21 December 2021

Solvay Interox Superannuation Plan: Actuarial investigation as at 30 June 2021

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Foster a culture of strong governance to confidently manage uncertainty.

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Understand the implications of decisions and the likely outcomes.

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Navigate the regulatory and business environment and unlock the value of data.

Table of Contents

1 Executive summary 1

1.1 Introduction 1
1.2 Financial position 1
1.3 Plan's experience since previous valuation 2
1.4 Valuation of Plan liabilities 2
1.5 Pension benefits 3
1.6 Contribution recommendations 3
1.7 Next actuarial review 4

2 The Plan 5

2.1 Description 5
2.2 Trust Deed 5

3 Data 6

3.1 Membership and assets at 30 June 2021 6
3.2 Defined benefit section 6
3.3 Vested benefits 7
3.4 Asset value 7
3.5 Accumulation section 7

4 Plan's experience since previous valuation 8

4.1 Benefit changes 8
4.2 Membership changes 8
4.3 Employer contributions 8
4.4 Investment returns 9
4.5 Member salary growth 9
4.6 Real rate of investment return 9
4.7 Expenses 9

5 Investments 10

5.1 The UBS Defensive Fund 10
5.2 Investment objectives 10
5.3 Crediting rate policy 10
5.4 Shortfall limit 11

Table of Contents

6 Insurance 12

6.1 Death and TPD benefits 12

6.2 Total and temporary disability 12

6.3 Insurance appropriate 12

7 Valuation of liabilities 13

7.1 Methodology 13

7.2 Financial assumptions 13

7.3 Demographic assumptions 14

7.4 Expenses and insurance costs 14

7.5 Superannuation Guarantee 14

7.6 Pension benefits 14

8 Funding status 16

8.1 Introduction 16

8.2 Asset coverage of member benefits 16

8.3 Pension benefits 16

9 Valuation Results 18

9.1 Valuation balance sheet 18

9.2 Progression since 30 June 2018 18

9.3 Impact of variation in assumptions 19

9.4 Vested benefit projections 20

10 Material risks 22

10.1 Introduction 22

10.2 Investment return 22

10.3 Pension benefits 22

11 Recommendations 24

11.1 Employer contribution rates 24

11.2 Next actuarial review 24

Appendix 1. Benefit Summary 25

Appendix 2. Demographic assumptions 27

Appendix 3. AASB1056 disclosures 28

Appendix 4. Short report for members 29

1 Executive summary

1.1 Introduction

I have carried out an actuarial investigation of the Solvay Interox Superannuation Plan (the Plan), a defined benefit plan within the Retirement Portfolio Service (RPS), as at 30 June 2021 (valuation date).

This report has been prepared for the Plan's Trustee, OnePath Custodians Pty Limited.

The main purposes of the investigation are to:

- Examine the financial condition of the Plan at the valuation date.
- Recommend the employer contributions required by the employer, Solvay Interox Pty Ltd (Solvay), to meet its continuing benefit obligations, and to maintain the Plan in a sound financial condition.
- Consider the appropriateness of the Plan's investment and insurance arrangements.
- Satisfy the actuarial investigation requirements of the Superannuation Industry (Supervision) Act 1993 (SIS).

I carried out the previous actuarial investigation of the Plan as at 30 June 2018. My report was dated 20 December 2018. I also provided a funding update as at 30 June 2019, in a report dated 3 April 2020.

This report complies with the Actuaries Institute's *Professional Standard 400 Investigations of the financial condition of defined benefit superannuation funds.*

1.2 Financial position

My actuarial investigation of the Plan focuses on the financial condition of the closed defined benefit section of the Plan.

At the valuation date, there were five defined benefit members. Total vested benefits (i.e. the benefits immediately available to members on resignation or retirement) were [redacted], backed by Plan assets of [redacted].

The Plan was in a satisfactory financial position (as defined under SIS) at the valuation date, with the Plan's defined benefit section assets providing 116% coverage of members' vested benefits.

1.3 Plan's experience since previous valuation

Based on previous actuarial recommendations, Solvay currently is contributing to the Plan at the rate of 15% of defined benefit member salaries, plus 3% of salaries towards members' 3% Account contributions in the accumulation section of the Plan. This was expected to improve the Plan's asset coverage of vested benefits to around 112% by 30 June 2021.

The Plan's coverage of vested benefits was 116% at 30 June 2021, slightly better than expected. The improvement is attributable mainly to favourable real rates of investment return (1.6% p.a. compared to 1.0% p.a. assumed), and to higher than expected Solvay contributions, as for administrative convenience Solvay pays 15% contributions on bonuses, which do not form part of members' superannuation salaries.

1.4 Valuation of Plan liabilities

I have carried out the 30 June 2021 valuation based on the following key financial assumptions, which are identical to those used for the 30 June 2018 valuation.

Assumption	Return (% p.a.)
Discount rate / return on assets (net of investment expenses and tax)	4.0%
Salary increases	3.0%

The results of the valuation as at 30 June 2021 can be summarised as follows:

Valuation balance sheet 30 June 2021	
Plan assets	[redacted]
Employer liabilities:	
Past service liabilities	[redacted]
Future service liabilities	[redacted]
Future expenses at 3.5% of salaries	[redacted]
less: Future member contributions	([redacted])
Total employer liabilities	[redacted]
Surplus/(Deficit)	[redacted]

The valuation results show that on the assumptions adopted, there is expected to be an actuarial surplus of [redacted], even if employer contributions to the Plan are suspended over the future lifetime of the defined benefit membership.

1.5 Pension benefits

Two members of the Plan are entitled to take pension, rather than lump sum, benefits on retirement. Both are within two years of the Plan's normal retirement age of 65.

For the purposes of the valuation, I have assumed that all benefits will be taken in lump sum form, since members have always elected to take lump sum benefits and the Plan currently has no pensioner members.

However, in the event that either or both members elect to take pensions, there would be a substantial additional lump sum contribution required from Solvay to maintain the Plan in a satisfactory financial position, and to provide adequate security for the benefits of the remaining active members.

On the valuation assumptions adopted, I estimate that if both members elect for pension benefits there would be deficits of approximately [redacted] for non-indexed pensions, or [redacted] for CPI-indexed pensions. With allowance for contributions tax, this would require additional Solvay contributions of approximately [redacted] or [redacted] respectively.

1.6 Contribution recommendations

I recommend that from 1 February 2022, Solvay should contribute to the Plan at the following rates:

- Nil% of salaries towards the defined benefit section, plus
- 3% of salaries towards members' 3% Accounts in the accumulation section of the Plan, plus
- if any retiree should elect to take their benefits in pension form, an additional lump sum assessed at that time.

I recommend that all Plan expenses can continue to be met from Plan assets.

On the valuation assumptions adopted, employer contributions at this level are expected to be sufficient to maintain the Plan's asset coverage of members' vested benefits above 110% over the five year period following the valuation date.

1.7 Next actuarial review

The next actuarial review of the Plan will be due as at 30 June 2024.

I understand that the Trustee monitors the Plan's defined benefit asset coverage of vested benefits on a monthly basis, and will notify me if this measure falls below 110%.

The Plan's financial position should also be reviewed if any member elects to take a pension benefit on retirement.

If the Plan starts paying pension benefits, there will be a legislative requirement for annual actuarial investigations.

John Newman	Peer reviewed by Stephen Crump
Fellow of the Institute of Actuaries of Australia	Fellow of the Institute of Actuaries of Australia

21 December 2021

2 The Plan

2.1 Description

The Plan is a defined benefit sub-plan within the RPS. OnePath Custodians Pty Limited is the RPS Trustee. OnePath provides administration services.

The Plan is regulated by the Australian Prudential Regulation Authority (APRA) in accordance with SIS. As a regulated and complying plan, employer contributions are tax deductible to Solvay, but subject to tax in the hands of the Trustee, and the Plan's investment income is subject to concessional rates of tax.

The Plan contains a closed defined benefit section, and an accumulation section open to new members. All defined benefit members are also members of the accumulation section as they receive part of their employer-financed benefits (their 3% Accounts), plus any voluntary member contributions and rollovers, in accumulation form. Although the Plan is administered as two separate sections, the Trustee has confirmed that the RPS's structure allows cross-subsidies between these sections so that employer costs, and shortfalls or surpluses, can be taken together across the Plan as a whole.

Solvay uses the Plan to meet its Superannuation Guarantee (SG) obligations under the Superannuation Guarantee Administration Act 1992.

2.2 Trust Deed

The Plan is governed by the provisions of the RPS Trust Deed, and the Plan's Employer Application Form and Benefit Specification Schedule, and any subsequent deeds of amendment.

For ease of reference, the Plan's governing provisions are referred to collectively in this report as the Trust Deed.

The benefit provisions relating to the Plan's defined benefit members are summarised in Appendix 1 to this report.

3 Data

3.1 Membership and assets at 30 June 2021

My actuarial investigation of the Plan focuses on the financial condition of the closed defined benefit section, and is based on 30 June 2021 membership, investment and accounts data provided by the Plan's administrators, OnePath.

I have checked the data for reasonableness and consistency with the Trust Deed. However, I have not independently verified the data, hence my report necessarily relies on the accuracy and completeness of the data provided.

3.2 Defined benefit section

At the valuation date, the closed defined benefit section of the Plan contained five members distributed by category and age as follows.

Age	Category 1	Category 3
50-54	2	
55-59		
60-64	1	2
Total	**3**	**2**

The valuation of the defined benefit section includes allowance for the accumulation accounts maintained within the defined benefit section, i.e. member contribution accounts, deemed (pre-tax) member contribution accounts, surcharge accounts, and the notional employer accounts forming part of the Plan's Minimum Requisite Benefits (i.e. Superannuation Guarantee minimum benefits).

The valuation makes no allowance in either the assets or the liabilities for the members' 3% Accounts, or for any rollover or voluntary account balances that members may have in the accumulation section of the Plan.

3.3 Vested benefits

At the valuation date, total vested benefits for the Plan's defined benefit members were [redacted].

3.4 Asset value

I have taken the defined benefit section asset value as [redacted] at the valuation date, based on the Plan's Statement of Account for the 2020-21 financial year.

This was the value of the Plan's holding in the UBS Defensive investment option at the valuation date. Based on the information provide by the Plan's administrators, I am not aware of any amounts payable to or from the Plan that would require adjustment to this asset value.

At the valuation date, the Plan's defined benefit section assets provided 116% coverage of members' vested benefits, i.e. a surplus margin of [redacted].

3.5 Accumulation section

At 30 June 2021, the accumulation section of the Plan contained 32 members, and had assets of approximately [redacted].

4 Plan's experience since previous valuation

4.1 Benefit changes

Since the previous actuarial valuation of the Plan, there have been no changes to the Trust Deed relating to the calculation of members' benefit entitlements.

4.2 Membership changes

At the 30 June 2018 valuation date, the Plan had nine active defined benefit members. Since then, there have been two redundancies, one retirement, and one member transferred to the accumulation section after reaching age 65.

4.3 Employer contributions

Based on previous actuarial recommendations, at the 30 June 2018 valuation date Solvay was not contributing to the defined benefit section, and was funding members' 3% Account contributions from defined benefit section assets.

My report on the 30 June 2018 actuarial investigation recommended that Solvay should recommence employer contributions from 1 February 2019 at the following rates:

- 15% of salaries to fund defined benefit section benefits, plus
- 3% of salaries to fund defined benefit members' 3% Accounts in the accumulation section of the Plan.

I understand that Solvay's contributions to the Plan have been in accordance with these recommendations. I also understand that for administrative convenience, Solvay pays 15% contributions on members' annual bonuses, which do not form part of members' superannuation salaries.

4.4 Investment returns

The assets of the defined benefit section are invested wholly in the UBS Defensive Fund.

Based on movements in unit prices, I estimate the defined benefit section investment return as approximately 3.8% p.a. for the three-year period to 30 June 2021.

Year	Return
2018-19	5.0%
2019-20	-0.8%
2020-21	7.4%
Average	**3.8%**

For the purposes of the previous actuarial investigation, it was assumed that investment returns would be 4.0% p.a.

4.5 Member salary growth

For the defined benefit members in-force for the three-year period to 30 June 2021, salaries have increased by approximately 2.2% p.a. over the period.

For the purposes of the previous actuarial investigation, it was assumed that members' salaries would increase by 3.0% p.a.

4.6 Real rate of investment return

The key measure impacting the Plan's financial position is the real rate of investment return, i.e. the investment return over and above the rate of member salary growth. The Plan's real rate of return over the three year period has been 1.6% p.a., i.e. 3.8% investment return less 2.2% p.a. salary growth), slightly better than the 1.0% p.a. assumed at the previous valuation. This will have had a small favourable impact on the Plan's financial position.

4.7 Expenses

Over the past three years, the Plan's administration, consulting and insurance expenses have averaged [redacted] p.a., or around 2.6% of total 30 June 2021 defined benefit member salaries.

Year	Expenses
2018-19	[redacted]
2019-20	[redacted]
2020-21	[redacted]
Average	[redacted]

5 Investments

5.1 The UBS Defensive Fund

The Plan's defined benefit assets are invested wholly in the UBS Defensive Fund.

The UBS Defensive Fund's objective is to provide a total return (after management costs) in excess of its neutral asset allocation, over rolling five year periods over a full investment cycle (usually three to five years). According to OnePath, the neutral asset allocation displays average performance characteristics of CPI plus 4.5-6.5% p.a.

The Fund's long-term average exposures to growth and defensive assets are expected to be around 30% and 60% respectively of the total portfolio, with the remaining 10% to be allocated to alternative asset strategies, delivering a combination of growth and income.

5.2 Investment objectives

In my view, the Plan's investment strategy is appropriate. For an ongoing plan paying benefits linked to members' salary growth, it is appropriate to maintain some exposure to growth assets, as the plan's investment returns will then be expected to outperform measures such as AWOTE or CPI over reasonably long periods such as five years.

However, the Plan's bias towards defensive assets should reduce the potential volatility of investment returns. This should better secure the Plan's asset coverage of members' accrued benefit entitlements, and reduce the possibility of materially negative investment returns requiring substantial employer contributions to rectify.

5.3 Crediting rate policy

The Trustee sets interim and final crediting rates based on movements in the Plan's investment unit prices, which are net of allowance for investment tax and investment management fees.

I consider that the Trustee's crediting policy remains appropriate for the Plan.

5.4 Shortfall limit

For the purpose of APRA's Superannuation Prudential Standard 160, the Trustee is required to set a shortfall limit. This is the extent to which the Trustee considers that a plan can be in an unsatisfactory financial position, with the Trustee still being able to reasonably expect that, because of corrections to temporary negative market fluctuations in the value of fund assets, the Plan can be restored to a satisfactory financial position within one year.

I have been advised that the Trustee has set a shortfall limit of 100% for the Plan i.e. for the Plan to not be in breach of this limit, Plan assets need to provide at least 100% coverage of defined benefit members' defined benefit interests. In my opinion, currently there is no need to review this shortfall limit.

6 Insurance

6.1 Death and TPD benefits

For members of the defined benefit section, death and TPD benefits are fully insured under a group life arrangement. The insured portion of each member's death and TPD benefit is the excess above the member's vested benefit.

6.2 Total and temporary disability

The two category 3 members are entitled to monthly income benefits in the event of total and temporary disability. These benefits are also fully insured.

6.3 Insurance appropriate

In my view, this fully insured approach is appropriate, given the small size of the defined benefit section and the potential variability of claims experience.

7 Valuation of liabilities

7.1 Methodology

For the purpose of this valuation, I have used the aggregate funding method, which I consider appropriate for a small defined benefit plan closed to new entrants.

This method calculates the employer contribution rate required to fund members' future benefit payments, in respect of both past and future service, taking into account the Plan assets held at the valuation date. If the Plan's future experience is in line with the assumptions adopted, this contribution rate is expected to remain unchanged until the last defined benefit section member leaves the Plan.

The liabilities for projected future benefit payments are split into a component in respect of service prior to the valuation date (the past service liability) and a component in respect of service after the valuation date (the future service liability). The past service liability for each member at the valuation date has been assessed subject to a minimum of that member's vested benefit, i.e. the benefit that member would have been entitled to had he or she left the Plan at that date.

7.2 Financial assumptions

The financial assumptions used in the valuation are:

Assumption	Return (% p.a.)
Discount rate / return on assets (net of investment expenses and tax)	4.0%
Salary increases	3.0%

These are identical to the assumptions adopted for the 30 June 2018 actuarial valuation.

7.3 Demographic assumptions

I have assumed the rates of resignation, retirement, death and disablement set out in Appendix 2.

These decrement rates are based on the experience of similar corporate superannuation plans and are identical to those used in the previous actuarial investigation.

7.4 Expenses and insurance costs

Based on the Plan's recent experience, I have retained the previous valuation assumption that the Plan's administration, consulting and insurance expenses will amount to 3.5% of defined benefit members' salaries.

7.5 Superannuation Guarantee

The Superannuation Guarantee (SG) rate currently is 10.0% of Ordinary Time Earnings (OTE). The rate is expected to increase to 12% of OTE according to the schedule below:

Financial year	Rate (% of OTE)
2021/22	10.0%
2022/23	10.5%
2023/24	11.0%
2024/25	11.5%
2025/26 and subsequent	12.0%

For the purpose of the actuarial valuation, it has been assumed that the SG rate will increase as shown.

7.6 Pension benefits

Consistent with previous actuarial investigations, I have assumed that all benefits will be taken in lump sum form, since members have always elected to take lump sum benefits and the Plan currently has no pensioner members.

However, for the two category 3 members, the Plan's retirement benefits are expressed in pension form, with the Trust Deed specifying fixed commutation rates to apply if the members elect to receive their benefits in lump sum form.

I have therefore also considered the potential impact on the Plan's funding position if members were to take pension benefits. For this analysis, I have assumed:

a) An investment return of 4.5% p.a., slightly higher than the 4% p.a. assumption above, as the assets supporting pension benefits should not be subject to tax.

b) Nil pension indexation, and CPI indexation at an assumed rate of 2.5% p.a. (Under the Trust Deed, The Trustee has discretionary power to increase pensions, subject to the advice of the Actuary and the financial position of the Plan).

c) Pensioner mortality rates based on 80% of ALT2015-17 (Australian population mortality) with allowance for future mortality improvement based on the ALT 25-year factors. In my view, these mortality rates provide appropriately for the potential longevity risk of any pensioner section of the Plan.

8 Funding status

8.1 Introduction

This section examines the Plan's ability to meet defined benefit members' benefits at the valuation date. I have measured the Plan's asset coverage of the following benefits:

a) Superannuation Guarantee minimum benefits

b) Vested benefits

c) Actuarial value of accrued benefits

d) Pension benefits, and

e) Benefits on termination of the Plan.

8.2 Asset coverage of member benefits

At the valuation date, defined benefit section assets amounted to $3,451,000, and provided the following coverage of member benefit entitlements:

Benefits	Amount	Asset coverage
SG minimum benefits	[redacted]	164%
Vested benefits	[redacted]	116%
Actuarial value of accrued benefits	[redacted]	116%
Pension benefits	[redacted]	94%
Termination benefits	[redacted]	116%

In the event that Solvay terminates its participation in the Plan, the Trust Deed requires any arrears of contributions to be paid into the Plan, but does not impose any additional funding requirements. Therefore the Plan's termination benefits have been taken as equivalent to vested benefits, on the assumption that all members take lump sums, rather than pensions.

8.3 Pension benefits

If both category 3 members take their retirement benefits in non-indexed pension form, then on the assumptions adopted, the actuarial values of members' vested benefits and accrued benefits would amount to [redacted], and Plan assets of [redacted] would provide only 94% coverage, i.e. a shortfall of approximately [redacted].

If the pensions were to be indexed based on an assumed CPI rate of 2.5% p.a., the Plan's vested benefits and accrued benefits would increase further by approximately [redacted], and the Plan's asset coverage of both measures would reduce to around 75%.

9 Valuation Results

9.1 Valuation balance sheet

The results of the valuation as at 30 June 2021 can be summarised as follows:

Valuation balance sheet 30 June 2021	
Plan assets	[redacted]
Employer liabilities:	
Past service liabilities	[redacted]
Future service liabilities	[redacted]
Future expenses at 3.5% of salaries	[redacted]
less: Future member contributions	([redacted])
Total employer liabilities	[redacted]
Surplus/(Deficit)	[redacted]

The table shows that on the assumptions adopted, there is expected to be an actuarial surplus of [redacted], before allowance for any employer contributions to be paid into the Plan.

9.2 Progression since 30 June 2018

The 30 June 2018 valuation disclosed a corresponding deficit of $120,000, requiring an employer contribution rate of 3.8% of defined benefit member salaries to rectify over the lifetime of the defined benefit membership.

However, at 30 June 2018, Plan assets provided only 109% coverage of member vested benefits, and at the date of my report, the Plan's investment return had been approximately -2%. Therefore I recommended that Solvay contribute at the higher rate of 15% of salaries, which was expected to improve the Plan's asset coverage of vested benefits to around 112% by 30 June 2021.

The Plan's coverage of vested benefits was 116% at 30 June 2021, i.e. slightly better than the 112% expected. The improvement is attributable mainly to favourable real rates of investment return (1.6% p.a. compared to 1.0% p.a. assumed), and to higher than expected Solvay contributions, as for administrative convenience Solvay pays 15% contributions on bonuses, which do not form part of members' superannuation salaries.

9.3 Impact of variation in assumptions

9.3.1 Investment Returns and Salary Increases

A key valuation assumption is the difference between the assumed Plan investment return of 4.0% p.a. net of tax and investment expenses, and the salary growth rate of 3.0% p.a., i.e. a real rate of return of 1.0% p.a.

Other things being equal, if the Plan's investment return exceeds defined benefit members salary growth by more than 1% p.a., the Plan's actuarial surplus will be greater than expected. Conversely, the actuarial surplus will be lower than expected, and may become a deficit requiring additional employer funding, if the Plan's real rate of investment return is lower than expected.

The tables below illustrates the sensitivity of the valuation results to these key financial assumptions:

Investment return	Surplus/(Deficit)
3% p.a.	[redacted]
4% p.a.	[redacted]
5% p.a.	[redacted]

Salary growth	Surplus/(Deficit)
2% p.a.	[redacted]
3% p.a.	[redacted]
4% p.a.	[redacted]

These tables do not indicate the bounds of all possible outcomes. In practice, the Plan's experience may lie outside the ranges illustrated.

9.3.2 Early Retirement

Another key assumption is the defined benefit members' rates of early retirement from the Plan. The longer the members remain within the Plan, the lower the Plan's actuarial surplus because of ongoing defined benefit accruals.

I calculate that if all five members remain defined benefit members until age 65 (i.e. assuming no resignations, early retirements, or deaths), the Plan's surplus at 30 June 2021 would reduce from [redacted] to [redacted].

9.3.3 Retirees electing pension benefits

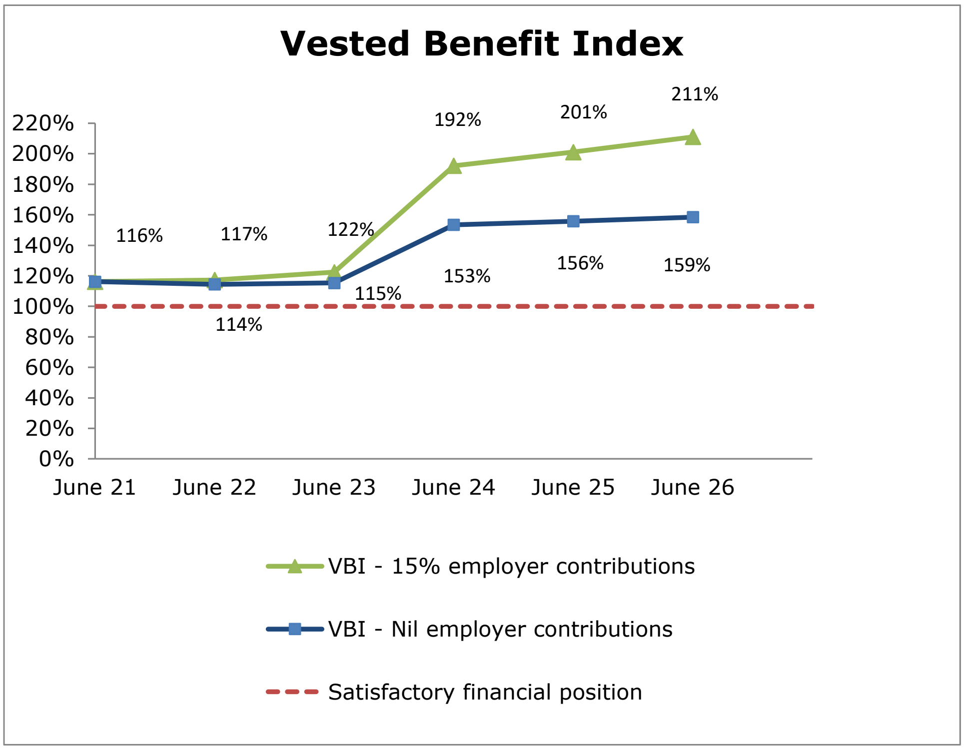
The Plan's two category 3 members are entitled to pension benefits on retirement. In the event that either or both members elect to take pensions, there would be a substantial additional lump sum contribution required from Solvay to maintain the Plan in a satisfactory financial position, and to provide adequate security for the benefits of the remaining active members.

On the valuation assumptions adopted, I estimate that if both members elect for pension benefits, there would be deficits of approximately [redacted] for non-indexed pensions, or [redacted] for CPI-indexed pensions. With allowance for contributions tax, this would require additional Solvay contributions of approximately [redacted] or [redacted] respectively.

9.4 Vested benefit projections

The graph below summarises the Plan's projected asset coverage of member vested benefits over the five-year period from the valuation date, on the valuation assumptions adopted. The projections allow for an estimated -0.7% Plan investment return between 30 June 2021 and 31 October 2021.

I have shown results on two bases, assuming employer contributions towards the defined benefit section continue at current rates, or reduce to nil effective 1 February 2022.



By 30 June 2024, the Plan will have no more than two defined benefit members, hence the discontinuity in the index as surplus assets cover reduced total vested benefits.

The graph illustrates that on the assumptions adopted, and on either contribution basis, Plan assets are expected to provide in excess of 110% coverage of member vested benefits over the lifetime of the defined benefit membership.

10 Material risks

10.1 Introduction

Professional Standard PS 400 issued by the Institute of Actuaries of Australia requires the actuary to consider and document any material risks to the Plan associated with the actuarial assumptions, or related to the ongoing actuarial management.

10.2 Investment return

The key assumptions made in this report are the investment return assumption of 4.0% p.a. for the Plan's investment in the UBS Defensive fund, and the salary growth assumption of 3% p.a., i.e. an assumption that the Plan's real investment return will be 1.0% p.a.

If the Plan's investment returns are lower than expected, or salary growth higher than expected, Solvay may need to increase its contributions to the Plan to fund members' future benefits.

10.3 Pension benefits

For the two Category 3 members, the Plan's retirement benefits are expressed in pension form, with the Trust Deed specifying fixed commutation rates to apply if the members elect to receive their benefits in lump sum form.

I understand that in practice, members have always elected to take lump sum benefits, and the Plan currently has no pensioner members.

However, in the event that either or both of these members elect to take pensions, there would be a substantial additional lump sum contribution required from Solvay to maintain the Plan in a satisfactory financial position, and to provide adequate security for the benefits of the remaining active members.

On the valuation assumptions adopted, I estimate that if both members elect for pension benefits there would be deficits of approximately [redacted] for non-indexed pensions, or [redacted] for CPI-indexed pensions. With allowance for contributions tax, this would require additional Solvay contributions of approximately [redacted] or [redacted] respectively, if the pension benefits were to be provided by the Plan.

If members do elect to take their retirement benefits in pension form, the Trustee could consider purchasing annuities to match the characteristics of the retirement pension otherwise payable from the Plan. However, in practice I would expect the cost of a third party annuity to exceed the actuarial value of the pension, because of the annuity provider's allowance for profit and contingencies.

11 Recommendations

11.1 Employer contribution rates

I recommend that from 1 February 2022, Solvay should contribute to the Plan at the following rates:

- Nil% of salaries towards the defined benefit section, plus
- 3% of salaries towards members' 3% Accounts in the accumulation section of the Plan, plus
- if any retiree should elect to take their benefits in pension form, an additional lump sum assessed at that time.

I recommend that all Plan expenses can continue to be met from Plan assets.

On the valuation assumptions adopted, employer contributions at this level are expected to be sufficient to maintain the Plan's asset coverage of members' vested benefits above 110% over the five year period following the valuation date.

11.2 Next actuarial review

The next actuarial review of the Plan will be due as at 30 June 2024.

I understand that the Trustee monitors the Plan's defined benefit asset coverage of vested benefits on a monthly basis, and will notify me if this measure falls below 110%.

The Plan's financial position should also be reviewed if any member elects to take a pension benefit on retirement. In this event, it is likely that a substantial additional lump sum employer contribution will be required to maintain the Plan in a satisfactory financial position, and to ensure that Plan assets provide adequate security for remaining members' benefits.

If the Plan does start paying pension benefits, there will also be a legislative requirement for annual actuarial investigations.

Appendix 1. Benefit Summary

Benefit Summary	
All Categories:	
Normal Retirement Date (NRD)	65th birthday
3% Account (maintained in accumulation section)	Members receive the balance of their 3% Account (based on accumulated employer contributions of 3% of salary, less allowance for tax) on leaving the Plan for any reason.
Voluntary Accounts (maintained in accumulation section)	Member voluntary contribution and rollover accounts (if any) are payable on exit from the Plan for any reason.
Surcharge Account	The member's liability for contributions surcharge is maintained as a negative accumulation account within the defined benefit section of the Plan.
Category 1:	
Final Average Salary (FAS)	Average of the member's five highest salaries at the Review Dates (1 July) prior to the member's leaving service date. On early retirement, death or TPD, FAS is calculated assuming salary at previous Review Date continues up to NRD.
Member contribution rate	5% of salary
Normal Retirement Benefit	A lump sum benefit of 12.5% of FAS for each year of service.
Early Retirement Benefit (from age 55)	Normal Retirement Benefit based on actual service, reduced by 0.25% for each complete month that date of leaving service precedes NRD.
Death Benefit	Prospective Normal Retirement Benefit, assuming member remains in service to NRD.
Total and Permanent Disablement (TPD) benefit	Prior to age 60: Death Benefit After age 60: Early Retirement Benefit
Withdrawal and Retrenchment Benefit	Twice the member's contribution account balance

Benefit Summary	
Category 3	
FAS	Average of the member's three highest salaries over the ten Review Dates (1 July) prior to the member's leaving service date.
Member contribution rate	Nil
Normal Retirement Benefit	A pension benefit of 1.5% of FAS for each year of service:
Early Retirement Benefit (from age 55)	Normal Retirement Benefit based on service and FAS at date of leaving service, reduced by 1/6% for each complete month that date of leaving service precedes NRD.
Commutation Factors	10 + 0.025n, where n is the number of complete months that the date of leaving service precedes NRD.
Death Benefit	Greater of:
	a) Ten times the prospective Normal Retirement Benefit pension, b) Three times FAS, c) The Early Retirement Benefit, if eligible, commuted to a lump sum.
TPD Benefit	Prior to age 60: Death Benefit After age 60: Early Retirement Benefit, commuted to a lump sum.
Withdrawal and Retrenchment Benefit	Normal Retirement Benefit (commuted to a lump sum using NRD commutation factors) based on actual service and prospective FAS assuming salary at previous Review Date continues up to NRD, reduced by 1/6% for each complete month that date of leaving service precedes NRD.

Appendix 2. Demographic assumptions

Retirement rates: 10% p.a. over the ten years prior to Normal Retirement Date.

Resignation rates (per 10,000 members)

Age	Resignations
50	250
51	200
52	150
53	100
54	50
55	0

Death and TPD rates (per 10,000 members)

Age	Deaths	TPDs
50	30	21
55	47	41
60	72	60

Appendix 3. AASB1056 disclosures

This statement is provided to assist the Trustee in preparing its AASB1056 disclosures. It has been prepared in accordance with Institute of Actuaries Professional Standard 402, and Practice Guideline PG499.06.

For the purposes of AASB1056, the following amounts have been determined as at 30 June 2021 in respect of members of the defined benefit section of the Plan:

[redacted]	
Fair value of assets	[redacted]
Member liabilities	[redacted]
Value of vested benefits	[redacted]

The key assumptions used are investment returns of 4.0% p.a., and member salary growth of 3% p.a. These are best estimate assumptions, and the investment return assumptions are based on the investment objectives of the Plan.

Member liabilities have been calculated as the actuarial value of members' accrued benefits, i.e. the total of the present values of expected future benefit payments attributable to service that accrued prior to the valuation date. A vested benefit minimum has not been applied.

The table below illustrates the sensitivity of the member liabilities to variations in the key assumptions:

Investment return	**Member liabilities**
3% p.a.	[redacted]
4% p.a.	[redacted]
5% p.a.	[redacted]

Salary growth	**Member liabilities**
2% p.a.	[redacted]
3% p.a.	[redacted]
4% p.a.	[redacted]

Appendix 4. Short report for members

The following statement has been prepared for compliance with Regulation 9.31 of the Superannuation Industry (Supervision) Act 1993.

I have carried out an actuarial valuation of the Solvay Interox Superannuation Plan, a sub-plan of the Retirement Portfolio Service, at 30 June 2021 and certify the following:

a) At the valuation date, the value of Plan assets available to meet the liabilities of the defined benefit section of the Plan was [redacted].

b) The value of the Plan assets was sufficient to meet the value of the liabilities in respect of accrued benefits at the valuation date. I expect the Plan's assets to remain sufficient to cover the liabilities in respect of accrued benefits over the three-year period following the valuation date.

c) Based on my previous actuarial recommendations, Solvay currently is contributing at the rates of 15% of salaries towards the defined benefit section of the Plan, and 3% of salaries towards members' 3% Accounts in the accumulation section of the Plan.

   I recommend that from 1 February 2022, Solvay should contribute at the rates of:

   - Nil% of salaries towards the defined benefit section of the Plan, plus
   - 3% of salaries towards members' 3% Accounts in the accumulation section of the Plan, plus
   - if any retiree should elect to take their benefits in pension form, an additional lump sum assessed at that time.

d) All required Funding and Solvency Certificates have been issued for the Plan. I believe it is likely that an actuary will be able to certify the solvency of the Plan in any Funding and Solvency Certificate that may be required during the three-year period following the valuation date.

e) At the valuation date the Plan was in a satisfactory financial position (as defined in SIS Regulation 9.04). I expect the Plan to remain in a satisfactory financial position during the three-year period following the valuation date.

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