

Annexe 3 B

Safeguarding the value of potential special distributions to non-electing policyholders: re-assessing Aviva's Old WPSF 'safety net'

LECG's 'safety net' analysis

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Contents

1.00	Introduction	3
2.00	The position of non-electors and Aviva's analysis	8
3.00	Original safety net analysis	13
4.00	Aviva's additional analysis	18
5.00	Conclusions	25

1.00 Introduction

1.01 Introduction

This appendix has been prepared by LECG Ltd. for the policyholder advocate. While care has been taken to explain the technical terms and concepts contained in this appendix, the complex issues involved will be better understood by readers with some familiarity of the concepts involved.

The purpose of this appendix is to provide LECG's commentary on the analysis that has been performed in re-evaluating the position of non-electing policyholders and the sufficiency of the 'safety net' mechanism, which serves to top up the inherited estate of the Old WPSF with up to £100 million from the RIEESA to preserve the value of non-electors' potential future special distributions, as described in Section 1.02 below. LECG's original assessment of Aviva's analysis was included in the policyholder advocate's June 2009 report, "*A report by the office of the policyholder advocate in connection with the reattribution of the inherited estates of the CGNU Life and CULAC with-profits funds*".

In the June 2009 report, the policyholder advocate concluded that, while a majority of eligible policyholders are likely to be made better off by the reattribution proposals, irrespective of the new business assumptions or estate values used in the analysis, there are likely to be some policyholders for whom the value of Aviva's Policyholder Incentive Payment ("PIP") offer does not exceed the value of the potential future special distributions of excess surplus, which they might receive, absent a reattribution.

These policyholders may be considered potential 'non-electing policyholders', or 'non-electors'; that is, they may choose not to accept Aviva's PIP offer. The policyholder advocate, Aviva and the FSA have agreed that any non-electing policyholders should, on the whole, not be disadvantaged by the reattribution. The FSA has said that it would consider a reattribution to be fair, if amongst other conditions, 'policyholders have been given the

opportunity to retain the status quo, which is to retain their interest in the inherited estate without suffering detriment.’¹

In the June 2009 report, LECG reviewed the analysis performed by Aviva to assess the position of non-electors and the adequacy of the ‘safety net’ mechanism. LECG concluded that, across a wide range of scenarios, based on the assumptions, data and analysis provided by Aviva, and assuming an annual decline in new business of 10 per cent, a 95 per cent acceptance rate was sufficient to preserve the position of non-electing policyholders. On that basis, the policyholder advocate believed that Aviva’s proposals would broadly preserve non-electors’ future special distributions following a reattribution, although LECG noted that the safety net may not be sufficient in all scenarios.

As noted in Annexe 2B, the June 2009 report was based on analysis performed on year-end 2006 data that had been provided by Aviva. During the finalisation of the June 2009 report Aviva and the policyholder advocate agreed that this analysis would be updated for actual year-end 2008 data. Therefore, LECG has reviewed the conclusions reached in relation to the position of non-electors and the adequacy of the safety net in light of the new year-end 2008 data that has been provided by Aviva. Additionally, feedback from the policyholder advocate road shows suggests that policyholders might ‘self-select’ to non-elect and therefore potentially will have different lapse rates as compared to those who elect. This could potentially have a significant impact on Aviva’s analysis; as a result, LECG has requested that Aviva revise its methodology to account for this issue, and Aviva has agreed to an update which it will document in a supplementary letter to the AFH report. We discuss this issue in more detail in the remainder of this Annexe.

The remainder of this paper is structured as follows:

- Section 2 summarises the initial analysis that Aviva provided in relation to the position of non-electors and the safety net and discusses the work LECG has performed in reviewing Aviva’s analysis;

¹ FSA: Feedback Statement on the With-Profits Review’, May 2002, p99
4 of 27

- Section 3 summarises the previous analysis Aviva conducted in 2008 and LECG's revised assessment of that work;
- Section 4 details the additional work Aviva has performed in response to analysis performed in Section 2; and
- Section 5 contains LECG and the policyholder advocate's conclusions in respect of the position of non-electing policyholders.

All of the analysis contained in this paper has been conducted on a range of values of the inherited estate at 1 October 2009, the expected Effective Date of the reattribution.

1.02 Summary of conclusions

Aviva and the policyholder advocate agree that, without special safeguards being put in place, it is possible that non-electors' potential future special distributions from the inherited estate of the Old WPSF, following the reattribution, will be lower than they could have been, absent a reattribution. In the policyholder advocate's view, that situation potentially arises because Aviva's proposed allocation mechanism is not perfectly correlated with the potential future special distributions to individual policyholders, absent a reattribution. In response, Aviva has proposed a safety net payment of up to £100 million to the inherited estate of the Old WPSF from the RIEESA in order to preserve non-electors' potential future special distributions at approximately the same level following a reattribution.

Aviva previously tested the adequacy of the safety net under a range of assumptions, including a 10 per cent per annum decline in new business to ensure that on those assumptions, non-electing policyholders will be at least as well off, following a reattribution, as they would have been if a reattribution had not occurred. LECG reviewed Aviva's analysis of the position of non-electors under a wide range of potential voting patterns and levels of new business. In order for the safety net to be effective across all scenarios considered, around 95 per cent of policyholders would need to accept Aviva's PIP offer. LECG's revised analysis of Aviva's original 110 scenarios suggests that the safety net cap could be breached. However Aviva has now stated that, given current voting patterns, these scenarios cannot occur. Aviva has stated it will not be performing further voting scenario analysis, as the 110

original scenarios are considered more extreme than the actual voting results in their ability to test the safety net. LECG has reviewed the latest voting results as of 28 August 2009 and agrees that the voting pattern appears likely to lead to a lower shortfall in the Old WPSF than many of Aviva's original scenarios where the safety net cap may have been breached.

Aviva's original analysis and calculation of VPDP for the purposes of assessing the safety net payment did not distinguish between how non-electors' behaviour may differ from the rest of a group. Therefore, this approach did not adequately allow for the effects of 'self-selection' whereby policyholders who plan to remain in the fund longer and have a higher VPDP are more likely to vote 'no'. This is of particular significance to bond holders (those policyholders with no fixed maturity date). The implication is that, in LECG's opinion, the VPDP of eligible non-electors who hold bonds, absent a reattribution, is highly likely to be understated and consequently the estimated safety net payment required will also be understated.

Consequently, following discussions with LECG and the policyholder advocate, Aviva has presented a new proposal for calculating the VPDP of non-electing eligible bond policyholders. Aviva has adjusted non-electing eligible bond policyholders lapse rates based on the maturity dates of non-electing fixed maturity policyholders. Using this method, non-electing bond policyholders have higher projected in force asset shares and therefore a higher percentage of distributions and VPDP compared to Aviva's previous approach. LECG is satisfied with this approach.

On this basis, Aviva has calculated that the likely safety net payment, with an assumed estate value of £1,200 million, relating to bond holders that 'self-select' into the Old WPSF is between £4 million and £30 million, with the policyholder advocate's and Aviva's preferred approach ('Smoothed profile') deriving an estimated additional payment of £15 million. This payment solely relates to the 'self-selection' issue for eligible bond policyholders. However, Aviva has confirmed that they do not believe this payment in addition to any other shortfall in Old WPSF will breach the £100m safety net.

Aviva's revised approach is considered adequate to assess the impact of self-selection by bond holders; this can be assessed in combination with an analysis of the actual voting results in comparison with the previous scenarios Aviva constructed to evaluate the effectiveness of the safety net. Aviva's current voting analysis shows that there is a trend that shows non-electors or non-respondents are likely to be those with longer outstanding terms or no fixed maturity date, but without any large fluctuations that would indicate a bias towards an extreme voting scenario that may result in a shortfall greater or equal to that under Aviva's original voting scenarios under which the safety net was breached. In addition, the voting patterns within open maturity policies shows that there is a degree of randomness to responses where policyholders that hold policies with Market Value Reductions ("MVRs") are voting 'no' when if they were voting on the basis of comparing the PIP to estimate VPDP then they should vote 'yes'. This randomness in voting serves to reduce any potential safety net issue.

The basis for calculating VPDP in context of assessing the position of non-electors or the adequacy of the safety net mechanism rests with Aviva and is not entirely resolved within the AFH report or the Scheme. Aviva has stated it will be providing a supplementary letter to the AFH report and a further witness statement in the High Court, detailing the revised methodology for determining the VPDP of non-electors in its calculation of the safety net payment.

Given current voting patterns and the changes made to Aviva's calculation of VPDP for assessing the position of non-electors, LECG and the policyholder advocate are happy that Aviva has made the necessary arrangements to protect non-electors.

Additionally, it should be noted that the quantification of estimated VPDP is uncertain as it is based on variables about which various assumptions need to be made over the next 25 year period. The extent of any 'self-selection' is not known until after the event, however, for the purposes of the safety net assessment, the VPDP of non-electors needs to be calculated now and therefore, any assessment has to consider whether the safety net payment is sufficient across a suitable range of scenarios.

2.00 The position of non-electors and Aviva's analysis

2.01 Introduction

This section describes Aviva's current mechanism for assessing the position of non-electors and the adequacy of the safety net mechanism. LECG then provides an assessment of this mechanism and summarises an alternative approach.

2.02 Policyholders in the Old WPSF

A fundamental principle of the reattribution process is that policyholders who are transferred to the Old WPSF (i.e. those who either vote 'no', do not respond or have spoilt papers) should, in aggregate, broadly be in no worse a position post-reattribution compared to the position they would have been in had the reattribution not taken place.

Policies that expect to remain in the fund for a number of years are more likely to be offered a PIP that is less than their expected future special distributions since they are more likely to be in the fund when future special distributions are expected to occur. This was reflected in the policyholder advocate's guidance to policyholders and means that, if they choose to, policyholders are in a position to 'self-select' between the Old WPSF and the New WPSF according to their own expectations about the future. This will mean that the characteristics of policies in the Old WPSF are likely to be different from those in the New WPSF. For example, policyholders who do not intend to surrender their policy for a number of years could be more likely not to elect to take the PIP and vice versa; this would imply that the average persistency in the Old WPSF could be significantly higher than in the New WPSF.

2.03 Aviva's analysis

In its initial analysis of non-electors and the adequacy of the safety net, Aviva grouped fixed maturity policies into categories according to policy type and outstanding term and grouped open maturity policies according to similar characteristics and effectively treated all policies in a group (whether electors or non-electors) as homogeneous. Aviva's mechanism averages VPDP over large groups of policyholders, while there is actually likely to be a wide

dispersion of VPDP. In doing so, the policyholder advocate believes that Aviva's analysis does not adequately allow for the effects of 'self-selection' whereby policyholders who expect to remain in the funds for the long term and therefore have a higher VPDP are more likely to vote 'no'.

This is particularly true for bonds which have no fixed maturity date, as categories of these bonds are treated homogeneously, and thus policies that are expected to leave the funds within the next five years are deemed to have the same VPDP per pound of asset share as policies that are expected to remain in the funds for twenty-five years, while in all likelihood the former group will have zero VPDP and the latter will have a significant VPDP. LECG considers that the grouping of fixed maturity policies into five-year brackets according to outstanding term largely accounts for this issue for those policies, but that an issue regarding the treatment of bonds (open maturity policies) remains.

Therefore, the implication for Aviva's initial analysis is that to the extent there is self-selection in policyholder voting, the VPDP of non-electors absent a reattribution, particularly for bond holders, is highly likely to be understated and consequently the estimated safety net payment required could also be understated. As noted above, the basis for calculating VPDP in context of assessing the position of non-electors or the adequacy of the safety net mechanism rests with Aviva and will be detailed in a supplementary letter to the AFH report.

The adequacy of the Aviva's proposed mechanism for the protection of non-electors depends on a number of different features:

- the misalignment between the allocation mechanism of the inherited estates between the Old WPSF and the New WPSF and the VPDP forgone by policyholders;
- the actual voting experience; and
- the lack of homogeneity between the policyholders in the Old WPSF and the New WPSF and the failure of the Aviva mechanism and approach to allow for this.

These features are discussed below.

Firstly, to calculate an individual policyholder's PIP, Aviva uses an individual current asset share approach to allocate a share of the PIP. In doing so, Aviva recognises that for some policies (e.g. regular premium policies with long outstanding terms) current asset shares are not a fair representation of the likely potential special distributions that may emerge from the funds. Therefore, Aviva has up-weighted the asset shares of such policies; however a significant misalignment still remains that leads to certain policies having a PIP allocation that is not sufficient to cover estimated potential future special distributions, and certain policies having a PIP allocation that is significantly in excess of their potential future special distributions. Since the estate is allocated to the Old WPSF for non-electors on the same basis as the PIP has been calculated, the Old WPSF may not have enough estate allocated to it for those non-electors whose value of potential special distributions exceed their PIP. This misalignment may result in non-electors being in a worse position post-retribution, where the overall estate transferred to the Old WPSF may be insufficient to maintain policyholders' estimated potential future special distributions.

To mitigate this misalignment issue and to protect the position of non-electors post-retribution, Aviva proposed the safety net mechanism where up to £100 million can be transferred from the RIEESA to the Old WPSF to preserve the position of non-electing policyholders. The policyholder advocate and LECG agree with the principle of this mechanism, however, (as previously discussed) they do not agree with the basis upon which any shortfall is calculated.

The analysis contained in *Appendix 44: The Position of Non-Electing Policyholders* was carried out by Aviva and used ten different voting scenarios. Whilst the actual voting pattern to date is quite different from those original voting scenarios, there does appear to be some bias in the pattern of the voting to date towards non-electors having those policies with longer outstanding terms to run. It also appears there are about ten per cent of policyholders who are likely not to respond to the offer and will therefore also be treated as non-electors. In the policyholder advocate's view, this feature of the voting pattern does, firstly, demonstrate the need for a safety net and secondly, the need for a revision to the calculation of it as described in the paragraphs below..

It is also apparent that the ‘self-selection’ issue discussed in Section 1.01 is likely to be relevant to the size of the safety net that is needed to protect non-electors. Feedback from the policyholder advocate’s road shows suggested that there could be an element of ‘logical voting’, with some policyholders voting no and subsequently remaining in the funds longer than the average lapse rates assumed for their cohort pre-retribution.

Aviva’s previous analysis consisting of the 110 scenarios did not take account of these voting patterns and the ‘self-selection’ issue that arises from them. In fact, Aviva assumes that all policyholders are homogeneous within certain groups, most significantly grouping all open maturity policies together, and therefore does not make any distinction in its analysis of the safety net about how specific policyholders’ behaviour (and therefore potential VPDP) may differ. The implication is that Aviva’s methodology could underestimate the VPDP of non-electors absent a retribution, and could therefore underestimate the safety net payment required to top-up the OWPFSS.

Consequently, LECG and the policyholder advocate have asked Aviva to reassess the position of non-electors and the adequacy of the safety net considering the assumption that non-electing policyholders are likely to have different lapse rates from other policyholders in the same group.

2.04 Aviva’s mechanism – a suggested solution

LECG and the policyholder advocate have considered various options that could be employed to address the issues discussed above. An example of one such solution is provided in Section 4.02.

LECG believe that a reasonable indicator to assess the extent to which open maturity policies (i.e. bonds) may ‘self-select’ and therefore the potential VPDP shortfall in the Old WPSF is to analyse the voting patterns of fixed maturity policies. It may be argued that the characteristics of these policies differ, however the key relevant factor for policyholders to consider in the retribution is the length of time that they expect to remain in the fund, which should not be affected by other differences between these types of policies. Further, the actual experience

from fixed maturity voting patterns offers one of the only data points that can be used to predict likely open maturity patterns.

Aviva can apply the voting patterns from fixed maturity policies proportionately to open maturities. That is, Aviva assumes that the same proportion of open maturity policies lapsing in a given year vote 'no' or don't vote as fixed maturity policies that lapse / mature in that year, i.e. if 25 per cent of fixed maturity policies with a maturity date in 2025 vote 'no', then assume that 25 per cent of the open maturity policies that are projected to lapse in 2025 vote 'no'.

Using this approach, Aviva can split open maturity policies into two groups: 'yes' and 'no' voters. Different lapse assumptions can then be applied to each group to reflect different levels of persistency. In performing this analysis, it is important that the overall lapse profile of any group is not affected.

To calculate the potential shortfall in any safety net payment, Aviva would then run the counterfactual scenario (absent any reattribution) with open maturities split into 'yes' and 'no' voter groups and calculate the VPDP of the 'no' voter group. This counterfactual would then be compared against the VPDP in the post-reattribution scenario with VPDP split between the Old WPSF and the New WPSF. This analysis would identify whether a safety net payment is required and whether the £100 million cap is sufficient to protect policyholders across a range of new business assumptions.

3.00 Original safety net analysis

In 2008, Aviva analysed a total of 110 scenarios, using 10 different sets of assumptions about policyholders' voting behaviour and 11 different sets of assumptions in respect of future new business volumes, based on year-end 2006 data.

As detailed in the policyholder advocate's report in June 2009, the policyholder advocate assessed 10 of Aviva's scenarios based on an assumed annual decline in new business of 10 per cent (new business scenario F) to assess the effectiveness of Aviva's mechanism. The policyholder advocate concluded that the safety net was adequate provided a 95 per cent take-up rate can be achieved and that plausible scenarios existed to support a 95 per cent take-up rate.

Current voting percentages suggest that there may be about 10 per cent non-responders, 4 per cent non-electors and 1 per cent spoilt papers, leading to around 15 per cent non-electors overall. As highlighted in Annexe 2B, the shape of the current experience of the voting pattern for non-electors means that a number of the scenarios are no longer possible. However, it is still possible for significant number of different scenarios to emerge from the vote.

The voting behaviour assumptions originally used by Aviva are summarised in Table 1 below²:

² Note also that Aviva assumes a voting pattern for each group and then analyses the resulting impact on the funds. In contrast, the policyholder advocate determines voting behaviour by comparing the value of the PIP allocation to each policy to the estimated value of the potential future special distributions by the policy.

Table 1 Summary of voting scenarios used by Aviva³

Scenario	Description
Base	Uniform take-up across all policy groups
1	50 per cent higher take-up for bonds and policies with outstanding term <= 10 years
2	100 per cent higher take-up for bonds and policies with outstanding term <= 10 years
3	All bonds and policies with term <= 10 years elect and no others
4	Only non-electors are 30 per cent of policies with terms between 15 to 20 years, 80 per cent with terms between 20 to 25 years and 90 per cent with terms over 25 years
5	Take-up: 50 per cent of bonds; 90 per cent of other policies
6	Multipliers on take-up rates: x2 if not regular premium x2 if bonds or outstanding term <= 10 years
7	Multiplier to take-up rate: x2/3 if regular premium and term > 5 years
8	Profile of take-up declines from 100 per cent if short-term to zero for long-term regular premium policies
9	Logical voting based on outstanding term: < 10 years RP 100 per cent, SP 100 per cent; 10-15 years RP 96.5 per cent, SP 86.5 per cent; 15-20 years RP 60.5 per cent, SP 67.5 per cent; 20-25 years RP 49.5 per cent, SP 84.5 per cent; > 25 years RP 52.5 per cent, SP 96.5 per cent

Source: Aviva

Table 2 shows a detailed breakdown of Aviva’s analysis of its new business scenario F, in which new business volumes fall by 10 per cent per annum. The table shows the VPDP of non-electors with and without a reattribution and highlights in red those voting scenarios that generate a shortfall in the value of non-electors VPDP with a reattribution compared to their

³ Aviva refers to single premium policies without a known expected maturity date simply as “bonds”.

VPDP without a reattribution. As will be shown below, it is apparent that the current voting patterns differ quite markedly from these original voting scenarios.

Table 2 Detailed breakdown of Aviva’s new business scenario F, values falling by 10 per cent per annum

	Base	1	2	3	4	5	6	7	8	9
VPDP of non-electors without a reattribution	169	269	421	501	259	197	357	202	473	110
VPDP of non-electors post-reattribution before transfer payment	169	209	352	267	111	231	310	205	280	56
Shortfall before transfer payment	0	-60	-69	-234	-148	34	-47	3	-193	-54
Per cent electors	80%	77%	61%	72%	91%	75%	64%	76%	71%	94%
Transfer payment	0	60	68	80	89	0	47	0	87	54
Shortfall after transfer payment	0	0	-1	-154	-59	34	0	3	-106	0
Breakeven per cent electors	-	-	62%	90%	95%	-	-	-	87%	-

Source: Aviva

3.01 Re-performance of analysis using likely take-up rates, based on current voting patterns

Aviva has provided LECG with its latest voting statistics, based on a response rate of 80 per cent of eligible policies. LECG has grouped the policies into four categories, based on outstanding term: 0-5 years, 6-10 years, 11-15 years and 15+ years. Table 3 below summarises the results of LECG’s analysis of the voting statistics provided by Aviva.

Table 3 Results of analysis of voting statistics provided by Aviva⁴

	Outstanding term					Total
	0-5 years	6-10 years	11-15 years	15+ years	None (open maturity policies)	
Proportion of fund	8.1%	18.9%	14.8%	20.0%	38.1%	100.0%
Response rate	86.8%	80.9%	75.8%	68.1%	88.3%	80.9%
Yes votes	98.2%	97.4%	95.3%	94.5%	97.0%	96.5%
No votes	1.8%	2.6%	4.7%	5.5%	3.0%	3.5%
Current no voters and non-responders as a % of all policies	1.20%	4.00%	4.13%	7.12%	5.45%	21.91%

Source: LECG analysis

Two main points are illustrated by the results above:

- the proportion voting ‘yes’ decreases as the OST increases; and
- the response rate falls as the OST increases.

Aviva’s projections based on this analysis suggest that there may be up to 10 per cent of policyholders who are non-responders and 1 per cent with spoilt papers (both of these groups go into the Old WPSF), as well as about 4 per cent ‘no’ voters, leading to 15 per cent of total policies that will be considered non-electors and will be transferred to the Old WPSF.

LECG has therefore re-performed the break-even analysis assuming a 10 per cent annual decline in new business considering likely take-up rates of 85 per cent⁵, in order to see if the safety net remains adequate (based on Aviva’s original analysis of year-end 2006 data).

⁴ The numbers in Table 3 are based on statistics provided to LECG by Aviva in August and do not take into account the policies that have matured since A-day, which are presumed to vote ‘yes’ – these policies represent around 10 per cent of the fund.

⁵ As advised by Aviva.

Table 4 Summary of shortfalls after transfer payment, assuming 85 per cent take-up rate

	Base	1	2	3	4	5	6	7	8	9
Per cent electors (take-up)	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Shortfall before transfer payment £m	0	-39	-27	-125	-247	20	-20	2	-100	-135
Transfer payment £m	0	39	-27	80	89	0	20	0	87	85*
Shortfall after transfer payment £m	0	0	0	-45	-158	0	0	0	-13	-50

Source: Aviva *Aviva has not provided the actual transfer for scenario 9 in the new analysis; therefore we have made an assumption on the transfer value based on the previous analysis.

Assuming an 85 per cent take-up and these historic scenarios, the safety net would appear not to be sufficient to protect non-electing policyholders in four of the ten scenarios analysed by Aviva using year-end 2006 data. The shortfall after the transfer payment, in these four scenarios, ranges from £13 million to £158 million.

However, Aviva has stated that, given current voting patterns, these scenarios cannot now occur. This does not mean that other scenarios could not occur which might result in the safety net payment being inadequate; LECG has reviewed the voting figures underlying Table 3 above, and notes that there is a fairly steady profile of non-electors in the different groups, with a noticeable increase as outstanding term increases, but without any fluctuations that would indicate a bias towards an extreme voting scenario that may result in a greater shortfall than in Aviva's previous scenarios and which might lead to a breach in the safety net.

Aviva's current voting analysis shows that there is a trend that shows non-electors or non-respondents are likely to be those with longer outstanding terms or have no fixed maturity date. However, the voting patterns within open maturity policies shows that there is a degree of randomness to responses where policyholders that hold policies with Market Value Reductions ("MVRs") are voting 'no' when if they were voting on the basis of comparing the PIP to estimate VPDP then they should vote 'yes'. This randomness in voting serves to reduce any potential safety net issue.

4.00 Aviva's additional analysis

4.01 Introduction

As previously noted, LECG has asked Aviva to reconsider the way it calculates VPDP for non-electing bond holders for the purpose of assessing whether non-electing policyholders' position is preserved following the reattribution and to assess the adequacy of the safety net mechanism. This proposed change in methodology is designed to test the incremental sensitivity of non-electors' VPDP to increased self-selection by bond holders.

In this section LECG has summarised the analysis and proposals that Aviva has put forward to address the issue of preserving the position of non-electing bond holders. LECG then considers the mechanism Aviva has developed to mitigate this issue and summarises the analysis Aviva has performed, in light of this change in mechanism, to assess the adequacy of the safety net.

4.02 Aviva's mechanism

Aviva provided LECG with a paper outlining its proposals for rectifying any issue relating to non-electing policyholders on 28 August 2009. In this paper, Aviva acknowledges that it is conceivable that policyholders who would have intended to surrender their policies in the short term would choose to elect, whereas those policyholders who intend to hold their policies for the longer term would choose not to elect. In these circumstances it is possible that, in the absence of the reattribution, the lapse rates for those who have chosen to elect would have been higher than those who have chosen not to elect. That is, the persistency within the Old WPSF (for this group of policyholders) will differ from the New WPSF.

Aviva recognises that estimating the lapse rates for non-electors after the reattribution is a difficult task and that there are few data-points to use as benchmarks. Aviva states that analysis of AXA's FSA returns might suggest that non-electors lapse rates would be 80 to 90 per cent of electing policyholder lapse rates. However, the applicability of this information is limited by the relative lack of information available to policyholders.

As noted in Section 2, LECG accepts that there is a reasonably clear view on the lapse rates for fixed maturity policies but that determining the prospective lapse rates of open-ended policies is much more problematic. LECG believes that the voting patterns for fixed maturity policies may be a useful indicator of the relative lapse experience of non-electing policies without fixed maturity dates. Aviva acknowledges that the voting patterns are one of the few available sources of data, although they have concerns regarding making inferences from one set of products being applied to another. Nevertheless, Aviva has used this analysis as the starting point for its proposed mechanism to adjusting lapse rates for non-electing open-ended policies.

Effectively Aviva subdivides the bond policies into those projected to exit each year, whilst fixing the non-electing proportion of the exiting policyholders in each subgroup to be those which corresponds with the non-electing proportion of policies with maturity dates in that year. This method has been applied to the latest profile of votes received as at 21 August 2009. The table below shows the non-election rates by year and maturity.

Table 5: Non election rates

Non election rates for policies with maturity dates (by count)									
1	2	3	4	5	6	7	8	9	10
1.85%	2.27%	2.29%	2.20%	2.76%	2.86%	3.20%	4.16%	4.40%	4.73%
11	12	13	14	15	16	17	18	19	20
5.15%	5.65%	6.30%	6.28%	5.84%	5.71%	5.40%	4.63%	4.85%	4.71%
21	22	23	24	25					
4.73%	5.13%	5.00%	5.54%	5.12%					
Non election rates for policies without maturity dates (by count): 2.97%									

Applying these rates to policyholders with bonds would derive the following lapse rates.

Table 6: Base lapse rates for policyholders with bonds

Sensitivity factor to bond non-electors' exit rates by year									
1	2	3	4	5	6	7	8	9	10
63%	70%	63%	52%	59%	58%	61%	75%	76%	79%
11	12	13	14	15	16	17	18	19	20
84%	89%	98%	97%	90%	87%	80%	66%	65%	59%
21	22	23	24	25					
55%	54%	48%	48%	39%					

Aviva has used these base rates to calculate adjustments to lapse rates for bond non-electors using non-election rates weighted by PIP liability as is shown in the table below:

Table 7: Lapse rate adjustments for policyholders with bonds

Sensitivity factor to bond non-electors' exit rates by year									
1	2	3	4	5	6	7	8	9	10
52%	75%	62%	51%	56%	52%	62%	74%	72%	74%
11	12	13	14	15	16	17	18	19	20
76%	80%	85%	82%	71%	63%	76%	51%	49%	41%
21	22	23	24	25					
40%	41%	45%	32%	27%					

However, Aviva argues that the profiles shown above can be quite volatile from year to year, and has therefore suggested that the profile of adjustments be smoothed as follows:

- 60 per cent for the first 6 years;
- increase by 5 percentage points per annum until reaches 90 per cent in year 12;
- remain at 90 per cent until year 14; and

- decrease by 5 percentage points per annum thereafter, reaching 35 per cent in year 25.

LECG and the policyholder advocate broadly agree with Aviva's proposal and basis for smoothing the adjustments to non-electing bond policyholder lapse rates. Additionally, LECG has reviewed and substantiated the underlying voting and policyholder response data that Aviva has used to calculate these adjustments. Consequently, LECG and the policyholder advocate are broadly satisfied with the approach Aviva has adopted to adjusting lapse rates for non-electing bond policyholders. However, they believe that Aviva's approach should be modified to take proper account of non-responders (i.e. those policies that do not return their ballot) when calculating lapse rates.

4.03 Aviva's method of calculating non-electors' VPDP

In Section 2, LECG raised the issue of the approach Aviva has adopted to calculating VPDP for non-electors in both the pre- and post-distribution context. Aviva has now revised its basis for calculating VPDP for non-electors and it is this new basis that Aviva proposes to include in a supplementary letter to the AFH report.

Pre-retribution

Aviva has correctly maintained aggregate lapse rates the same as those used in base lapse assumptions. However, Aviva has now disaggregated eligible bond policyholders into non-electors, with the selected sensitivity lapse rate (as discussed above), and electors with the relevant lapse rate to maintain the aggregate base lapse assumption. Using this method, non-electing bond policyholders have higher projected in force asset shares and therefore a higher percentage of distributions and VPDP compared to Aviva's previous approach.

Post-retribution

In the post-retribution position, the change in non-electors' lapse experience changes the projected distributions from the fund as well as the proportion of the projected in force asset share which relates to non-electors. Therefore, in order to calculate the post-retribution VPDP, Aviva is proposing to project the Old WPSF, in this instance being a fund with the

same distribution of business as the New WPSF but where the lapse rates on non-electing bonds are lower than those on electing bonds in the New WPSF.

Aviva notes that applying this method means that the run-off of liabilities in the Old WPSF is slower and therefore AAA requirements are higher – deferring distributions. Additionally, estimated non-electors' asset share is higher, resulting in higher distributions to non-electors. The degree to which each factor influences VPDP determines whether aggregate VPDP for non-electors increases or decreases compared to Aviva's previous analysis.

LECG and the policyholder advocate are happy with the changes Aviva has made in calculating non-electing policyholders VPDP and believe that the new basis reflects an appropriate approach to ensuring the position of non-electing policyholders is preserved and one on which the adequacy of the safety net can properly be assessed.

4.04 Aviva's analysis of the safety net using the new basis

Aviva has presented analysis of the adequacy of the safety net based on its new basis for calculating VPDP for non-electing bond policyholders. To be consistent with the assumptions used when the safety net was assessed for the purposes of the policyholder advocate's June 2009 report, Aviva has performed its analysis assuming new business declines at 10 per cent per annum from 2011 onwards. Additionally, Aviva has used the latest voting and response data and has assumed a 15 per cent non-election rate amongst policies that are still in force at the Effective Date. LECG and the policyholder agree that this is a prudent approach as current voting data suggests that the non-election rate for bonds can be no higher than 15 per cent. The table below provides a summary of Aviva's analysis, assuming an estate of £1,200 million, showing VPDP pre- and post-retribution and safety net implications using various lapse rate assumptions. The safety net payment shown reflects any additional payment necessary over and above Aviva's base analysis on all non-electing policies. Therefore, it purely reflects the impact of assuming different lapse rates for non-electing bond policyholders.

Table 8: Safety net payment based on Aviva's new lapse rate assumptions for eligible bond policyholders with an assumed estate value of £1,200 million

Lapse rate as % of base	Pre-retribution		Post-retribution		Ratio post/pre-VPDP	Additional safety net payment
	Total VPDP	Bonds VPDP	Total VPDP	Bonds VPDP		
100%	42	18	42	18	100%	n/a
90%	46	21	44	21	97%	4
80%	50	25	46	24	93%	9
75%	52	27	47	26	91%	11
60%	61	36	52	32	85%	21
50%	68	44	55	37	81%	30
Adjusted by Count	54	30	49	27	89%	14
Adjusted by Liability	58	33	50	30	87%	18
Smoothed profile	55	31	49	28	89%	15

Aviva's analysis suggests that depending on the lapse rate adjustment that is applied the additional safety net payment is between £4 million and £30 million, with the policyholder advocate's and Aviva's preferred approach ('Smoothed profile') deriving an additional payment of £15 million. Aviva notes that if non-electors VPDP is within 10 per cent of that absent a retribution. Additionally, Aviva's analysis suggests that, as expected post-retribution VPDP increases as lapse rates fall, however this does not increase by as much as VPDP absent a retribution.

The table below replicates this analysis assuming an estate value of £1,529 million.⁶

⁶ £1,529 million is the end-2008 published figure from Aviva. In other areas of the report, an end-2008 estate value of £1,570 million is used, as this incorporates a £41 million post year-end adjustment made by Aviva. In terms of the results of the analysis performed, this difference is not considered material.

Table 9: Safety net payment based on Aviva’s new lapse rate assumptions for eligible bond policyholders with an assumed estate value of £1,529 million

Lapse rate as % of base	Pre-retribution		Post-retribution		Ratio post/pre-VPDP	Additional safety net payment
	Total VPDP	Bonds' VPDP	Total VPDP	Bonds VPDP		
100%	62	25	62	25	100%	n/a
90%	66	29	64	28	97%	5
80%	71	34	66	32	94%	10
75%	74	37	68	34	92%	14
60%	84	47	73	42	86%	26
50%	94	57	77	49	82%	36
Adjusted by Count	78	41	69	37	89%	18
Adjusted by Liability	81	44	71	40	88%	22
Smoothed profile	78	42	70	38	89%	19

As expected, the analysis shows that the VPDP of non-electing eligible bond policyholders increases with an assumed estate value of £1,529 million and consequently the range of safety net payments increases to between £5 million and £36 million, with the additional payment being £19 million under the preferred approach.

Therefore, Aviva’s analysis suggests that an additional payment of between £15m and £19m will be required in relation to bond holders that might ‘self-select’ into the Old WPSF. Aviva has stated that, given current voting patterns, it does not believe that any shortfall in the Old WPSF calculated on base lapse assumptions for all policies (that is excluding the ‘self-selection’ bond issue) would amount to more than £80 million. In that case, the £100 million safety net cap will be adequate.

5.00 Conclusions

A suitable method for calculating the VPDP for the protection of non-electors has not been entirely resolved in the AFH report or the Scheme, but will be added in a supplementary letter to the AFH report. Additionally, the current treatment of open maturity policies in Aviva's approach and analysis is likely to underestimate the VPDP of non-electors absent a reattribution.

LECG's analysis using Aviva's original 110 scenarios suggests that there are plausible scenarios where the £100 million cap may not be sufficient to protect non-electors. However Aviva has now stated that, given current voting patterns, these scenarios cannot occur. There are also scenarios where the £100 million cap will be sufficient to protect non-electors. However, LECG is not able to model the Old WPSF explicitly and so Aviva will need to analyse the post-reattribution scenario. Aviva has stated it will not be performing further voting scenario analysis, as it considers the 110 original scenarios more extreme than the actual voting results in their ability to test the safety net. LECG's review of actual voting results indicates that there is a general increase in the proportion of non-electors as outstanding term increases, but without any large fluctuations that would indicate a bias towards an extreme voting scenario that may result in a greater shortfall than in Aviva's previous scenarios.

Aviva's current voting analysis shows that there is a trend that shows non-electors or non-respondents are likely to be those with longer outstanding terms or no fixed maturity date. However, the voting patterns within open maturity policies shows that there is a degree of randomness to responses where policyholders that hold policies with Market Value Reductions ("MVRs") are voting 'no' when if they were voting on the basis of comparing the PIP to estimate VPDP then they should vote 'yes'. This randomness in voting serves to reduce any potential safety net issue.

Aviva's original analysis assumed that policyholders within a group are homogeneous and therefore that policyholders that elect and do not elect have the same lapse rates. Consequently, Aviva's analysis did not adequately allow for the effects of 'self-selection'

whereby policyholders with higher VPDP might be more likely to vote 'no'. Aviva's mechanism averaged VPDP over large groups of policyholders. However, there is likely to be a wide dispersion of VPDP. Therefore, the implication for Aviva's analysis is that the VPDP of eligible non-electors who hold bonds, absent a reattribution, is highly likely to be understated and consequently the estimated safety net payment required might also be understated.

Therefore Aviva has presented new analysis based on a new mechanism for calculating the VPDP of non-electing eligible bond policyholders. Aviva has adjusted non-electing eligible bond policyholders lapse rates based on the lapse rate experience of eligible fixed maturity policyholders. Using this method, non-electing bond policyholders have higher projected in force asset shares and therefore a higher percentage of distributions and VPDP compared to Aviva's previous approach. LECG is satisfied with this approach.

On this basis, Aviva has calculated that the likely safety net payment, with an assumed estate value of £1,200 million, relating to bond holders that might 'self-select' into the Old WPSF is between £4 million and £30 million, with the policyholder advocate's and Aviva's preferred approach ('Smoothed profile') deriving a payment of £15 million. This payment solely relates to the 'self-selection' issue for eligible bond policyholders. However, Aviva has confirmed that they do not believe this payment in addition to any other shortfall in Old WPSF will breach the £100 million safety net.

Aviva's revised approach is considered adequate to assess the impact of self-selection by bond holders; this can be assessed in combination with an analysis of the actual voting results in comparison with the previous scenarios Aviva constructed to evaluate the effectiveness of the safety net. Given current voting patterns and the changes made to Aviva's calculation of VPDP for assessing the position of non-electors, LECG and the policyholder advocate are happy that Aviva has made the necessary arrangements to protect non-electors.

Additionally, it should be noted that the quantification of estimated VPDP is uncertain as it is based on variables about which various assumptions need to be made over the next 25 year period. The extent of any 'self-selection' is not known until after the event, however, for the

purposes of the safety net assessment, the VPDP of non-electors needs to be calculated now and therefore, any assessment has to consider whether the safety net payment is sufficient across a suitable range of scenarios.