NERA

Gas Network Premium (GNP) and Additional Cost of Borrowing (ACB) for GD/GT3

A report for the gas networks

19 August 2025

Redacted version

Wales & West Utilities Limited ("WWU") has a fundamentally different approach to Ofgem in relation to determination of the cost of debt allowance and this is subject to a Judicial Review process where the hearing is expected to take place before the High Court in October 2025. In the process of completing this report, WWU provided data to NERA to enable NERA to establish a position for the gas cohort for which Ofgem proposes an allowance for cost of debt for GD3. The provision of the data and WWU's involvement in this report is entirely without prejudice to WWU's legal position in the forthcoming Judicial Review and any remedies which are sought by WWU in those proceedings.

Contents

1 Summary

Scope of Work and Summary of Analysis (1/2)

- NERA were commissioned by the gas distribution networks (GDNs) and National Gas Transmission (NGT) to assess Ofgem's RIIO-3 Draft Determination (DD) in relation to the Gas Network Premium (GNP) and Additional Cost of Borrowing (ACB).
- For GNP (section 2) Ofgem assumed a GNP of 25bps relative the average of the iBoxx A and iBoxx BBB non-financial 10+ corporate index. By contrast, our analysis shows:
  - In calculating GNP, Ofgem has used issue date data instead of pricing date data for 3 bonds in its sample yet pricing date for all others. Consistently using pricing date, we estimate a GNP of 31-32 bps or 32-35 bps, if we further exclude 2 short tenor bonds which will not reflect GNP over RIIO-3
  - Aligning with Ofgem's approach at RIIO-2, we estimate a GNP calculated as the gas network spread less the iBoxx spread of 45 bps. Our estimate is higher than Ofgem's DD of 25 bps, as we correctly control for tenor and draw on a wider sample of bonds
    - At RIIO-3, Ofgem's approach in effect restricts companies to issue in line with the tenor of around 12 years, i.e. average tenor of Ofgem's GNP sample of 14 debt instruments. By contrast, our approach, consistent with Ofgem's position at RIIO-2, controls for tenor differences in the sample and the iBoxx, and leaves tenor decisions to companies – noting that any benefit from shorter tenors are passed-through to customers at each price control through the calibration exercise
    - Whereas the calibration exercise fully appropriates any tenor optimisation to customers, ACB cost performance is not shared with customer and therefore gas networks must be funded at review for the expected tenor – as we do so for our ACB estimates
- For ACB (section 3), we estimate an ACB of 44 bps, plus infrequent issuer premium of 6 bps compared to Ofgem's estimate of 25 bps. The difference arises because:
  - 1) Transaction Cost: Ofgem states that shorter-tenor bonds tend to incur lower costs and sees no reason to increase its allowance of 7bps to allow for gas networks' expected shorter tenor at RIIO-3. We show Ofgem's statement is wrong – that t-costs, when correctly expressed on an annuitized basis and as a % of debt issuance, increase for shorter tenor bonds and we estimate a marginally higher t-cost of 8 bps
  - 2) Liquidity Cost & Cost of Carry: We estimate a cost-of-carry and liquidity allowance of 31 bps, higher than Ofgem's 15 bps, principally because we take account of greater refinancing requirement from shorter tenor debt and we assume a higher iBoxx-cash spread over RIIO-3, whereas Ofgem's approach is backward-looking
  - 3) CPI/H basis risk mitigation allowance: Ofgem has proposed a CPIH basis risk mitigation of 3bps, based solely on its assumption that companies incur RPI-CPI swap costs of 15bps. Ofgem is wrong to exclude cost of issuing synthetic CPI-linkers as a cost borne by networks, given that the majority of the gas sector currently employs this approach, and there are practical limits to issuing RPI ILD. Overall, we estimate a CPI/H basis risk mitigation allowance of 3-6 bps
  - 4) Infrequent Issuer Premium: Ofgem does not include infrequent issuer allowance as it considers compensated by its estimate of the GNP of 25bps, since the infrequent issuers' bonds account for a large portion of GNP data sample. However, around half of Ofgem's debt sample not issued by infrequent issuers. We estimate an infrequent issuer premium based on: i) illiquidity premium for sub-benchmark sized debt issues of 3.5 bps; and ii) constant maturity swap (CMS) evidence which supports a 9 bps premium

Summary (2/2): Overall, we estimate the additional cost of borrowing (exc. GNP & NIP) of 44 bps in RIIO-3, higher than Ofgem's 25bps. We also estimate an infrequent issuer premium of 6 bps

Units: bps p.a.	NERA (March 2024, GDNs)	Ofgem RIIO-3 DD	NERA (Aug 2025, exc. gas network premium)	Comment on main differences to Ofgem RIIO-3 DD
Transaction Costs	8.5	7	8	• Analysis of gas transaction costs shows cost of 8 bps for shorter tenor debt
Liquidity Cost & Cost of Carry	13 + 12-27 (19)	15	5+26 (31)	• Higher than Ofgem's 15 bps, principally because we take account of greater pre-financing needed amortised over shorter bond tenor of 10 years, and adopt iBoxx flat forecast (+6.10%) plus 45bps GNP less overnight SONIA forecast in WACC Rates Model (average 3.96%). The spread of 2.59% (i.e. iBoxx A/BBB + GNP of 45bps vs SONIA) is higher than Ofgem's backward-looking estimate of 1.70%.
CPIH Premium	18-23 (21)	3	3-6 (5)	• We estimate a CPI/H basis risk mitigation allowance of 3-6 bps, which is based on for new debt: i) lower bound on RPI-CPI swap cost of 15 bps; upper bound of 30-50 bps for new CPI-ILD issuance, ii) 15bps for managing RPI/CPI basis risk of embedded RPI ILD.
Additional Cost of Borrowing	**57-77 (67)**	**25**	**43-45 (44)**	• Calculations
Small Company/Infrequent Issuer Premia	10-18 (14)	0	3.5-9 (6)	• Ofgem identifies four infrequent issuers with expected average annual issuance lower than threshold of £250 million: SGN Scotland, SGN Southern, WWU and NGN. Our modelling identifies the same set of infrequent issuer as Ofgem • We estimate an infrequent issuer premium of 3.5-9 bps, based on the illiquidity premium of sub-benchmark issues, and constant maturity swap (CMS) evidence
Total	**67-95 (81)**	**25**	**46-54 (50)**	

Source: Updated analysis of NERA (4 March 2024), Impact of GDNs' Reduced Debt Tenor on Additional Cost of Borrowing at RIIO-3.
Note 1: Our assumption of GDNs' debt tenor at issuance of around 10 years reflects current market data and investors' preference for short tenor debt. Investors' preference may continue to change in light of further Ofgem policy decisions and changing market conditions, e.g. investors may prefer even shorter tenor debt for GDNs
Note 2: This report estimates the additional cost of borrowing common to the gas networks. It does not incorporate company-specific costs, and therefore should be viewed as a minimum allowance

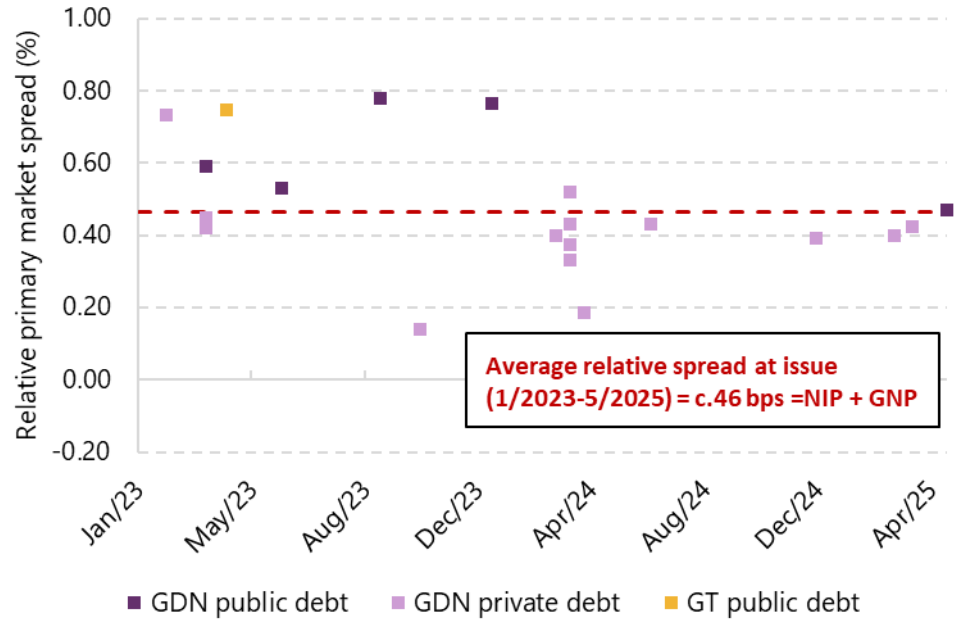
2

Estimating Gas Network Premium (GNP)

Summary of GNP: We estimate gas network premium GNP of 45 bps, drawing on spread at issue of gas network bonds relative to A/BBB iBoxx spread. Our estimate is higher than Ofgem's DD of 25 bps, as we control for tenor and use wider sample of bonds

- Gas networks issue debt at a premium reflecting two elements:
  - Gas network premium (GNP) – the premium required by gas network debtholders to compensate them for bearing the risks around the future role of gas networks
  - New issue premium (NIP) – the cost of incentivising investors to participate in the primary market relative to the secondary traded market (not-specific to gas network debts).[2]
- In its DD, Ofgem estimated a GNP of 25 bps based on the yield to maturity (YTM) of 14 bonds relative to the average A/BBB iBoxx. (We note that Ofgem's analysis comprises both a GNP and a NIP, but following Ofgem we refer to such estimates simply as a GNP.)
  - In calculating GNP, Ofgem has used issue date data instead of pricing date data for 3 bonds in its sample yet pricing date for all others. Consistently using pricing date, we estimate a GNP of 31-32 bps or 32-35 bps, if we further exclude 2 short tenor bonds which will not reflect GNP over RIIO-3
  - We have also calculated GNP based on : i) spread for gas network debt *less* ii) spread for the average A/BBB iBoxx Corporate 10yr+ index, where we calculate spread for both by deducting the respective tenor-matching nominal gilt yield. We estimate a GNP of 44-46 bps and conclude on GNP of 45 bps
- Our relative spread approach controls for tenor differences between the sample of bonds (which is c.13 years based on our GNP sample) and the iBoxx A/BBB of around 19 years and aligns with Ofgem's methodology at RIIO-2 . The approach allows companies to optimise tenor over RIIO-3 noting that any benefits of shorter tenor are passed through to customers at review.
  - By contrast, at RIIO-3 DD Ofgem's YTM does not control for tenor differences and in effect obliges companies to restrict tenor in line with the tenor of Ofgem's bond sample
- Our higher GNP estimate not only reflects conceptual difference but draws on more substantive evidence base of 23 bonds relative to Ofgem's 14
  - We also show that recent gas network bonds issued at an average premium of 33 bps relative to electricity bonds – suggesting a GNP and NIP combined of ca 50 bps, allowing for a NIP of 15 bps[2]

We calculate gas network bond spread less A/BBB iBoxx spread of 44-46bps for the period Jan 2023 – May 2025



Source: NERA analysis.

1. Ofgem (9 July 2020), RIIO-2 Draft Determinations – Finance Annex, para. 2.14; Ofgem (24 May 2019), RIIO-2 Sector Specific Methodology Decision – Finance, paras. 2.72-2.74.
2. In our previous study for ENA, we estimated market-wide NIP of 15bps. NERA (22 February 2024), Additional Cost of Borrowing for the RIIO-3 Price Control, p.19.

Verifying Ofgem's approach: At RIIO-3 DD, Ofgem estimated a GNP of 25 bps drawing on data from 2023-2024. Updating pricing date data in Ofgem' adopted sample and excluding short tenor debts which are unrepresentative of GNP over RIIO-3, we estimate premium of between 32 and 35 bps

- In the DD, Ofgem calculates the GNP based on yield at issue of recently issued licensee GBP fixed debt against the prevailing benchmark YtM, i.e. average iBoxx GBP A and BBB non-financial 10Y+ index
- Ofgem draws on 14 issuances from 5 issuers for GD and GT sectors over the period of 2023-2024, excluding instruments which Ofgem considers are unrepresentative:
  - Ofgem calculates a GNP of 23bps and 18 bps on a simple and issuance weighted basis and proposes a GNP of 25 bps[1]
- We have reviewed Ofgem's precise sample. Among the 14 chosen bonds, Ofgem has used issue date data as proxies for pricing date for 3 WWU private placements. Using pricing date data for all bonds, we have updated Ofgem's calculation of GNP:
  - Scenario 1 (updated pricing date data for 3 WWU debts): GNP is 31bps (simple average) and 32bps (weighted average). The sample size is 14 from 5 issuers, consistent with Ofgem's adopted sample.
  - Scenario 2 (further exc debts with tenor <= 10 years): Further excluding 2 bonds with tenor less than or equal to 10Y, which we consider unrepresentative of GNP over RIIO-3 given short tenor, we estimate GNP of 32bps (simple average) and 35bps (weighted average). The sample size is 12 from 4 issuers.

We estimate GNP of between 32 and 35 bps exc. short tenor debts from Ofgem's 14 debt issuances

		NERA's replication	
	Ofgem DD	Scenario 1	Scenario 2
Simple average	23bps	31bps	32bps
Weighted average (by issuance size)	18bps	32bps	35bps
Sample size	14 from 5 issuers	Ofgem's 14 bonds from 5 issuers, updating pricing date data for 3 WWU debts	Ofgem's sample, updating pricing date data for 3 WWU debts and excl. debt with tenor <=10 years. Resulting sample: 12 bonds from 4 issuers

Source: NERA analysis.

Source: 1. Ofgem (2025) RIIO-3 Draft Determinations – Finance Annex, p. 17

NERA approach/ Ofgem RIIO-2: We estimate relative spread of gas network debt against benchmark iBoxx index, consistent with Ofgem's adopted approach at RIIO-2

- Ofgem's approach at RIIO-3 DD does not control for differences in tenor between the gas bond and A/BBB iBoxx – therefore its GNP estimate of 25 bps is understated because of the shorter tenor of the gas network bond sample of c.12 years relative to the tenor of the A/BBB iBoxx of around 19 years
- Drawing on Ofgem's approach at RIIO-2[1], we control for tenor by calculating *relative spreads*: gas network debt spread - iBoxx index spread, where:[2]
  - gas network debt spread: gas network debt yield minus the Bank of England (BoE) nominal spot curve yield or benchmark UKT yield with closest matching tenor (C=A-B, below)
  - iBoxx index spread: average A and BBB iBoxx 10Y+ Non-financial Corporate index yield minus BoE spot curve yield or UKT yield with closest matching tenor (F= D-E)

A	Calculate yield **at issuance[2]** for public and private gas network bond
B	Calculate the nominal yield from the BoE spot curve/ UKT for the closest matching tenor to the gas network bond tenor
C=A-B	Calculate the spread **at issuance** for each debt
D	Calculate the yield to maturity of A/BBB iBoxx index, at the debt's **date of issuance**
E	Calculate the nominal yield from the BoE spot curve/ UKT, for the closest matching tenor to the tenor of the A/BBB iBoxx index
F=D-E	Calculate the iBoxx spread **for the debt's date of issuance**
G=C-F	Relative spread at issue = Bond spread at issue – iBoxx spread at issue → a positive value supports the existence of a GNP and NIP combined

Ofgem is wrong not to tenor adjust in measuring GNP:

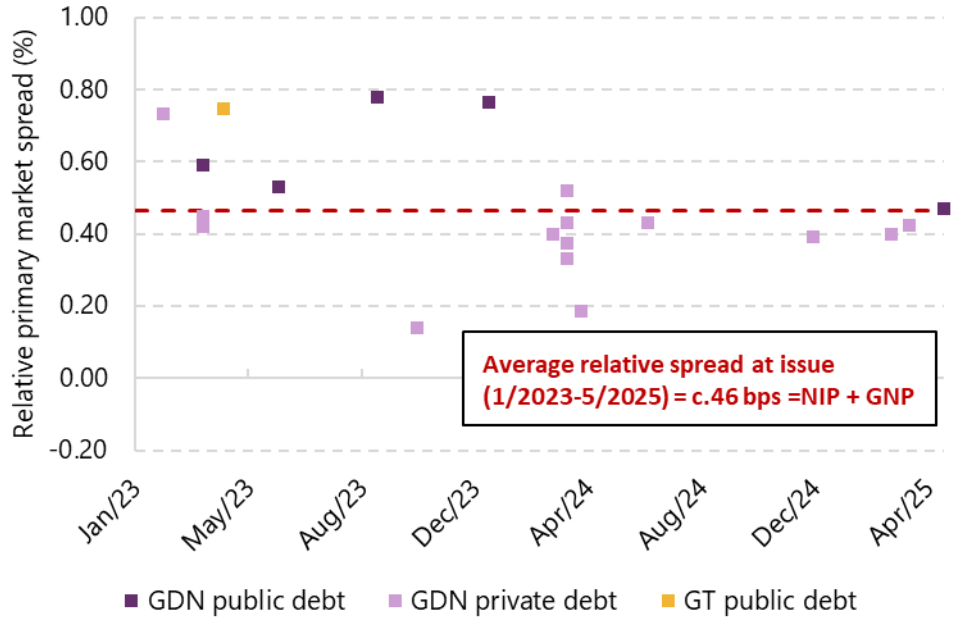
- Ofgem's reasoning is unclear: " *Given that companies have discretion over the tenor of their debt issuance, we consider it more appropriate to assess potential outperformance against the benchmark on an aggregate basis rather than at specific tenors."*[3] Companies have always enjoyed discretion (limited by market appetite) over the tenor of their debt issuance, and therefore it is not clear why this provides a reason for Ofgem to change approach from RIIO-2.
- Regulatory consistency. At RIIO-2, Ofgem stated that it is not its role to determine Treasury strategy, e.g. whether 10 or 20-year tenor is the most efficient.[4] Consistent with this standpoint, Ofgem calculated companies' debt premium controlling for tenor differences between the sample and the iBoxx index and therefore leaving companies to optimise tenor.
  - By contrast, at RIIO-3, by failing to control for differences in the tenor of the sample of bonds and the iBoxx, Ofgem in effect restricts GDNs to issue tenors in line with the sample tenor
  - Rather, Ofgem should set the allowance such that a notional gas network could issue at the average tenor of the index and provide incentives to optimise
- Our approach to GNP and ACB is consistent whereas Ofgem's is not. The benefits of any tenor optimisation are passed through to customers at each review through the calibration exercise, e.g. any benefit is limited to 2.5 years on average. By contrast, higher ACB costs are left with companies as these do not form part of the calibration exercise (or indeed totex incentive mechanism)
  - It is therefore consistent to set a GNP which does not in effect restrict tenor decisions by companies, as any benefit from optimising tenor is passed through to customers. By contrast, companies incur higher ACB costs over the life of bond and therefore allowance should be based on the expected tenor
  - By contrast, Ofgem's RIIO-3 DD proposals appropriates any benefit of shorter tenor debt, while leaving all associated costs, including ACB costs, with companies.

1. Ofgem (9 July 2020), RIIO-2 Draft Determinations – Finance Annex, para. 2.14; Ofgem (24 May 2019), RIIO-2 Sector Specific Methodology Decision – Finance, paras. 2.72-2.74.
2. We calculate the relative spread based on the pricing date, i.e. we calculate relative spread for gas network bond at pricing date and compare this to iBoxx spread at pricing date, as per Ofgem's approach. We calculate spreads for gas network bonds and iBoxx relative to both: i) the Bank of England curve which fits a smooth curve through the UK Treasury (UKT) benchmark issues; and ii) UKT. We consider BoE curve provides a more accurate measure of the relative spread, given the potential mis-pricing (e.g. because of infrequent trading) of benchmark gilts, particularly at long durations. However, our results are not overtly sensitive to the choice of benchmark. See appendix A1 for an illustrative example calculations
3. Ofgem (1 July 2025) RIIO-3 Draft Determinations – Finance Annex, para 22.3
4. Ofgem (2021) Decision - RIIO-2 Final Determinations – Finance Annex (REVISED), para. 2.43

Relative spread: Our analysis shows an average relative spread at issue of 44-46 bps for gas network bonds issued in the period Jan 2023 – May 2025. This is higher than our replication of Ofgem's approach as per previous slide of 32-35 bps, principally as we control for tenor

- We calculate relative spread at issue for gas network bonds of between 44 bps and 46 bps when spread compared to UKT and BoE curve respectively, based on the methodology explained in the previous slide[1]
- We draw on bonds issued in the period of Jan 2023 to May 2025 to inform our estimate relative spread, consistent with Ofgem's focus on most recent timeframe.
- Our sample of bonds comprises:
  - fixed nominal public and private debts, including both GBP-denominated and non-GBP-denominated debt with currency swaps
  - all company debt (with rating A/Baa) and reflecting the average rating of the A/BBB iBoxx
    - excludes shorter tenor debt of less than or equal to 10 years, as shorter tenor debt with relatively early redemption (e.g. in RIIO-3) may not reflect gas premium[2]
  - Overall, we identify 23 bonds comprising 6 public bonds and 17 private placements
- As per Ofgem's estimate, our calculation of the relative spread at issue reflects both gas network-specific premium (GNP), which reflects higher risk given restricted investor pool due to concerns around the future of gas network given the decarbonisation of heat, as well as New Issuance Premium (NIP), which reflects the cost of incentivising investors in the primary market relative to the secondary traded market (not-specific to gas network debts).[3]

We calculate gas network spread less iBoxx spread of 44-46 bps, for the period Jan 2023 – May 2025



Source: NERA analysis.

Notes
1. As set out in slide 9, we consider spread analysis based on BoE curve provides a more accurate measure of GNP+NIP, as BoE curve addresses any anomalies in UKT yield data, which can be prevalent for longer durations
2. However, the inclusion/ exclusion of shorter tenor debt has an immaterial impact on the analysis. Including shorter tenor debt results in an average relative spread at issue which is around 2 bps *higher*.
3. In our earlier study for ENA, we estimated market-wide NIP of 15bps. See NERA (22 February 2024), Additional Cost of Borrowing for the RIIO-3 Price Control, p.19.

Case studies: As further evidence, we examined two recent pairs of gas and electricity bonds (i.e. SGN vs NIE; Cadent vs NGED) issued in close proximity with similar tenor and same credit rating. Our analysis shows gas network bonds have premium of 33bps relative to electricity. Reflects GNP only, and implies GNP + NIP of ca 50 bps consistent with our evidence from gas network spread relative to iBoxx

- As additional evidence of GNP, we analysed relative spread on two pairs of gas and electricity bonds which were issued in close proximity with similar tenor
- Given practical identical issue date and similar tenor, we would expect to find similar spread other than for GNP. We find:
  - SGN vs NIE: The difference in relative spread at issue (against iBoxx non-fin A/BBB 10Y+) between the two bonds is 13 bps[2];
    - We would expect NIE's yield at issuance to be higher than GB network given NI has less mature regulatory regime, and weaker credit sub-rating. Therefore, 13 bps is likely to understate the gas vs electricity spread
  - Cadent vs NGED: The difference in relative spread at issue (against iBoxx non-fin A/BBB 10Y+) is 53 bps
- On average, gas network bonds are issued at a premium of 33bps relative to electricity bonds – further evidence supporting the existence of GNP
  - Drawing on our earlier estimate of NIP of 15 bps[1], implies a GNP+ NIP of ca 50 bps

Gas network debt premium relative to electricity for two recent issues

Issuer	Issue date	Maturity	Rating at issue	Relative spread
Southern Gas networks PLC	07//05/2025	07/05/2039	BBB+	47bps
NIE Finance PLC	07//05/2025	07/12/2035	BBB+	34bps
			Difference:	13bps
Cadent Finance PLC	11/01/2024	11/01/2036	BBB+	76bps
National Grid Electricity Distribution South Wales PLC	10/01/2024	10/07/2039	BBB+	23bps
			Difference:	53bps
			Implied GNP:	(13+53)/2= 33 bps

Note: Relative spread at issue is calculated against iBoxx Utilities 10Y+ on the pricing date.
Source: NERA analysis of market data

Notes
1. NERA (22 February 2024), Additional Cost of Borrowing for the RIIO-3 Price Control, p.19.

Additional Cost of Borrowing (ACB)

3.1 Transaction Costs

At DD, Ofgem estimates a transaction cost allowance of 7bps for GD and GT companies

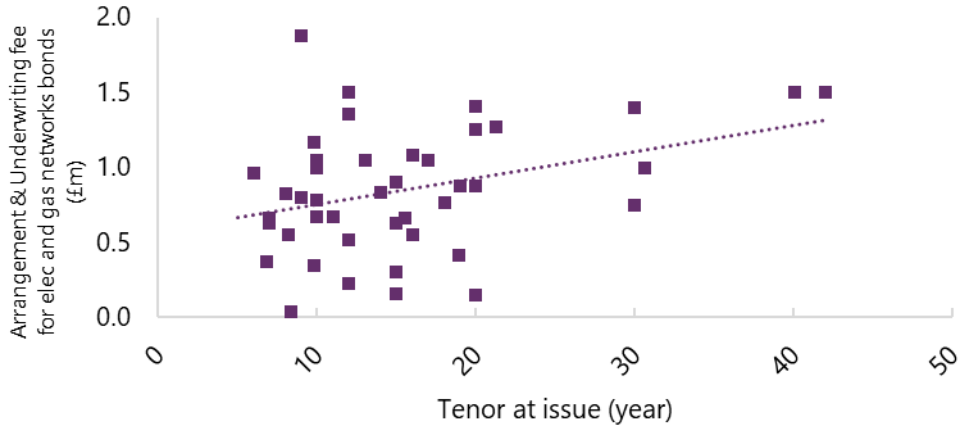
- In the Draft Determination, Ofgem estimates a transaction cost allowance of 7bps for GD and GT companies, which includes ongoing and upfront costs (i.e. legal fees and costs associated with underwriting, arrangement, listing, and rating) of issuing debt instruments.
- Ofgem's RIIO-3 DD methodology for t-cost is consistent with its approach at RIIO-2. i.e. utilising data collated by NERA from companies on fees associated with individual debts, annualized over the corresponding debt instrument lives
- The only change at RIIO-3 is in the data sampling approach:
  - In the DD, Ofgem acknowledges that the tenor of gas network debt issuances has shortened over time, falling to c.12 years for bonds issued after 2023. Given the recent difference in tenors between electricity and gas sectors, Ofgem separately estimates transaction costs for the two sectors
  - Ofgem estimates the t-cost to be 7bps based on the GD/GT data, and 5 bps based on the ET data

Source: Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.71-78.

Ofgem is wrong that shorter-tenor bonds tend to incur lower arrangement & underwriting fees *when the cost is correctly expressed on an annuitized basis and as a % of debt issuance*

- In NERA's March 2024 report, we argued that the gas sector should receive a higher transaction cost allowance on the basis that a shorter observed tenor of gas debts since 2020 will lead to higher per annum transaction cost, as upfront costs are annualised over a shorter tenor.[1]
- In the DD, Ofgem responds that that it has "*conducted further analysis which suggests a correlation between bond tenor and the size of associated arrangement and underwriting fees specifically, that shorter-tenor bonds tend to incur lower fees.*"[2] Ofgem therefore does not consider a higher gas sector allowance (stemming solely from a shorter expected future bond tenors) to be justifiable.
  - It is possible that Ofgem has examined the positive correlation between bond tenor and arrangement & underwriting fees as shown in figure below

Illustration of Ofgem's analysis of arrangement & underwriting fees vs bond tenor



- If indeed Ofgem has analysed the relationship between bond tenor and the arrangement & underwriting fees in absolute £m terms, this is incorrect
- Rather t-costs must be assessed on an annuitised basis, and expressed as a percentage of the debt issuance amount because
  - i) the upfront t-costs are recovered as an annuity over the life of the bond
  - ii) the t-cost allowance is set as a percentage of the notional debt amount, hence, to be consistent this should also be the basis for estimating the t-cost
- As shown in figure below, on a correct basis, there is a negative correlation between bond tenor and arrangement & underwriting fees

Correct analysis of arr. & underw. fees (annuitised and as a % of debt issuance amount) vs bond tenor shows a negative correlation

Footnote: 1. NERA (4 March 2024), Impact of GDNs' Reduced Debt Tenor on Additional Cost of Borrowing at RIIO-3
2. Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.76.

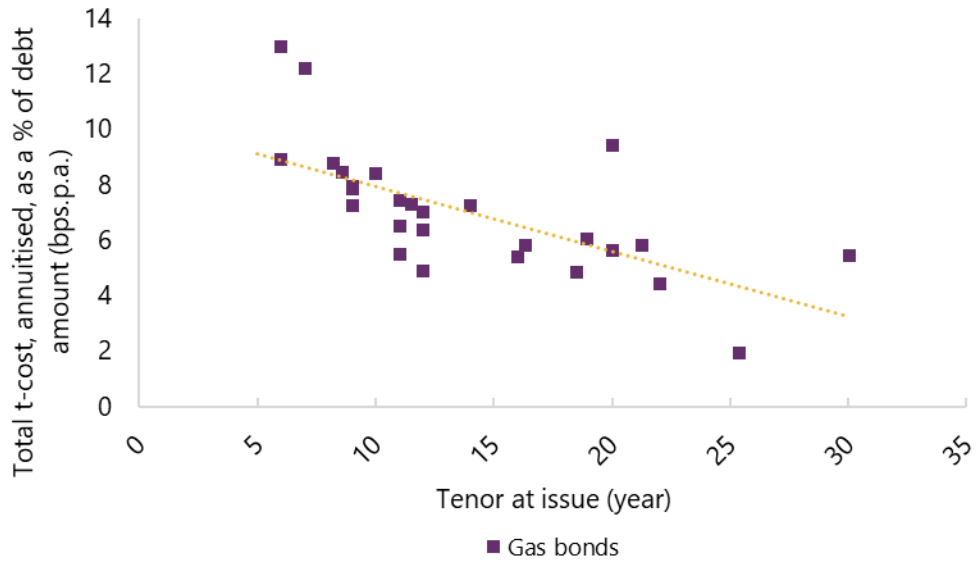
As per Ofgem, we estimate a t-cost on average of 7 bps over the wide sample of gas network bonds. Given the negative relationship between cost and tenor, we estimate a cost of 8 bps based on the expected shorter tenor of gas network debt over RIIO-3

- Additionally, Ofgem's analysis considers only part of the total t-cost, i.e. underwriting & arrangement fees, but neglects the other material components, such as rating agency fees, legal fees, auditor fees, listing fees, etc.
- In contrast, we have collected updated evidence on transaction costs for public bond issuance including underwriting fees, bond advisory fees, arrangement fees, rating agency fees, legal fees, auditor fees, listing fees etc.
- Taking into account amounts issued and tenors, we distinguish between up-front costs and on-going/annual costs, and we calculate up-front transaction cost to be recovered as an annuity over the life of the bond, as shown in formula below

$$Transaction\ cost = \frac{\frac{upfront\ fees}{bond\ tenor} + Per\ annum\ costs}{debt\ amount\ issued} + \frac{per\ annum\ common\ costs}{notional\ debt\ amount}$$

- Figure below shows the total transaction costs for gas network bonds, distinguishing between bonds issued before and after 1 Jan 2023, consistent with Ofgem's sample of recently-issued gas bonds for its gas premium analysis
  - the average t-cost (debt-weighted) of gas bonds is 7 bps, taking into account the entire sample of bonds.
  - The t-cost increases to around 8 bps, when we take into account the observed negative correlation between bond tenor and t-cost (shown in figure below), and shorter tenor debt of around 10 years

Recently issued gas bonds since 2023 has a higher t-cost of 8bps, consistent with a shorter observed gas bond tenor



3.2 Cost of Carry & Liquidity Cost

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ECONOMICS. EXPERTS. EXPERIENCE.

In RIIO-3 DD, Ofgem sets out a liquidity allowance of 15bps for GD&GT, comprising 13bps of cost of carry allowance, and 2 bps of liquidity cost allowance

- In RIIO-3, Ofgem considers jointly the liquidity/revolving credit facility (RCF) allowance and cost of carry allowance, on the basis that the sizes of cash balances and RCFs are negatively correlated and likely to be driven by common causal factors.
- In aggregate, Ofgem sets out a liquidity allowance of 15bps for GD and GT, comprising:
  - 13bps of cost of carry allowance, and
  - 2 bps of liquidity cost allowance.
- Ofgem's framework for estimating the liquidity/RCF and cost of carry cost is largely consistent with RIIO-2, albeit with a small increase from 14bps to 15bps. The main changes are as follows:
  - Cost of carry allowance: Ofgem's cost of carry allowance has increased marginally from 10 to 13 bps based on:
    - Evidence of an increase in cash-balances of 7.7%, derived from the two-year average of network companies' actual cash balances and debt data.
    - off-set by a lower cost of carry rate of 1.70%, based on a 5-year average difference between i. average of iBoxx GBP A and BBB non-financial 10+ index; and ii. 3-month cash deposit rate. The decline from RIIO-2 is partly driven by Ofgem's adoption of iBoxx A/BBB benchmark index, rather than iBoxx Utilities 10+ index in RIIO-2.
  - Liquidity allowance: Ofgem's RIIO-3 liquidity allowance has decreased from 4 bps to 2bps. The decrease is driven by a lower commitment fee, which Ofgem has calculated based on a 2-year average of actual network company data at RIIO-3 DD

Ofgem's liquidity cost and cost of carry allowance at GD/T2 and RIIO-3 DD

Parameter	Ofgem GD2&T2	Ofgem GD3 & GT3
Cash assumption (% debt) [A]	5.0%	7.7%
Cost of carry [B]	2.00%	1.70%
Cost of carry allowance [C=A*B]	**10bps**	**13bps**
RCF size assumption (% debt) [D]	10%	10%
Commitment fees [E]	35-45bps (40bps)	16bps
Liquidity allowance [F=D*E]	**4bps**	**2bps**
Total (C+F)	**14bps**	**15bps**

Source: Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.56-2.70.

Cost of Carry: Ofgem's 13bps allowance is based on 5-yr average of iBoxx-cash deposit rate spread (plus a GNP estimate of 25bps) of 1.70%, which reflects abnormal market conditions and not indicative of RIIO-3. Alternatively, adopting Ofgem's approach to forecasting iBoxx and SONIA as per WACC rates model, plus our GNP of 45 bps, results in spread of 2.59%. This change alone leads to a cost of carry of 20 bps

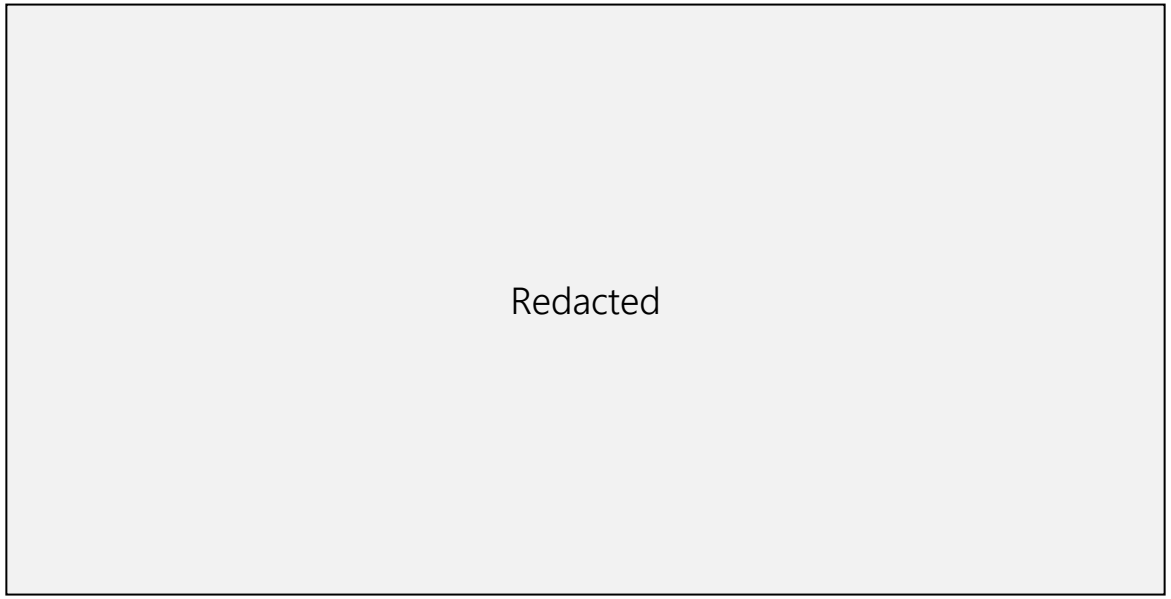
- Ofgem's cost of carry estimate is based on the following two assumptions:
  - 1) Cost of Carry Estimate: the five-year average difference between the average iBoxx GBP A and BBB non-financial 10+ indices and the 3-month cash deposit rate plus Ofgem's GNP estimate of 25bps, which amounts to 1.70%
  - 2) Cash balance: Ofgem assumes the proportion of cash and cash equivalents on networks' balance sheets is c.8% of average debt based on an average of network companies' 2-year actual historic data

Ofgem cost of carry allowance vs NERA's estimate (only updating iBoxx-cash rate spread)

Parameter	Ofgem GD2&T2	Ofgem GD3 & GT3	NERA (*only updating iBoxx-cash rate spread)
Cash assumption (% debt)	5.0%	7.7%	7.7%
iBoxx-cash rate spread	2.0%	1.70%	2.59%
Cost of carry allowance	**10bps**	**13bps**	**20bps**

Footnote 1: *Table above is a partial correction of Ofgem's cost of carry estimate, and we show the full correction in next slide.
Footnote 2: Indeed, we believe the most robust approach is to use market-based forecast. Ofgem argues against the forward curve stating that it risks capturing term premium. However, we note that forward rates reflect the market's collective expectations about future spot rates and provides a projection of future rates based on market consensus rather than subjective assumptions, as per Ofgem's approach. Practitioners and financial institutions commonly use forward rates to forecast interest rates. For example, the OBR's latest March 2025 forecast of 10-yr nominal gilt yield is derived based on a similar basis and projects ca 1% increase in 10-yr nominal gilt yield over next 5 years, which is in line with the forecasts based on our forward rates calculations. See OBR (March 2025), Economic and fiscal outlook, p.12.
Source: NERA analysis. Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.56-2.70.

- Ofgem's historical data is not a reliable estimate of carry cost for RIIO-3, as it includes 2023-24 period which is historically abnormal period of low spreads (See figure below)
- Instead, adopting Ofgem's own RIIO-3 approach (as per WACC rates models) to forecasting iBoxx (held flat at +6.10%) less overnight SONIA forecast (average 3.96%) equals 2.14%. Adding our GNP of 45bps, results in spread of 2.59%
  - This change alone increases cost of carry from 13 bps to 20 bps (See LHS table)[1]
- The estimated spread of 2.59% conservative in light of:
  - NERA market forecast derived from Bank of England's 10-yr nominal gilt spot curve and SONIA spot curve plus 45 GNP results in a spread of 3.45%[2]
  - historical average spread since RIIO-1 to date (April 2013-March 2025) + 45 bps GNP of 2.9%



Source: NERA analysis.

Cost of Carry: Ofgem's 13bps allowance is based on 2-yr average of cash/debt ratio of 7.7%, but gas sector will require a higher cash/debt ratio of 10% at RIIO-3 as pre-financing costs amortised over shorter bond tenor of 10 years. In conclusion, we estimate cost of carry of 26 bps, based on 2.59% forecast iBoxx-cash deposit rate spread and 10% cash/debt ratio over RIIO-3

- Ofgem estimate the cash/debt ratio of 7.7% based on companies' 2-year actual data.
  - Conceptually, the 7.7% cash/debt ratio over RIIO-2 is consistent with the assumption of pre-financing new debt issuance equal to 1/13th of sector debt each year, i.e. 1/13=7.7%.
- However, gas networks face greater risk at RIIO-3 relative to RIIO-2 given increasing concerns about future role of gas networks from decarbonisation of heat as well as smaller investor pool because of ESG constraints. In response to an increasingly uncertain future, we would expect debt investors to prefer short tenor debt relative to historical issues. Indeed, recent GDN debt tenors around 10 years are shorter than historical average tenor
  - Assuming gas companies will need to issue shorter tenor debt and amortise cost of carry over a 10-year instead of a 13-year bond tenor, the gas sector will need to hold a 10% cash/debt ratio to meet the more frequent refinancing need, i.e. 10%=1/10th
- In conclusion, Ofgem's cost of carry allowance is based on RIIO-2 backward-looking data, which understates the RIIO-3 cost of carry for the gas sector for two reasons:
  - Ofgem assumes the iBoxx-cash deposit rate spread to be based on 5-yr average of 1.70% (based on 25bps of Ofgem's assumed GNP) – but reflects historical period of abnormally low spread and not reflective of RIIO-3
    - adopting Ofgem's own approach to forecasting iBoxx and SONIA as per its WACC model , plus our GNP estimate of 45bps, results in a spread 2.59%. Our estimate conservative in light of NERA market evidence
  - Ofgem assumes the 7.7% cash/debt ratio based on 2-yr average of RIIO-2 data. However, in RIIO-3, sector will require greater cash/debt as prefinancing costs amortised over shorter bond tenor of 10 years with implied increase in cash/debt% to 10%
- Overall, we estimate the cost of carry to be 26 bps, reflecting forecast iBoxx-cash deposit rate spread, and higher cash/debt ratio over RIIO-3[1]

Ofgem cost of carry allowance vs NERA's estimate

Parameter	Ofgem GD2&T2	Ofgem GD3 & GT3	NERA (Aug 2025)
Cash assumption (% debt) (A)	5.0%	7.7%	10%
iBoxx-cash rate spread (B)	2.0%	1.70%	2.59%
Cost of carry allowance (C=A*B)	**10bps**	**13bps**	**26bps**

Source: NERA analysis

Note: 1. Alternatively, using the forecast spread of 3.45% between iBoxx A/BBB and SONIA (3m) (plus our GNP estimate of 45 bps) results in a cost of carry allowance of 34.5 bps.

Liquidity/RCF Cost: Ofgem sets a liquidity cost allowance of 2bps, but it does not allow cost of draw-down and understates size of RCF facilities. In practice, companies on average draw 3% facilities to fund working capital requirement/operational needs and maintains RCF of 14.6% of debt – higher than 10% assumed by Ofgem

- In NERA's earlier 2024 report, we estimate average liquidity cost to be at 13 bps p.a. of notional debt based on:
  - Ofgem's assumed 35-45 bps p.a. commitment fee and facility size of 10 per cent of debt, as per RIIO-2
  - Annual utilisation fee: 20bps of drawn credit facility amount
  - Interest on the liquidity facility: SONIA + 45 bps
  - Assume facilities are on average 15% drawn to fund working capital
- Ofgem assumes 2 bps for RIIO-3 DD, and makes the following comments:
  - Ofgem argues that its RIIO-3 DD approach uses more frequent company data, and is therefore more robust than relying solely on year-end data (NERA's approach), which may not capture intra-year fluctuations during operational cycles
  - Ofgem states that NERA estimates a higher liquidity allowance assuming drawing down 15% of RCF and incurring utilisation fees and interest costs. In contrast, Ofgem assumes no-draw-down, and does not consider utilisation fee or associated margin w.r.t RCF, as it argues most network companies do not normally draw upon RCF given its role as a liquidity backstop.
  - Ofgem does not consider upfront costs (e.g. arrangement and legal fees) in setting liquidity allowance, given that these fees are small relative to the overall costs
- We have concerns with Ofgem's RIIO-3 liquidity cost analysis on the following points:
- 1) Utilitisation fee & Margin:
  - Ofgem does not allow for utilisation fee or associated margin as most companies do not draw down on the RCF. However, Ofgem is wrong to assume such costs will be zero. We have collected intra-year cash balance data from the companies, as referenced by Ofgem in the DD.
  - Our analysis shows that on average companies draw down 3.1% of their RCF facilities over the last two years (2022-2024). The utilisation fee and the associated margin should be reflected in the allowance
- 2) Size of RCF:
  - Ofgem derives that RCF facilities size to cover 10% of companies' debt, based on a two-year average of actual RCF and debt data reported by network companies.
  - However, using the same data as referenced by Ofgem in the DD, we calculate the average RCF facilities to be 14.6% of companies' debt
- 3) Costs of maintaining RCF:
  - Ofgem's 16bps only reflects commitment fees, and ignores other potential costs such as upfront arrangement fees, legal fees and annual (agency) fees , although these additional costs are small and of the order of ca 1 bps p.a.

Note: Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.56-2.70.

Liquidity/RCF Cost: We estimate liquidity costs of 5 bps p.a. assuming RCF facilities 3.1% drawn and incurs utilisation and margin cost, and RCF sized to be 14.6% of debt based on companies' data

- We estimate average liquidity cost to be at **5 bps** p.a. of notional debt based on the following:
  - **Commitment fees**: consistent with Ofgem's assumed 16 bps p.a., and in line with companies' data submitted to Ofgem
  - **RCF size**: 14.6% of debt based on an average of all energy network companies' 2-year actual historic RCF and debt data, rather than Ofgem's assumed 10% of debt
  - **RCF drawn%:** 3.1% based on companies' data on drawn RCF facilities over the last two years (2022-2024) compared to Ofgem's assumption of no draw-down
  - **Utilisation fee**: 10 bps of drawn credit facility amount based on companies' data
  - **Interest on the liquidity facility**: SONIA + 45 bps
- Overall, we estimate 5 bps p.a. liquidity cost, comprising 2 bps of commitment fees on undrawn facilities, and 2 bps of margin costs based on 3.1% drawn amount.

	Parameter	Ofgem T2	Ofgem RIIO-3 GD/T	NERA (Aug 2025)	NERA's approach
Inputs	RCF size assumption (% debt) [A]	10%	10%	14.6%	Based on average of network companies' 2-year historical RCF and debt data
	RCF drawn-down assumption [B]	-	-	3.1%	Based on companies' data on drawn RCF facilities over the last two years over 2022-2024
	Commitment fees [C]	35-45bps (40bps)	16bps	16bps	Consistent with Ofgem and in line with companies' data
Calculations	Commitment fees [D] – weighted basis		2bps	2bps	2bps calculated as 16bps commitment fee * 14.6% RCF size * (1-3.1% drawn amount)
	Interest on liquidity facility and utilisation fee [E] – weighted basis	-	-	2bps	2bps calculated as 4.4% (SONIA f'cast+45bps) * RCF size of 14.6% * 3.1% facilities drawn Utilisation fees of 0.04 bps calculated as 10 bps utilisation fee of drawn credit facility amount * RCF size of 14.6% * 3.1% facilities drawn
	Upfront arrangement, legal, agency fees [F]	-	-	1bps	7bps of upfront fees * RCF size of 14.6%
	Liquidity allowance [G=D+E+F]	**4bps**	**2bps**	**5bps**	

Liquidity + Cost of Carry: We estimate a cost-of-carry and liquidity allowance of 31 bps, higher than Ofgem's 15 bps, principally because we take account of greater refinancing requirement from shorter tenor debt and carry-cost over RIIO-3 whereas Ofgem's approach is backward-looking

Ofgem's cost of carry and liquidity cost allowance vs NERA's estimate

Parameter	Ofgem RIIO-3 GD/T	NERA' Estimate for RIIO-3
Cash assumption (% debt) [A]	7.7%	10%
iBoxx-cash rate spread [B]	1.70%	2.59%
Cost of carry allowance [C=A*B]	**13bps**	**26bps**
RCF size assumption (% debt) [D]	10%	14.6%
RCF drawn-down assumption [E]	-	3.1%
Commitment fees [F]	16bps	16bps
Commitment fees for undrawn facilities [G]	2bps	2bps
Interest on drawn liquidity + utilisation fee [H]	-	2bps
Upfront arrangement, legal, agency fees [I]	-	1bps
Liquidity allowance [J=G+H+I]	**2bps**	**5bps**
Total Liquidity + Cost of Carry [C+J]	**15bps**	**31bps**

Source: Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.56-2.70.

3.3 CPI/H premium

Ofgem has proposed a CPIH basis risk mitigation allowance of 3bps, based solely on companies incurring RPI-CPI swap costs of 15bps, applicable to both new debt and embedded debt

- In the DD, Ofgem estimates a CPIH basis risk mitigation allowance of 3bps. This is lower than 5bps determined by Ofgem in RIIO-2, which primarily stems from methodological differences:
  - In RIIO-2, Ofgem based its allowance on i) new CPI/CPIH debt and ii) managing basis risk between CPI and RPI for embedded debt. The two components are then multiplied by the proportion of new and embedded debt respectively, before being multiplied by ILD assumption of 30%.
  - In RIIO-3 DD, Ofgem does not deem CPI-CPIH basis risk as relevant on the basis that
    - i) it believes companies do not actively hedge such risk
    - ii) the risk of out-/under-performance is at least equally likely or favourable to companies given CPI remains below CPIH.
  - Hence, Ofgem relies solely on companies incurring RPI/CPI swap cost, applicable to both new debt and embedded debt.[1]

Parameter		RIIO-2 GD&T FD	NERA (Feb 2024)	RIIO-3 GD&T DD
New debt				
Cost of CPI-linked issuance	A	30bps	30-50bps	-
CPI-CPIH basis risk	B	-	40-50bps	-
Cost of managing RPI/CPI basis risk (applicable to new debt in RIIO-3 DD)	C	-	-	15bps
Proportion of new debt	D	24%	35%	31%
ILD assumption	E	30%	30%	30%
RPI Methodology Modifier[1]	F	-	-	76.67%
New debt allowance	G=(A+B+C) *D*E*F	2bps	7-11bps	1bps
Embedded debt				
Cost of managing RPI/CPI basis risk	H	12.5bps	15bps	15bps
CPI-CPIH basis risk	B	-	40-50bps	-
Proportion of embedded debt	I=1-D	76%	65%	69%
ILD assumption	E	30%	30%	30%
RPI Methodology Modifier[1]	F	-	-	76.67%
Embedded debt RPI/CPIH basis risk allowance	J=(H+B)*I*E *F	3bps	11-13bps	2bps
Overall allowance		5bps	18-23bps	3bps

Note: 1. In RIIO-3 DD, Ofgem introduces a cost estimate modifier to account for RPI-CPI transition, calculated as the ratio of the remaining months where RPI is still relevant to the total number of months in RIIO-3 (i.e. 46/60 = 76.67%); 2. In the DD, Ofgem does not propose separate CPI/H basis risk allowance for new and embedded debt. We thus assume new/embedded debt split from RIIO-2 for illustrative purpose.

Footnote: 1. Ofgem (1 July 2025), RIIO-3 Draft Determinations – Finance Annex, paras 2.80-2.83.

Ofgem is wrong to disallow the cost of issuing synthetic CPI-linkers, particularly given that the majority of the gas sector currently employs this approach, and there are practical limits to issuing RPI ILD

- In NERA's Feb 2024 report, we estimated the CPI/H allowance as follows
  - For new debt, we estimated the cost of CPI-linked issuance to be 30-50bps, derived from bank quotes on 10-year CPI inflation-linked real coupon swaps, i.e. the cost of issuing nominal debt and swapping to real CPI
  - For embedded RPI ILD debt, we estimated 15bps of cost of managing RPI/CPI basis risk based on RPI/CPI swaps.
- For new debt, Ofgem does not consider CPI-linked real coupon swaps appropriate in estimating RPI-CPI basis risk, and instead assumes companies will issue RPI ILD and then issue RPI-CPI swap at cost of 15 bps. By contrast, we assume companies issue nominal and swap to CPI at a reported cost of 30-50 bps.
  - We disagree with Ofgem's assumption that companies will exclusively issue RPI ILD and RPI-CPI swaps, because most of the gas networks do rely on issuing synthetic CPI-linkers, i.e. issuing nominal and swapping into CPI-linked debt, as evidenced by companies' derivatives data.
  - Ofgem is therefore wrong to exclude cost of issuing synthetic CPI-linkers, as this is a common approach. The quote on charges associated with structuring a nominal-CPI inflation swap are in the range of 30-50 bps p.a. for a 10-yr swap based on data from companies/their banks, as detailed in our Feb 2024 report
  - While it is possible for company to issue RPI ILD and then issue RPI-CPI swap, there are practical limits to issuing RPI ILD, and companies typically view synthetic ILD as a more cost-efficient and flexible approach, e.g. RPI ILD markets tend to be less liquid, making it more challenging and costly for companies to issue these instruments
  - We note that Ofgem's allowance of 15bps does not cover the liquidity cost of issuing RPI ILD (which is then swapped to CPI), and therefore undercompensates companies. By contrast, at RIIO-2 Ofgem allowed for the cost of issuing CPI ILD, and therefore did provide such compensation
- Overall, we estimate that the cost associated with issuing new CPI-linked debt to be **15-50bps**, based on:
  - i) 15bps, consistent with Ofgem's assumption that companies could issue RPI ILD and then issue RPI-CPI swap at cost of 15 bps (but noting that this is likely to underestimate companies' costs, as it does not cover the illiquidity cost associated with RPI ILD); and
  - ii) 30-50bps, based on the cost for structuring a nominal-CPI inflation swap, a widely adopted route for issuing CPI-linked debt
- Ofgem also introduces a cost estimate modifier to account for RPI-CPI transition, calculated as the ratio of the remaining months where RPI is still relevant to the total number of months in RIIO-3 (i.e. 46/60 = 76.67%).
  - For our estimate, we also apply the RPI-CPI transition multiplier to the cost associated with CPI-ILD, given the RPI-CPI alignment in Feb 2030
- Ofgem also acknowledges the high degree of uncertainty and potential costs amidst the RPI-CPIH transition but argues that such costs would not be appropriately accounted for under this allowance. Ofgem therefore separately sets out a close out mechanism to directly address transition costs.

Overall, we estimate a CPI/H basis risk mitigation allowance of 3-6 bps, based on: i) lower bound on RPI-CPI swap cost of 15 bps; upper bound cost of 30-50bps for new CPI-ILD issuance, ii) 15bps of cost for managing RPI/CPI basis risk of embedded RPI ILD

Parameter		Ofgem RIIO-GD/T-3 DD	NERA's Estimate	NERA's approach
New debt				
Cost of CPI-linked issuance	A	15bps	15-50bps	• LB = 15bps, consistent with Ofgem's assumption that companies' issue RPI ILD and RPI-CPI swap at 15 bps (but conservative as does not compensate for RPI ILD illiquidity); and • UB = 30-50bps, based on the cost for structuring a nominal-CPI inflation swap, a widely adopted and viable route for issuing CPI-linked debt
Proportion of new debt	B	31%	31%	• Ofgem's estimate of RIIO-3 new debt%
ILD assumption	C	30%	30%	• Ofgem's ILD assumption for gas sector in RIIO-3
RPI Methodology Modifier[1]	D	76.67%	76.67%	• Applicable to cost of CPI-ILD issuance, but not CPI-CPIH basis risk
New debt allowance	E=A*B*C*D	1bps	1-4bps	Calc.
Embedded debt				
Cost of managing RPI/CPI basis risk	F	15bps	15bps	• Consistent with Ofgem's assumption on RPI-CPI swap cost of 15 bps
Proportion of embedded debt	G=1-B	69%	69%	• Ofgem's estimate of RIIO-3 embedded debt%
ILD assumption	C	30%	30%	• Ofgem's ILD assumption for gas sector in RIIO-3
RPI Methodology Modifier[1]	D	76.67%	76.67%	• Applicable to cost of CPI-ILD issuance, but not CPI-CPIH basis risk
Embedded debt RPI/CPIH basis risk allowance	H=F*C*D*G	2bps	2bps	Calc.
Overall allowance		3bps	3-6bps	

Note: 1. In RIIO-3 DD, Ofgem introduces a cost estimate modifier to account for RPI-CPI transition, calculated as the ratio of the remaining months where RPI is still relevant to the total number of months in RIIO-3 (i.e. 46/60 = 76.67%); 2. In the DD, Ofgem does not propose separate CPI/H basis risk allowance for new and embedded debt. We thus assume new/embedded debt split from RIIO-2 for illustrative purpose.

3.4 Infrequent Issuer Premium

Ofgem does not include infrequent issuer allowance as it considers compensated by its estimate of the GNP of 25bps, since the infrequent issuers' bonds account for a large portion of GNP data sample. However, 43 per cent of the debt sample used by Ofgem to estimate GNP are not issued by infrequent issuers

- In the RIIO-3 DD, Ofgem identifies four infrequent issuers with expected average annual issuance lower than minimum efficient size of £250 million. These are: SGN Scotland, SGN Southern, WWU and NGN.
  - Our modelling identifies the same set of infrequent issuer as Ofgem
- However, Ofgem does not propose a separate allowance for the following reasons:
  - The main debt allowance already reflects the infrequent issuer premium since the four identified companies account for a majority (i.e. 86 per cent if equally weighted, or 57 per cent if weighted by amount outstanding)[1] of the data used to inform the gas network premium of 25bps for new debt
  - Similarly, the four identified infrequent issuers account for 67 per cent of the data used to model embedded debt in the main calibration exercise
- However, while Ofgem argues that the four identified companies account for a majority (i.e. 57 per cent if weighted by amount outstanding) of the data used to inform the gas network premium of 25bps for new debt, or 67 per cent of the data used to model embedded debt in the main calibration exercise, this does not fully compensate the infrequent issuer premium to these companies.
  - That is, the 1-57%=43 per cent of the debt sample used to estimate GNP are not issued by infrequently issuers and therefore the GNP cannot fully reflect the infrequent issuer premium

1. Ofgem uses a weighted average approach to calibrate the overall cost of debt indexation mechanism, and therefore for consistency the relevant weight of infrequent issuers in Ofgem's sample of bonds should be the weighted average of 57 per sent rather than the simple average of 86 per cent.

At GD2/T2, Ofgem allowed 6 bps p.a. infrequent issuer premium based on evidence from constant maturity swaps (CMS). The CMS provides a basis for estimating infrequent issuer premium that is unrelated to the gas network premium, and therefore not compensated through the main CoD allowance

- At GD2/T2, Ofgem allowed 6 bps p.a. allowance for notional licensees expected to issue smaller size or less frequently.
- Ofgem's 6 bps p.a. allowance based on two main sources:
  - i) Evidence from constant maturity swaps (CMS): under CMS, the issuing party receives a fixed iBoxx rate (on the date of issuance) and pays a rate that is reset daily based on the swap rates matching the duration of the debt issuance.
    - In the case of GD2/T2, the assumed maturity was 15 years. Drawing on evidence from banks on the price of the CMS of 26 bps and applying to new debt only, companies provided an estimated cost of ca 6 bps p.a.
  - ii) Liquidity premium for smaller debt issuance: an alternative is to assume companies issue smaller value nominal debt on an annual basis yet at a higher cost, reflecting the reduced liquidity of lower face value debt.
    - At GD2/T2, companies provided evidence of a liquidity premium at around 15 bps, and applying to its new debt issuance over RIIO-2 translated into a 6 bps uplift
- That is, evidence from both CMS and illiquidity supported a 6 bps uplift that was the basis for Ofgem's allowance at RIIO-2

- Our estimates from banks indicate that CMS costs in range of **18-41 bps p.a. (mid-point 30bps)**
  - This supports an infrequent issuer premium of 9 bps, (mid-point of 18-41 bps*31% new debt assumed in RIIO-3) based on the CMS-implied premium
- However, CMS provide a lower bound value of the infrequent issuer premium:
  - CMS only covers the interest rate risk, but credit spread risk is not hedged, hence an infrequent issuer still carries disproportionate financial risk exposure.
  - As shown below, the historical credit spread of iBoxx A/BBB index shows that infrequent issuers may face substantial credit risk

Redacted

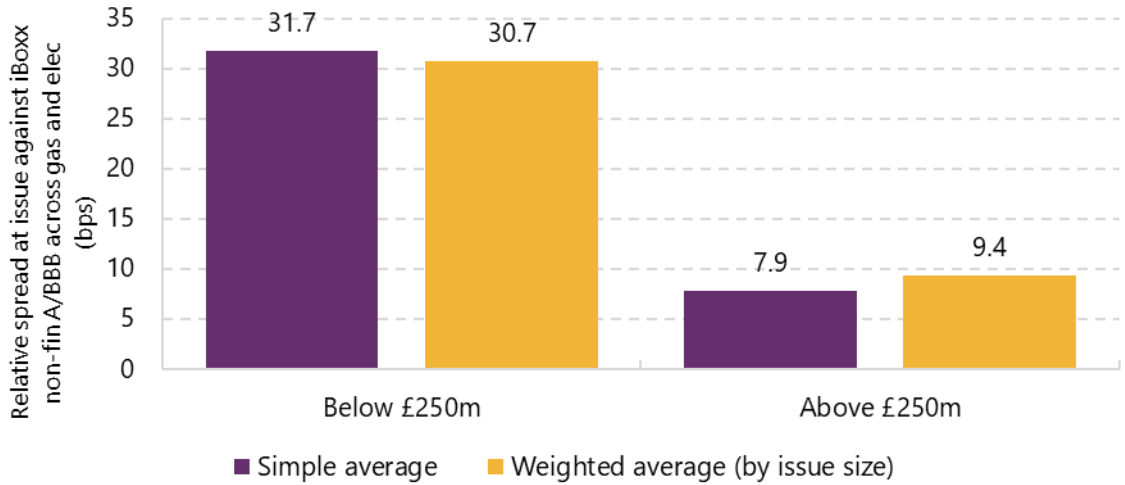
- Ofgem is wrong to conclude that fact not all companies employ CMS means that companies should not be compensated for such risks.[1] Companies incur such risks irrespective of whether they choose to mitigate risk. Companies also incur the small issue premium, as we discuss on the next slide

1. Ofgem states: "derivative use to manage infrequent issuance is limited. Just one infrequent issuer regularly engages in interest rate hedging to mitigate the risk of becoming misaligned to the trailing average which only covers a portion of their total debt (c.70%)". Source: Ofgem (1 July 2025) Ofgem RIIO-3 DD – Finance Annex, para 2.95

Primary market evidence based on relative spread at issue of a wide sample of energy network debt shows 21-24 bps illiquidity premium for sub-benchmark sized debt issues relative to issues at and above £250m

- In NERA's March 2024 report, we provided evidence for the infrequent issuer based on the illiquidity premium for bond issuance below £250m. Ofgem commented that NERA's approach is not robust as bid-ask spread in the secondary market is not a reliable proxy for premium at issuance
- To respond to Ofgem, we provide evidence on the relative liquidity of small issuers in the primary market based on relative spread at issue (against iBoxx non-fin A/BBB index) based on a wide sample of energy network debts (fixed nominal debt instruments) issued over the last five years
- As shown in figure below, the average differential in relative spread at issue is around 21-24bps between the sub-benchmark sized issues and issues at and above £250m. This supports an infrequent issuer premium of 7 bps (22.5bps*31% new debt, based on RIIO-3)
  - Around half of the sample of Ofgem's bonds are sub-benchmark £250m. Therefore, we assume that half of the estimated small issue premium could be reflected in the GNP. Consequently, the 21-24bps of small issue premium translates to an infrequent issuer premium of 3.5bps (half of 22.6bps*31% new debt based on RIIO-3).

Relative spread at issue is 21-24 bps higher for debt issues below £250m relative to debt above the £250m benchmark size



- Overall, we estimate an infrequent issuer premium of between 3.5 bps based on the illiquidity premium of sub-benchmark issues and 9 bps based on CMS, with a mid point of 6 bps

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Appendix 1: Illustrative example of relative spread calculation

Illustrative example of relative spread calculation

- Below outlines the steps in calculating the relative spread for a hypothetical bond issued on **2 Jan 2023**, with **15 years** tenor at issue.
- <u>To calculate the bond spread:</u>
  a. We calculate the gas network bond yield (for the 15-year tenor bond, in this example)
  b. We calculate the nominal gilt yield from Bank of England's nominal spot curve/ benchmark UKT with **15**-year tenor (or closest matching) on the bond's pricing date.
  c. We calculate the spread **at issue as** (a) minus (b)
- <u>To calculate the iBoxx spread:</u>
  a. We calculate the annual yield of average of A/BBB iBoxx Corporate Non-financial 10Y+index on the bond's issue date
  b. We calculate the nominal gilt yield from the Bank of England's nominal spot curve/ benchmark UKT, selected as the closest marching tenor to the iBoxx tenor, say, 20 years, for the same date
  c. We calculate the spread as (a) minus (b)
- <u>Relative spread:</u>
  – We calculate the gas network bond spread **at issue less** the iBoxx spread **on the bond's issue date** to estimate the relative spread **at issue**

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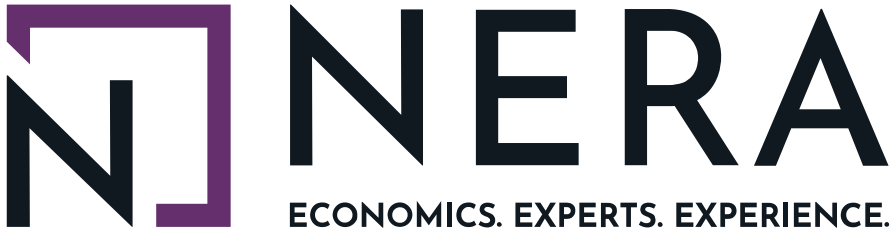
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