identifying safety, health and environmental criticality, utilising advanced risk management (for example risk event bowties) to guide decisions and action.
- Enhancing engineering risk management in asset policy, including procurement, installation, inspection, maintenance, and defect management with a risk-based approach
- Ensuring operational excellence and compliance with policy through improved processes and informative key performance indicators and governance.
- Optimise monitoring & control to enable dynamic monitoring

By strengthening our workforce capability, improving systems, and fostering a culture that prioritises reliable networks and responsible operations, we minimise impacts on our people, customers, communities, and the environment.

We will implement a new Network Safety and Integrity framework by year 2 of ED3, with annual reporting on implementation progress.

Asset Class Strategies

In ED3 we will benefit from work started in ED2 to develop Asset Class Strategies as part of Strategic Asset Management Plan. This work ensures that we have the capability to address whole life performance and cost across a diverse asset base. Our asset class strategies will be foundational in driving incremental improvement and enabling the outcomes we need to see for network capacity, reliability, resilience, environment, and climate resilience. We will mature these asset classes further in ED3 to enable our long-term objectives to improve our overall performance and compare with our peers.

We are facing a period of growth in the network and a substantial volume of work across all our asset investment drivers. Our asset class product and design standards can reduce the potential risks associated with:

- The rapid growth of the network resulting in poor outcomes or unforeseen future asset management challenges
- Being unable to deliver the volume of work due to under- or overly prescriptive policy requirements.

We are enabling our supply chain and contract partners by refining our standards and rationalising current requirements – this will support the delivery at pace and scale needed for in ED3 and beyond, while ensuring the network will be delivering for our stakeholders' priorities. This will be integrated to positive asset performance and network outcomes using our Asset Class Strategies.

Digital Substations

We recognise that with huge growth in network reconstruction and refurbishment that we will need to think differently about how substations are built to keep pace, with five hundred 132 kV switchgear bays to install or replace between now and 2035. Digital substations, using the IEC61850 standard and other techniques, are a potential way to:

- Reduce the size and cost of plant;
- Achieve greater standardisation, reducing project risk and accelerating procurement;

- Reduce auxiliary cabling, site footprints, and on-site construction – thereby reducing total delivery time for substation projects;
- Ensure constantly supervised control schemes, providing advanced warning of issues or failures and permitting a transition towards condition-based maintenance practices;
- Providing a 'digital foundation' for gathering the data we need for network operations, flexibility, and improvement asset management.

We are pioneering this in ED2 through our Networks Innovation Allowance (NIA) project 'Pathfinder' (NIA_SSEN_0081), looking at how we might adopt IEC61850 and Low Power Instrument Transformers (LPITs) across our business but particularly at the 66 & 132 kV voltage levels.

Our intention is to transition to digital substation methods as our standard practice during ED3, subject to the findings of Pathfinder and enabling changes to regulations (for example, metering codes of practice being altered to permit the use of LPITs for settlement). We will also investigate the implications of this change, in terms of how this might alter our inspection, maintenance and support activities for both the substation plant but in particular the control system itself (such as what is needed from a "digital substation" workforce) as well as other consequences such as cyber security.

Strategic Spares

Strategic spares provide an additional resilience option where the consequence of asset unavailability is high and replacement lead times cannot be adequately mitigated through normal sourcing arrangements.

We assess strategic spares on a category-specific basis, considering lead time, asset criticality, failure consequence, interchangeability, existing stock and other available contingency routes. This ensures that inventory is targeted where it provides incremental resilience and customer value rather than being used as a substitute for effective capacity planning. We are currently leading across DNOs to assess opportunities for mutual support and joint procurement with other network operators where shared arrangements could provide additional resilience. Any shared model would need to demonstrate incremental customer value and establish appropriate requirements for technical compatibility, ownership, storage, release, replenishment, governance and regulatory treatment before implementation.

3.4 THIRD PILLAR: UPHOLD RELIABILITY PERFORMANCE

Uphold the baseline interruptions performance for customers and use targeted investment to benefit those experiencing worse than average performance

3.4.1 RELIABILITY ASSET INVESTMENT HIERARCHY

The reliability of our network is a key performance outcome and expectation for our customers. This is true for business and domestic customers and is vital for where our network serves critical national infrastructure. A reliable network is a prerequisite for electrification in our society.

Improvement in reliability has been realised across previous price control periods through the Interruptions Incentive Scheme (IIS) and asset health replacement, with availability consistently above 99.98%. An average customer on our network is without power for less than an hour each year. During ED3, we will target a 1% year-on-year improvement in Customer Interruptions performance across both networks and, for Customer Minutes Lost, we will maintain our performance, whilst pressures on the network grow from increasing demand on our assets and more severe impacts from climate change driven weather patterns. We will do this by carefully understanding where our integrated plan will return performance benefit for reliability under any investment case, considering not only the frequency and duration of interruptions, but also the relative harm they cause.

Reliable network performance is an outcome that can only be achieved through delivering many different forms of capital investment and the matching operational capability.

The network renewal and capital investment outlined in our **First Pillar, Responsibly Investing for Network Integrity and Resilience**, is necessary to ensure that assets are operating within their operational life and do not have an undue risk of failure resulting in service interruptions. This investment is a foundational prerequisite to securing a reliable network but does not guarantee it. Capital renewal investment can also take longer to realise the benefit in reliability, which is for the benefit of future customers as much as today, with expected asset lives measured in decades.

In our **(SSEN_ED3_NOCs) Network Operating Costs Strategy**, we outline how the fundamental activities we must deliver to keep our network operating. These are fundamental to a reliable performance. These activities, together with the focussed investments within the NAMS **Second Pillar, Maintaining a Safe and Compliant Network**, are necessary not just for overall reliability, but to prevent unpredictable and unsafe asset failures associated with specific risks.

Learning from our Stakeholders

Stakeholder engagement reinforced that reliability investment should focus on reducing customer harm as well as improving overall network performance where affordable. There was strong support for targeted intervention for persistent local reliability issues, while large energy users emphasised the importance of reliability for business continuity, economic growth and critical services.

Across customer groups, there was strong support for proactive approaches that prevent interruptions through effective asset management, monitoring and maintenance, rather than relying solely on restoration following failure.

Stakeholders consistently supported prioritising investment where it delivers the greatest customer benefit and reduces the greatest customer harm. During the *Future-Proofing Power Webinar*, stakeholders ranked improving reliability for customers experiencing multiple interruptions as the highest reliability priority and strongly supported targeted investment for Worst Served Customers. Deliberative engagement similarly found support for directing investment towards areas experiencing chronic reliability issues, particularly where customers experience repeated disruption or disproportionate impacts from outages. This supports our layered approach to reliability investment, combining broad network improvements with targeted interventions that improve fairness and addresses local reliability challenges.

As a responsible asset manager, we must balance how we can improve reliability in the short term, whilst securing a similar or improved service for future customers. Equally, we must determine how to invest to support the baseline network performance, compared to focussed or targeted spend, which may mitigate the impacts of faults when they do occur (such as network automation), or may improve performance for a local set of customers (such as Worst Served Customers). The relative priority of asset investments for their contribution to reliability is displayed in the figure below.

Understanding how different types of investment will contribute to reliability under this framework has allowed us to design an ED3 plan to deliver what our customers have told us is important. This hierarchy allows us to prioritise the overall baseline network performance, whilst also implementing performance measures that will improve the customer experience and improve fairness by addressing customers that are currently worst served. Knowing we have the correct balance of investments is critical when there is a complex balance of investment needs and constraints around affordability as well as deliverability. For customers, these combined interventions mean fewer asset-related failures, reduced exposure to prolonged or repeated interruptions, faster restoration where faults occur and continued high network availability as reliance on electricity grows.

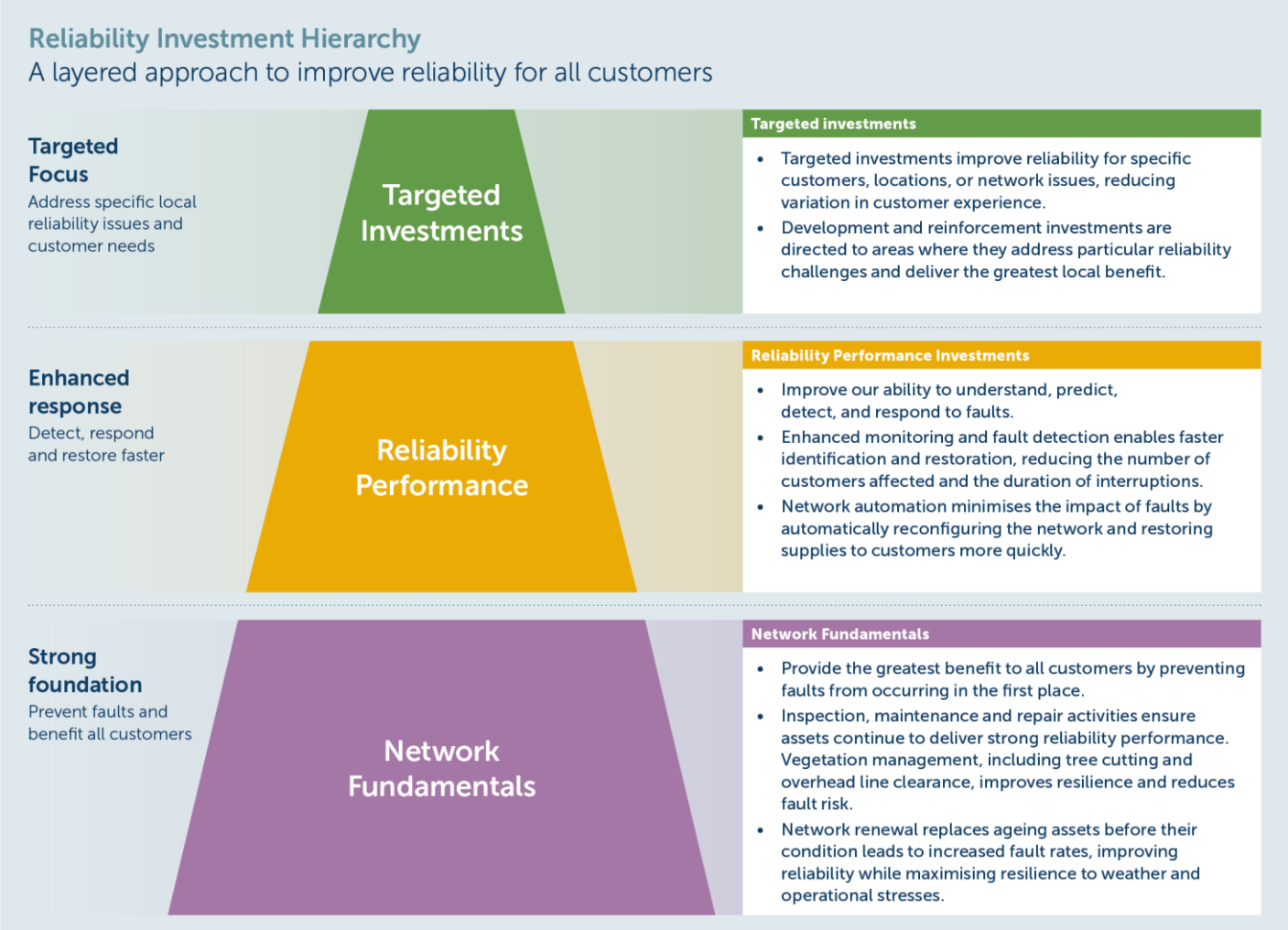


Figure 10: Reliability Investment Hierarchy

3.4.2 RELIABILITY ASSET INVESTMENT OVERVIEW

Expenditure Type		Strategy for Expenditure	Reliability Investment Hierarchy	ED3 Plan Investment	Contribution		
					Prevents an Interruption from happening	Reduces the number of customers affected	Reduces the duration of the outage
Capital Expenditure							
Network Asset Renewal		**Network Asset Management Strategy**	**Network Fundamental**	**£1319.01m Replacement £126.48m Refurbishment**	Renewal or life-extension of network assets based on the probability of failure attributed to age, condition and deterioration.	Our plan prioritises earlier intervention if the impact of a failure would affect more customers.	
Climate Resilience	Flood Mitigation	(ED3-S03) Climate Resilience Strategy	**Network Fundamental**	£30.04m Risk Assessments & Remedials	Prevents flooding events from impacting a substation	Prioritises the highest risk issues via risk assessment.	
	Storm Resilience	(ED3-S03) Climate Resilience Strategy	**Network Fundamental**	£49.69m network hardening and development	Interventions that directly mitigate the impacts of acute storm hazards on network assets, systems or operations, or, address storm driven failure modes or vulnerabilities.	Strengthens network to reduce the risk of faults occurring in storm conditions.	
	Extreme Heat	(ED3-S03) Climate Resilience Strategy	**Network Fundamental**	£6.30m network monitoring	Alerts and enables preventive operational actions that directly mitigate acute heat hazard impacts on asset performance, thermal loading and operational resilience.	Our plan prioritises the monitoring of environmental conditions in substations to understand heat impacts to determine future investments to mitigate extreme heat risk	
System Monitoring		**Network Asset Management Strategy**	**Reliability Performance**	**£17.44m Low voltage £12.42 High and Extra High Voltage**	Developing techniques to use monitoring data to identify problems before they develop into faults and proactively intervene where possible.	System monitoring, in addition to its baseline purpose of providing real-time data and visibility of our network, will include fault location capabilities which will reduce time taken to isolate faults, and improve restoration times.	

Expenditure Type	Strategy for Expenditure	Reliability Investment Hierarchy	ED3 Plan Investment	Contribution		
				Prevents an Interruption from happening	Reduces the number of customers affected	Reduces the duration of the outage
Worst Served Customers	(ED3-S04) Reliability Strategy	Targeted	**£52.76m for WSC schemes**	Various forms of network investment available to improve service for customers who meet criteria.	Investment will help stop recurring faults which those customers have previously experienced.	Options for investment could include automation which can restore supplies for all customers following transient faults, or for some customers during sustained faults.
Short and multiple unplanned interruptions	(ED3-S04) Reliability Strategy	Targeted	**£25m for research and targeted interventions to deliver reductions in frequency, duration, and/or impact of short and multiple interruptions**	Various forms of network investment available to improve service where value can be demonstrated.	Investment will help stop recurring faults which those customers have previously experienced.	Options for investment could include automation which can restore supplies for all customers following transient faults, or for some customers during sustained faults.
Operational Expenditure						
Inspection & Condition Assessment	(SSEN_ED3_NOCs) Network Operating Costs Strategy	Network Fundamental	**£34.86m SHEPD** **£23.30m SEPD**	Identifies where there are condition or repair issues on our network, informing appropriate interventions.		
Preventative Maintenance & Repairs	(SSEN_ED3_NOCs) Network Operating Costs Strategy	Network Fundamental	**£48.56m SHEPD** **£120.93m SEPD**	Proactive work to reduce unplanned failures and uncover/mitigate Reactive work to restore safety, functionality, and resilience of the network	Maintenance is more frequent if the equipment type is more critical. Defects and repairs are prioritised based on risk.	
Tree Cutting & Overhead Clearances	(SSEN_ED3_NOCs) Network Operating Costs Strategy	Network Fundamental	**£247.16 m tree cutting** **£35.10m OH Clearances**	Reduces the impacts of vegetation impacting overhead line conductors, causing faults or damage to the circuit.		
Faults	(SSEN_ED3_NOCs) Network Operating Costs Strategy	Network Fundamental	**£152.40m SHEPD** **£309.51m SEPD**		Our operational capacity to respond to faults determines how quickly we can isolate faults, reconfiguring the network to restore as many customers as possible before repair commences.	Our operational capacity to respond to faults is critical to reducing outage duration for customers dependent on fault repair for restoration.

3.4.3 EFFICIENT AND LOW IMPACT OUTAGES

Planned Interruptions

In ED3 we will continue our ED2 philosophy of "touch the network once", where we maximise the amount of work undertaken in a single outage for maximum efficiency and minimum customer disruption.

Touch the network once has been at the forefront of our creating our investment plan for ED3, and when determining all our asset intervention needs, we have scoped all work opportunities together, making discrete work packages which can be integrated seamlessly into our delivery model. When the work is delivered, we will strive for a single outage, or as few outages as practically possible, to address the full scope of needs at a single location or circuit.

The increased volume of planned works in ED3 will place greater demand on network access and available outage opportunities, increasing the complexity of outage coordination and programme sequencing. The associated delivery risk, and the measures being taken to manage it, are set out in our **(ED3-S05) Delivery Strategy.**

Automation and Segmentation

We have historically provided options to either fit, or not fit, automation to our 11 kV networks depending on customer numbers and circuit risk to achieve a balance between reduced interruptions and the associated lifecycle costs.

We have now developed new tools for lower cost retrofitting of automation on ground-mount substations and are exploring options for overhead sites. Based on this and revised IIS targets, we will review and deliver further network segmentation where the value of benefits exceeds the costs. Furthermore, to increase standardisation across the network we are moving from a position of having 'automation ready' switchgear, where fitting can be completed later, to 'automation by default', where we will proactively install automation onto any new or replaced secondary substation.

3.5 FOURTH PILLAR: CREATING A CIRCULAR APPROACH TO ASSET MANAGEMENT

Further develop Circular Economy values into asset management decision making and implement activity and investment that deliver on this in ED3.

3.5.1 CREATING CONSUMER VALUE THROUGH A CIRCULAR APPROACH

Creating a circular approach begins with understanding the whole-life impacts of our operations, our assets, and the materials that underpin our network. In 2025 we undertook an independent, end to end value chain assessment in accordance with industry best practice, learning from industry groups like the Energy Networks Association, summarised in Figure 12.

This assessment provided a comprehensive understanding of the environmental, nature and human rights impacts associated with our network assets throughout their lifecycle. Through this we identified that most of our impacts occur upstream through the extraction of raw materials, manufacture of equipment and construction activities.

Recognising that the greatest environmental and social impacts associated with our network occur across the full asset lifecycle, from raw material extraction and manufacturing through to installation, maintenance, refurbishment and end-of-life recovery. Our value chain assessment identified **steel, aluminium, copper, timber, cement, oil-based products and construction activities** as the most significant contributors to these impacts, with the majority arising upstream in the supply chain.

In response, we will apply circular economy principles and whole-life thinking to every investment decision. This approach will sit alongside our other strategic pillars, shaping how we specify, procure, operate, maintain, refurbish, replace and retire network assets. By maximising the value of existing assets and reducing demand for virgin materials, we will minimise waste, lower embodied carbon and strengthen long-term supply chain resilience.

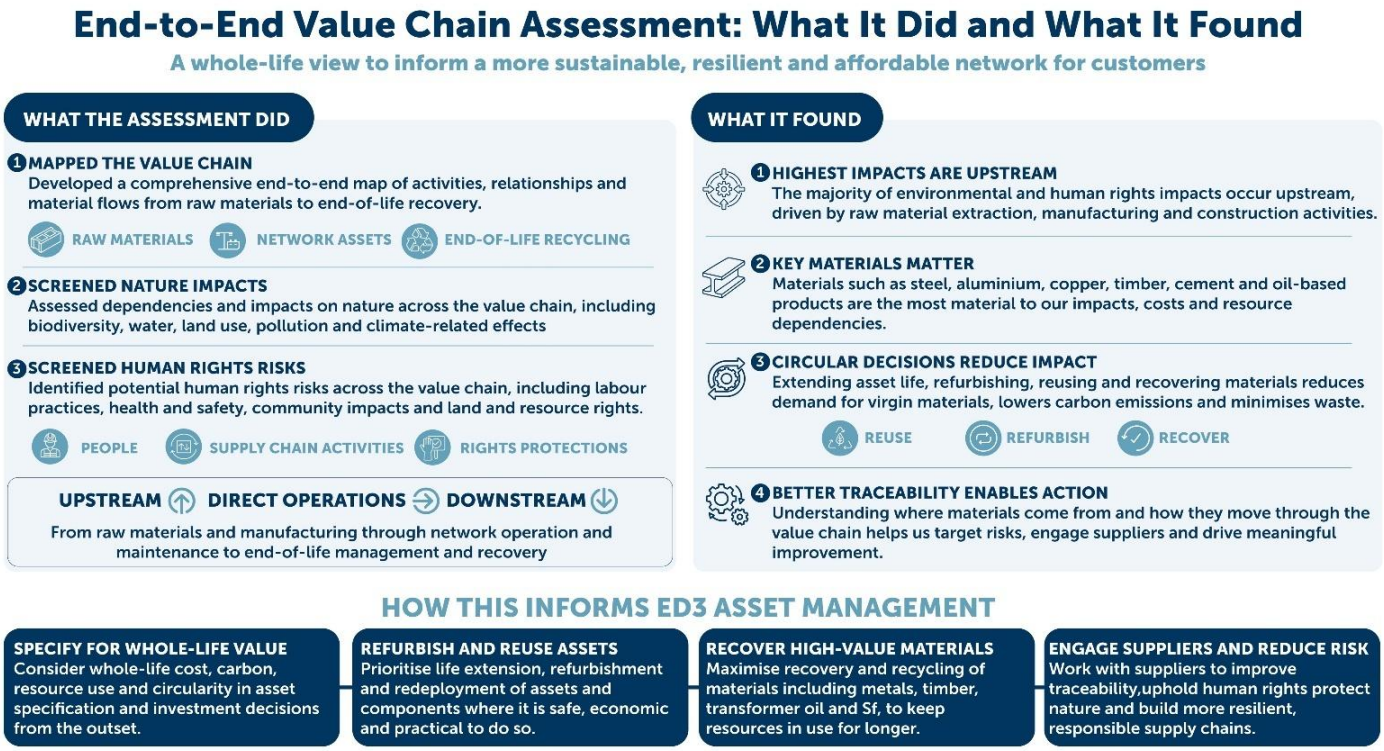


Figure 11: Summary of End-to-End Value Chain Assessment

Our focus will be on the assets and materials that underpin our network. We will increase opportunities to refurbish, life-extend and reuse transformers, switchgear, poles, cables and associated equipment wherever this can be achieved safely and efficiently. We will maximise the recovery and reuse of high-value materials such as steel, aluminium and copper, while managing timber assets to extend their useful life through inspection, treatment, refurbishment and reuse, supported by responsible sourcing of replacement materials. This will be measured and reported on throughout ED3 and included in our annual reports. (as well looking at alternatives)

We will also ensure that circular economy principles are reflected in our procurement and asset specification standards. This includes considering whole-life costs, material efficiency, recycled content, repairability, reuse potential, environmental impacts and supply-chain sustainability when selecting equipment and designing network solutions. We will increasingly view retired assets and recovered materials as future resources rather than waste streams and will work with suppliers and contractors to improve transparency, traceability and circularity throughout the value chain.

Cumulatively, our strategy will deliver lower whole-life costs and greater value for customers. Refurbishment and life-extension programmes will avoid unnecessary new asset expenditure, while recycled-content procurement and circular design will reduce Scope 3 emissions and improve customer bill efficiency through avoided replacement costs. By increasing the use of recycled materials and developing closed-loop supply arrangements, we will also reduce customers' exposure to commodity price volatility in materials such as copper, aluminium and SF_6.

Importantly, these benefits will not come at the expense of network performance. Refurbished and life-extended assets will meet the same engineering performance standards as new assets, maintaining or enhancing network resilience and delivering equivalent reliability outcomes at lower lifecycle cost. Together, these measures create a proven platform for ED4,

Shirley Robertson- Head of Strategic Planning and Sustainability:

"Circularity starts at specification and design, not disposal. By reducing our reliance on virgin materials and making better use of the assets and resources we already have, we can reduce waste, avoid carbon emissions and lessen the environmental impacts associated with the extraction, processing and transportation of raw materials. Looking after our existing network well, extending useful life and investing in refurbishment and reuse are fundamental principles of responsible asset stewardship.

Over time, we want to change how we think about waste, viewing retired assets and recovered materials as future resources and maximising opportunities for reuse, refurbishment and recovery before disposal is ever considered. Every pound invested in our network should deliver the greatest possible value for customers. Through whole-life asset management, we will maximise the benefit of existing assets while continuing to provide the safe, reliable and affordable service that our customers depend upon."

building on tested delivery mechanisms and evidenced customer value. Throughout, we will ensure that customer benefits are delivered without compromising resilience, reliability or operational efficiency.

3.5.2 BUILDING CIRCULAR MATURITY FROM ED2 FOUNDATIONS

We intend for our Circular Approach to build on the strong foundations established during ED2, we believe that this will enable asset management practices that are financially, socially, and environmentally sustainable. During ED2, we made substantial progress in embedding sustainability across our supply chain and embedding responsible resource management through:

- Introducing a Distribution-specific sustainable supplier code setting out 11 sustainability minimum expectations.
- Enhancing procurement processes integrating sustainability scoring and assessment criteria into tenders.
- Extensive supplier engagement to strengthen collaboration, share best practice and alternative solutions.
- Refurbishing switchgear, transformers and components from retired assets where appropriate for reuse on the network.

We also completed a double materiality assessment, supported by WSP, which identified 19 material ESG topics including resource efficiency, circularity and supply chain sustainability. These priorities have informed our strategic decision-making, long-term asset management planning and risk approach for ED3. For further information see our Environmental Action Plan.

For ED3, we will adopt a whole-system approach to investment planning, coordinating asset replacement, reinforcement and load-driven investment programmes to maximise opportunities for asset reuse. Where assets are replaced solely to accommodate increased demand or network growth, their suitability for redeployment elsewhere on the network will be assessed, allowing remaining asset life to be used effectively and reducing the need for new assets. This will help optimise investment, reduce waste and improve customer value. We will also seek to optimise reuse and recovery of materials such as timber, steel, aluminium, copper, cement, transformer oils and SF_6. This will help reduce embodied carbon, strengthen supply chain resilience and minimise environmental impacts whilst maintaining network reliability and performance. Our enablers to build circularity in asset management is summarised in the figure below.

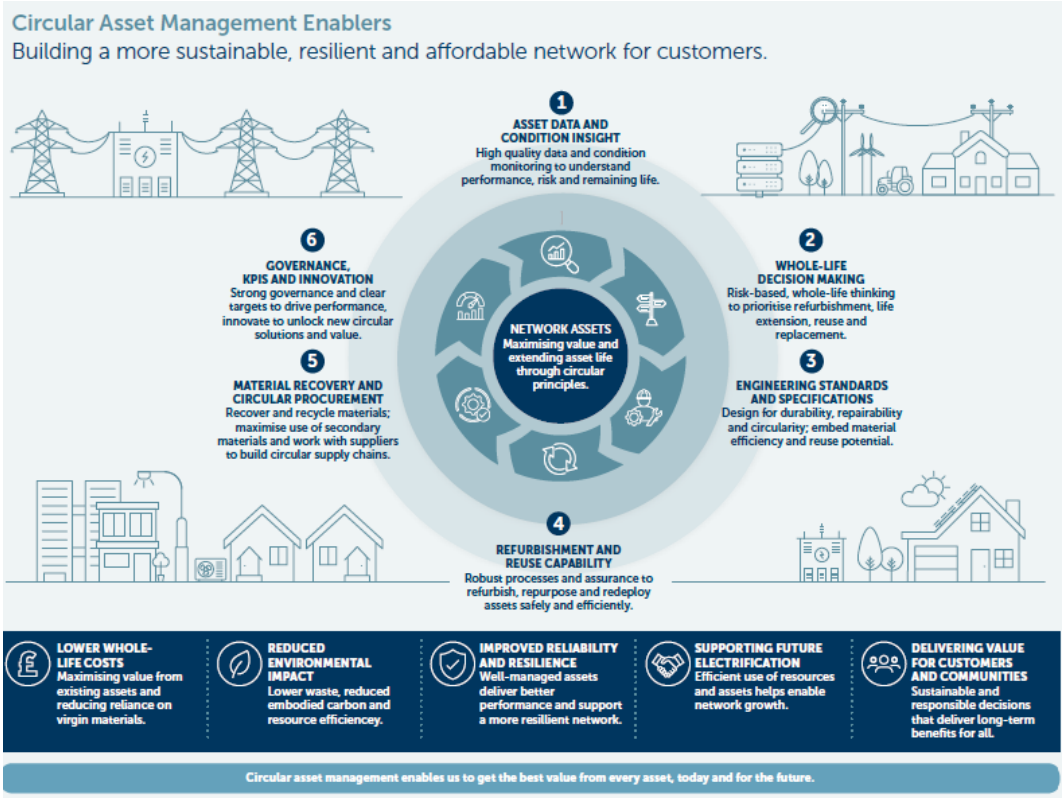


Figure 12: Summary of Circular Asset Management Enablers

3.5.3 REALISING CIRCULAR BENEFITS IN THE LONG TERM

Realising the full potential benefits of a circular approach cannot be achieved in a single price control. The more embedded it becomes in decision making, and maturity extends into well evidenced outcomes, the greater the benefit will be – across the value chain. We have framed our development against the value entry points definited within the Instution of Asset Manamement (IAM) White Paper on Circular Economy:

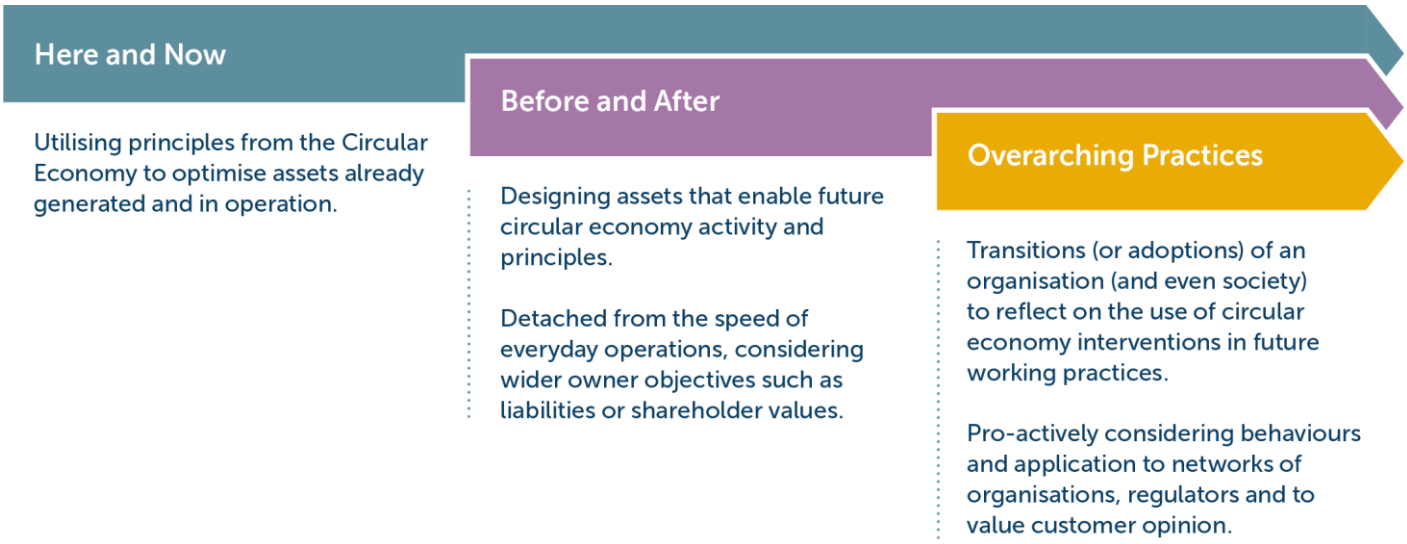


Figure 13: IAM White Paper: Entry Points for Creating Value through the Circular Economy

Ultimately, our decision making for ED3 will highly prioritise what we can do to me more circular now, while ensuring that our practices for both upstream and downstream consumption will create an opportunity to be more circular in the future.

Even in the short term, it may seem counterintuitive to place a high priority on circularity when there is significant network spend to enable electrification. However, it is because this necessary expenditure will also carry carbon and material demand alongside cost to bill payers, that the circular approach will be vital. We must ensure we maximise every opportunity to alleviate the burden associated with the energy transition. What this means for our asset management is displayed below.

4. ASSURANCE, PERFORMANCE MONITORING AND CONTINUOUS IMPROVEMENT

4.1 ASSURANCE AND PERFORMANCE MONITORING

Delivery of our Network Asset Management Strategy investment will be overseen through SSEN Distribution's established governance framework. We will monitor ED3 asset management commitments using our ISO 55001-certified asset management system and assign each delivery goal to an identified business owner responsible for tracking progress against business plan commitments, annual trajectories, delivery milestones, expenditure, risks and expected benefits.

The Business Planning and Investment Subcommittee (BPI) provides governance, oversight, and strategic direction for the delivery and development of SSEN's five-year business plan for ED3, including:

- Plan Oversight: Govern and maintain the rolling five-year business plan aligned with regulatory and asset strategies.
- Performance Monitoring: Track delivery, identify shortfalls, and intervene to ensure targets are met.
- Investment Governance: Approve or recommend investment cases and allocate funding within delegated limits.

- Strategic Escalation: Act as an escalation point for key delivery and investment issues.
- Risk & Incentive Management: Oversee business risks, regulatory funding, and incentive performance.

The Distribution Asset Management Steering Group (DAMSG), chaired by the Asset Management Director, is our internal governance forum assuming responsibility for asset management risk and outcomes. Clear technical authority and decision ownership support this governance throughout ED3. Named technical and design authorities provide technical assurance over the application of engineering policies, standards and specifications, while accountable business owners are responsible for delivery of individual NAMS commitments and their expected benefits. DAMSG provides a forum for assurance and escalation of material asset management and technical matters, with issues escalated through BPI and the Distribution Executive Committee (DEC) where required. DEC retains overall accountability for delivery of the strategy, supported by the DAMSG, the Distribution SHE Committee, and other forums associated with asset risk and investment management – including climate resilience, environment and DSO.

Measure	ED3 outcome	Monitoring	Accountable owner	Trigger and response
NARM risk reduction	Business Plan commitment by licence area	Quarterly, with annual regulatory reporting	Director of Asset Management	Forecast variance triggers portfolio review and recovery plan
Asset intervention delivery	Annual trajectory by asset class	Monthly or quarterly	Director of Capital Delivery / Director of Services	Slippage assessed for risk, customer and future-year impact
Reliability	Maintain agreed network reliability outcome	Existing performance cycle	Director of Services	Adverse movement triggers causal review and targeted response
Refurbishment	Delivery against ED3 refurbishment commitment	Quarterly	Director of Asset Management & Director of Services	Shortfall prompts review of pipeline and capability
Data and models	IGP progress, data quality and new models	Existing monthly/quarterly cycle	Director of Asset Management	Missed threshold triggers remediation plan
NAMS commitments	Milestones and expected benefits	Quarterly	Head of Strategic Planning	Material variance escalated through BPI

Figure 14: Assurance of ED3 NAMS Commitments

4.2 INDUSTRY BENCHMARKING

As a long-term asset steward, we recognise that effective asset management requires continuous learning, external challenge and comparison with leading organisations. We therefore benchmark our performance, practices and capability through a combination of formal certification, independent maturity assessments, stakeholder-led reviews and industry benchmarking exercises. In ED3 we will continue participating in the cross-DNO data share, which will allow us to consider out cost and deliver performance alongside our peers, and challenging ourselves to prove efficiency while delivering our targets and outcomes in price control.

Alongside ISO55000 certification, we have undertaken independent reviews of our asset management maturity. A 2021 end-to-end assessment identified opportunities to strengthen strategic planning, decision making, governance, data, investment planning and performance management, while recognising strong leadership commitment, engineering capability and the foundations created through our ISO 55001 system. Many of the recommendations from that review have subsequently informed the development of our operating model, strategic planning capability, portfolio governance, decision-making frameworks, data improvements and investment planning processes.

To further strengthen our understanding of asset management maturity, we are participating in the International Distribution Asset Management Study (IDAMS). IDAMS is an international benchmarking programme based on the ISO 55000 framework that assesses asset management across four core dimensions: Operating Model, Processes, Competences, and Information Management and Enabling Technology. The study allows participants to compare performance against international peers, identify leading practices and target future areas for improvement.

Importantly, it evaluates not only whether asset management systems exist, but how effectively they are embedded and contributing to operational performance.

The IDAMS framework is particularly valuable because it highlights the characteristics consistently associated with leading-performing organisations. These include strong strategic planning, mature risk and opportunity management, effective investment planning, robust data governance, advanced analytics capability, leadership engagement and a culture of continuous improvement. We intend to use future IDAMS assessments not simply to measure performance, but to identify opportunities to accelerate capability development across our asset management system.

Our benchmarking extends beyond asset management practices alone. During 2026 we completed an extensive Double Materiality Assessment involving internal and external stakeholders, independent facilitation, structured impact and financial risk assessment, and consideration of the full asset lifecycle and value chain. This assessment concluded that Climate Change, Adaptation and Resilience, Enabling Net Zero and Network Resilience and Integrity represent the most strategically significant issues for SSEN Distribution. The findings provide independent evidence that the priorities reflected within our ED3 business plan and Network Asset Management Strategy are aligned with stakeholder expectations, wider societal needs and long-term business resilience.

We do not view asset management maturity as a fixed destination. Collectively, these assessments provide confidence that our asset management approach is both externally validated and continuously improving. They help us identify strengths, challenge established practices, prioritise improvement activities and ensure that our asset management system remains aligned with evolving stakeholder expectations, industry best practice and the future needs of the electricity system. Through ED3 we will continue to benchmark our performance, participate in external assessments and adopt leading practices where they provide value for customers and improve long-term asset stewardship.

4.3 NARM CONTINUOUS IMPROVEMENT

The Network Asset Risk Metric is a part of the regulatory framework has been hugely successful in codifying and standardising risk modelling and underpins the majority of asset health investment decision making for all DNOs. In ED3, we will continue with the same NARM asset classes and revised models from ED2, plus begin reporting of new asset classes using the CNAIM V3 methodology. We will assess the suitability of these new models to become NARM in the future by monitoring their risk point movements in ED3 and making improvements to the asset information population through the revised IGP.

We will build assurance on the NARM methodology with targeted internal and external auditing programs which will assess the data integrity of the inputs used in modelling. Currently we audit our NARM asset intervention process and outputs annually, as well as our IGP which tracks the progress of our data population that informs our NARM models. The end-to-end condition assessment process is also audited through the ISO 55001 accreditation to ensure we have robust asset management systems to flow inspection and maintenance assessments to health scores and monetised risk. In the future, we are confident that our foundational systems will be compliant with other surveillance initiatives such as the ED3 IGP and Ofgem Asset Health Inspectorate.

The aim for our ED3 digital strategy investments is to improve the assessment and monitoring of our assets' deterioration, faults and failures. We will invest in enhanced condition monitoring capability and system integrations to provide improved reporting, recording and analysis of assets and locations involved in faults and failures. This in turn will improve the evidence-based decisions we make on asset interventions, ultimately improving performance outcomes and consumer value for money.

Through innovation, new techniques are being tested, proven, and expanded to support our investments for asset renewal. Our Smart Hammer innovation project has developed a hammer tool for testing and inspecting the asset health of wooden poles. The project has field trialled the Smart Hammer across the SSEN Operational Regions. Repeatedly striking a pole with the hammer measures the condition of the pole and its asset condition score is recorded in an accompanying Smart Hammer app. This method supports quantitative assessment of condition and more consistent health modelling of poles. In ED3 we will expand usage of this tool to all our linespeople.

Our Scottish network has 112 33kV and 11kV submarine electricity cables that span 455km. These cables can be subject to harsh environmental conditions, and their health can be difficult to assess due to being situated on the seabed. These cables are of high criticality. Through innovative monitoring techniques which identify cable movement, damage or fault locations, costly routine inspection of the cables by divers or Remotely Operated Vehicles (ROV's) can be reduced. These developments will improve our health monitoring on these assets in ED3 as we integrate it into our business-as-usual capability.

4.4 DEVELOPMENT OF NON-NARM MODELLING

The majority of asset renewal investment on our network is driven through NARM replacement, and categories which are non-NARM have typically remained so because of practical challenges collecting data to inform the full CNAIM approach. On some parts of our network, collecting this data would be disproportionately expensive compared to the level of renewal expenditure it would inform. However, where possible through continuous improvement or innovation, we support the transition to full or partial health modelling to further inform our understanding of network risk, investment needs, and consumer benefit.

To enable the transition to more health models in the future, ensuring a higher proportion of renewal investment is associated with modelling outcomes, we have tested and implemented several new models together with all other UK DNOs as part of the NARM Electricity Distribution Working Group (NEDWG). These models allow us to model risk on some non-NARM categories for the first time, though these will not influence the existing NARM categories or performance targets in ED3. In ED3, we will report our risk performance on these asset categories to create a pathway for model outputs to be potentially used as a regulatory mechanism for performance in ED4.

The non-NARM models that will be reported for the first time in ED3 are:

- Pole Mounted Transformers
- Pole Mounted Switchgear
- 132kV & EHV Switchgear Other (ground mounted)

Although these asset models have some challenges with data completeness, they are sufficiently informed to begin reporting the benefit of “risk removed” through our investment and completed work in ED3.

In ED3 we will also consider how we can collect more data to enable risk modelling of Pole Mounted Overhead Line Conductors and Battery Systems in an approach that is appropriate and agreed between all DNOs in the NEDWG.

5. OUTLOOK TO ED3 AND BEYOND

The reliability, resilience and sustainability of our electricity network will become increasingly important as homes, businesses, communities and critical services become more dependent on electricity. Our ED3 Network Asset Management Strategy sets out a clear and deliverable plan to meet this challenge through responsible asset stewardship, targeted investment and evidence-led decision making.

The principal quantified long-term benefit of this strategy is the avoidance and removal of monetised network risk through NARM, supported by asset-volume, reliability and commitment-level measures. This investment reduces the likelihood and consequence of asset failure, supports continued network availability and avoids transferring a larger and more costly renewal challenge to future consumers. Wider safety, resilience and environmental benefits are assessed through the relevant technical justification and supporting strategies, recognising that these outcomes depend on the combined effect of asset investment, maintenance, operations and system capability. We will monitor both delivery outputs and the resulting movement in network risk and performance.

As an ISO 55001 accredited organisation, our approach is underpinned by robust governance, technical expertise and continuous improvement. By integrating asset health, network growth, resilience, environmental performance and customer outcomes within a single decision-making framework, we are ensuring that every intervention delivers the greatest possible long-term benefit.

The Network Asset Management Strategy balances the needs of today’s customers with those of future generations. It addresses the risks associated with an ageing asset base, strengthens network safety and resilience, improves reliability performance and supports the transition to a more electrified energy system. Through a combination of risk-based investment, improved asset intelligence, stronger supply chain readiness and a growing focus on circular asset management, we will maximise value from existing assets and materials while maintaining the safe, reliable and resilient network that customers expect.

When considered together with the investment needs on the network in the Long-Term Network Integrated Network Plan, our ED3 plan and delivery is crucial to upholding the network integrity and performance in the future.

Our ED3 Network Asset Management Strategy demonstrates that SSEN’s investment programme is justified by asset need, shaped by stakeholder priorities and designed for efficient delivery. It provides a credible pathway to maintaining network integrity, supporting electrification and delivering sustainable long-term value for customers, communities and future generations.

APPENDIX A: OUR STAKEHOLDER LEARNINGS

ED3 Outcome	Policy Area (theme)	Type of Engagement Undertaken	Stakeholder Groups	Summary Feedback	Impact on Business Plan
Resilient Networks	Asset Health & Resilience	Consumer Research (ED3 Consumer Priorities Research, Ofgem ED3 Consumer Panel Deliberative Research), Workshops (SSEN ED3 Stakeholder Engagement Workshops, March 2026 – Session 4: Driving Reliability and Resilience; Session 1: Planning for the ED3 Price Control), Webinars (Future-Proofing Power – Reliability, Climate Resilience & Network Integrity Webinar; Closing the Loop – Our Circular Asset Management Approach Webinar)	Trade Associations, Consultants, Domestic & SME Customers, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator, Contractors,	Stakeholders increasingly recognise electricity as critical infrastructure underpinning other essential services and highlighted the importance of understanding asset criticality, network interdependencies and consequences of failure when prioritising investment. The SSEN ED3 Stakeholder Engagement Workshops demonstrated strong support for a proactive and risk-based approach to managing network assets, with an average support score of 4.48 out of 5 for proactive asset management and 68% favouring a high level of investment to address asset health risks. The Ofgem ED3 Consumer Panel Deliberative Research identified support for anticipatory investment where future need and customer benefits can be clearly demonstrated. Consumer Priorities Research and the Future-Proofing Power – Reliability, Climate Resilience & Network Integrity Webinar highlighted growing recognition that climate change, extreme weather and increasing dependence on electricity are increasing network risks and reinforcing the importance of long-term planning and investment. Customers and stakeholders consistently expected SSEN to maintain a safe, resilient network capable of supporting future demand growth and electrification.	Reinforced the adoption of a proactive, risk-based asset management approach. Increased focus on anticipatory investment where justified by risk and future network needs. Strengthened emphasis on climate adaptation, resilience and criticality-based investment prioritisation. Increased use of asset health, criticality and consequence-of-failure assessments to support intervention decisions.
Responsible & Sustainable Business	Safety & Compliance	Research (SSEN ED3 Consumer Priorities Research, Ofgem ED3 Consumer Panel Deliberative Research (Wave 1)), Webinars (Closing the Loop – Our Circular Asset Management Approach Webinar, Greener Horizon Webinar), Workshops (SSEN ED3 Stakeholder Engagement Workshops, March 2026 – Planning for the ED3 Price Control, Sustainable Supplier Engagement Days),	Trade Associations, Consultants, Contractors, Domestic & SME Customers, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator, Resilience Partners.	The SSEN ED3 Consumer Priorities Research and Ofgem ED3 Consumer Panel Deliberative Research reinforced that safety and compliance are fundamental expectations of network management and should remain the foundation of decision-making. The Closing the Loop – Our Circular Asset Management Approach Webinar identified support for greater use of asset data, analytics and monitoring to improve intervention targeting and operational efficiency. The SSEN ED3 Stakeholder Engagement Workshops highlighted the need for improved coordination between electricity networks, local authorities and other infrastructure providers to reduce disruption and improve efficiency, while the Greener Horizon Webinar demonstrated that stakeholders expect environmental obligations, pollution prevention and sustainability considerations to be embedded within business-as-usual operations. Together, these engagement activities highlighted support for a joined-up approach to asset management that delivers safe, efficient and sustainable network outcomes.	Increased emphasis on data-driven network operation and risk-based maintenance. Enhanced coordination considerations within operational planning. Strengthened integration of sustainability, environmental compliance and asset stewardship activities.

ED3 Outcome	Policy Area (theme)	Type of Engagement Undertaken	Stakeholder Groups	Summary Feedback	Impact on Business Plan
		and Surveys (Sustainable Supplier Survey)			
Responsible & Sustainable Business	Circular Economy	Webinars (Closing the Loop – Our Circular Asset Management Approach Webinar, Greener Horizon Webinar), Surveys (Sustainable Supplier Survey), Workshops (Sustainable Supplier Engagement Days).	Trade Associations, Supply Chain, Contractors, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator, Resilience Partners.	The Closing the Loop – Our Circular Asset Management Approach Webinar demonstrated strong support for embedding Circular Economy principles within asset management, with 87% of stakeholders supporting SSEN's proposed circular asset management approach. Stakeholders supported extending asset life through refurbishment and reuse where supported by robust condition evidence and highlighted the importance of improving resource efficiency and reducing reliance on virgin raw materials. Participants identified digitalisation, condition monitoring and improved asset information as important enablers of Circular Economy decision-making, while consistently emphasising that circular approaches should not compromise network reliability, safety or resilience. Sustainable Supplier Engagement Days and the Sustainable Supplier Survey reinforced support for circular economy objectives across the supply chain, while highlighting the importance of clear requirements, long-term planning, collaboration, best-practice sharing and ongoing engagement to support delivery. The Greener Horizon Webinar further highlighted support for integrating biodiversity, nature and wider environmental considerations into asset planning and infrastructure design.	Circular Economy principles have been incorporated into the Network Asset Management Strategy. Increased focus on refurbishment, reuse and life-extension opportunities where supported by condition data. Strengthened consideration of whole-life value, sustainability and resource efficiency in asset optioneering. Enhanced emphasis on asset monitoring and condition information to enable circular decision-making. Greater focus on supply-chain sustainability and responsible sourcing.
Investing for the Energy Transition	Affordability & Value for Money	Research (SSEN ED3 Consumer Priorities Research, Fair Future Panel Workshop 1, Ofgem ED3 Consumer Panel Deliberative Research (Wave 1), Citizens Advice Deliberative Research on Energy System Cost Allocation (March 2026)), Workshops (SSEN ED3 Stakeholder Engagement Workshops, March 2026 – Planning for the ED3 Price Control)	Trade Associations, Consultants, Domestic & SME Customers, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator, Consumer Representatives	The SSEN ED3 Consumer Priorities Research identified affordability and value for money as dominant considerations when assessing future network investment. Helping bring down bills in the long term was the highest-ranked sub-priority across all 39 priorities tested, while investing early to futureproof the network for low-carbon technologies was the highest-ranked social initiative, selected first by 35% of customers. The Fair Future Panel reinforced that customers assess investment proposals through a lens of affordability, fairness and customer benefit, while the Ofgem ED3 Consumer Panel Deliberative Research found support for investment where future need, customer benefits and long-term value can be clearly demonstrated. SSEN ED3 Stakeholder Engagement Workshops also demonstrated support for proactive investment, with 68% of participants favouring a high level of asset health investment and 57.9% supporting a balanced approach to investment across ED3 and ED4. Citizens Advice deliberative research further highlighted that affordability is closely linked to perceptions of fairness, with customers considering how costs are shared, whether vulnerable groups are protected and whether the distribution of costs and benefits is equitable. Across	Reinforced the use of whole-life value and risk-based decision making when prioritising interventions. Increased emphasis on demonstrating long-term customer value from proposed investments. Strengthened transparency around investment justification and customer benefits. Supported the move towards proactive investment where evidence demonstrates long-term value and reduced future costs.

ED3 Outcome	Policy Area (theme)	Type of Engagement Undertaken	Stakeholder Groups	Summary Feedback	Impact on Business Plan
				engagement activities, stakeholders recognised the need for investment to support electrification, resilience and future network requirements, but expected investment decisions to be proportionate, clearly justified and supported by transparent evidence of customer value.	
Smarter Networks	Data & Analytics	Webinars (Closing the Loop – Our Circular Asset Management Approach Webinar, Future-Proofing Power – Reliability, Climate Resilience & Network Integrity Webinar), Workshops (SSEN ED3 Stakeholder Engagement Workshops, March 2026).	Trade Associations, Consultants, Domestic & SME Customers, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator.	The Closing the Loop – Our Circular Asset Management Approach Webinar highlighted strong support for using asset health data, analytics and monitoring to improve the targeting of interventions and support more efficient decision-making. Stakeholders expressed a preference for investment decisions to be informed by evidence of asset condition and risk rather than asset age alone. The Future-Proofing Power – Reliability, Climate Resilience & Network Integrity Webinar and SSEN ED3 Stakeholder Engagement Workshops highlighted the importance of improved forecasting and modelling capabilities to understand future demand, resilience risks and investment priorities. Across engagement activities, stakeholders supported greater transparency in how data, evidence and risk assessments are used to prioritise investment decisions and manage long-term network performance.	Increased focus on asset health, criticality and consequence-based investment decision making. Greater emphasis on condition monitoring and asset data quality. Strengthened forecasting and analytical capabilities within asset strategy development. Improved transparency of how risk and evidence influence investment choices.
Responsible & Sustainable Business	Sustainable Supply Chain	Workshops (SSEN ED3 Stakeholder Engagement Workshops, Sustainable Supplier Engagement Days, ED3 Supply Chain Engagement Series), Surveys (Sustainable Supplier Survey), Webinars (Closing the Loop – Our Circular Asset Management Approach Webinar, Greener Horizon Webinar), Reviews (SSEN Distribution ED3 and Beyond Procurement and Supply Chain Strategy Review).	Contract Partners, Consultants, Trade Associations, Water Companies, Critical Infrastructure Operators, Local Authorities, DNOs, System Operator.	The SSEN ED3 Stakeholder Engagement Workshops highlighted that workforce capability, materials availability and supplier capacity will increasingly influence what can be delivered during ED3. Stakeholders emphasised the importance of aligning investment ambitions with real-world delivery constraints and avoiding assumptions of unconstrained labour, manufacturing capacity and material availability. The Sustainable Supplier Survey, Sustainable Supplier Engagement Days and ED3 Supply Chain Engagement Series reinforced the importance of long-term planning certainty, credible demand signals and visibility of future investment pipelines to support workforce development, supplier investment and capacity growth. The SSEN Distribution ED3 and Beyond Procurement and Supply Chain Strategy Review similarly found that suppliers value early engagement, transparent forecasting and programmatic approaches to delivery, while highlighting workforce skills, manufacturing capacity, lead times and material availability as key risks to successful delivery. Across engagement activities, stakeholders consistently supported stronger collaboration with suppliers and delivery partners, alongside increased focus on responsible sourcing, sustainable procurement and a resilient supply chain capable of supporting ED3 delivery	Greater recognition of supply-chain and workforce constraints within asset strategy development. Increased focus on long-term planning certainty and phased delivery. Stronger emphasis on sustainable procurement and responsible sourcing. Enhanced engagement with suppliers and delivery partners to support future network investment.