Government Actuary's Department

Ofgem

Review of network operators' pension costs

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1 Executive summary

1.1 Ofgem commissioned the Government Actuary's Department (GAD) to conduct an initial high-level review of network operators' (NWOs') defined-benefit (DB) pension costs. The results of this review assist Ofgem to assess the reasonableness of the methods and assumptions used to determine NWOs' pension costs, and to understand the differences between individual NWOs' pension costs.

1.2 This report analyses the principal factors which determine NWOs' pension costs. NWOs' pension schemes are compared against each other and with publicly available information on typical UK private sector DB pension provision. This review covers NWOs' principal DB pension schemes.

Scheme benefits

1.3 Scheme benefits are one of the main determinants of defined-benefit pension schemes' ultimate costs. There have been few changes to NWOs' schemes' benefits since GAD's review in May 2012. Licensees' abilities to amend the schemes' provisions are limited by constraints that were imposed at privatisation. Nonetheless, some NWOs' have recently implemented changes such as salary sacrifice and pensionable pay increase caps to control pension costs. Ofgem may wish to ask other licensees to what extent they have considered such measures.

1.4 All NWOs' original DB pension schemes are closed to new entrants, with all now offering defined contribution (DC) arrangements to new entrants. The gas schemes provide more generous benefits than the electricity schemes (as a consequence of a lower normal retirement age, lower member contributions and higher accrual rate), and the electricity schemes provide slightly more generous benefits than typical UK private sector defined benefit pension schemes (as a consequence of a lower normal retirement age).

Investment strategy

1.5 Schemes' investment strategies affect their investment returns (and therefore their current and future funding levels), and also the choice of actuarial assumptions for funding valuations. A number of factors affect schemes' investment strategies.

1.6 Most licensees' schemes invest between 40% and 60% in 'return-seeking' assets such as equities and property (as opposed to 'matching' assets such as bonds). Such proportions are broadly consistent with average UK private sector defined benefit pension schemes, after adjusting for the relative maturity of licensees' schemes. Allocations to return-seeking assets are slightly lower (by around 5-10%) than those shown in GAD's May 2012 report. This is broadly consistent with the general trend for typical UK private sector defined benefit pension schemes.

1.7 Most licensees' schemes now incorporate a de-risking objective in their investment strategies with the aim of moving towards a broadly matched position over the long-term. The approach varies between schemes, however nearly all have some form of *liability-driven investment (LDI)* strategy. This type of approach is now common among many UK private sector defined benefit pension schemes (especially for larger-sized schemes).

1.8 With the exception of 2 or 3 individual years, schemes' investment returns over the past 10 years have been broadly in line with CAPS pooled pension fund return data. Some differences would be expected as investment strategies and allocations vary between schemes and the CAPS data used for comparative purposes.

Funding valuation methodology and assumptions

1.9 The results of a pension scheme's funding valuation and therefore the sponsor's future cash contributions depend significantly on the assumptions made for future experience. This report considers the assumptions adopted for licensees' schemes' funding assessments as at 31 March 2013.

1.10 Most licensees' schemes' funding assumptions are within a range that would be expected from data on typical schemes' assumptions. Outliers are discussed.

1.11 Most, but not all, electricity licensees' schemes' funding assessments assume that pension increases will be capped if RPI exceeds 5% in future years. The actual pension increase awarded in 2012 (when the measure was above 5%) exceeded 5% for four schemes. Ofgem has asked licensees to explain why pension increases were not restricted in 2012.

1.12 A number of licensees' schemes' funding assessments assume that some of the past service funding deficit will be met by higher investment returns in the future than the prudent rates used for the purposes of calculating the technical provisions. This means that deficit recovery contributions payable are only assumed to meet some, not all, of the funding shortfall. Ofgem should consider how this interacts with the calculations it carries out and the way that pension allowances are determined.

Administration expenses and PPF levies

1.13 Scheme trustees have a duty to monitor expenses and ensure the level incurred is reasonable. Expense treatment varies between companies and detailed analysis would have been possible with the provision of further information from licensees to enable consistent comparisons. However, we have agreed with Ofgem that this analysis should be carried out at the next review and we will work with Ofgem to make sure that suitable information is provided for this purpose.

Funding valuation results

1.14 Many variations between individual licensees' schemes' funding valuation results as at March 2013 are explained by the differences in scheme benefits, investment strategy and funding assumptions discussed in this report. Licensees' schemes' funding levels are generally within a range that would be expected compared to other UK private sector schemes.

1.15 A scheme's ongoing funding level reflects its past experience (for example past investment returns, employer contributions and any transfers to or from the scheme) as well as its future liabilities and valuation assumptions. Movements in funding results since previous valuations are broadly as expected.

1.16 Some companies have paid additional contributions – above the specified normal and deficit contributions – in respect of benefit augmentations over the review period. The (relatively modest) contributions were typically made to support enhanced early retirement terms. Further, we have also noted instances of employers paying some deficit contributions earlier than required by their recovery plans. Ofgem should consider how these payments interact with their allowances and whether any adjustments to its calculations are necessary.

1.17 This report does not consider schemes' recovery periods or deficit recovery contributions. This is because Ofgem's pension allowances in price controls do not directly equal schemes' actual annual deficit recovery contributions.

Next steps

1.18 This review is principally an information gathering and summarising exercise. Identification as a possible outlier must not be seen as actual or implied criticism of a scheme or NWO, but allows Ofgem to consider if further investigation is appropriate (and informs the decision of how such further work might be specified). Ofgem has sought further information from NWOs on the process and rationale underlying certain decisions and assumptions, where the initial information provided suggested that further investigation was appropriate. Where appropriate, this report reflects such additional information and Ofgem's analysis of it.

Limitations of the analysis

1.19 This review considers NWOs' DB pension provision in isolation. It is recognised that pension arrangements are only part of overall remuneration packages.

1.20 Schemes' benefits, investment strategies and funding valuations reflect each scheme's particular circumstances. It is beyond the scope of this report to consider all such factors. It is recognised that a 'one-size fits all' approach is not appropriate. This review must not be interpreted as advising that a particular approach or level of provision is necessarily inappropriate. Further, in the review of schemes' funding assumptions, while individual assumptions are reviewed in turn it is recognised that the overall basis in the round determines the funding valuation results. Comparisons of NWOs' schemes with publicly available information on other UK private sector DB pension schemes do not take into account factors which affect particular industries, sponsoring employers or pension schemes in isolation.

1.21 The purpose of this report is to assist Ofgem in its consideration of price control allowances. This report does not represent advice on the appropriate funding of licensees', or other, pension schemes.

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27 November 2014

2 Introduction

Section summary

Ofgem commissioned the Government Actuary's Department (GAD) to conduct an initial high-level review of network operators' (NWOs') defined-benefit (DB) pension costs. The results of this review assist Ofgem to assess the reasonableness of the methods and assumptions used to determine NWOs' pension costs, and to understand the differences between individual NWOs' pension costs. This report analyses the principal factors which determine NWOs' pension costs. NWOs' pension schemes are compared against each other and with publicly available information on typical UK private sector DB pension provision. This review covers NWOs' principal DB pension schemes. Limitations of the analysis are noted.

Background

2.1 Ofgem regulates the energy networks to protect the interests of customers. It sets price controls which limit the total revenues that each network licensee can recover from customers at a level that allows an efficient business to finance its activities. In considering such revenues, Ofgem considers the treatment of pension costs.

2.2 Ofgem applies six pensions principles to its price controls. Of these, four are most relevant to this report:

- ***Principle 1 – Efficient and economic employment and pension costs*** – Customers of network monopolies should expect to pay the efficient cost of providing a competitive package of pay and other benefits, including pensions, to staff of the regulated business, in line with comparative benchmarks.
- ***Principle 3 – Stewardship – ante/post investment*** – Adjustments may be necessary to ensure that the costs for which allowance is made do not include excess costs arising from a material failure of stewardship.
- ***Principle 4 – Actuarial valuation / scheme-specific funding*** – Pension costs should be assessed using actuarial methods, on the basis of reasonable assumptions in line with current best practice.
- ***Principle 5 – Under funding/over funding*** – In principle, each price control should make allowance for the ex-ante cost of providing pension benefits accruing during the period of the control, and similarly for any increase or decrease in the cost of providing benefits accrued in earlier periods resulting from changes in the ex-ante assumptions on which these were estimated on a case-by-case basis.

Objectives of this review

2.3 Ofgem commissioned the Government Actuary's Department (GAD) to conduct an initial high-level review of network operators' (NWOs') defined-benefit (DB) pension costs. The Terms of Reference (ToR) state the review's objectives, which are reproduced in Appendix A.

2.4 The results of this review assist Ofgem to assess:

- The reasonableness of NWOs' pension costs;
- Differences between NWOs' pension costs; and
- The reasonableness of the methods and assumptions used to determine NWOs' pension costs.

2.5 The report on GAD's previous review of NWOs' pension schemes was dated 16 May 2012 and is available on Ofgem's website.

2.6 This review is principally an information gathering and summarising exercise. Identification as a possible outlier must not be seen as actual or implied criticism of a scheme or NWO, but allows Ofgem to consider if further investigation is appropriate (and informs the decision of how such further work might be specified).

2.7 Ofgem has sought further information from NWOs on the process and rationale underlying certain decisions and assumptions, where the initial information provided suggested that further investigation was appropriate. Where appropriate, this report reflects such additional information and Ofgem's analysis of it.

Pension schemes

2.8 This review covers NWOs' principal DB pension schemes, being those which are most significant for future pension costs. Appendix B lists the licensees and pension schemes which have been included in the analysis, and the abbreviations used in this report.

2.9 This report only considers licensees' DB pension provision.

Methodology

2.10 Details of the methodology used for this review are set out in GAD's paper of 21 July 2014 entitled '2014 reasonableness review of NWO pension costs for Ofgem: Note by GAD on methodology for the review – July 2014'. This report analyses the principal factors which determine NWOs' pension costs:

- Scheme benefits (Section 3)
- Investment strategy and returns (Section 4)
- Actuarial funding methodology and assumptions (Section 5);
- Scheme administration costs and PPF levies (Section 6) and
- Actuarial funding valuation results (Section 7).

2.11 NWOs' pension schemes are compared against each other and with publicly available information on typical UK private sector DB pension provision.

2.12 Appendix C provides some background on DB pension scheme funding and contributions. Appendix D summarises factors affecting a scheme's high-level investment strategy. A glossary is included in Appendix E.

Data

2.13 Ofgem has provided GAD with data on NWOs' pension schemes. In general, this includes:

- Pensions data from NWOs' annual returns to Ofgem
- NWOs' schemes' funding documentation (for example, schemes' actuarial valuation reports and funding updates)
- NWOs' schemes' reports and accounts; and
- Information provided by NWOs in response to specific questions from Ofgem.

2.14 Ofgem and NWOs were shown drafts of this report before it was finalised, for comment and to check factual accuracy. Ofgem's and NWOs' comments have been borne in mind when preparing the final version.

2.15 My analysis is based solely on the information that has been provided by Ofgem. It relies on the completeness and accuracy of that information. I have checked this information for consistency with other sources provided where appropriate and, where material to the review, queried any discrepancies. Such checks do not represent a full independent audit of the data supplied. In particular, I have not checked the details of NWOs' schemes' funding calculations. GAD accepts no responsibility for any inaccuracies or omissions due to any errors or omissions in the data provided for this review.

Limitations

2.16 This review considers NWOs' DB pension provision in isolation. It is recognised that pension arrangements are only part of overall remuneration packages.

2.17 Schemes' benefits, investment strategies and funding valuations reflect each scheme's particular circumstances. It is beyond the scope of this report to consider all such factors. It is recognised that a 'one-size fits all' approach is not appropriate. This review must not be interpreted as advising that a particular approach or level of provision is necessarily inappropriate. Further, in the review of schemes' funding assumptions, while individual assumptions are reviewed in turn it is recognised that the overall basis in the round determines the funding valuation results.

2.18 Comparisons of NWOs' schemes with publicly available information on other UK private sector DB pension schemes do not take into account factors which affect particular industries, sponsoring employers or pension schemes in isolation.

Distribution and publication of this report

2.19 This report is addressed to Ofgem. I am aware that Ofgem may make this report available to other parties. I am aware that this report may be published or quoted in part by Ofgem, subject to confidentiality requirements. GAD reserves the right to review and comment on any context in which Ofgem may quote material from this report. GAD does not accept any responsibility to third parties who may read this report or extracts from it.

2.20 The purpose of this report is to assist Ofgem in its consideration of price control allowances. This report does not represent advice on the appropriate funding of licensees', or other, pension schemes.

3 Scheme benefits

Section summary

Scheme benefits are one of the main determinants of defined-benefit pension schemes' ultimate costs. There have been few changes to NWOs' schemes' benefits since GAD's review in May 2012. Licensees' abilities to amend the schemes' provisions are limited by constraints that were imposed at privatisation. Nonetheless, some NWOs' have recently implemented changes such as salary sacrifice and pensionable pay increase caps to control pension costs. Ofgem may wish to ask other licensees to what extent they have considered such measures.

All NWOs' original DB pension schemes have been closed to new entrants, with all now offering defined contribution (DC) arrangements to new entrants. The gas schemes provide more generous benefits than the electricity schemes (as a consequence of a lower normal retirement age, lower member contributions and higher accrual rate), and the electricity schemes provide slightly more generous benefits than typical UK private sector defined benefit pension schemes (as a consequence of a lower normal retirement age).

Introduction

3.1 Scheme benefits are one of the main determinants of DB pension schemes' ultimate costs, and therefore also of contribution rates to schemes. This section considers the absolute and relative levels of benefits provided by NWOs' schemes.

3.2 There have been few changes to NWOs' schemes' benefits since GAD's review of NWOs' pension costs in May 2012. This section summarises the key messages from that report and highlights recent changes.

Background to schemes

3.3 The four gas schemes originate from the pre-privatisation British Gas pension schemes, which were consolidated into one scheme over the period to April 2000. The original scheme became the National Grid UK Pension Scheme. The other three gas schemes were formed in 2005 on the sale of distribution networks to three separate buyers. All four schemes provided identical benefits in 2005.

3.4 The majority of the electricity licensees' principal DB pension schemes originate from the pre-privatisation Electricity Supply Pension Scheme (ESPS). Two licensees' schemes did not originate from the ESPS but have similar provisions to the ESPS.

3.5 On privatisation in 1990, individual businesses' shares of the ESPS were split into segregated sections of the scheme, referred to as Groups. Since then, there have been various transfers between and mergers of Groups, in line with sales and mergers of the sponsoring employers.

3.6 Licensees' abilities to amend the schemes' provisions are limited by constraints that were imposed at privatisation:

> The gas schemes are subject to a rule amendment made on the privatisation of the industry in 1986, whereby any reduction in scheme benefits or increase in member contributions can only occur with the consent of two thirds of affected members

> Pension provision in respect of *Protected Persons* (broadly members of the ESPS on privatisation, plus some other employees) is governed by legislation made on the privatisation of the electricity industry in 1990. In broad terms, future pension rights cannot be reduced for Protected Persons unless a meeting of affected members votes in favour of the change by a two-thirds majority. Similar provisions apply to the two Scottish electricity schemes.

Closure of original schemes to new entrants

3.7 All NWOs' original DB pension schemes are closed to new entrants. Active members continue to accrue benefits in respect of future service, but new employees are offered alternative provision through defined contribution (DC) pension arrangements.

3.8 Licensees closed their original schemes to new entrants at different times. Because the original schemes' benefits are typically more generous than those offered to more recent entrants, the earlier a licensee closed their original scheme to new entrants the larger the expected saving on pension costs. Table 3 in GAD's July 2009 report listed the changes made by each licensee. At that time, Western Power Distribution (South Wales / South West) had not closed its original DB scheme to new entrants, however it did so on 31 March 2010.

3.9 Where a licensee has closed its original DB scheme to new entrants and replaced it with a DC arrangement, this reduces the licensee's exposure to the risk of deficiency contributions, and would be expected to reduce overall pension costs (although this depends on the design of the DC scheme). These effects will increase over time, as more entrants join the DC arrangement rather than the DB scheme.

3.10 The main difference between DB and DC provision relates to risk: in a DB scheme the employer bears the risk of adverse future experience through the possibility of deficiency contributions being required, whereas in a DC scheme the risk of adverse future experience rests with the member through lower than expected benefits. Conversely, any benefits of favourable experience are more likely to go to the member in a DC scheme (through higher than expected benefits) than in a DB scheme (where employer contributions may be reduced, although this depends on the scheme rules).

3.11 A DC pension usually, but not necessarily, involves lower employer pension contributions than a defined benefit pension. Whether contributions are lower to a DC arrangement than to a previous DB scheme depends on the design of the two schemes.

Original schemes' benefits

3.12 Very similar benefits are provided by the original schemes within each of the gas and electricity sectors. The principal benefits are summarised in Table 1. Table 1 also illustrates the benefits offered by 'typical' UK private sector defined benefit pension schemes, from 2011 ONS survey data.[1] This initial comparison ignores differences between individual gas or electricity schemes and industry- or company-specific factors.

Table 1: Principal benefits provided by gas and electricity original DB schemes

	Gas	Electricity	'Typical' UK scheme
Age at which unreduced benefits are paid	60	63 [1]	65
Accrual rate	60ths	80ths [2]	60ths
Lump sum on retirement	By commutation	3 x pension [2]	By commutation
Member contributions (% of pay)	3%	6% [3]	5%
Dependants' pension after member's death	67%	50%-67%	50%
Pension increases (in payment)	RPI-linked	RPI-linked [4]	Capped [5]

Source: 'Typical' UK scheme: Occupational Pension Schemes Annual Report 2011 (ONS)

[1] For post-April 1988 entrants. Some employers grant unreduced benefits at age 60.

[2] Two schemes offer 60ths accrual with lump sum by commutation.

[3] Some schemes have different member contribution rates.

[4] Increases above 5% are generally subject to employer consent in the electricity schemes.

[5] Increases linked to price inflation but with a cap.

3.13 Table 1 shows that, in general, benefits provided by the gas schemes are more generous than those provided by the electricity schemes and by 'typical' UK private sector schemes, principally due to the lower age at which benefits are paid, the lower member contribution rate, and the higher accrual rate (compared with the electricity schemes) or higher expected pension increases (compared with 'typical' schemes).

3.14 The electricity schemes pay unreduced benefits at a lower age than the 'typical' UK private sector defined benefit scheme. Otherwise, the electricity schemes provide a similar level of benefits to typical schemes except for pension increases, which are discussed further below.

[1] "Occupational Pension Scheme Survey, 2011 Annual Report", Office for National Statistics (ONS), Tables 3.19, 4.2, 5.1 and 5.14, and Figure 5.13. The 2013 survey is the latest currently available. The 2013 survey results contain less data than in 2011. The data that is available for 2013 is consistent with that shown in Table 1 from the 2011 survey.

3.15 The 'typical' scheme benefits shown in Table 1 are based on ONS survey data from 2011 and 2013. Therefore it does not reflect the most recent changes that might have been made to schemes. I have commented on more recent scheme changes later in this section.

3.16 Most electricity schemes provide 80ths accrual[2] with an additional lump sum on retirement of three times the annual pension. The gas schemes provide 60ths accrual, but any lump sum is by commutation (this means in return for giving up some of the member's annual pension). A comparison of schemes' benefits must take into account this difference in lump sum entitlement. The value of a 60ths pension where the lump sum is by commutation is usually higher than the value of an 80ths pension with an additional lump sum of 3 times the annual pension, but not by as much as the accrual rate alone would suggest (in other words, comparing 60ths with 80ths). The precise difference depends on the terms and extent of commutation.

3.17 From April 2011, statutory minimum pension increases have been linked to the Consumer Prices Index (CPI) rather than Retail Prices Index (RPI) that had formerly applied. Basing pension increases on CPI is generally expected to lead to smaller future pensions than would have been the case had an RPI link remained. Since 1988, RPI has averaged around ¾% a year more than CPI, and many observers expect a material difference to remain over the longer-term.

3.18 The effect of this change on a scheme depends on its rules. The impact for licensees has been relatively minor as their schemes' rules require pension increases to continue to be linked to RPI. To the extent that many (but not all) other UK private sector DB schemes' pension increases have been affected by the change in statutory indexation, this has increased the relative generosity of the gas and electricity schemes.

Recent actions to control pension costs

3.19 GAD's July 2009 report noted that the generosity of benefits provided by the gas and electricity schemes, and therefore their SCRs and current funding positions, partly reflect improvements to benefits made in the 1990s and early 2000s mostly in order to utilise valuation surpluses. Table 5 of that report summarised differences between licensees' schemes. No licensees have made significant changes to their original schemes' benefits as summarised in that table since that time.

3.20 At the last review in 2012, it was noted that some licences have taken action to reduce employer pension costs by introducing salary sacrifice arrangements. Salary sacrifice arrangements result in a saving in the licensee's National Insurance Contributions. Any such savings for licensees might therefore be included in projections of other employment costs, rather than licensees' pension costs.

[2] Please refer to the glossary in Appendix E for a definition of accrual rates.

3.21 A salary sacrifice arrangement is where the member's salary is reduced by the amount of the member pension contributions that he or should would normally pay, and instead the employer meets the cost of the member pension contributions. The pension scheme should be broadly unaffected by any salary sacrifice arrangement: the benefits provided to members and the total contributions to the scheme should be unchanged.

3.22 Since GAD's May 2012 report, Scottish & Southern Energy: Hydro and Scottish & Southern Energy: Southern Electric Power Distribution have introduced salary sacrifice arrangements. Table 2 below shows that around two-thirds of the licensees covered by this review now have salary sacrifice arrangements.

Table 2: Licensees with salary sacrifice arrangements

Network operator (licensee)	Year introduced
Gas	
Northern Gas Networks	2006
National Grid Gas	2009
Electricity	
Scottish & Southern Energy: Hydro	2013
SP Distribution	2009
Northern Powergrid	2007
National Grid Electricity Transmission	2009
SP Manweb	2009
Electricity North West	2006
Scottish & Southern Energy: Southern Electric Power Distribution	2013

3.23 Further, the employers within the National Grid Group of the ESPS (NGESPS) as well as the employers within the National Grid UK scheme (NGUKPS) have introduced a cap on pensionable pay increases[3], applying to benefits accrued from 1 April 2013 onwards. The effect of a pensionable pay cap is that, depending on the level of future pay awards, members' benefits (for members retiring in the future) might be lower than they would have been had there been no cap. It reduces the risk of the pension scheme to unexpectedly high future pay awards.

[3] Annual increases will be capped by the lesser of an individual's pay rise, the annual increase in RPI or 3%.

3.24 The constraints imposed at privatisation described in paragraph 3.6 above restrict licensees' abilities to amend their pension benefits. If Ofgem wished to consider further the extent to which licensees' benefits could be amended, taking those constraints into account, it should take legal advice on this issue. Other considerations (for example industrial relations aspects) are also relevant.

3.25 The fact that some licensees have made some changes to reduce or control their pension costs (such as the introduction of salary sacrifice and pensionable pay caps) suggests that such measures are possible within the relevant legal constraints. I would suggest that, as an initial step, Ofgem seeks further information on the extent to which other licensees have considered changes such as the ones that some have implemented.

3.26 More generally, managing sponsors' pension costs efficiently remains a key issue for UK employers. The following table shows results from the National Association of Pension Fund's (NAPF) 2013 annual survey[4] on recent and anticipated changes in pension benefits:

Table 3: Scheme status and anticipated benefit changes, from NAPF 2013 survey

	Percentage of schemes
Percentages of all private sector schemes that, in 2013, were	
Open to new entrants	12%
Closed to new entrants but open to future accruals	53%
Closed to new entrants and future accruals	35%
Percentages of closed private sector and 'other public sector' schemes that were considering the following changes:	
Closure to future accruals (replace with DC/CARE)	33%
Retain DB for future accruals on less favourable terms	15%
No changes expected	36%
Prefer not to say	16%

[4] "Annual survey 2013", NAPF, December 2013.

3.27 Table 3 shows that, based on the NAPF survey data:

> The fact that licensees' principal DB schemes have been closed to new entrants but remain open to future accruals is consistent with 53% of private sector DB schemes;

> Of schemes in a similar situation, nearly half of schemes are planning to either reduce the value of benefits for future accruals, or to close their schemes for future accruals; with the remaining half either not expecting any further scheme changes or preferring not to say.

3.28 In the public sector, the main public service pension schemes have been reformed for future accruals (generally from April 2015), with:

> An increase in normal retirement age (aligned with State Pension Age);

> A move to career average revaluation of benefits (rather than a link to final pay), in conjunction with an improved accrual rate;

> An increase in employee contribution rates in recent years; and

> The introduction of a process designed to control future scheme cost rises.

3.29 Whilst it is recognised that there are constraints and limitations to changes that might be made to benefit designs for schemes in scope at this review due to the constraints imposed at privatisation, the evidence suggests that many employees in other private sector industries and in the public sector are experiencing (or may be expected to experience in due course) benefit reductions for future accruals. Whilst pensions are a significant part of an employee's remuneration, it is important to consider the overall pay package rather focus on pensions in isolation.

4 Investment strategy

Section summary

Schemes' investment strategies affect their investment returns (and therefore their current and future funding levels), and also the choice of actuarial assumptions for funding valuations. A number of factors affect schemes' investment strategies.

Most licensees' schemes invest between 40% and 60% in 'return-seeking' assets such as equities and property (as opposed to 'matching' assets such as bonds). Such proportions are broadly consistent with average UK private sector defined benefit pension schemes. Consistent with longer-term objectives, most schemes have reduced their allocation to 'return-seeking' assets since the review in May 2012 and nearly all schemes have introduced liability-driven investment (incorporating hedging strategies). These 'de-risking' strategies have recently become common place for UK private sector DB schemes.

Schemes with relatively low investment in return-seeking assets are the SHEPS, the NGUKPS and the ENWESPS (recognising the March 2014 change in asset allocation).

Schemes' investment returns over the past 3 years have generally been slightly higher than CAPS pooled pension fund return data. Over a 10-year period returns have generally been slightly lower than CAPS pooled pension fund return data. Further comments on these features are given below.

Introduction

4.1 Schemes' investment strategies affect their investment returns (and therefore their current and future funding levels), and also the choice of actuarial assumptions for funding valuations. A summary of the key factors that influence the high-level strategic investment strategy for a funded defined benefit pension scheme is given in Appendix D.

4.2 Schemes' actual investment returns are a key factor affecting future pension costs.

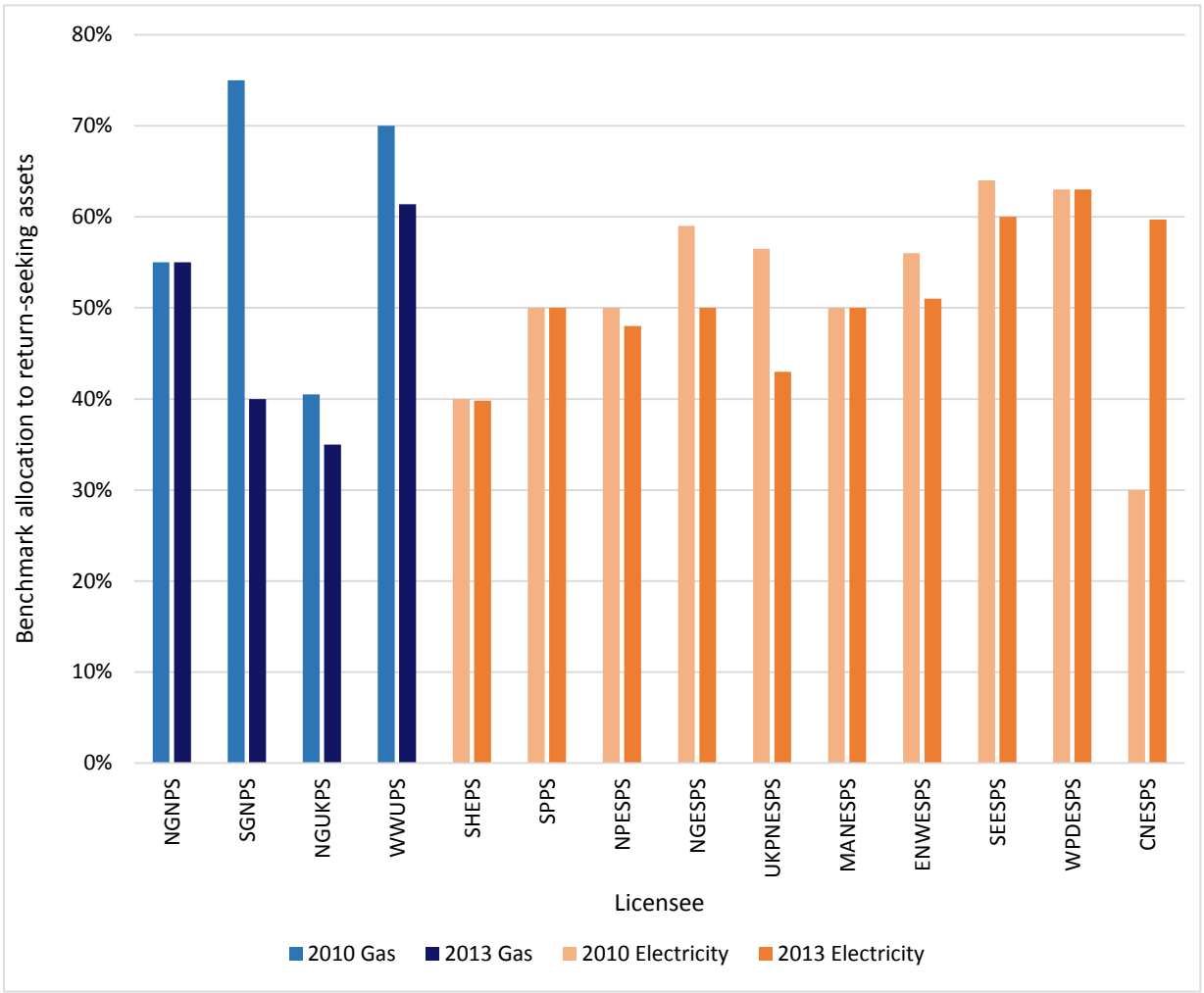
4.3 This section analyses NWOs' schemes' benchmark investment strategies and recent investment returns.

4.4 The analysis in this section concentrates on the high-level split between return-seeking assets and matching assets. A more detailed analysis of specific asset classes is beyond the scope of this report.

Licensees' schemes' investment strategies

4.5 Figure 1 illustrates licensees' schemes' current benchmark investment strategies, showing the percentage of the schemes' assets to be invested in return-seeking assets. Figure 1 also shows a comparison between the licensees' schemes' benchmark strategy in 2010 and their current benchmark strategy. Broadly the actual percentage allocations reflect the stated benchmark strategy. Actual investment allocations would be expected to deviate from the benchmark strategies from time to time due to tactical decisions and short-term investment returns.

Figure 1: Percentage of assets invested in return-seeking assets, benchmark



4.6 Figure 1 shows that most schemes' strategies are to invest between 40% and 60% of their assets in return-seeking assets. Exceptions are:

> WPDESPS: 63% in return-seeking assets; and

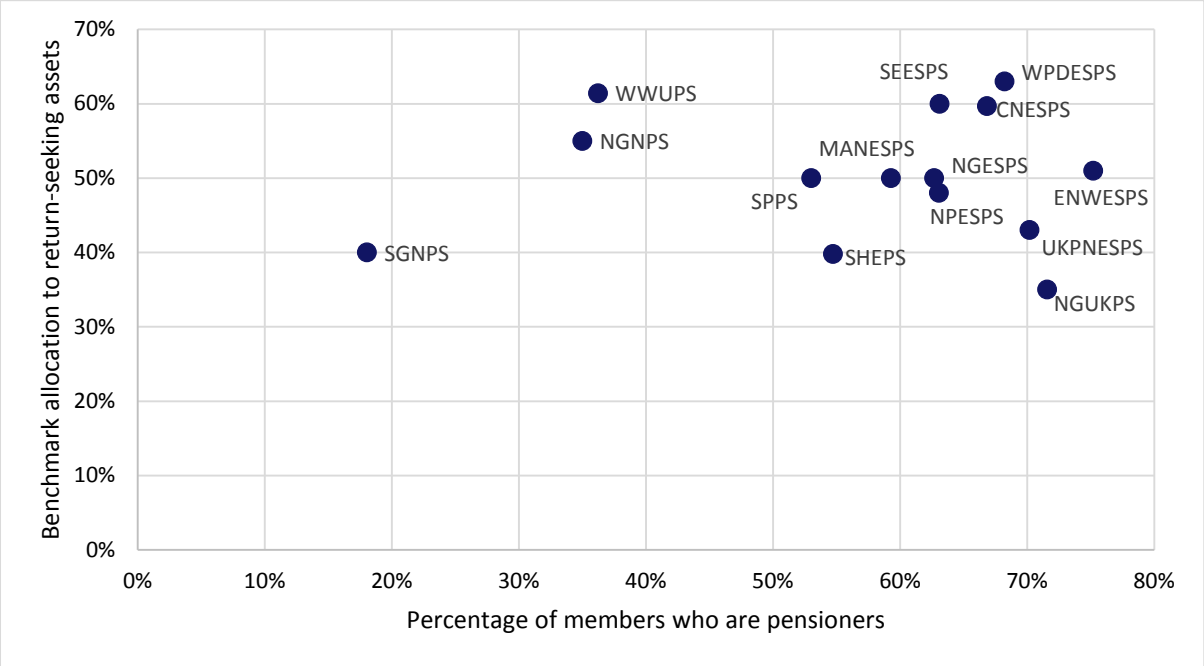
> NGUKPS: 35% in return-seeking assets[5]

4.7 Compared to the May 2012 review, schemes are generally allocating a lower proportion of their portfolio to return-seeking assets (the typical allocation is around 5-10% less than at the previous review). A reduction in the proportion of return-seeking assets combined with an increase in the allocation to bonds is consistent with the trend seen for UK private sector DB pension schemes over the same period. Schemes which have adjusted their allocations to return-seeking assets significantly since the last review are: SGNPS (reduced) and CNESPS (increased).

4.8 One of the main factors affecting investment strategy is the maturity of the scheme: other things being equal, a scheme with a more mature liability profile would be expected to invest a lower proportion of its liabilities in return-seeking assets

4.9 Figure 2 illustrates each scheme's allocations to return-seeking assets (vertical axis) relative to the percentage of its members who are pensioners (horizontal axis). The percentage of a scheme's members who are pensioners has been used as a simplified indication of a scheme's maturity.

Figure 2: Percentage of assets to be invested in return-seeking assets on vertical axis, against percentage of members who are pensioners (horizontal axis)



[5] For ENWESPS, their benchmark allocation as at 31 March 2014 is 24% which is significantly lower than that at March 2013.

4.10 Figure 2 shows that:

> In relative terms, we might expect the SGNPS to invest a higher proportion of its portfolio in return-seeking assets as it is the least mature of the schemes (indicated by the relatively low percentage of pensioner members). We note that this allocation has reduced noticeably since the last review when it was 75%.

> SHEPS and NGUKPS have a relatively low allocation to return-seeking, but this is partly explained by the relative maturity of the schemes. Conversely, the CNESPS, SEESPS and WPDESPS which are of a broadly similar maturity might be expected to have slightly lower allocations to return-seeking assets.

It should be noted that this analysis is necessarily simplified so these observations may not be too significant.

4.11 Licensees' schemes' strategic investment strategies are broadly consistent with those of average UK private sector defined benefit schemes from publicly available information.

4.12 2014 PPF/tPR data[6] suggests that the average asset allocation for UK private sector defined benefit pension schemes is to have around 45% in return-seeking assets. This is of a similar order to most licensees' schemes, as shown in Figure 1.

4.13 Chart 7.4 in the 2014 Purple Book illustrates the relationship between investment strategy and scheme maturity. It suggests that relatively immature schemes (schemes where current pensioner liabilities are less than 20% of the total liabilities) typically invest around 50% in return-seeking assets, whereas more mature schemes (schemes where current pensioner liabilities are between 60% and 79% of the total liabilities) typically invest around 30-40% in return-seeking assets.

4.14 Figure 2 suggests that most licensees' schemes invest a slightly greater percentage in return-seeking assets than typical schemes of similar maturities, from this Purple Book data. However, the comparison is complicated by the effect of market movements, as the Purple Book data reports allocations by market value at a certain date, not schemes' benchmark strategies. Further, to the extent that licensees' covenants might be stronger than average and their schemes larger than average, a greater allocation to return-seeking assets could be reasonable. Taking all of these points into account, overall licensees' schemes' strategic investment strategies appear to be broadly consistent with the Purple Book data on typical UK private sector schemes.

[6] "The Purple Book: DB pensions universe risk profile, 2014", Pension Protection Fund (PPF) and the Pensions Regulator (tPR), Table 7.2.

Implications of strategic investment strategy

4.15 *Long-term implications* Other things being equal, less (more) investment in return-seeking assets implies:

- lower (higher) long-term expected investment returns; and therefore
- an expectation of higher (lower) long-term employer contributions (in order for the scheme's assets to be able to meet future benefit payments); but with
- less (more) investment risk; so
- potentially less (more) volatile funding outcomes; and therefore
- potentially less (more) volatile overall employer contribution rates.

4.16 *Short-term implications* One possible consequence of a relatively low (high) investment in return-seeking assets is a relatively high (low) employer contribution rate in the short term, due to actuarial valuation assumptions anticipating lower (higher) long-term investment returns.

De-risking strategies

4.17 A key feature of the schemes' investment strategies is an objective to de-risk over the longer-term. In other words, the aim is to reduce the allocation to return-seeking assets and increase the level of matching assets. The advantage of matching assets is that they are expected to move broadly in line with changes (up or down) in the value of the liabilities. However, as these assets are considered to be lower risk, the expectation is that returns will be lower – over the long term – than returns earned on higher risk asset classes (for example, equities).

4.18 The approach and level of complexity involved in managing a transition to lower risk portfolios can vary considerably. Traditionally, schemes would look to move towards a de-risked position by increasing their allocations to gilts (using suitable proportions of index-linked and fixed interest gilts). In recent years, many private sector defined benefit schemes now follow more sophisticated approaches and this is the case for most of the schemes in scope at this review.

4.19 In more detail, the common approach to de-risking now involves the use of derivatives, particularly swaps, in order to manage or 'hedge' the scheme's exposure to various financial risks. Derivatives are not physical assets but will change the fundamental nature of the scheme's investment portfolio.

4.20 As an example, a key risk for pension schemes is interest rates. If interest rates decrease, we would expect the present value of pension scheme liabilities to increase. Under a swap arrangement, two parties agree to exchange a series of payments (one will pay a fixed rate and the other will pay a floating rate). At outset, the expected value of the swap for both parties is zero. However, as soon as interest rate expectations change, the value of the swap will no longer be zero. As such, if a scheme agrees to pay floating rate payments under a swap, it will 'profit' if interest rates fall. In that way, in theory the scheme's funding position can be (fully or partially) hedged against falls in interest rates. Conversely, should interest rates rise, whilst the funding position will not worsen (assuming a scheme is fully hedged), the scheme's investment returns would be less than they would otherwise have been.

4.21 All schemes have regard to the level of matching assets which their trustees believe is appropriate. In particular, eleven[7] of the fourteen schemes employ some form of hedging strategy and/or make use of *liability-driven investment (LDI)* strategies to manage their exposure to risks such as interest rates and inflation. This is consistent with general market practice for larger-sized schemes[8].

4.22 Only limited information on schemes' hedging strategies was provided by licensees. Of the few schemes where information on target hedging levels was submitted, levels ranged between 35% and 60% (hedged against changes in both interest rates and inflation). This level of hedging does not appear to be out of line with levels we would expect to see.

4.23 A related feature which is part of some licensees' schemes' de-risking strategies is the use of trigger points to alter the asset allocation to reduce investment risk when the scheme funding levels hit certain points. This approach is commonly used in practice by private sector defined benefit schemes with de-risking strategies[9].

Investment returns

4.24 Table 4 summarises licensees' average rates of investment return over the three- and ten-year periods to March 2013. It also shows the median return on balanced funds from CAPS pooled pension fund updates[10] for comparison, while noting that this source does not reflect licensees' schemes individual asset allocations[11] and objectives.

[7] Of the other 3, we understand the UKPNESPS trustees have also now implemented a hedging strategy.
[8] For example, Chart 31 in Aon Hewitt's Global Pension Risk Survey 2013 UK survey findings, shows that only 18% of large schemes (over £1bn of assets) do not have a policy for hedging interest rate and inflation risks.
[9] For example, Chart 32 in Aon Hewitt's Global Pension Risk Survey 2013 UK survey findings, shows that 19% of respondents to its 2013 survey used triggers as part of a de-risking strategy.
[10] CAPS pooled pension fund updates, BNY Mellon P&RA Europe Limited.
[11] In particular, the source data reflects a significantly higher allocation to return-seeking assets than typical allocations in licensees' schemes.

Table 4: Average investment returns – three- and ten-year periods to March 2013

Scheme	3 years to March 2013 % a year	10 years to March 2013 % a year
Gas [1]		
NGNPS [2]	9.1	8.2
SGNPS	9.2	9.0
NGUKPS	9.6	9.4
WWUPS	9.0	8.8
Electricity		
SHEPS	10.4	11.6
SPPS	9.2	10.9
NPESPS	10.2	10.1
NGESPS	9.1	10.0
UKPNESPS	9.8	9.1
MANESPS	7.9	9.4
ENWESPS[3]	9.5	9.9
SEESPS	9.6	9.7
WPDESPS	8.9	10.5
CNESPS[4]	9.3	9.2
CAPS median balanced fund	***7.2***	***10.6***

Source: CAPS median balanced fund: BNY Mellon P&RA Europe Limited

[1] Returns for all four gas schemes before 2005/06 relate to the former combined gas scheme.

[2] Data for some intermediate years for the NGNPS are for years to December, not March.

[3] Returns for ENWESPS from 2008 onwards relate to the ENW group. Returns prior to 2008 relate to when ENWESPS was part of the United Utilities Group.

[4] Returns for CNESPS from 2011 onwards relate to the WPD Group. Returns prior to 2011 relate to when CNESPS was part of EON.

[5] For simplicity, calculations use arithmetic means of annual returns and ignore timing of cash flows.

4.25 Considering returns over the ten-year period to March 2013, all schemes' average annual returns were within 2% of the CAPS median balanced fund (10.6% a year), except for the NGNPS (see paragraph 4.28).

4.26 All four of the gas schemes use the same returns between 2004-2006 which relate to the former combined gas scheme. Over that period, the overall return was significantly lower than the CAPS median balanced fund return which is the main reason why those schemes all have ten-year returns which are more than 1% lower than the CAPS data.

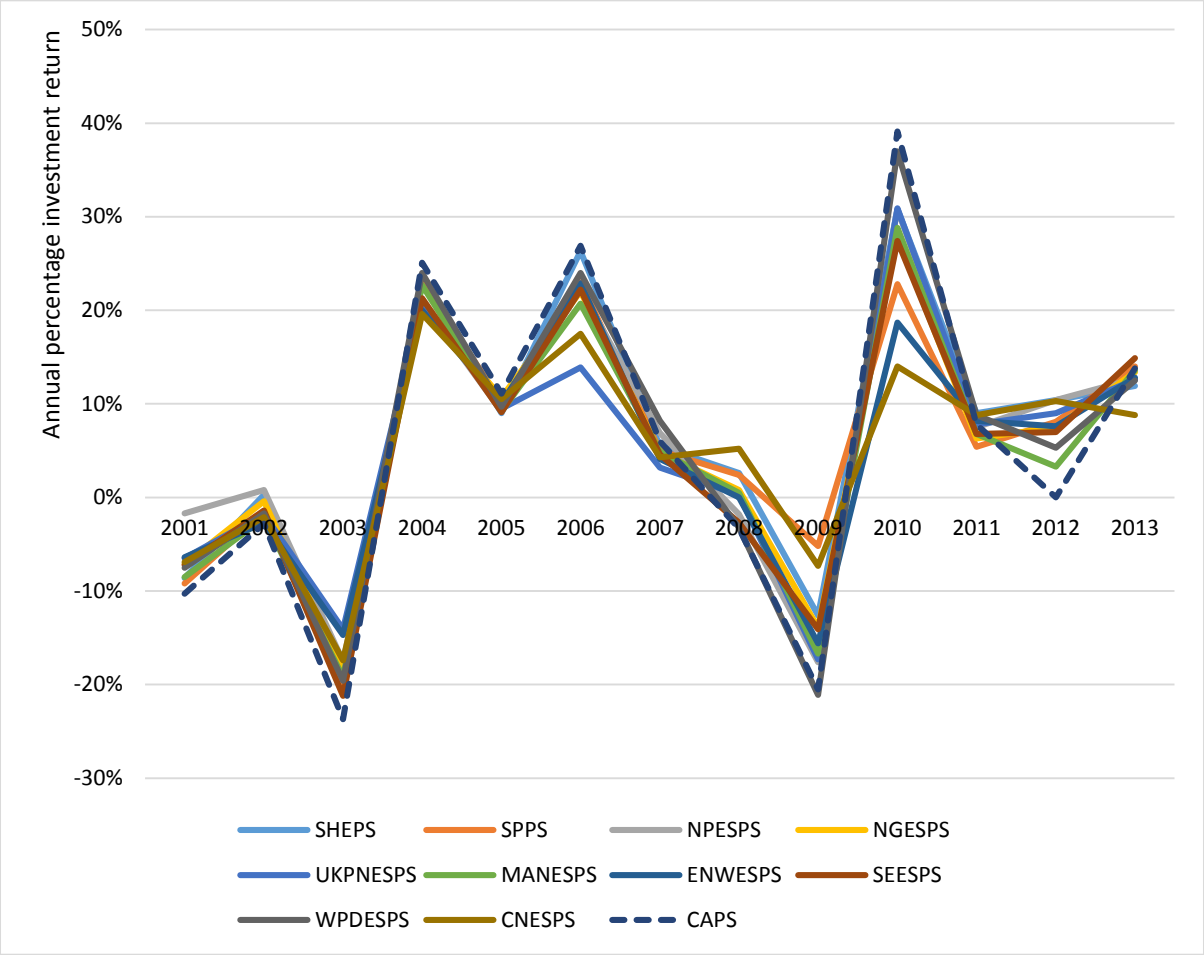
4.27 For the electricity schemes, two schemes (the SHEPS and SPPS) had higher returns than the CAPS data over a 10-year period, with eight schemes (the NPESPS, NGESPS, UKPNESPS, MANESPS, ENWESPS, SEESPS, WPDESPS and CNESPS) having lower returns. Individual schemes' outcomes depend significantly on their asset allocations.

4.28 As well as the point noted in paragraph 4.26, the NGNPS's returns reflect, in part, the different period covered in recent intermediate years (see footnote 2 to Table 4). In particular, the NGNPS's data exclude the relatively strong period of market returns between December 2009 and March 2010.

4.29 Average returns over the three-year period to March 2013 were broadly consistent, ranging from 7.9% a year for the MANESPS to 10.4% a year for the SHEPS. All schemes' three-year returns compare favourably with a return of 7.2% a year from the CAPS data. This is principally due to comparative returns in 2012. For the year ending 31 March 2012, returns in long dated bonds performed strongly relative to other asset classes and scheme allocations to those asset classes are generally higher than they are in the Balanced portfolio (that is, the CAPS data). This has therefore resulted in some outperformance for both the gas and electricity schemes over the 3-year period.

4.30 Figures 3 and 4 illustrate past investment returns for the electricity and gas schemes respectively. They show that NWOs' schemes' investment returns have broadly followed the same shape as the CAPS returns. Variations will reflect differences in investment strategy among other factors (as noted above). For example, Figure 3 illustrates that the SPPS and the CNESPS, which have had relatively low investment in return-seeking assets, suffered smaller investment losses in the year to March 2009 than other schemes (when UK equities returned -29%, as measured by the UK FTSE All-share total return index) with consequentially smaller gains during the year to March 2010 (when UK equities returned +52%).

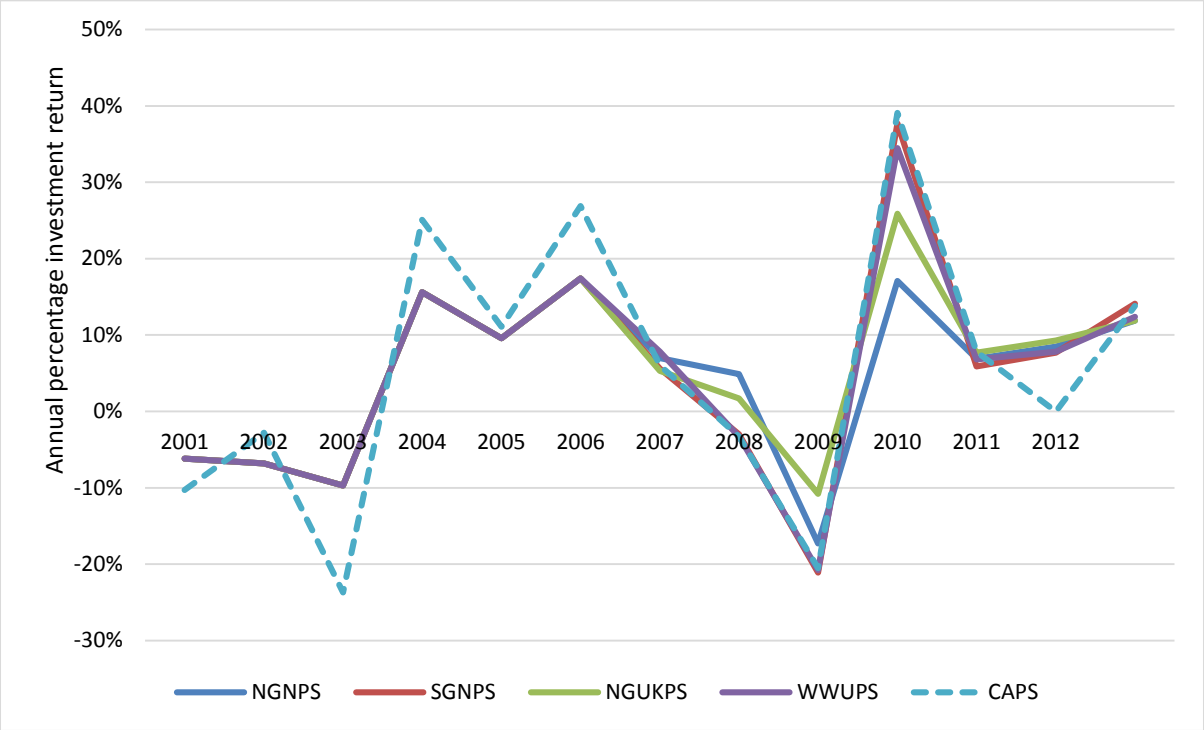
Figure 3: Annual percentage investment returns, years to March – electricity NWOs



[1]Returns for ENWESPS from 2008 onwards relate to the ENW group. Returns prior to 2008 relate to when ENWESPS was part of the United Utilities Group.

[2] Returns for CNESPS from 2011 onwards relate to the WPD Group. Returns prior to 2011 relate to when CNESPS was part of EON.

Figure 4: Annual percentage investment returns, years to March – gas NWOs



[1] Returns for all four gas schemes before 2005/06 relate to the former combined gas scheme.

[2] NGNPS returns are not directly comparable with other schemes as some annual returns have different year ends.

Limitations of this analysis

4.31 The analysis in this section focuses on high-level strategic investment strategy only. It ignores many detailed risk and return factors which schemes' trustees take into account when deciding on investment strategy.

4.32 Comparisons of investment returns have not been adjusted for investment risk or other factors. It is recognised that schemes' trustees will monitor regularly investment returns relative to their stated objectives and benchmarks. The use of the CAPS pooled balanced fund returns does not imply that this is an appropriate benchmark for licensees' schemes' returns. The purpose of this analysis is to summarise the available information and to identify if there are any significant concerns shown by past experience.

4.33 Comparisons between pension schemes are indicative and do not reflect many detailed scheme- and sponsor-specific factors.

5 Actuarial funding methodology and assumptions

Section summary

The results of a pension scheme's funding valuation and therefore the sponsor's future cash contributions depend significantly on the assumptions made for future experience. This section of the report considers the assumptions adopted for licensees' schemes' funding assessments as at 31 March 2013.

Most licensees' schemes' funding assumptions are within a range that would be expected from data on typical schemes' assumptions. Outliers are discussed.

The actual pension increase awarded in 2012 (when RPI was above 5%) exceeded 5% for four of the electricity schemes.

A number of licensees' schemes' funding assessments assume that some of the past service funding deficit will be met by higher investment returns in the future than the prudent rates assumed for the valuation. This means that deficit recovery contributions are only required to meet some, not all, of the funding shortfall.

Introduction

5.1 The results of a pension scheme's funding valuation and therefore the sponsor's future cash contributions depend significantly on the assumptions made for future experience. More prudent (or cautious) assumptions place a higher present value on the scheme's liabilities[12] and will result in a higher Standard Contribution Rate (SCR)[13], but would be more likely to result in a future valuation surplus and hence lower future contribution rates (assuming that surplus is used to reduce contribution rates rather than to improve members' benefits).

5.2 This section of the report considers the assumptions adopted for licensees' schemes' funding assessments as at 31 March 2013. Assumptions are set by the pension scheme trustees, after taking actuarial advice, but they must be agreed by the sponsoring employer. Appendix C provides some background on scheme funding valuations and assumptions.

5.3 No information has been provided on the NGUKPS's most recent actuarial valuation. This is due to the valuation having not been agreed in time for this review. The NGUKPS has therefore been excluded from most of the analysis in this section. Ofgem should consider when and how to review the NGUKPS's funding position.

[12] In other words, it would suggest that the scheme should be holding more assets now in order to meet its future liabilities.

[13] In other words, the sponsoring employer will be required to pay higher contributions to meet the expected cost of benefits accruing to active members. Please refer to the glossary in Appendix E for a definition of Standard Contribution Rate.

Relevance of funding valuation methodology and assumptions

5.4 At a high level, the method and assumptions used for funding valuations affect the timing of pension contributions but not the pension scheme's ultimate costs.

5.5 However, funding valuation outcomes do affect consumers' utility bills, as:

- There may be timing issues, if a sudden increase in pension contributions contributes to increased utility bills in the short term;
- There are issues of inter-generational equity between consumers over time;
- In the event that a prudent funding approach ultimately leads to future scheme surpluses, if such surpluses (or a portion of them) are used to improve members' benefits, then ultimate pension costs increase;
- Where different regulatory approaches apply to different portions of a pension scheme's costs or deficit, the allocation (through the funding valuation, using funding assumptions) of costs or deficit to different portions may affect the ultimate split of costs between different stakeholders.

5.6 The terms of reference for the review require GAD to assess licensees' funding approaches and assumptions relative to those used by other licensees and by other UK private sector pension schemes. In view of the considerations above, I have agreed with Ofgem that the purpose of this review is to highlight any assumptions or approaches that are significantly outside the range used by other schemes, but not to investigate smaller differences in assumptions.

5.7 While individual assumptions are reviewed in turn it is recognised that the overall basis in the round determines the funding valuation results. The analysis in this section focuses on the most significant actuarial assumptions.

5.8 It is recognised that funding valuations and assumptions are chosen by the pension scheme trustees, not the sponsor. However, the sponsor has specific roles in scheme funding legislation with regard to being consulted on, and agreeing, funding assumptions and contribution outcomes. Ofgem should be concerned if licensees' incentives to negotiate with trustees on these matters were weaker than for scheme sponsors in competitive industries.

5.9 At this review, licensees were asked to summarise the process adopted by the company for discussing and agreeing the valuation assumptions with the trustees. Further they were asked to include details of any concessions obtained by the trustees. None of the responses highlighted any major concerns.

Sponsor covenant

5.10 A key factor affecting the trustees' choice of valuation assumptions, and in particular the degree of prudence incorporated, is the trustees' view of the sponsor's covenant. The greater the trustees' perceived risk of the sponsoring employer's insolvency, the more prudence they are likely to apply.

5.11 For the purposes of this section, I have assumed that licensees' covenants are relatively strong. Therefore, I would expect licensees' schemes' funding assumptions to incorporate low to normal margins for prudence. I have not independently reviewed licensees' covenants for the purposes of this review. Instead, this is based on the following information:

- Ofgem indicated that a condition of network licenses is that licensees maintain comfortable investment grade credit ratings;
- Licensees reported their Dun & Bradstreet (D&B)[14] failure scores: a measure of sponsor covenant that is used to calculate Pension Protection Fund levies. Failure scores range from 1 to 100. A failure score of 1 indicates a good chance of a company being declared bankrupt, with 100 indicating a small chance. Many licensees reported D&B scores of 100, with some others being in the high 90s.

Neutral estimates

5.12 The terms of reference require an assessment of funding valuation assumptions and outcomes against *neutral estimates*. Neutral estimates are an indication of likely future experience on a best-estimate basis, rather than on the prudent basis required by scheme funding legislation[15]. A comparison of neutral estimates with funding outcomes provides a useful, albeit simplistic, measure of the degree of prudence incorporated in a funding valuation.

5.13 Licensees were asked to supply details of neutral valuation assessments for this review. Around half the licensees did not provide such details, stating that they were not provided by the scheme trustees. In my opinion, licensees (and other large scheme sponsors) should request and consider neutral estimates as part of the standard process of reviewing proposed funding valuation outcomes, unless they use more sophisticated approaches (such as stochastic modelling techniques) instead.

5.14 The estimates provided do not highlight any information or concerns that are not raised elsewhere in this report. In the absence of this information for all or most licensees, I have not included in this report details of funding outcomes relative to neutral estimates. I recommend that licensees obtain such estimates from trustees at future valuations, and that Ofgem requires all licensees to provide these estimates at future pension cost reviews.

Valuation method

5.15 All schemes' valuations were carried out using a standard actuarial funding method called the *projected unit method*, except for the WPDESPS, where a different method (called the *attained age method*) was used to calculate future service contributions. Both methods are commonly used for funding valuations of pension schemes that are closed to new entrants.

[14] Future measures will be supplied by Experian as the PPF is changing its provider of insolvency risk information.
[15] Please refer to Appendices C and E for further details.

5.16 The use of the attained age method for the WPDESPS would be expected to lead to a higher initial contribution rate than if the projected unit method had been used instead. However, in the current environment (with relatively low real discount rates) the differences between the two methods will be reduced. The use of the projected unit method for other licensees' schemes provides consistency otherwise.

5.17 Appendix C contains further information on these actuarial funding methods.

Discount rates and pay increases

5.18 The discount rate is the rate at which a scheme's expected future benefit expenditure is discounted for the purpose of an actuarial valuation. It can be thought of as corresponding to an assumed rate of return on assets. Pension scheme valuation outcomes are very sensitive to changes in the discount rate. For example, a ½% increase in the discount rate could increase a typical scheme's funding level by around 5 to 10 percentage points and reduce the employer's share of the SCR by 2-4% of pay.

5.19 Discount rates are typically set by reference to gilt yields or swap curves plus an allowance for assumed *outperformance* of return-seeking assets relative to gilts or swaps.[16]

5.20 A comparison of the assumed *asset outperformance* (relative to gilts or swaps) adopted for schemes' funding valuations therefore provides a comparison of the relative prudence of the valuation assumptions: other things being equal, assuming lower outperformance relative to gilts is more prudent than assuming higher outperformance. Such a comparison is somewhat simplified, but does provide a basis on which to compare different schemes' assumptions. In particular, it should be borne in mind that a scheme with a higher percentage of return-seeking assets would, other things equal, be expected to assume higher outperformance relative to gilts.

5.21 It is relatively common for schemes to adopt different discount rates for valuing benefits in the period up to retirement (in which period investment is assumed to be predominantly in return-seeking assets) and for valuing benefits post-retirement (in which a greater degree of matching is typically assumed). The assumed asset outperformance has therefore been analysed separately for pre- and post-retirement.

5.22 The assumed asset outperformance should reflect market conditions at the valuation date. The assumptions considered in this report are taken from valuations with effective dates of either 31 March 2012 or 31 March 2013.

[16] Gilt yields or swap curves are taken to represent the market's view of the expected rate of return on risk-free assets.

5.23 When considering the effect of the assumed asset outperformance on a scheme's SCR in particular, it is important also to consider the assumed rate of salary growth above price inflation ('real salary growth'). In a final salary pension scheme, an active member's pension will depend on his or her pay at, or near, retirement (or other exit). Other things being equal, higher assumed real salary growth will result in a higher SCR (and a higher value being placed on liabilities in respect of active members).

5.24 Table 5 shows the assumed asset outperformance and real salary growth adopted for licensees' schemes' funding assessments.

Table 5: Assumed asset outperformance (% a year) and real salary growth (% a year)

Scheme	Pre-retirement asset outperformance (% a year) [1]	Post-retirement asset outperformance (% a year) [1]	Real salary growth (% a year) [2]
Gas			
NGNPS	1.2%	0.7%	0.5%
SGNPS	1.0%	0.5%	1.0%
WWUPS	2.1%	0.4%	0.8%
Electricity			
SHEPS	1.0%	0.5%	1.5%
SPPS	2.0%[3]	0.3%[3]	0.5%
NPESPS	1.9%	0.5%	0.5%
NGESPS	2.1%	0.6%	0.5%[4]
UKPNESPS	2.5%	0.7%	1.3%
MANESPS	2.0%[3]	0.3%[3]	0.5%
ENWESPS	2.0%	0.5%	0.5%[5]
SEESPS	2.0%	0.5%	1.0%
WPDESPS	2.0%	0.5%	1.5%
CNESPS	2.0%	0.5%	1.5%

[1] A higher (lower) value decreases (increases) the SCR and value of the liabilities.

[2] A higher (lower) value increases (decreases) the SCR and value of the liabilities.

[3] SPPS and MANESPS do not apply separate pre- and post-retirement discount rates. Term-dependent discount rates apply (outperformance of 2% a year up to 2028, and 0.3% after).

[4] Applies for pre-2013 service only. Cap on pensionable pay increases applies for later service.

[5] A material additional allowance is made for promotional salary increases.

5.25 Data from The Pensions Regulator[17] suggests that for valuations between late 2011 and late 2012, typical asset outperformance assumptions for funding purposes were around 1½% to 2% a year pre-retirement and ½% to ¾% a year post-retirement, or around 1% to 1¼% a year overall for both pre- and post-retirement combined.

[17] "Scheme funding statistics", The Pensions Regulator (tPR), May 2014, Table 4.2.

5.26 The Pensions Regulator has not yet published data on assumptions for funding valuations during 2013. However, based on the above information and on changes in market conditions over the year to March 2013, very broadly I might expect typical asset outperformance assumptions of around these levels for valuations as at 31 March 2013.

5.27 Most schemes in Table 5 are broadly consistent with this and with each other. The following features are worth noting:

> The SGNPS and SHEPS have relatively low asset outperformance assumptions. The levels of outperformance are consistent with those at the last review and were considered in some detail then. Both schemes have lower allocations to return-seeking assets compared to the average level for the schemes under review. All else being equal, a lower allocation to return-seeking asset would imply a lower asset outperformance assumption. It should also be noted that a lower asset outperformance assumption would lead to a higher SCR. However, both employers have agreed to pay a contribution rate in respect of future service which is lower than the theoretical SCR. At the last review, the employers' view was that the discount rate assumptions should not be considered in isolation and that paying a lower rate effectively delivered a funding outcome closer to those on more 'normal' assumptions[18]. In view of considerations in paragraph 5.7 above, and since assumptions are unchanged from last time, Ofgem should decide the extent to which it wishes to consider this further.

> The NGNPS asset outperformance assumptions have reduced materially since the last review and are now relatively low compared with the other licensees. The allocation to return-seeking assets is broadly similar to the level at the last review. Conversely, there has been an offsetting reduction in the real salary growth assumption. Taken together, these changes do not lead to valuation results which are out of line with other licensees. This is reflected in section 7 where the SCR is lower than for the other gas licensees and the funding level is broadly similar.

> The UKPNESPS has relatively high assumed post-retirement asset outperformance. On the other hand, the assumption for real salary growth is relatively high. Taken together, when calculating the technical provisions and the SCR, these assumptions are not significantly out of line with the assumptions used for the other electricity licensees. This is reflected in section 7 where the funding level and SCR are broadly similar to those for other electricity licensees.

5.28 Table 6 shows certain other aspects of licensees' schemes' valuation approaches.

[18] Correspondence between Scottish and Southern Energy's Finance Director and Ofgem of 27 March 2012, and between Scotia Gas Network's Chief Financial Officer of 28 March 2012 refers.

Table 6: Certain funding valuation parameters used by licensees

Scheme	Adjust for market movements since valuation date?	Different discount rate used - SCR vs technical provisions?	Different discount rate used - recovery plan vs technical provisions?	Full RPI pension increases assumed? (electricity only[1])
Gas				
NGNPS	No	Yes	No	n/a
SGNPS	No	No[4]	No	n/a
WWUPS	Yes[2]	No	No	n/a
Electricity				
SHEPS	No	No[4]	No	No[3]
SPPS	No	No	No	No
NPESPS	Yes	No	No	No
NGESPS	No	No	Yes	No
UKPNESPS	No	No	Yes	No
MANESPS	No	No	No	Yes[5]
ENWESPS	Yes[6]	No	Yes	No
SEESPS	No	No[4]	Yes	No[7]
WPDESPS	No	No	Yes	Yes
CNESPS	No	No	Yes	Yes

[1] Gas schemes pension increases are RPI linked

[2] Between 2013 and 2016 the company will pay a contribution rate lower than the SCR which will give rise to a shortfall. Additional company contributions may be payable from 2016 with the amount, if any, depending on real gilt yields at 31 March 2016

[3] SHEPS also apply a floor of 0% to their pension increases

[4] Employer contribution rate payable is lower than calculated SCR

[5] Manweb use best endeavours to meet an RPI increase greater than 5%

[6] Some initial contributions are deferred following favourable market changes since 31 March 2013. A contingent 'catch-up' contribution may be payable depending on the funding position on 31 March 2016

[7] SEESPS allowed for pension increases in line with the lower of RPI and 6% at this valuation

5.29 Table 6 shows that:

- In the 1st (parameter) column the WWUPS, NPESPS and ENWESPS have allowed for some (favourable) post valuation experience and will therefore pay lower deficit recovery contributions than would otherwise be implied from the deficit reported at the valuation. Ofgem should take this into account for the calculations it carries out and the way that pension allowances are determined.
- In the 2nd column, one scheme has used different discount rates for calculating past and future service liabilities (typically where this happens a higher rate is used for future service calculations). A lower SCR will be calculated with a higher discount rate. Only the NGNPS has followed this approach and a 0.1% pa addition was applied. The rationale for this approach is that the rate more accurately reflects the active membership profile as it is derived from gilts with a similar duration. A 0.1% pa increase in the discount rate would have led to a small reduction in the SCR (perhaps up to around 1% of pay). Given the small difference, we would not expect this to be of concern to Ofgem.
- In the 3rd column, some licensee schemes are assuming that part of the deficit will be met by returns in excess of the discount rate used to calculate the valuation deficit (instead of paying higher employer contributions or seeking to extend the recovery period). The table shows that the majority of the electricity licensees factor in some outperformance. This approach is commonly used in funding valuations of private sector UK defined benefit pension schemes. WPDESPS and CNESPS note in their submissions that they believe this issue was considered at the last review. Ofgem should revisit relevant correspondence and any actions taken then when deciding how to account for this aspect when determining price controls.
- In the 4th column, some electricity schemes are funding on the basis that full RPI pension increases will be payable in future. Under the rules of those schemes, we understand that a pension increase above 5% is not automatically payable when RPI is above that level. The table shows that WPDESPS, CNESPS and MANESPS use assumptions which allow for an uncapped RPI increases being payable in future. The SEESPS assumes that pension increases will be capped at 6%. This issue was considered in detail at the last review and we understand Ofgem made some adjustments to its price controls where licensees were funding on an uncapped basis. Ofgem should consider what, if any, price control adjustments it should make for this feature at this review.

5.30 On a related point, we have also reviewed where pension increases awarded in the electricity schemes in 2012 exceeded 5% (when RPI was in excess of 5%). This point is of greater relevance to Ofgem than the funding assumptions used as actual benefits payable are affected. Based on the information submitted, it appears that the SHEPS, NPESPS, UKPNESPS and MANESPS all awarded pension increases in excess of 5% in 2012. Ofgem have asked licensees to explain why pension increases were not restricted in 2012. On the basis of the responses received, Ofgem should consider what, if any, action it should take in this regard (recognising any adjustments which were applied at the last review).

5.31 The terms of reference require me to comment on the application of any significant risk-management strategies or hedging, and in particular on their effects on the valuation of schemes' assets and liabilities. In summary, I am not aware of any features in this regard that warrant specific actions by Ofgem.

5.32 None of the licensees' schemes have implemented significant liability managing strategies such as a buy-in, significant immediate shift in investment strategy or longevity swaps.

5.33 A number of the schemes covered by this review have liability hedging strategies in place and intend to de-risk their investment strategy gradually over time. As noted in section 4 of this report, such measures are consistent with general developments in UK private sector pension schemes. They are also consistent with the valuation approach used by most licensees' schemes, whereby separate discount rates are used for the periods pre- and post-retirement. This approach implicitly assumes investment de-risking over time as members retire.

Assumed longevity

5.34 The longer a pension scheme member lives after retirement, the greater the cost of providing a defined benefit pension. Ongoing funding valuations require an assumption regarding the assumed longevity of members and their dependants. Such assumptions should reflect the particular membership of the scheme (in other words, whether the members' industry or geographical location suggests they might live for longer or shorter than average), and should allow for expected future improvements in longevity.

5.35 Figures 5 and 6 show the expected ages at death for a male and female pension scheme member respectively, currently age 45 and retiring in 20 years' time as assumed for licensees' schemes. They also show the median (solid red lines) and the 5th and 95th percentiles (dotted red lines) of equivalent assumptions used for valuations around 2012 from Pensions Regulator data[19].

[19] "Scheme funding statistics", The Pensions Regulator (tPR), May 2014, Table 6.1.

Figure 5: Assumed age at death (years) for a male pension scheme member currently age 45 retiring in 20 years' time

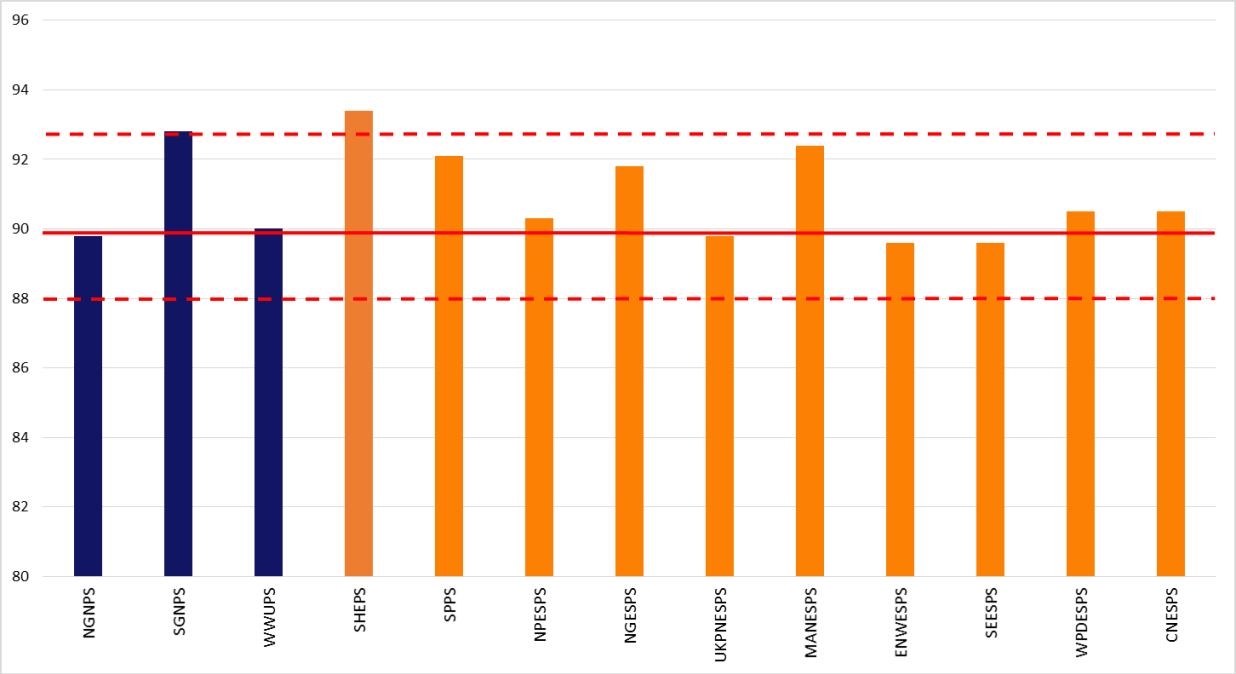
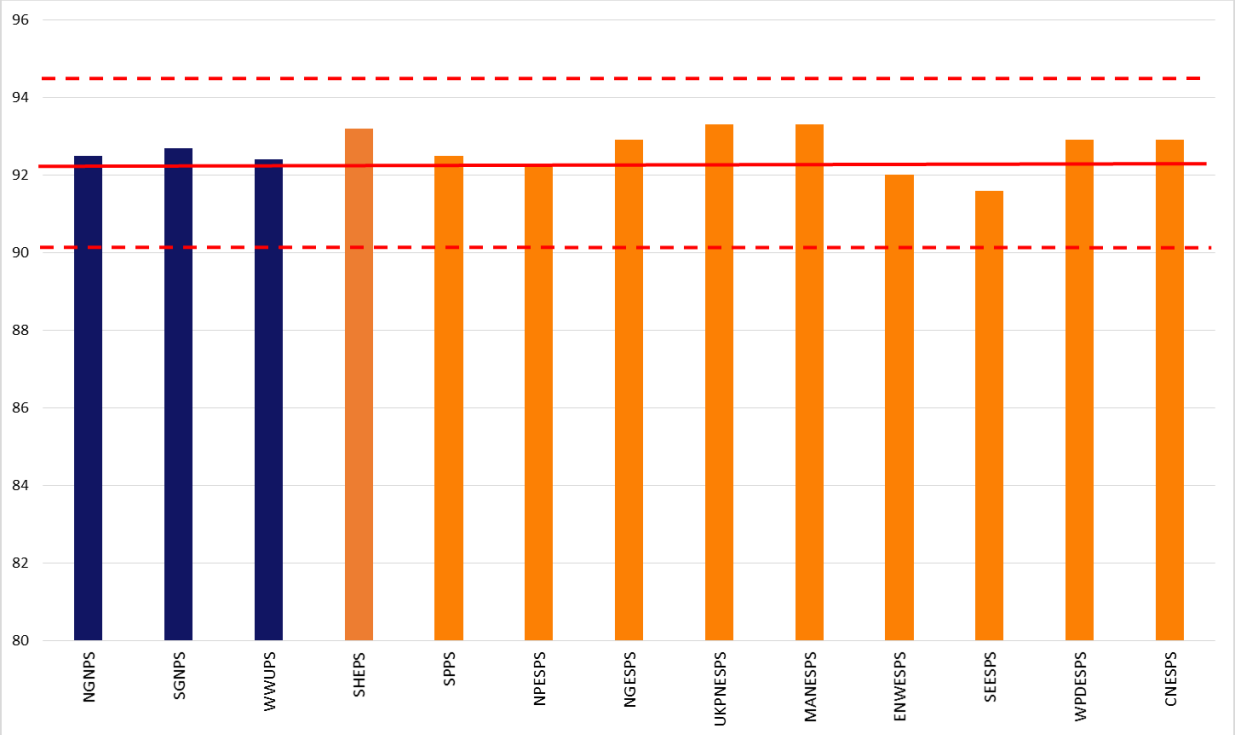


Figure 6: Assumed age at death (years) for a female pension scheme member currently age 45 retiring in 20 years' time



5.36 Figures 5 and 6 show that:

> Many licensees' schemes' longevity assumptions are around the median level from the Pensions Regulator data, particularly for women;

> Five of the licensees' schemes' male longevity assumptions (SGNPS, SHEPS, SPPS, NGESPS and MANESPS) are noticeably higher than the Pensions Regulator median level, with two of them (SGNPS and SHEPS) being at or around the 95th percentile.

5.37 Differences between schemes will arise, in part, due to the different membership of schemes (for example, due to regional variations) reflecting actual data on past deaths and statistical analyses of members' characteristics and locations.

Other assumptions

5.38 The terms of reference require me to report on changes in licensees' schemes' commutation assumptions since the previous valuation (commutation is where members can choose to take a cash lump sum instead of part of their pension). There have been no significant changes in this regard. Broadly, from the information submitted around half of licensees' schemes have used the same assumption as at the previous valuation with the remainder making a small increase to the assumed level of commutation. These changes do not appear, in our view, to raise any concerns.

PDAM tables question on assumptions

5.39 The terms of reference require me to identify any scheme assumptions that disproportionately attribute risk to consumers through the pension deficit allocation methodology without adequate justification.

5.40 The issue potentially of concern here is that:

> Ofgem's regulatory approach to pension costs treats pension costs differently for costs incurred before or after certain dates (which vary between different types of network operator);

> Licensees' pension schemes' assets are not segregated between these periods. The identification of pension costs (and particular, deficits and surpluses) requires a notional calculation to be undertaken;

> The outcome of the calculation depends on the method, assumptions and data used. It is therefore possible that the choice of certain valuation methods or assumptions could result in a more favourable allocation of deficit;

> For this review, there have been no fundamental changes in methodology or assumptions from those used previously. This provides comfort that licensees have not changed approaches significantly in order to disproportionately attribute risk to consumers.

Other factors

5.41 A number of other actuarial assumptions affect the results of funding valuations. It is beyond the scope of this report to analyse in detail all assumptions adopted for licensees' schemes valuations.

Limitations of this analysis

5.42 The analysis in this section focuses on key valuation assumptions. It ignores many detailed factors which schemes' trustees' take into account when deciding on funding assumptions. It is recognised that a scheme's funding approach should reflect its, and its sponsor's, particular circumstances. This review is solely intended to highlight where Ofgem may wish initially to seek further information on the approach adopted. It should not be interpreted as advising that a particular approach is necessarily inappropriate for funding purposes.

5.43 Comparisons between pension schemes are indicative and do not reflect many detailed scheme- and sponsor-specific factors.

6 Administration expenses and PPF levies

Section Summary

Scheme trustees have a duty to monitor expenses and ensure the level incurred is reasonable. Expense treatment varies between companies and detailed analysis would have been possible with the provision of further information from licensees to enable consistent comparisons. However, we have agreed with Ofgem that this analysis should be carried out at the next review and we will work with Ofgem to make sure that suitable information is provided for this purpose. Further comments are set out in this section.

6.1 Table 5 in GAD's 2012 report showed the approaches adopted in respect of schemes' administration costs and PPF levies in setting contributions at funding valuations. Whilst there have been some changes since then, broadly most schemes follow the same (or a similar) approach to meeting administration costs and PPF levies as they did at the last review.

6.2 The terms of reference states that GAD should identify where scheme administration and investment management costs are materially out of line with industry figures in the period under review. We have reviewed the information submitted by licensees for this purpose. It is important to ensure the costs are not excessive and represent value for money. Ofgem should note that the trustees' role will involve monitoring expenses regularly to ensure they are reasonable and governance processes should be in place to ensure this happens. Ofgem can therefore take comfort that such controls should lead to a reasonable level of expenses being incurred in the running of schemes.

6.3 Detailed analysis could be carried out to compare expenses across licensees' schemes. However, as treatment of expenses varies from scheme to scheme, this would require more information to be provided to allow for a consistent comparison to be made. Following discussions with Ofgem, it has been agreed that this analysis should be carried out at the next review and we will work together with Ofgem to specify information that should be provided to enable ready comparison of expenses levels.

6.4 In particular, at the next review, I recommend that licensees provide expense information in a format where different components are given on a per member basis so they can be compared separately and consistently to typical industry levels, such as the information published on The Pensions Regulator's website[20].

[20] For example, comparison can be made against typical fees in Tables 4.2, 4.16 of Defined benefit (DB) scheme running cost research, April 2014, by IFF Research

6.5 Where appropriate (and possible), any allowance for administration costs has been removed from contribution rates in this report to facilitate comparisons. When considering licensees' projected pension costs, Ofgem should take account of differences in the treatment of administration costs.

7 Actuarial funding valuation results

Section summary

This section reviews licensees' funding levels (the ratio of the value of the assets to the value of the past service liabilities) and employers' shares of schemes' SCRs (excluding expenses) as at 31 March 2013.

It comments on features that are explained by the analyses in earlier sections of this report and notes that licensees' schemes' funding levels are generally within a range that would be expected compared to other UK private sector schemes.

This section also reviews changes in funding levels and SCRs since previous valuations. It notes that movements in funding results are broadly as expected. Some licensees have paid contributions in respect of benefit augmentations in the review period. Ofgem should consider if any adjustments are required in its calculations.

Introduction

7.1 This section reviews licensees' funding levels (the ratio of the value of the assets to the value of the past service liabilities) and employers' shares of schemes' SCRs (excluding expenses) as at 31 March 2013. It comments on features that are explained by the analyses in earlier sections of this report. It also comments on changes in funding levels and SCRs since previous valuations.

7.2 This section does not consider schemes' recovery periods or deficit recovery contributions. This is because Ofgem's pension allowances in price controls do not directly equal schemes' actual annual deficit recovery contributions. Ofgem should note that some licensees' schemes assume higher investment returns during the recovery period for the purposes of calculating deficit recovery contributions than those underlying the calculation of technical provisions. In other words, they apply a smaller margin for prudence when calculating deficit recovery contributions, and assume that some of the funding deficit will be met by excess investment returns rather than additional contributions.

7.3 This section reviews licensees' schemes' funding assessments as at 31 March 2013. In some cases these assessments will not determine licensees' actual future pension contributions. This is the case where a full triennial actuarial valuation has not been carried out as at 31 March 2013.

7.4 No information has been provided on the NGUKPS's most recent full actuarial valuation. This is due to the valuation having not been agreed in time for this review. Therefore, the NGUKPS has been excluded from the analysis in this section. Ofgem should consider when and how to review the NGUKPS's funding position.

Funding valuation results

7.5 Table 7 summarises licensees' schemes' funding positions at March 2013.

Table 7: Funding positions at March 2013

Pension scheme	Most recent triennial valuation	Employer SCR [1] (% of pay)	Funding level (%)
Gas			
NGNPS	March 2013	46%	78%
SGNPS	March 2012	58%	80%
WWUPS	March 2013	52%	79%
Electricity			
SHEPS	March 2012	53%	87%
SPPS	March 2012	34% [2]	84%
NPESPS	March 2013	34%	82%
NGESPS	March 2013	28%	70%
UKPNESPS	March 2013	32%	75%
MANESPS	March 2012	32%	74%
ENWESPS	March 2013	32% [3]	85%
SEESPS	March 2013	35%	74%
WPDESPS	March 2013	32% [4]	64%
CNESPS	March 2013	29%	77%

[1] Excluding any allowances for administration expenses and PPF levies. In some cases the SCRs shown do not reflect licensees' actual pension contributions.

[2] The SPPS SCR covers two benefit scales. The equivalent SCR for the original scheme's benefit scale (as described in Section 3) would be around 40% of pay.

[3] The ENWESPS SCR covers two benefit scales. The equivalent SCR for the original scheme's benefit scale (as described in Section 3) would be around 30% of pay (very approximately).

[4] This SCR has been calculated using a different method than the other schemes' (see paragraphs 5.15 to 5.17). Otherwise, the SCR would be expected to be lower.

7.6 The following features are shown in Table 7:

> The gas schemes' SCRs are generally much higher than for the electricity schemes. This is principally due to the more generous benefits provided as discussed in Section 3.

> The electricity schemes' SCRs lie between 28% and 35% of pay (taking into account the comments in the notes to the table), except for the SHEPS.

> The SHEPS has a much higher SCR than other electricity schemes. This is principally due to its relatively low assumed asset outperformance as discussed in Section 5. Further, it also has a higher accrual rate. However, as noted elsewhere in this report, in practice the employer is paying a significantly lower contribution rate in respect of future service benefit accrual.

7.7 A scheme's ongoing funding level reflects its past experience (for example past levels of employer contributions and any transfers to or from the scheme) as well as its future liabilities and valuation assumptions. It is beyond the scope of this report to quantify all the factors affecting schemes' funding levels. Recent movements in the funding level are discussed later in this section.

Comparison with other schemes

7.8 Based on available PPF/tPR data, we might expect the average funding levels for UK defined benefit pension schemes to be around 82%[21] on an ongoing funding basis at 31 March 2013. This data is purely indicative, and is based on the past relationship between different types of actuarial valuation rather than reflecting actual scheme funding data at that date. Nevertheless, it indicates that licensees' funding levels at 31 March 2013 (as shown in Table 7) are broadly within an expected range compared to other UK private sector defined benefit schemes[22].

7.9 We have reviewed the contributions paid by employers over the review period and they generally appear consistent with the schedules of contributions and deficit recovery plans. In addition to the employer deficit and future accrual contributions, we have noted that some companies have paid additional contributions in respect of benefit augmentations (typically to support enhanced early retirement terms). Those payments have been disclosed in the scheme accounts and are generally relatively modest, however Ofgem should consider how these augmentations are funded and any interaction with its price allowances. Further, we have also noted some early payment of deficit contributions. This could be a timing point but Ofgem may wish to consider the implications of any advance payment of deficit contributions.

[21] Table 2.1 of Scheme funding statistics, May 2014 - tPR suggests the average funding level at 31 March 2012 is 80.8%. Between 31 March 2012 and 31 March 2013, funding levels observed for s179 and buyout bases (see tables 4.1 of the 2012 and 2013 tPR Purple books) improved by around 1%. Assuming this change might serve as a proxy for the change on an ongoing basis, we might expect the average funding level to be around 82%.

[22] NAPF's 2013 annual survey also suggests an average funding level of 86% on a scheme funding basis.

Movements in SCRs and funding levels

7.10 Table 8 shows movements in schemes' SCRs and funding levels since the previous full actuarial valuation, by effective date of the previous valuation. This table includes those schemes where the most recent valuation was carried out as at 31 March 2013.

Table 8: Movements in SCRs and funding levels from previous full valuation (effective date shown) to March 2013

Pension scheme	Employer SCR [1] (% of pay)		Funding level (%)	
	Previous valuation	March 2013	Previous valuation	March 2013
31 March 2010				
NPESPS	27%	34%	78%	82%
NGESPS	24%	28%	75%	70%
UKPNESPS	26%	32%	77%	75%
SEESPS	26%	35%	71%	74%
WPDESPS	24%	32%	70%	64%
ENWESPS	29%	32%	85%	85%
31 March 2012				
SHEPS	48%	53%	85%	87%
SPPS	31%	34%	83%	84%
MANESPS	30%	32%	70%	74%
SGNPS	53%	58%	76%	80%
WWUPS	46%	52%	77%	79%
31 December 2011				
NGNPS	45%	46%	72%	78%
30 June 2011				
CNESPS	26%	29%	81%	77%

[1] Excluding any allowances for administration expenses and PPF levies.

Table 9: Commentary on movements in SCRs and funding levels shown in Table 8

	Employer SCR	Funding level
March 10 – March 13		
Typical change	Increase by around 5% of pay	Broadly similar
Explanation	Reasonable due to decrease in bond yields (reduces discount rate) and ageing membership	Reasonable due to combination of higher than expected asset returns and payment of deficit contributions broadly offset by decrease in bond yields
Exceptions	> NPESPS – relatively strong investment returns contributed to improved funding levels, but larger increase in SCR due to updated market conditions reflected in 2013 assumptions > NGESPS – funding level worsened as relatively weak investment returns not sufficient to offset reduction in bond yields > SEESPS – large increase in SCR in report noted due to changes in market conditions and ageing active membership > WPDESPS – funding level worsened with relatively weak investment returns. Relatively low average age of active membership leads to bigger impact on SCR due to falling bond yields	
June 11 – March 13		
Typical change (CNESPS only)	Increase by 3% of pay	Decrease by 4 percentage points
Explanation	Would expect an increase due to reduction in bond yields	Reasonable due to decrease in bond yields, partially offset by deficit contributions and favourable investment performance
Dec 11 – March 13		
Typical change (NGNPS only)	Increase by 1% of pay	Increase by 6 percentage points
Explanation	Would expect a modest increase due to small decrease in bond yields and changes to valuation assumptions	Reasonable due to higher than expected asset returns, partially offset by decrease in gilt yields
March 12 – March 13		
Typical change	Increase by 2-5% of pay	Increase by 0-5 percentage points
Explanation	Reasonable due to decrease in bond yields (reduces discount rate)	Reasonable due to higher than expected asset returns, partially offset by decrease in bond yields

Appendix A: Objectives of the review

Extracts from the Terms of Reference for the review, as set out in Appendix 1 of Ian Rowson's published letter dated 30 June 2014.

Objectives of review

A.1 At a minimum the review should assess the following broad areas:

- valuation assumptions and any outliers;
- reasonableness of pension costs;
- efficiency and reasonableness of member benefits; and
- whether pension scheme governance and the management of scheme risks adversely affect consumer funding.

A.2 The initial review will determine what, if anything, should be subject to a second stage review, and to ascertain whether:

- increased balances on deficits should be funded going forward;
- over-spends against allowances should be made good; and
- under-spends against allowances should be clawed back.

A.3 A second stage review may also be required if the initial review reveals any concerns regarding the extent to which an NWO has not taken steps within its power to minimise costs.

A.4 Other areas identified as outliers will be re-evaluated in the 2017 reasonableness review. Should no action be taken on identified areas of concern, Ofgem may take future action.

Scope of review - analysis and methodology

A.5 Analyse DB pension scheme data and compare licensees' pension arrangements (including actuarial assumptions and scheme benefits) with other NWOs and publicly available information on other UK private sector DB schemes (subject to the availability of reasonably concurrent data) to:

(a) assess whether valuation assumptions and, by comparison, assumptions in recovery plans are, in their view, reasonable, consultants will:

i. identify any actuarial assumptions that are outliers compared to:
a) the neutral estimate of the value of scheme's liabilities in the triennial valuation;
b) utility peers; and
c) publicly available information on other UK private sector DB schemes.

ii. advise if there are any offsetting assumptions or mitigating factors for outliers.

iii. identify whether the valuation assumptions and deficit recovery plan assumptions take into account market movements since the valuation date.

iv. identify where a deficit recovery plan has not used an outperformance assumption compared to the assumptions in the valuation and comment on any stated rationale.

v. review the reconciliation of the deficit balance to the previous triennial valuation to ascertain whether the changes (eg movements due to market conditions and changes to mortality assumptions) are reasonable and adequately supported, identify any areas requiring additional explanation, and (if possible) quantify the impact and report thereon.

vi. identify the level of prudence applied to assumptions where the scheme has acquired a buy-in or in the hedging of scheme risks. review any Employers' Covenant Reports received to assess the impact of covenant factors on contributions and deficit funding levels/plans, and discuss confidentially any other issues which you consider should be brought to our attention. identify changes in the assumptions of percentage take up of commutation payments on retirement and whether these are reasonable and adequately supported by scheme specific evidence.

(b) identify whether pension costs and member benefits are efficient and reasonable, consultants will:

i. identity where scheme administration and investment management costs are materially out of line with industry figures in the period under review.

ii. identify where an employer has scope under a scheme's rules to request that any future pensions in payment from movements in RPI above an amount prescribed in the rules are restricted, whether it has requested such a restriction and any relevant details of said request.

iii. review actions taken by NWOs and other comparable private sector employers to mitigate pension liabilities increases and identify best practice.

(c) assess whether pension scheme governance and management of scheme risks are outliers:

i. to identify recent actions taken on risk management (assessing consideration of de-risking or re-risking strategies and innovative funding strategies);

ii. to assess the impact on the underlying assets and liabilities of the pension scheme's risk management strategies; and

iii. to identify any scheme assumptions that disproportionately attribute risk to consumers through the pension deficit allocation methodology without adequate justification.

Appendix B: Licensees and pension schemes

Network operator (Licensee)[23]	Defined benefit pension scheme	Abbreviation used
Gas		
Northern Gas Networks	Northern Gas Networks Pension Scheme	NGNPS
Scotia Gas Networks	Scotia Gas Networks Pension Scheme	SGNPS
National Grid Gas	National Grid UK Pension Scheme	NGUKPS
Wales & West Utilities	Wales & West Utilities Pension Scheme	WWUPS
Electricity		
Scottish & Southern Energy: Hydro	Scottish Hydro-Electric Pension Scheme	SHEPS
SP Distribution	ScottishPower Pension Scheme	SPPS
Northern Powergrid	Northern Powergrid Group of the ESPS	NPESPS
National Grid Electricity Transmission	ESPS National Grid Electricity Group	NGESPS
UK Power Networks	ESPS UK Power Networks Group [1]	UKPNESPS
SP Manweb	ESPS Manweb Group	MANESPS
Electricity North West	ESPS ENW Group	ENWESPS
Scottish & Southern Energy: Southern Electric Power Distribution	ESPS Southern Electric Group	SEESPS
Western Power Distribution (South Wales / South West)	ESPS WPD Group	WPDESPS
Western Power Distribution (West / East Midlands)	ESPS Central Networks Group	CNESPS

[1] The UK Power Networks Pension Scheme is excluded from much of the analysis in this report, since its regulated share is currently small relative to the UK Power Networks Group of the ESPS.

[23] Schemes are ordered in the same way as they were at the last review in 2012 and that order has been retained for ease of comparison.

Appendix C: Background to scheme funding and contributions

C.1 Most UK private sector defined benefit pension schemes are subject to the scheme funding requirements of Part 3 of the Pensions Act 2004.[24] Pension schemes must have a full actuarial valuation carried out at least every three years. The purposes of such an actuarial valuation are:

> To check whether the pension scheme's assets are sufficient to cover its accrued liabilities (referred to as its *Technical Provisions* in the Pensions Act 2004); and

> To determine the contribution rate payable by the employer going forward.[25]

C.2 Employers' contribution rates usually comprise two elements:

> The employer's share of the *Standard Contribution Rate (SCR)*: this is the contribution rate required to meet the expected cost of pension benefits accruing to active members in respect of service in the relevant period (often the next three years), after deducting the members' contribution rate. The higher the members' contribution rate, the lower the employer's share of the SCR.

> Adjustments for past service surplus or deficit: where an actuarial valuation shows that the scheme's assets are less than required to cover the expected cost of members' benefits which have accrued up to the valuation date, additional *deficiency contributions* are required from the employer to make up the shortfall. Conversely, where the scheme's assets are more than sufficient, the employer's contributions may be reduced, depending on the scheme's rules.

C.3 The Standard Contribution Rate (SCR) therefore depends on the following three main factors:

> The level of benefits being provided: the more generous the benefits, the higher the SCR. Also, the lower the members' contribution rate (as specified in the scheme rules), the higher the employer's share of the SCR.

> The actuarial assumptions used: the more optimistic the assumptions, the lower the expected cost now of providing the defined benefits.[26]

> The membership profile of the pension scheme: the expected cost of providing a pension depends on the age of the members. Differences in age profiles will result in different SCRs.

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[24] For further information, please refer to the Pensions Regulator's regulatory code of practice 03, "Funding defined benefits".

[25] The pension scheme's rules usually determine the rate of members' contributions. In a defined benefit scheme, the employer's contributions are usually variable, and depend on the scheme's experience. In other words, given a fixed rate of member contributions, the employer must ensure the scheme has sufficient assets to pay the specified benefits.

[26] Other things being equal, the more optimistic the assumptions used to calculate the SCR, the greater the risk of actual future experience being worse than the assumptions used and hence of a deficit emerging in the pension scheme in the future.

C.4 The amount of any deficiency contributions depends on the following factors:

> The scheme's funding position: this depends on the scheme's actual past experience, and also on the assumptions used for the valuation with regard to the scheme's future experience. Past experience affects both the scheme's liabilities (its obligations to pay members' pensions) and the scheme's assets (the fund which has built up from past contributions and the actual investment performance achieved to date).

> The *recovery period*: in other words, the period over which any shortfall must be met by the employer through additional contributions. For any given deficit, the annual deficiency contribution will be lower the longer the period over which the deficit is to be repaid.

C.5 Some key points on the scheme funding process are[27]:

> The assumptions to be adopted for funding purposes are not prescribed in legislation or guidance.

> Assumptions must be set by the pension scheme trustees, after taking actuarial advice, and they generally must be agreed by the sponsoring employer. Assumptions must reflect the scheme's and the sponsoring employer's specific circumstances, in particular the trustees' view of the sponsoring employer's covenant.

> When calculating past service liabilities, assumptions must be prudent. The degree of prudence is not defined, and will depend on the scheme's circumstances.[28]

> The recovery period must also be agreed with the sponsoring employer.

C.6 A number of assumptions affect the results of an ongoing funding valuation. These include:

> Financial assumptions: including the discount rate (or equivalently, the assumed rate of return on the scheme's assets), pay increases, price inflation and pension increases.

> Demographic assumptions: including assumed longevity (allowing for expected future longevity improvements), assumed rates of withdrawal from active service (and whether this is through voluntary withdrawal, ill-health, death or retirement), and the proportion of members in respect of whom dependants' benefits will be paid.

[27] This list is not exhaustive.
[28] Please refer to Appendix E for a definition of "prudence" in this context.

Valuation method

C.7 Almost all licensees' funding valuations use an actuarial method called the *projected unit method*. This is a standard method which is commonly used for funding valuations. For schemes that are closed to new entrants (like licensees' original schemes), an alternative method (called the *attained age method*) is sometimes used. The attained age method would be expected to result in higher contribution rates in the short term. The following paragraphs explain this further.

C.8 The expected cost of pension benefits accruing to active members, expressed as a percentage of payroll, usually increases with age (although this depends on the actuarial assumptions used to calculate the expected cost). Where a pension scheme is closed to new entrants, this would be expected to result in an increase in the average age of active members over time, and hence an increase in the expected cost of benefits accruing to active members, expressed as a percentage of payroll.

C.9 If the employer standard contribution rate (SCR) is calculated to be sufficient to meet the expected cost of benefits accruing to active members in the few (typically three) years following the valuation date, then the employer SCR (expressed as a percentage of payroll) would be expected to increase in the future for a closed scheme. Such an approach is called the projected unit method.

C.10 Alternatively, the employer SCR could be calculated to be sufficient to meet the average expected cost of benefits accruing to active members for the remainder of their expected working lifetimes. This can result in a higher initial SCR, but with no further increases being expected in the future as the average age of active members increases. This is called the attained age method.

C.11 Both the projected unit method and the attained age method are commonly used for funding valuations of closed pension schemes. The projected unit method would be expected to result in lower initial employer contributions than if the attained age method were used. The projected unit method is expected to lead to future increases in the employer SCR as the average age of active members' increases, but this should be considered in light of the corresponding expected reduction in pensionable payroll.

Appendix D: Factors affecting investment strategy

D.1 A number of factors affect the high-level strategic investment strategy for a funded defined benefit pension scheme. The choice of investment strategy represents a trade-off between:

> Return – In isolation, assets which are expected to generate higher returns would be preferred to assets with lower expected returns. Such assets include equities and property, and are referred to as return-seeking assets in this report.

> Risk – The scheme's trustees wish to minimise the risk of sufficient assets not being available to meet the scheme's benefit payments as they fall due. The employer may also want to minimise the risk of large deficiency contributions being required in the future. Investing in matching assets, such as government and corporate bonds, can reduce risk by providing an approximate match to future pension liabilities, and by their market values broadly reflecting changes in the present value of the scheme's liabilities[29].

D.2 In their consideration of risk, one key factor for the trustees is the financial strength of the sponsoring employer (that is, its 'covenant'). They wish to minimise the likelihood of there being insufficient assets in the scheme with no continuing sponsoring employer being able to meet the deficiency. The greater the trustees' perceived risk of the sponsoring employer's insolvency, the more cautious the scheme's investment strategy is likely to be, although this may be influenced by the size of any existing surplus or deficit.

D.3 The maturity of the scheme is also important. Mature schemes, for example schemes where a large proportion of their liabilities relate to current pensioners, generally have net cash outflow and need certainty of investment income to ensure pensioner payments can be met. Immature schemes with significant cash inflows may choose to take a more risky approach to investment, as there is a longer time horizon to deal with fluctuations in asset values (subject to the strength of the sponsor's covenant).

[29] Depending on the method used to value the scheme's liabilities.

Appendix E: Glossary

Accrual rate – The rate at which benefits accrue to active members in a defined benefit scheme. For example, in a final salary scheme where a member is entitled to a pension of one eightieth of his or her final salary for each year of pensionable service, the *accrual rate* is one eightieth.

Asset outperformance – The assumed extent to which a scheme's investment return will exceed returns on government bonds (gilts[30]).

Deficiency contributions – Where an actuarial funding valuation shows that the scheme's assets are less than required to cover the expected cost of members' benefits which have accrued up to the valuation date (so the scheme is in 'deficit'), additional *deficiency contributions* will be required from the employer to make up the shortfall. Deficiency contributions are payable for a fixed term, known as the ***recovery period***, after which the deficiency would be expected to have been eliminated.

Defined benefit (DB) pension scheme – A pension scheme in which an employee's pension is determined under the scheme rules. In a ***final salary scheme***, the pension is based on the number of years of service and on the employee's *pensionable salary* at, or shortly before, the employee leaves active service. In a ***career average scheme***, the pension reflects the employee's average *pensionable salary* throughout his or her active service. The cost of providing the defined benefits will depend on the scheme's experience. In most schemes, the employer has to provide additional funds to the scheme to meet the cost of providing the defined benefits, if experience is worse than expected. In other words, the risk of adverse experience usually rests with the sponsoring employer. Conversely, the employer usually benefits from reduced contributions if experience is favourable.

Defined contribution (DC) pension scheme – A pension scheme in which the benefits paid to an employee depend on the level of contributions to the scheme, the investment return earned on the contributions, annuity rates at retirement and the provider's expense charges. There is no guaranteed level of benefits. In other words, the risk of adverse experience rests with the employee (who also benefits from any favourable experience).

Discount rate – The rate at which a defined benefit pension scheme's expected future benefit expenditure is discounted for the purpose of an actuarial valuation. That is, to convert a stream of expected future benefit cash flows to a current capitalised value. It can be thought of as corresponding to an assumed rate of return on assets. A higher discount rate (or assumed rate of return) means that the scheme's assets are expected to generate higher investment returns, and therefore the scheme needs to hold less assets now in order to meet its liabilities, its *funding level* is higher, and its *standard contribution rate* is lower.

Distribution network operators (DNOs) – A DNO is a company which operates the electricity distribution network.

[30] At this review, where schemes have adopted a financial basis using yields on swaps, outperformance has been quoted relative to those yields.

ESPS – The Electricity Supply Pension Scheme. The ESPS was formed in 1983 as a result of the amalgamation of the Staff Scheme and the Industrial Staff Scheme. On privatisation in 1990, individual businesses' shares of the ESPS were split into segregated sections of the scheme, referred to as Groups.

Funding level – The ratio of the value of the pension scheme's assets to the value of its accrued liabilities. A funding level of 100% means that the pension scheme is deemed to be 'fully funded'; in other words, its assets are expected to be sufficient to meet the expected cost of the benefits accrued to the valuation date, on the basis of the assumptions adopted for the valuation. A 'fully-funded' scheme is not guaranteed to be able to meet its future liabilities; it is only an expectation based on the assumptions adopted.

Gas distribution networks (GDNs) – GDNs transport gas from the National Transmission System to final consumers and to connected system exit points.

Liability-driven investment (LDI) – Liability driven investment is an investment strategy which considers the nature of both a pension scheme's assets and liabilities when determining an approach. Typically these strategies involve the use of swaps and other derivatives to manage, or hedge, a scheme's exposure to risk (most commonly interest rates and inflation). Such strategies can also incorporate 'flight paths' with the aim of reducing risk over the long-term, subject to returns delivering a suitable level of outperformance against low-risk asset classes in the meantime.

Matching assets – Asset classes such as government and corporate bonds, whose cashflows can provide an approximate match to future pension payments, and whose market values may broadly reflect changes in the present value of the scheme's liabilities, depending on the method used to value the scheme's liabilities. Such assets are used to reduce a pension scheme's investment risk (in simplistic terms) but at the expense of lower expected long-term investment returns compared with *return-seeking assets***.**

Neutral estimate – A neutral estimate is similar to a 'best-estimate' assumption, where there is expected to be a broadly 50% chance that future experience will be higher (or lower) than the relevant assumption.

Pensionable salary – The amount of an employee's salary which is used to calculate the amount of contributions to a pension scheme, and the benefits provided by a defined benefit pension scheme. Pensionable salary can exclude fluctuating elements of pay, such as overtime and bonuses.

Protected persons – People covered by The Electricity (Protected Persons) (England and Wales) Pension Regulations 1990 (SI 1990/346). Principally members of the ESPS on privatisation, plus some other employees. The Protected Persons Regulations place obligations on successor employers to fund accrued pension rights. The Regulations also specify (broadly) that future pension rights cannot be reduced for Protected Persons unless a meeting of affected members votes in favour of the change by a two-thirds majority.

Prudence *(in the context of scheme funding assumptions)* – A prudent (or cautious) assumption increases the value of the liabilities compared to a best-estimate assumption.

Real salary growth – The rate of salary growth in excess of price inflation, that is, how much quicker salaries increase than prices.

Return-seeking assets – In a pensions context, asset classes such as equities and property, which are expected to generate higher returns than *matching assets*. However, the market values of such assets are expected to demonstrate greater volatility of returns relative to the value of the liabilities than *matching assets*, increasing the risk of a future deficit.

Salary sacrifice – A salary sacrifice arrangement in respect of pension scheme benefits is where the member's salary is reduced by the amount of the member pension contributions that he or she would normally pay, and instead the employer meets the cost of the member pension contributions. The advantage of such an arrangement is a saving in National Insurance Contributions for both the member and the employer.

Standard contribution rate (SCR) – The level of contributions required to meet the expected cost of the additional pension to which active members will be entitled in respect of service in the relevant period. The SCR is assessed at full actuarial funding valuations.

Transmission network owners and operators (TOs) – 3 TOs own the high-voltage electricity transmission system in Great Britain, and a further company is responsible for the gas transmission system.

Technical provisions – The present value of a pension scheme's past service liabilities for scheme funding purposes.

Government Actuary's Department
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