# RIIO GD2 Business Plan Appendix Financeability December 2019





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# **Document outline**

This document consists of the appendices to Chapter 18: Financing information. The table below outlines the main topics discussed in each appendix.

Appendix	Summary
A. Credit metrics and Ratings Thresholds	This appendix sets out the credit metrics and rating thresholds used by the credit rating agencies and required by Ofgem. It also covers the potential impact of adjusting capitalisation or depreciation rates.
B. Impact of Changes in the Regulatory and Political Environment	This appendix discusses the increase in the risk associated with investing in UK utilities over the past five years, as a result of changes in the regulatory regime and increasing political uncertainties, including renationalisation policies.
C. Minimum Credit Rating	This appendix sets out the appropriate minimum credit rating for the notional and actual company.
D. Qualitative Assessment	This appendix outlines the qualitative part of the rating methodology used by Moody's to assess gas networks. It sets out SGN's current rating using this methodology and provides our view of the potential changes in GD2.
E. Financeability Assessment – Ofgem's Working Assumptions	This appendix sets out our financeability assessment using Ofgem's working assumptions.
F. Monte Carlo Analysis of Risk	This appendix sets out our Monte Carlo analysis of risk and how this analysis fits into our overall assessment of risk.
G. Allowed Revenue and Costs to customers	This appendix provides a breakdown of SGN's projected allowed revenues for the GD2 period under Ofgem's working assumptions.
H. Key assumptions	This appendix sets out our key financial assumptions on asset lives, depreciation, totex allowances, capitalisation rates, and RIIO-GD1 close out mechanisms.
I. Financing Strategy	This appendix outlines the group's financing strategy, which has been designed to promote an efficient capital structure while managing financial risk.
J. Financial Projections	This appendix provides a breakdown of SGN's financial projections for the GD2 period (2022-2026) under Ofgem's working assumptions.
K. Dividend and Equity Issuance policy	This appendix provides a brief overview of SGN's dividend and equity issuance policy.
L. Equity Issuance Costs	This appendix provides an analysis of equity issuance costs compared with Ofgem's current assumptions.
M. Pensions	This appendix outlines SGN's estimated pension costs for GD2.
N. Tax	This appendix provides an overview of SGN's approach to modelling the tax allowance.
O. Consumer stakeholder	This appendix provides an overview of the approach taken to engage customers on



engagement	financeability issues and the main findings.
P. Reconciliation Between Company and Licence Model	This appendix sets out any issues we incurred when populating the Ofgem model for Ofgem's working assumptions.
Q. Assurance	This appendix sets out the financeability assurance that has taken place.

# Figure 1:Where Financeability sits within the Business Plan

	Distribution Mains & Services	Distribution (Governors & Crossings etc)	Transmission	Other Assets	gement
Management		Work Management	& Business Support		ngag
		Environmenta	l Action Plan		erE
Sustama	IT &	Cyber Resilience	Electrical & Instrumentation		old
Systems	Energy Futures: WI	nole Systems & Scenari	os, Energy System Tran	sition, Innovation	akeh
People		Workforce N	lanagement		t, Sta
Other Assets		Property, Fleet, Pl	ant & Equipment		nent
Customers		Customer Service	e & Vulnerability		urer
Emergency Service	Emergency Service				Proc
Emergency Service	Repair Service				iť ,
Inspection/ Maintenance		Asset Mai	ntenance	SIUs	cabil
Repair & Revalidation			Integrity &		nanc
Refurbishment / Replace / Rebuild	Repex	Integrity	Compliance		ncy, Fi
Growth/Recilience	Connections				fficie
Growthy Resilience		Capacity Management			
Removal		Maintenance	Integrity & Compliance		ပိ



# A. Credit metrics and Ratings Thresholds

#### Appendix A Summary

- This appendix sets out the credit metrics and rating thresholds used by the credit rating agencies, as well as the potential impact of adjusting capitalisation or depreciation rates.
- The quantitative assessment of SGN's financeability uses credit ratios required by Ofgem in addition to those used by credit rating agencies.
- The short-term liquidity benefits of adjusting capitalisation and depreciation rates are likely to be adjusted out by credit rating agencies and therefore do not improve financeability.
- SGN currently achieves an issuer rating of BBB+ and Baa1 from S&P and Moody's respectively. It is rated one notch lower at BBB by Fitch. However, Fitch currently rates SGN's Bonds (Senior Unsecured) at BBB+.

# A.i Credit Metrics Used and Their Calculations

Ofgem has outlined a number of financial ratios to be used in the quantitative assessment of SGN's financeability. These ratios have been considered alongside other metrics identified by Ofgem in their Financeability Guidelines<sup>1</sup>. However, we consider the metrics used by credit rating agencies in determining credit ratings to be the most important and therefore refer to these as 'primary' or 'key' credit metrics.

Further details on the calculation of each metric, as set out by Ofgem, is included below. SGN's calculation of each metric is consistent with credit rating agencies where applicable and broadly consistent with the definition provided by Ofgem. However, we have identified a number of differences in the SGN, and hence credit rating agency calculations, and the application of these definitions within Ofgem's Licence Model. These differences, impacting AICR, PMICR, FFO:Net Debt and Nominal PMICR, and our treatment of these ratios within the Licence Model are set out in Appendix 004P.

Metric	Calculation
Primary Metrics	
AICR	FFO (pre cash net interest) - RAV depreciation / Cash net interest
PMICR	FFO (pre cash net interest) - RAV depreciation / Cash net interest
FFO/Net Debt	FFO (post cash net interest) - principal inflation accretion / Net debt
Gearing	Net Debt / RAV
Additional Metrics	
FFO Interest Cover (incl. accretions)	FFO (pre-cash net interest) / Cash net interest + principal inflation accretion
FFO Interest Cover (cash interest)	FFO (pre-cash net interest) / Cash net interest
Nominal PMICR	FFO (pre-cash net interest) - RAV depreciation + YoY RAV inflation / Cash net interest + principal inflation accretion

# **Table A1: Primary and secondary credit metrics**

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<sup>&</sup>lt;sup>1</sup> Ofgem's 'Financeability Assessment for RIIO-2: Further Information' (March 2019)

RCF/Net Debt	FFO (post cash net interest) - dividends - principal inflation accretion / Net debt
EBITDA/RAV	EBITDA / RAV
RoRE	EBIT - tax - (cost of debt * debt RAV)/ Equity RAV
Dividend Cover	Profit after tax / Dividends declared
Dividend/Reg Equity	Dividends declared / Equity RAV

Source: Ofgem, rating agencies

# A.ii Impact of Adjustment of Capitalisation or Depreciation rates

We consider that using capitalisation or depreciation rates that reflect the creation or use of underlying assets is the best approach to maintain a sustainable, long-term cost structure for the benefit of customers. While adjustments to capitalisation or depreciation rates can improve liquidity in the short term, credit rating agencies assess both underlying creditworthiness and whether adjustments have a short-term benefit to the detriment of the company's longer-term position.

In particular, Moody's normalise the adjusted ICR for the regulatory levers that alter the timing of cost recovery<sup>2</sup>. These levers include regulatory asset lives, depreciation and the speed of money. The aim of this is to "capture the credit effects of true cost outperformance and provide better comparability between networks that may be allowed greater current cash returns (either because revenue is being pushed forward or because the RAB is effectively being depleted faster) with those that are likely to have more stable returns over the longer term".

Similarly, Moody's state that, "Regulators may provide options for companies to choose a different allocation of fast and slow money to address financeability issues if they are persuaded it would aid the financeability of the notional company. This means that companies can, with the regulator's consent, advance an element of future revenue to receive more cash in a given regulatory period, but this cash will no longer be available in future periods. We (Moody's) aim to disregard these individual adjustments for the purpose of calculating our AICR metrics." <sup>3</sup>

S&P also state that utilities using "accelerated depreciation of assets" to distort profit margins "might not be sustainable in the long-run"<sup>4</sup>. Finally, Fitch also state that, "we view that the alternative capitalisation or depreciation rates would not help PMICRs and therefore financeability"<sup>5</sup>.

Consequently, while the adjustment of capitalisation or depreciation rates may increase cash flows in the shortterm and improve short term liquidity, any benefit will likely be adjusted out by the credit rating agencies and therefore not improve credit metrics or financeability.

# Analysis of changes to deprecation rates

In GD1, Ofgem changed the profile of depreciation of gas network assets, shifting to a sum of years' digits (SOYD) approach rather than straight line depreciation. The figure and table below show that there is a marked



<sup>&</sup>lt;sup>2</sup> Moody's 'Regulated Electric and Gas Networks Rating Methodology' (March 2017)

<sup>&</sup>lt;sup>3</sup> Moody's 'Rock of Low returns Meets hard place of Covenants' (October 2019)

<sup>&</sup>lt;sup>4</sup> S&P 'Key Credit Factors for the Regulated Utilities (Nov 2013)'

<sup>&</sup>lt;sup>5</sup> Fitch 'Ofgem's Credit-Enhancing Mechanisms Unlikely to Benefit Ratings' (Feb 2019)

difference when moving from a 45 year straight line depreciation approach to the 45 year SOYD approach. Specifically, in the first 5 years (i.e. the length of the GD2 price control), cumulative depreciation is almost twice as high as the straight-line approach.



Figure A1: Illustration of different depreciation profiles

#### Source: SGN analysis

#### Table A2: Impact of different depreciation approaches

£ real	Cumulative Depreciation in first 5 years	Cumulative Depreciation in first 10 years
Straight line 45 years	11%	22%
SOYD 45 years	21%	39%
SOYD 35 years	26%	48%

Source: SGN analysis

When moving from the 45 year SOYD approach to the 35 year SOYD approach, cumulative depreciation in the first 5 years is slightly higher, at 26% compared with 21%. However, after 10 years (two price control periods) a shorter 35 year period almost depreciates the asset by half under the SOYD approach. This is highly front-end loaded for an asset which should, on average, provide service for 45 years.

Hence, we continue to consider that a 45 year depreciation profile (using the SOYD approach), which was specifically introduced to take into account the heat policy uncertainty, facilitates a more appropriate balance by spreading the cost over current and future customers while also acknowledging the risk of stranding at the end of asset lives. Consequently, we view that it would be more appropriate to review the length of asset lives once future heat policy has been established, which we anticipate will be towards the end of GD2.

This is consistent with our consumer engagement on this topic which found that the majority believe that current and future customers should pay their fair share of long-term investments.

# A.iii Ratings Thresholds

To determine the appropriate rating thresholds to adopt for the financeability analysis we have, alongside our credit rating advisors, reviewed credit rating agency (CRA) methodologies, credit opinions from the CRAs for



SGN and selected peers and conducted conversations with the CRAs. The guidance below presents the results of this process for the primary metrics adopted by S&P, Moody's and Fitch.

# Table A3: Credit rating agencies guidance

S&P Global		S&P Global	Moody's	<b>Fitch</b> Ratings
Current OpCo rating		<ul> <li>BBB+ / Stable Outlook</li> </ul>	<ul> <li>Baa1 / Negative Outlook</li> </ul>	<ul> <li>SR unsecured: BBB+/ Stable outlook</li> <li>Issuer: BBB / Stable Outlook</li> </ul>
OpCo key credit metrics (2018A)		<ul> <li>FFO / Net Debt: 9.3%</li> </ul>	<ul> <li>AICR: 1.4x/1.9x (SO/SC)<sup>1</sup></li> <li>Net Debt / RAV: 73.4%/72.4% (SO/SC)</li> </ul>	<ul> <li>PMICR: 1.3x/2.0x (SO/SC)</li> <li>Net Debt / RAV: 73.2%/70.2% (SO/SC)</li> </ul>
OpCo downgrade thresholds (issuer ratings) <sup>2</sup>	BBB+ / Baa1 / BBB+	<ul> <li>FFO / Net Debt ratio falls below 9% over an extended period</li> </ul>	<ul> <li>AICR's of lowerthan 1.4x at OpCo's</li> <li>Net debt / RAV above 75% for OpCo's</li> </ul>	<ul> <li>Lowerthan 1.7x Cash PMICR</li> <li>Lowerthan 2.0x Nominal PMICR (assuming materially higher than 55% IL debt)</li> <li>&gt;65% leverage</li> </ul>
	BBB / Baa2 / BBB	FFO / Net Debt 6%	<ul> <li>AICR's of lowerthan 1.2x at OpCo's</li> <li>Net debt / RAV above 85% for OpCo's</li> </ul>	<ul> <li>Lower than 1.5x Cash PMICR</li> <li>Lower than 1.8x Nominal PMICR (assuming materially higher than 55% IL debt)</li> <li>&gt;73% leverage</li> </ul>
	BBB- / Baa3 / BBB-	<ul> <li>FFO / Net Debt 5%</li> <li>1.5x EBITDA / interest cover</li> <li>At high levels of leverage we expect S&amp;P to start focusing on the interest cover EBITDA / Interest metric</li> </ul>	<ul> <li>AICR of lower than 1.1x at the OpCo's</li> <li>Net debt / RAV above 87% for OpCo's</li> </ul>	<ul> <li>Lower than 1.3x Cash PMICR</li> <li>Lower than 1.7x Nominal PMICR</li> <li>&gt;78% leverage</li> </ul>

Note(s): (1) SO: Southern GN, SC: Scotland GN; (2) Senior Unsecured Rating for Fitch is 1 rating notch higher than the issuer default rating

# Source: Fitch, Moody's, S&P

SGN achieves a higher issuer rating with S&P (BBB+) and Moody's (Baa1) compared to Fitch, which rates SGN one notch lower (BBB). However, from an issue (debt) rating perspective, all three ratings are aligned at the BBB+/Baa1/BBB+ category level as Fitch provides a one notch uplift to the issue (debt) rating.

The licence conditions to maintain an investment grade rating refer to the issuer rating and this is the basis on which the stress test triggers have been set. However, debt investors also focus on the issue (debt) rating, which is one notch higher for Fitch. We have therefore used the issuer default threshold to represent the sub investment grade trigger (where the stress tests are assessed) and a hybrid of the issuer rating and the debt rating for the upper end of the BBB rating range.

It is also important to note that credit metrics only form one part of a ratings assessment. In fact, qualitative factors are given a higher weighting of 60%, relative to 40% for the credit metrics, in the overall assessment by Moody's. We present more analysis of this topic in Appendix 004D.



# **B.** Impact of Changes in the Regulatory and Political Environment

#### Appendix B Summary

- This appendix discusses the increase in the risk associated with investing in UK utilities over the past five years due to changes in the regulatory regime, new greenhouse gas emissions targets and increasing political uncertainties, including renationalisation.
- As a result of these factors, the volatility of energy stock returns has increased markedly over recent years when compared to the FTSE 350. This has been most notable since 2016, in light of proposed regulatory changes, the acceleration of the Labour Party's renationalisation policy, and the UK's commitment to bring all greenhouse gas emissions to net zero by 2050. This indicates that the risk of investing in energy stocks is far greater than in RIIO-1.
- Consequently, gas network companies should target stronger credit metrics to increase headroom against existing thresholds.
- Investors should also be appropriately compensated for the additional political, industry and regulatory risk associated with investing in the energy sector. Selecting an asset beta from the top end of the estimated range is an appropriate way to achieve this.

Energy networks face a series of specific political, regulatory and industry risks. Specific events or announcements that have affected the risk associated with these companies include:

- The Labour party's 2017 election manifesto is launched with a commitment to renationalisation, 16/05/2017
- Independent report by Dieter Helm finds that Energy bills are significantly higher than necessary, published 25/10/2017
- RIIO-2 framework consultation published 07/03/2018
- RIIO-2 framework decision published 30/07/2018
- RIIO-2 sector specific methodology consultation published 18/12/2018
- Labour announce 'Bringing energy home' plan launched 15/05/2019
- RIIO-2 sector specific methodology decision published 24/05/2019
- UK becomes first major economy to pass net zero emissions law, requiring the UK to bring all greenhouse gas emissions to net zero by 2050, 27/06/2019
- The Labour party's 2019 election manifesto is launched with a commitment to nationalise the regulated energy networks, the Big Six<sup>6</sup> energy firms, National Grid, the water industry, Royal Mail, railways and the broadband arm of BT. Labour also announced their intentions to put the UK on track for a net-zero carbon energy system within the 2030s, which is significantly earlier than the 2050 target signed into law earlier in the year, 21/11/2019

Engagement with financial stakeholders found that the risk associated with investing in the UK utilities market has increased over the last 5 years, with the proposed changes to the regulatory regime and renationalisation policies cited as two of the main factors behind these elevated levels of risk.

Sometimes these events or announcements have resulted in a sharp correction in share prices on the day of the announcement. For example, National Grid's share price fell by 9% on the day the RIIO-2 sector specific methodology consultation was published, and SSE's share price fell by 2.5% following the announcement of the Labour Party's 'Bringing Energy Home' plans.

However, generally, these regulatory, political and industry risks appear to have been 'priced-in' more gradually, with energy stock prices experiencing a downward trend over the last 3 years. Specifically, since June 2016 the UK stock market, as proxied by the FTSE 350, has performed relatively well with the index rising by 18%. In



<sup>&</sup>lt;sup>6</sup> SSE, EDF Energy, British Gas, npower, E.ON UK and Scottish Power.

contrast, energy shares prices have significantly underperformed the broader UK stock market as National Grid and SSE declined by 23% and 29% respectively<sup>7</sup> over the same period. Given that utility stocks have in the past been typically considered to be 'defensive' stocks, this indicates they have been adversely affected by sector specific risks. This includes industry risks, for example, the Government's commitment to bring all greenhouse gas emissions to net zero by 2050, as well as regulatory changes and Labour's renationalisation policy.

One way to assess the relative risk profile of companies and stock indices is through measuring changes in volatility. To estimate volatility for both energy stocks and the FTSE 350, we calculate an annualised rolling volatility measure, using the standard deviation of 30 observations of daily returns multiplied by the square root of 252 trading days within a year<sup>8</sup>. To compare the annualised volatility of each stock and the FTSE 350, we then calculate the difference (or delta) in annualised volatility between them.

Using this measure, Figure B1 below shows that there has been an unprecedented increase in the volatility of energy stock returns in recent years compared with the FTSE 350. In particular, this figure shows that there has been a significant increase in the volatility of returns since the acceleration of Labour's nationalisation plans in 2016 and the start of preparations for the RIIO-GD2 regulatory period. The average difference in the annualised volatility of both energy stocks, relative to the FTSE 350, from June 2016 to present is more than twice as high than over the period from 2013 to June 2016. Compared to the 2008 – 2012 period, the average difference in volatility between the energy stocks and the FTSE 350 is over ten times higher.

This variability demonstrates that investments in UK utilities are inherently riskier than they have been during previous price controls, providing further evidence that the sector is being adversely affected by nationalisation, regulatory risks, and growing industry risks posed by the net zero target.



<sup>&</sup>lt;sup>7</sup> This underperformance is consistent across other listed utilities, with the share prices of Pennon Group, United Utilities and Severn Trent falling by 23%, 23% and 16% across the same period.

<sup>&</sup>lt;sup>8</sup> This measure of volatility is also used by Bloomberg.



# Figure B1: Difference in annualised volatility between each energy company and the FTSE 350, rolling 3month average

#### Source: Refinitiv

# Implications for RIIO-GD2

Compared with the GD1 price control, increased regulatory, political and industry risks, as well as persistent elevated volatility compared to the wider market, has a number of implications for the GD2 price control:

- it is appropriate to target stronger credit metrics. Our stakeholder engagement<sup>9</sup> showed that debt investors and ratings agencies generally agreed that target ratings for the energy sector should be around A/BBB+ (see Appendix 004C). However, stakeholders considered that Ofgem's proposed cuts to returns will make it harder for companies to achieve the A/BBB rating level that Ofgem uses to benchmark the cost of debt;
- it is appropriate to target strong quantitative credit metrics with greater headroom above existing thresholds, as qualitative metrics can't be assumed to be as strong in GD2 compared to GD1. Additionally, SGN has substantially less ability to influence its rating on qualitative factors, such as the stability and predictability of the regulatory regime and cost and investment recovery, which together account for 30% of the Moody's assessment; and
- investors should be adequately compensated for bearing elevated risk over GD2. Most stakeholders consider Ofgem's current proposed allowed return on equity (4.3% real, CPIH) is too low to compensate investors for the risk associated with investment in energy networks<sup>9</sup>. A more appropriate way to compensate investors could be through selecting an asset beta towards the top end of the estimated range for the cost of equity, or through an additional risk premium for elevated regulatory and political risks in setting the allowed return.

Looking forward, it also shows that returning to a stable, predictable political and regulatory environment will support low cost and efficient financing, thereby providing long-term benefits to customers.



<sup>&</sup>lt;sup>9</sup> PWC (November 2019) 'Financial Stakeholder Engagement – For SGN's RIIO-GD2 Business Plan'

# C. Minimum Credit Rating

#### **Appendix C Summary**

- This appendix sets out SGN's view of the appropriate minimum credit rating for the notional and actual company.
- Achieving the minimum credit rating is necessary to procuring the most efficient sources of debt financing, mitigating financial risk and lowering customer bills.
- Given the risk currently associated with investing in the UK energy sector, coupled with the feedback SGN has received that financial stakeholders do not view the UK energy sector as an attractive equity investment opportunity, it is necessary for network companies to maintain solid credit ratings to retain the ability to access capital.
- SGN consider the minimum credit rating for the notional company should be a strong BBB+/Baa1. Importantly, this rating provides sufficient headroom to protect the notional business, customers and investors against adverse shocks. It is also consistent with recent regulatory precedent. Many UK corporates are rated BBB+/Baa1, so this is therefore a more liquid part of the UK corporate debt market, an important factor in the ability of a company to continue to raise debt efficiently. This rating also closely aligns to the mid-point of the A/BBB iBoxx cost of debt index used by Ofgem to set the cost of debt allowances.
- SGN employ an actual capital structure with a slightly higher gearing level than Ofgem's assumed level for the notional company, which is likely to correspond to a credit rating that is one notch lower that the notional company (assuming no outperformance) i.e. BBB/Baa2. The SGN board considers it could securely finance the business at a rating which is one notch lower than the notional standard, as it has the benefit of a privately held ownership structure which is able to provide more rapid additional financial support (if required) than a comparable listed UK utility. We view that this rating provides sufficient headroom to handle adverse shocks and there is sufficient liquidity and demand from investors at this rating.

# C.i Considerations When Setting a Minimum Credit Rating

There are several important considerations when selecting a minimum credit rating for the notional and actual companies. These include the investment and funding needs of the company, ensuring there is enough headroom to manage adverse shocks, as well as being able to maintain financial resilience throughout a price control and over the long-term. The stability of the regulatory framework and predictability of resulting cash flows is key to maintaining resilient and efficient capital structures. This allows our networks to procure the most efficient sources of debt financing, mitigate financial risk and eventually lower customer bills by decreasing the cost of capital for infrastructure investments.

The sector specific risks posed by changes in the political and regulatory environment may have implications for investment in the sector over the short to medium term, while the UK's commitment to bring all greenhouse gas emissions to net zero by 2050 brings increased uncertainty. These factors create added pressure on SGN and the wider sector's credit rating assessment both in GD-2 and over the long run. Considering this, it is extremely important for network companies to maintain strong credit metrics in order to retain the ability to raise efficient debt to meet the long-term challenges faced by the energy sector.

In the Table C1 below, we outline the main factors we consider when assessing an appropriate minimum credit rating. Figures C1 and C2 directly below provide the supporting analysis that underpin our assessment.



# Table C1: Main factors to consider when assessing an appropriate minimum credit rating

Rating	BBB+	BBB	BBB-
Ability to absorb shocks (including economic, regulatory, political etc.)	At BBB+, the company has greater headroom to absorb negative shocks, which is particularly important given that economic, regulatory and political risks are weighed to the downside. The expected probability that the company starts at BBB+ and is downgraded in three consecutive years to a sub-investment grade rating is close to 0% (as shown in Figure C1 below), while the expected probability that the company debt is sub- investment grade in year 5 of the price control is 0.8%. This provides comfort that the company will be able to withstand a shock as well as meet its license requirements.	At BBB, the company has headroom to absorb negative shocks. The expected probability that the company is downgraded twice from BBB to a sub-investment grade rating in year 5 of the price control is 8% (as shown in Figure C1 below). This provides some comfort that the company will be able to withstand a shock as well as meet its license requirements, however, the probability of a license breach is significantly higher than when the starting position is BBB+.	At BBB-, the company has very limited headroom to absorb negative shocks. The expected probability that the company is downgraded to a sub- investment grade rating by year 5 of the price control is 33% (as shown in Figure C1 below), which indicates that the company will struggle to withstand a shock and continue meeting its license requirements. This rating would be significantly riskier for the company and its investors.
Ability to attract capital	As shown in Figure C2 from Moody's below, when measured by the RAB-weighted Moody's ratings of UK water & energy networks, most ratings cluster at A3 (AAA-) & Baa1 (BBB+), with Baa1 being the single largest category. This implies demand and liquidity is greatest at this rating.	Figure C2 shows that there is a drop of debt issuance at Baa2 (BBB), which indicates that there is lower demand and liquidity at this rating. Figure C3 also shows there are fewer bonds rated at BBB by S&P.	Figure C3 shows that the number of utility companies rated at BBB- /Baa3 is very low, pointing to limited liquidity and investor appetite at this rating. In addition, many large investors, such as pension funds and asset managers, are not able to allocate capital to debt rated at BBB-/Baa3 given its proximity to a sub- investment grade rating.
Cost of debt relative to BBB+	n/a	Analysis of spreads for UK non-financial corporate debt indicates that to move from BBB+ to BBB there is a cost increase of around 32 bps (see Table C2 below), depending on 11	Analysis of spreads for UK non-financial corporate debt indicates that to move from BBB+ to BBB- there is a cost increase of around 58 bps (see Table C2 below), depending on



		the time and		
		considered.	considered.	
Conformity with cost of debt allowance	The cost of debt allowance is calculated using the rolling average of the iBoxx 10yr+ non- financials A rated and 10yr+ non-financials BBB rated debt, so a BBB+ rating is closely aligned with Ofgem's allowance.	The analysis of credit spreads in Table C2 below indicates that a BBB rating would increase the cost of debt by approximately 32 basis points relative to the allowance.	The analysis of credit spreads in Table C2 below indicates that a BBB- rating would increase the cost of debt by approximately 58 basis points relative to the allowance.	
Financial stakeholder views	Stakeholders commented that at A/BBB companies have some headroom and can 'withstand a downgrade'. Stakeholders suggested that BBB+ provided the most liquidity in the BBB range. Figure C2 also supports this with BBB+ being the most prevalent rating for utility bonds.	One debt investor in our stakeholder interview programme preferred BBB within the broader BBB range as it 'offers a better capital/return trade-off' from their perspective. Stakeholders suggested that there was sufficient liquidity at BBB.	Stakeholders commented that being rated at BBB– provides limited headroom to withstand a negative shock to the business. They would just about meet the licence requirements, but several stakeholders suggested that this rating is 'not a comfortable place to be'.	
Financeability research with informed consumer panel (Appendix 004O)	The consumer panel expressed a strong preference for a BBB+ credit rating when compared to BBB- rating. Over 75% agreed that they would be willing to forgo an additional £7 annual bill saving (the approximate difference in cost to consumers between the BBB+ and BBB- rating) to maintain a good credit score and keep future bills down.			



# Figure C1: Probability of rating changes over the course of a five-year price control<sup>10</sup>

Start rating	Baa1						
End of year		0	1	2	3	4	5
A1 A2				0.2%	0.4%	0.7%	0.9%
A3			5.00%	9.2%	12.0%	13.7%	14.7%
Baa1		100%	85.0%	72.9%	63.1%	55.2%	48.6%
Baa2			6.0%	11.7%	15.5%	17.8%	19.1%
Baa3				0.3%	1.3%	2.4%	3.6%
Ba1					0.0%	0.3%	0.8%
Start rating	Baa2						
End of year		0	1	2	3	4	5
A1							
A2					0.0%	0.2%	0.4%
A3				0.4%	2.4%	3.9%	5.1%
Baa1			8.0%	11.7%	14.1%	15.6%	16.4%
Baa2		100%	82.0%	68.3%	57.7%	49.3%	42.7%
Baa3			9.0%	14.6%	17.8%	19.6%	20.3%
Ba1				0.4%	3.0%	5.3%	7.2%
Ba2					0.0%	0.3%	0.8%
Start rating	Baa3						
End of year		0	1	2	3	4	5
A1							
A2							
A3					0.0%	0.4%	0.7%
Baa1				0.7%	1.3%	1.9%	2.4%
Baa2			9.0%	11.4%	12.6%	13.1%	13.2%
ВааЗ		100%	80.0%	65.0%	53.6%	44.9%	38.1%
Ba1			4.0%	14.3%	19.9%	22.7%	23.5%
Ba2			1.0%	3.6%	6.1%	8.3%	9.8%
Ba3				0.0%	4.1%	0.7%	0.6%

Source: SGN analysis using Moody's credit transition model

<sup>&</sup>lt;sup>10</sup> The probabilities for each year do not always add up to 100% as some companies become non-rated due to merger/takeover activity.



#### Figure C2: RAB-weighted Moody's ratings of UK water & energy networks

Note: Operating company ratings reflect corporate family ratings for companies in highly covenanted financing structures. Due to debt tranching, with the majority of debt issued as part of a senior secured debt class, most of the debt in the UK water sector is rated A3.

#### Source: Moody's investors service<sup>11</sup>





# Source: S&P ratings taken from the Capital IQ database

To inform our estimate of changes to the cost of debt at different ratings, we analysed sterling fixed rate corporate bonds (excluding financials and real estate) up to 40 years. After eliminating split ratings, we were left with a data set of close to 250 data points for the A to BBB- range. To obtain a sufficient time series and account for yearly fluctuations, we considered the 10-year average yield to maturity across the different rating notches. This further reduced the sample size to 83 bonds.

Table C2 below shows the output of this analysis. It shows an increase in the cost of debt when moving from BBB+ to BBB of 32 bps and 26 bps when moving from BBB to BBB-<sup>12</sup>. We note that the gap from BBB+ to BBB is slightly wider than the gap from BBB to BBB-. This could be explained by the shorter average tenor of the sample BBB- bonds (versus the BBB+ and BBB average tenor) returning a lower relative spread and yield. Further to this, our conversations with market participants indicate that in some instances, the move from BBB+ to BBB can be more significant (than the move from BBB to BBB-) in terms of cost as the headroom above sub-investment grade is materially reduced. Another factor contributing to this could be the smaller sample size for

<sup>&</sup>lt;sup>12</sup> By way of comparison, we also estimated the difference in spread between the iBoxx A index and the iBoxx BBB index to be 30 bps (average since 2010). However, given the structure of the UK bond market, with a greater proportion of bonds rated A- and BBB+ relative to other notches in their respective bands, we view that the spread between the indices can be seen as approximating a move from A- to BBB+.



<sup>&</sup>lt;sup>11</sup> Moody's (2018), 'Increasingly complex group structures create diverging opco and holdco credit risk'

#### BBB and BBB- rated bonds.

Table C2: 10-year trailing average UK non-financial bond yield to maturity by rating (excluding financial an	d
real estate companies), basis points	

Rating	10-year trailing average yield to maturity (YTM)	Difference relative to BBB+	Sample size <sup>13</sup>	Average tenor	
BBB+	349	n/a	37	23.8	
BBB	381	32	15	23.1	
BBB-	407	58 (26 from BBB to BBB-	) 10	20.0	

Source: Analysis using data from Thomson Reuters Eikon

In the subsequent sections, we set out our views on the appropriate credit rating for the notional and actual company. In determining whether or not the company is able to meet the requirements to achieve these credit ratings, the company is assessed on both a quantitative and qualitative basis. We conduct our quantitative assessment in Appendix 004E and the qualitative assessment in Appendix 004D.

Furthermore, it's necessary to highlight that credit metrics are materially improved because of the switch to CPIH indexation, as highlighted in Appendix 004Civ below.

# C.ii Notional credit rating

We believe a strong BBB+/Baa1 credit rating is appropriate for the notional company for a number of reasons, as set out below.

Firstly, a strong BBB+/Baa1 credit rating is closely aligned with the cost of debt assumptions provided by Ofgem. In the Sector Specific Methodology Decision document, Ofgem propose that the cost of debt allowance for new debt is calculated using the average of the A and BBB iBoxx corporate non-financials indices. This implies that an efficient, notionally financed GDN can achieve cost of debt consistent with a strong BBB, weak A credit rating (BBB+/A-). Given that the cost of debt is based on the average of A and BBB iBoxx 10+ non-financials, the midpoint will reflect the threshold between A- (A3) and BBB+ (Baa1). Likewise, the structure of the UK bond market - with a greater proportion of corporate bonds rated A- and BBB+ relative to other notches in their respective bands - also implies that this is where the threshold is. The chart below shows that the average remaining life (or tenor) on the iBoxx indices since 2010 is 20.1 years, which aligns to our analysis of UK non-financial yields and our suggested alternative assumption for the trailing average cost of debt calculation (see Alternative Cost of Capital Assumptions Financeability Appendix 004Bi).



<sup>&</sup>lt;sup>13</sup> The overall sample of 83 for the 10-year trailing average included 4 A rated bonds and 17 A- rated bonds

# Commercial Confidentiality, 3rd Party Data Provider

We also consider that it is important to align Ofgem's cost of debt assumptions and the financeability analysis, otherwise this creates inconsistencies across the price control. Where financeability is assessed on a weaker credit rating, this would be expected to result in higher debt costs. Assuming a lower credit rating assumption for financeability purposes, and higher rated cost of debt assumption for setting finance cost allowances, risks setting benchmarks which are unachievable.

It is also important to consider the ability of companies to continue to efficiently raise finance during periods of financial distress. Historical yields for A and BBB rated indices diverged significantly during the financial crisis in 2008 reflecting the 'flight to quality' many investors undertook. This suggests companies with stronger credit ratings are better able to maintain stable access to capital markets during periods of financial stress. This view is supported by debt investors and ratings agencies, who generally agreed that credit ratings for the sector should be around A/BBB+. Several stakeholders observed that there is less liquidity in the BBB+ to BBB range, and if companies were downgraded to BBB – they would lose a lot of liquidity. Hence, it's essential that a solid rating is maintained, particularly as the currently favourable debt financing environment (i.e. low interest rates) is unlikely to persist indefinitely.

This proposed minimum credit rating for the notional structure is also consistent with the majority of water company business plans submitted to Ofwat in PR19<sup>14</sup>, suggesting that this is an efficient credit rating for other regulated utilities. It is also a common rating for UK corporate bond issuers, thereby benefiting from a liquid corporate debt market<sup>15</sup>.

A BBB+/Baa1 credit rating for the notional company also provides sufficient headroom to maintain an investment grade rating in the event of downside risks materialising. This view was supported by stakeholders, with some commenting that at A/BBB companies have got some headroom and can 'withstand one downgrade',

<sup>&</sup>lt;sup>15</sup> The Baa1/BBB+ rating is the most common rating for UK corporates within the investment grade band (Source: Capital IQ, 2014-2019)



<sup>&</sup>lt;sup>14</sup> 65% of the water company Business Plan's submitted for PR19 target a credit rating of Baa1/BBB+ for the notional structure

but at lower ratings it will certainly be more difficult for them as investors are clearly ratings sensitive.

Furthermore, it is important that the base assessment of financeability falls comfortably within a rating notch score band. If this were not the case, a company would risk a rating downgrade following minor credit negative factors. As well as increasing debt costs, a credit rating downgrade could be damaging to a company's ability to raise further finance.

Notably, a number of the proposed regulatory changes to RIIO-GD1 were identified as credit negative by Moody's in February 2019<sup>16</sup> and this view was reinforced in October 2019<sup>17</sup>. Similar changes to the UK water regulatory regime resulted in a downgrade to the rating of the regime's stability and predictability from Aaa to Aa in December 2018<sup>18</sup>. Downgrades to qualitative factors also have implications for financial ratio requirements, with firms requiring additional headroom on their credit metrics to offset the downgrade.

As well as impacting credit ratings, the proposed regulatory regime has also impacted equity markets, with National Grid's share price falling by c. 9% following publication of the Sector Specific RIIO-GD2 Methodology in December 2018. This provides further evidence that the proposed changes to the regime will impact investor appetite.

Achieving a BBB+/Baa1 rating in the current regulatory and political environment will undoubtedly be more difficult given the risks highlighted in this Appendix and the qualitative assessment in Appendix 004D. It will require stronger performance against the quantitative financial metrics, instead of relying on qualitative factors to support the overall ratings assessment.

# C.iii Minimum actual credit rating

The notional company is a regulatory standard which accommodates different actual capital structures within the sector. However, companies are free to choose an appropriate structure that matches the risk profile chosen by its Board. SGN's Board has opted for a capital structure with a level of gearing above that assumed at the notional company, to maintain a more efficient capital structure, and private shareholders are willing to accept a lower minimum credit rating compared to the notional company (based on no outperformance on allowed and expected returns) recognising this provides a degree of uncertainty in terms of returns for instance in the event of operational shocks.

The SGN board considers it could continue to securely finance the business at a credit rating, which is at least two notches above sub-investment grade as there is sufficient (albeit reduced) liquidity and demand from debt investors at this credit rating (as evidenced by BBB/Baa2 corporate issuance); and it has the benefit of a privately held ownership structure which is able to provide more rapid additional financial support, (if required) in the event of a downside scenario, than a comparable listed UK company.

Estimating the rating impact of higher gearing relative to the notional assumption is to some extent uncertain. As set out in Table A3 in Appendix 004A, gearing of up to 75% is consistent with the Moody's BBB+ rating, suggesting that SGN's approach and therefore the actual company is consistent with a BBB+ rating. However, with this level of gearing the impact of a significantly reduced allowed cost of capital is expected to exert downward pressure on other financial ratios.

We therefore use a minimum rating of BBB/Baa2 for the actual company. We consider this to still provide sufficient headroom to manage downside risks. Figure C1 above suggests that the probability of transitioning

<sup>&</sup>lt;sup>16</sup> Moody's 'Credit quality likely to weaken in RIIO-GD2 regulatory period' published 14 February 2019

<sup>&</sup>lt;sup>17</sup> Moody's: Rock of low returns meets hard place of covenants, 8 October 2019

<sup>&</sup>lt;sup>18</sup> Moody's '2019 outlook negative as companies steer through troubled waters' published 5 December 2018

from BBB/Baa2 to a sub-investment grade rating is 7.2% by the end of a five-year period. This is based upon ratings performance for all companies and we consider that SGN, and the wider UK utility sector, has stronger credit features which reduces this probability further. A number of UK utilities have successfully financed their businesses while being rated BBB/Baa2.

# C.iv Impact of switch to CPIH on financeability metrics

Credit metrics are materially improved because of the switch to CPIH. For example, when scenario A1 or A2 (Ofgem's working assumptions) are switched from an RPI to CPIH basis, the AICR/PMICR improves by approximately +0.4x. Without this switch Ofgem's working assumptions scenario would be borderline sub-investment grade even before allowing headroom for stress testing downside risks.

The 0.4x increase in AICR/PMICR is not a fundamental improvement in the profitability of the business. Therefore, Ofgem should be careful about netting this movement off against other regulatory changes which would reduce the profitability of the business, for example, through a lower WACC. Using the immediate switch to CPIH to accelerate cashflow to mitigate low returns, may provide protection to debt investors, but only as a result of shifting material risk to equity investors.

We understand that Ofgem have taken the decision not to make the switch from RPI to CPIH indexation for Tender Round 6 of the OFTO programme in part as a result of the lack of a liquid swap market and lack of transparency<sup>19</sup>. We would argue that the same issues are applicable to RIIO2, for instance, by undermining the stability and predictability of the regime. Furthermore, it's worth noting that in their decision to retain RPI as the inflation index for the Offshore Tenders Round 4, and as the default for the cap and floor interconnector regime<sup>20</sup>, Ofgem stated that they:

- **a.** 'note the risks (regarding the lack of a liquid CPI linked debt market) and have considered this in our decision'
- **b.** 'do not expect to consult on our thinking on any changes in indexation for RIIO until the future role in the economy of an alternative measure of consumer inflation, which may be CPIH, becomes clear'
- **c.** 'would expect to consult on how we would put into effect any such change to ensure it is present value neutral'.

It has to be considered whether the use of CPIH/CPI indexation in financial markets is actually now clear. For example, it is not clear when the Debt Management Office is going to issue CPI linked debt and, as per Ofgem's considerations for OFTO round 6, the swap market is still illiquid and has a lack of transparency. Furthermore, there has not been a comprehensive impact assessment of the change to CPIH in RIIO-2 and whether NPV negative decisions have been made as part of this change. Moody's in particular highlighted the novel approach to deflating the TMR in RIIO-2<sup>21</sup>.

This highlights that the current regulatory inconsistency/instability needs to be taken into account when setting target credit metric thresholds. It should also be noted that this could have been mitigated to some extent by gradually transitioning to CPIH, instead of an immediate switch. This would have helped to maintain the trust and confidence of investors, who have historically invested on the basis of RPI indexation. This was a key consideration for Ofwat when they decided to employ a transition period in PR19.

<sup>&</sup>lt;sup>19</sup> OFTO Tender Process Changes for Future Tender Rounds implemented for Tender Round 6 onwards (November 2018)

<sup>&</sup>lt;sup>20</sup> Decision Regarding the Indexation of Future OFTO and Interconnector Licenses (March 2016)

<sup>&</sup>lt;sup>21</sup> Moody's (2019): Credit quality likely to weaken in RIIO-GD2 regulatory period

The uncertainties outlined above suggest that credit metrics need to be assessed carefully, with some precautionary headroom factored in, until the ratings agencies and financial market participants have had time to assess the risks and changes to the regime.



# **D. Qualitative Assessment**

#### **Appendix D Summary**

- This appendix outlines the qualitative part of the rating methodologies used by credit rating agencies to assess gas networks. It sets out SGN's current rating focusing on the Moody's methodology and provides our view of the potential changes in GD2.
- To conduct its qualitative assessment, Moody's consider the following factors: stability and predictability of the regulatory regime, asset ownership model, cost and investment recovery, revenue risk, scale and complexity of capital programme, and financial policy.
- We find that there is potential for the qualitative factors to worsen over RIIO-GD2, which increases the need to maintain quantitative factors with sufficient headroom in the range in order to protect credit ratings.
- The credit rating of Scotland, which achieves an implied rating of A3 from the Moody's grid, is more sensitive to credit negative movements in the qualitative factors assessed by Moody's. A downgrade in the Cost and Investment Recovery factor or Financial Policy factor could result in a downgrade to the implied credit rating from A3 to Baa1. The implied credit rating of Southern, which is closer to the Baa2 threshold, could be downgraded if the financial policy factor is downgraded by one notch.
- Southern and Scotland are both particularly vulnerable to changes in S&P's assessment of the industry risk factor, which can be regarded to have increased as a result of regulatory and political pressures. A change in this factor from 'very low' risk to 'low' risk could lead to an overall rating decline of one notch.
- The regulatory environment is the most important factor in Fitch's assessment of the qualitative factors. In its latest assessment of SGN, Fitch notes that they expect reduced scope for operational and financing outperformance, and greater regulatory dividend scrutiny of the operating companies. This indicates that the regulatory environment factor could come under pressure in GD2, which could impact on SGN's overall rating.
- Our assessment of the qualitative factors indicates that SGN will have even greater focus put on the primary quantitative ratio of AICR to stay within the required Baa1 threshold.

Qualitative factors are considered by credit rating agencies alongside quantitative metrics (i.e. credit metrics) in determining the appropriate credit rating. In Moody's rating methodology qualitative factors (i.e. factors not included in the 'Leverage and Coverage' ratios factor in the Moody's ratings grid) represent 60% of the overall score, while for Standard &Poor's (S&P) the qualitative factors and the quantitative metrics form the basis of the 'anchor rating', which is then adjusted for the modifiers, such as management and financial policy. The Fitch corporate rating criteria considers a range of quantitative and qualitative factors, with the weighting varying between entities in a sector as well as over time. Where one factor is significantly weaker than others, this element attracts a greater weight in the analysis.

Moody's rating methodology is the most transparent in identifying the key factors and corresponding weightings for determining the overall rating. It is therefore the most easily replicable methodology, of the three main credit rating agencies. We have reviewed the most recent Moody's credit opinions for SGN from October 2018<sup>22</sup> and February 2019, the negative outlook announcement for SGN (January 2019)<sup>23</sup> and comments on the proposed changes to the regulatory regime for RIIO-GD2 (February 2019 and October 2019). The comments from Moody's on the qualitative factors are summarised in the following table, along with our observations that may indicate a change to factor scores in the future. The current ratings reflect the most recent credit opinions from Moody's.

<sup>&</sup>lt;sup>22</sup> Moody's (2018), 'Southern Gas Networks plc: Update following FY18 results'

<sup>&</sup>lt;sup>23</sup> Moody's (2019), 'Moody's changes outlook on Southern Gas Networks and Scotland Gas Networks ratings to negative'

Qualitative Factor (Weighting)	Current SGN credit rating opinion and rationale <sup>24</sup>	Possible rationale for change	SGN view on possible factor ratings in GD2
Stability and Predictability of Regulatory Regime (15%)	<ul> <li>Aaa</li> <li>Well-established and transparent regulatory framework underpins stable and predictable cash flow, with good visibility</li> <li>Ofgem have a long track record of consistent decision-making and consulting stakeholders on changes in the past</li> </ul>	Scotland and Southern Gas Networks Credit Opinion (Feb 19): Moody's reaffirm their view of the difficult operating environment and note that if political pressure leads to further interventions, it could, over time, weaken their assessment of the transparency, stability and predictability of the regime. Scotland and Southern Gas Networks Credit Opinion (Oct 18): Moody's comment on the difficult environment in which the sector is now operating, with affordability of utility bills high on the political agenda. Moody's note that interventions arising from further political pressure could weaken their assessment of the transparency, stability and predictability of the regime. The stability of the regime reflects the extent to which the level of allowed cost of debt and equity is consistent over time. Ofgem's current working assumptions (Scenario A1 and A2) represent a significant change to the RIIO-GD1 working assumptions for the cost of capital. Furthermore, the cost of equity assumed under these scenarios represents a very significant change from GD1 and at least a 15- 20 year trailing average is required to fund the actual cost of debt, as shown in SGN's Alternative Cost of Capital Assumption Financeability Appendix 004iBi. Other elements that could lead to a potential downgrade of the sector, due to major changes made to regulatory precedent in GD2 and increased regulatory risk, include: • novel approach to the deflation of TMR <sup>125</sup> • allowed vs expected returns wedge asset stranding risk • low incentives • approach to financeability assessment • regulatory process • cost indexation	Aa Moody's downgraded the stability and predictability of the water regime in May 2018 (from Aaa to Aa) for similar reasons and therefore it is possible a similar change may be applied here.

# Table D1: Moody's credit rating opinion for SGN qualitative factors and possible rationale for change



<sup>&</sup>lt;sup>24</sup> Current rating taken from the Moody's February 2019 credit opinion while some of the supporting rationale is taken from the October 2019 credit opinion.

<sup>&</sup>lt;sup>25</sup> Moody's (2019): Credit quality likely to weaken in RIIO-GD2 regulatory period

Qualitative Factor (Weighting)	Current SGN credit rating opinion and rationale <sup>24</sup>	Possible rationale for change	SGN view on possible factor ratings in GD2
		<ul> <li>relative and dynamic targets</li> <li>disproportionate level of penalties</li> <li>tightening of licence obligations.</li> </ul>	
Asset Ownership Model (5%)	<ul> <li>Aa</li> <li>Network assets are owned outright by SGN and there is a low risk of the licence being terminated</li> </ul>	The Labour party's nationalisation policy is a clear risk to the asset ownership model of the sector.	A Possible change to this factor but dependent upon fast-changing political environment.
Cost and Investment Recovery (Ability and Timeliness) (15%)	<ul> <li>A</li> <li>The regulatory formula is supportive of cost recovery and SGN has significant outperformance of cost allowances for RIIO-GD1</li> <li>The regulator seeks to insulate consumers from the volatility and cost uncertainty</li> <li>Risk-sharing in place between the network and consumers</li> <li>Potential ability to pass through costs incurred</li> <li>SGN's cost of debt is broadly in line with the regulatory allowance</li> </ul>	N/A	A Unlikely to be any change to this rating factor.
Revenue Risk (5%)	<ul> <li>Aa</li> <li>SGN has limited volume exposure, as any revenue shortfalls because of faster-than- expected declines in demand can be recovered from customers with a two- year lag</li> </ul>	Scotland and Southern Gas Networks Credit Opinion (Oct 18): Moody's notes that declining allowed returns for RIIO-2 will hurt returns for the whole British regulated energy sector. Furthermore, the uncertainty surrounding future energy policy decisions such as decarbonisation of heat may create longer- term revenue challenges.	Aa There may not be a downgrade during GD2, but this could be impacted during future price controls.
Scale and Complexity of Capital Program (10%)	<ul> <li>A</li> <li>Relatively modest investment programme (due to part-funding by a government grant) coupled with expected totex outperformance should lead to strong free cash flow</li> </ul>	N/A	A Unlikely to be any change to this rating factor as the GD2 capital programme is comparable to the GD1 capital programme.



Qualitative Factor (Weighting)	Current SGN credit rating opinion and rationale <sup>24</sup>	Possible rationale for change	SGN view on possible factor ratings in GD2
(weighting)	generation		
Financial Policy (10%)	<ul> <li>Ba</li> <li>High level of gearing (73%)</li> <li>SGN OpCos benefit from regulatory ring-fencing provisions which partly insulate it from the credit quality of the SGN MidCo</li> </ul>	Scotland and Southern Gas Networks Credit Opinion (Oct 18): The company's policy to maintain a high level of gearing for RIIO-GD2 (73%) makes significant further deleveraging unlikely. Moody's note that a gearing increase to 75% for SGN or 85% for SGN MidCo could lead to a downgrade.	Ba SGN assume the same rating for this factor for the notional company and actual company, as OpCos benefit from additional regulatory ring-fencing provisions.

Source: SGN analysis using Moody's ratings methodology

Moody's methodology converts each factor (both qualitative and quantitative) to a numerical score and applies a weighting to each factor. A lower score leads to a higher credit rating, with a score between 7.5 and 8.5 corresponding to a Baa1 rating. The current SGN credit ratings and forecast financial ratios suggest that the overall (i.e. including both quantitative and qualitative factors) indicative scores from the ratings grid of Scotland and Southern are 7.13 (A3) and 7.81 (Baa1), respectively. However, it should be noted that both Scotland and Southern have been assigned a Baa1 rating, with Moody's commenting that the assigned Baa1 rating for Scotland is constrained by the weaker credit quality of the consolidated SGN MidCo group.

The following table D2 summarises the impact on credit rating score of a one-notch downgrade to each factor with all other factors (qualitative and quantitative) remaining constant.



# Table D2: The latest Moody's credit rating opinion for SGN qualitative factors and possible impact of a onenotch downgrade

Qualitative Factor (Weighting)	Current SGN credit rating opinion	One-notch downgrade on current rating	Impact to overall score (and corresponding rating) of a one-notch downgrade to factor
Stability and Predictability of Regulatory Regime (15%)	Aaa	Aa	Scotland: 7.38 (remains at A3) Southern: 8.04 (remains at Baa1)
Asset Ownership Model (5%)	Aa	А	Scotland: 7.25 (remains at A3) Southern: 7.93 (remains at Baa1)
Cost and Investment Recovery (Ability and Timeliness) (15%)	A	Ваа	Scotland: 7.52 (one notch downgrade to Baa1) Southern: 8.16 (remains at Baa1)
Revenue Risk (5%)	Aa	A	Scotland: 7.25 (remains at A3) Southern: 7.93 (remains at Baa1)
Scale and Complexity of Capital Program (10%)	А	Ваа	Scotland: 7.39 (remains at A3) Southern: 8.05 (remains at Baa1)
Financial Policy (10%)	Ва	В	Scotland: 8.15 (one notch downgrade to Baa1) Southern: 8.71 (one notch downgrade to Baa2)

Source: SGN analysis using Moody's ratings methodology

The credit rating of Scotland, which achieves an implied rating of A3 from the Moody's grid, is more sensitive to credit negative movements in the qualitative factors assessed by Moody's. A downgrade in the Cost and Investment Recovery factor or Financial Policy factor could result in a downgrade to the implied credit rating from A3 to Baa1. The implied credit rating of Southern, which is closer to the Baa2 threshold, could be downgraded if financial policy factor is downgraded by one notch.

SGN is also rated by S&P. S&P regards industry risk - the relative health and stability of the markets in which a company operates - as one of the key components for determining the anchor credit rating (see figure D1 below). This is rated as 'very low' in Scotland and Southern's current S&P ratings (May 2019)<sup>26</sup>, which is the strongest possible rating. As noted above, in light of recent political pressures and declining allowed returns, it is possible that the industry risk could be adjusted to 'low' which would lead to an overall rating downgrade of one notch (from BBB+ to BBB).

<sup>&</sup>lt;sup>26</sup> S&P (2019), 'Scotia Gas Networks Ltd. Group', May 2019

# Figure D1: S&P Corporate criteria framework



# Source: S&P (2013), 'Corporate Methodology'

As noted previously, the Fitch corporate rating criteria considers a range of quantitative and qualitative factors, with the weighting varying between entities in a sector as well as over time. Where one factor is significantly weaker than others, this element attracts a greater weight in the analysis. The factors considered are outlined in the table below.

# Table D3: Fitch key rating factors

Qualitative factors	Financial factors
<ul> <li>Business profile</li> <li>Sector risk profile</li> <li>Country risk</li> <li>Management strategy/governance</li> <li>Group structure</li> </ul>	<ul> <li>Financial profile         <ul> <li>Cash flows and profitability</li> <li>Financial structure</li> <li>Financial flexibility</li> </ul> </li> </ul>

# Source: Fitch Corporate Rating Criteria (February 2019)

Fitch's most recent rating notes<sup>2728</sup> on SGN placed more emphasis on their financial assessment of SGN, however they did note that SGN has achieved Solid Regulatory Performance, with both GDNs having met all the regulatory output targets during the first five years of RIIO-GD1 and exceeded output targets for iron mains risk removal and leakage of gas in both networks.

The table D4 below shows Fitch's current assessment of SGN's business profile compared with its competitors. It shows that the regulatory environment is the most important factor in the assessment. On the upcoming

<sup>&</sup>lt;sup>27</sup> Fitch Ratings (2019), 'Scotland Gas Networks', March 2019

<sup>&</sup>lt;sup>28</sup> Fitch Ratings (2019), 'Scotland Gas Networks', March 2019

GD2 price control, Fitch comment that it expects RIIO-GD2 to be 'more challenging than RIIO-GD1 based on Ofgem's proposal for a drastically reduced allowed return on regulatory equity (RoRE), proposed at 4% (real, CPIH-linked; CPIH is consumer price inflation including owner-occupiers' housing costs) or 3% (real, RPI-linked), down from 6%-7% (real, RPI-linked) allowed under the present price control.'<sup>2930</sup>. Fitch also notes that they expect reduced scope for operational and financing outperformance, and greater regulatory dividend scrutiny of the operating companies. This indicates that the regulatory environment factor considered by Fitch could come under pressure in GD2, which could impact on SGN's overall rating.

# Table D4: Fitch assessment of SGN's business profile

Issuer	Business profile										
Name	IDR/Outlook	Operati Environn	ing nent	Managemen and Corporat Governance	t e Se Posi	ctor tioning	Regulatory Environment	Asset	Base	Operat	ions
Scotland Gas Networks plc	BBB/Sta	aa-		a-	bbb+		a 📕	bbb+		а	
Southern Gas Netw orks plc	BBB/Sta	aa-		a-	bbb+		a 📕	bbb+		а	
Wales & West Utilities Limited	BBB/Sta	aa-		a-	bbb+		a 📕	bbb+		а	
Cadent Gas Limited	BBB+/Sta	aa-		a-	bbb+		a	bbb+		a-	
Source: Fitch Ratings, Fitch Solutions						Import	ance	Higher		Moderate	

Issuer	Business profile								
Name	IDR/Outlook	Operating	Management and Corporate	Sector	Regulatory	Asset Base	Operations		
Scotland Gas Networks plc	BBB/Sta	5.0	2.0	1.0	3.0	1.0	3.0		
Southern Gas Networks plc	BBB/Sta	5.0	2.0	1.0	3.0	1.0	3.0		
Wales & West Utilities Limited	BBB/Sta	5.0	2.0	1.0	3.0	1.0	3.0		
Cadent Gas Limited	BBB+/Sta	4.0	1.0	0.0	2.0	0.0	1.0		
Source: Fitch Ratings, Fitch Solutions				Worse positio	ned than IDR	In line wi	ith IDR		

# Source: Fitch<sup>31</sup>

The credit negative factors identified by Moody's in its January assessment of SGN<sup>32</sup> (January 2019) resulted in a negative outlook for the Baa1/BBB+ credit rating. At this stage, this has not resulted in a downgrade of our credit rating and S&P have not revised their assessment or outlook since the rating was affirmed in May 2019. However, as highlighted in both this Appendix and the minimum credit rating Appendix 004C, there is a risk that the qualitative factors could worsen, thus emphasising that the quantitative factors should be towards the top of the BBB+/Baa1 range.

In summary, our assessment of qualitative factors under the Moody's rating grid indicates the importance of maintaining the quantitative ratios within their minimum rating thresholds. Therefore, for the purposes of our analysis, we have used the primary ratio for each rating agency from the quantitative assessment in Appendix 004E as the minimum financeability requirement.

 <sup>&</sup>lt;sup>31</sup> Fitch Ratings (2019), 'Southern Gas Networks', March 2019 & Fitch Ratings (2019), 'Scotland Gas Networks', March 2019
 <sup>32</sup> Moody's (2019), 'Moody's changes outlook on Southern Gas Networks and Scotland Gas Networks ratings to negative'



 <sup>&</sup>lt;sup>29</sup> Fitch Ratings (2019), 'Southern Gas Networks', March 2019 & Fitch Ratings (2019), 'Scotland Gas Networks', March 2019
 <sup>30</sup> note this quote was based on Ofgem's Sector Specific Methodology and the proposed allowed cost of equity was marginally higher in the Sector Specific Methodology Decision at 4.3% (real, CPIH linked)

# E. Financeability Assessment – Ofgem's Working Assumptions

#### **Appendix E Summary**

- This appendix outlines our financeability assessment using Ofgem's working assumptions.
- In Scenario A1 (including 50 basis points outperformance), the notional company meets the thresholds
  of the primary metrics for Baa1/BBB+ for two of the three rating agencies, for both Southern and
  Scotland. Importantly the average AICR across GD2 is 1.48x for Southern and 1.47x for Scotland which
  is above the 1.4x threshold for Baa1, but below the revised 1.5x ratio Moody's is now using for the UK
  regulatory water sector. The PMICR falls short of the 1.6x BBB+ ratio threshold across GD2 for Fitch –
  being 1.53x for Southern and 1.56x for Scotland. The FFO/net debt ratio is above 10% providing some
  headroom above the 9% BBB+ threshold. In overall terms, this represents a weak Baa1 / BBB+, thereby
  achieving the minimum rating for the notional company.
- In Scenario A1, the notional company is able to retain financial ratios consistent with investment grade ratings across most of the downside stress tests.
- In Scenario A2 (no outperformance), the notional company financial metrics fall materially. The average AICR across GD2 falls below the 1.4x lower threshold for Baa1, and the PMICR is substantially below the BBB+ threshold. There is still some headroom in the FFO/net debt ratio which is above 9x. Bringing together qualitative and quantitative factors, the financial metrics do not provide the headroom we target given the weakening outlook on the qualitative factors. We assess the notional company in Scenario A2 to be Baa2 / BBB, so one notch lower than our minimum Baa1 / BBB+ rating for the notional company. For most stress tests the downside scenarios are worse for scenario A2 vs A1, apart from the combined downside which had already had the 50bps incentive income assumption removed.
- The financial ratios for the actual company fall short of thresholds for Baa2 / BBB in both Scenario A1 and A2. The financial ratios also fall below investment grade thresholds in downside stress tests. This requires identification of potential mitigation levers.
- We have identified a number of mitigation levers to improve financeability during GD2, including: regulatory asset life reduction, acceleration of existing interest cash flows, funding mix of new debt (both tenor and inflation base), liability management, interest profiling, natural de-gearing, HoldCo generated equity injection and a whole business securitisation structure. While use of these levers can restore financial ratios to above minimum rating thresholds (Baa2 / BBB for the actual company), many of these levers have offsetting costs to SGN in other periods e.g. GD3.

# E.i Notional Company

The sections below set out the financial results of the scenarios Ofgem have requested for the notional company. This provides the primary credit metrics and the secondary credit metrics requested by Ofgem and used by credit rating agencies.

# **Notional Base Case**

The tables below show the primary and secondary financial ratios, for Scenario A1 which is based on Ofgem's working assumptions (including a 4.3% cost of equity with 50bps incentive income), as requested by Ofgem in their Sector Specific Methodology Decision. We have also completed analysis on Scenario A2 which assumes no incentive income which is consistent with a sensitivity requested by the RIIO2 Challenge Group.



# Table E1: Scenario A1 - Southern

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.4	1.48x	1.45x	1.50x	1.45x	1.46x	1.48x	1.49x	1.50x
PMICR	> 1.6	1.53x	1.50x	1.56x	1.50x	1.52x	1.53x	1.55x	1.56x
FFO/Net Debt	> 9%	10.17%	9.81%	10.55%	9.81%	9.97%	10.19%	10.34%	10.55%
Gearing	< <mark>65%</mark>	59.80%	59.38%	60.10%	60.10%	60.05%	59.81%	59.65%	59.38%
Secondary metrics									
FFO Interest Cover (incl. accretions)		3.56x	3.41x	3.69x	3.41x	3.49x	3.57x	3.63x	3.69x
FFO Interest Cover (cash interest)		4.07x	3.89x	4.23x	3.89x	3.99x	4.08x	4.16x	4.23x
Nominal PMICR		2.18x	2.13x	2.22x	2.13x	2.16x	2.18x	2.20x	2.22x
RCF/Net Debt		8.0%	7.6%	8.3%	7.6%	7.8%	8.0%	8.1%	8.3%
EBITDA/RAV		9.1%	9.0%	9.2%	9.0%	9.1%	9.1%	9.2%	9.2%
RoRE		4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Dividend Cover		0.60x	0.59x	0.62x	0.59x	0.59x	0.60x	0.61x	0.62x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

#### Table E2: Scenario A1 - Scotland

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.4	1.47x	1.45x	1.49x	1.45x	1.46x	1.47x	1.48x	1.49x
PMICR	> 1.6	1.56x	1.54x	1.58x	1.54x	1.55x	1.55x	1.56x	1.58x
FFO/Net Debt	> 9%	10.23%	9.99%	10.59%	9.99%	10.07%	10.15%	10.36%	10.59%
Gearing	< 65%	60.17%	59.88%	60.38%	60.11%	60.25%	60.38%	60.21%	59.88%
Secondary metrics									
FFO Interest Cover (incl. accretions)		3.55x	3.43x	3.67x	3.43x	3.50x	3.55x	3.61x	3.67x
FFO Interest Cover (cash interest)		4.06x	3.91x	4.21x	3.91x	4.00x	4.06x	4.14x	4.21x
Nominal PMICR		2.19x	2.16x	2.22x	2.16x	2.18x	2.20x	2.21x	2.22x
RCF/Net Debt		7.9%	7.7%	8.3%	7.7%	7.8%	7.9%	8.1%	8.3%
EBITDA/RAV		9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%
RoRE		4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Dividend Cover		0.59x	0.59x	0.61x	0.59x	0.59x	0.59x	0.59x	0.61x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

In Scenario A1, the notional company meets the thresholds of the primary metrics for Baa1for two of the three rating agencies, for both Southern and Scotland. Importantly, the AICR is above the 1.4x threshold across the GD2 period, but below the revised 1.5x ratio Moody's is now using for the UK regulatory water sector. The PMICR across GD2 falls short of the 1.6x ratio threshold for Fitch – being 1.53x for Southern and 1.56x for Scotland. The FFO/net debt ratio is above 10% providing some headroom above the 9% threshold. In overall terms, this represents a weak Baa1 / BBB+ rating, thereby achieving the minimum rating for the notional company.

The secondary metrics listed in the above table carry less weight in the credit rating agencies' methodologies and are therefore less prominent in our assessment. However, they are still part of the methodology and therefore need to be considered. Specifically, the RCF / Net Debt ratio accounts for 5% of the overall rating in the published Moody's methodology, so this is the most important secondary metric to consider.

Under Moody's methodology, the Baa band for RCF / Net Debt is 7% - 14%. Our modelling indicates that the notional company sits just inside the Baa threshold for both Southern and Scotland, with GD2 averages of 8.0% and 7.9%, respectively.

Another metric considered by Moody's is FFO / Interest Coverage, with the threshold for Baa at 2.8x - 4x. In our financeability assessment we calculate two measures of FFO / Interest Coverage, one including accretions and the second focusing on cash interest. On average, the notional company is towards the top end of the Baa range across GD2 when accretions are included in the measure, with the Southern average at 3.56x and Scotland at 3.55x. When we include cash interest in our calculations, both Southern and Scotland are just inside the A rating threshold, achieving average GD2 ratios of 4.07x and 4.06x, respectively.

This evidence supports our conclusions from the assessment against the primary metrics that the notional company just about meets the Baa1 rating in scenario A1.



# Table E3: Scenario A2 – Southern

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics					l				
AICR	> 1.4	1.39x	1.37x	1.40x	1.37x	1.38x	1.39x	1.40x	1.40x
PMICR	> 1.6	1.44x	1.43x	1.46x	1.43x	1.44x	1.45x	1.45x	1.46x
FFO/Net Debt	> 9%	9.80%		10.09%	9.51%	9.63%	9.82%	9.93%	10.09%
Gearing	< 65%	60.29%	60.21%	60.38%	60.26%	60.38%	60.30%	60.31%	60.21%
Secondary metrics					]				
FFO Interest Cover (incl. accretions)		3.46x	3.34x	3.58x	3.34x	3.41x	3.47x	3.53x	3.58x
FFO Interest Cover (cash interest)		3.96x	3.81x	4.10x	3.81x	3.89x	3.98x	4.04x	4.10x
Nominal PMICR		2.10x	2.06x	2.12x	2.06x	2.08x	2.10x	2.11x	2.12x
RCF/Net Debt		7.6%	7.3%	7.9%	7.3%	7.5%	7.6%	7.7%	7.9%
EBITDA/RAV		8.9%	8.8%	9.0%	8.8%	8.9%	8.9%	9.0%	9.0%
RoRE		4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
Dividend Cover		0.46x	0.45x	0.47x	0.45x	0.45x	0.45x	0.46x	0.47x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

# Table E4: Scenario A2 – Scotland

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.4	1.38x	1.37x	1.39x	1.37x	1.38x	1.38x	1.38x	1.39x
PMICR	> 1.6	1.47x	1.46x	1.48x	1.46x		1.47x	1.47x	
FFO/Net Debt	> 9%	9.86%	9.69%	10.14%	9.69%	9.73%	9.78%	9.95%	10.14%
Gearing	< 65%	60.66%	60.28%	60.87%	60.28%	60.58%	60.87%	60.87%	60.71%
Secondary metrics									
FFO Interest Cover (incl. accretions)		3.46x	3.36x	3.56x	3.36x	3.41x	3.46x	3.51x	3.56x
FFO Interest Cover (cash interest)		3.96x	3.83x	4.08x	3.83x	3.90x	3.96x	4.02x	4.08x
Nominal PMICR		2.11x	2.09x	2.13x	2.09x	2.11x	2.11x	2.12x	2.13x
RCF/Net Debt		7.6%	7.4%	7.9%	7.4%	7.5%	7.5%	7.7%	7.9%
EBITDA/RAV		8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%
RoRE		4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
Dividend Cover		0.45x	0.44x	0.45x	0.45x	0.44x	0.44x	0.44x	0.45x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

In Scenario A2, where the 50bps outperformance assumption is removed, the notional company financial metrics fall materially. The average AICR across GD2 falls below the 1.4x threshold for Baa1, and the PMICR is substantially below the BBB+ threshold. There is still some headroom in the FFO/net debt ratio which is above 9%. Bringing together qualitative and quantitative factors, the financial metrics do not provide the headroom we target given the weakening outlook on the qualitative factors. We assess the notional company to be Baa2 / BBB, so one notch lower than our minimum Baa1 / BBB+ for the notional company.

# **Notional Scenario Testing**

# 25% RPI Linked Debt

As requested by Ofgem the table below illustrates Scenario A1 for the notional company when 25% RPI linked debt is assumed for RIIO-GD2 rather than 25% CPIH linked debt.



# Table E5: Scenario A1 (25% RPI Linked Debt) – Southern

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics					ĺ				
AICR	> 1.4	1.60x	1.57x	1.63x	1.57x	1.59x	1.60x	1.62x	1.63x
PMICR	> 1.6	1.66x	1.63x	1.69x	1.63x	1.64x	1.66x	1.68x	1.69x
FFO/Net Debt	> 9%	10.17%	9.82%	10.55%	9.82%	9.97%	10.19%	10.34%	10.55%
Gearing	< 65%	59.79%	59.38%	60.09%	60.09%	60.05%	59.80%	59.64%	59.38%
Secondary metrics									
FFO Interest Cover (incl. accretions)		3.56x	3.42x	3.69x	3.42x	3.49x	3.57x	3.63x	3.69x
FFO Interest Cover (cash interest)		4.41x	4.20x	4.59x	4.20x	4.32x	4.43x	4.51x	4.59x
Nominal PMICR		2.18x	2.14x	2.22x	2.14x	2.16x	2.18x	2.20x	2.22x
RCF/Net Debt		8.0%	7.6%	8.3%	7.6%	7.8%	8.0%	8.1%	8.3%
EBITDA/RAV		9.1%	9.0%	9.2%	9.0%	9.1%	9.1%	9.2%	9.2%
RoRE		4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Dividend Cover		0.60x	0.59x	0.62x	0.59x	0.59x	0.60x	0.61x	0.62x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

# Table E6: Scenario A1 (25% RPI Linked Debt) – Scotland

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.4	1.59x	1.57x	1.61x	1.57x	1.58x	1.59x	1.60x	1.61x
PMICR	> 1.6			1.71x	1.66x	1.67x			1.71x
FFO/Net Debt	> 9%	10.23%	10.00%	10.59%	10.00%	10.07%	10.15%	10.36%	10.59%
Gearing	< 65%	60.16%	59.88%	60.38%	60.11%	60.25%	60.38%	60.20%	59.88%
Secondary metrics									
FFO Interest Cover (incl. accretions)		3.55x	3.44x	3.67x	3.44x	3.50x	3.55x	3.61x	3.67x
FFO Interest Cover (cash interest)		4.40x	4.23x	4.57x	4.23x	4.33x	4.41x	4.49x	4.57x
Nominal PMICR		2.20x	2.16x	2.23x	2.16x	2.18x	2.20x	2.21x	2.23x
RCF/Net Debt		7.9%	7.7%	8.3%	7.7%	7.8%	7.9%	8.1%	8.3%
EBITDA/RAV		9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%
RoRE		4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
Dividend Cover		0.59x	0.59x	0.61x	0.59x	0.59x	0.59x	0.59x	0.61x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

Relative to the base case, these scenarios show an improvement in financial ratios for the notional company. For example, the AICR improves by 0.12x for both Southern and Scotland and the notional company would achieve the minimum rating. However, we have concerns about assuming RPI linked debt during GD2 for the notional company as this creates a mis-match between the indexation of the debt and the CPIH indexation of the RAV. Ofgem have already assumed an immediate move to CPIH indexation, and this needs to be reflected throughout the assessment of the notional company.

# **Notional Stress Testing**

The tables below show the primary and secondary financial ratios, and implied overall rating for scenarios A1 and A2 under the notional structure for the stress tests requested by Ofgem in their Sector Specific Methodology Decision. For stress testing purposes, we focus on the thresholds for maintaining investment grade – i.e. Baa3 / BBB-, rather than the minimum ratings set out above.

The stress tests are as follows:

Downside

- i. -1% change in interest rate (for RFR, Libor and iBoxx inputs)
- ii. -1% change in CPIH from 2% base assumption
- iii. -0.5% change in RPI-CPIH wedge from 1.049% base assumption<sup>33</sup>

<sup>&</sup>lt;sup>33</sup> As all index linked debt is assumed to be CPIH based, and the price control is on a CPIH basis, this requested stress test will not have an impact vs. base case. Any movements due to changes in inflation are picked up in the +/- 1% CPIH scenario.



- iv. -10% change in Totex performance from base assumption of no outperformance
- v. -2% change in RoRE from base assumption
- vi. -5% change in the proportion of index-linked debt from 25% base assumption
- vii. Combined downside:
  - +0.75% change in interest rate (for RFR, Libor and iBoxx inputs)
  - -1% change in CPIH from 2% base assumption
  - -1.3% change in RoRE from base assumption (modelled as -6.5% change in Totex performance, Business Plan Incentive at -1.3% of Totex allowance and a -£7m change in Incentive income)

#### Upside

- viii. +1% change in interest rate (for RFR, Libor and iBoxx inputs)
- ix. +1% change in CPIH from 2% base assumption
- x. +0.5% change in RPI-CPIH wedge from 1.049% base assumption
- xi. +10% change in Totex performance from base assumption of no outperformance
- xii. +2% change in RoRE from base assumption
- xiii. +5% change in the proportion of index-linked debt from 25% base assumption

#### **Downside stress tests**

The following tables set out the downside stress tests for both Scenario A1 and Scenario A2.

#### Table E7: Scenario A1: Downside stress tests (average over GD2) - Southern

Metric	Threshold	Base case	Downside stress tests							
				ii		iv	V	vi	vii	
Primary metrics										
AICR	> 1.1	1.48x	1.46x	1.44x	1.48x	1.39x	1.06x	1.44x	1.16x	
PMICR	> 1.3	1.53x	1.52x	1.50x	1.53x	1.45x	1.11x	1.49x	1.21x	
FFO/Net Debt	> 5%	10.2%	10.0%	10.1%	10.2%	9.6%	8.4%	10.2%	8.7%	
Gearing	< 65%	59.8%	60.1%	61.2%	59.8%	61.3%	62.2%	<b>59.8%</b>	63.8%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		3.56x	3.67x	3.71x	3.56x	3.43x	3.12x	3.56x	3.48x	
FFO Interest Cover (cash interest)		4.07x	4.24x	3.98x	4.07x	3.92x	3.57x	3.96x	3.74x	
Nominal PMICR		2.18x	2.20x	1.84x	2.18x	2.09x	1.78x	2.18x	1.58x	
RCF/Net Debt		8.0%	7.8%	8.0%	8.0%	7.5%	6.3%	8.0%	6.7%	
EBITDA/RAV		9.1%	8.9%	9.1%	9.1%	8.9%	8.2%	9.1%	8.4%	
RoRE		4.8%	4.5%	4.8%	4.8%	4.5%	2.8%	4.8%	3.5%	
Dividend Cover		0.60x	0.51x	0.68x	0.60x	0.47x	(0.11x)	0.60x	0.20x	
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	



# Table E8: Scenario A1: Downside stress tests (average over GD2) - Scotland

Metric	Threshold	Base case	e Downside stress tests							
				ii	iii	iv	v	vi	vii	
Primary metrics										
AICR	> 1.1	1.47x	1.45x	1.44x	1.47x	1.38x	1.05x	1.43x	1.16x	
PMICR	> 1.3	1.56x	1.54x	1.53x	1.55x	1.46x	1.14x	1.51x	1.25x	
FFO/Net Debt	> 5%	10.2%	10.0%	10.2%	10.2%	9.6%	8.5%	10.2%	8.9%	
Gearing	< 65%	60.2%	60.5%	61.5%	60.2%	61.8%	62.6%	60.2%	63.2%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		3.55x	3.66x	3.71x	3.55x	3.41x	3.11x	3.55x	3.50x	
FFO Interest Cover (cash interest)		4.06x	4.23x	3.97x	4.06x	3.90x	3.56x	3.95x	3.77x	
Nominal PMICR		2.19x	2.22x	1.86x	2.19x	2.09x	1.80x	2.19x	1.62x	
RCF/Net Debt		7.9%	7.7%	7.9%	7.9%	7.4%	6.3%	7.9%	6.7%	
EBITDA/RAV		9.1%	8.8%	9.1%	9.1%	8.9%	8.1%	9.1%	8.3%	
RoRE		4.8%	4.5%	4.8%	4.8%	4.5%	2.8%	4.8%	3.3%	
Dividend Cover		0.59x	0.50x	0.67x	0.59x	0.44x	(0.12x)	0.59x	0.16x	
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	

#### Table E9: Scenario A2: Downside stress tests (average over GD2) - Southern

Metric	Threshold	Base case	Downside stress tests							
				<b>ii</b>		iv	٧	vi	vii	
Primary metrics										
AICR	> 1.1	1.39x	1.36x	1.36x	1.39x	1.31x	0.96x	1.35x	1.16x	
PMICR	> 1.3	1.44x	1.42x	1.42x	1.44x	1.36x	1.01x	1.40x	1.21x	
FFO/Net Debt	> 5%	9.8%	9.6%	9.7%	9.8%	9.2%	8.0%	9.8%	8.7%	
Gearing	< 65%	60.3%	60.6%	61.7%	60.3%	61.8%	62.8%	60.3%	63.8%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		3.46x	3.57x	3.62x	3.46x	3.34x	3.01x	3.46x	3.48x	
FFO Interest Cover (cash interest)		3.96x	4.12x	3.88x	3.96x	3.82x	3.44x	3.85x	3.74x	
Nominal PMICR		2.10x	2.12x	1.76x	2.10x	2.01x	1.69x	2.10x	1.58x	
RCF/Net Debt		7.6%	7.4%	7.6%	7.6%	7.1%	5.9%	7.6%	6.7%	
EBITDA/RAV		8.9%	8.7%	8.9%	8.9%	8.7%	7.9%	8.9%	8.4%	
RoRE		4.4%	4.1%	4.4%	4.4%	4.1%	2.3%	4.4%	3.5%	
Dividend Cover		0.46x	0.37x	0.53x	0.46x	0.33x	(0.29x)	0.46x	0.20x	
Dividend/Reg Equity	]	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	

#### Table E10: Scenario A2: Downside stress tests (average over GD2) - Scotland

Metric	Threshold	Base case	Downside stress tests							
				ii		iv	v	vi	vii	
Primary metrics										
AICR	> 1.1	1.38x	1.36x	1.35x	1.38x	1.29x	0.95x	1.34x	1.16x	
PMICR	> 1.3	1.47x	1.45x	1.44x	1.47x	1.37x	1.04x	1.43x	1.25x	
FFO/Net Debt	> 5%	9.9%	9.6%	9.8%	9.9%	9.3%	8.0%	9.9%	8.9%	
Gearing	< 65%	60.7%	61.0%	62.0%	60.7%	62.3%	63.2%	60.7%	63.2%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		3.46x	3.56x	3.61x	3.46x	3.32x	3.01x	3.46x	3.50x	
FFO Interest Cover (cash interest)		3.96x	4.12x	3.87x	3.96x	3.80x	3.44x	3.85x	3.77x	
Nominal PMICR		2.11x	2.13x	1.78x	2.11x	2.01x	1.71x	2.11x	1.62x	
RCF/Net Debt		7.6%	7.4%	7.6%	7.6%	7.1%	5.9%	7.6%	6.7%	
EBITDA/RAV		8.9%	8.6%	8.9%	8.9%	8.7%	7.9%	8.9%	8.3%	
RoRE		4.4%	4.1%	4.4%	4.4%	4.1%	2.3%	4.4%	3.3%	
Dividend Cover		0.45x	0.36x	0.52x	0.45x	0.30x	(0.30x)	0.45x	0.16x	
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	

For Scenario A1, the notional company is able to retain financial ratios consistent with investment grade ratings across most of the downside stress tests. In stress test (v), the AICR is below Moody's threshold for Baa3 (1.06x) and below the Fitch PMICR ratio threshold for BBB. In the combined downside (stress test vii), across all the metrics, the implied rating is Baa3, suggesting the business could be downgraded by two notches, but would expect to retain an investment grade rating with two of the three rating agencies.

For Scenario A2, the financial ratios are worse. The toughest downside stress test is the -2% change to RoRE



(assumed to be from incentives performance as per Ofgem's modelling). In stress test (v), the AICR falls below Moody's threshold for Baa3 and the Fitch PMICR ratio is under similar pressure.

#### **Upside stress tests**

The following tables set out the upside stress tests for both Scenario A1 and Scenario A2.

# Table E11: Scenario A1: Upside stress tests (average over GD2) - Southern

Metric	Threshold	Base case			Upside st	ress tests		
			viii	ix	x	xi	xii	xiii
Primary metrics								
AICR	> 1.4	1.48x	1.50x	1.51x	1.48x	1.56x	1.93x	1.52x
PMICR	> 1.6	1.53x	1.55x	1.56x	1.53x	1.62x	1.99x	1.58x
FFO/Net Debt	> 9%	10.2%	10.4%	10.2%	10.2%	10.8%	12.1%	10.2%
Gearing	< 65%	59.8%	59.5%	58.5%	59.8%	58.2%	57.4%	59.8%
Secondary metrics								
FFO Interest Cover (incl. accretions)		3.56x	3.47x	3.42x	3.56x	3.70x	4.03x	3.56x
FFO Interest Cover (cash interest)		4.07x	3.93x	4.16x	4.07x	4.23x	4.61x	4.19x
Nominal PMICR		2.18x	2.16x	2.49x	2.18x	2.28x	2.60x	2.18x
RCF/Net Debt		8.0%	8.2%	8.0%	8.0%	8.5%	9.8%	8.0%
EBITDA/RAV		9.1%	9.4%	9.1%	9.1%	9.3%	10.1%	9.1%
RoRE		4.8%	5.1%	4.8%	4.8%	5.1%	6.8%	4.8%
Dividend Cover		0.60x	0.69x	0.53x	0.60x	0.74x	1.32x	0.60x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

# Table E12: Scenario A1: Upside stress tests (average over GD2) – Scotland

Metric	Threshold	Base case	Upside stress tests							
			viii	ix	X	xi	xii	xiii		
Primary metrics										
AICR	> 1.4	1.47x	1.49x	1.50x	1.47x	1.57x	1.92x	1.51x		
PMICR	> 1.6	1.56x	1.57x	1.59x	1.55x	1.66x	2.01x	1.60x		
FFO/Net Debt	> 9%	10.2%	10.5%	10.3%	10.2%	10.9%	12.2%	10.2%		
Gearing	< 65%	60.2%	59.9%	58.9%	60.2%	58.5%	57.8%	60.2%		
Secondary metrics										
FFO Interest Cover (incl. accretions)		3.55x	3.55x	3.46x	3.42x	3.55x	3.70x	4.02x		
FFO Interest Cover (cash interest)		4.06x	4.06x	3.93x	4.15x	4.06x	4.24x	4.60x		
Nominal PMICR		2.19x	2.19x	2.17x	2.50x	2.19x	2.30x	2.62x		
RCF/Net Debt		7.9%	7.9%	8.2%	8.0%	7.9%	8.5%	9.8%		
EBITDA/RAV		9.1%	9.1%	9.3%	9.1%	9.1%	9.3%	10.1%		
RoRE		4.8%	4.8%	5.1%	4.8%	4.8%	5.1%	6.8%		
Dividend Cover		0.59x	0.59x	0.68x	0.52x	0.59x	0.75x	1.31x		
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%		


#### Table E13: Scenario A2: Upside stress tests (average over GD2) – Southern

Matria.	Threshold	Base case			Upside s	tress tests		
metric			viii	ix	x	xi	xii	xiii
Primary metrics								
AICR	> 1.4	1.39x	1.41x	1.42x	1.39x	1.47x	1.87x	1.43x
PMICR	> 1.6	1.44x	1.46x	1.47x	1.44x	1.53x	1.87x	1.49x
FFO/Net Debt	> 9%	9.8%	10.0%	9.9%	9.8%	10.4%	11.6%	9.8%
Gearing	< 65%	60.3%	60.0%	59.0%	60.3%	58.7%	58.0%	60.3%
Secondary metrics								
FFO Interest Cover (incl. accretions)		3.46x	3.38x	3.33x	3.46x	3.60x	3.91x	3.46x
FFO Interest Cover (cash interest)		3.96x	3.83x	4.05x	3.96x	4.12x	4.47x	4.08x
Nominal PMICR		2.10x	2.08x	2.40x	2.10x	2.19x	2.50x	2.10x
RCF/Net Debt		7.6%	7.8%	7.6%	7.6%	8.2%	9.3%	7.6%
EBITDA/RAV		8.9%	9.2%	8.9%	8.9%	9.1%	9.8%	8.9%
RoRE		4.4%	4.6%	4.4%	4.4%	4.7%	6.3%	4.4%
Dividend Cover		0.46x	0.55x	0.38x	0.46x	0.59x	1.14x	0.46x
Dividend/Reg Equity	l	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

#### Table E14: Scenario A2: Upside stress tests (average over GD2) – Scotland

	Threshold	Base case			Upside s	tress tests		
Metric								
			VIII	IX	X	XI	XII	XIII
Primary metrics								
AICR	> 1.4	1.38x	1.40x	1.41x	1.38x	1.48x	1.89x	1.42x
PMICR	> 1.6	1.47x	1.49x	1.50x	1.47x	1.57x	1.89x	1.51x
FFO/Net Debt	> 9%	9.9%	10.1%	9.9%	9.9%	10.5%	11.7%	9.9%
Gearing	< 65%	60.7%	60.4%	59.3%	60.7%	59.0%	58.4%	60.7%
Secondary metrics								
FFO Interest Cover (incl. accretions)		3.46x	3.37x	3.33x	3.46x	3.61x	3.90x	3.46x
FFO Interest Cover (cash interest)		3.96x	3.83x	4.05x	3.96x	4.13x	4.46x	4.08x
Nominal PMICR		2.11x	2.10x	2.42x	2.11x	2.22x	2.51x	2.11x
RCF/Net Debt		7.6%	7.8%	7.6%	7.6%	8.2%	9.3%	7.6%
EBITDA/RAV		8.9%	9.1%	8.9%	8.9%	9.1%	9.8%	8.9%
RoRE		4.4%	4.6%	4.4%	4.4%	4.7%	6.3%	4.4%
Dividend Cover		0.45x	0.53x	0.37x	0.45x	0.60x	1.13x	0.45x
Dividend/Reg Equity		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

All upside stress tests show an improvement on the base case position for both companies across scenarios A1 and A2. Stress test xii. (+2% change in RoRE from base assumption) has the most positive impact on the financial ratios.

For Scenario A2, the upside stress tests is still insufficient to generate financial ratios which meet the thresholds for the minimum rating. For example, the average PMICR over GD2 is still below the 1.6x threshold for a BBB+ rating.

#### E.ii Actual Company

The sections below provide the financial ratios for the scenarios Ofgem have requested for the actual company.

#### **Actual Base Case**

The tables below show the primary and secondary financial ratios, for scenarios A1 and A2 under the actual company structure, as requested by Ofgem and the RIIO2 Challenge Group, respectively.

Note: the gearing output in each of the tables is from the License Model which does not fully align with our own company model and thus where we expect leverage to be in the scenarios modelled for the actual company. We expect gearing to be below 73% for all of the actual company base cases. We use our company model outputs for all of the actual company stress test cases, as explained in Appendix



#### 004P.

#### Table E15: Scenario A1 - Southern

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.2	1.12x	0.99x	1.19x	1.19x	1.19x	1.16x	1.06x	0.99x
PMICR	> 1.4	1.15x	1.03x	1.22x	1.22x	1.22x	1.19x	1.09x	1.03x
FFO/Net Debt	> 6%	7.08%	6.79%	7.37%	7.37%	7.27%	7.17%	6.79%	6.82%
Gearing	< 73%	73.10%	72.84%	73.19%	73.17%	73.19%	72.84%	73.13%	73.15%
Secondary metrics									
FFO Interest Cover (incl. accretions)		2.62x	2.44x	2.79x	2.79x	2.72x	2.65x	2.44x	2.48x
FFO Interest Cover (cash interest)		2.96x	2.79x	3.07x	3.07x	3.05x	3.04x	2.79x	2.85x
Nominal PMICR		1.64x	1.49x	1.77x	1.77x	1.73x	1.67x	1.54x	1.49x
RCF/Net Debt		6.1%	5.5%	7.0%	7.0%	5.8%	6.4%	5.5%	5.7%
EBITDA/RAV		9.0%	8.9%	9.1%	9.0%	9.1%	9.1%	9.0%	8.9%
RoRE		8.8%	8.4%	8.9%	8.8%	8.9%	8.9%	8.8%	8.4%
Dividend Cover		2.74x	1.17x	7.38x	7.38x	1.53x	2.32x	1.17x	1.30x
Dividend/Reg Equity		1.8%	0.6%	2.6%	0.6%	2.6%	1.6%	2.4%	2.0%

#### Table E16: Scenario A1 - Scotland

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.2	1.12x	0.95x	1.25x	1.22x	1.09x	1.25x	1.08x	0.95x
PMICR	> 1.4	1.17x	1.01x	1.29x	1.26x	1.14x	1.29x	1.13x	1.01x
FFO/Net Debt	> 6%	6.96%	6.57%	7.46%	6.96%	6.72%	7.46%	7.08%	6.57%
Gearing	< 73%	74.43%	73.92%	74.90%	73.92%	74.17%	74.56%	74.59%	74.90%
Secondary metrics									
FFO Interest Cover (incl. accretions)		2.49x	2.35x	2.72x	2.42x	2.35x	2.72x	2.57x	2.39x
FFO Interest Cover (cash interest)		2.93x	2.75x	3.19x	2.91x	2.83x	3.19x	2.99x	2.75x
Nominal PMICR		1.58x	1.48x	1.73x	1.63x	1.50x	1.73x	1.58x	1.48x
RCF/Net Debt		5.3%	4.6%	5.8%	4.6%	5.7%	5.8%	5.8%	4.8%
EBITDA/RAV		8.9%	8.6%	9.1%	9.1%	9.0%	9.1%	8.8%	8.6%
RoRE		8.5%	7.7%	8.9%	8.9%	8.8%	8.9%	8.3%	7.7%
Dividend Cover		1.18x	0.64x	1.64x	0.75x	1.64x	1.41x	1.46x	0.64x
Dividend/Reg Equity		2.6%	1.6%	4.0%	4.0%	1.6%	2.7%	2.0%	2.8%

#### Table E17: Scenario A2 - Southern

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.2	1.05x	0.92x	1.15x	1.15x	1.14x	1.08x	0.98x	0.92x
PMICR	> 1.4	1.09x	0.96x	1.18x	1.18x	1.17x	1.12x	1.01x	0.96x
FFO/Net Debt	> 6%	6.84%	6.47%	7.23%	7.23%	7.09%	6.89%	6.47%	6.55%
Gearing	< 73%	73.28%	73.04%	73.38%	73.24%	73.37%	73.04%	73.37%	73.38%
Secondary metrics									
FFO Interest Cover (incl. accretions)		2.56x	2.37x	2.76x	2.76x	2.67x	2.58x	2.37x	2.43x
FFO Interest Cover (cash interest)		2.90x	2.72x	3.03x	3.03x	3.01x	2.97x	2.72x	2.78x
Nominal PMICR		1.58x	1.43x	1.73x	1.73x	1.69x	1.60x	1.47x	1.43x
RCF/Net Debt		6.0%	5.5%	6.9%	6.9%	5.7%	6.3%	5.5%	5.7%
EBITDA/RAV		8.8%	8.6%	8.9%	8.9%	8.9%	8.9%	8.7%	8.6%
RoRE		4.6%	4.0%	4.8%	4.8%	4.8%	4.6%	4.4%	4.0%
Dividend Cover		(0.41x)	(1.12x)	0.54x	0.54x	(0.04x)	(0.58x)	(0.82x)	(1.12x)
Dividend/Reg Equity		1.5%	0.5%	2.5%	0.5%	2.5%	1.1%	1.9%	1.5%



#### Table E18: Scenario A2 - Scotland

	Threshold	GD2	GD2	GD2	2021-22	2022-23	2023-24	2024-25	2025-26
Metric		Average	MIN	MAX					
Primary metrics									
AICR	> 1.2	1.05x	0.87x	1.20x	1.14x	1.01x	1.20x	1.03x	0.87x
PMICR	> 1.4	1.11x	0.94x	1.25x	1.19x	1.07x	1.25x	1.09x	0.94x
FFO/Net Debt	> 6%	6.73%	6.28%	7.31%	6.69%	6.43%	7.31%	6.93%	6.28%
Gearing	< 73%	74.66%	74.09%	75.10%	74.09%	74.51%	74.82%	74.77%	75.10%
Secondary metrics									
FFO Interest Cover (incl. accretions)		2.44x	2.29x	2.69x	2.37x	2.29x	2.69x	2.54x	2.33x
FFO Interest Cover (cash interest)		2.87x	2.68x	3.15x	2.84x	2.76x	3.15x	2.95x	2.68x
Nominal PMICR		1.53x	1.41x	1.70x	1.57x	1.44x	1.70x	1.55x	1.41x
RCF/Net Debt		5.2%	4.4%	5.9%	4.4%	5.4%	5.8%	5.9%	4.8%
EBITDA/RAV		8.7%	8.3%	8.9%	8.9%	8.7%	8.9%	8.7%	8.3%
RoRE		4.5%	3.4%	5.0%	4.9%	4.6%	5.0%	4.4%	3.4%
Dividend Cover		(0.63x)	(1.09x)	(0.05x)	(0.26x)	(1.09x)	(0.05x)	(0.70x)	(1.04x)
Dividend/Reg Equity		2.3%	1.5%	4.0%	4.0%	1.5%	2.3%	1.5%	2.4%

For scenarios A1 and A2, both companies achieve financial ratios consistent with the thresholds for a Baa2 / BBB rating for FFO/Debt, but AICR and PMICR ratios do not achieve levels consistent with the thresholds for a minimum rating of Baa2 / BBB.

The step-down in primary metrics in certain years across GD2 for both Southern and Scotland is as a consequence of some larger debt maturities that if refinanced 12-24 months in advance will attract a material level of cost of carry interest, which Ofgem does not currently provide an allowance for (as it is not taken into account in the iBoxx benchmark index). For Southern this impact is more evident in 2024/25 & 2025/26 and for Scotland in 2022/23 & 2025/26.

For the secondary metrics in Scenario A1, Southern and Scotland achieve average GD2 RCF / Net Debt metrics of 6.1% and 5.3% respectively. This is below the Baa band for RCF / Net Debt of 7% - 14%. Likewise, the average GD2 FFO / Interest Coverage ratios of 2.62x for Southern and 2.49x Scotland sit below the 2.8x – 4x threshold for the Baa range. Again, this supports our conclusions from analysis of the primary metrics that the actual company does not achieve the Baa2 minimum rating in Scenario A1 without mitigating actions.

As a consequence of the weakened financial ratios, we consider mitigating actions in the next section (Financeability Appendix 004Eiii).

#### **Actual Stress Testing**

The tables below show the primary and secondary financial ratios for scenarios A1 and A2 for the actual company for the stress tests requested by Ofgem in their Sector Specific Methodology Decision. Please note, as per our commentary on the Licence Model in Appendix 004P, the base case metrics are from the Licence model – but we use our company model for the stress tests.

The stress tests are as follows:

#### Downside

- i. -1% change in interest rate (for RFR, Libor and iBoxx inputs)
- ii. -1% change in CPIH from 2% base assumption
- iii. -0.5% change in RPI-CPIH wedge from 1.049% base assumption<sup>34</sup>
- iv. -10% change in Totex performance from base assumption of no outperformance
- v. -2% change in RoRE from base assumption
- vi. -5% change in the proportion of index-linked debt from 25% base assumption

<sup>&</sup>lt;sup>34</sup> As all index linked debt is assumed to be CPIH based, and the price control is on a CPIH basis, this requested stress test will not have an impact vs. base case. Any movements due to changes in inflation are picked up in the +/- 1% CPIH scenario.



#### vii. Combined downside:

- +0.75% change in interest rate (for RFR, Libor and iBoxx inputs)
- -1% change in CPIH from 2% base assumption
- -1.3% change in RoRE from base assumption (modelled as -6.5% change in Totex performance, Business Plan Incentive at -1.3% of Totex allowance and a -£7m change in Incentive income)

#### Upside

- viii. +1% change in interest rate (for RFR, Libor and iBoxx inputs)
- ix. +1% change in CPIH from 2% base assumption
- x. +0.5% change in RPI-CPIH wedge from 1.049% base assumption
- xi. +10% change in Totex performance from base assumption of no outperformance
- xii. +2% change in RoRE from base assumption
- xiii. +5% change in the proportion of index-linked debt from 25% base assumption

#### **Downside stress tests**

We seek to achieve a minimum credit rating of investment grade or higher for the downside stress tests, consistent with the minimum rating for the notional structure downside stress tests.

#### Table E19: Scenario A1: Downside stress tests (average over GD2) - Southern

Metric	Threshold	Base case	Downside stress tests							
			ii	ii	<b>III</b>	iv	۷	vi	vii	
Primary metrics										
AICR	> 1.1	1.12x	1.08x	1.10x	1.12x	1.04x	0.93x	1.10x	0.91x	
PMICR	> 1.3	1.15x	1.11x	1.15x	1.15x	1.09x	0.98x	1.15x	0.95x	
FFO/Net Debt	> 5%	7.1%	7.2%	7.5%	7.1%	7.0%	6.7%	7.2%	6.6%	
Gearing	< 73%	73.1%	72.7%	72.6%	73.1%	72.7%	71.8%	72.7%	74.6%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		2.62x	2.77x	2.90x	2.62x	2.69x	2.61x	2.75x	2.74x	
FFO Interest Cover (cash interest)		2.96x	3.17x	3.09x	2.96x	3.07x	2.96x	3.13x	2.94x	
Nominal PMICR		1.64x	1.74x	1.51x	1.64x	1.74x	1.61x	1.75x	1.36x	
RCF/Net Debt		6.1%	6.4%	7.3%	6.1%	6.7%	6.7%	6.3%	6.7%	
EBITDA/RAV		9.0%	9.0%	9.3%	9.0%	9.0%	8.7%	9.3%	8.6%	
RoRE		4.8%	4.5%	4.8%	4.8%	4.0%	2.8%	4.8%	3.0%	
Dividend Cover		2.74x	0.37x	0.28x	2.74x	(0.51x)	0.00x	0.23x	0.00x	
Dividend/Reg Equity		1.8%	2.2%	0.5%	1.8%	0.8%	0.0%	2.6%	0.0%	

#### Table E20: Scenario A1: Downside stress tests (average over GD2) - Scotland

Metric	Threshold	Base case	e Downside stress tests								
			i	ii	<b>iii</b>	iv	v	vi	vii		
Primary metrics											
AICR	> 1.1	1.12x	1.09x	1.12x	1.12x	1.04x	0.94x	1.07x	0.91x		
PMICR	> 1.3	1.17x	1.14x	1.18x	1.17x	1.11x	1.01x	1.15x	0.99x		
FFO/Net Debt	> 5%	7.0%	7.2%	7.6%	7.0%	6.9%	6.8%	7.4%	6.9%		
Gearing	< 73%	74.4%	72.7%	72.6%	74.4%	72.7%	70.6%	72.5%	73.2%		
Secondary metrics											
FFO Interest Cover (incl. accretions)		2.49x	2.70x	2.89x	2.49x	2.62x	2.58x	2.80x	2.75x		
FFO Interest Cover (cash interest)		2.93x	3.23x	3.16x	2.93x	3.11x	3.05x	3.11x	3.01x		
Nominal PMICR		1.58x	1.74x	1.56x	1.58x	1.73x	1.63x	1.83x	1.42x		
RCF/Net Debt		5.3%	6.0%	6.9%	5.3%	6.3%	6.9%	6.0%	6.9%		
EBITDA/RAV		8.9%	9.1%	9.4%	8.9%	9.0%	8.7%	9.3%	8.6%		
RoRE		4.8%	4.5%	4.8%	4.8%	3.9%	2.8%	4.8%	3.0%		
Dividend Cover		1.18x	0.14x	1.22x	1.18x	0.45x	0.00x	0.16x	0.00x		
Dividend/Reg Equity		2.6%	3.3%	1.9%	2.6%	1.8%	0.0%	4.0%	0.0%		



#### Table E21: Scenario A2: Downside stress tests (average over GD2) – Southern

Metric	Threshold	Base case	Downside stress tests							
			i	ii	iii	iv	۷	vi	vii	
Primary metrics										
AICR	> 1.1	1.05x	1.03x	1.05x	1.05x	1.00x	0.88x	1.06x	0.91x	
PMICR	> 1.3	1.09x	1.06x	1.10x	1.09x	1.04x	0.93x	1.11x	0.95x	
FFO/Net Debt	> 5%	6.8%	7.0%	7.3%	6.8%	6.8%	6.5%	7.1%	6.6%	
Gearing	< 73%	73.3%	72.7%	72.6%	73.3%	72.7%	72.1%	72.7%	74.6%	
Secondary metrics										
FFO Interest Cover (incl. accretions)		2.56x	2.73x	2.85x	2.56x	2.65x	2.57x	2.71x	2.74x	
FFO Interest Cover (cash interest)		2.90x	3.12x	3.04x	2.90x	3.02x	2.91x	3.08x	2.94x	
Nominal PMICR		1.58x	1.69x	1.47x	1.58x	1.70x	1.56x	1.71x	1.36x	
RCF/Net Debt		6.0%	6.4%	7.3%	6.0%	6.7%	6.5%	6.3%	6.7%	
EBITDA/RAV		8.8%	8.9%	9.1%	8.8%	8.8%	8.5%	9.1%	8.6%	
RoRE		4.3%	4.0%	4.3%	4.3%	3.5%	2.3%	4.3%	3.0%	
Dividend Cover		(0.41x)	0.15x	12.48x	(0.41x)	1.11x	0.00x	(0.01x)	0.00x	
Dividend/Reg Equity		1.5%	1.8%	0.1%	1.5%	0.4%	0.0%	2.1%	0.0%	

#### Table E22: Scenario A2: Downside stress tests (average over GD2) - Scotland

Metric	Threshold	Base case			Dow	inside stress	tests		
			i	ii	iii	iv	۷	vi	vii
Primary metrics			Ì						
AICR	> 1.1	1.05x	1.04x	1.07x	1.05x	0.99x	0.89x	1.02x	0.91x
PMICR	> 1.3	1.11x	1.09x	1.14x	1.11x	1.07x	0.96x	1.11x	0.99x
FFO/Net Debt	> 5%	6.7%	7.0%	7.4%	6.7%	6.7%	6.6%	7.2%	6.9%
Gearing	< 73%	74.7%	72.7%	72.6%	74.7%	72.7%	70.9%	72.5%	73.2%
Secondary metrics	0								
FFO Interest Cover (incl. accretions)		2.44x	2.66x	2.85x	2.44x	2.58x	2.53x	2.76x	2.75x
FFO Interest Cover (cash interest)		2.87x	3.18x	3.12x	2.87x	3.06x	3.00x	3.06x	3.01x
Nominal PMICR		1.53x	1.70x	1.51x	1.53x	1.69x	1.58x	1.78x	1.42x
RCF/Net Debt		5.2%	6.0%	6.9%	5.2%	6.3%	6.7%	6.0%	6.9%
EBITDA/RAV		8.7%	8.9%	9.2%	8.7%	8.9%	8.6%	9.2%	8.6%
RoRE		4.3%	4.0%	4.3%	4.3%	3.4%	2.3%	4.3%	3.0%
Dividend Cover		(0.63x)	(0.04x)	1.32x	(0.63x)	(0.03x)	0.00x	0.04x	0.00x
Dividend/Reg Equity		2.3%	2.9%	1.5%	2.3%	1.4%	0.0%	3.5%	0.0%

Scenario A1 presents challenges for both companies post stress tests. PMICR is below the investment grade minimum threshold for all stress tests and AICR is below the investment grade minimum threshold for stress tests (i), (ii), (iv) and (v), in the case of Southern; and (i), (iv), (v) and (vi), in the case of Scotland. Scenario A2 is further challenged with PMICR and AICR below the investment grade minimum threshold for both Southern and Scotland across all stress tests.

The combined downside stress test produces an AICR of 0.91x across GD2 for both Southern and Scotland. While ratings agencies would likely consider the circumstances of the financial deterioration and management plans for recovery, this is a material shortfall in relation to the minimum threshold for investment grade and we consider the actual company would likely lose its investment grade rating. For this reason, we assess mitigating actions in the next section.

#### **Upside stress tests**

The following tables set out the upside stress tests for both Scenario A1 and Scenario A2.



#### Table E23: Scenario A1: Upside stress tests (average over GD2) - Southern

Metric	Threshold	Base case	e Upside stress tests							
			i	ix	X	xi	xii	xiii		
Primary metrics										
AICR	> 1.2	1.12x	1.12x	1.11x	1.12x	1.17x	1.28x	1.13x		
PMICR	> 1.4	1.15x	1.19x	1.16x	1.15x	1.21x	1.33x	1.17x		
FFO/Net Debt	> 6%	7.1%	7.3%	7.0%	7.1%	7.5%	7.9%	7.1%		
Gearing	< 73%	73.1%	72.7%	72.8%	73.1%	72.6%	72.7%	72.8%		
Secondary metrics										
FFO Interest Cover (incl. accretions)		2.62x	2.73x	2.60x	2.62x	2.81x	2.90x	2.69x		
FFO Interest Cover (cash interest)		2.96x	3.09x	3.16x	2.96x	3.19x	3.31x	3.18x		
Nominal PMICR		1.64x	1.77x	1.96x	1.64x	1.77x	1.91x	1.72x		
RCF/Net Debt		6.1%	6.2%	5.3%	6.1%	5.9%	6.3%	6.2%		
EBITDA/RAV		9.0%	9.5%	9.2%	9.0%	9.5%	9.9%	9.3%		
RoRE		4.8%	5.0%	4.8%	4.8%	5.6%	6.8%	4.8%		
Dividend Cover		2.74x	0.16x	(0.13x)	2.74x	0.19x	0.58x	0.17x		
Dividend/Reg Equity		1.8%	3.0%	4.7%	1.8%	4.4%	4.4%	2.6%		

#### Table E24: Scenario A1: Upside stress tests (average over GD2) – Scotland

Metric	Threshold	Base case	e Upside stress tests							
			viii	ix	x	xi	xii	xiii		
Primary metrics										
AICR	> 1.2	1.12x	1.14x	1.12x	1.12x	1.20x	1.31x	1.10x		
PMICR	> 1.4	1.17x	1.22x	1.18x	1.17x	1.26x	1.37x	1.18x		
FFO/Net Debt	> 6%	7.0%	7.3%	6.9%	7.0%	7.5%	7.9%	7.3%		
Gearing	< 73%	74.4%	72.7%	72.9%	74.4%	72.7%	72.7%	72.7%		
Secondary metrics										
FFO Interest Cover (incl. accretions)		2.49x	2.67x	2.51x	2.49x	2.75x	2.84x	2.71x		
FFO Interest Cover (cash interest)		2.93x	3.16x	3.21x	2.93x	3.26x	3.37x	3.17x		
Nominal PMICR		1.58x	1.77x	1.92x	1.58x	1.77x	1.91x	1.77x		
RCF/Net Debt		5.3%	5.8%	4.9%	5.3%	5.5%	5.9%	5.9%		
EBITDA/RAV		8.9%	9.6%	9.3%	8.9%	9.6%	9.9%	9.3%		
RoRE		4.8%	5.0%	4.8%	4.8%	5.7%	6.8%	4.8%		
Dividend Cover		1.18x	0.04x	(0.13x)	1.18x	0.18x	0.39x	0.10x		
Dividend/Reg Equity		2.6%	4.2%	5.6%	2.6%	5.7%	5.5%	3.9%		

#### Table E25: Scenario A2: Upside stress tests (average over GD2) – Southern

Metric	Threshold	Base case	Upside stress tests					
			viii	ix	X	Xİ	xii	xiii
Primary metrics								
AICR	> 1.2	1.05x	1.08x	1.06x	1.05x	1.12x	1.24x	1.08x
PMICR	> 1.4	1.09x	1.15x	1.11x	1.09x	1.17x	1.29x	1.13x
FFO/Net Debt	> 6%	6.8%	7.1%	6.8%	6.8%	7.3%	7.8%	7.0%
Gearing	< 73%	73.3%	72.7%	72.8%	73.3%	72.6%	72.7%	72.8%
Secondary metrics								
FFO Interest Cover (incl. accretions)		2.56x	2.69x	2.57x	2.56x	2.77x	2.86x	2.65x
FFO Interest Cover (cash interest)		2.90x	3.05x	3.12x	2.90x	3.14x	3.26x	3.13x
Nominal PMICR		1.58x	1.73x	1.92x	1.58x	1.73x	1.87x	1.68x
RCF/Net Debt		6.0%	6.2%	5.3%	6.0%	5.9%	6.3%	6.2%
EBITDA/RAV		8.8%	9.4%	9.1%	8.8%	9.4%	9.7%	9.1%
RoRE		4.3%	4.5%	4.3%	4.3%	5.1%	6.3%	4.3%
Dividend Cover		(0.41x)	(0.06x)	(0.27x)	(0.41x)	0.06x	0.53x	(0.11x)
Dividend/Reg Equity		1.5%	2.5%	4.2%	1.5%	4.0%	3.9%	2.1%



Metric	Threshold	Base case	e Upside stress tests					
			viii	ix	X	Xi	xii	xiii
Primary metrics								
AICR	> 1.2	1.05x	1.09x	1.06x	1.05x	1.15x	1.26x	1.05x
PMICR	> 1.4	1.11x	1.18x	1.14x	1.11x	1.21x	1.32x	1.13x
FFO/Net Debt	> <mark>6%</mark>	6.7%	7.1%	6.7%	6.7%	7.4%	7.7%	7.1%
Gearing	< 73%	74.7%	72.7%	72.9%	74.7%	72.7%	72.7%	72.7%
Secondary metrics								
FFO Interest Cover (incl. accretions)		2.44x	2.63x	2.47x	2.44x	2.71x	2.80x	2.67x
FFO Interest Cover (cash interest)		2.87x	3.11x	3.16x	2.87x	3.21x	3.32x	3.12x
Nominal PMICR		1.53x	1.73x	1.88x	1.53x	1.73x	1.87x	1.73x
RCF/Net Debt		5.2%	5.8%	4.9%	5.2%	5.5%	5.9%	5.9%
EBITDA/RAV		8.7%	9.4%	9.1%	8.7%	9.5%	9.8%	9.2%
RoRE		4.3%	4.5%	4.3%	4.3%	5.2%	6.3%	4.3%
Dividend Cover		(0.63x)	(0.11x)	(0.24x)	(0.63x)	0.08x	0.34x	(0.05x)
Dividend/Reg Equity		2.3%	3.7%	5.1%	2.3%	5.2%	5.0%	3.4%

#### Table E26: Scenario A2: Upside stress tests (average over GD2) – Scotland

All upside tress tests show an improvement on the base case position for both companies, however in the majority of cases the AICR and PMICR lower thresholds required for the minimum Baa2 / BBB rating are not met. Again, this demonstrates the need to identify potential mitigation actions, which we do in the next section.

E.iii Explanation of Potential Mitigating Levers for the Actual Company























### F. Monte Carlo Analysis of Risk

#### **Appendix F Summary**

- This appendix outlines our Monte Carlo analysis of risk and how this analysis fits into our overall assessment of risk.
- Monte Carlo simulation provides greater flexibility to combine risks and illustrates the full distribution of potential outcomes. The analysis is carried out on Ofgem's working assumptions (no 50 bps incentive outperformance assumed)
- For the notional company, the P5/P95 range for the AICR is from 1.26x to 1.57x. The probability of falling below Moody's 1.2x threshold for Baa2 is around 1% and the probability of falling below the 1.1x threshold (which would indicate sub-investment grade) is negligible.
- For the actual company the P5/P95 range for the AICR is from 0.86x to 1.26x. This range is substantially lower than the notional company, primarily due to the higher level of gearing. At the P5 level the AICR is below the investment grade threshold of 1.1x and below the level of 1.0 where the profits of the business cover debt interest payments. This analysis demonstrates the need to consider mitigating actions in Appendix Eiii.
- The results of the Monte Carlo analysis are consistent with our stress testing. The combined downside stress test is worse than the P5 point on the Monte Carlo distribution. This is because stress tests are designed to be a form of "worst case" scenario to test whether business could manage in the unlikely event of a combination of downside factors, which are unlikely to occur together. This demonstrates the reasonableness of our combined downside stress test.

#### F.i Overall approach to risk assessment

Ofgem requires companies to set out the overall risk of their business plans. An important part of any risk assessment is conducting scenario analysis and stress testing to assess the impacts under a range of adverse scenarios. This is set out in Appendix E. To complement this, we have also conducted Monte Carlo simulation which provides greater flexibility to combine risks and illustrate the full distribution of potential outcomes. The approach and results of this analysis are presented in this appendix. In addition, we also conduct risk analysis in the following chapters of our business plan.

Chapter 12 of our Business plan covers two major areas of risk management. Section 12a presents our proposals for dealing with anticipated uncertainty in relation to future workload requirements and outrun figures. In both cases we have employed mechanisms to ensure risk is shared between the company and the consumer. Furthermore, section 12b considers real price effect indices and the need to manage exposure to labour and material price inflation should it differ to CPIH.

In addition, our Financing Strategy Appendix (4K) sets out our approach to mitigating a number of financial risks. Finally, our Annual Report<sup>35</sup> sets out SGN's overall risk management framework. This is assessed and updated on an ongoing basis and addresses principal risks and uncertainties, as well as their mitigations.

#### F.ii Explanation of Monte Carlo analysis

We use a Monte Carlo simulation technique to capture overall risk. This technique involves assessing the risk distributions for the main uncertain parameters in the business plan and the correlations between those parameters. Through many simulations (we use 500), we obtain a view of the overall risk of the business plan. These simulations are then presented in the form a histogram which can be used to demonstrate the likelihood of different outcomes (e.g. breeching an interest cover threshold).



<sup>&</sup>lt;sup>35</sup> SGN: 'Annual Report & Financial Statements 2019', p26-28.

The differences between Monte Carlo simulation and scenario approaches are:

- Monte Carlo simulation provides a complete range of possible outcomes, both upside and downside.
- Monte Carlo simulation allows for different distributions for risks e.g. some risks are bounded with ceilings and floors, but others are unbounded where extreme events are possible, but unlikely.
- Monte Carlo simulation allows for risk parameters to be less than perfectly correlated. Compared to a stress scenario, which assumes all risks materialize, this reduces the overall risk range, because all risks turning out positive or negative is highly unlikely.

Like all analytical techniques, the quality of the Monte Carlo outputs are dependent on the quality of the inputs. If a substantial risk is omitted, then the risk analysis will not present the entire range of possible outcomes.

The Monte Carlo analysis has been performed on the basis of Ofgem's working assumptions, excluding the 50bps incentive outperformance assumption. It has also been carried out using SGN's company model, which has some small variances from the Licence Model (which does not have Monte Carlo functionality). This does not change the interpretation of the results.

#### F.iii Risk parameters used for Monte Carlo analysis

We use the same risk parameters in the Monte Carlo analysis as used for the stress testing. The assumptions for the risk distributions are set out in Table F1 below.

Inputs varied	Distribution assumption used in Monte Carlo analysis
I. Interest rate change	Normal distribution based upon historical variation in interest rates.
II. CPIH change	Normal distribution based upon historical variation in CPIH inflation.
III. RPI-CPIH wedge	Excluded as GD2 has no RPI-linked parameters.
IV. Totex performance	Normal distribution with standard deviation of 5%.
V(a) BPI allowance	Triangular distribution with maximum range of +/-2%
V(b) Incentive Income	Normal distribution with standard deviation of £5m.
VI. Percentage of index linked debt	Normal distribution with standard deviation of 2.5pp.

#### Table F1: Monte Carlo risk parameters

Source: SGN, Refinitiv

For the correlation assumptions:

- We obtained correlations between market and economic parameters from historical analysis (for I and II in Table F1 above). Correlations can shift over time, particularly during times of stress, so the results are subject to some uncertainty.
- We assumed the BP allowance is uncorrelated with any other risk parameters. This is because the risks of preparing a sub-standard business plan are different to the outturn performance of the business.



• We assumed totex performance and incentive performance is uncorrelated. This is as there is evidence of both negative correlation (e.g. high costs are required to drive higher outcome performance) and positive correlation (e.g. strong performance in both cost performance and outcome performance). This means some simulation runs will have both totex out-performance and incentive out-performance, but others will have a mix, where one under-performs and the other out-performs. It will also be possible for both to under-perform.

#### F.iv Results of Monte Carlo analysis

Using the SGN business plan and the risk and correlation assumptions set out above, we ran 500 simulations of the SGN financial model and extracted the key business plan outputs. We focused on the Adjusted Interest Cover Ratio, the FFO/net debt and PMICR ratios for both the notional and actual structure as key metrics of interest. In the following charts we present the outcome from each simulation in histogram form and also the P5 and P95 range. In only 10% of occasions would we anticipate the performance of the company to be outside this P5/P95 range.

#### Notional capital structure results



#### Figure F1: GD2 average RoRE for Southern and Scotland (notional)

Source: SGN financial model using @risk simulation software

Figure F1 shows a RoRE P5/P95 range from 3.0% to 5.8% for both companies, with a wider range of possible outcomes down to around 2% and up to 7%. This means equity is, appropriately, bearing almost the entirety of the risk of the business.





#### Figure F2: GD2 average AICR for Southern and Scotland (notional)

Source: SGN financial model using @risk simulation software

Figure F2 shows an AICR P5/P95 range from around 1.26x to 1.57x across the two companies. The probability of falling below Moody's 1.2x threshold for Baa2 is around 1% and the probability of falling below the 1.1x, which would indicate sub-investment grade, is negligible. It is reassuring that Southern and Scotland are both able to maintain an AICR above 1.0x in virtually all downside scenarios. In this situation both companies can pay their ongoing debt liabilities, however mitigating actions would be required to restore credit metrics to support the minimum rating. This analysis supports the ability of the notional company to achieve Baa1 rating and has a very low probability of not being able to retain an investment grade rating.



Figure F3: GD2 average FFO/net debt for Southern and Scotland (notional)

Source: SGN financial model using @risk simulation software

Figure F3 shows a FFO/net debt P5/P95 range from 9.3% to 11.4% across the two companies. This is comfortably above the BBB+ band for S&P guidance of this ratio and supports our main financial analysis which shows this ratio is not source of ratings pressure.





#### Figure F4: GD2 average PMICR for Southern and Scotland (notional)

Source: SGN financial model using @risk simulation software

Figure F4 shows a PMICR P5/P95 range from 1.32x to 1.66x. At the bottom end, this is just above the Fitch threshold for BBB- of 1.3x. This demonstrates that the notional company can maintain ratios sufficient for investment grade across virtually all modelled risks.

#### Actual capital structure



#### Figure F5: GD2 RoRE for Southern and Scotland (actual)

Source: SGN financial model using @risk simulation software

Figure F5 shows a RoRE P5/P95 range from 2.2% to 6.6% for Scotland, with a slightly smaller range for Southern. This is similar to the notional structure results, but the range is somewhat stretched as consequence of the more geared structure.





#### Figure F6: GD2 Average AICR for Southern and Scotland (actual)

Source: SGN financial model using @risk simulation software

Figure F6 shows a AICR P5/P95 range from around 0.9x to 1.2x for Southern and 0.86x to 1.26x for Scotland. This range is lower than the notional company. At the P5 level the AICR is below the investment grade threshold of 1.1x and below the level of 1.0 where the profits of the business cover debt interest payments. This analysis is consistent with the combined downside stress test in Appendix E (scenario vi) which has a downside AICR across GD2 of 0.91x. This shows the need for the mitigation actions we consider in Appendix Eiii.



#### Figure F7: GD2 average FFO/net debt for Southern and Scotland (actual)

Source: SGN financial model using @risk simulation software

Figure F7 shows a FFO/net debt P5/P95 range from 6.3% to 7.8%. This is within the BBB band for S&P guidance of this ratio and supports our main financial analysis which shows this ratio is not source of ratings pressure.





#### Figure F8: GD2 average PMICR for Southern and Scotland (actual)

Source: SGN financial model using @risk simulation software

Figure F8 shows a PMICR P5/P95 range from 0.94x to 1.32x across both companies. This is below the Fitch threshold for BBB- of 1.3x. Consistent with the range on the AICR, this shows the need for the mitigation actions we consider in Appendix E.

#### F.v Linkage between stress testing and Monte Carlo analysis

The results of the Monte Carlo analysis are consistent with our stress testing. Focusing on the notional AICR, the combined downside stress test produces an AICR of around 1.16x for both Southern and Scottish. This is below the P5 point and therefore towards the extreme end of Monte Carlo distributions. There is a similar result in the actual structure, where the combined downside stress test produces an AICR of around 0.91x, which is close to the P5 point on the Monte Carlo distribution.

These results are expected, as the Monte Carlo simulation uses the same risk factors and many of the same parameters as the stress tests. Therefore, it is possible to achieve the stress test result from within the Monte Carlo distribution of outcomes. However, stress tests are designed to be a form of "worst case" scenario to test whether business could manage in the unlikely event of a combination of downside factors (for example the PRA require UK banks to pass stringent stress tests to demonstrate resilience in a very adverse economic and market environment). By contrast the Monte Carlo simulation shows the full distribution of likely outcomes where the combination of all downside factors occurring at once is unlikely. It therefore helps to show the likelihood of the combined downside stress test and, in turn, helps to demonstrate the reasonableness of our combined downside stress test.

#### F.vi Mitigating actions

The Monte Carlo analysis does not incorporate dynamic management responses to risks. For example, reprofiling expenditure during a period of stress. This means that, in reality, the notional company (and the actual company) should be able to constrain downside risk to less than shown in Figures F1 to F8. All the actions we developed in Appendix E are available to management to mitigate risk, but these are not 'hardwired' into the Monte Carlo analysis.



### G. Allowed Revenue and Costs to customers

#### **Appendix G Summary**

• This appendix provides a breakdown of SGN's projected revenues and change in customer bills for the GD2 period based on Ofgem's working assumptions

The RIIO-GD2 process sets our allowed revenue for the period 1<sup>st</sup> April 2021 to 31<sup>st</sup> March 2026. Revenue can be broken down into:

- 1. RAV Revenue: this is revenue associated with capital investment which determines the level of our RAV (regulated asset value) for which we receive revenues for;
  - a. depreciation, to share the cost of the asset across customers during the asset's lifetime
  - b. allowed return for the investment made, both in terms of shareholder investment (equity) and the cost of borrowing
- 2. Operational Revenue: this is revenue related to day to day running of the network and pays for a wide variety of items including network operation and maintenance, business rates and corporation tax

Percentage changes in customer bills quoted in this section, and for the Business Plan as a whole, are based on SGN's share of the overall bill only.

#### G.i Customer Bills Under Ofgem's Working Assumptions

Below is an annual breakdown of our projected allowed revenues for GD2, based on Ofgem's working assumptions for the cost of capital (4.3% cost of equity with 50bps outperformance, 11-15 year trailing average and 60% notional gearing) and the key assumptions as set out in Financeability Appendix 004H. This analysis uses forecast actual rather than notional revenues, i.e. takes account all the building blocks of allowed revenue and thus represents the revenue that will be used to calculate customer bills

This analysis has been conducted from a local network perspective, excluding network innovation allowance (NIA), but does include our Statutory Independent Undertakings (SIUs) in Scotland. GD2 revenues have been compared to the last 3 years of GD1 in line with the totex analysis in the Business Plan;

£ms 18/19 Ps	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Av. Last 3 Years GD1	GD2 Av.	% Change
Fast pot expenditure	103.66	85.68	78.03	71.32	77.58	76.59	71.15	65.96	89.12	72.52	-19%
Non-controllable opex	39.57	39.45	39.39	47.49	47.47	46.61	46.52	46.42	39.47	46.90	19%
RAV depreciation	94.70	103.40	113.38	91.85	94.76	97.84	100.95	103.51	103.83	97.78	-6%
Return	62.77	58.14	53.14	50.89	51.20	51.71	52.21	52.57	58.01	51.71	-11%
Equity issuance cost	0.00	0.00	0.00	4.35	0.00	0.00	0.00	0.00	0.00	0.87	
Business Plan Incentive	2.75	2.75	2.35	0.00	0.00	0.00	0.00	0.00	2.62	0.00	-100%
Pension Deficit Allowance	9.05	9.05	9.05	4.12	2.82	2.82	1.53	0.00	9.05	2.26	-75%
Incentive Revenue	4.03	3.45	3.51	3.25	3.34	3.47	3.54	3.61	3.67	3.44	-6%
Price Control Adjustments	-4.25	10.04	22.72	2.73	1.44	-0.57	-1.91	-0.08	9.50	0.32	-97%
Other	-0.34	-2.25	6.25	0.00	0.00	0.00	0.00	0.00	1.22	0.00	-100%
Tax allowance	25.00	23.39	20.61	12.02	10.56	11.70	10.52	9.45	23.00	10.85	-53%
Total Allowed Revenue	336.94	333.08	348.43	288.01	289.17	290.16	284.50	281.44	339.48	286.66	-16%
Annual Customer Bill Changes		-1%	5%	-17%	0%	0%	-2%	-1%			

Table G1: Scotland customer bills under Of	fgem's working assu	nptions
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Source: SGN analysis using Ofgem's working assumptions



£ms 18/19 Ps	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Av. Last 3 Years GD1	GD2 Av.	% Change
Fast pot expenditure	189.39	161.54	140.34	127.65	136.49	137.94	134.21	128.81	163.76	133.02	-19%
Non-controllable opex	94.86	93.21	108.78	121.14	112.69	103.27	102.97	102.68	98.95	108.55	0
RAV depreciation	206.14	223.74	244.92	206.03	210.11	216.25	221.58	227.31	224.93	216.26	0
Return	139.37	129.79	119.87	114.61	114.24	114.60	115.21	116.14	129.68	114.96	-11%
Equity issuance cost	0.00	0.00	0.00	9.79	0.00	0.00	0.00	0.00	0.00	1.96	
Business Plan Incentive	5.57	5.57	5.38	0.00	0.00	0.00	0.00	0.00	5.51	0.00	-100%
Pension Deficit Allowance	13.41	13.41	13.41	6.18	4.23	4.23	2.30	0.00	13.41	3.39	-75%
Incentive Revenue	16.37	16.18	20.85	16.74	17.27	7.81	7.89	8.00	17.80	11.54	-35%
Price Control Adjustments	-2.80	9.11	2.19	-14.65	-8.24	2.01	1.59	2.22	2.83	-3.42	-221%
Other	-6.01	-2.29	-2.21	0.00	0.00	0.00	0.00	0.00	-3.51	0.00	-100%
Tax allowance	49.81	52.41	42.45	30.48	29.27	27.42	26.94	23.12	48.22	27.45	-43%
Total Allowed Revenue	706.12	702.67	695.98	617.97	616.06	613.52	612.69	608.28	701.59	613.70	-13%
Annual Customer Bill Changes		0%	-1%	-11%	0%	0%	0%	-1%			

#### Table G2: Southern customer bills under Ofgem's working assumptions

Source: SGN analysis using Ofgem's working assumptions

The main drivers of a decrease in revenue from RIIO-GD1 to GD2 are the lower totex and tax allowances.

In the table below we show the build-up of the average allowed revenue per year, % change in customer bills and £s cost per customer, starting with the case above as the base case. NIA is then overlaid, plus charges from National Transmission (NTS exit capacity) and Network Innovation Competition Funding (NIC). As the table shows, there is a sizeable reduction in customer bills projected across GD2 compared with the last three years of GD1, in line with the reduction in revenues highlighted above.

Table G3: Average allowed revenue per year, % change in customer bills and £s cost per customer

£ms 18/19	Notwork	Av Last 3 Yrs	Av GD2	% change in	£ per dom	l customer
Ps	Network	GD1 Rev	Rev	<b>Customer Bills</b>	GD1	GD2
Paro Caro	Scotland	339	287	-16%	146	123
Dase Case	Southern	702	614	-13%	147	129
Inc MIA	Scotland	341	291	-15%	147	125
IIICINIA	Southern	705	622	-12%	148	130
Inc MTC Evit	Scotland	341	292	-14%	147	126
IIIC IVES EXIL	Southern	762	672	-12%	160	141
Inc NIC	Scotland	343	300	-13%	147	129
IIIC NIC	Southern	766	687	-10%	160	144

Source: SGN analysis using Ofgem's working assumptions

At the date of this submission a decision had not been reached on the NTS charging methodology MOD0678. If approved, this modification would significantly impact SGN's revenues and costs, and thus customer bills. In Scotland it would significantly increase costs (£20m-£30m per year) and on the two year lag basis, ultimately impact revenue and bills. We know Scotland will be heavily impacted as both proposed methodologies, capacity weighted distance and postage stage, appear to penalise offtakes at the periphery of the network.

Due to the lack of data available it is unsure whether Southern would see a +/- impact. However, as there are considerably more offtakes in the south of England any impact would not be as material as those seen in Scotland.



### H. Key assumptions

#### **Appendix H Summary**

- This appendix outlines our key assumptions on asset lives, depreciation, totex allowances, capitalisation rates, and the RIIO-GD1 close out mechanisms.
- SGN have retained the 45 year asset life from GD1, as this is a reasonable assumption of the economic life of the asset. This approach is interlinked with a sum of digits depreciation assumption.
- We align capitalisation rates with accounting treatment, as adjusting these rates would not aid financeability and is not supported by our customer engagement

#### H.i Asset Lives and Depreciation

We have retained a 45-year asset life assumption from RIIO-GD1 as this provides a reasonable assumption of the economic life of the asset. Asset life was assessed as part of the RIIO-GD1 process with a number of factors considered including technical asset life, existing age of the network and statutory/regulatory accounts treatment, and scenarios for the future use of the gas network<sup>36</sup>. With the backdrop of this uncertainty CEPA proposed that making a change to asset lives is not justifiable. We believe this is still the case until government carry out their review of heat policy. However, we combine the 45 year asset life with the sum of digits (front loaded) depreciation approach for each year of RIIO-GD2, which is also retained from RIIO-GD1 to reflect the significant uncertainty and risk that gas distribution has in the future use of its assets compared to other energy network sectors. Gas distribution was the only sector to have front loaded depreciation in RIIO-1 to reflect these asset stranding risks and, as highlighted in SGN's Alternative Cost of Capital Assumption Financeability Appendix 004iBii, these risks are even more relevant to RIIO-GD2.

As set detailed in Financeability Appendix 004Aii, we do not believe changes to asset lives and depreciation will aid financeability due to rating agency treatment and is not supported by our customer engagement.

#### H.ii Totex Allowances and Capitalisation Rates

We have aligned capitalisation rates with accounting treatment – in line with the transition to 100% capitalisation of repex, as well as capex, by the end of RIIO-GD1.

For RIIO-GD1 it was decided that repex capitalisation rates needed to be shown separately, owing to their transition from 50% to 100% over RIIO-GD1. Ofgem stated that 'once repex has transitioned to full capitalisation there will no longer be a need for the full transition approach to totex capitalisation'<sup>37</sup>. SGN agree there is no reason for opex and capex capitalisation to be stated separately from repex capitalisation. Furthermore, if these capitalisation rates are stated separately it may create an imbalance of incentives between Opex, Capex and Repex, which was one of the reasons why the concept of overall Totex was brought in.

The resulting capitalisation rates are as follows in table H1 below, based on our proposed Totex allowances. We have still shown the Capex and Opex Capitalisation rate for information as this is currently an input to the RIIO-GD2 Licence Model. The capitalisation rates are constant for each year of RIIO-GD1 as they are calculated using average opex, capex and repex for the period.



<sup>&</sup>lt;sup>36</sup> Ofgem (2011), Decision on strategy for the next transmission and gas distribution price controls – RIIO-T1 and GD1 Financial Issues

<sup>&</sup>lt;sup>37</sup> Ofgem (2012), 'RIIO-GD1: Final Proposals – Finance and uncertainty supporting document'

£m 2018/2019	Scot	land	Sout	hern
	GD1 Av	GD2 Av	GD1 Av	GD2 Av
Opex	68	73	129	133
Repex	63	66	188	198
Сарех	47	61	69	81
Totex	178	200	386	412
Capitalisation rate				
Opex	0%	0%	0%	0%
Repex	75%	100%	75%	100%
Сарех	100%	100%	100%	100%
Overall totex Capitalisation Rate	50%	64%	54%	68%
Capex and opex capitalisation Rate	35%	46%	32%	38%

#### Table H1: GD1 and GD2 capitalisation rates for Scotland and Southern

#### Source: SGN analysis

Our Business Plan submission is consistent with our accounting standards, FRS102, and therefore does not include the impact of IFRS16. To ensure that networks are not penalised for their choice of accounting standards, we recommend that both FRS102 and IFRS accounting standards are considered when making a final decision.

However, due to rating agencies looking through adjustments to capitalisation rates, as set out in Financeability Appendix 004Aii, we do not believe changes to rates away from the accounting treatment will aid financeability.

As well as considering the accounting treatment, we also consider the following factors when determining the appropriate capitalisation rates: expected levels of opex and capex and the balance of affordability and financeability, customers views, the potential impact on consumer bills, and the interaction between capitalisation and depreciation rates.

#### Expected levels of opex, repex and capex, and the balance of affordability and financeability

As shown in table H1, the proportion of opex, repex and capex for are reasonably stable. For example, the share of opex for Scotland is projected to move from 38% during GD1 to 37% during GD2 and for Southern from 33% during GD1 to 32% during GD2. On this basis we consider there is little rationale for moving the capitalisation rate of opex. We retain a capitalisation rate of 0% for opex during GD2.

For repex, the proportions decline slightly in GD2, whereas for capex the proportions increase. For example, the share of capex for Scotland is projected to move from 26% during GD1 to 31% during GD2 and for Southern from 18% during GD1 to 20% during GD2. On this basis we consider there is little rationale for moving the capitalisation rate of repex.

Given the relative increase in capex within totex for GD2, we could consider making a small reduction in the capitalisation rate for capex (to below 100%). This would support financeability and reduce affordability. Such a change would have a cost to GD2 consumers, and would likely be reversed in ratings assessment, and therefore such a change would have limited financeability benefit, but with detrimental affordability impacts. On this basis we do not alter capitalisation rates from GD1 levels and use other levers to support financeability, where



required.

#### **Customer views**

As noted in Appendix 004O, we have engaged customers through various means to understand their views on financeability issues in RIIO-GD2. We specifically sought to gather their views on whether current customers or future customers should pay a greater proportion of high-cost investments made today. The informed customer panel advocated that both current and future customers should pay their fair share. Indeed, the majority agreed that the cost of building and operating a pipe should be fairly spread over customers' bills across the next 45 years.

This supports SGN's business plan assumption to use a 100% capitalisation rate for repex and capex for longlived assets during GD2. This enables the costs to be shared more evenly between different generations of consumers, which again is aligned to the preferences we heard from customers.

#### Interaction between capitalisation and depreciation rates

As noted in Appendix 004Aii, we continue to consider that a 45-year depreciation profile using the sum of year's digits approach facilitates a more appropriate balance between generations by spreading the cost over current and future customers. This approach also manages the risk of stranding at the end of asset lives. We propose to retain the 100% capitalisation rate for capex as this will enable SGN to fully depreciate the asset over its life, which is consistent with customers preferences, but the greater up-front depreciation enables the business to recoup its investment earlier and reduce asset stranding risks. The transition to a 100% capitalisation rate for repex again allows the costs to be shared more evenly between generations, as well as enabling the business to recover greater value up front to reduce the risk of asset stranding.

#### Smoothing the switch to CPIH or bill smoothing generally

As noted in Appendix 004C, the switch to CPIH provides a boost to both credit metrics and customer bills and in GD2; however, this should not be interpreted as a fundamental improvement in the profitability of the business.

The credit metrics in our financeability assessment for GD2 are very tight; close to their thresholds, so we do not consider there is any headroom to smooth the switch to CPIH by altering capitalisation rates (even if credit rating agencies were to acknowledge such adjustments in the calculation of their ratios).

We consider there is ample headroom to accommodate the switch to CPI in full, while maintaining reducing customer bills (16% for Scotland, 13% for Southern, using Ofgem working assumptions).

Since most of the changes in bill profiles for GD2 are driven by fundamental changes such as lower totex and tax allowances, we don't consider there is a need to alter capitalisation rates to smooth any differences between customer bills in GD2 and longer-term projections for GD3. As RAV growth is modest during GD2 we do not anticipate a marked increase in customer bills for GD3 which would warrant reprofiling bills in GD2 using capitalisation rates. Rather any changes in capitalisation rates could be considered for GD3.

#### H.iii RIIO-GD1 Close Out Mechanisms

The following close out mechanisms have been incorporated in our financeability assessment, in accordance with the latest Ofgem guidance;

- a. Totex under/over spend adjustments from RIIO-GD1
- **b.** Incentive income and pass through cost adjustments from the last two years of RIIO-GD1
- c. RIIO-GD1 Land disposals of former gas holder sites have been deducted from the RAV

During the transfer process of the majority of non-operational former Gas Holder sites from the regulated business to SGN place we have had detailed discussion with Ofgem's Finance team regarding consents and our proposed RAV adjustments. The RAV adjustments are based on our estimates of 3rd party cost of sale presented to Ofgem's Finance team over the last 12 months. Appendix 002 (Property) sets out our strategy for non-operational holder sites and why we believe the transfer of risk to our unregulated business is in customers best



interest. The appendix sets out the proposed RAV adjustment for the transfer of sites to SGN Place in 2018 from the two regulated businesses. We also set out the fact that we are proposing a RAV adjustment based on a clean site (Red Book Value) but with the holder demolition and land remediation costs relating to these transferred sites in GD2 netted off this value rather than requesting Totex allowances for these activities in GD2.

Separately, we note that Ofgem's Licence model deducts proceeds after five years from the RAV without deducting depreciation for these five years. We believe as the proceeds go through the RAV for five years before being deducted, the depreciation should be deducted from the proceeds. We intend to discuss this further with Ofgem as the Licence model is further developed ahead of initial determination in 2020.

We would also highlight that we believe the tax trigger calculation, in row 43 of the Tax Trigger tab of the PCFM, incorrectly uses 'Profits Attributable to corporation tax (before tax clawback)'. It should use Profits Attributable to corporation tax after tax clawback, as the tax allowance we receive as a company is post clawback, before adjusting for the impact of any tax trigger event. This is a matter raised previously with Ofgem and the close out mechanism was deemed the best way of addressing this issue, and thus we intend to discuss this further with Ofgem.

Finally, there has been no adjustment for NARMS in the October Business Plan submission.

#### H.iv Totex Performance and Incentive Assumptions

No under/over performance has been assumed in our forecasts. We have also included projections based on de-minimis, excluded services and other activities not part of the core price control in our Business Plan Data Templates and Licence Model. We have broadly forecast a similar level of de-minimis activities in GD2 from that seen in GD1 and within existing caps. For excluded services, the main element is the consented activity of meterwork. As set out in Appendix 13 (Emergency Service), this work is expected to decline with the roll out of Smart meters and our forecasts reflect this.



### I. Financing Strategy

#### **Appendix I Summary**

- This appendix outlines the group's financing strategy, which has been designed to promote an efficient capital structure whilst also managing financial risk.
- SGN's financing strategy will no longer place reliance on the availability of monoline wraps or European Investment Bank (EIB) funding, which has become more difficult to attain following the 2016 Brexit vote.
- Moving forward, SGN will maintain an efficient approach to its financing strategy through a focus on diversifying funding sources, while targeting issuance tenors that maintain an appropriate mix of financing risk and pricing.
- Overall, SGN has a material refinancing requirement in GD2 of c£2.6bn, which represents c50% of existing debt.

The SGN group funding strategy has been put in place to achieve an appropriate investment grade rating through an efficient capital structure. We define this as one which achieves sufficient investor demand whilst also managing financing risk such as inflation / interest rate exposure and maintaining sufficient liquidity.

In delivering this strategy, we look to maintain access to a diversified source of funds, together with a smooth maturity profile that is appropriate to our asset portfolio.

The approach historically taken by Southern and Scotland has enabled the company to spread out the timing of issuance and achieve pricing competitive to the benchmark allowance. However, we previously relied on the availability of support from monolines and the EIB, which can no longer be guaranteed, and is in fact unlikely, going forward. We also believe our track record of delivery in a stable and predictable regulatory environment has played a part in successful and efficient transactions.

Across the two regulated businesses, SGN has a material refinancing requirement in GD2 of c£2.6bn in total, which represents c.65% of existing debt, aggregated across the two companies. This appendix provides further details on our financing strategy including:

- An explanation of corporate structure;
- Our financing & risk management approach;
- Current debt profile (by type) and maturity;
- Our current track record of raising debt; and
- A summary of our debt issuance programme, including debt maturing during GD2 and anticipated financing requirements (including future sources of finance).

This annex should be read in conjunction with SGN's Alternative Cost of Capital Assumption Financeability Appendix 004iHi (Cost of Debt), where we expand on the approach taken by SGN in a number of key areas that influence our proposals on cost of debt.

#### I.i Overview of the current Capital Structure

The SGN group funding structure has been put in place to achieve the following objectives:

- Investment grade credit ratings at the operating companies;
- Efficient overall capital structure;
- Sufficient investor demand to finance the business;
- Manage exposure to interest rate risk and inflation risk; and



• Positive liquidity in line with working capital and funding requirements.

The group consists of four primary funding entities<sup>38</sup> as outlined in the Figure and Table below:

Figure I1: SGN organisational and ownership structure



Source: SGN analysis

 $^{\mbox{\tiny 38}}$  Amounts outstanding as at 31 March 2019 including accrued inflation

SGN SGN

#### Table I1: Amounts outstanding across SGN funding entities

Funding entity	Amounts outstanding
Southern Gas Networks PLC	£494m index-linked public notes
(Southern)	• £1,865m fixed public notes
	• £300m floating EIB loans
	• £250m fixed PP notes
	• £240m committed bank facility
Scotland Gas Networks PLC (Scotland)	• £413m index-linked public notes
	• £475m fixed public notes
	£80m floating public notes
	• £110m fixed EIB loans
	• £65m floating EIB loans
	• £150m fixed PP notes
	• £120m committed bank facility
Scotia Gas Networks Ltd	Shareholder equity and £328m shareholder loans
SGN Midco Ltd	• £130m index-linked private placement (PP) notes
	• £300m fixed PP notes; and £150m committed bank facility

Source: SGN analysis

#### I.ii Financing & risk management approach

The financing and risk management approach for both Southern and Scotland is to:

- Maintain a capital structure that supports credit metrics commensurate with a solid investment grade credit rating;
- Target issuance tenors and issuance sizes that create a smooth maturity profile;
- Maintain a weighted average maturity (WAM) appropriate for the asset portfolio (i.e. the average remaining asset life);
- Access a diversified range of funding sources to prevent over-reliance on any one market. This should support the refinancing of existing debt, as well as increasing debt in line with investment plans;
- Manage exposure to floating interest rate debt to be less than 25% of total debt; and,
- Maintain positive committed funding headroom to cover forecast cash flows and ensure that regulatory sufficiency of resources requirements and credit rating agency liquidity requirements are met.



As at 31 March 2019, Southern and Scotland maintained the following positions in line with the above strategy: **Table I2: Current performance against SGN's financing strategy** 

Financing Strategy	Southern	Scotland
Floating interest rate debt	11%	11%
WAM	10yrs	12yrs
Committed funding headroom: 12 months	£240m	£65m
Capital structure: leverage	72.9%	71.7%
Funding sources	See figure	I1 (above)
Maturity profile	See figure	es below
Source: SGN analysis		

#### Figure 12: Southern maturity profile by financial year



Source: SGN analysis







#### Source: SGN analysis

Historically, the debt issuance approach taken by Southern and Scotland has been to manage debt issuance size and target tenors to allow the company to issue as frequently as possible and spread debt maturities across years where there is low concentration of existing debt maturing. The approach taken is always subject to internal and external influences, and historically, this has included the following factors:

#### **Company establishment in 2005**

As a result of creating an efficient capital structure, there was a large quantum of debt issuance and concentrated interest rate risk. We managed these risks by:

- Transacting interest rate swaps to fix a proportion of the interest rate exposure in April 2005 ahead of capital markets debt issuance. This allowed SGN to establish a blended approach to interest rates;
- Targeting capital markets debt issuance across a range of tenors (5 years to 30 years) and diversified markets including, GBP fixed rate notes, GBP index-linked notes, GBP floating rate notes, EUR floating rate notes and GBP committed bank loans. This approach sought to minimise refinancing risk and interest rate risk in the future; and,
- Implementing a series of monoline wraps (a fee-based structure) to acquire a higher rated wrap on initial capital markets debt issuance, which minimises credit spreads on issued debt.

#### **Global financial crisis:**

• The global financial crisis drove increased credit spreads, caused uncertainty around funding capacity and created interest rate volatility. Southern and Scotland managed the impact of this by further diversifying funding sources to include committed EIB loan funding (shown below), which was available at competitive pricing, in flexible notional amounts and tenors not available in the GBP capital markets.

#### **Brexit:**

• The proposed exit of the UK from the EU has made securing new funding from the European Investment Bank (EIB) a more challenging process in terms of both pricing and process. Southern and Scotland have managed the impact of this by diversifying funding sources to include US private placement investors. Similar to the EIB loans, the funding secured so far has been achieved at competitive pricing and with notional amounts not available in the GBP capital markets, as well as tenors that allow the distribution networks to appropriately manage interest rate risk exposure.


#### Market dynamics:

 Public debt issuance markets have limitations on benchmark size which is driven by investors' desire for liquidity in the instruments that they invest in and index eligibility. Public debt markets are also limited in terms of the available maturities that have sufficient support to execute a transaction efficiently. In the GBP markets the benchmark size is £250m and GBP investors are biased towards the longer dated maturities which has influenced the size and tenor of debt that that has been historically issued in public markets by Southern and Scotland and therefore the frequency with which both entities have been able to issue.

The financing approach taken by Southern and Scotland has enabled efficient debt issuance against the benchmark for several reasons, as outlined below:

- Maturities and issuance targeted: At company establishment, SGN issued debt across a range of tenors to mitigate any refinancing and interest rate concentration risk on maturity. For subsequent long-term financing, SGN has targeted issuance sizes and tenors, whilst navigating market preference, to where possible align with open maturity buckets to further mitigate exposure to these risks;
- Monoline guarantees: implementation of this structure for issuance enabled the company to reduce investor counterparty credit risk by paying a fee to insurance companies to guarantee the bonds, thus improving the credit spreads that could be achieved. The bonds carried AAA guarantees and were more highly rated than the A/BBB blended iBoxx;
- EIB Issuance: at the time of issuance, credit spreads in this market were tighter than credit spreads available in public markets and tenors which were shorter than those available in GBP public issuance were available to SGN. The EIB loans range from 8-10 years in maturity and carry a lower weighted average life (WAL) than the WAL of the iBoxx; and,
- USPP: at the time of issuance credit spreads in this market were tighter than credit spreads available in public markets. The USPP markets took a different approach to evaluating credit spreads in the sector, and at the time of issuance, priced this lower than GBP public markets.

Going forward, SGN does not place reliance on the availability of monoline wraps or EIB funding within its financing strategy. The market for implementing credit rating enhancements through monoline wraps has largely fallen away, with the majority of monolines either in run-off or no longer willing to underwrite this form of business. Additionally, for the reasons mentioned above, it is unlikely that the shorter weighted average life EIB funding will be made available. Finally, the pricing benefit achieved in the USPP markets vs GBP Public markets to date cannot be relied upon going forwards as the relative pricing between these two markets shifts with market dynamics.

SGN intends to maintain an efficient approach to its funding strategy. This will be achieved through continuing to focus on diversified funding sources, in addition to targeting issuance tenors that maintain the appropriate mix of financing risk and pricing. SGN recognises that its funding approach must match the risk appetite of its shareholders, while also managing the exposure that the group and individual companies have. A large number of the factors/parameters that are under review by Ofgem in RIIO-2 have a material impact on financing and risk management exposure, and SGN will continue to evolve its financing and risk management strategy to appropriately manage the outcome as these are finalised.

Across the two regulated businesses SGN has a material refinancing requirement in GD2, c£2.6bn in total which represents c62% of existing debt (aggregated across the two companies):

- Southern: £1.8bn over the 5yr period (62% of existing debt); and
- Scotland: £0.9bn over the 5yr period (67% of existing debt).

Maintaining solid investment grade credit ratings across both companies will be a key driver in raising debt efficiently.



# J. Financial Projections

#### **Appendix J Summary**

• This appendix provides a breakdown of SGN's financial projections for the GD2 period (2022-2026).

The tables below provide financial projections from the Licence Model including Regulatory earnings statement and Regulatory cash flow for the Notional and Actual company for scenario A1.

Note: as stated on p34 the gearing in the Licence Model for the actual company does not fully align with our own company model and we expect gearing to be below 73% for all of the actual company base cases. The Licence Model is also calculating a higher statutory depreciation than our company model. We will discuss these issues with Ofgem.



## Table J1: Southern Notional A1 financial projections

PCFM year ending		31 Mar 2022	31 Mar 2023	31 Mar 2024	31 Mar 2025	31 Mar 2026
Regulatory earning statement						
Francisco hafano internet terres deserviction and anomaliation						
Earnings before interest, taxes, depreciation and amortis	ation (EDITDA	*)				
Operating revenue	£m nominal	705.78	724.88	747.06	761.88	775.03
Add incentives and other net revenue	£m nominal	8.37	8.69	8.99	9.28	9.58
Less fast pot expenditure	£m nominal	(137.76)	(150.25)	(154.88)	(153.71)	(150.48)
Less difference in fast pot expenditure pre-TIM and p	£m nominal	-	-	-	-	-
Less non-controllable opex	£m nominal	(172.59)	(176.09)	(177.41)	(180.61)	(183.89)
Less equity issuance cost	£m nominal	(10.31)		-		-
Less established pension deficit repair	£m nominal	(6.66)	(4.65)	(4.74)	(2.63)	
EBITDA	£m nominal	386.82	402.58	419.02	434.20	450.25
Earnings before interest and taxes (FRIT)						
Less regulatory depreciation as per PCFM	£m nominal	(219.84)	(231.49)	(243.01)	(253.96)	(265.74)
ЕВП	£m nominai	166.77	171.09	176.01	180.24	184.51
Profit before tax (PBT)						
Less net interest paid (excluding principal inflation acc	: £m nominal	(88.39)	(89.97)	(91.45)	(93.28)	(95.40)
Less net interest paid (principal inflation accretion)	£m nominal	(12.31)	(12.85)	(13.26)	(13.64)	(14.04)
РВТ	£m nominal	66.29	68.27	71.31	73.32	75.08
Profit after tax (PAT)						
	(m. neminal	(26.05)	(21 72)	(29.21)	(29.40)	(29.44)
PAT	£m nominal	30.24	31.54	33.10	34.72	36.41
• · · · ·						
Retained earnings						
Less dividends paid	£m nominal	(51.45)	(53.32)	(54.99)	(56.84)	(58.61)
Retained earnings for the year	£m nominal	(21.21)	(21.77)	(21.89)	(22.12)	(22.20)
Regulatory cash flow statement						
Funds from operations (FFO)						
Operating revenue	£m nominal	705.78	724.88	747.06	761.88	775.03
Add incentives and other net revenue	£m nominal	8.37	8.69	8.99	9.28	9.58
Less total operating costs	£m nominal	(327.33)	(330.99)	(337.03)	(336.95)	(334.37)
Net cash flow from operations	£m nominal	386.82	402.58	419.02	434.20	450.25
Less net interest paid (excluding principal inflation acc	: £m nominal	(88.39)	(89.97)	(91.45)	(93.28)	(95.40)
Less tax paid	£m nominal	(36.05)	(36./3)	(38.21)	(38.60)	(38.66)
FF0	£m nominai	262.38	275.88	287.36	302.32	316.17
Retained cash flow (RCF)						
Less dividends paid	£m nominal	(51.45)	(53.32)	(54.99)	(56.84)	(58.61)
RCF	£m nominal	210.93	222.57	234.38	245.49	257.58
Net cash flow before financing						
Net slow pet expenditure	fm nominal	(304 57)	(31017)	(214.90)	(217 15)	(219 / 4)
Less RAV adjustment from previous price controls	£m nominal	(304.37)	(310.16)	(314.78)	(317.15)	(317.44)
Less pre-vesting and post-vesting disposal proceeds	£m nominal	4.48	8.69	21.77	0.57	0.58
Net cash flow before financing	£m nominal	(89.16)	(78.90)	(58.83)	(71.09)	(61.28)
Change in net debt						
Equity issuance	£m nominal	206.26		~	-	-
Net cash flow from financing	£m nominal	206.26				-
Change in net debt	£m nominal	117.10	(78.90)	(58.83)	(71.09)	(61.28)
Check	fmnominal					
Check	£m nominal	-	-	-	-	-



## Table J2: Scotland Notional A1 financial projections

PCFM year ending		31 Mar 2022	31 Mar 2023	31 Mar 2024	31 Mar 2025	31 Mar 2026
Regulatory earning statement						
Francisco la francisco de constation en de constitu						
Earnings before interest, taxes, depreciation and amorti-	sation (EDITDA					
Operating revenue	£m nominal	307.95	318.96	326.57	328.82	329.49
Add incentives and other net revenue	£m nominal	3.74	3.89	4.05	4.20	4.33
Less fast pot expenditure	£m nominal	(76.97)	(85.40)	(86.00)	(81.49)	(77.05)
Less difference in fast pot expenditure pre-TIM and	p £m nominal	-			-	-
Less non-controllable opex	£m nominal	(52.12)	(53.13)	(53.24)	(54.20)	(55.17)
Less equity issuance cost	£m nominal	(4.61)			-	-
Less pension admin and PPP levy	£m nominal	-	- (2.10)	(2.14)	-	-
Established pension deficit repair	£m nominal	(4.44)	(3.10)	(3.16)	(1.76)	201.60
LBIDA	Entrionnia	175.55	101.22	100.22	175.50	201.00
Earnings before interest and taxes (EBIT)						
Less regulatory depreciation as per PCFM	£m nominal	(99.11)	(104.37)	(109.91)	(115.67)	(120.98)
EBIT	£m nominal	74.44	76.85	78.30	79.91	80.62
Pustite bafaus tax (DDT)						
Less net interest paid (excluding principal inflation ac	c £m nominal	(39.50)	(40.37)	(41.51)	(42.64)	(43.54)
Less net interest paid (principal inflation accretion)	£m nominal	(5.50)	(5.77)	(6.02)	(6.24)	(6.41)
РВТ	£m nominal	29.44	30.71	30.78	31.03	30.68
Profit after tax (PAT)						
		(15.00)	(14.47)	(14.17)	(15.33)	
Less tax paid	£m nominal	(15.93)	(16.67)	(16.17)	(15.77)	(14.64)
FAT	Em nominal	13.50	14.04	14.01	15.26	16.05
Retained earnings						
Loss dividends paid	(m nominal	(22.99)	(22.92)	(24.91)	(25.73)	(26.49)
Retained earnings for the year		(22.77)	(23.73)	(10.30)	(10.47)	(10.46)
recarried carrings for the year	Linnonina	(*. 17)	(7.07)	(10.50)	(10.17)	(10.10)
Regulatory cash flow statement						
Funds from operations (FFO)						
Operating revenue	£m nominal	307.95	318.96	326.57	328.82	329.49
Add incentives and other net revenue	£m nominal	3.74	3.89	4.05	4.20	4.33
Less total operating costs	£m nominal	(138.14)	(141.63)	(142.40)	(137.44)	(132.22)
Net cash flow from operations	£m nominal	173.55	181.22	188.22	195.58	201.60
Less net interest paid (excluding principal inflation ac		(37.50)	(40.37)	(41.51)	(42.64)	(14 64)
FFO	£m nominal	8. 2	124.18	130.54	37.17	43.42
Retained cash flow (RCF)						
Less dividends paid	£m nominal	(22.99)	(23.93)	(24.91)	(25.73)	(26.49)
RCF	£m nominal	95.12	100.25	105.64	111.44	116.92
Net cash flow before financing						
Net slow pot expenditure	£m nominal	(136.38)	(145.06)	(146.19)	(143.52)	(141.82)
Less RAV adjustment from previous price controls	£m nominal		-	-	-	-
Less pre-vesting and post-vesting disposal proceeds	£m nominal	0.53	0.82	(4.93)	0.34	0.35
ivet cash flow defore financing	±m nominal	(40.73)	(44.00)	(45.48)	(31.74)	(24.55)
Change in net debt						
Equity issuance	fm nominal	92 14				
Net cash flow from financing	£m nominal	92.14				
Change in net debt	£m nominal	51.41	(44.00)	(45.48)	(31.74)	(24.55)
<b>u</b>			(	()	(- ··· · ·)	(=
Check	£m nominal	-	-	-	-	-
Check	£m nominal	-	-	-	-	-



## Table J3: Southern Actual A1 financial projections

PCFM year ending		31 Mar 2022	31 Mar 2023	31 Mar 2024	31 Mar 2025	31 Mar 2026
Regulatory earning statement						
Earnings before interest, taxes, depreciation and amorti	sation (EBITDA	4)				
Operating revenue	£m nominal	704.76	723.80	740.04	753.15	764.56
Add incentives and other net revenue	£m nominal	3.15	6.40	9.39	10.29	9.24
Less actual controllable opex	£m nominal	(141.77)	(146.66)	(150.05)	(152.63)	(156.07)
Less non-controllable opex	£m nominal	(172.59)	(176.09)	(177.41)	(180.61)	(183.89)
Less pension admin and PPF levy	£m nominal	-				-
Less established pension deficit repair	£m nominal	(6.66)	(4.65)	(4.74)	(2.63)	-
EBITDA	£m nominal	386.88	402.81	417.24	427.56	433.85
Earnings before interest and taxes (EBII)						
Less statutory depreciation as per PCFM	£m nominal	(158.06)	(165.92)	(174.93)	(184.20)	(192.67)
EBIT	£m nominal	228.82	236.89	242.30	243.36	241.18
Profit before tax (PB1)						
Less net interest paid (excluding principal inflation ac	c £m nominal	(116.00)	(121.93)	(127.24)	(143.10)	(142.51)
Less net interest paid (principal inflation accretion)	£m nominal	(11.55)	(15.13)	(19.15)	(20.83)	(20.99)
РВТ	£m nominal	101.26	99.83	95.92	79.43	77.68
Profit after tax (PAT)						
Less tax paid	£m nominal	(30.42)	(30.34)	(30.00)	(27.60)	(27.63)
ΡΑΤ	£m nominal	70.84	69.49	65.92	51.83	50.05
Retained earnings						
Less dividends paid	£m nominal	(9.60)	(45.43)	(28.35)	(44.36)	(38.47)
Retained earnings for the year	£m nominal	61.24	24.06	37.56	7.48	11.58
Regulatory cash flow statement						
Funds from operations (FFO)						
	fm nominal	704 76	723.80	740.04	753 15	764 56
Add incentives and other net revenue	£m nominal	3.15	6.40	9.39	10.29	9.24
Less total operating costs	£m nominal	(321.03)	(327.40)	(332.20)	(335.88)	(339.95)
Net cash flow from operations	£m nominal	386.88	402.81	417.24	427.56	433.85
Less net interest paid (excluding principal inflation ac	c £m nominal	(116.00)	(121.93)	(127.24)	(143.10)	(142.51)
Less tax paid	£m nominal	(30.42)	(30.34)	(30.00)	(27.60)	(27.63)
FFO	£m nominal	240.45	250.54	260.00	256.86	263.71
Retained cash flow (RCF)						
Less dividends paid	£m nominal	(9.60)	(45.43)	(28.35)	(44.36)	(38.47)
RCF	£m nominal	230.85	205.11	231.65	212.50	225.24
Net cash flow before financing						
Net cash flow from capex	£m nominal	(300.56)	(313.75)	(319.81)	(318.23)	(313.85)
Less RAV adjustment from previous price controls	£m nominal	-	-	-	-	-
Less pre-vesting and post-vesting disposal proceeds	£m nominal fm nominal	4.48	(99.95)	(66.39)	(105.15)	(88.03)
	a	(00.20)	(****3)	(00.07)	(	(00.00)
Change in net debt						
Faulty issuance	fm nominal					
Net cash flow from financing	£m nominal	-	-	-	-	
Change in net debt	£m nominal	(65.23)	(99.95)	(66.39)	(105.15)	(88.03)
		· ·				
Check	£m nominal	-	-	-	-	-
Check	£m nominal	-	-	-	-	-



## Table J4: Scotland Actual A1 financial projections

PCFM year ending		31 Mar 2022	31 Mar 2023	31 Mar 2024	31 Mar 2025	31 Mar 2026
Regulatory earning statement						
Earnings before interest, taxes, depreciation and amortis	ation (EBITDA	A)				
Operating revenue	£m nominal	307.95	318.96	321.77	323.30	325.66
Add incentives and other net revenue	£m nominal	2.45	(0.80)	2.35	2.40	3.19
Less actual controllable opex	£m nominal	(79.77)	(83.23)	(79.53)	(79.97)	(84.60)
	(m. nominal	(52,12)	(52.12)	(52.24)	(54.20)	(55.17)
Less non-controllable opex	£m nominal	(52.12)	(55.15)	(55.24)	(54.20)	(55.17)
Less pension admin and PPF levy	£m nominal	-		-		-
Less established pension deficit repair	£m nominal	(4.44)	(3.10)	(3.16)	(1.76)	-
EBITDA	£m nominal	174.07	178.69	88.18	189.78	189.08
Earnings before interest and taxes (EBIT)						
;g ()						
Less statutory depreciation as per PCFM	£m nominal	(72.56)	(75.75)	(80.39)	(84.93)	(88.59)
EBIT	£m nominal	101.52	102.95	107.79	104.85	100.48
Profit before tax (PBT)						
Less net interest paid (excluding principal inflation acc	£m nominal	(55.70)	(58.95)	(55.24)	(59.84)	(65.31)
Less net interest paid (principal inflation accretion)	£m nominal	(11.15)	(12.21)	(9.43)	(9.62)	(9.81)
FDI	£m nominai	34.67	31.79	43.12	35.40	25.36
Profit after tax (PAT)						
Less tax paid	£m nominal	(12.00)	(11.62)	(12.15)	(11.03)	(9.52)
FAI	£m nominai	22.66	20.18	30.77	24.37	15.04
Retained earnings						
		(22.12)	(10.00)	(21.24)	(1.4.70)	(2.4.42)
Less dividends paid	£m nominal	(30.13)	(12.33)	(21.96)	(16.70)	(24.62)
Retailed earnings for the year	Entrioninal	(7.47)	7.07	2.01	7.07	(6.77)
Regulatory cash flow statement						
Funds from operations (FFO)						
Operating revenue	£m nominal	307.95	318.96	321.77	323.30	325.66
Add incentives and other net revenue	£m nominal	2.45	(0.80)	2.35	2.40	3.19
Less total operating costs	£m nominal	(136.33)	(139.46)	(135.94)	(135.92)	(139.77)
Net cash flow from operations	£m nominal	174.07	178.69	188.18	189.78	189.08
Less net interest paid (excluding principal inflation acc	fm nominal	(55.70)	(58.95)	(12.15)	(59.84)	(65.31)
FFO	£m nominal	106.37	108.13	120.79	118.92	4.25
Retained cash flow (RCF)						
Less dividends paid	fm nominal	(30   3)	(12.33)	(21.96)	(16.70)	(24.62)
RCF	£m nominal	76.24	95.80	98.83	102.22	89.63
Net cash flow before financing						
Net cash flow from capex	£m nominal	(133.58)	(147.23)	(152.65)	(145.04)	(134.27)
Less RAV adjustment from previous price controls	£m nominal	-	-	-	-	-
Less pre-vesting and post-vesting disposal proceeds	£m nominal	0.53	0.82	(4.93)	0.34	0.35
Net cash flow before financing	£m nominal	(56.82)	(50.61)	(58.75)	(42.47)	(44.29)
Change in net debt						
-						
Equity issuance	£m nominal	-	-	-	-	-
Net cash flow from financing	£m nominal	-	-	-	-	-
Change in het debt	±m nominal	(56.82)	(50.61)	(58.75)	(42.47)	(44.29)
Check	£m nominal	-	-	-	-	-
Check	£m nominal	-	-	-	-	-



# K. Dividend and Equity Issuance policy

#### **Appendix K Summary**

• This appendix provides an overview of SGN's dividend and equity issuance policy.

### K.i Dividend Policy

Our dividend policy seeks to manage the level of distributions to shareholders after taking into account expected cashflows and investment plans, the level of committed funding available, as well as maintaining minimum credit rating metrics and gearing covenants.

In addition, our policy will ensure compliance with our sufficiency of resources requirements under our licence and compliance with the Companies Act in relation to profits available for distribution.

Distributions in GD2 will only be made after robust financeability and long-term financial resilience testing demonstrates the ability to afford these distributions. The flexibility of our dividend policy was clearly shown in prior years, when the company issued no dividends due to a period of deflation and made a voluntary contribution of £145m.

#### Assessment of Notional Dividend Yield Working Assumption

When determining the appropriate level of distributions, it will also be important to consider the attractiveness of the company to investors. As noted in Appendix 004B, the gas distribution sector faces a series of challenges including proposed changes to the regulatory regime, renationalisation policies and the uncertainty surrounding the future of gas.

Therefore, we believe Ofgem's working assumption of a 3% dividend yield, which is a reduction from assumptions made in GD1, is inconsistent with the increased risks highlighted above.

### K.ii Equity issuance

Our equity issuance policy, like our dividend policy, takes into consideration the expected cashflows and investment plans of the business, as well maintaining minimum credit rating metrics and gearing covenants and longer-term financial resilience. Our policy prioritises dividend reductions over equity issuance as a more cost effective way of increasing the financial resources available to the company.

In the Notional company, as guided by Ofgem, we assume equity issuance at the start of GD2 is used to reduce the notional gearing from 65% to 60% with an associated equity issuance fee of 5% (see Appendix 004L).

In the Actual company, we do not forecast the requirement for equity issuance. In Appendix 004Eiii we set out the tools available to mitigate credit ratios which are projected to be weaker than required to meet our minimum rating for the Actual company.



# L. Equity Issuance Costs

#### **Appendix L Summary**

- This appendix provides an analysis of equity issuance costs compared with Ofgem's current assumptions.
- Our analysis shows that the average total cost of issuance is 4.6% for transactions of £250m-£750m, which aligns with the 5% proposed by Ofgem.

Evidence from UK equity issuances since 2016 shows an average total cost of issuance of 4.6% for transactions of £250m-£750m, which we believe are representative of the scale of GDN issuances to re-lever to a notional gearing of 60%. This cost of issuance is consistent with Ofgem's working assumption of 5% and the allowance for RIIO-GD1. Considering the not insignificant additional internal costs of equity issuance, we view 5% equity issuance costs as an appropriate assumption.

#### Table L1: Market equity issuance costs for transactions between £250m-£750m since 2016

Pricing Date	Company	Deal Value (£m)	Est. Net Proceeds (£m)	General Industry	Deal Type	% of Company Sold	Est. Total Cost of Offering (%)	Underwriting Fees (%)
13-Jun-19	Marks & Spencer	601	571	Retail	Rights Offer	16.7%	5.1%	2.0%
21-May-19	Sirius Minerals	327	311	Chemicals	Cash Placing	31.3%	4.9%	3.8%
17-May-19	Metro Bank	375	363	Finance	ABB	43.5%	3.2%	2.5%
18-Dec-18	Grainger	349	332	Real Estate	Rights Offer	31.8%	5.0%	2.5%
14-Dec-18	Restaurant Group	319	305	Dining & Lodging	Rights Offer	59.1%	4.4%	2.8%
11-Jul-18	ITE Group	267	250	Professional Services	Rights Offer	63.6%	6.4%	2.3%
10-Apr-18	Provident Financial	331	300	Finance	Rights Offer	41.5%	9.4%	2.8%
04-Dec-17	Assura	330	319	Real Estate	Cash Placing	22.9%	3.3%	2.5%
05-May-17	Cobham	521	497	Defense	Rights Offer	28.6%	4.6%	2.3%
25-Apr-17	Tullow Oil	625	607	Oil & Gas	Rights Offer	33.8%	2.9%	2.5%
28-Mar-17	SEGRO	577	556	Real Estate	Rights Offer	16.7%	3.6%	2.3%
27-Feb-17	RPC Group	560	540	Chemicals	Rights Offer	20.0%	3.6%	2.0%
21-Dec-16	Greencore Group	451	427	Food & Beverage	Rights Offer	40.9%	5.4%	2.3%
24-Nov-16	Sirius Minerals <sup>(1)</sup>	370	352	Chemicals	Cash Placing	44.4%	4.9%	4.5%
09-Nov-16	Phoenix Group	742	718	Insurance	Rights Offer	39.1%	3.2%	2.3%
17-Jun-16	Cobham	507	487	Defense	Rights Offer	33.3%	3.9%	2.3%
Average		453	433			35.4%	4.6%	2.6%

Source: SGN 's financial advisors



# **M.**Pensions

#### Appendix M Summary

- This appendix outlines SGN's estimated pension costs for GD2.
- We forecast that across the two networks, pension costs will average £23m p.a. in Totex. This covers new defined benefit accrual, incremental deficit payments and new defined contribution accruals. Overall, total pension costs are slightly below GD1 levels.

As instructed by Ofgem in the Sector Specific Decision, we have included an estimate for the Pension Protection Fund (PPF) levy and administration costs as part of our Totex submission for GD2. Specifically, we have included the following amounts:

- Scotland average of £500k per annum
- Southern average of £700k per annum

This covers the PPF levy, which is currently less than £100,000 per annum, the scheme admin team, actuary, investment advisor and legal advisor fees. This is consistent with the costs incurred in GD1. To aid comparability, we have included these costs in Totex tables for GD1.

Our provisional estimates of pension costs rolling forward in GD2 are also based on the latest actuarial assumptions, manpower projections, and the application of the Pensions Deficit Allocation Methodology (PDAM).

We forecast that across the two networks, pension costs will average £23m per annum in Totex. This covers new defined benefit accrual, incremental deficit payments, and new defined contribution accruals. Total pension costs are slightly below GD1 levels.



# N. Tax

#### Appendix N Summary

• This appendix provides an overview of SGN's approach to Ofgem's three options for tax allowance methodology

For our business plan, the modelling of the tax allowance reflects Ofgem's current established tax policies.

Ofgem have stated they are keeping the following three options open for consideration for RIIO-2 as part of their assessment of business plans:

- Option A: notional allowance with added protections
- Option B: pass-through for payments to HMRC
- Option C: the 'double-lock, i.e. the lower of notional (Option A) and actual (Option B)

To assess these options in more detail, we would welcome further dialogue with Ofgem, as outlined in previous submissions, on how the tax allowance would be calculated under option A and the mechanics of the pass-through mechanism under option B. This will enable us to assess viability of the two options. However, without this further detail we consider that a pass-through mechanism may be preferable to incentivise networks' to take a balanced view to tax risk management.

We view that option C appears to expose networks to asymmetric risk, and therefore we do not see this as a viable option in GD-2.

We would also welcome the use of incentives to encourage networks to obtain the Fair Tax Mark.



# **O.** Customer Engagement

#### **Appendix O Summary**

- This appendix provides an overview of the approach taken to engage customers on financeability issues and the main findings.
- Customer engagement is an essential part of the RIIO-2 regulatory approach and we have taken a comprehensive approach to engage customers on a wide range of financeability issues.

### O.i Summary of Approach

Customer engagement is an essential part of the RIIO-2 regulatory approach and we have taken a comprehensive approach to engage customers on a wide range of financeability issues. We used different sources of insight to understand relevant aspects of our customers' views:

- **Customer panel survey:** Sought views from customers with whom we engage regularly online, who have therefore been educated about our business over time, including building an understanding of financeability issues;
- Willingness to pay research: Sought views from a group of customers with low awareness of our business to gauge how much customers would be willing to pay for incremental improvements across our customer priorities;
- Acceptability testing survey: Sought views from customers both before and after explaining the details of our plan so we can understand how customers react when presented with the impact on their bills.

We then triangulated our customers' views on a range of financeability issues from across these three sources of insight to build a rich picture of our overall findings.

#### Figure O1: Triangulation of customer views



Source: SGN analysis



A summary of the questions asked is as follows, with the results from each group shown in the following sections;

Table O1: Summary of topics covered by our three sources of insight

Торіс	Customer panel survey	Willingness to pay research	Acceptability testing survey
Intergenerational fairness – the relative proportion of cost borne by current and future customers	x	x	х
Importance of stability of the bill	x		х
Bill profile over time and importance of credit rating	x	x	х
Hyperbolic discounting	x		x
Sample size	108	3,005	1842

Source: 093 Financeability Research triangulation of informed and uninformed customer views 20191019\_SigTested

Questions evolved over time between the three methods of research at the expense of direct comparability but bringing the benefit of more nuanced insight. Further details of each of the three elements of our insight programme follow below.

### O.ii Financeability research with informed customer panel

One of the challenges of conducting research with domestic and small and medium sized enterprise (SME) business customers is that they often have low awareness of, and familiarity with, SGN. This means it can take some time to educate participants, which can be particularly challenging with online surveys.

Working with a specialist research company we set up an online customer panel in March 2019. This customer panel is an enduring engagement mechanism through which we can test a variety of ideas with customers who already have a good understanding of what we do as a business. Customers who had previously attended face-to-face qualitative research workshops were invited to join our customer panel, along with other customers who had been educated about our role and activities. This provides us with the means to engage with an informed group of customers in a cost effective, fast and efficient way.

During September and October 2019, we ran a survey with our customer panel to seek their views on a range of financeability issues. Having been provided with some background information on the topic, customers were asked to answer questions in relation to:

- Establishing a fair balance between paying for investments now (impacting current bill payers) versus paying more later (impacting future bill payers)
- Whether having a stable bill instead of a variable bill (which could be more or less expensive than the stable bill) was important
- Whether customers would be willing to forego greater reductions in bills in order to allow us to maintain good credit scores, protect against paying more in the future, and support long-term investors in the network

A range of demographics are represented on the panel. Overall, 108 respondents completed the survey, spread across the following age profiles:



#### Table O2: Customer survey age profiles

Age band	18 – 34	35 – 44	45 +
Number of panel members	• 38	• 36	• 34

Source: SGN customer survey

The results of the survey are summarised in the table O3 and figure below:

#### Table O3: Key findings from the customer survey

Finding	Response and evidence
Statements relating to long term investment in green energy and allowing fair returns for companies who perform well whilst lowering gas bills received the highest agreement levels.	<ul> <li>93% of respondents strongly agreed or agreed that having long-term investors who are able to fund greener energy solutions was important.</li> <li>88% of respondents strongly agreed or agreed with the statement that 'A company that is lowering gas bills, performing well and ensuring long-term network resilience should receive a fair return?'</li> <li>≤5% of respondents disagreed with these statements.</li> <li>NB: this is congruent with the findings of wider customer research we've undertaken, where keeping costs down and supporting future energy solutions have been identified as priority areas<sup>39</sup>.</li> </ul>
The panel were divided on whether current customers or future customers should pay a greater proportion of high-cost investments made today.	<ul> <li>50% of customers felt that it was acceptable for current customers to pay for a greater proportion of a high-cost asset today</li> </ul>
Rather than pay a greater proportion, the panel advocated both current and future customers paying their fair share.	<ul> <li>Overall, 82% strongly agreed (37%) or agreed (45%) with this concept.</li> <li>Similarly, the majority agreed that the cost of building and operating a pipe should be fairly spread over customers' bills over the next 45 years (83% in agreement, whilst 8% disagreed).</li> </ul>
A strong majority thought it was important that their bill was stable rather than highly variable.	<ul> <li>Overall, 92% thought it was very important (62%) or somewhat important (30%) when asked 'How important to you is it that your bill is stable, so that you pay a consistent amount over the coming years, rather than a highly variable cost? The variable amount could be higher or lower than the stable amount.' 2% rated this as unimportant, with 6% answering neutrally.</li> <li>18 to 34 year olds were the group who agreed with this most strongly, with 76% answering 'very important'.</li> </ul>
	• The percentage of respondents rating this area as somewhat or very unimportant increased with age band to 6% for over 45s.

<sup>39</sup> Explorative Qualitative Workshops and Interviews (Jan 2018, 147 customers, ref: 002)



The majority would be willing to forgo an additional £7 annual bill saving to maintain a good credit score and keep future bills down.	<ul> <li>Overall, 77% agreed with this statement. 6% of the panel somewhat disagreed and 5% strongly disagreed.</li> <li>18 to 34 year olds agreed with this statement most strongly. Although 75% of 35 to 44 year olds agreed or strongly agreed with this statement, 16% disagreed or strongly disagreed, which was the highest of the three age bands.</li> </ul>
A small majority disagreed with the statement 'I would rather bills decrease more now and risk paying more in future'.	<ul> <li>63% somewhat disagreed (32%) or strongly disagreed (31%) with this statement. 22% agreed (16%) or strongly agreed (6%). 15% of the panel respondents neither agreed nor disagreed.</li> </ul>
The majority agreed that we should pay a fair return to shareholders and investors.	<ul> <li>74% of the panel strongly agreed or agreed with this principle, 8% somewhat or strongly disagreed.</li> <li>Relative to other questions asked, a comparatively high proportion of the panel (17%) answered neither agree nor disagree in response to whether we should pay a fair return to our shareholders and investors.</li> </ul>
The majority also agreed we should maintain a good credit rating.	<ul> <li>84% strongly agreed or agreed, with &lt;5% disagreeing.</li> </ul>

Source: SGN customer panel survey financeability



#### Figure O2: Survey of Panel Responses



Source: SGN customer panel survey financeability

In addition, to the summary findings presented above, the customer panel has a discussion forum, where members can share views on research topics under consideration. Following the survey, we launched a conversation topic on financeability considerations. A selection of verbatim customer comments included the following:

*"I feel as long as the increases were gradual and vulnerable customers were taken care of I would not have a problem"* 

"I found the whole exercise very interesting and illuminating in terms of the day to day decisions that SGN need to take. There is always a balance to be struck between delivering to the customer and generating business that is profitable and financeable. The more transparency there is the better. Those at the top need to be accountable, but not penalised."

"I think it's important that companies tell their stories like this, so they aren't seen as faceless corporations. It's also good for consumers to see that each action has consequences and the days of just wanting things cheaply are gone if we want things done responsibly."

### O.iii Financeability insight from Willingness-to-Pay research

The Willingness-to-Pay survey was carried out by a specialist research agency to gauge how much customers would be willing to pay for incremental improvements across our customer priorities. Two questions were attached to the end of the survey to gather insight on customers' uninformed views on financeability considerations, when they are presented with the impact on their bills.

1. Your annual gas bill decreases by £10 and remains stable over the next 10 – 15 years, or



2. Your annual gas bill decreases by £17 but at the risk of it increasing over the next 10 – 15 years

These questions sought to understand:

• Whether customers prefer high-cost, long-term investment to be paid for by current or future bill payers.

Whether there is support for a lower annual customer bill reduction which would result in more stable bills for the next 10-15 years, viz, asking customers which of the following two bill profiles they would prefer.

The Willingness-to-Pay research was conducted with customers from a range of demographics. The summary in this section is based on results consisting of 2,586 domestic customers and 419 SMEs. The table below shows the spread of household respondents across the following age profiles.

#### Table O4: Age profiles for participants of the Willingness-To-Pay research

Age band	18 - 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 79	80+
Number of participating customers	• 117	• 307	• 433	• 441	• 604	• 656	• 28

#### Source: SGN willingness to pay research

Respondents were from the two regions, Scotland and Southern as follows:

#### Table O5: Regional breakdown of Willingness-To-Pay research participants

Region	Scotland	Southern
Number of participating household customers	• 969	• 1,617
Number of participating SMEs	• 120	• 299

Source: SGN willingness to pay research

The results from the financeability questions in the Willingness-to-Pay research are summarised below:

- 1. When asked how the high cost of long-term investment should be spread over customers' bills, uninformed participants in the willingness-to-pay research were split on whether it should be paid by current or future customers.
- In this respect too, the finding is consistent with that from the earlier panel<sup>40</sup> research where informed customers were also divided on whether current or future customers should pay a greater proportion of high cost investments made today.
- There were no significant differences between the two regions, although Southern SMEs were slightly more likely (52%) than Scotland SMEs (48%) to say high-cost long-term investment should be paid by future bill payers.
- Half of the SMEs in the willingness-to-pay research thought the cost of long-term investment should be borne by future bill payers.
- The age group most likely to be future bill payers (18-24 year olds) were significantly less likely<sup>41</sup> than those aged 45 and above to say long-term investment should be paid through future bills. The choice of 'future bills' increases with age with less than 3 in 10 (27%) from the 18-24 group favouring 'future bills' compared to 40% of the 45-54s, 43% of the 55-64s, 48% of the 65-79s and 57% of the 80+.

<sup>40</sup> 093 Panel financeability report



<sup>&</sup>lt;sup>41</sup> Significantly lower at the 95% confidence level

# 2. Half of the uninformed SMEs in the willingness-to-pay research thought the cost of long-term investment should be borne by future bill payers



Source: SGN WTP Round 2 research

# 3. Domestic customers aged 45+ are more likely than their younger counterparts to favour the cost of long-term investment being paid through future bills



Source: SGN WTP Round 2 research



# 4. When we break this down into more granular age bands, we can see the proportion favouring 'future bills' increases with age



Source: SGN Round 2 WTP research

- 5. Uninformed on the financeability aspects, a large majority of customers in the willingness-to-pay research said they were prepared to forego an additional £7 annual saving in preference of a stable future bill.
- This finding supports the informed customer view from panel research<sup>42</sup> where a large majority (92%) were in favour of stable bills and nearly 8 in 10 (77%) said they would be willing to go without an additional £7 saving on their annual bill to maintain a good credit score and keep future bills down.
- There were no significant differences between the propensities in the two regions for SMEs or domestic customers to opt for 'Your annual gas bill decreases by £10 and remains stable over the next 10 15 years' when asked to choose between the two options.
- Future bill payers aged 18-24 were significantly<sup>43</sup> more likely (90%) than domestic customers aged 25-34 (81%) to choose the lower bill reduction so bills remain stable in the next 10-15 years.
- SMEs were twice as likely<sup>44</sup> (14%) than domestic customers (6%) to choose the greater bill decrease of £17 at the risk of bills increasing over the next 10-15 years.
- Domestic customers who struggle to pay their bills were twice as likely<sup>45</sup> (10%) than those who only sometimes struggle (5%) to prefer an additional £7 reduction.



<sup>&</sup>lt;sup>42</sup> 093 Panel financeability report

<sup>&</sup>lt;sup>43</sup> Significantly higher at the 95% confidence level

<sup>&</sup>lt;sup>44</sup> Significantly higher at the 95% confidence level

<sup>&</sup>lt;sup>45</sup> This was <u>not</u> significantly higher at the 95% confidence level

# 6. A large majority of domestic customers across all age groups prefer to forgo an additional £7 annual saving in favour of a stable future bill



#### Source: SGN WTP Round 2 research

7. SMEs are twice as likely as domestic customers to want a further £7 saving on their annual bill at the risk of a future bill increase





Source: SGN WTP Round 2 research

## O.iv Financeability insight from business plan acceptability research

Working with our partner research agency, we ran a qualitative phase of acceptability research<sup>46</sup> in April and May 2019. This aimed to gain insight from customers which could then be used to underpin SGN's decision making.

During October and November 2019, we conducted the quantitative phase of the Business Plan acceptability research to gauge the levels of acceptability and affordability as well as the perceptions of value for money with domestic customers and SMEs in the Southern region and Scotland. A few additional attitudinal questions were asked of respondents towards the end of this survey. Financeability questions included cover the following topics:

- Customers' level of agreement for a fair balance between paying for long-term high cost investments now (impacting current bill payers) versus paying more later (impacting future bill payers)
- Whether having a stable bill instead of a variable bill (which could be more or less expensive than the stable bill) was important
- Whether customers would be willing to forego greater reductions in bills in order to keep them stable and reduce the risk of paying more in the future as and when investment is required. Customers were asked to choose between the two bill profiles below:
- 1. Your annual gas bill decreases by £11.20 (Scotland) / £8.40 (Southern) per year and is more likely to remain stable over the next 10 15 years; and,
- 2. Your annual gas bill decreases by £19.60 (Scotland) / £16.80 (Southern) per year but may be more likely to

<sup>&</sup>lt;sup>46</sup> 078 SGN Business Plan Acceptability Testing Phase 1

increase over the next 10 – 15 years.

The aim of including the above questions was to seek views from an uninformed group so we understand how customers react when presented with the impact on their bills.

The business plan acceptability research was conducted with customers from a range of demographics. This summary is based on final results consisting of 1,463 domestic customers and 379 SMEs. The table below shows the spread of household respondents across the following age profiles:

Table outrige profiles for participants of the acceptability rescared
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Age band	18 - 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 79	80+
Number of participating customers	128	214	382	199	268	230	42
Scotland	28	93	154	85	96	100	17
Southern	100	121	228	114	172	130	25

Source: SGN Business plan acceptability research

Respondents were from the two regions, Scotland and Southern as follows:

#### Table O7: Age profiles for participants of the acceptability research

Region	Scotland	Southern
Number of participating household customers	573	890
Number of participating SMEs	177	202

Source: SGN Acceptability research

We also identified customer who struggle pay their utility bills by including these two statements in the survey:

*I struggle to pay my electricity and gas bills and I am often behind in my payments I always struggle to pay my electricity and gas bills and I am nearly always behind in my payments* 

The results of the financeability element from the acceptability survey are summarised below:

- 1. A majority of customers are in favour of current and future customers paying their fair share for long term high cost improvements, i.e. preferring that costs are spread over time.
- SMEs in the Southern region are only slightly more likely<sup>47</sup> to agree (74%) than those in Scotland (70%) that the long-term cost of improvements should be spread fairly across current and future customers.
- Within the Southern region, SMEs were slightly more likely<sup>48</sup> (74%) than domestic customers (67%) to agree that current and future customers should pay their fair share.
- 26% of SMEs in the South agreed strongly, 48% slightly while 24% of domestic customers agreed strongly and 43% slightly.
- There were no significant differences between 18-24s and other age groups in agreement levels for either region.



<sup>&</sup>lt;sup>47</sup> This is **not** significantly different at the 95% confidence level.

<sup>&</sup>lt;sup>48</sup> This is **not** significantly different at the 95% confidence level

• When looking at those who struggle to pay their utility bills, a significantly lower proportion agreed (49% in both Scotland and Southern). However, disagreement levels were 24% in Scotland and 17% in Southern, as many customers stated, 'Neither agree/ nor disagree' or 'don't know'.

Table O8: Current customers and future customers should pay their fair share for long term, high cost improvements (i.e. costs should be spread over time)

	Domestic Southern	Domestic Scotland	SME Southern	SME Scotland
NET: Agree	67%	72%	74%	70%
NET: Disagree	7%	6%	8%	8 %

Source: SGN Business plan acceptability research

- 2. Consistent with the findings from the Panel research<sup>49</sup>, a strong majority thought it was important that their bill was stable, so they pay a consistent amount over the coming years.
- In Scotland, when asked 'How important to you is it that your bill is stable, so that you pay a consistent amount over the coming years, rather than paying a bill that can vary?', 90% of SMEs said it was either very important (46%) or somewhat important (45%) and 89% of domestic customers said it was either very important (52%) or somewhat important (37%).
- In the Southern region, 87% of SMEs said it was either very important (38%) or somewhat important (49%) and 85% of domestic customers said it was either very important (43%) or somewhat important (43%).
- In the Southern region, future customers aged 18-24 (89%) were more likely to say it was important that their bill remained stable than domestic customers aged 65-79 (73%).
- When looking at those who struggle to pay their utility bills, there were no statistically significant differences.

Table O9: 'How important to you is it that your bill is stable, so that you pay a consistent amount over the coming years, rather than paying a bill that can vary?

	Domestic Southern	Domestic Scotland	SME Southern	SME Scotland
NET: Important	85%	89%	87%	90%
NET: Unimportant	3%	2%	2%	3%

Source: SGN Business plan acceptability research

# 3. Only around a third of customers agreed, when asked if they would rather bills decreased more now and risk paying more in the future when investment is required

#### Scotland:

- SMEs: 44% either slightly disagreed (27%) or strongly disagreed (17%) with the statement 'I would rather bills decrease more now, and risk paying more in the future as and when investment is required'. 22% of the business respondents neither agreed nor disagreed, 15% strongly agreed and 19% slightly agreed.
- Domestic customers: 40% either slightly disagreed (28%) or strongly disagreed (13%) with the statement. 26% of the household respondents neither agreed nor disagreed while only 32% agreed, 12% strongly and 19% slightly.



<sup>&</sup>lt;sup>49</sup> 093 Panel financeability report

- In Scotland, future bill payers aged 18-24 were more likely to disagree (59%) and less likely to agree (17%) that they would rather bills decreased more now than customers aged 65-79 (32% disagreed and 39% agreed).
- There were no statistically significant differences when looking at those customers in Scotland who struggle to pay their utility bills.

#### Southern:

- SMEs: 34% either slightly disagreed (23%) or strongly disagreed (11%) with the statement 'I would rather bills decrease more now, and risk paying more in the future as and when investment is required'. 27% of the business respondents neither agreed nor disagreed, 17% strongly agreed and 20% slightly agreed.
- Domestic customers: 40% either slightly disagreed (26%) or strongly disagreed (14%) with the statement. 26% of the household respondents neither agreed nor disagreed while only 31% agreed, 13% strongly and 18% slightly.
- SMEs in the Southern region (37%) were slightly more likely<sup>50</sup> to agree than domestic customers (31%).
- When looking at those who struggle to pay their utility bills, the proportion who disagreed was significantly lower (25%). Whereas 43% agreed with the statement.

Table O10: 'I would rather bills decrease more now, and risk paying more in the future as and when investment is required'

	Domestic Southern	Domestic Scotland	SME Southern	SME Scotland
NET: Agree	31%	32%	37%	34%
NET: Disagree	40%	40%	34%	44%

Source: SGN Business plan acceptability research

- 4. A majority of SMEs and domestic customers across both regions chose the option with the lower reduction when asked to choose between the two options below:
- 1. Your annual gas bill decreases by £11.20 (Scotland) / £8.40 (Southern) per year and is more likely to remain stable over the next 10 15 years; and,
- 2. Your annual gas bill decreases by £19.60 (Scotland) / £16.80 (Southern) per year but may be more likely to increase over the next 10 15
- In this respect too, the results are congruent with the findings from the earlier Panel research where the majority said they would be willing to forgo an additional annual bill saving to maintain a good credit score and keep future bills down.
- In Scotland, when asked which of two options they prefer, 80% of SMEs and 87% of domestic customers chose the option with a lower reduction to their gas bill so their bills are more likely to be stable over the next 10-15 years.
- In the Southern region, 71% of SMEs and 79% of domestic customers chose the option with a lower reduction to their gas bill so their bills are more likely to be stable over the next 10-15 years. The difference between SMEs and domestic customers in the Southern region is statistically significant51.
- Domestic customers in Scotland are significantly<sup>52</sup> more likely (87%) than domestic customers in the Southern region (79%) to choose the lower reduction, perhaps partly attributable to the difference in the

<sup>&</sup>lt;sup>50</sup> This was **not** significantly different at the 95% confidence level

<sup>&</sup>lt;sup>51</sup> Significantly different at the 95% confidence level

<sup>&</sup>lt;sup>52</sup> Significantly different at the 95% confidence level

bill impact between the two regions.

- There are no significant differences between the extent to which 18-24 year olds choose the lower reduction compared to other age groups for either region.
- When looking at those who struggle to pay their utility bills, there were no significant differences in Scotland. However, in Southern, a significantly lower proportion (62%) favoured a lower reduction to their gas bill.

#### Table O11: Domestic and SME responses to bill decrease questions

	Domestic Southern	Domestic Scotland	SME Southern	SME Scotland
Your annual gas bill decreases by <scotland= £11.20;<br="">SOUTHERN= £8.40&gt; per year and is more likely to remain stable over the next 10 – 15 years</scotland=>	79%	87%	71%	80%
Your annual gas bill decreases by <scotland= £19.60;<br="">SOUTHERN= £16.80 &gt; per year but may be more likely to increase over the next 10 – 15 years</scotland=>	15%	9%	18%	14%
Don't know	7%	4%	11%	6%

Source: SGN Business plan acceptability research



# P. Commentary on Licence Model

## P.i Use of Model

As instructed we have used Ofgem's licence model for assessment of financeability for Ofgem's working assumptions. Unfortunately, it was not possible to use the model to carry out stress tests of the actual company as due to the nature of the links to the BPDT as they do not flex the RAV and debt (and thus interest costs) for stress tests. Therefore, we had to use our company model for these financeability outputs and will discuss with Ofgem the resolution of these issues going forward.

## P.ii Financial ratios

A number of adjustments have been applied to the Financial ratios in the Licence Model in order so that the calculation aligns to the approach taken by Credit Rating Agencies and SGN's Company model. As set out in the table below for Southern Scenario A1, these adjustments have been applied to the numerator and denominator included in the Licence Model for AICR, PMICR, Nominal PMICR and FFO:Net debt.

These adjustments have been applied within the Licence Model 'FinancialRatios' tab from row 133. This follows a note within the same sheet in row 109 of the Licence Model which states 'Note: Companies may insert additional ratios in the appropriate slots below.' The adjustments are also consistent with previous guidance provided by Ofgem through the Licence Model issues log whereby spare rows can be inserted at the bottom of the 'Financial Ratios' tab to provide alternative financial ratio calculations



# Table P1: Adjustments to Licence Model financial ratios to align to Credit Rating Agency methodology – Southern A1

	Notional A1	Actual A1
AICR		
Numerator		
FFO per Ofgems workings	137.2	141.7
SGN adjustments to align to CRA methodology:		
Reclassification of financial instruments	-	(4.1)
Interest income	-	3.3
Excluded services net revenue (for net debt and tax)	-	(1.8)
Total	-	(2.5)
FFO - SGN adjusted	137.2	139.1
Denominator		
Interest per Ofgems workings	93.6	130.2
SGN adjustments to align to CRA methodology:		
Onerous swap payments	-	(4.1)
RCF commitment fee	-	(0.6)
Total	-	(4.7)
Interest - SGN adjusted	93.6	125.4
AICR - Ofgem workings	1.47	1.09
AICR - SGN adjusted	1.47	1.12
PMICR		
Numerator		
PMICR numerator (based on Ofgem Nominal PMICR excluding RAV inflation)	137.2	141.7
SGN adjustments to align to CRA methodology:		
Amortisation for Customer contribution	5.3	5.3
Excluded services net revenue (for net debt and tax)	-	(1.8)
Total	5.3	3.5
PMICR numerator - SGN adjusted	142.5	145.2
Denominator		
PMICR denominator (based on Ofgem Nominal PMICR excluding interest accretion)	93.6	130.2
SGN adjustments to align to CRA methodology:		
Interest income	-	(3.3)
PMICR denominator - SGN adjusted	93.6	126.8
PMICR - SGN adjusted	1.52	1.15



	Notional A1	Actual A1
Nominal PMICR		
Numerator		
Numerator per Ofgems workings	227.0	231.5
SGN adjustments to align to CRA methodology:		
Amortisation for Customer contribution	5.3	5.3
Excluded services net revenue (for net debt and tax)	-	(1.8)
Total	5.3	3.5
FFO - SGN adjusted	232.3	235.0
Denominator		
Denominator per Ofgems workings	107.1	147.7
Adjustments:		
Interest income	-	(3.3)
Interest - SGN adjusted	107.1	144.3
PMICR - Ofgem workings	2.12	1.58
PMICR - SGN adjusted	2.17	1.64
FFO:Net debt		
Numerator		
Numerator per Ofgems workings	272.9	236.8
SGN adjustments to align to CRA methodology:		
Amortisation for Customer contribution	5.3	5.3
Pensions excess contribution over costs	-	(2.0)
Excluded services net revenue (for net debt and tax)	-	(1.8)
Total	5.3	1.5
FFO - SGN adjusted	278.2	238.3
Denominator		
Denominator per Ofgems workings	2,745.1	3,352.7
SGN adjustments:		
Denominator per BPDT	3,369.1	3,369.1
Denominator used to calculate ratio	2,745.1	3,369.1
FFO:Net debt - Ofgem workings	10.0%	7.1%
FFO:Net debt - SGN adjusted	10.1%	7.1%



## P.iii Other Points

We had to make a minor change to the tax clawback calculations in row 160 of the 'FinInput' tab as these did not reflect the two-year delay tax clawback has on impacting base revenues. Again, we will discuss the resolution of this issue with Ofgem going forward.

Also, we needed to make a change to the LiMo to incorporate a 4<sup>th</sup> option for Totex performance – i.e. the - 6.5% Totex under performance in our combined downside scenario. This extra scenario was added in row 350 of the Scotland and Southern (Scenarios) tabs, with the formulae changed in I151 and AX46 in order to pick this up in our combined downside modelling scenario.

Finally, we would like to make the following points;

- 1. Cell AN1010 of the Scotland and Southern Scenarios tab: either this cell should be highlighted grey and cleared, or it should link into cell R190 of the '1.02\_BP\_Financial\_Requirements' tab.
- 2. We believe there is some ambiguity over whether the notional company should in include the Legacy revenue adjustments (LAR) from the 4 references on p3, 7, 15 & 15 of the latest LiMo guidance<sup>53</sup>. Due to the factors listed below we have assumed the LAR should be zero:
  - a. the notional company LAR in cell is set to 0 and in a grey cell (AP43 of the 'Scotland' and 'Southern' tabs, i.e. it's an Ofgem input;
  - b. the guidance on p3 and p14 is stating that the Notional company should not have LAR included;
  - c. its generally excepted that the notional company should not be impacted by cashflow adjustments.

<sup>&</sup>lt;sup>53</sup> LiMo GD2 20191107 d 4.1 guidance (for ENA)

## **Q.** Assurance

Our Business Plan, including Appendices, has been subject to a rigorous assurance process which is detailed in Chapter 3 of the Plan and the Board Assurance Statement.

Our Chief Financial Officer was appointed as the Sponsor for the Financeability Appendix and the associated Business Plan Data Templates (BPDTs); which have been through the following levels of review and assurance:

#### First Line

This was undertaken at project level by the team producing the document, as a regular self-check or peer review.

#### Second Line

This was undertaken independently within the organisation to review and feedback on product development, including a workshop on Financeability Assumptions. Both Senior Manager and Director sign-off was obtained.

#### **Third Line**

This was undertaken by external advisors and groups providing critical challenge during the development of products within the Business Plan. In addition to the feedback and challenge provided by the Customer Engagement Group (CEG) and Customer Challenge Group (CCG) this Appendix was developed after consultation with and advice from:

Advisor / Group	Contribution	
PwC	Expert input and challenge on business plan financeability and financial modelling support.	
National Westminster Bank plc	Consultancy to produce a strategic report on mitigation steps to close the financeability gap.	
Evercore		
Oxera, Nera Economics and KPMG	External ENA Reports.	

In addition, financeability formed part of the RIIO-GD2 Committee (a sub-Board Committee) discussions since set up in May 2017. During the development of our Business Plan, SGN's Finance Committee (a sub-Board Committee) focussed on financeability, which was an Agenda item on five occasions from March 2019. It was then a particular focus of 11 wider ring-fenced Board discussions which took place between August and November 2019.

#### **Fourth Line**

This was undertaken by independent and impartial external providers, who provided a detailed and comprehensive report to the Board of Directors:

Advisor / Group	Contribution
PwC ('Clean Team')	Conducted a factual check on the metrics put forward to the Board and on adherence to the Ofgem financeability business plan guidelines.

