

# Network Asset Secondary Deliverables Rebasing Consultation

## Consultation

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**Response deadline:** 31 March 2017

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### Overview

In response to the Authority's direction on 1 February 2016, the Distribution Network Operators (DNOs) submitted the Rebased Network Asset Secondary Deliverables (NASD) Target Risk Delta on 30 December 2016. This document is notice of our intention to approve the Rebased NASD Targets under CRC 5D of the Special Licence Condition of the Electricity Distribution Licence. It sets out the reasons for the Authority's intention to approve the DNOs' submissions and the period during which the licensees or any other interested parties may make representations.

Please submit responses to Ofgem by 31 March 2017.

## Context

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As part of the RIIO-ED1 price control review, DNOs provided forecasts of their asset health and criticality positions 'with intervention' and 'without intervention'. We used these to create Network Asset Secondary Deliverables (NASD) Target Risk Delta, setting out the required improvements in asset health and criticality during the price control.

SLC 51 of the Electricity Distribution Licence ("Licence") requires the DNOs to have a common methodology for asset health, criticality and monetised risk. Pursuant to SLC 51, the DNOs worked together to develop the Common Network Asset Indices Methodology (CNAIM) draft version V4, and the Authority approved this on 1 February 2016<sup>1</sup>. In our approval letter and pursuant to CRC 5D.17, we directed the licensees to rebase their Network Asset Secondary Deliverables by 30 December 2016. During the implementation of the approved CNAIM draft version V4, the DNOs made a number of amendments to correct errors or omissions in the methodology and we approved the CNAIM v1.0 pursuant to SLC 51.27 on 21 October 2016<sup>2</sup>.

During the latter part of 2016, the Reliability Working Group was used as a forum to discuss how the NASD Rebasing would be undertaken<sup>3</sup>. Following these meetings we published the NASD Rebasing Requirements and Assessment Methodology<sup>4</sup> in order to facilitate the DNOs submissions and our assessment.

## Associated documents

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**[RIIO-ED1: Modifications to special conditions of the electricity distribution licences held by the slow-track licensees – 3 February 2015](#)**  
**[Decision on DNO Common Network Asset Indices Methodology – 1 February 2016](#)**  
**[Decision on distribution network operators Common Network Asset Indices Methodology – 21 October 2016](#)**  
**[Network Asset Secondary Deliverables Rebasing Requirements and Assessment Methodology – 6 December 2016](#)**

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<sup>1</sup> <https://www.ofgem.gov.uk/publications-and-updates/decision-dno-common-network-asset-indices-methodology>

<sup>2</sup> <https://www.ofgem.gov.uk/publications-and-updates/decision-distribution-network-operators-common-network-asset-indices-methodology>

<sup>3</sup> <https://www.ofgem.gov.uk/publications-and-updates/reliability-working-group>

<sup>4</sup> <https://www.ofgem.gov.uk/publications-and-updates/network-asset-secondary-deliverables-rebasing-requirements-and-assessment-methodology>

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# 1. Introduction

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## Purpose of this document

1.1. In order to complete the implementation of the Common Network Asset Indices Methodology (CNAIM), the Network Asset Secondary Deliverables Target Risk Delta, referred to as the target risk delta throughout this document, must be rebased in accordance with this new methodology. The current target risk deltas have been agreed in the original Network Asset Workbook (NAW)<sup>5</sup> as part of the RIIO-ED1 price control and the purpose of the rebasing is to translate the agreed target risk deltas using the CNAIM and not to revise the planned interventions that were originally agreed.

1.2. This document is notice of our intention to approve the rebased target risk deltas under CRC 5D of the Licence. It explains:

- the assessment that has been carried out;
- the issues encountered during the process;
- the reasons we intend to approve the target risk deltas;
- the process by which interested parties may make representations; and,
- the proposed next steps.

## Consultation Questions

1.3. As part of this consultation document we are seeking views on the questions below:

1. Do you agree that the Network Asset Secondary Deliverables Rebasing Requirements and Assessment Methodology document provides a suitable basis for the submission of the NASD rebasing and subsequent assessment methodology?
2. Do you believe that the equally as challenging tests are comprehensive, appropriate and will result in a target risk delta that is equally as

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<sup>5</sup> <https://www.ofgem.gov.uk/publications-and-updates/riio-ed1-modifications-special-conditions-electricity-distribution-licences-held-slow-track-licensees>

challenging? Where you disagree please clearly set out your reasoning and suggest how it could be improved to fulfil that objective.

3. Do you agree with our intention to approve each of the DNO submissions and our view on each of the assessment criteria explained in Chapter 2? Where you disagree please clearly set out your reasoning and if possible suggest an alternative solution.

## Assessment approach

1.4. The assessment of the Rebased NASD submissions provided by the DNOs was carried out as per the published NASD Rebasing Requirements and Assessment Methodology, which should be read in conjunction with this consultation document.

## Legal framework

1.5. Part C of CRC 5D of the Licence sets out the requirements for rebasing and modification of the NAW.

1.6. Further, CRC 5D.17 and 5D.18 are of particular relevance:

- CRC 5D.17 states that the licensees:

'must develop and submit for approval to the Authority a revised set of Network Asset Secondary Deliverables ("Rebased Network Asset Secondary Deliverables") in accordance with the Common Network Asset Indices Methodology, which are trued up to take account of actual data up to and including 31 March 2015.'

- CRC 5D.18 states that:

'The Rebased Network Asset Secondary Deliverables must:

- a) be consistent with the Common Network Asset Indices Methodology;
- b) remain equally as challenging as those set out in the Network Assets Workbook that was applicable at 1 April 2015, as calculated using the values for Average Probability of Asset Failure and Average Consequence of Asset Failure applied at that time adjusted for any modification to the Regulatory Instructions and Guidance (RIGs) or Common Network Asset Indices Methodology;
- c) be in the same format as the Network Assets Workbook; and

d) be based on actual rather than forecast data up to and including 31 March 2015.'

### **Assessment process**

1.7. In order to carry out our assessment the DNOs were required to submit:

- A restatement of the Network Assets Workbook (NAW);
- A restatement of the Secondary Deliverables monetised risk file;
- A submission of the Secondary Deliverables Reporting Pack (Annex D of the Regulatory Instructions and Guidance);
- A Rebasing Commentary pack associated with the restatement of the NAW; and
- An asset additions and removals file.

1.8. We received these files from all of the companies by the 30 December 2016 deadline.

1.9. We carried out our assessment according to the NASD Rebasing Requirements and Assessment Methodology and have published our rebasing assessment spreadsheet which carries out the ECTs alongside this consultation. Additionally, Appendix 1 is an explanatory note that should be read in conjunction with the rebasing assessment spreadsheet.

1.10. We carried out our assessment of the NASD Rebasing in collaboration with PA Consulting. It provided an expert view of the rebased submissions, all of the issues that arose, and assured the ECTs that were run. The work that was carried out has given us confidence that we have reached an appropriate view for each DNO.

1.11. As part of the assessment we also held bilateral meetings with the DNOs where the main concerns and issues were raised. Following these meetings there was further engagement with all DNOs to address any cross cutting issues.

1.12. We asked a number of supplementary questions (SQs) to each DNO in order to address issues and ensure the rebasing commentary pack provided the appropriate level of detail. Where necessary, the DNOs resubmitted documents in order to address specific issues and SQs that were raised.

## 2. The NASD Rebasing Assessment

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### Chapter Summary

This chapter details the issues encountered during the assessment of the NASD Rebasing submission and the outcome of our assessment.

2.1. In our view, all the DNOs have fulfilled the requirements of the NASD rebasing and we intend to approve their target risk deltas. The reasons and main issues encountered during the assessment are explained in this chapter.

### High level analysis and cross cutting issues

#### Overview of target risk deltas

2.2. The target risk delta originally agreed for the RIIO-ED1 period was based on the DNOs' own Network Asset Indices Methodologies. Following the agreement and implementation of the CNAIM, the DNOs have undertaken the NASD Rebasing in order to agree the new target risk delta to be delivered in RIIO-ED1. The assessment methodology is designed to assess whether the planned interventions are equally as challenging for each asset health category separately. Each asset health category has an associated monetised risk with and without intervention and a resulting target risk delta. The rebased target risk delta is the total across all the asset health categories and, where each of these are found to be equally as challenging, forms the new agreed rebased target risk delta to be delivered in RIIO-ED1.

2.3. The figures below present a high level comparison between the original and rebased NAW for information purposes and have not been included as part of our assessment. We have published the Secondary Deliverables monetised risk file alongside this consultation which contains the rebased target risk delta.

2.4. The target risk delta is a monetised value that has been determined using estimates of the consequence of failure that have been monetised.

2.5. Figure 1 shows the total risk without intervention for the original and rebased NAW. Note that both of the SSEN licensees have values in excess of the scale shown. The Original Total Risk is £2,429 million for SSEH and £2,582 million for SSES.

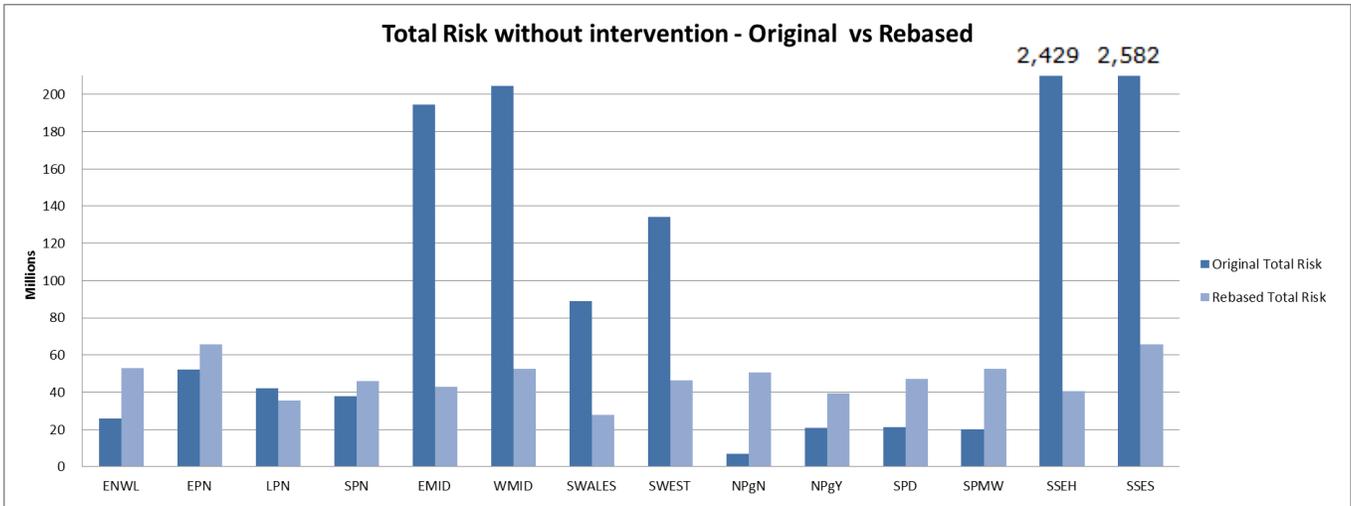


Figure 1

2.6. Figure 2 shows the target risk delta for the original and rebased NAW. Note that both of the SSEN licensees have values in excess of the scale shown. The original target risk delta is £511 million for SSEH and £580 million for SSES.

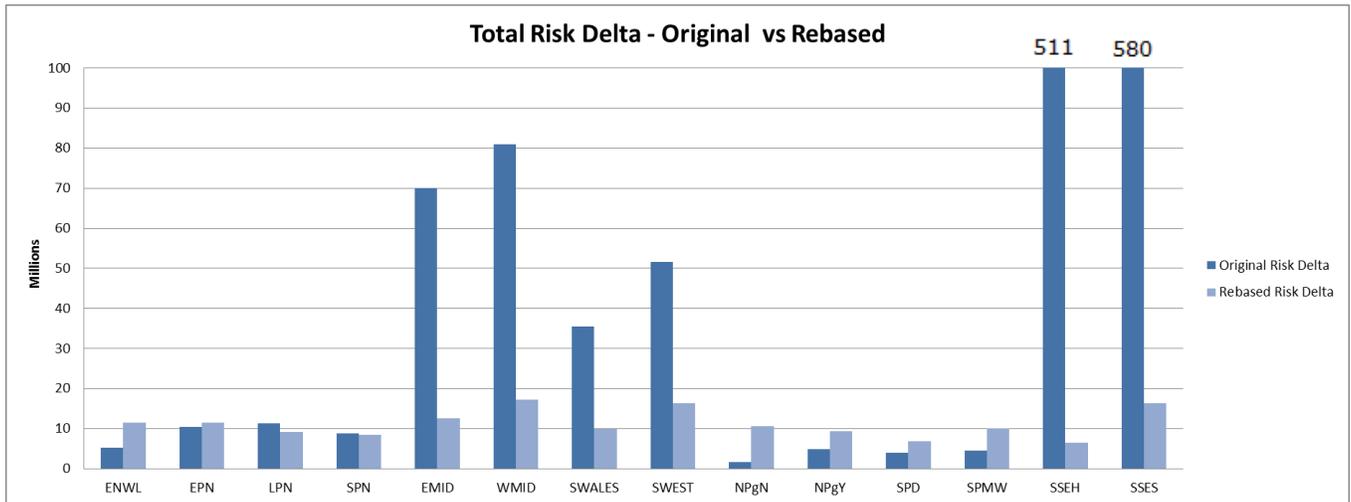


Figure 2

2.7. Figures 1 and 2 show at a high level the CNAIM has resulted in each licensee's network now having risk of comparable magnitude. This is appropriate given the similarities in size of licensees' networks. It shows a significant reduction in risk for WPD and SSEN and increases for ENWL, NPg and SPEN.

2.8. Figures 3 and 4 show both the total risk without intervention for the rebased NAW broken down to the risk with intervention and the target risk delta. Figure 3



## Network Asset Secondary Deliverables Rebasing Consultation

shows the risk in absolute terms whereas Figure 4 shows the percentage composition of each.

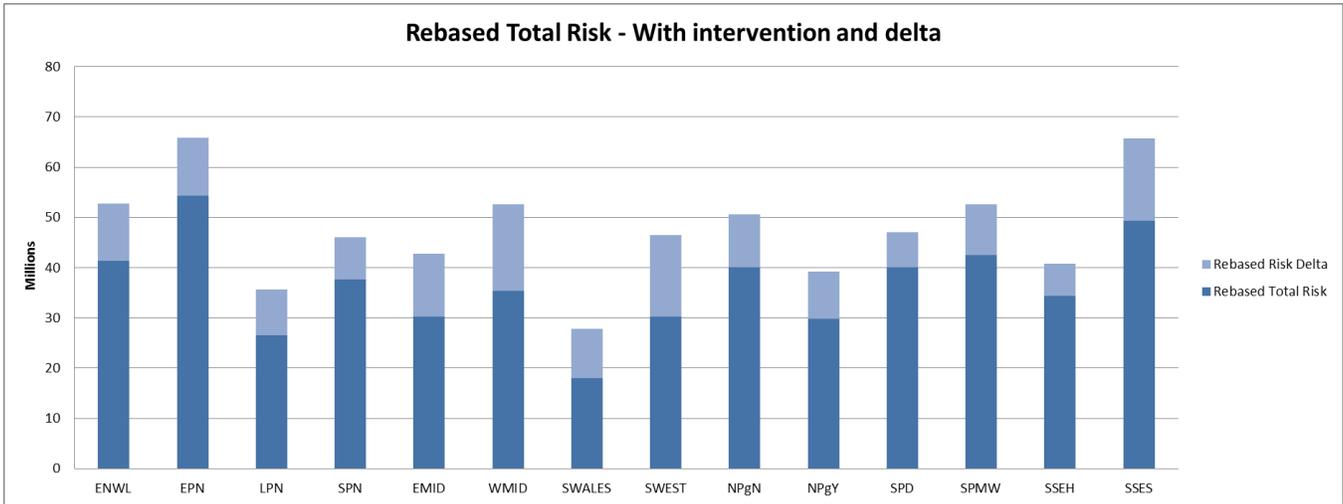


Figure 3

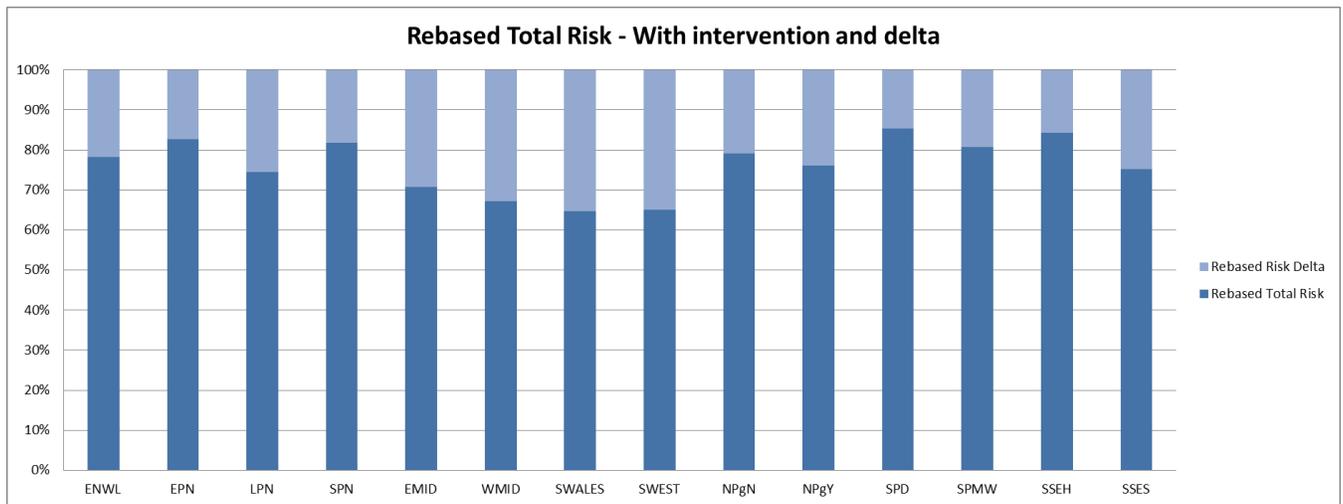


Figure 4

### EHV and 132kV OHL Support – Towers and UG Cables (Oil)

2.9. During the bilateral meetings the majority of the DNOs raised concerns about EHV and 132kV OHL Support – Towers and the disproportionate contribution to the total risk from these asset categories. Some DNOs also raised these similar concerns for EHV and 132kV UG Cable (Oil). Following further discussions with the DNOs it was agreed that the risk contribution from both asset categories was, in particular for OHL Support – Towers, out of proportion with the level of investment planned. In

some cases OHL Support – Towers were contributing to approximately 20% of the overall target risk delta for around 1% of the Secondary Deliverables investment.

2.10. The DNOs identified changes to the k-factor of the Probability of Failure (PoF) and Network Performance aspect of the Consequence of Failure (CoF) to resolve the issue for EHV and 132kV OHL Support – Towers. The DNOs also identified a change to the k-factor of the PoF to resolve the issue for EHV and 132kV UG Cable (Oil). We have incorporated these changes into the analysis presented in this document.

2.11. The DNOs have consulted on these PoF and CoF changes described above<sup>6</sup>. These changes will affect the assessment of the performance at the end of the RIIO-ED1 and if they are not incorporated into the NASD Rebasing then it will be necessary to do so later in this price control. We have therefore requested that the DNOs include these changes to their rebasing submission, in order to avoid the need for a subsequent rebasing immediately following the conclusion of this one.

2.12. Given that the DNO consultation does not close until 3 March 2017, there is a risk that the responses received result in the proposed changes not being approved. Where this situation arises we will require the DNOs to reverse the changes they have made before making our decision on the NASD Rebasing. We are of the view that these changes do not have any impact on the outcome of our assessment as described in this chapter but simply the relative contribution to the overall target risk delta for these asset categories.

## The assessment process

2.13. Our assessment consisted of the following stages:

1. The approach adopted to establish the 1 April 2015 data set.
2. The approach used to restate the planned interventions in the NAW.
3. The results of the Equally as Challenging Tests (ECTs).

Each of these are discussed in turn below.

2.14. While we intend to approve SSEN's rebased NAW and target risk delta, we continue to have significant ongoing concerns regarding its data quality. We are satisfied that SSEN's rebased NAW reflects the data available at present. However, there is a strong likelihood that the results of ongoing data improvement exercises<sup>7</sup>

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<sup>6</sup> <https://www.ofgem.gov.uk/publications-and-updates/consultation-modifications-dno-common-network-asset-indices-methodology>

<sup>7</sup> SLC 51 Part F requires SSEN to take steps to improve its asset data quality. SSEN has set out plans to introduce an intervention modelling tool and to collect additional data in its Information Gathering Plan (IGP).

will significantly change Health Indices (HI) profiles and associated intervention requirements. We will therefore require SSEN to undertake another rebasing exercise on conclusion of its data improvement exercises, unless it can satisfactorily demonstrate to us that further rebasing is not required.

2.15. SSEN explained in its commentary that it continues to use its own assessment methodology to determine the need for UG Cable (Oil) interventions. We are satisfied with its explanation but note that during the development of the CNAIM SSEN should have taken steps to ensure that the models were compatible and we require them to propose future changes to ensure this is the case for RIIO-ED2.

## Establishing the 1 April 2015 data set

2.16. Section 2.4 of the NASD Rebasing Requirements and Assessment Methodology sets out the two approaches that DNOs are able to use to establish the asset profiles at the start of RIIO-ED1 (1 April 2015).

### Approach taken by DNOs

2.17. UKPN used data from the start of RIIO-ED1 to determine the Health Index (HI) of its assets. This was achieved by mapping the condition data to the CNAIM using a bespoke set of mapping rules. UKPN used the latest available data from 2016/17 to determine the Criticality Index (CI) of its assets. UKPN then roll forward the CNAIM model by 8 years to forecast the end of RIIO-ED1 without investment profile.

2.18. The other five DNOs all used data sets from after the start of RIIO-ED1.

- WPD used data from the end of year 1 of RIIO-ED1 (31 March 2016) to determine the HI and CI of its assets. It adjusted for interventions during 2015/16 period but did not reverse age the data to account for the year of asset deterioration. Because of this, WPD rolled forward the CNAIM model 7 years to forecast the end of RIIO-ED1 without investment profile and have not reported any deterioration in the first year of RIIO-ED1.
- The other four DNOs (ENWL, NPg, SSEN and SPEN) all used data from year 2 of RIIO-ED1 (2016/17) to determine the HI and CI of their assets. They all adjusted for interventions and rolled back the age of the assets by setting the date of creation of the model to 1 April 2015.

## **Ofgem's view**

2.19. Our view is that all the DNOs have established a data set that is representative of the actual 1 April 2015 position, and we set out our reasoning below.

2.20. The CNAIM requires two types of input data. Firstly, condition information for the assets which determines the HI of the asset, for example, the observed deterioration of the asset. Second is the information which determines the CI of the asset which includes network performance, safety, environmental and financial consequence of failure. UKPN used a hybrid between 2015/16 and 2016/17 data for HI and CI respectively. The condition information required to generate the HI for CNAIM was available in 2015/16. However, some of the criticality information was not available so UKPN used 2016/17 data to populate the CI. This is appropriate because the 2016/17 criticality information can be assumed to be representative of the 2015/16 values given that the information tends to be driven by location and the type of asset, both of which tend to remain fixed where no intervention is carried out.

2.21. WPD did not account for deterioration in 2015/16. Our view is that this is not a material issue and we accept its approach given that the end of year 1 position is correct and it is only rolling forward the model 7 years. We also recognise that during the discussions around reverse ageing the model there were a number of issues identified and a solution to this was only found later on in the process, after WPD had already committed to its approach.

2.22. The other four DNOs have all followed the approach set out in the guidance and in our view their data sets accurately reflect the 1 April 2015 positions.

2.23. Both SSEN and UKPN have adjusted some of their asset volumes to reflect data improvements since the original NAW were approved. SSEN's improvements come as part of its widespread asset data project, while UKPN reassessed its overhead line and cable volumes using more accurate measurement techniques. We are satisfied that both companies have justified the inclusion of these changes in the rebased NAW and that they do not materially impact our assessment. These adjustments mean there is a difference between the 2014/15 Regulatory Reporting Packs and these will be reconciled in the 2016/17 submission.

## **Restating the intervention plan**

### **Approach taken by DNOs**

2.24. When restating the intervention plan in the NAW, the DNOs all used a combination of two approaches; Generic Work Programmes (also referred to as a statistical approach) or Named Schemes.

2.25. Generic Work Programmes (GWP) are interventions that are identified based on historical volumes of work and the forecast HI of the assets. The implementation

of the new CNAIM results in assets moving between HI categories and DNOs have selected equivalent interventions based on the new profiles.

2.26. Named schemes are interventions on specific assets that have been identified in the plan due to a variety of reasons not necessarily driven by the HI category. These named schemes have been retained in the rebased NAW. For example, for the planned replacement of a substation, often the most economic solution is to replace all assets at the site which might include some assets in lower HI categories that would not otherwise need to be replaced. Where named schemes have caused DNOs to fail the ECTs they have, where possible, substituted these assets with equivalent alternatives. Where this approach has not been possible explanations have been provided by the DNOs; these are detailed in the Equally as Challenging Test results section below.

### **Ofgem's view**

2.27. Our view is that all of the DNOs have adopted an appropriate approach to identifying the intervention plan using a combination of GWP and Named Schemes. We provide additional detail in the ECT results section below.

2.28. We are of the view that SSEN has restated the intervention plan in accordance with the rebasing requirements based on its current data. However, the introduction of an intervention modelling tool and the future improvements in condition data will result in significant material changes. These material changes will impact the HI profiles of SSEN's assets, potentially resulting in a shift of assets to higher HI categories as default data is replaced with actual condition data. Any shift in the profiles would potential have meant that SSEN would have selected different assets in the intervention plan. In order to ensure that the target risk delta is based on accurate and complete data, SSEN will be required to undertake another rebasing exercise, unless it are able to demonstrate to us that it is not necessary.

### **Equally as Challenging Test results**

2.29. The ECTs are formed of three tests that are applied to each asset health category. These are explained in full within the published NASD assessment methodology.

1. Test 1 – Statistical test to determine whether the risk points delivered by the planned interventions are equally as challenging as the original NAW.
2. Test 2 – Checks whether the volumes of interventions are the same as the original NAW.
3. Test 3 – Statistical test to determine the percentage of interventions in the lower HI bands compared to the original NAW.

2.30. The ECTs were run for all assets categories and the results are published alongside this document.

2.31. While the DNOs all passed the majority of the ECTs, there are some common issues that arose during our assessment and issues specific to individual companies.

2.32. We intend to accept all of the explanations the DNOs provided and deem the submissions equally as challenging to the original NAW.

### **Common issues**

2.33. **Non-Secondary Deliverable Improvement (Non-SDI) Refurbishment activity** – Both ENWL and SSEN have Test 1 fails for refurbishment of some asset categories as they have removed these interventions from the Rebased NAW. It was originally assumed that those refurbishment activities would generate a SDI i.e. a HI benefit. However, the agreed RIGs Annex A document classes this as a Non-SDI activity meaning the activity wouldn't result in any HI benefit, therefore they have been removed from the rebased NAW. Our view is that ENWL and SSEN have correctly removed these interventions as per Section 2.12 of the NASD Rebasing Requirements and Assessment Methodology.

2.34. **Insufficient HI 3-5 assets** – Test 3 is failed for ENWL, UKPN, NPg and WPD due to a change in the asset profile across HI bands in the rebased NAW. In all cases the failure arises when the DNOs have selected all of the HI 3-5 assets for intervention, but still have additional volumes of interventions remaining. Given the volume of planned interventions should match the original NAW as per Test 2, the DNOs must then continue to select interventions in the HI 2 category, and this causes the DNOs to fail Test 3. Our view is that this approach is equally as challenging given that it is not possible for the DNOs to pass Test 3 due to insufficient assets in HI 3-5 bands.

2.35. **EHV and 132kV OHL Fittings** – ENWL, UKPN, SSEN and SPEN's original submission for Conductor and Fittings was based on conductors only. Fittings are included in the rebased NAW as a new asset category using the volumes of interventions agreed in Final Determinations (FD) of the Business Plan Data Templates (BPDTs). However, the ECTs cannot be run for this asset category. Our view is that this asset category is equally as challenging as the volumes of interventions match the FD BPDTs and we do not have any concerns about the profile of planned interventions.

2.36. **Named schemes** – Test 1 is failed for NPg, UKPN, SSEN and SPEN due to the inclusion of named schemes from the original plan. Our view is that in each case the inclusion of the named assets is justified and we accept these asset categories as equally as challenging based on the commentary provided. We describe these instances in more detail separately for each DNO below.

2.37. **Rounding of asset volumes** – Test 2 is failed for NPg, WPD and SSEN due to the volume of asset interventions being rounded in the original NAW. Our view is

that these failures are immaterial and as the issues are with the original NAW we consider them to be equally as challenging.

### **Company-specific issues**

#### **ENWL**

2.38. Test 1 is failed for asset refurbishment of 132kV OHL Support – Tower in ENWL as under CNAIM assets beyond HI 4 are not suitable for refurbishment. Where assets previously targeted in the original NAW were found to be HI 4, in the rebased NAW ENWL planned to refurbish equivalent lower HI assets. Our view is this asset category is equally as challenging since ENWL is not able to target assets beyond HI 4 and the failure of this test is due to the change in the methodology.

#### **NPg**

2.39. Test 3 is failed for asset replacement of HV Transformers (GM) in both NPgN and NPgY. NPg has failed this test for two reasons; firstly, the CNAIM results in significantly more assets in the HI 1 and 2 bands (see section 2.34). Secondly, NPg has now considered associated asset replacement which was not done in the original plan. Our view is that the explanation is acceptable given that Test 1 is passed by a significant margin. The inclusion of associated assets would reduce the total percentage of risk targeted and passing Test 1 means that in our view the planned interventions are equally as challenging.

2.40. Test 1 is failed for asset refurbishment of EHV OHL Support – Poles in NPgN. NPg has failed this test as the refurbishment interventions have been retained from the original NAW and they are all named schemes associated with a particular asset type. NPg explain that re-running Test 1 on this asset class alone would result in a pass. Our view is that the planned interventions are equally as challenging given NPg's explanation that they are based on a named scheme of work. However, we will apply additional scrutiny to this particular asset category in future performance assessments.

#### **UKPN**

2.41. Tests 1 and 3 are failed for the High Value Projects interventions of 132kV Circuit Breakers in EPN. UKPN has failed these tests as it has retained all of the interventions in the original plan which was associated with a specific type of circuit breaker. Our view is that the planned interventions are equally as challenging given UKPN's explanation. However, we will apply additional scrutiny to this particular asset category in future performance assessments.

2.42. Tests 1 and 3 are failed for the High Value Projects interventions of 132kV OHL Support – Tower and 132kV OHL (Tower Line) Conductor in SPN. UKPN has failed these tests as all of the interventions in the original plan which are associated with the PO route in SPN have been retained. Our view is that the planned interventions are equally as challenging given UKPN's explanation. However, we will

apply additional scrutiny to this particular asset category in future performance assessments.

## **WPD**

2.43. In all cases WPD fails Test 1 because multiple asset register categories are bundled together into a single asset health category. For example, both 33kV and 66kV assets are grouped together within the EHV asset health categories. In the original NAW WPD had planned interventions for some asset register categories but not for others, it has retained this in the rebased NAW. WPD has selected the highest risk assets within the asset register categories that have planned interventions. However, Test 1 is run it is at the asset health category level and WPD fail because asset register categories with no interventions are combined with ones that have interventions which increases the high risk (HI 4 and 5) assets that could be selected. Our view is that the planned interventions are equally as challenging given WPD's explanation as WPD has targeted the highest risk assets at the asset register level as set out in Section 2.11 of the NASD Rebasing Requirements.

2.44. WPD passes Test 2 for all asset categories. However in three instances the volumes of planned interventions have been adjusted to ensure a pass. For EHV Switchgear in SWALES and EHV UG Cable (Gas) in SWALES and SWEST there are insufficient asset population available to meet the volumes of interventions in the original NAW. The additional planned interventions have been selected based on WPD's suggested approach which we have agreed is appropriate. As there are insufficient volumes of assets to deliver these planned interventions we expect WPD to trade the risk associated with the additional intervention volumes across different asset categories.

## **SSEN**

2.45. We note that SSEN uses a version of the NAW which was agreed with Ofgem in May 2015 but never published. This unpublished version of the NAW contained updates to reflect missing PoF details on subsea cables and reduce the volume of interventions for both Subsea Cables and EHV Transformers following RIIO-ED1 Final Determinations. We have agreed SSEN can use this updated version for the rebasing assessment and have published it alongside this consultation.

2.46. Test 3 is failed for HV transformers for both asset replacement and refurbishment in SHEPD. This asset category's interventions are based on generic work programmes and have been selected on this basis. However, SSEN lacks condition data for some of these assets and has identified some HI 2 assets for intervention on the basis of age data alone until further condition information is gathered. SSEN submitted the refurbishment work as part of the original NAW in error as its policy had changed. The work has been retained in the rebased NAW and SSEN intends to trade the risk across other asset categories. Our view is that SSEN correctly kept these assets in the rebased NAW and its proposed approach to trade the risk across asset categories is appropriate. We also accept that SSEN has identified some assets based on aged data alone. However, we note that additional

condition data obtained in the future is likely to have a material impact on the asset profile and reinforces our view that a subsequent rebasing is required for SSEN.

2.47. All of the ECTs are failed for SHEPD's asset replacement of EHV UG Cable (Oil). Tests 1 and 3 are failed due to differences in SSEN's condition assessment process to the CNAIM. SSEN has identified replacement of these cables as named schemes based on its own evidence based approach. Test 2 is failed due to rounding in the original NAW which has been amended. We accept SSEN's explanation for failing Test 2 given that it results in a higher volume of interventions. Our view is to accept the Test 1 and 3 failures given the additional explanation of SSEN's condition assessment process noting that we will apply additional scrutiny to this particular asset category in future performance assessments. We note that during the development of the CNAIM, SSEN should have taken steps to ensure that the models were compatible and we require them to propose future changes to ensure this is the case for RIIO-ED2.

## **SPEN**

2.48. Test 1 is failed for 132kV OHL Support – Towers Asset Replacement and 132kV UG Cable (Oil) Asset Replacement in SPMW. SPEN fails these tests as it has retained all of the interventions in the original NAW as they are named schemes. When calculating maximum risk there are now higher risk assets that are not planned interventions, this results in the test failure. Our view is that the planned interventions are equally as challenging given SPEN's explanation however, we will apply additional scrutiny to this particular asset category in future performance assessments.

2.49. SPEN fails Test 3 for a number of asset categories due to consequential asset replacement or refurbishment as part of named schemes. Given SPEN's explanation our view is that the planned interventions are equally as challenging.

## 3. Next Steps

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- 3.1. We welcome views on the NASD Rebasing Requirements and Assessment Methodology as well as our intention to approve the Rebased NASD Targets.
- 3.2. Please send your responses, preferably by email, to [kiran.turner@ofgem.gov.uk](mailto:kiran.turner@ofgem.gov.uk) by 31 March 2017.
- 3.3. Unless marked confidential, all responses will be published on our website.
- 3.4. Based on the representations made during the consultation period, we will make our decision on the NASD rebasing submissions and the assessment methodology. The timing of our decision is dependent on the outcome of the DNOs consultation to modify the CNAIM.

## Appendices

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## Appendix 1 – Rebasing Assessment Spreadsheet explanatory note

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1.1. This is an explanatory note for the rebasing assessment spreadsheet which carries out the three equally as challenging tests (ECTs) set out in the Network Asset Secondary Deliverables Rebasing Requirements and Assessment Methodology.

1.2. The rebasing assessment spreadsheet is composed of a single “Summary” tab with individual “Licensee” tabs and “Licensee Data Copy” tabs for each licensee.

1.3. The results of each ECT for all licensees are presented on the Summary tab.

1.4. The licensee tab details the full calculations of the ECTs for all asset categories that contribute to the target risk delta. The ECTs are run separately for replacement, refurbishment and High Value Projects (HVP) however, only UKPN have planned interventions for HVP.

1.5. Finally, the “Licensee Data Copy” tabs provide the raw data that has been read in from the DNO submissions. This data are hard coded values in order to preserve the functionality of the spreadsheet. However the next section explains the process that was used to import the raw data.

### **Importing data from the DNO submissions**

1.6. This section provides an overview of how the data from the DNO submissions was imported into our assessment spreadsheet.

1.7. The method used to import the data from each Licensee’s submission is identical and follows the following stages:

1. Data is pulled into a “Raw Data” tab from the company submissions, the information on this tab is later copied to the “Data Copy” tab. We do not present the “Raw Data” tab as the values are identical to the “Data Copy” tab. For both the original NAW and rebased NAW the data used are:
  - a) “End of RIIO-ED1 without investment” – the forecast asset profile at the end of RIIO-ED1 as stated in the NAW,
  - b) “Intervention volumes” – the planned interventions during the RIIO-ED1 period taken from the Additions and Removals file (or NAW in some cases) for Asset Replacement, Refurbishment and HVP,

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- c) "Probability of Failure" – the average Probability of Failure (PoF) taken from the SD Monetised Risk file, and
  - d) "Consequence of Failure" – the average Consequence of Failure (CoF) taken from the SD Monetised Risk file.
2. The data is brought into the rebasing assessment spreadsheet using Excel's OFFSET and MATCH functions.
    - a) The generic form of this formula is:  
  
`=IFERROR(OFFSET([Reference point in target s/s],MATCH(CONCATENATE(" ",$C5),[Lookup array],0)-1,[# rows across],4,5),"-")`
    - b) A specific example in cell D10 for NPgN to bring in the asset population data is:  
  
`=IFERROR(OFFSET('[Network Assets Workbook - NPg.xlsx]NAW2 - Total - NPgN!$B$9,MATCH(CONCATENATE(" ",$C5),'[Network Assets Workbook - NPg.xlsx]NAW2 - Total - NPgN!$B$9:$B$266,0)-1,35,4,5),"-")`
  3. The "Raw Data" tab values are copied into the "Licensee Data Copy" tab to ensure the preservation of the data.

### Running the Equally as Challenging Tests

1.8. This section provides an overview of how the Equally as Challenging Tests are calculated in our assessment spreadsheet:

1. The data from the "Licensee Data Copy" tab is read into the "Licensee" tab with:
  - a) "Asset Population" – read directly from the "End of RIIO-ED1 without investment" profile,
  - b) "Intervention Volumes" – only the removals are read from the raw data tab, and
  - c) "Risk Matrix" – is calculated by multiplying the PoF and CoF values together.
2. The "Maximum Volumes" matrices are determined by ranking the Risk Matrix from highest risk to lowest. The interventions are populated backwards from the highest risk (HI5C4) to lowest until all of the

intervention volumes are assigned. This is carried out using a Macro which is contained within the rebasing assessment spreadsheet. We do not explain how the Macro works in this document as comments are embedded within the code itself.

3. The "Removed Risk Points" is calculated by multiplying the "Intervention Volumes" by the corresponding "Risk Matrix" value. This matrix is then summed to give the "Total Removed Risk Points".
4. The "Maximum Removed Risk Points" is calculated by multiplying the "Maximum Volumes" by the corresponding "Risk Matrix" value. This matrix is then summed to give the "Total Maximum Removed Risk Points".
5. "Test 1a" is run as per the NASD Rebasing Requirements and Assessment Methodology, where:
  - a) Steps 1 and 4 read the "Total Removed Risk Points" for the Original NAW and Rebased NAW respectively.
  - b) Steps 2 and 5 read the "Total Maximum Risk Points" for the Original NAW and Rebased NAW respectively.
  - c) Steps 3 and 6 calculate the "Total Removed Risk Points" as a percentage of the "Total Maximum Removed Risk Points" for the Original NAW and Rebased NAW respectively.
  - d) Step 7 calculates a "Pass", "Fail" or "Insufficient Data" result for Test 1. The test is only passed where the value of Step 6 is greater than or equal to the value of Step 3.
6. Test 1b is only run for refurbishment activity and additional "Asset Population (Test 1b)", "Maximum Volumes (Test 1b)" and "Maximum Removed Risk Points (Test 1b)" are used for this test. The "Asset Population (Test 1b)" profile is the "Intervention Volumes" removed from the "Asset Population" profile.
7. Test 2 gives a "Pass" result where the Total "Intervention Volumes" is the same for the Original NAW and Rebased NAW, otherwise the test returns a "Fail", as per the NASD Rebasing Requirements and Assessment Methodology.
8. Test 3 follows the rebasing methodology, with:
  - a) The "Original NAW % (HI 1,2 & 3)" takes the sum of the total HI 1,2 & 3 "Intervention Volumes" from the Original NAW and then

calculates the percentage of this using the Total "Intervention Volumes" across all HI bands.

- b) The "Rebased NAW % (HI 1 & 2)" takes the sum of the total HI 1 & 2 "Intervention Volumes" from the Rebased NAW and then calculates the percentage of this using the Total "Intervention Volumes" across all HI bands.
- c) Test 3 returns a "Pass" where the "Rebased NAW % (HI 1 & 2)" is greater than or equal to the "Original NAW % (HI 1,2 & 3)".

1.9. Where any questions regarding the functionality of the rebasing assessment arise please contact us.

## Appendix 2 - Feedback on this consultation

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We want to hear from anyone interested in this document. Send your response to the person or team named at the top of the front page.

We've asked for your feedback in each of the questions throughout it. Please respond to each one as fully as you can.

Unless you mark your response confidential, we'll publish it on our website, [www.ofgem.gov.uk](http://www.ofgem.gov.uk), and put it in our library. You can ask us to keep your response confidential, and we'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004. If you want us to keep your response confidential, you should clearly mark your response to that effect and include reasons.

If the information you give in your response contains personal data under the Data Protection Act 1998, the Gas and Electricity Markets Authority will be the data controller. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. If you are including any confidential material in your response, please put it in the appendices.

### **General feedback**

We believe that consultation is at the heart of good policy development. We are keen to hear your comments about how we've conducted this consultation. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?

Please send your comments to [stakeholders@ofgem.gov.uk](mailto:stakeholders@ofgem.gov.uk).