



INDEPENDENT ASSURANCE REPORT

for SSEN May 2025 DNOA Outcomes

*Sep 2025
Version 2.0*





Introduction

Statement of Purpose and Scope of this Report

This Report summarises key findings from independent assurance checks undertaken on a sample of DNOA outcomes taken from the DNOA Outcomes Report May 2025 published by SSEN Distribution. The scope relates to 6 DNOA outcomes (4 in SEPD and 2 in SHEPD). All the reviewed schemes have a project value above £2M. The conclusions from these checks have been reviewed by the DSO Advisory Board.

SSEN DNOA Reports

SSEN Distribution publishes a DNOA Outcomes Report on its website each quarter. This describes its plans for meeting network needs for the next 7 years, in the North of Scotland (SHEPD) and South of England (SEPD) distribution licensed areas. These plans (known as schemes) have been taken through the SSEN Distribution Network Options Assessment (DNOA) Methodology, published in its final version in March 2024.

Requirement for independent assurance

The DNOA methodology outlines an independent assurance process normally for schemes with a value over £2M. The objective being to ensure that the SSEN DNOA methodology has been applied to the assessment of these schemes and that there is transparency in how outcomes are reached.





Introduction (continued)

Threepwood Consulting and our role

Threepwood Consulting has been appointed by SSEN Distribution to conduct the independent assurance checks required. We are an industry respected consultancy that has expertise in distribution network planning and audit/assurance activities. We have a proven track record in providing independent assurance of network related processes and operations like those required in the DNOA methodology.

Nature of the assurance review

This assurance review is an independent check of a selected number of schemes normally with a value above £2M.

Schemes are selected by Threepwood from a list of schemes provided by SSEN. They ensure that both license areas are covered, different options (flexibility procurement and/or reinforcement) are reviewed and schemes from different planning departments are checked.

There are two types of review: A 'Sample' type review is focused on reviewing the Engineering Justification Papers (EJPs), CBA and CEM deterministic tools associated with each scheme. A 'Deep Dive' type review involves greater scrutiny of the content of the EJPs, CBA and CEM and seeks further evidence of how the process has been applied and decisions have been reached. The 'Deep Dive' includes interviews with engineers that have evaluated the solutions and proposed the recommended solution.

Threepwood independently and randomly choose which schemes are reviewed as Samples or Deep Dives based on achieving a balance of flex and asset solution schemes across both areas.

The assurance review is carried out every quarter to align with the publication of the latest DNOA Outcome Report.





Overall Summary of Findings

DNOA Scheme Reviewed

Findings Topic	1	2	3	4	5	6
Have future forecasts of demand and generation been done and have system needs been suitably identified (capacity)?						
Have suitable flexibility and asset options been identified and developed?						
Have the options been suitably assessed taking into account strategic requirements etc?						
Does the DNOA outcome report adequately reflect the assessment carried out?						

RAG status:	
	Requirement not met (to the degree that the outcome could be materially affected or is inaccurate)
	Requirement partially met (process not robust, opportunities for improvement identified but the deficiency is not material and the outcome wouldn't change or its accuracy not affected)
	Requirement fully met



Overall Summary of Findings (...continued)

General Points:

The schemes checked were found to follow the DNOA process. All of the options proposed (flex and/or assets solutions) were determined as being correctly identified/assessed. In all cases, the “Do nothing” option is ignored in this report, as the requirement to “do something” is a given.

Good practices were common across different licensed areas and planners, including the use of a centrally managed/updated load model and cost database and considering outputs from stakeholder engagement. Several opportunities for improvement were identified in relation to the level of detail and consistency of information in the EJPs, CBA and CEM tools and the DNOA Outcome Reports. However, these do not have a material impact on the outputs. Improvement opportunities include: a more robust document version control and approval process, a need for consistency between scheme names used in EJPs and Outcome Reports (especially where options for multiple schemes are presented in one EJP), greater visibility of liaison and feedback from the DNO (in the EJP), greater visibility of social and economic considerations and alignment of estimated demand and capacity between the DNOA Outcome Report and the EJP.

The DNOA Outcome Report template is somewhat limited, particularly with respect to communicating strategic approaches and investment beyond 2031 and conveying load and generation related schemes. Better use of the limited available space in the report and deleting unused parts of the report, where possible, would improve communication of information. There is scope to improve descriptions in the report to better reflect the constraints and proposed options.

DFES scenario Customer Transformation (CT) has been applied in all cases. This is considered the most likely and realistic future scenario by most DSOs at present.

Throughout the assurance reports, an SSEN process known as DGIF (Distribution Governance Investment Framework) is mentioned. DGIF is a staged process which ensures that DNO input to the scheme proposals is sought at the earliest stages of a project. Meetings will take place between the DNO and DSO, where DNO engineers' local knowledge can be considered and, if necessary, site visits will be organised.

Records of the meetings and any site visits are kept and are available to review as necessary. Outputs from this process are only recorded in the EJP by exception, i.e. high-risk issues, known operational issues, SSSIs, protected species, etc.



Assurance Review Methodology

Summary

- The same methodology applies to the assurance check irrespective of the type of review carried out.
- A standard question set is used to ensure all relevant requirements of the DNOA methodology are checked. There are 32 questions in total. These cover the four steps that make up the decision-making process: 'Identifying Future Load Related System Needs', 'Developing Options', 'Assessing Options' and 'Update Plan & Deliver'.
- For each scheme, an assessor reviews the EJP and supporting information and records findings.
- The findings against each question are recorded in a standard template and the assessor assigns a score depending upon the degree to which the requirement has been met. For 'Deep Dive' type reviews, the assessor documents any further evidence or clarifications required from the SSEN engineer(s).
- Scores are assigned as either 'Red', 'Amber' or 'Green' (RAG status) according to the criteria shown in the 'Overall Summary of Findings' slide in this Report.
- For each 'Deep Dive Review', the assessor conducts a detailed interview with the relevant SSEN engineer(s) to seek further clarification / evidence in order to conclude whether the process has been followed.
- Based on the recorded scores, the assessor concludes whether each key step in the decision-making process has been adequately followed and the outcome is valid.
- The outcomes from these reviews provide assurance that SSEN has followed its own processes. Whilst reviews do not specifically determine whether the correct decisions were reached, they should provide confidence that the most appropriate decisions have been reached based on the DNOA methodology having been correctly followed.
- Opportunities for improvement and enhancement are identified from the Assurance and are assigned the colour Blue to differentiate them from the RAG status. It is for SSEN to consider these suggested areas and take them forward to solutions.



DNOA Outcome Schemes Reviewed

Ref	DNOA Scheme Name	Type	Area	Type of Review
1	Raigmore Primary Substation Reinforcement	Asset Solution	SHEPD	Deep
2	Grudie Bridge 1L5 & 3L5 Circuits Reinforcement	Procure Flex	SHEPD	Sample
3	Alderton PSS & 33kV Circuits Reinforcement	Asset Solution	SEPD	Deep
4	Rowden Primary Substation Reinforcement	Procure Flex	SEPD	Sample
5	Whitchurch Primary Substation Reinforcement	Asset Solution	SEPD	Sample
6	Bemerton 33kV Meshed Network Reinforcement	Procure Flex	SEPD	Deep

All SSEN May 2025 DNOA Outcome Schemes reviewed have been developed to Strategic Justification Validation stage. This is prior to a completion of detailed asset optioneering and feasibility design.

Findings - 1. Raigmore Primary Substation (Deep Dive Review)

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
1	Raigmore Primary Substation	Raigmore Primary Substation, NE Inverness Reinforcement	SHEPD

Identifying Future Load Related System Needs

- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options.
- Future load including committed connections (load and generation) and output from stakeholder engagement accounted for.
- Thermal overload at Raigmore PSS was identified as the key constraint.
- No voltage or fault level issues were identified.

Developing Options

- Three possible reinforcement options were considered in reasonable detail.
- One option was to reinforce transformers at the existing PSS. The second was to build a new PSS to load share with the existing PSS. The third option was the second option plus deferral by flexibility.
- The second and third options were taken forward to CBA.
- The optimum solution with the lowest NPV was found to be reinforcement with deferral of two years by use of flexibility.
- The Outcome report correctly shows deferral for two years.

Developing Options (...continued)

- Engagement with regional councils and community energy groups was conducted to ensure alignment of aspirations.
- Information on the age and condition of existing network assets is included and is available to the DSO via the DNO INVEST asset database.
- A strategic and proactive investment approach was chosen, allowing for future load growth and extension.
- Site input by the DNO was not transparent in the EJP. It is assumed that no major issues were raised by the DNO, as issues are usually only reported in EJPs by exception.
- Meeting notes are kept for future reference in any case.

Assessing Options

- The CBA tool was used to support the proposed solution.
- There is scope to populate more detail in the CBA, (i.e. risk tab and baseline costs tab not completed) although this would not materially affect the outcome.

Assessing Options (...continued)

- The CEM tool was correctly used to assess the viability and economic benefit of flexibility.
- Reinforcement with deferral of two years using flexibility was the preferred option.
- Meeting whole system requirements beyond ED2 (up to 2050) was a factor in the proposed solution.
- Social and environmental aspects were not covered in detail. However, it is recognised that SSEN's DGIF process addresses this in more detail at the next stage.
- No social or environmental aspects are believed to materially change the decision.
- DNO feedback on the proposed options was not specifically mentioned in the EJP. However, the planner confirmed that DNO staff had input at the initial stage, as described in the DGIF process.
- The engineer confirmed that the DNO had not highlighted any safety concerns.
- The correct signature protocol for approving the EJP was followed, the provided PDF copy was correctly signed and numbered, but there was no issue date.
- There were no typos or other drafting errors in the EJP, which indicated that the final review process was effective in this case.



Findings - 1. Raigmore Primary Substation (Deep Dive Review)

continued...

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
1	Raigmore Primary Substation	Raigmore Primary Substation, NE Inverness Reinforcement	SHEPD

Update Plan and Deliver

- Key driver correctly identified as thermal overload with no voltage or fault level violations.
- Two practicable options addressing these constraints were brought forward to CBA.
- The preferred and most economic solution was identified as network asset reinforcement deferred by use of flexibility for two years.
- The constraint management timeline in the Outcome Report correctly shows two years deferral, as stated in the EJP.

Good Practices

- System model includes DFES forecasts, committed connections etc.
- NDR is centrally owned and managed by the Modelling and Reporting Team.
- Stakeholder engagement feeds into load and generation forecasts.
- Future load growth takes account of DFES scenario CT.
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- Flexibility was exploited to defer reinforcement by two years.
- Deliverability and operability issues have been adequately considered.
- No high risks were identified in the EJP.

Opportunities for Enhancement

- Output from DNO liaison under DGIF process and feedback on the proposed network options are not generally shown in the EJP.
- Issues are only reported by exception.
- Capturing DNO feedback in EJP – noting this is recorded in meeting notes, which are available for future reference.
- Better visibility of social and environmental considerations from the DGIF process in the EJP and CBA.
- Completeness of fields and detail in the CBA tools.

Summary

- Future forecasts of demand and generation beyond ED2 (up to 2050) have been suitably considered and whole system needs (i.e. network capacity) have been suitably identified.
- Flexibility was correctly assessed and was put forward as part of the chosen solution, giving a deferral period of two years.
- The presented options were suitably assessed, considering strategic requirements, etc.
- The DNOA outcome report generally reflects the assessment carried out.



Findings - 2. Grudie Bridge 1L5 & 3L5 Circuits (Sample Review)

Scheme Details			
Ref:	Scheme Name:	Scheme Title:	Planning Area:
2	Grudie Bridge 1L5 & 3L5 Circuits	Grudie Bridge 1L5 & 3L5 Circuits Reinforcement	SHEPD

Identifying Future Load Related System Needs

- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options, although there is no mention of EV chargers.
- Future load including committed connections (load & generation) plus output from stakeholder engagement all accounted for.
- Load related voltage violations identified as key constraint, with no reported fault level issues.
- Predicted thermal issues will be resolved as part of a future scheme.

Assessing Options

- CBA tool was correctly used to assess two options.
- CEM tool was not used, as there was insufficient flexibility to defer reinforcement.
- Due to insufficient flexibility, the only two viable options were reinforcement without deferral.
- Deliverability and operability risks were identified.
- Installation of STACOMs without deferral was correctly identified as the option with the lowest NPV.
- Chosen option considers whole system requirements beyond ED2 (up to 2050).
- The voltage constraints will be managed operationally until the reinforcement is completed.

Good Practices

- Stakeholder engagement feeds into load and generation forecasts.
- Future load growth takes account of the forecasted DFES scenario (CT).
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- High level risks have been assessed and documented in the EJP.
- EJP was correctly signed, dated and numbered, but was not PDF.

Developing Options

- Three reinforcement options, including flexibility procurement to defer reinforcement, were considered in suitable detail.
- A proactive investment, allowing for future growth and extension was selected.
- Chosen option was to install two STATCOMs at Achiltibuie PSS to manage the voltage issues, with no deferral by flexibility, as there was insufficient flexibility available.

Update Plan and Deliver

- Key driver correctly identified as load related voltage violations.
- The DNOA Outcome Report correctly captures that use of flexibility was not viable.
- Reinforcement only approach correctly stated.

Opportunities for Enhancement

- More visibility of DNO liaison in EJP.
- Visibility of stakeholder engagements.
- More detail of environmental aspects.
- Final document approval and error checking could be more robust, as the EJP copy provided was not the final PDF version and had multiple drafting errors.

Summary

- Future forecasts of demand and generation have been adequately considered and whole system needs have been suitably identified.
- Suitable flexibility and asset options were identified and developed, although insufficient flexibility meant deferral was not possible.
- The options have been suitably assessed, considering strategic requirements etc.
- The DNOA outcome report accurately reflects the chosen reinforcement solution.



Findings - 3. Alderton PSS & 33kV Circuits (Deep Dive Review)

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
3	Alderton PSS & 33kV Circuits	Alderton Primary Substation & 33kV Circuits Reinforcement	SHEPD

Identifying Future Load Related System Needs

- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options.
- Future load growth including output from stakeholder engagement were accounted for in the process.
- There is no mention of committed connections (load or generation), but trend in connections activity is forecast to remain steady.
- Growth in PV generation, EV charging and heat pump installations is cited.
- Thermal overload and voltage issues under FCO were identified as the primary drivers on this scheme.
- Extra land may be required to extend Chippenham BSP
- Wayleaves are required for new circuits.
- No operational issues were highlighted.
- Most of the assets to be replaced as part of the proposed reinforcement are nearing the end of their expected operational lives and will have high HI and CI scores by the time the works are completed. This further supports the need for investment.

Developing Options

- Three reinforcement options were evaluated, including one with deferral by flexibility.
- Flexibility was not viable to defer the investment any further than it had already been deferred.
- Engagement with regional councils and community energy groups was conducted to ensure alignment of aspirations.
- Information on the age and condition of existing network assets is available to the DSO via the DNO INVEST asset database.
- Identified risks include the requirement for extra land to extend Chippenham BSP.
- Strategic and economic aspects were considered for the reinforcement options, i.e. asset ratings and cost.
- Site input by the DNO is not mentioned but would only be captured in the EJP if any high risks had been identified under DGIF.
- It was confirmed that liaison with the DNO had taken place, which comprehensively considered the merits of the options put forward.
- Notes of meetings with the DNO are kept for future reference as part of DGIF.
- No environmental issues were mentioned.

Assessing Options

- The CBA tool was used to evaluate two of the three proposed solutions. There is scope to populate more detail in the CBA, (i.e. risk tab missing) but the baseline costs tab was completed in this instance.
- The CEM Tool indicated insufficient Flexibility available to further defer the transformer reinforcement, and this is clearly reported in the EJP.
- Deliverability and operability risks were identified.
- Reinforcement with no further deferral was recommended as the solution with the lowest NPV.
- The chosen solution accounts for whole system requirements beyond ED2 (up to 2050).
- Environmental aspects were not covered in detail, however, it is recognised that the DGIF process addresses this in more detail at the next stage.
- No environmental aspects were believed to materially change the decision.
- DNO feedback on the proposed options was not specifically mentioned in the EJP but notes of meetings with DNO staff are kept for future reference.
- It was confirmed that DNO staff had an input at this initial stage, as described in the DGIF process.
- The engineer confirmed that the DNO had not highlighted any safety concerns.
- It was not possible to confirm if the correct document approval protocol for the EJP was followed, as the EJP copy provided was missing a document number.



Findings – 3. Alderton PSS & 33kV Circuits (Deep Dive Review) *continued...*

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
3	Alderton PSS & 33kV Circuits	Alderton Primary Substation & 33kV Circuits Reinforcement	SHEPD

Update Plan and Deliver

- The Outcome Report only covers the new 33kV circuit aspects of the EJP, not the transformer replacements, which will feature in a future Outcome Report .
- That said, the key driver for this part of the scope is correctly identified as being due to P2 compliance and voltage violations.
- Two practicable options that address these constraints were put forward to CBA assessment.
- The preferred solution did not include flexibility to defer investment, due to flexibility not being feasible for deferring voltage issues.
- The Constraint Management Timeline in the Outcome Report correctly shows deferral by operational management of the constraints.

Good Practices

- System model includes DFES and assumes connections activity as staying steady.
- The network model is centrally owned and managed by Modelling and Reporting Team.
- Stakeholder engagement feeds into load and generation forecasts.
- Future load growth takes account of DFES CT scenario.
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- Deliverability and operability have been adequately considered.
- High level risks have been assessed and documented in the EJP.

Opportunities for Enhancement

- Better visibility of DNO liaison (site visits, etc.) and feedback on the proposed network options, rather than just reporting on aspects by exception.
- Notes of meetings with DNO are however kept for future reference.
- Greater visibility of stakeholder engagements in the EJP.
- More detail in the EJP of environmental aspects covered.
- Visibility of social and environmental considerations in the EJP and CBA.
- There appears to be an issue with the approval protocol, as the EJP copy provided was missing a document number.

Summary

- Future forecasts of demand and generation have been suitably considered and whole system needs have been suitably identified.
- Suitable asset options have been identified and developed. Deferral using flexibility was not feasible for the 33kV circuit works.
- The options have been suitably assessed, considering strategic requirements etc.
- The DNOA outcome report generally reflects the assessment carried out, given the limited space available on the report template.
- Only part of the recommended works which were put forward in the EJP was covered in the Outcome Report.



Findings - 4. Rowden Primary Substation (Sample Review)

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
4	Rowden Primary Substation	Rowden Primary Substation Reinforcement	SEPD

Identifying Future Load Related System Needs

- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options.
- Future load including committed connections (load & generation) plus output from stakeholder engagement all accounted for.
- P2 compliance due to thermal overloading was identified as the key driver.
- No voltage violations or fault level issues were identified.

Developing Options

- Four options were considered, including load transfer and reinforcement with and without deferral and these were considered in suitable detail.
- A proactive investment, allowing for future growth and extension was selected.
- Existing asset conditions and physical constraints for installing the reinforcement assets were addressed in the options.

Assessing Options

- CBA tool was correctly used for three viable options (Load transfer was discounted).
- CEM tool was used to determine flexibility effects.
- Reinforcement deferred by two years with flexibility gave the best NPV.
- Deliverability and operability risks were identified.
- A deferred reinforcement approach was correctly identified as the preferred option, considering whole system requirements beyond ED2 (up to 2050).
- Document approval; protocol was followed, EJP copy was numbered, dated and signed.

Update Plan and Deliver

- Key driver correctly identified as P2 compliance due to thermal overloading
- The DNOA Outcome Report correctly captures that use of flexibility was economic for two years.
- A deferred reinforcement approach was correctly reflected in the Outcome Report.

Good Practices

- Stakeholder engagement feeds into load and generation forecasts.
- Future load growth takes account of the forecasted DFES scenario (CT).
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- High level risks have been assessed and documented in the EJP.
- Document approval process was correct.

Opportunities for Enhancement

- More visibility of DNO liaison and feedback on the proposed network options, rather than just reporting on aspects by exception.
- However, notes of meetings with DNO are kept for future reference.
- Better visibility of stakeholder engagements and environmental aspects in the EJP.
- Better visibility of social and environmental considerations in the CBA and CEM.

Summary

- Future forecasts of demand and generation have been adequately considered and whole system needs have been suitably identified.
- Suitable flexibility and asset options have been assessed and developed, and flexibility was found to be economic.
- The options have been suitably assessed, considering strategic requirements etc.
- The DNOA outcome report accurately reflects the chosen deferred reinforcement solution.

Findings - 5. Whitchurch Primary Substation (Sample Review)

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
5	Whitchurch Primary Substation	Whitchurch Primary Substation Reinforcement	SEPD

Identifying Future Load Related System Needs

- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options.
- Future load including output from stakeholder engagement all accounted for.
- No committed connections on the network.
- P2 compliance due to anticipated load growth was identified as the key constraint.
- Thermal and voltage issues are also noted.
- No fault level issues are cited.

Assessing Options

- CBA tool was correctly used on two options.
- CEM tool was used to determine flexibility effects.
- The most beneficial solution, including deferment of the transformer reinforcement using flexibility, was selected as the preferred option.
- Deliverability and operability risks were identified.
- A combined flexibility and reinforcement approach was correctly identified as the preferred option, considering whole system requirements beyond ED2 (up to 2050).
- Document approval process was not followed as EJP copy was undated and unnumbered.

Good Practices

- Stakeholder engagement feeds into load and generation forecasts.
- Future load growth takes account of the forecasted DFES scenario (CT).
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- High level risks have been assessed and documented in the EJP.

Developing Options

- Four options, including load transfer and flexibility procurement to defer reinforcement, were considered in suitable detail.
- A proactive investment allowing for future growth and extension was selected.
- Existing asset conditions and physical constraints for installing the reinforcement assets were considered in the options.

Update Plan and Deliver

- Outcome report only addresses the new 33kV circuit not the transformer reinforcement.
- Key driver for the new 33kV circuits correctly identified as thermal and voltage issues.
- The DNOA Outcome Report correctly captures the recommended solution to install the new 33kV circuit from Barton Stacey to Whitchurch.
- Requires operational management of the constraints for five years.

Opportunities for Enhancement

- More visibility of DNO liaison and feedback on proposed network options, not just reporting on aspects by exception.
- However, notes of meetings with DNO are kept for future reference, in any case.
- Better visibility of social and environmental considerations and engagements with stakeholders in the EJP.
- There are multiple drafting errors in the EJP copy provided, which suggest a lack of robustness in document checking and approval process.

Summary

- Future forecasts of demand and generation have been adequately considered and whole system needs have been suitably identified.
- Suitable flexibility and asset options were assessed and developed. Deferment with flexibility was not suitable for the new 33kV circuit.
- The options were suitably assessed, considering strategic requirements etc.
- The DNOA outcome report adequately reflects the assessment carried out up to the end of ED2.

Findings - 6. Bemerton 33kV Meshed Network (Deep Dive Review)

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
6	Bemerton 33kV Meshed Network	Bemerton 33kV Meshed Network Reinforcement	SEPD

Identifying Future Load Related System Needs

- Caters for predicted load and generation growth through to 2050.
- DFES future scenario (CT) used for developing and assessing options.
- Committed new connections considered.
- Outputs from stakeholder engagement were accounted for in the process.
- Growth of EVs and Heat Pumps was cited.
- Main driver for the scheme was identified as thermal overload.
- No voltage or fault level issues reported.
- Possible space constraints at Salisbury BSP.
- Wayleaves required for new 33kV circuits.
- No operational issues were highlighted.
- Asset HI & CI conditions are presented.

Developing Options

- Four reinforcement options were analysed in adequate detail.
- Options included reinforcement with and without deferral with flexibility.
- A proactive investment allowing for future growth and extension was selected.
- Engagement with regional councils and community energy groups was conducted to ensure alignment of aspirations.

Developing Options (...continued)

- The age and condition of existing network assets were considered; this information is available to the DSO via the DNO INVEST asset database.
- Most affected assets are in good health and not near their expected lifespans.
- DNO Asset Management may decide to use the healthy assets elsewhere.
- Strategic and economic aspects were considered for the reinforcement options (i.e. asset ratings and cost) as part of the stakeholder engagement process.
- Input by the DNO (including site visits) is not mentioned in the EJP, but feedback from the DNO would only be included by exception in any case.
- Any high risks would be highlighted.
- The engineer confirmed that liaison with the DNO had taken place, which considered the merits of the options put forward comprehensively.
- Notes of meetings with the DNO are kept for future reference.
- No environmental issues were reported.
- Flexibility was correctly considered to defer reinforcement and was included in the preferred option to defer investment.
- Different deferral periods were required for different parts of the scheme scope.

Assessing Options

- Only two of the asset investment options were taken to CBA, one with and one without flexibility.
- The CEM tool was correctly applied to check the viability of flexibility.
- CEM indicated that there was sufficient flexibility available for the various parts of this scheme.
- Deliverability and operability risks were identified.
- Meeting whole system requirements beyond ED2 (up to 2035) were a factor in the proposed future proof solution.
- A rigorous process (DGIF) considers social, economic and deliverability issues (although this was not all recorded in the EJP, as issues are only recorded by exception).
- Environmental impacts, including, for example, land use, protected land, SSSIs, noise mitigation, nearby residential properties, public rights of way, using non-SF6 equipment where possible, etc, are all captured in the DGIF process.
- It was confirmed that the DNO had not highlighted any safety concerns.
- The correct approval protocol appears to have been followed, as the EJP copy provided was numbered, dated and signed off.



Findings - 6. Bemerton 33kV Meshed Network (Deep Dive Review)

continued...

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
6	Bemerton 33kV Meshed Network	Bemerton 33kV Meshed Network Reinforcement	SEPD

Update Plan and Deliver

- The Outcome Report only covers the new 33kV circuit aspects of the EJP.
- **It incorrectly states two dual circuits are to be installed between Salisbury BSP and Netherhampton PSS, when in fact one of the dual circuits will go to Petersfinger PSS.**
- The remaining aspects of the EJP will feature in a future Outcome Report.
- That said, the key driver for this part of the scope is correctly identified as being due to thermal overload.
- No voltage or fault level violations were noted.
- The only two practicable options that address these constraints were put forward to CBA assessment.
- The preferred solution with the lowest NPV was reinforcement with flexibility to defer investment.
- The Constraint Management Timeline in the Outcome Report correctly shows deferral for one year by flexibility.
- The estimated peak load without reinforcement was shown as exceeding the network capacity from 2030 onwards.

Good Practices

- The system model includes all DFES, connection projections and load growth
- The model is centrally owned and managed by the Modelling and Reporting Team.
- Stakeholder engagement feeds into the load and generation forecasts.
- Strategic and whole system aspects have been considered beyond ED2 (up to 2050).
- Sufficient flexibility was available to defer the various parts of the reinforcement scope.
- Deliverability and operability issues have been adequately considered.
- Foreseeable risks were identified in the EJP.
- Possible environmental impacts were assumed to be considered outside of the EJP, as part of the DGIF process.

Opportunities for Enhancement

- Confusion over naming of schemes between EJP and Outcome Report.
- Bemerton is not mentioned at all in the Outcome Report.
- Outcome Report is confusing when referring to two dual circuits going to Netherhampton PSS.
- Better visibility in EJP of DNO liaison (site visits, local knowledge, etc.) and feedback on the proposed network options, rather than just reporting on aspects by exception.
- However, notes of meetings with DNO are kept for future reference.
- Better visibility of social and environmental considerations would be beneficial.
- Completeness of fields and more detail in the CBA tool.
- Final document approval and error checking could be more robust, as the EJP copy provided had multiple drafting errors.

Summary

- Future forecasts of demand and generation have been suitably considered and whole system needs have been correctly identified.
- Due to the nature of the scheme, only two practicable asset investment options were taken through to CBA.
- Flexibility was not feasible due to a lack of flexibility to defer investment.
- **The DNOA outcome report is a little at odds with the chosen asset intervention.**