



INDEPENDENT ASSURANCE REPORT

for SSEN Nov 2025 DNOA Outcomes

*Feb 2026
Version 1.0*





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 November 2025 published by SSEN Distribution. The scope relates to 7 DNOA outcomes (4 in SEPD and 3 in SHEPD). All but one of 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	7
Have future forecasts of demand and generation been done and have system needs been suitably identified (capacity)?	Green	Green	Green	Green	Green	Green	Green
Have suitable flexibility and asset options been identified and developed?	Green	Green	Green	Green	Green	Green	Green
Have the options been suitably assessed taking into account strategic requirements, land requirements, environmental issues, deliverability, etc?	Yellow	Green	Yellow	Green	Green	Yellow	Yellow
Does the DNOA outcome report adequately reflect the assessment carried out?	Green	Green	Green	Green	Green	Yellow	Green
RAG status:							
Red	Requirement not met (to the degree that the outcome could be materially affected or is inaccurate).						
Yellow	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).						
Green	Requirement fully met, although some minor issues may still be highlighted.						



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. SSEN consider this the most likely and realistic future scenario at present. However, it should be questioned as to whether applying CT across all areas of what is a very diverse pair of license areas is appropriate or not.

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. Some risks are however left unquantified until later in the programme.

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 Planning 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 Planning 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	Aberdeen City (Queens Lane North PSS)	Procure Flex	SHEPD	Sample
2	North West Mull, Coll and Tiree (Dervaig PSS)	Asset Solution	SHEPD	Sample
3	Islay and Jura - Phase 1 (Carradale GSP 33kV Circuits)	Asset Solution	SHEPD	Deep
4	Northeast Hampshire (Coxmoor Wood BSP)	Asset Solution	SEPD	Sample
5	Berinsfield (Berinsfield PSS)	Procure Flex	SEPD	Sample
6	North Dorset and South Wiltshire (Shaftesbury BSP)	Asset Solution	SEPD	Deep
7	North Bournemouth (Winton PSS)	Procure Flex	SEPD	Deep

All SSEN November 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. Aberdeen City (Queens Lane North PSS) - Sample Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
1	Aberdeen City (Queens Lane North PSS)	Woodhill GSP, Queens Lane North EJP	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 output from stakeholder engagement all accounted for.
- Committed connections have been accounted.
- Thermal overload due to projected load growth was identified as the key constraint.
- No voltage issues were identified during studies.
- Fault level studies or results are not mentioned.

Assessing Options

- CBA tool was correctly used on two of the options.
- CEM tool was used to determine flexibility effects.
- Replacement of existing assets deferred one year with flexibility (for 33kV circuits), was selected as the most beneficial option, considering whole system requirements beyond ED2 (up to 2050).
- Flexibility not suitable to defer replacement of the transformers, as these are already at end of life.
- **Deliverability and operability risks were identified, but some are left unquantified until detailed design.**
- Document approval process appears not to have been followed as EJP provided was 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

- Five intervention options, including one with flexibility procurement to defer reinforcement, were considered in suitable detail. Do nothing is ignored.
- 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

- The DNOA Outcome Report addresses the new 33kV circuits and the transformer reinforcements.
- Key driver for the reinforcement is correctly identified as due to thermal issues.
- Outcome Report correctly captures the recommended solution to install the new 33kV circuits and transformers.
- Constraint on the 33kV circuits is managed by use of flexibility for one year.

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.
- The EJP copy provided was not the final numbered PDF version, 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. Deferral with flexibility was not suitable for the new transformers.
- The options were suitably assessed, considering strategic requirements etc. Some risk are left unquantified until the detailed design stage.
- The DNOA outcome report adequately reflects the assessment carried out up to the end of ED2.

Findings - 2. North West Mull, Coll and Tiree (Dervaig PSS) - Sample Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
2	North West Mull, Coll and Tiree (Dervaig PSS)	Taynuilt EJP - Scheme 3 Only	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 explicit mention of Heat Pumps or EV chargers, these are included in DFES forecasts.
- Future load including committed connections (>1MW) and output from stakeholder engagement all accounted for.
- Load related thermal overload and voltage violations are identified as key constraints.
- Fault level studies are not mentioned, so it is assumed that no fault level issues were found.

Assessing Options

- CBA tool was correctly used to assess one option.
- CEM tool was not used, as flexibility was not feasible to manage the identified constraint.
- The only viable option was installation of STATCOMs without deferral by flexibility.
- Only low deliverability 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).
- Assumed voltage constraints will be managed until the reinforcement is completed in 2034/35.
- Document approval process appears not to have been followed as EJP provided was unsigned.

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 – Scheme 3 only

- Only one option (installation of STATCOMs) was taken forward to CBA, for Scheme 3.
- Flexibility was not suitable for the identified constraint.
- Chosen option was to install 3 x STATCOMs at Dervaig PSS to manage the voltage issues, with no deferral by flexibility.

Update Plan and Deliver

- Key drivers correctly identified as load related thermal overload and 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 signed 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 flexibility was not feasible which meant deferral was not possible.
- Only one option was suitably assessed, considering strategic requirements etc.
- The DNOA outcome report accurately reflects the chosen reinforcement solution.

Findings - 3. Islay and Jura - Phase 1 - Deep Dive Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
3	Islay and Jura - Phase 1 (Carradale GSP 33kV Circuits)	Port Ann GSP - Scheme 3 only	SHEPD

Identifying Future Load Related System Needs

- Only Scheme 3 is considered in this Outcome.
- Future load modelled using DFES scenarios beyond ED2 (up to 2035).
- CT future scenario used for developing and assessing options.
- Future load including committed connections (load and generation) and output from stakeholder engagement accounted for.
- Load related voltage constraints and P2 compliance were identified as the key constraints.
- No fault level issues were identified in the studies.

Developing Options – Scheme 3 only

- Option 1 – do nothing is ignored.
- Two possible reinforcement options were considered in reasonable detail.
- The two options considered two different modes of 33kV interconnection to reinforce and thus alleviate the network constraints.
- Both options were taken forward to CBA.
- The optimum solution with the lowest NPV was found to be Option 2, Interconnection via a new 33kV circuit from Port Ann GSP and a new 33kV circuit from Carradale GSP.
- There was no deferral, as flexibility was not economical for the identified constraints.

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, but meeting notes are kept for future reference at the design stage 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.
- The CEM tool showed that flexibility was uneconomic for Scheme 3 due to the nature of the constraint.
- Reinforcement without deferral was the preferred option.

Assessing Options (...continued)

- 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 DGIF.
- **Some significant risks were identified in the EJP that would be given consideration only at the design stage, which does leave unquantified risks until that stage.**
- The engineer confirmed that the DNO had not highlighted any particular safety concerns.
- The correct signature protocol for approving the EJP was not followed, the provided Word copy was not signed and should also have been issued as a PDF, once signed.
- There were several typos and other drafting errors in the EJP, including lost Cross Reference errors, which indicates that the final review process could be more robust.

Findings - 3. Islay and Jura - Phase 1 - Deep Dive Review *continued...*

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
3	Islay and Jura - Phase 1 (Carradale GSP 33kV Circuits)	Port Ann GSP	SHEPD

Update Plan and Deliver

- Key drivers correctly identified as load related voltage constraints and P2 compliance, with no fault level violations.
- Two practicable options addressing these constraints were brought forward to CBA.
- The preferred and most economic solution was identified as Interconnection via a new 33kV circuit from Port Ann GSP and a new 33kV circuit from Carradale GS.
- No deferral as use of flexibility was uneconomic.
- The constraint management timeline in the Outcome Report correctly shows the constraints being managed operationally for three years before reinforcement is complete.

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 2035).
- Flexibility was not economical.
- Deliverability and operability issues have been adequately considered, although some risks remain unquantified until detailed design.

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.
- A more robust document vetting and approval process would be a benefit.

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.
- Although the reinforcement for Scheme 3 only covers to 2035, further reinforcement is required to cover to 2050.
- Flexibility was found to be uneconomic for the particular constraints on Scheme 3. No deferral by flexibility was available.
- The presented options were suitably assessed, considering strategic requirements, etc.
- The DNOA outcome report generally reflects the assessment carried out.

Findings - 4. Northeast Hampshire (Coxmoor Wood BSP) - Sample Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
4	Northeast Hampshire (Coxmoor Wood BSP)	Coxmoor Wood 132/33kV BSP	SEPD

Identifying Future Load Related System Needs

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

Developing Options

- Ignoring Option 1 (do nothing), three intervention options were considered in suitable detail.
- One option was impractical, so only two options were taken to CBA.
- One option included deferral by flexibility, so the CEM tool was used to consider its NPV.
- A proactive investment, allowing for future growth and extension was selected.
- Existing asset conditions were not listed.
- Physical constraints for installing the reinforcement assets were addressed in the options.

Assessing Options

- CBA tool was correctly used for two viable options (changing both transformers was discounted).
- CEM tool was used to determine flexibility effects and indicated that deferral was not economic.
- Minor issue with EJP/CEM cross referencing.
- Deliverability and operability risks were identified.
- A reinforcement approach without deferral was correctly identified as the preferred option.
- Whole system requirements were considered beyond ED2 (up to 2050).
- Document approval protocol was not followed, EJP PDF copy provided was signed but was not dated or given a reference number.

Update Plan and Deliver

- Key driver correctly identified as P2 compliance due to thermal overloading
- The DNOA Outcome Report correctly captures that flexibility was not economic.
- A straight 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 not fully followed.

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 to 2050.
- Suitable flexibility and asset options have been assessed and developed, but flexibility was found to be uneconomic.
- The options have been suitably assessed, considering strategic requirements etc.
- The DNOA outcome report accurately reflects the chosen straight reinforcement with no deferral solution.

Findings - 5. Berinsfield (Berinsfield PSS) - Sample Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
1	Berinsfield (Berinsfield PSS)	Cowley - Berinsfield	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.
- Load forecasts are credible.
- Committed connections have been included.
- Thermal overload due to projected load growth was identified as the key constraint.
- No voltage or fault level studies were mentioned, so assumed no issues.

Assessing Options

- CBA tool was correctly used on two of the options.
- CEM tool was used to determine flexibility effects.
- Transformer replacements deferred by one year with flexibility was selected as best NPV option.
- Whole system requirements were considered beyond ED2 (up to 2050).
- Risks are identified and rated, including the requirement for consents for new 33kV circuits.
- Document approval process was not fully followed as EJP provided was signed and dated but not given a reference number.
- Drafting comments and errors still visible in PDF.

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 intervention options, including one with flexibility procurement to defer reinforcement, were considered in suitable detail. Do nothing is ignored.
- 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

- The DNOA Outcome Report only addresses the transformer reinforcements.
- Key driver correctly identified as thermal overload.
- Outcome Report correctly captures the recommended solution to replace the transformers after one year of deferral by flexibility.
- The 33kV circuits reinforcement will follow at a later stage.

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.
- The EJP PDF provided was not numbered and contained several drafting errors, which suggests 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 up to 2050.
- Suitable flexibility and asset options were assessed and developed. Deferral with flexibility was suitable for the transformers for one year.
- The options were suitably assessed, considering strategic requirements etc. Risks are identified and rated.
- The DNOA outcome report covers the transformer reinforcements only, but adequately reflects the assessment carried out up to the end of ED2.

Findings - 6. North Dorset and South Wiltshire (Shaftesbury BSP) - Deep Dive Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
6	North Dorset and South Wiltshire (Shaftesbury BSP)	Mannington GSP	SEPD

Identifying Future Load Related System Needs

- EJP covers three different reinforcement scopes;
 1. Replacement of the 132kV switchgear at Mannington GSP,
 2. New 132kV circuits to Shaftesbury BSP (plus a third grid transformer), and
 3. Addition of a third grid transformer at Lytchett BSP.
- Outcome report covers the new 132kV circuits to Shaftesbury BSP only.
- Future load modelled using DFES scenarios beyond ED2 (up to 2050).
- CT future scenario used for developing and assessing options.
- Future load growth, including committed connections (load and generation) plus output from stakeholder engagement were accounted for in the forecasts.
- Growth in PV generation, EV charging and heat pump installations is cited.
- Fault level issues (affecting Mannington only) and thermal overload were identified as the primary drivers on this scheme.
- Voltage studies did not reveal voltage issues.
- Various operational issues were highlighted.
- HI and CI scores for various assets involved in the overall scope are clearly set out.
- Extra land requirements are cited in the EJP.

Developing Options – Shaftesbury BSP 132kV circuits only

- Three reinforcement options were evaluated, including one with deferral by flexibility.
- EJP states flexibility as viable to defer the investment for this part of the EJP Scope.
- 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 Shaftesbury BSP and wayleaves for the new 132kV circuits.
- 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.
- The significant environmental impacts of using OHL for the two new circuits is mentioned.
- Deliverability risks of OHLs also mentioned.
- OHL options were discounted due to high risks.

Assessing Options – Shaftesbury BSP 132kV circuits only

- The CBA tool was used to evaluate two of the three proposed solutions.
- The CEM Tool indicated flexibility was feasible to defer the reinforcement called for in this scope.
- Reinforcement with deferral by flexibility was recommended as the solution with the lowest NPV.
- **However, the Outcome Report states that flexibility was not feasible to defer the two new circuits.**
- **Significant unquantified risks were identified, which will not be resolved until the design stage.**
- The chosen solution accounts for whole system requirements beyond ED2 (up to 2050).
- Environmental aspects were covered in detail and materially changed the chosen design of the new 132kV circuits, i.e., using underground cable instead of overhead lines.
- 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.
- Document approval process was not fully followed as EJP provided was signed but not dated and had no reference number.



Findings - 6. North Dorset and South Wiltshire I (Shaftesbury BSP) - Deep Dive Review *continued...*

Scheme Details			
Ref:	Scheme Name:	Scheme Title:	Planning Area:
6	North Dorset and South Wiltshire I (Shaftesbury BSP)	Mannington GSP	SEPD

Update Plan and Deliver – Shaftesbury BSP 132kV circuits only

- The Outcome Report only covers part of the EJP scope, namely the new 132kV circuits to Shaftesbury BSP. The remaining scope will feature in future Outcome Reports.
- The key driver for this part of the scope is correctly identified as thermal overload.
- Two practicable options that address these constraints were put forward to CBA
- The preferred solution in the EJP included flexibility to defer investment.
- **The Outcome Report states flexibility as not being feasible.**
- **Accordingly, the Constraint Management Timeline in the Outcome Report does not include deferral.**

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).
- 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.
- 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 not dated and had no document number.

Summary

- Only the two new 132kV circuits to Shaftesbury BSP were put forward from the EJP and covered in the Outcome Report.
- Future forecasts of demand and generation have been suitably considered and whole system needs have been suitably identified up to 2050.
- Suitable asset options have been identified and developed. Although there is confusion around feasibility of flexibility for the 132kV circuit works.
- The options have been suitably assessed, considering strategic requirements etc.
- The DNOA outcome report generally reflects the assessment carried out, except for the issue of flexibility feasibility.

Findings - 7. North Bournemouth (Winton PSS) - Deep Dive Review

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
7	North Bournemouth (Winton PSS)	Redhill BSP and 132kV Network Reinforcements	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 drivers for the scheme were identified as thermal overload and P2 compliance.
- No voltage constraints were highlighted but some fault level issues were mentioned.
- Land purchase required for a new PSS.
- Wayleaves required for new 132kV circuits.
- One minor operational issue was highlighted.
- Asset HI & CI conditions are presented.

Developing Options

- Three 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.
- Some affected assets are near the end of their expected lifespans.
- 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.
- There is no table of risks, although risks are mentioned,
- 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.

Assessing Options

- Only two of the three reinforcement options were taken to CBA,.
- One option 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
- Deliverability and operability risks were identified.
- **Significant unquantified deliverability and cost risks remain, which will not be resolved until the design stage.**
- Meeting whole system requirements beyond ED2 (up to 2050) 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 not to have been followed, as the EJP copy provided was not numbered nor dated.

Findings - 7. North Bournemouth (Winton PSS) - Deep Dive Review

continued...

Scheme Details

Ref:	Scheme Name:	Scheme Title:	Planning Area:
7	North Bournemouth (Winton PSS)	Redhill BSP and 132kV Network Reinforcements	SEPD

Update Plan and Deliver

- The Outcome Report only covers the new 33kV circuit aspects of the EJP.
- 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 violations were noted but some fault level issues were reported.
- 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 of the two 33kV circuits for two years with flexibility.
- The estimated peak load without reinforcement was shown as exceeding the network capacity from 2033/34 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 reinforcement.
- Deliverability and operability issues have been adequately considered, although some deliverability risks cannot be quantified until the design stage.
- 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.
- Redhill BSP is not mentioned at all in the Outcome Report.
- 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 process could be more robust, as the EJP copy provided had no document number.

Summary

- Only the reinforcement of the two new 33kV circuits between Victoria Park PSS and Winton PSS were covered in the Outcome Report.
- Future forecasts of demand and generation have been suitably considered and whole system needs have been correctly identified up to 2050.
- Suitable asset options have been identified and developed which have been suitably assessed, considering strategic requirements etc.
- Due to the nature of the scheme, only two practicable asset investment options were taken through to CBA.
- Flexibility was feasible to defer investment by two years, and this is reflected in the Outcome Report.