

# Safety, Resilience, and Reliability Working Group

## Meeting 23 – NARM



**RIIO Electricity Distribution**  
12/11/2020

- Welcome and introductions
- Brief update on activities
- Recalibration Values for CNAIM V2.0
- Good Practice Guide for CNAIM V2.0
- Expansion of methodology consultation responses
- Actions, next steps, AOB

**SSMD on programme to be published in December, with exception of Regulatory Finance decisions**

We are delaying all key finance decisions to February 2021. We do not expect this to affect the DNOs' ability to prepare robust drafts of their Business Plans by 1 July



SRRWG & Date	Agenda Items	Key Task Details
<p><b>SRRWG-23</b> 12<sup>th</sup> November</p>	<p>Interaction with the Business Plan Data Templates (BPDTs), cost assessment, CBAs and EJPs</p>	<ul style="list-style-type: none"> <li>- As above.</li> </ul>
	<p>NARM incentives</p>	<ul style="list-style-type: none"> <li>- Review T2/GD2 NARM Funding Adjustment and Penalty Mechanism</li> <li>- Review ED1 NASDs incentive properties.</li> <li>- Develop proposals around the ED2 incentive package.</li> </ul>
	<p>Revision of methodology (CNAIM v2.0)</p>	<ul style="list-style-type: none"> <li>- DNOs to develop and present views on the setting of input values to the methodology.</li> <li>- ENA to provide update on consultation on adoption of CNAIM v2.0.</li> </ul>
	<p>Expansion of the methodology</p>	<ul style="list-style-type: none"> <li>- DNOs to develop and present views on the proposals on the treatment of Non-NARM assets in ED2.</li> </ul>

# Recalibration Values for CNAIM V2.0

**The Voice of the Networks**

**Energy  
Networks  
Association**



**Recalibration Values for CNAIM V2.0**

**Proposed Methodology For Reporting Future (Long  
Term) Risk Improvement**

**12th November 2020**

**Bob Wells**

# Recalibration Requirements - Current Position

- Within CNAIM V1.1 a number of key values were established from publicly available Government data or values used in the Final Determination of the ED1 period for both Fast and Slow track Companies.
- These values all impact the average Consequence of Failure and hence risk score per asset type
- The adoption of Long-term Risk has a material impact on the Methodology and hence values of risk, but these recalibration values only effect quantum value within V2.0.
- The values of these calibration points are used to determine the average GB value of risk per asset type.
- The values used in V1.1 are set to FY12/13 price base as is the remainder of the ED1 determination.
- These values need to be revised to the value of the RII0-ED2 cost base.

# Revision Proposals Made in March 2020

Description	ED1 Value	Proposed ED2 Value	Comments
Asset Intervention Cost	Various	To be revised Post ED2 FD	Source will be Ofgem FD RIIO-ED2
Lost Time Accident	£9,000	£39,732	Source - HSE adjusted by ONS index
Death or Serious Injury to Public	£1,600,000	£2,134,440	Source - HSE adjusted by ONS index
Death or Serious Injury to Staff	£1,600,000	£2,134,440	Source - HSE adjusted by ONS index
Environmental cost per litre of oil	£36.08/litre	£43.30/litre	Source - Defra cost of carbon value with ONS adjustment
Environmental cost per kg of SF <sub>6</sub> lost	£240/kg	£290/kg	Source - Defra cost of carbon value with ONS adjustment
Traded Carbon Price	£10.04/tonne	£20.54/tonne	Source - Defra cost of carbon value with ONS adjustment
Conversion Factor of SF <sub>6</sub> loss c/w cost of carbon	23,900 kg(CO <sub>2</sub> )/kg SF <sub>6</sub>	23,900 kg(CO <sub>2</sub> )/kg SF <sub>6</sub>	Source - Defra cost of carbon value with ONS adjustment
Environmental cost of fire	£5,000	£6,600	Calculation based on - Defra cost of carbon value ONS adjustment
Environmental cost per tonne waste	£150/tonne	£198/tonne	Calculation based on - Defra cost of carbon value ONS adjustment
Cost of CML	£0.38	To be revised Post ED2 FD	Source - Ofgem FD RIIO-ED2
Cost of CI	£15.44	To be revised Post ED2 FD	Source - Ofgem FD RIIO-ED2
VoLL	£18,143	To be revised Post ED2 FD	Source - Ofgem FD RIIO-ED2

- The DNOs recognise that the values of some of the calibration requirements will be subject to further work in assessing the ED2 submissions and are dependent upon the outcome of the SSMC consultation and work beyond
- The values required has a direct influence on
  1. the ability to complete version 2.0 of CNAIM and express values in the ED2 financial base year
  2. The alignment of the values to be used in CBAs and CNAIM V2.0 need to be aligned to the same base values
  3. The ability of each submission per licence to be sufficiently developed in time for the July 2021 draft submission
  4. As 3 above but for the final submission December 2021

- There can be no/minimal alignment between the calibrations for CBA and NARM submission – Foundation blocks of the submission will potentially be open to challenge
- The NARM submission may need to be revised once the values are known (December 2022 after final determination?), hence a further delay in being able to state ED2 targets
- Hampers DNOs in justifying the use of cross asset trading within the NARM methodology.

# Potential Options For CNAIM v2 Submission

- For CNAIM v2 to be used in preparing Draft Business Plan forecasts, use of the methodology shall need to be agreed by the end of December 2020.
- Ideally all CNAIM v2 parameters should be known prior to the Draft Business Plan submission, consistent with the ED2 CBA template, and remain fixed for the RIIO-ED2 period.
- Regardless, all DNOs need to use the same values when creating the Business Plan forecasts to maintain Commonality.
- If the ED2 CBA template values are not known before CNAIM v2 needs to be submitted for approval, the methodology could be submitted with the following options for ‘key parameters’:-
  - Retain the ‘key parameter’ values used in CNAIM v1.1 (but adjusted for price base); or
  - DNOs to take a ‘best view’ of ‘key parameter’ values based on the currently available information.
  - Retaining CNAIM v1.1 calibrations will not capture changes in valuation that have occurred since 2013.
  - A DNO ‘best view’ permits consideration of current valuation (where identifiable).

# Potential Options For CNAIM v2 Submission

- Sensitivity of Issues
  - Safety factor (e.g. cost of a Loss Time Accident) from HSE.
    - ‘best view’ in CNAIM v2 for Draft Business Plan submission, any inconsistencies with ED2 CBA templates are likely to be small where a definitive source for such information is available
  - Environmental Factor - Cost of Carbon from BEIS
    - The BEIS Traded Carbon Price varies significantly for each year of the RII0-ED2 period and also across ‘Low’, ‘Central’ and ‘High’ scenarios.
    - The current values in the public domain issued by BEIS takes no account of the impacts of Zero Carbon but further delay jeopardises the creation of the business plans
    - CNAIM requires a single value to be used, the value in the March 2020 proposal is at the lower end of the potential range, the annual review policy of BEIS indicates that a value at the end of the review period will be more appropriate
    - The adoption of Long Term Risk suggests that the value for the Cost of Carbon should be set at a value appropriate to the later timeline of the period (eg 2028 value)

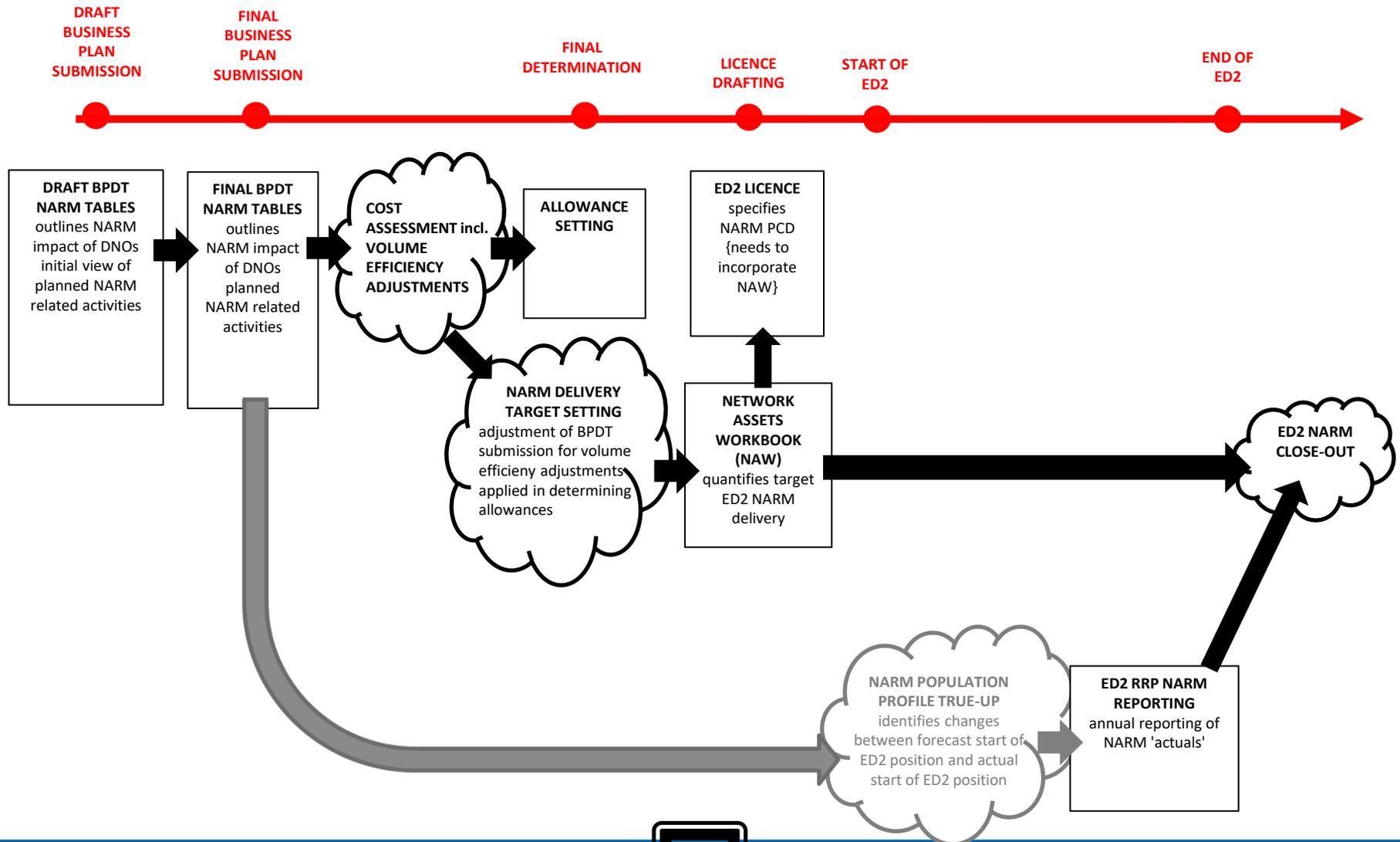
# Potential Options For CNAIM v2 Submission

- Sensitivity of Issues
  - Network Performance (VoLL, Cost of a CI and Cost of a CML etc) These are ‘key parameters’ and have a material affect on the consequences of failure, as Network Performance is a dominant Consequence Category for most asset types.
    - There is a significant risk of inconsistencies with the ED2 CBAs if these parameters are not common in both CNAIM and the CBA templates.

# Potential Options For CNAIM v2 Submission

- Sensitivity of Issues
  - Financial Reference Costs of Failure (i.e. cost of repair/ replacement)  
This is key for CNAIM but not the ED2 CBA template.
    - For CNAIM v1.1, derivation of the Financial Reference Costs of Failure included use of industry typical asset replacement costs based on **Ofgem's Expert View** from RII0-ED1 Business Plan cost assessment.
    - The equivalent costs for ED2 will not be available until after Final Determination.
    - The Financial Reference Costs of Failure include consideration of both repair and replacement costs (weighted based on the likely failure types), with incipient repair costs estimated at 10% of replacement costs (for most asset types).
    - The need for such assumptions around repair costs may outweigh any materiality associated with unavailability of the ED2 'Expert View' of asset replacement costs.

# NARM Timeline



# Changing Key Parameters - After Draft Submission

- The timing of the revision of the calibration values has an impact on the ability of the Businesses to state the risk movements and hence understand and agree their targets for RIIO-ED2
- Ideally a set of calibrations should be available prior to December 2021 to facilitate a full NARM submission.
- A revised set of calibration could be directed post Final Determination and a “true up” could take place
- In determining the approach the following should be considered.
- Note – In preparing the business plan the asset movements to be used to create the NAW cannot formally occur until after the FD.

# Changing Key Parameters - After Draft Submission

- When considering the approach to be taken the following needs to be considered.
  - Assuming that the Draft Business Plans are submitted using either the option of retaining the CNAIM v1.1 ‘key parameters’ or using a ‘best view option’, there may be opportunities to revise these calibrations:-
    - prior to submission of Final Business Plans;
    - following Final Determinations;
    - at the start of the RIIO-ED2 period; or
    - during the RIIO-ED2 period itself.
  - Revision prior to Final Business Plan submission, if these are to be carried out then:-
    - Enables NARM to align with CBAs, supporting justification;
    - ensures risk deliverable more closely reflects Ofgem’s view of accepted valuations (when setting at Final Determination);
    - would not provide greater insight into ‘industry typical asset replacement costs for ED2’;
    - may undermine the validity of the NARM data in the draft plan.

- There are three potential options for this period
- Don't revise any values post determination and use ED2 close-out to align any inaccuracies.
  - To do this we would propose to adopt the format of the ED1 close-out mechanism to carry out the assessments, thus “Ironing out” any issues at the end of ED”
  - This however will see potential wide variations during the period which may require detailed explanation through reporting.
- Revision after Final Determinations:-
  - ensures risk deliverable more closely reflects Ofgem's view of accepted valuations (but the NARM deliverable that will apply in the ED2 period will not be able to be incorporated into the Final Determination);
  - enables ‘industry typical asset replacement costs for ED2’ from cost assessment to be applied;
  - may change view of justification provided by NARM for the Business Plans
- Revision at the start of, or during, RIIO-ED2 period:-
  - as above; and
  - will require a rebasing of the deliverable and any delivery progress in period.

- Is it necessary to rebase the Business Plan to create the NAW post FD, given that changes in the suggested programmes of work can be managed at close-out?
- If an alignment to the FD is required what parameters will need to be involved in the true up?
  - Volume Revision
  - Revision of ED2 start position (Change forecasts to actuals)
  - Revised CNAIM V2 risk values
- In ED1 the rebasing of the NASD resulted in the alignment of the Business Plan to NAW to the FD and ED1 start. If this is carried out in ED2 then there is a potential delay in agreeing the NARM Target
  - If the materiality is small, is that appropriate?
  - Is this necessary as the Business Plan would become the NAW, SDRP reporting and adoption of the Closeout mechanism can manage these issues based on the ability to risk trade?
- A ‘true-up’ of the Business Plan to create the NAW and hence the elements of the NARM target **must not result in the need to re-open the price control** and must be picked up in the Licence Drafting requirements.
- There is a need to consider however the question, Why would a ‘true-up’, be undertaken without a methodology change, requiring a restatement of the NAW? Nothing associated with the changes post FD affect the methodology, simply the calibration, therefore does a post FD True up benefit the process?

- CNAIM v2 needs to be submitted so that its use in the preparation of RIIO-ED2 Business Plans can be approved/ directed – this requires a decision about ‘key parameters’
- Where final values for ‘key parameters’ cannot be determined in time, that will be inconsistent with the CBA template, an alternative approach will need to be taken, either:-
  - Retain the ‘key parameter’ values used in CNAIM v1.1 (but adjusted for price base); or
  - DNOs to take a ‘best view’ of ‘key parameter’ values based on the currently available information.
- Ofgem need to consider the implications of changing ‘key parameters’ following submission of the Draft Business Plan and whether such changes are appropriate for the NARM framework at each stage of the process.

# **Good Practice Guide for CNAIM V2.0**

**The Voice of the Networks**

**Energy  
Networks  
Association**

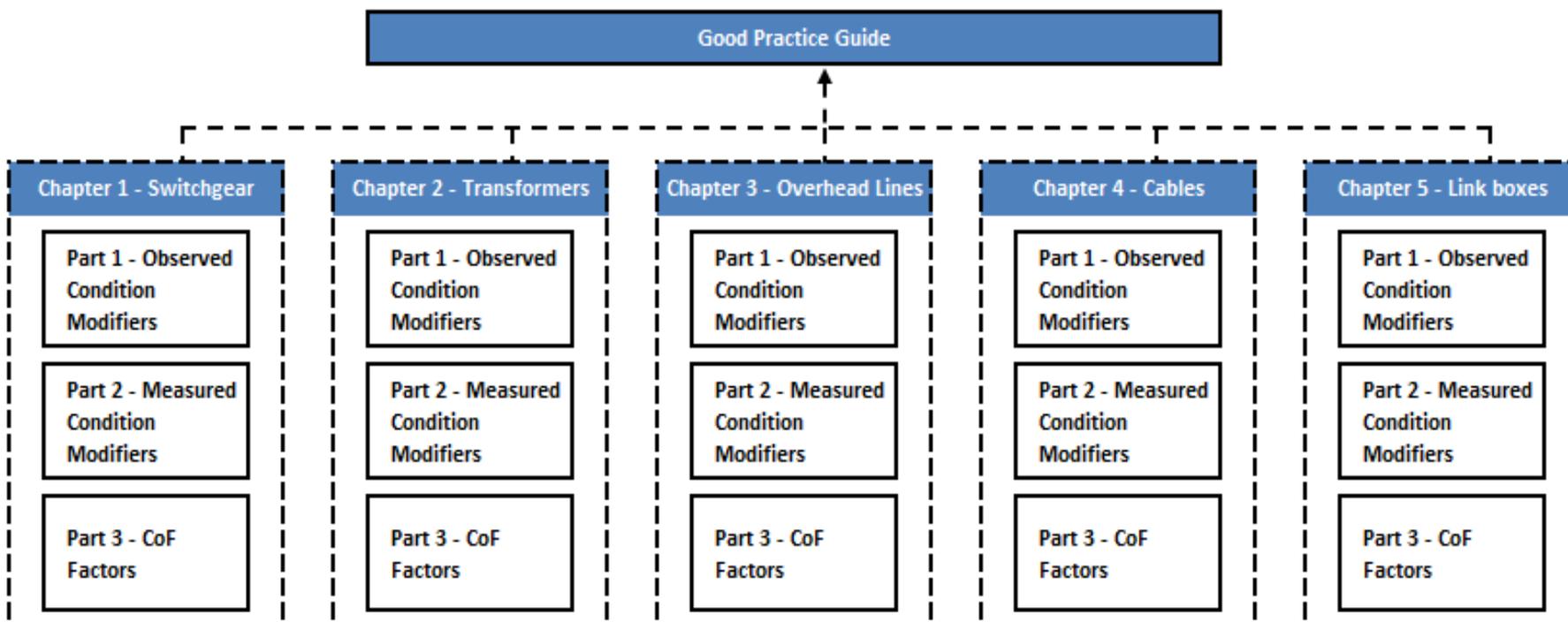


**Good Practice Guide for CNAIM V2.0**

**Revised delivery timeline proposal**

**12th November 2020**

# Good Practice Guide (GPG) - recap



- On 30<sup>th</sup> June 2020 the NOMs ED Working Group (NEDWG) issued its latest working draft of the Good Practice Guide (GPG) via Huddle.
- We have focussed our work to date on the observed condition modifiers associated with ground mounted plant.
- Note that the initial draft was applicable to CNAIM v1.1. Subsequent discussions with Ofgem has confirmed that the GPG should support NARMs in ED2. A small number of updates have been identified and scoped (e.g. to address new condition modifiers introduced by CNAIM v2.0).
- Recognising that there are also some gaps in our initial submission (e.g. guidance around tap changers) we have been continuing to expand the GPG:
  - To cover other asset groups (overhead lines, cables, link boxes)
  - To cover other input types (measured condition modifiers, consequence of failure)

# Revised Delivery Proposal

- The initial delivery for the GPG associated with Ground Mounted plant has substantial been delivered (See previous slide)
- The delivery requirement for the remaining GPG's is for them to be ready for use by the start of RIIO-ED2
- The business priority for the next period is to create and deliver their business plans for the RIIO-ED2 period
- In order to minimise potential conflicts between the creation of the remaining GPGs and the RIIO-ED2 Business Plan, NEDWG proposes a revised delivery timetable for the GPG project.
- The revised time table is designed to meet the Ofgem timeline for the work.

Task	Key Activities	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4																
ENA development of CNAIH Good Practice Guide	Good Practice Guide - external condition and leaks for substation assets																				
	Good Practice Guide - all condition points for substation assets																				
	Good Practice Guide - all condition points for all assets																				

→ throughout RIIO-ED2

# Proposed timeline

- Initial drafts
- NEDWG review and approval
- DNO internal approval
- Document drafting
- Enabling works

“enabling works” – low resource burden      “document writing and review” – high resource burden

Good Practice Guide (GPG) section		Pre-Oct '20	Oct '20	Nov '20	Dec '20	Jan '21	Feb '21	Mar '21	Apr '21	May '21	Jun '21	Jul '21	Aug '21	Sep '21	Oct '21	Nov '21	Dec '21	Q1 2022	2022 -23	ED2					
Part 1 - Observed Condition Modifiers	Chapter 1 - Switchgear		Submitted to Ofgem 30 <sup>th</sup> June 2020			<i>Source and produce (further) worked examples</i>																			
	Chapter 2 - Transformers					<i>Source and produce (further) worked examples</i>																			
	Chapter 3 – Overhead Lines					<i>Source and produce (further) worked examples</i>																			
	Chapter 5 – Link Boxes					<i>Source and produce (further) worked examples</i>																			
Part 2 - Measured Condition Modifiers						<i>Table/input review to establish requirement for further guidance</i>																			
Part 3 - COF						<i>Table/input review to establish requirement for further guidance</i>																			
Final document																									
Publication																						1 <sup>st</sup> April 2022			
Trial implementation																									
DNOs adopt principles of good practice guide																									

- We now propose to use Q1-Q2 2021 to:
  - Source additional worked examples of assets in various states of degradation through BAU activity (e.g. routine maintenance)
  - Consider the requirement for additional guidance for Measured Condition Modifiers and CoF factors.
- During September and August 2021 we will complete further drafting of the GPG to cover all Observed Condition Modifiers as per the original request from Ofgem.
- We have planned for a break in production until after the Final Business plan submissions.
- During Q1 2022:
  - We will produce additional guidance material on an as needs basis for Measured Condition Modifiers and CoF Factors.
  - We will produce and publish a final draft of the GPG.
- The proposed timeline enables the final year of ED1 to be used by DNOs to review practises and processes in response to the GPG, ahead of use of CNAIM v2 in ED2 reporting.

## **Expansion of methodology consultation responses**

- In the SSMC we set our ambition is to improve coverage of the CNAIM, setting out the following three high-level options as potential approaches to setting outputs for the Non-NARM assets not covered by the methodology:
- **Option 1:** Multi-asset Volume Driver
  - Input-led multi-asset volume driver.
- **Option 2:** Notional Risk Weighting
  - Application of some of the underlying principles of the CNAIM, by assigning 'typical' values of PoF and CoF to Non-NARM assets.
- **Option 3:** Fault Rate Measure
  - Use of a Fault Rate measure that was last used in DPCR5

- Option 2, Notional Risk Weighting – Whilst there could be merit in a framework like this, the practicalities of developing one that accurately captures appropriate values of risk for these Non-NARM assets is not achievable before the start of RIIO-ED2. Licensees are already developing their plans internally ahead of initial submission in summer 2021 and as a result there is simply not enough time to create reliable risk models that have been robustly tested with appropriate IT systems developed to support this implementation. Rushing this through without due consideration and testing runs the risk of inaccurately capturing the risk reduction associated by asset replacement and refurbishment activities. Furthermore, depending on the risk values associated with asset interventions it could cause unintended consequences/gaming of risk trading of assets between NARM and Non-NARM assets.
- Option 3, Fault Rate Measure – We agree with Ofgem’s assessment of this option and believe this lagging output measure that is not directly linked to asset replacement or refurbishment expenditure, is not worth considering.
- Instead, we believe Option 1, Multi-asset Volume Driver, or similar, is the most appropriate way to attach an output to Non-NARM assets and provide adequate protection to licensees and consumers.

- Instead, we believe Option 1, Multi-asset Volume Driver, or similar, is the most appropriate way to attach an output to Non-NARM assets and provide adequate protection to licensees and consumers.
- We believe that the Non-NARM intervention volumes agreed by Ofgem in final determinations should have a set efficient baseline unit cost per asset per intervention with an ex-ante allowance to deliver these plans. Within period licensees are then free to deliver the plan or indeed amend their plan based on appropriate asset management and engineering decisions. At the end of the period, Ofgem can consider a licensee's delivery against the original plan, and if deviation from the plan is appropriately justified, Ofgem can adjust the final allowances using the agreed unit cost to ensure only justified delivered work is appropriately funded. Ofgem may consider the use of a deadband at an asset, voltage or network level to avoid regulatory burden for small differences in actuals verses planned volume delivery.

- In RIIO-ED1, no specific outputs or delivery targets were attached to the approximately 30% of expenditure allowances for asset health which, in turn, accounts for about 20% of overall allowances. This has made it difficult to assess whether DNOs have been delivering volumes of work funded and could lead to material consumer detriment. It is necessary this is not repeated in RIIO-ED2.
- We note the intent to reduce the percentage of asset health expenditure which will not be within the scope of the Network Asset Risk Metric(NARM)to 25%, but which will still be material. As such, we welcome outputs being attached to this proportion of asset health expenditure. At this stage, do not believe there is merit in pursuing developing a parallel risk-based approach for this subset of assets; it would be more efficient to expand the scope of the NARM and resolve any implementation issues ahead of RIIO-ED3.
- We also comment on the general features of the proposed NARMs framework. In our response to RIIO-2 Draft Determinations for the transmission and gas distribution companies, we highlighted the significant implementation risk associated with the NARM mechanism-companies can make large gains by switching investment between asset categories, between schemes, or between types of intervention. Providing expenditure allowances to deliver a given network risk benefit despite there being no relationship between asset costs and the unit cost of risk benefit, which is a theoretical construct, remains problematic. This disconnect is likely to create the opportunity for windfall gains or losses, neither of which is in consumers' interests.

- We believe that the current definition of assets within CNAIM is appropriate both in terms of the types of equipment where the costs of proactive management (inspections, maintenance etc.) are justified and in the quantum of the risk being managed. For those assets where this is not the case, and which are typically managed on a fix-on-fail approach, the appropriateness of future volume forecasts can be assessed with reference to several parameters including trend volumes, comparisons with other DNOs etc. We agree that fault rates can be an indicator, but they are high level, trailing and influenced by other factors as noted in the consultation.
- We support exploring Option 2 to look at how the principles of risk assessment can be applied to these asset types without collecting the granular asset-specific data required for CNAIM. We believe there are open source data and emerging analytic techniques that will enable us to explore this area for RIIO-ED2, however this is unlikely to be directly comparable with CNAIM itself in the short-term. This is also an area where EJPs may be a useful source of evidence to explore the engineering rationale behind proposed volumes.

- Future expansion of the asset categories covered by NARMs, beyond those covered by CNAIM, requires careful consideration.
- Non-NARMs assets typically are asset categories where insufficient data is available to implement the type of probability of failure and consequence of failure evaluation described in the existing CNAIM methodology. To extend the NARMs framework to these categories, it may be necessary for alternative risk modelling approaches to be developed that are complementary to the NARM metric, or alternatively the framework itself may need adaptation.
- The fault rate measure (option 3) can only be viewed as a 'backstop' measure being a lagging output measure that is influenced by other areas of expenditure other than asset replacement and refurbishment. This means that it most likely would be fairly ineffective unless significant variances in the Non-NARMs asset replacement and refurbishment activities occur.
- Both the multi-asset volume driver (option 1) and the notional risk weighting (option 2) options are input led. The multi-asset volume driver has potential to create a hard boundary between NARMs and Non-NARMs expenditure areas that may limit the capability to direct asset replacement expenditure appropriately to areas of need that emerge during the price control period.

- Ofgem proposes options that appear to include, as option 3, extending a volume driven framework to non-NARM asset classes. If we have understood correctly, this is astonishing, as it implies that Ofgem may be proposing to remove incentives for good asset management from virtually the whole price control settlement (since companies would be in effect held to the volumes in their plan). Option 2, an attempt at a framework that allows trading off assets in a NARMs category with a non-NARMs category appears to have the same property. Option 3, fault rates, at least focusses on a measure of an outcome; although it is captured in the IIS incentive (to the extent it impacts customers) and was removed from ED1 for good reasons.
- Ofgem correctly recognises the disadvantages of these options. However, it then goes on to say it may need to use uncertainty mechanisms – without providing further details. If the uncertainty Ofgem is referring to is the volume of activity the DNOs will actually undertake, this exemplifies everything that is wrong with Ofgem’s approach to RIIO-2; at every turn seeking to prevent any risk of outperformance, and in doing so removing the very incentives that Ofgem’s original RIIO framework intended to keep the cost of the low carbon transition low.
- Instead, Ofgem should use its cost benchmarking, and, in particular, totex benchmarking, to establish appropriate baseline allowances, and then let its cost efficiency incentive act on volumes and not just unit costs. In effect, this is the current framework, or the “do nothing” option. To do otherwise will cause a gradual creeping inefficiency, that will cost energy consumers significant amounts in the longer term.

- The complexity in developing these alternatives, and the available timescales to do so, risks undermining the approach and introducing divergent practices between companies. We also note that this proposal is the lowest in Ofgem's prioritised list of NARM developments, that these assets contribute a small proportion of typical investment and they are often justified under separate programmes of work e.g. PCB removal for Pole Mounted Transformers. As such we propose the continued use of TIM for ED2 and welcome the intention to create a roadmap to expand the methodology for ED3.
- We are concerned that Ofgem has not provided sufficient information on how a non-NARM asset re-opener would operate in order for us to provide a full response and enable Ofgem to reach a decision at SSMD. Given the tight timings associated with the publication of SSMD in December 2020, we would urge Ofgem to consider retaining the current status quo as an alternative. We consider that this approach could be retained for RIIO-ED2, with the aim of developing the framework for non-NARM assets for RIIO-ED3. This would enable Ofgem and the DNOs to work together to further develop options for the treatment of these assets, recognising the challenges associated with collecting condition data.
- This detail could be incorporated into a published roadmap for the development of CNAIM during RIIO-ED2 for ED3 and beyond incorporating all remaining asset classifications in the appropriate way as outlined during the Safety Resilience and Reliability Working Group presentations already made by the ENA working group.

## **Actions, next steps and AOB**

- Is another meeting required ahead of the SSMD
  - How do we progress work in 2021
- We will circulate notes and an actions log from this meeting.

**Our core purpose is to ensure that all consumers can get good value and service from the energy market. In support of this we favour market solutions where practical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.**

**We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.**