

National Grid Gas Transmission (NGGT) Consultation Response on Network Asset Risk Metric (NARM) Regulatory Instructions and Guidance (RIGs) and NARM Regulatory Reporting Pack (RRP) to apply during RIIO-ET2, RIIO-GT2, and RIIO-GD2

We welcome the ongoing engagement with Ofgem and other networks on NARM, and the collaborative way in which issues relating to this new element of asset risk management are being resolved. We would welcome continued open and transparent engagement with Ofgem after this consultation has closed. We have highlighted in our response where we are seeking further clarity on the completion of some of the data required as part of the annual RRP (see section on RIGs below).

Please note that we have also submitted a separate issues log highlighting errors we found in the NARM RRP tables while reviewing the tables as part of this response and we have also added any clarification we are seeking to be included in the RIGs (which are also detailed below). Given we have not yet completed a dry run of our 2020/21 RRP submission we have in best endeavours tried to find any errors/snags in the template. We are aware that some errors will only be found during a dry run, a number of lookup and data validation errors would not be evident on a superficial examination.

Consultation Area	Comments
General	<p>As highlighted in the consultation, Ofgem are attempting to improve the interlinkage of the NARM RRP with the sectoral cost and volume RRP. For NGGT the cost and volumes RIGs and tables have been published for consultation on the 14th December 2021 and we will carry out a review and test the proposed interface sheet as part of the dry run for our 2020/21 NARM RRP.</p> <p>It is not always clear what use Ofgem intends to make of some of the requested data. A short statement of the intended use of each data table would be welcomed. In particular:</p> <ul style="list-style-type: none"> • The intended use of monetised risk banding in the tables. • The reporting of absolute levels of monetised risk as NGGT does not have an absolute monetised risk target, nor a customer commitment to (for example) “keep monetised risk levels stable”. • The detailing of investment drivers in tables N3.XX (column C), in particular. <p>We would welcome further engagement on the proposed structure for the Schema, in particular what the unique identifier would be. Some clarity if the intention would be that a unique identifier would be based around assets or the unique asset and intervention definitions (UIDs) and if this would mean that we in future provide a single data table of assets/UIDs and then the equivalent of this table would be described by automation. We also need to highlight, as we did before, that we wish to move to our new ISO14224 standard asset definition prior to RIIO-3, which will require a change to our current Secondary Asset Class (SAC) and UID based approach. We plan to communicate this intention more fully to Ofgem during 2022.</p>
RIIO-2 Regulatory Instructions and Guidance (RIGs) for Network Asset Risk Metric (NARM) Tables – for Electricity Transmission, Gas Transmission, and Gas Distribution (Version 1.0)	<p>Unless otherwise stated (or where a data requirement is new for this NARM RRP table) we will interpret column headers in the same way as we did for the NARM business plan submissions in December 2019 (e.g. Item/sub-component in N1.2). For constants/fixed values (such as the Expected Life of Intervention in N.12) we will use identical assumptions or else report differences in the accompanied narrative.</p> <ul style="list-style-type: none"> • There are interchangeable references between the NOM and NARM methodology throughout the RIGs, which needs to be corrected as

these are not the same thing. After Ofgem approval of our NARM methodology our NOMs methodology will essentially be superseded.

- Paragraph 1.2: The NARM metrics (long term risk benefit (LTRB) and unit cost of risk (UCR)) do not measure a company's ability to "ensure that the risk to consumers is maintained within reasonable bounds" and we believe this statement is possibly misleading. NARM in RIIO-2 measures the LTRB delivered by investments and UCR is measuring the efficiency of delivering that benefit, **but provides no indication of the actual level of network risk** (measured by an impact on customer service levels). Monetised risk does not directly correlate with customer service risk (i.e. degraded service levels), it weights different categories of risk (e.g. safety and environmental) to inform better economic analysis of investment options. This will indirectly ensure that companies do the work that minimises customer service risk, but it is possible that an economic outcome will let customer service risk levels increase over time. More appropriate wording may be: "*NARM ensures companies are incentivised to work that delivers the maximum long term risk reduction value to customers. This encourages long-term asset management thinking and discourages pursuit of short-term profit, which could lead to a degradation in network performance*".
- Paragraph 1.8 (bullet 11): Some probabilities of failure are very low and a 3dp limit is likely to generate many 0.000 entries which are not useful or informative. We suggest changing the requirement to 3 significant figures (i.e. 0.00000153 and 0.153 are allowable entries). In general, all requirements for decimal places should be changed to significant figures.
- Paragraph 1.9 (bullet 13): For NGGT all intervention volumes will be whole numbers as it is not possible to intervene on partial assets. In our business plan data tables, some partial volumes were presented where expenditure crossed RIIO-2 and RIIO-3 periods and a partial volume was needed such that unit cost x volume was equals the requested RIIO-2 allowance (per UID). There is an inevitable lag between project spend and outputs delivery, which means a simplistic expenditure/volume calculation to derive a unit cost is not possible without use of partial volumes.
- Paragraph 1.15: We have created a new LTRB Supporting Document within our NARM Methodology (submitted to Ofgem for approval on 1st September 2021). Rather than restate how we have calculated LTRB as requested we will refer to this document (if agreed with Ofgem) or resubmit the document alongside RRP, if this would be helpful.
- N0.5: There are 100's of constants used for NARM analysis. Could Ofgem please specify as to which constants are required (e.g. cost of carbon) and require us to reference where in the NARM Methodology this is documented.
- N1.1 (and subsequent sheets which link to N1.1): We interpret this as being the number of interventions carried out on the network, not the number of assets intervened upon. As discussed extensively during the RIIO-2 SQ process, it is possible to undertake multiple interventions on the same asset (especially if the asset "unit" is quite large, such as an electrical system). As per RIIO-1 we will use the same asset counts as described in the old RRP table 6.6, i.e. with some variances in the count by SACs, but generally a specific measure or per site.
- N1.3: NGGT do not report specific projects, so we will report by UID as the Ofgem Project/Scheme Reference (column C).
- N1.3: The RIGs are not clear whether this tab refers to actuals or forecasts monetised risk positions. Most logically it would appear to be the forecast for the end RIIO-2 position at the time of the RRP reporting year. This requires further clarification in the RIGs. If actuals

(i.e. delivered to date) are required, we would suggest there need to be a separate tab for the current year and end RIIO-2 positions.

- N1.3 Funding Category (column D): As previously discussed with Ofgem we cannot calculate risk values for the “NARM B” funding category and do not intend to include them in this table (these SACs are not part of agreed 37 SACs used for RIIO-1 rebasing and RIIO-2 target setting). The NARM A2 funding category contains load related investments (including Cyber and Customer projects, asset additions and removals not driven by Asset Health expenditure), which are not funded via Asset Health (NARM allowances or non-lead Asset Health allowances). We require clarity through the RIGs if these need to be reported each year through RRP. We had previously assumed that these would be included as a true-up to the total network risk position prior to RIIO-3 submission. The “NARM” prefix in this funding category column is misleading as it includes investments that are not part of the NARM Mechanism – A1, A2 etc. would suffice (column D).
- N.1.3: Delivery Date (column L) is not relevant for NGGT UIDs as these will be used/delivered throughout RIIO-2 and so this will be left blank. Phasing of costs and outputs can be seen in the relevant cost and volume tables.
- N2.1 (and N2.3-N2.8): Average Risk is not an ideal metric to use due to the non-normal distribution of PoF, CoF and Risk within individual asset categories (as we demonstrated through RIIO-1 rebasing as we calculate values for individual assets prior to banding). A more appropriate metric may be the Median Risk which is less influenced by high/low outliers. We have noted that this as this is a calculated field, dividing the Total Monetised Risk for an Asset Category by the Total Volumes for the same Asset Category. **As we pointed out for RIIO-1 rebasing (and was agreed with Ofgem), this will not give reliable results due to the non-normal distributions of PoF, CoF and Risk as mentioned previously.** We should be allowed to use the individual values available for each asset in the Asset Category and ideally report ideally the median value (but the average based on all assets could be reported if necessary).
- N2.2: As discussed for rebasing, Monetised Risk is not a relative metric (as were the old Health and Criticality bands), it is an absolute risk metric based on real, per-asset valuations. Accordingly, banding is an arbitrary exercise. We will adopt the approach for PoF, CoF and Risk banding agreed with Ofgem for RIIO-1 rebasing and RIIO-2 NARM submission. These bands will be fixed for RIIO-2 but may need to be changed through any subsequent NARM rebasing process (i.e. if NTS risk has doubled, and/or the risk distribution between asset categories has changed, post-rebasing due to a data/assumption change, then the bandings clearly need to re-defined). We also assume that Ofgem intend for these bands to be fixed for RIIO-3 (notwithstanding any necessary rebasing activity). These bands will be generated based on our actual asset distribution at the start of the period, and further note that some asset interventions will not cause a movement between bands as the asset will move within its band.
- N2.6-N2.8: We do not have System Risk in our NARM Methodology. As per previous submissions we will assume System Risk is the sum of Availability/Reliability Risk and Societal Risk unless instructed otherwise.
- Page 14: For NGGT, SACs are Secondary Asset Classes.
- Paragraph 3.2: There is no tab 1.4.
- N3.00 (and all N3.0x tabs): We are not clear why Ofgem need to understand the ‘Monetised Risk (R£m) With and Without Intervention’ positions, especially with the detailed analysis of the reasons for the changes. We do not have an absolute monetised risk target in RIIO-2 and our funded business plan does not seek to achieve specific £Rm

outcomes. It is possible we could deliver our NARM LTRB target and be significantly higher or lower than our £Rm position. We had no intention to monitor or articulate the reasons for these £Rm changes as it is not considered in our investment targeting or prioritisation approach. We would request further discussion with Ofgem as to the purpose and intended use of absolute monetised risk reported values. These are the most onerous tables to complete (especially as NGGT have 37 Asset Categories, some of which contribute a tiny proportion of overall NTS monetised risk). Therefore, we suggest these tables would serve a better purpose if they focused on changes impacting on LTRB outcomes (LR£m) and not Monetised Risk (R£m). Specific comments:

- All references to LTRB should use units of LR£m, not R£m.
- As mentioned above, clarification is required, if changes in R£m and LR£m for load-related intervention is required or if these are simply placeholders. As mentioned previously we had assumed these were required as a true-up prior to RIIO-3 reporting, not an annual data collection requirement. Valuing the R£m and LR£m of new assets requires some approximations and further work is required to improve this approach prior to RIIO-3.
- Some of the “factors contributing to risk changes” would benefit from more explanation to help networks decide when to use them, or not. We suspect there is some overlap between these categories. We intend to apply these very simply, consistent with our RIIO-2 business plan NARM submission.
- ‘Data Revision’: In RIIO-2 we have already identified an asset missing from our RIIO-1 asset list used for rebasing and target setting. Our interpretation of the RIGs is that we can include this asset in our reporting, using the ‘Data Revision’ risk impact cells. This would obviously be recorded in the table narrative accompanying our RRP submission. We would like to discuss with Ofgem, if there is an opportunity to include this directly in our NARM target following necessary rebasing following the Asset Health reopener submission, as a true-up which means it frees up LTRB for risk trading if desirable to do so.

NARM Regulatory Reporting Pack (RRP)

- Alignment with RIIO-1 end position and RIIO-2 start position (note: all prices are in 2016/17 for ease of reference to NGGT RIIO-1 closeout submission): As part of the RIIO-1 closeout we submitted two Delivery tables in Tab 3.2_Delivery_GT, while our assessed end position came from the bottom table of the two, as RIIO-1 load related assets were discounted through normalisation (i.e. new additions from customer connections). Our RIIO-2 start position is equivalent to the top table for a total start of period monetised risk position of R£5,535,464.43, with our end of RIIO-1 position used for closeout being R£5,530,649.0. The R£4,815.4 difference is the value in Year 8 of RIIO-1 of the assets added to the network in RIIO-1 through load-related interventions and can be seen in normalisation as the “Impact of Change in the Asset Base in RIIO-1”. Could Ofgem please confirm if this aligns with Ofgem’s understanding of how we should be considering the end RIIO-1, start RIIO-2 position.
- Our RIIO-1 closeout monetised risk data is in 2016/17 prices as stated above, this will need to be uplifted to 2018/19 prices for the RIIO-2 RRP requirements. Our volumes will align to the RIIO-1 closeout volumes.
- Could Ofgem please confirm, if we can hide the unneeded N3.XX tabs once the sheet is populated.
- The header of table N0.5 is wrong (it is called N0.6 not N0.5).

- N1.2: N1.2 – are Ofgem expecting that we define our SACs at a lower level or that we align these asset measures with the UID components, i.e. would you look to have us report at a SAC 43 level, locally actuated valve, or would you expect LAV – actuator, LAV – Ball Valve. I assume as it will match the NARW and the BDPT it would be at SAC level.
- N1.2: Column D – the data validation has no reference it is simply = #REF.
- N3.XX: Cell W33 and equivalents, the summation for counts is double counting so often that the final total before intervention is just the start position returned. We think it should be end of RIIO-1 position + revised deterioration + methodology changes + all the other points. Overall, the calculation looks like it accounts for the same thing too many times. See screen shots below to illustrate the point.
- N1.3: Can we either have years demarked in this template as additional columns or can we have an extra 600 lines as we have ~163 UIDs in NARM
- Above Ground Pipework, its measure is not in km, this should be a #. Further we will assume that measures per site per SAC are aligned as per RIIO-1. Further, as per previous RRP, we will assume asset counts are the same per Primary Asset class as before. This means SAC 33 is only km for pipelines.
- N1.1: The units do not update when NGGT is selected.
- Tab N0.6: Could Ofgem confirm, if it would be possible to link the asset categories to our 'original' SAC numbers (keeping the numbering despite the 10 B asset categories, which have been removed for NARM). This will make it easier to populate efficiently as our code would only have to look up against the SAC number once rather than try to match it each time. Please see below the 'original' numbering vs the numbering currently used in the template.

SAC Name	'Original' SAC Number	RRP Ref Number
Cladding	1	1
After coolers	2	2
Air Intake	3	3
Exhausts	4	4
Boundary Controllers	5	5
Cab ventilation	6	6
Fuel tanks & bunds	13	7
Compressor	14	8
Cathodic Protection	15	9
Electrical - including standby generators	16	10
Electrical - safe shutdown	17	11
Filters and Scrubbers (incl. Condensate Tanks)	18	12
Fire and gas detection	19	13
Fire Suppression	20	14
Flow or pressure regulator	21	15
Gas analyser	22	16
Gas Generator	23	17
Metering	27	18
Fuel gas metering	28	19
Network control and instrumentation	29	20
Odourisation Plant	30	21
Pig Trap	31	22

Above Ground Pipe and Coating	32	23
Below Ground Pipe and Coating	33	24
Power turbine	34	25
Preheaters	35	26
Station process control system	36	27
Unit Control System	37	28
AntiSurge System	38	29
Starter motor	40	30
Vent System	41	31
Electrical variable speed drive	42	32
Locally actuated valves	43	33
Non Return Valve	44	34
Remote Isolation Valves	45	35
Process valves	46	36
Slam shut	47	37

N3.XX, further notes on points raised for clarity:

	Units: #			1	
	R1	R2		R1	
Total Volume: Mo	9.0	2.0	Total Volume: M	9.0	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	9.0	2.0	#	-	
#	7.0	2.0	#	9.0	
#	-	-	#	7.0	
#	-7.0	-2.0	#	7.0	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-7.0	
#	ave detroriate		#	-	
#	-	-	#	ave detroria	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	9.0	2.0	#	-	
#	-	-	#	9.0	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	-	-	#	-	
#	9.0	2.0	#	-	
	2		#	9.0	
				2	

(All numbers are indicative and not final- this is a work in progress sheet for populating the template when required.)

Note the two formats neither of which give the expected answer of 2, we start with 9 assets, 7 should deteriorate in the period (NGGT has not changed its deterioration assumptions so the original would be the same as the revised). There are no additions or removals, so we would expect the final and preintervention total to be 2, but in both cases, it is 9.

This problem persists through all N3.XX tabs and is common for all aspects of the table, MR, POF volumes and MR volumes.

Excel screenshot showing a spreadsheet with columns for Risk (R2-R10) and Volumes (R1-R9). The formula bar at the top displays: $=SUM(W\$20:W\$21)+W\$23+SUM(W\$25:W\$32)$. The spreadsheet includes a 'Total' column and a 'Monetised Risk Banding' section. A formula bar at the bottom shows: $=W\$22-W\21 .

			Volumes		Volume: Monetised Risk Banding					
			Units	No.	Units	R1	R2	R3	R4	R5
9	R9	-	#		#	9.0	2.0	1.0	1.0	-
10	R10	0.011661	#		#	-	-	-	-	-
	Total	0.014780	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-
		0.0	#		#	9.0	2.0	1.0	1.0	-
		0.0	#		#	7.0	2.0	1.0	1.0	-
		-	#		#	-	-	-	-	-
		-0.0	#		#	W\$21	-2.0	-1.0	-1.0	-
		-	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-
		-	#		#	ave detrriorated vs baseline year 8				-
		-	#		#	-	-	-	-	-
		-	#		#	-	-	-	-	-