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GlencoreSuper –
Coal Section
Actuarial Investigation as at 31 December 2021

Report date: 29 June 2022

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29 June 2022

NULIS Nominees (Australia) Ltd
Level 8, 347 Kent Street
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Attention: Andrew Nunn

GlencoreSuper – Coal Section – Actuarial investigation as at 31 December 2021

We are pleased to present the actuarial investigation of the Coal Section ("the Section") of GlencoreSuper ("the Plan"), a sub-plan in the Plum Division of the MLC Super Fund ("the Fund") as at 31 December 2021 to NULIS Nominees (Australia) Ltd ("the Trustee").

Please call Diane Somerville on (02) 9322 7636 if you would like to discuss.

Yours sincerely,

Diane Somerville
Fellow of the Institute of Actuaries of Australia

Andrew Boal
Fellow of the Institute of Actuaries of Australia

Contents

1 Executive summary

1.1 Introduction

NULIS Nominees (Australia) Ltd has requested that Deloitte Actuaries & Consultants Limited ("Deloitte") conduct an actuarial investigation of the Coal Section ("the Section") of GlencoreSuper ("the Plan"). The Plan is a sub-plan in the Plum Division of the MLC Super Fund ("the Fund"), having been successor fund transferred from the Plum Superannuation Fund on 1 July 2016. This report presents the results of the actuarial investigation of the Section as at 31 December 2021.

The purposes of this report are to:

- Examine the sufficiency of the assets in relation to members' accrued benefit entitlements at the valuation date;
- Determine the employer contribution rate required after the valuation date;
- Satisfy the requirements of the Superannuation Industry (Supervision) Act and Superannuation Prudential Standard 160;
- Comment on any other matter considered relevant or as required under relevant Professional Standards of the Institute of Actuaries of Australia; and
- Comment and advise on any other matter considered relevant.

This report should not be used for any other purpose without the consent of the actuary.

This report has been prepared by Diane Somerville and Andrew Boal, of Deloitte Actuaries & Consultants Limited, in accordance with the Professional Standards, Guidance Notes and Practice Guidelines (in particular Professional Standard 400) issued by the Institute of Actuaries of Australia.

1.2 Financial position

Superannuation Prudential Standard (SPS) 160 requires statements to be made in respect of two measures of the financial position of the Section, these measures being related to the current and projected "vested benefits" and the present value of "accrued benefits" of members.

This investigation is concerned primarily with the valuation of the Section's assets and liabilities in respect of members' defined benefits only. The value of accumulation member liabilities is directly related to the value of the underlying assets and is not exposed to the same funding risks as defined benefit liabilities. Therefore, the value of accumulation members' assets and liabilities, and the accumulation benefits of defined benefit members where the members have an option to select how such monies are invested, are excluded from this investigation.

Funding levels for defined benefits

In respect of the defined benefit liabilities, the funding ratios at 31 December 2021 are shown in the table below:

Funding Measure	Defined Benefit Assets ($'000)	Defined Benefit Liabilities ($'000)	Funding Ratio
Vested Benefits	3,768	1,907	198%
Value of Accrued Benefits[1]	3,768	1,907	198%

[1] Minimum of vested benefits at an individual member level have been applied.

The assets backing defined benefits were sufficient to meet the total vested benefits and the total of the present value of accrued benefits for defined benefit members at the valuation date.

The financial assumptions adopted for the purposes of this investigation are long term future investment returns of 6% p.a. (net of tax and investment fees) and assumed salary increases of 3% p.a.

Events since 31 December 2021

In the period since 31 December 2021, investment markets have been weaker. Based on information provided by the Section's administrator, the Section's funding ratio for Vested Benefits (the Vested Benefits Index or VBI) fell slightly to 193% as at 31 March 2022, driven by a positive smoothed crediting rate applied to member accounts whilst the Section assets suffered falls in investment returns in that quarter. Also, for the period between 31 March 2022 and 31 May 2022, the Section's assets earned approximately -2.2%, which we expect will have resulted in the Vested Benefits Index falling slightly further but remaining above 180%.

We have considered the impacts of investment market movements since 31 December 2021 to the extent possible when considering our contribution recommendations. This is discussed further later in the report.

Superannuation guarantee and technical insolvency

The Employer's Superannuation Guarantee obligation is met in full for all members by the minimum benefits provided under the Section. The current Benefit Certificate for the period from 1 April 2019 to 31 March 2024 was issued on 25 June 2019.

The current Funding and Solvency Certificate (issued on 25 June 2019) is effective from 1 April 2019. The purpose of the Funding and Solvency Certificate is to specify the required Employer contributions needed to fund the Minimum Requisite Benefits used to offset the Superannuation Guarantee Charge. Pursuant to the Superannuation Industry (Supervision) Act (the SIS Act), a superannuation plan is "technically solvent" if the net value of its assets exceeds the minimum Superannuation Guarantee benefits.

At 31 December 2021, the Section was solvent on this basis and, based on the assumptions in relation to vested benefits, we expect that an actuary will be able to certify the solvency of the Section at all times during the three years to 31 December 2024.

It is expected that a new Benefit Certificate and a new Funding and Solvency certificate will be issued following completion of this investigation.

Investments

The Trustee has developed formal objectives and a policy for the investment of the Section's assets. These objectives and policy are summarised in the Product Disclosure Statement and other information available to employers and members.

Further, the Trustee has agreed the investment policy in respect of those assets which are designated to support the defined benefit liabilities.

We have reviewed the Section's investment policy in light of the funding method adopted and the nature of the Section's liabilities. In our opinion the Section's current investment policy remains appropriate, provided that the Employer recognises and accepts the potential variability in returns and the resulting impact on contribution requirements.

Regulatory requirements

Paragraph 23 of SPS 160 requires certain information to be included in actuarial reports. A summary of this information is included in Appendix C to this report. The Trustee may choose to provide this summary to any members who request details of the actuarial valuation, although members are entitled to request a copy of the full report.

The Trustee has set the shortfall limit at a level of 100% for the Section and we confirm that the VBI of the Section was above the Trustee's shortfall limit as at 31 December 2021 and in the period since. We consider that this shortfall limit remains appropriate given the current and target asset allocation for the Section and the nature of the liabilities.

The Section is not self-insured and there are no specific SPS 160 requirements on the Trustee for annual attestation of the validity (or otherwise) of continuing self-insurance.

Insurance

The valuation shows that the current insurance arrangements in respect of death and total and permanent disablement benefits are adequate for the defined benefits section of the Section.

The total and temporary disablement benefits are fully insured in the Section. This is appropriate in our opinion as the Section does not accrue reserves in respect of this benefit.

1.3 Recommendations

Previous investigation

The previous actuarial investigation was conducted as at 31 December 2018. The report recommended the following:

- The Employer contributes at least nil (0%) for defined benefit members, for the period from 1 January 2019; plus
- the Employer may also choose to meet 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf;
- additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional payment would reflect the Section's financial position and allow also for the payment of contributions tax):

  The following formula should be used for calculating top-up contributions:

  Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

  - Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
  - Benefit = the total benefit payable to the member before application of any taxes payable;
- the Employer makes such other "top up" payments as may be advised from time to time by the Section's actuary.

In addition, the report recommended that:

- the Section's financial position is monitored on a quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain a Vested Benefits Index of at least 100%; and

- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

Current investigation

Based on the approach and assumptions set out in this report, the recommended Employer contribution rate for defined benefit members over the period from 1 January 2022 until completion of the actuarial investigation as at 31 December 2024 is:

- at least nil (0%) for defined benefit members, for the period from 1 January 2022; plus
- the Employer also meets 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf;
- additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional payment would reflect the Section's financial position and allow also for the payment of contributions tax):

  The following formula should be used for calculating top-up contributions:

  Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

  - Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
  - Benefit = the total benefit payable to the member before application of any taxes payable.

We also recommend that, subject to any administrative or legal constraints, the Trustee allow the Employer to meet up to $300,000 p.a. (net of tax) of employer contributions in respect of accumulation members in the Plan from the Section's surplus assets, for a period of up to three (3) years, subject to annual confirmation from the Section actuary that this remains appropriate (or alternative contribution holiday arrangements as agreed between the Trustee and the Employer, subject to confirmation from the Section actuary that they are broadly equivalent to the above recommendation).

In addition, we recommend that:

- the Section's financial position is monitored on a quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain a Vested Benefits Index of at least 100%; and
- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

Next valuation

The next valuation is required to be conducted at an effective date no later than 31 December 2024.

Reliances and Limitations

We have relied on the accuracy and completeness of all data and other information (qualitative, quantitative, written and verbal) provided to us for the purpose of this report. We have not independently verified or audited the data but we have reviewed it for general reasonableness and consistency. It should be noted that if any data or other information is inaccurate or incomplete, our advice may need to be revised.

This report has been prepared for the sole use of the Trustee and Employer for the purpose stated earlier. No other use of, or reference to, this report should be made without prior written consent from Deloitte, nor should the whole or part of this report be disclosed to any other person. The report should be considered as a whole. Members of Deloitte staff are available to answer any queries, and the reader should seek that advice before drawing conclusions on any issue in doubt.

Diane Somerville
Fellow of the Institute of Actuaries of Australia

Andrew Boal
Fellow of the Institute of Actuaries of Australia

29 June 2022

2 Background

2.1 History

The Section commenced with defined benefit ("DB") members joining the Plan from 19 April 2006 as a consequence of the windup of the Previous Plan. We understand all defined benefit members' benefit entitlements under the Previous Plan were transferred to the Plum Superannuation Fund, a predecessor fund of the MLC Super Fund. The Plum Superannuation Fund was transferred to the MLC Super Fund on a successor fund basis on 1 July 2016, and the Plan became a sub-plan in the Plum Division of the MLC Super Fund (“the Fund”).

The Employer has advised the Section is closed to new defined benefit members and all new employees joining the Section are provided with accumulation benefits.

As a sub-plan of the MLC Super Fund, the Plan is a resident regulated fund and a complying fund for the purposes of the Superannuation Industry (Supervision) Act 1993 (the SIS Act). The Section therefore qualifies for concessional tax treatment.

2.2 Governing documents

The MLC Super Fund was established under a Trust Deed dated 9 May 2016 (as amended from time to time). The members and assets of the Plum Superannuation Fund were transferred into the MLC Super Fund on a successor fund basis from 1 July 2016. The operation of the Section is governed by the Trust Deed as subsequently amended and by the Participation Schedule dated 13 April 2006 (as amended) between the Employer and PFS Nominees Pty Limited as the trustee of the Plum Superannuation Fund, which was novated across to the Trustee as part of the successor fund transfer.

A summary of the main benefit provisions for the Section is included as Appendix A to this report.

2.3 Purpose of the investigation

Current legislation requires that an actuarial investigation be undertaken at least every three years. Where a defined benefit fund is paying defined benefit pensions, legislation requires an actuarial investigation to be undertaken annually, unless APRA determines that less frequent investigations (at intervals determined by APRA, between 1 year and 3 years) are permitted for that fund.

The purpose of this investigation is to:

- Examine the sufficiency of the assets in relation to members’ accrued benefit entitlements at the valuation date;
- Determine the recommended employer contributions required after the valuation date;
- Satisfy the requirements of the Superannuation Industry (Supervision) Act and SPS 160;
- Comment on any other matter considered relevant or as required under relevant Professional Standards of the Institute of Actuaries of Australia; and
- Comment and advise on any other matter considered relevant.

Current legislation also requires that the investigation consider the solvency and financial position of the Section, both as at the investigation date and during the ensuing three years.

This report is provided to the Trustee of the Plan and the Employer.

2.4 Key risks

There are a number of risks relating to the operation of the Section. The more significant financial risks for the Section are:

- ***Investment risk***

  Investment risk is borne by the Employer. The risk is that investment returns will be less than assumed and the Employer will need to increase contributions to offset this shortfall.

  `For example, the projection sensitivity analysis shown in section 7.4 of this report estimated that if the assumed future investment return was reduced by 1% p.a. with no change to other assumptions, then the Section's net surplus would be about $177,000 lower over the period to 31 December 2026.

  We note that the actual investment return achieved by the Section in the future may vary (positively or negatively) from the rate assumed in this investigation by much more than the negative 1% p.a. in the above sensitivity scenario.

- ***Salary growth risk***

  Salary growth risk is borne by the Employer. This risk is that wages or salaries (on which future benefit amounts will be based) will increase more rapidly than anticipated, increasing benefit amounts and thereby requiring additional contributions from the Employer.

  For example, the sensitivity analysis shown in section 7.3 of this report estimated that if the assumed future salary increase rate was increased by 1% p.a. with no change to other assumptions, then the Section's net surplus (before allowing for vested benefit minimums) would reduce by about $60,000.

- ***Liquidity risk***

  Liquidity risk is borne by the Employer. The expected average term of the defined benefit liabilities is approximately 5 years. Benefit payments will be paid in lump sum form. Accordingly, it is expected that benefit payments in coming years will exceed net contributions to the Section. This means that there is a need for the Trustee to ensure that the Section's investments provide a suitable level of liquidity to meet projected benefit payments.

  We note that the Section's assets are invested in an investment option together with the assets of many other funds and members, both accumulation and defined benefit based. Therefore, we expect that the current investment policy will provide an adequate level of liquidity for the Section.

- ***Legislative risk***

  Legislative risk is borne by the Employer. The risk is that legislative changes could be made which increase the cost of providing the defined benefits – for example, an increase in the rate of taxation on superannuation funds or an increase in the Superannuation Guarantee (SG) rate.

  Legislation has been passed to increase the SG rate from 10% to 12% progressively over the period from July 2021 to July 2025, with the next increase occurring with effect from July 2022. The benefits provided to active defined benefit members are subject to a minimum of the Minimum Requisite Benefits defined in the Section's Benefit Certificate. This may increase the benefits payable to some defined benefit members, and therefore increase the cost of providing the defined benefits.

The Risk Management Strategy and Risk Management Policy of the MLC Super Fund should identify the full range of risks faced by the Trustee in respect of the Fund as a whole and also in respect of its employer plans including the Section.

2.5 Previous investigation

The previous actuarial investigation of the Section was effective 31 December 2018 and was undertaken by Diane Somerville and Geoff McRae of Deloitte Actuaries & Consultants Limited, and the results set out in a report dated 25 June 2019.

The report on the previous actuarial investigation recommended the following:

- the Employer contributes at least nil (0%) for defined benefit members, for the period from 1 January 2019; plus
- the Employer may also choose to meet 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf;
- additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional payment would reflect the Section's financial position and allow also for the payment of contributions tax):

  The following formula should be used for calculating top-up contributions:

  Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

  - Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
  - Benefit = the total benefit payable to the member before application of any taxes payable;
- the Employer makes such other "top up" payments as may be advised from time to time by the Section's actuary.

In addition, the report recommended that:

- the Section's financial position is monitored on a quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain a Vested Benefits Index of at least 100%; and
- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

2.6 APRA Prudential Standards

Superannuation Prudential Standard 160 (Defined Benefit Matters) ("SPS 160") deals with a range of matters affecting defined benefit funds.

SPS 160 requires a Registered Superannuation Entity ("RSE") licensee (that is, a trustee) of a defined benefit fund to set a shortfall limit, and to determine and implement a monitoring process to detect when the fund has, or may have, breached the shortfall and/or moved into an unsatisfactory financial position. If the shortfall limit is, or may be, breached, SPS 160 outlines a range of actions that will need to be performed, which may include conducting an actuarial investigation.

As at 31 December 2021, the Section was in a satisfactory financial position. It is expected that the Section will maintain a satisfactory financial position over the period to 31 December 2024. Further details regarding future projections of the Section's financial position are shown in Section 7 of this report.

The Trustee has set the shortfall limit at a level of 100% for the Section and we confirm that the VBI is in excess of the shortfall limit as at 31 December 2021 and in the period since. We consider that this shortfall limit remains appropriate given the current and target asset allocation for the Section and the nature of the liabilities.

The Section is not self-insured and there are no specific SPS 160 requirements on the Trustee for annual attestation of the validity (or otherwise) of continuing self-insurance.

3 Data

3.1 Current data

We have obtained details of the membership of the Section at 31 December 2021 from the Administrator of the Section, MLC Wealth Limited ("the Administrator"). The details are summarised below. At the valuation date there were 2 active defined benefit members with total annual salaries of $332,013.

Category	Number of active members	Average Age (years)	Average Service (years)	Total Annual Salaries ($)	Average Annual Salary ($)
XSTS	1	58.8	30.6	***	***
XSTX	1	61.4	31.8	***	***
Total	**2**	**60.1**	**31.2**	**332,013**	**166,007**

Note: Individual salary figures have been redacted for privacy reasons.

We have reconciled the movements in the defined benefit membership between 31 December 2018 and 31 December 2021 as follows:

Category	Number of members at 31 December 2018	Exits during period	Number of members at 31 December 2021
XSTS	2	(1)	1
XSTX	1	0	1
Total	**3**	**(1)**	**2**

One member has exited the Plan since 31 December 2018, representing a decrease in membership of 33%.

We placed checks on the data to ensure that all dates, salaries and other amounts were reasonable. We are satisfied that the data provided is reasonable and correct.

4 Assets

4.1 Asset information

Assets and cash flow information was provided to us by the administrator, MLC Wealth Limited, for the purposes of this investigation.

We were provided with the value of assets held as at 31 December 2021 and a reconciliation of cash flows from the previous investigation date (31 December 2018) up to 31 December 2021.

As the Section is a sub-plan in the Plum Division of the MLC Super Fund, a separate set of financial statements is not prepared for the Section. The asset information for the Section is therefore not separately audited.

We are satisfied that the information provided appears to be correct based on our knowledge of the Section.

4.2 Net market value

The net market value of these assets was advised to be $3,767,670 as at 31 December 2021. We have therefore used this value in our valuation.

We have reviewed the asset and transaction details provided by the Administrator and we are satisfied they are appropriate for use in this investigation.

4.3 Investment strategy

The Trustee has developed formal objectives and a policy for the investment of the MLC Super Fund's assets. These objectives and policy are summarised in the Product Disclosure Statement and other information available to employers and members.

Further, the Trustee has agreed the investment policy in respect of those assets which are designated to support the defined benefit liabilities of the Plan.

The general aim of the investment strategy of the Section is to achieve capital and income growth, while minimising the risk that members' benefits will not be adequately covered, through asset diversification and the use of professional fund managers.

The assets backing defined benefit members are invested in the Active – Moderate portfolio (previously called JANA Moderate).

The benchmark asset allocation of the Active – Moderate portfolio includes approximately 68% 'growth' assets (equities, property, private equity and alternatives) and 32% 'defensive' assets (fixed interest, cash and infrastructure). It is shown in the table below.

Asset Class	Benchmark Allocation (%)
Equities	53%
Property	6%
Private equity	5%
Alternatives	4%
Infrastructure	6%
Fixed interest	19%
Cash	7%
Total	**100%**

Based on information received from the Administrator, we understand that the Section's actual allocation was reasonably close to the benchmark allocation as at 31 December 2021.

We have reviewed the Section's investment policy in light of the funding method adopted and the nature of the Section's liabilities.

The overall proportion of assets invested in "growth" assets (approximately 68%) is similar to other superannuation funds of a similar size. Therefore, in our opinion, the current investment strategy is appropriate at this time, provided that the Employer recognises and accepts the potential variability in returns and the resulting impact on contribution requirements.

Notwithstanding the above, the Trustee and Employer should be aware that adoption of such a "growth" strategy is accompanied by an increased level of risk compared to other less "aggressive" approaches. Continuation of the strategy in respect of the Section's defined benefit members requires regular monitoring of future investment returns.

4.4 Investment performance

During the period to 31 December 2021 the rate of return earned on the Section's assets net of tax and investment management fees were estimated to be:

Year	Earning rate (% p.a.)
2021	14.4%
2020	3.2%
2019	13.8%
Average annual rate	**10.4%**

Over the 3 years to 31 December 2021, the Section's actual earnings rate was 10.4% p.a.

In the period from 1 January 2022 to 31 May 2022 the Section assets earned approximately -3.4%. We consider the impacts of investment performance in the period since 31 December 2021 on our contribution recommendations later in this report.

4.5 Crediting rate policy

Consistent with past practice, the Declared Rates of Interest have been calculated based on the average of the earning rates of the GlencoreSuper Plan, i.e. excluding the GlencoreSuper - Coal Plan, and the same declared rates and interim rates are applied to both the GlencoreSuper Plan and the GlencoreSuper - Coal Plan.

We note that both the GlencoreSuper Plan and the GlencoreSuper - Coal Plan are wholly invested in the Active – Moderate Portfolio, and therefore they can be expected to earn similar rates (other than slight differences due to cashflow timing).

With the provision of six (6) monthly Member Statements the Administrator requested, on behalf of the Trustee, that this arrangement should allow for the use of Declared Rates of Interest for the six (6) months to 31 December each year that reflect the three (3) year average earning rate to that date. The Interim Rates of Interest for the next six (6) months are set to be equal to the most recent Declared Rates of Interest.

Further, it was requested that the Declared Rates of Interest for the six (6) months to 30 June each year should be determined in such a way that the Declared Rates of Interest for the twelve (12) months to 30 June each year were effectively the same as if the previous twelve (12) month basis (being a three (3) year average basis to 30 June each year) had continued to apply.

The adjusted rates of interest are to be calculated with a 0.3% deduction from the standard rates of interest.

During the period to 31 December 2021 the adjusted declared rates applied to defined benefit members' accounts were as follows:

Year	Adjusted declared rate (% pa)
2021	9.9%
2020	3.1%
2019	9.7%
Average annual rate	**7.6%**

Over the 3 years to 31 December 2021, the Section's adjusted declared rate was 7.6% p.a. on average. Therefore, over the inter-valuation period, the rate of actual investment earnings was higher than the rate of interest credited to defined benefit members' accounts, due to the operation of the crediting rate policy.

For the period from 1 January 2022 to 31 May 2022, the adjusted declared rate for the Section is expected to be a low positive rate for the period, compared to an actual earned rate of -3.4%.

We have reviewed the current approach to crediting interest to defined benefit member's account balances in the Section in light of the nature of the Section's liabilities, and in our opinion this remains acceptable.

4.6 Nature of liabilities

The defined benefit liabilities of the Section primarily reflect a combination of salary growth, member service and movements, the aging of the workforce, and the declared crediting rates. Also important is the level of the minimum Superannuation Guarantee accounts of members. The supporting assets however depend on:

- The amount of employer and member contributions; and
- The level of investment returns over time.

Most critical is the fact that the defined benefit liabilities are not directly linked to the investment returns.

In this case it is the employer who bears the net effect of investment risk. The level of employer contributions depends in part on the level of investment returns achieved.

Note that in the case of member accumulation accounts, there is a direct link between the investment return and the value of the member account, and hence the employer does not carry investment risk in respect of those accounts.

An investment strategy that is framed to take a long term view will often adopt relatively high levels of growth assets (property and equity investments) in order to:

- Secure attractive long term investment returns; and
- Provide an opportunity for capital appreciation and dividend growth, which gives some protection against inflation (as benefits are linked to salary growth which is also influenced by inflation).

Historically, growth assets have provided higher investment returns over medium to longer time periods than defensive assets (bonds and cash). However, these returns have also been more volatile exposing the Section to a greater risk of a fall in the value of assets, as was experienced during the Global Financial Crisis.

Some funds hold a reserve as a buffer against the likely fluctuation in asset values. The size of the required reserve will depend on the degree to which the employer is willing and able to accept short term variations in contributions as part of underwriting the defined benefits of the fund.

The concern about the volatility in asset values has led some companies to adopt more conservative investment policies. While this may reduce short term fluctuations in asset values, it is also likely to reduce long term returns and hence result in increased employer contributions in the long term.

In summary, a balance needs to be achieved between these short term and long term considerations in funding the defined benefit liabilities.

The valuation report assumes the current investment strategy will be retained by the Trustee in respect of defined benefit liabilities. We confirm that, in our opinion, the current investment strategy is appropriate for the long term, provided that the employer recognises and accepts the potential variability in returns and the resulting impact on contribution requirements.

5 Valuation method and assumptions

5.1 The valuation process

To carry out an actuarial valuation, it is necessary to decide on:

- The funding method to be adopted;
- The value of the assets for the purposes of long term assessment; and
- The assumptions as to the factors which will affect the cost of the benefits to be provided by the Section in the future.

5.1.1 Funding method

A funding method is a systematic basis for meeting the cost of benefits over the years of operation of the Section. It recognises that:

- a member's benefit entitlements should be funded as uniformly as possible over his or her working lifetime; and
- the assets of the Section should cover the total benefits which members would reasonably expect if they left the Section.

This valuation has been carried out using the "Attained Age Normal" funding method, which is the same method used for the previous investigation.

This method separately identifies the Employer contribution rate required to meet the cost of providing current members with benefits in respect of:

- future membership of the Section (the "Employer normal contribution rate"); and
- past membership of the Section that is not fully funded as at the valuation date (the "Employer additional contribution rate").

Where a deficit exists as at the valuation date – i.e. the value of the Section's past membership liabilities exceeds the value of the Section's assets – the additional contribution rate will be positive and will increase the total employer contribution rate. Conversely, where a surplus exists as at the valuation date, the additional contribution rate will be negative and will reduce the total employer contribution rate required.

In addition, for this valuation we have adopted a target of 100% of the members' vested benefits, consistent with the requirements of SPS 160.

Given the Section is closed to new defined benefit members I believe the Attained Age Normal Method is an appropriate method to adopt for this investigation. It was used here because it provides a future contribution rate that:

- is relatively simple to understand;
- is relatively stable over time; and
- limits the retention of excessive assets within the Section.

The important point is that there is a direct and transparent link between employer contributions and the security afforded to member benefits by the accumulated assets held in the Section on their behalf. From the employer's perspective there is greater clarity about the logical underpinning behind the contribution recommendation, the Section's current financial position, and the Section's financial objectives.

The choice of method does not directly affect the cost of benefits provided by the Section, which depends upon the Section's actual experience in future years. All funding methods are expected to produce the same total cost of benefits with the choice of method determining the "pace" at which such costs are met by the Employer.

5.1.2 Value of assets

For the purposes of this valuation, we have used an asset value of $3,767,670 as at 31 December 2021. We are satisfied that this value is appropriate.

5.2 Section experience

It is important when setting the valuation assumptions to examine the past experience of the Section to see whether the previous assumptions have been borne out in practice. A summary of the major items of experience over the period to the investigation date is given in the following paragraphs.

5.2.1 Financial assumptions

5.2.1.1 Investment return

Over the period since the previous investigation, the Section earned 10.4% p.a. on average compared to the assumption in the previous valuation of 6.25% p.a. This has had a positive effect on the financial position of the Section.

For this valuation we have assumed long term future investment returns of 6.0% p.a. (net of tax and investment management fees). This assumption takes into account the investment strategy of the Trustee with respect to assets supporting the defined benefit liabilities. This rate reflects the current long term earnings expectations of the major asset classes in which the defined benefit assets of the Section are invested.

5.2.1.2 Salary increases

Over the period covered by this report, overall salary increases have been approximately 4.5% p.a. for defined benefit members who were in the Section at both 31 December 2018 and 31 December 2021. This is higher than the 3.0% p.a. assumed in the 31 December 2018 valuation. This has had a negative effect on the financial position of the Section.

Based on input from the employer regarding expected salary increases over the next few years, and taking into account that the overall salary increases in the preceding three year period ended 31 December 2018 were approximately 2.9% p.a., we have retained a salary increase assumption of 3.0% p.a. for this investigation.

5.2.1.3 Net real return

The difference between the level of investment returns and salary increases is important as it links the growth in assets to the growth in salary-related liabilities.

Over the investigation period, the difference between the actual investment return and the rate of salary growth has been in the order of 5.9% per annum. The “gap” assumed in the 31 December 2018 valuation was 3.25% per annum. Since this is lower than the actual “gap”, the combined effect of the Section’s investment and salary experience has had a positive effect on the financial position of the Section.

For this valuation, the gap between the assumed rate of future investment earnings and the assumed rate of future salary increases is 3.0% p.a..

5.2.2 Non-financial assumptions

Considering the size of the membership, a full analysis of the experience in respect of the rates at which members left service due to retirement, resignation, death or total and permanent disablement (TPD) would not produce statistically credible results.

For the purpose of this valuation we have not undertaken a detailed analysis of decrement experience over the period from 1 January 2019 to 31 December 2021. The size of the membership does not allow enough data to conduct a meaningful statistical analysis.

However, we have instead conducted a simplified experience analysis by count, looking at the actual numbers of exits occurred in the three years ended 31 December 2021 compared to the numbers expected under the actuarial basis adopted for the 31 December 2018 valuation, for each decrement type.

The following table shows a comparison of actual exits versus those expected under the valuation basis over the three years ended 31 December 2021:

Decrement type	Actual	Expected	Difference (A-E)
Withdrawal/Retirement	1	0	1
Total	**1**	**0**	**1**

Given that there are only 2 remaining members in the Section with an average age of 60.1 years, we do not believe that any change in retirement decrements would make a material impact on the valuation results. Accordingly, we have retained the same demographic assumptions as those used in the previous valuation, i.e. it has been assumed that members remain in the Section until age 65.

Details of the demographic assumptions used are set out in Appendix B.

5.2.3 Crediting rates

The Trustee has adopted a policy whereby the crediting interest rate is set equal to the average of the actual earning rate over the previous three years, net of investment tax and investment expenses. The crediting rate policy is described in section 4.5 of this report. This is referred to as the “smoothing” policy. The smoothed crediting rate applies to defined benefit member accounts.

Over the period covered by this report, operation of the smoothing policy resulted in interest credited to members’ accounts being 7.6% p.a. compared to the Section’s average investment return over the same period of 10.4% per annum. Hence, the Section has credited less than it has earned and this had a positive effect on the financial position of the Section over the inter-valuation period.

The smoothing method adopted will eventually see average crediting rates increasing into line with actual Section earning rates over time. However, variations in the level of member balances over time may mean that the mismatch in crediting and earning rates which has occurred may have a real, albeit small, financial effect on the Section.

5.2.4 Expenses

The investment earnings rate is assumed to be net of investment expenses.

At the previous investigation, an administration expense assumption of 2.0% p.a. of salaries was used. Over the 3 years to 31 December 2021, the cost of administration expenses was about 3.2% p.a. of defined benefit members' salaries.

Taking into account actual expenses over the inter-valuation period and that the Plan is closed to new defined benefit members, we have revised the expense assumption to $17,500 per annum in relation to the defined benefit arrangements.

Insurance expenses are discussed below.

5.2.5 Insurance

Details of the Section's group insurance arrangements in respect of death and disablement benefits are included in Section 8.

At the previous investigation, an allowance of 4.0% p.a. of salaries was made to cover the cost of insurance premiums. The actual insurance premiums over the inter-valuation period were on average 2.7% of defined benefit members' salaries.

Based on insurance premiums over the last quarter of the 2021 year, we estimate that current insurance premiums are approximately 3.0% p.a. of defined benefit members' salaries at 31 December 2021. Therefore, given that there are only two remaining defined benefit members, we have revised this allowance to 3.0% of salaries for this investigation.

5.2.6 Taxation

The Section is a "regulated superannuation fund" and is governed by the regulations of the Superannuation Industry (Supervision) Act 1993.

We have assumed that the current tax regime will continue and that the tax rate presently applying to the Fund will be maintained in future i.e. that the Fund will remain a regulated and complying fund under SIS and the Tax Act respectively and that a concessional tax rate of 15% will apply to net deductible contributions and investment earnings.

In addition, we have assumed that any additional taxation attributable to contributions in respect of high income earners (Division 293 taxation) and/or excess concessional contributions will be deducted from the total benefits of the affected members by means of an offset account, if not paid separately by the individual member.

6 Solvency and funding measures

SPS 160 requires statements to be made in respect of two measures of the financial position of the Section, these measures being related to the current and projected (i.e. in three years' time) "vested benefits" and the present value of "accrued benefits" of members.

This investigation is concerned primarily with the valuation of the Section's assets and liabilities in respect of members' defined benefits only. The value of accumulation member liabilities is directly related to the value of the underlying assets and is not exposed to the same funding risks as defined benefit liabilities. Therefore the value of accumulation members' assets and liabilities, and the accumulation benefits of defined benefit members where the members have an option to select how such monies are invested, are excluded from this investigation.

6.1 Vested Benefits

"Vested benefits" are benefits that would be paid if all members voluntarily left service. The following table shows the progression of the vested benefits position of the defined benefits section of the Section as at 31 December 2021 compared to that at the previous valuation date (31 December 2018):

	31 December 2018	31 December 2021
Value of defined benefit assets ($'000)	3,525	3,768
Defined Benefit Vested benefits ($'000)	2,437	1,907
Vested Benefits Index (VBI)	**145%**	**198%**

The Vested Benefits Index (VBI) is the ratio of the market value of the Section's assets to the vested benefits. As shown above, at 31 December 2021 the VBI was 198%. In comparison, the VBI at 31 December 2018 was 145%. The main reasons for the significant improvement in the Vested Benefits Index over the inter-valuation period are higher than expected investment returns over the period, investment earnings earned on the surplus assets and surplus released in respect of exited members.

The assets and vested benefits at 31 December 2021 above exclude $89,151 of voluntary accumulation account balances in respect of defined benefit members.

6.2 Accrued Benefits Index

An indication of the funding status of the Section is also given by the ratio of the value of the Section's assets to the present value of all benefits accrued at the investigation date (subject to a minimum of the member's leaving service benefit, otherwise known as vested benefits). The term "Accrued Benefits" is used in Australian Accounting Standard AASB 1056 and is alternatively referred to as the past service liability or the actuarial value of benefits.

The value placed on the Accrued Benefits is calculated using the actuarial assumptions set out in section 5. It represents the value in today's dollars of future benefits based on membership completed to the investigation date, allowing for future salary increases, investment earnings and expected incidence of benefit payments. For this valuation, each member's accrued benefit has been made subject to a minimum of the member's vested benefit.

A fully secured position is represented by a ratio of 100%. At this level, if the Section were closed to new entrants and no further benefits were allowed to accrue to current members then assets would be expected to be sufficient to meet all future benefit payments as and when they fall due if the actuarial assumptions were borne out in practice.

The following table shows the progression of the Accrued Benefits Index position of the defined benefits section of the Section as at 31 December 2021 compared to that at 31 December 2018:

	31 December 2018	31 December 2021
Value of defined benefit assets ($'000)	3,525	3,768
Defined benefit accrued benefits[1] ($'000)	2,437	1,907
Accrued Benefits Index (ABI)	**145%**	**198%**

[1] Minimum of vested benefits at an individual member level have been applied.

The assets and accrued benefits at 31 December 2021 above exclude $89,151 of voluntary accumulation account balances in respect of defined benefit members.

The Accrued Benefits Index (ABI) is the ratio of the market value of the Section's assets to the accrued benefits. As shown above, at 31 December 2018 the ABI was 145%. In comparison, the ABI at 31 December 2021 was 198%, representing an increase in the accrued benefit coverage.

The main reasons for the significant improvement in the Accrued Benefits Index over the inter-valuation period are higher than expected investment returns over the period, investment earnings earned on the surplus assets and surplus released in respect of exited members.

We note that the value of accrued benefits before application of the vested benefits minimum was $1,663,000 as at 31 December 2021, which would have resulted in an Accrued Benefits Index (before vested benefits minimum) of 227%. This is higher than the Accrued Benefits Index (before vested benefits minimum) of 187% as at 31 December 2018.

6.3 Minimum Requisite Benefits

Another test of the adequacy of the Section's assets relates to the benefits which the Section must provide in order to satisfy the Superannuation Guarantee requirements. These benefits are termed Minimum Requisite Benefits and are defined in the Section's Benefit Certificate. The Minimum Requisite Benefit for each member is less than or equal to the member's vested benefit.

The following table shows the progression of the Minimum Requisite Benefits Index of the defined benefit section of the Section as at 31 December 2021 compared to that at the previous valuation date (31 December 2018):

	31 December 2018	31 December 2021
Value of defined benefit assets ($'000)	3,525	3,768
Defined Benefit Minimum Requisite Benefits ($'000)	1,425	1,108
Minimum Requisite Benefits Index (MRBI)	**247%**	**340%**

The assets and Minimum Requisite Benefits at 31 December 2021 exclude $89,151 of voluntary accumulation account balances in respect of defined benefit members.

At 31 December 2021, the coverage of defined benefit Minimum Requisite Benefits by defined benefit assets was 340%, compared to 247% at 31 December 2018.

6.4 Plan termination

The next stage in our valuation is to calculate if there would have been any additional liabilities arising had the Section terminated on the valuation date. It is obviously critical to be able to meet all of the Section's obligations in that circumstance.

Clause 7.5 of Schedule 2 (Plum Division) of the MLC Super Fund Trust Deed provides that on termination of the Plan the Trustee must apply the Plan assets in the following order of priority:

1. Meet all costs, expenses and liabilities which have occurred or are likely to occur (other than benefits),
2. Meet Plan benefits (including pensions) which have commenced payment or become payable before the termination date,
3. Pay to each accumulation member the Member's Account Balances and to each defined benefit member the amount which the Actuary determines has accrued in respect of the member. If the assets are insufficient to meet these amounts, then all benefits are reduced proportionately.
4. Pay any remaining balance to the participating employers in the proportions determined by the Trustee unless otherwise requested by the employer.

Thus there is no prescribed benefit on Section termination and there is no liability on the employer for additional amounts other than in respect of contributions unpaid or owing to the date of termination.

6.5 Events since 31 December 2021

In the period since 31 December 2021, investment markets have been weaker. Based on information provided by the Section's administrator, the Section's funding ratio for Vested Benefits (the Vested Benefits Index or VBI) fell slightly to 193% as at 31 March 2022, driven by a positive smoothed crediting rate applied to member accounts whilst the Section assets suffered falls in investment returns in that quarter. Also, for the period between 31 March 2022 and 31 May 2022, the Section's assets earned approximately -2.2%, which we expect will have resulted in the Vested Benefits Index falling slightly further but remaining above 180%.

Although it is important not to over-react to short term market movements, we have allowed for an estimate of recent market movements based on available information in determining the contribution recommendations in the following section.

6.6 Summary of total liabilities

The following table provides a summary of the total liabilities in GlencoreSuper as a whole, for both defined benefit members and accumulation members, as at 31 December 2021. This information has been included to assist the Trustee in its reporting under SRF 160.0.

	Defined benefit members (GlencoreSuper)	Defined benefit members (GlencoreSuper Coal)	Accumulation members	Total
Accrued benefits [1]				
Defined benefit interests	718	1,663	-	2,381
Defined contribution interests	943	89	801,093	802,125
Total interests	**1,661**	**1,752**	**801,093**	**804,506**
Vested benefits				
Defined benefit interests	697	1,907	-	2,604
Defined contribution interests	943	89	801,093	802,125
Total interests	**1,640**	**1,996**	**801,093**	**804,729**
Minimum benefits				
Defined benefit interests	683	1,108	-	1,791
Defined contribution interests	943	89	801,093	802,125
Total interests	**1,626**	**1,197**	**801,093**	**803,916**

Note: All figures in the above table are expressed in $'000s.

1. For consistency with AASB 1056, the accrued benefits in this table have not been subject to a minimum of vested benefits. This approach is in accordance with Practice Guideline 499.06 issued by the Actuaries Institute.

7 Valuation results

7.1 Introduction

The results of the valuation of the Section on a "going concern" basis are set out below. For this purpose, the value of all future benefit payments is determined using the assumptions described in Appendix B of this report.

A minimum of vested benefits at an individual member level has been applied when determining accrued benefits.

As mentioned in section 6.5, the Plan's Vested Benefits Index (VBI) has decreased since 31 December 2021. We have completed a number of projections below that incorporate the current funding position at 31 March 2022, the last quarterly review of the Plan.

A key objective of our contribution recommendations is to maintain the VBI of at least 100%. We have chosen a level of 100% as the 'target' in our funding approach.

The sections below consider the projection of the Section's VBI over the next 5 years. The projections below show that if the Employer contributes as recommended, the financial position of the Section is expected to remain in a satisfactory financial position over the next 3 years.

7.2 Long term funding rates

The results of the valuation of the Section on a "going concern" basis are set out below. For this purpose, the value of all future benefit payments is determined using the assumptions described in Appendix B of this report.

Specifically, we show:

- The Employer Additional Contribution Rate which represents the contribution rate required to fully amortise any current deficit, arising from past service, over members' future periods of Section membership
- The Employer Normal Contribution Rate which represents the cost of future accruing benefits, factoring in future member contributions and administration/other expenses.

The following table shows the long term funding rate calculation of the Section:

	($'000)
Future Service Liabilities	251
Future insurance expenses [1]	45
Future Member Contributions (5.0% of defined benefit members' salaries)	(75)
Total Future Net Liabilities [1]	221
Present value of 1% of future salaries	15
Employer normal contribution rate – future service (after 15% contributions tax) [1]	**17.3%**
Past Service Liabilities (after VB minimum)	1,907
Assets	3,768
Past Service Liabilities – Assets	(1,861)

1. Excludes administration expenses of $17,500 p.a. which would apply in addition

The average long-term Employer contribution rate required to ensure sufficient assets are accumulated in the Section to meet the cost of members' defined benefits in respect of future years of Section membership based on the assumptions in this report is approximately 17.5% of salaries plus $17,500 per annum.

Given the focus of SPS 160 is to maintain coverage of the VBI whenever possible, below we look at projections of the Section's VBI over the next 5 years, which indicate that a nil employer contribution rate is expected to maintain the Section's VBI of at least 100% over that period. In addition, we consider that the current size of the past service surplus in the Section is sufficient to also cover the cost of meeting 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf, if requested by the Employer.

7.3 Sensitivity analysis

We have calculated the actuarial surplus of the Section, assuming future investment returns of 5.0% p.a. (net of tax) instead of 6.0% (net of tax) with other assumptions unchanged.

	Value of assets ($'000)	Accrued benefits[1] ($'000)	Accrued Benefits Index (ABI)
5.0% discount rate	3,768	1,907	198%

1. Minimum of vested benefits at an individual member level has been applied

On this basis, there is no change in the Section's net surplus because the vested benefit minimums at an individual member level are applying for accrued benefit calculations under both at 6.0% p.a. discount rate and at 5.0% p.a. discount rate.

If the vested benefit minimums were ignored, the Section's net surplus would decrease by approximately $76,000 if future investment returns of 5.0% p.a. are assumed.

We have also calculated the actuarial surplus of the Section, assuming future investment returns of 6.0% p.a. (net of tax) and salary assumption of 4.0% p.a. instead of 3.0% p.a. with other assumptions unchanged.

	Value of assets ($'000)	Accrued benefits[1] ($'000)	Accrued Benefits Index (ABI)
6.0% discount rate and 4.0% salary increase	3,768	1,907	198%

1. Minimum of vested benefits at an individual member level has been applied

As above, there is no change in the Section's net surplus because the vested benefit minimums at an individual member level are also applying under this sensitivity basis.

If the vested benefit minimums were ignored, the Section's net surplus falls by approximately $60,000 on this basis compared to the base valuation results in section **Error! Reference source not found.** above, and therefore it can be seen that a 1% increase in the assumed salary increases has a similar effect as a 1% decrease in assumed future investment returns.

The variations selected in the above sensitivity analyses do not indicate upper or lower bounds of all possible outcomes.

7.4 Funding projections

As mentioned, we note that the VBI of the Section has fallen to approximately 193% at 31 March 2022. Allowing for the lower VBI as at 31 March 2022, and further falls in investment returns of about -2.2% over the period between 31 March 2022 and 31 May 2022, in the table below we have projected the assets and vested benefits of the Section to estimate the contribution rates required to maintain a VBI of at least 100% over the period to 31 December 2026.

Therefore, we estimate that the Employer can continue the current contribution holiday for at least another 5 years.

We have projected the build-up of the defined benefit assets over the next five years and compared the assets to the projected levels of the vested benefits on a number of scenarios.

These projections have been performed using the actuarial assumptions contained in section 5.

The projected Vested Benefits Index (VBI) for the defined benefits section of the Section is as follows:

Projection 1: Nil contributions, and investment return of 6.0% p.a.

Projected Date	No. of Members	Contribution rate	Projected DB Assets $000s	Projected DB Vested Benefits $000s	Projected DB VBI
31 December 2021 (actual)	2		3,768	1,907	198%
31 March 2022 (actual)	2		3,735	1,936	193%
31 December 2022 [1]	2	0%	3,762	2,041	184%
31 December 2023	2	0%	3,963	2,167	183%
31 December 2024	2	0%	4,176	2,298	182%
31 December 2025	1	0%	2,642	701	377%
31 December 2026	1	0%	2,781	747	372%

1. Allows for actual investment returns earned in the period to 31 May 2022

The above table shows a nil contribution rate is projected to comfortably maintain the VBI at or over 100% over the next 5 years assuming experience is in line with assumptions

To give an indication of the sensitivity of the VBI to investment returns, we also considered the progression of the VBI of the Section assuming investment returns on the Section assets are 1% p.a. lower, i.e. 5.0% p.a.

Projection 2: Nil contributions, and investment return of 5.0% p.a.

Projected Date	No. of Members	Contribution rate	Projected DB Assets $000s	Projected DB Vested Benefits $000s	Projected DB VBI
31 December 2021 (actual)	2		3,768	1,907	198%
31 March 2022 (actual)	2		3,735	1,936	193%
31 December 2022 [1]	2	0%	3,741	2,041	183%
31 December 2023	2	0%	3,903	2,168	180%
31 December 2024	2	0%	4,074	2,300	177%
31 December 2025	1	0%	2,498	701	356%
31 December 2026	1	0%	2,604	747	348%

1. Allows for actual investment returns earned in the period to 31 May 2022

We note that with a 1% p.a. lower investment return, the defined benefit VBI is expected to remain above 100% for the next five years considering the same contribution pattern as assumed above.

Given the current surplus assets in the Section, and considering the projections above, we have also projected the progression of the VBI if the recommendation to apply an amount of up to $300,000 p.a. in each of the next three years towards meeting the cost of employer contributions in relation to accumulation members in the Plan was fully taken up as a way to progressively manage down the surplus in the Plan.

Projection 3: As per Projection 1, and use of $300k of surplus towards contributions for accumulation members

Projected Date	No. of Members	Contribution rate	Surplus used to meet accum contns $000s	Projected DB Assets $000s	Projected DB Vested Benefits $000s	Projected DB VBI
31 December 2021 (actual)	2			3,768	1,907	198%
31 March 2022 (actual)	2			3,735	1,936	193%
31 December 2022 [1]	2	0%	300	3,460	2,041	170%
31 December 2023	2	0%	300	3,334	2,167	154%
31 December 2024	2	0%	300	3,201	2,298	139%
31 December 2025	1	0%	-	1,608	701	229%
31 December 2026	1	0%	-	1,685	747	225%

1. Allows for actual investment returns earned in the period to 31 May 2022

This shows that, assuming experience is in line with assumptions, the defined benefit VBI is expected to comfortably remain at or above 100% for the next five years if the employer continues the current contribution holiday for defined benefit members, and also applies $300,000 p.a. of surplus towards funding contributions in respect of accumulation members for the next three years.

We have also projected the financial position if the recommendation of applying up to $300,000 p.a. in each of the next three years towards meeting the cost of employer contributions in relation to accumulation members in the Plan was fully taken up but assuming the lower investment return assumption of 5.0% p.a.

Projection 4: As per Projection 2, and use of $300k of surplus towards contributions for accumulation members

Projected Date	No. of Members	Contribution rate	Surplus used to meet accum contns $000s	Projected DB Assets $000s	Projected DB Vested Benefits $000s	Projected DB VBI
31 December 2021 (actual)	2			3,768	1,907	198%
31 March 2022 (actual)	2			3,735	1,936	193%
31 December 2022 [1]	2	0%	300	3,440	2,041	168%
31 December 2023	2	0%	300	3,280	2,168	151%
31 December 2024	2	0%	300	3,112	2,300	135%
31 December 2025	1	0%	-	1,488	701	212%
31 December 2026	1	0%	-	1,543	747	206%

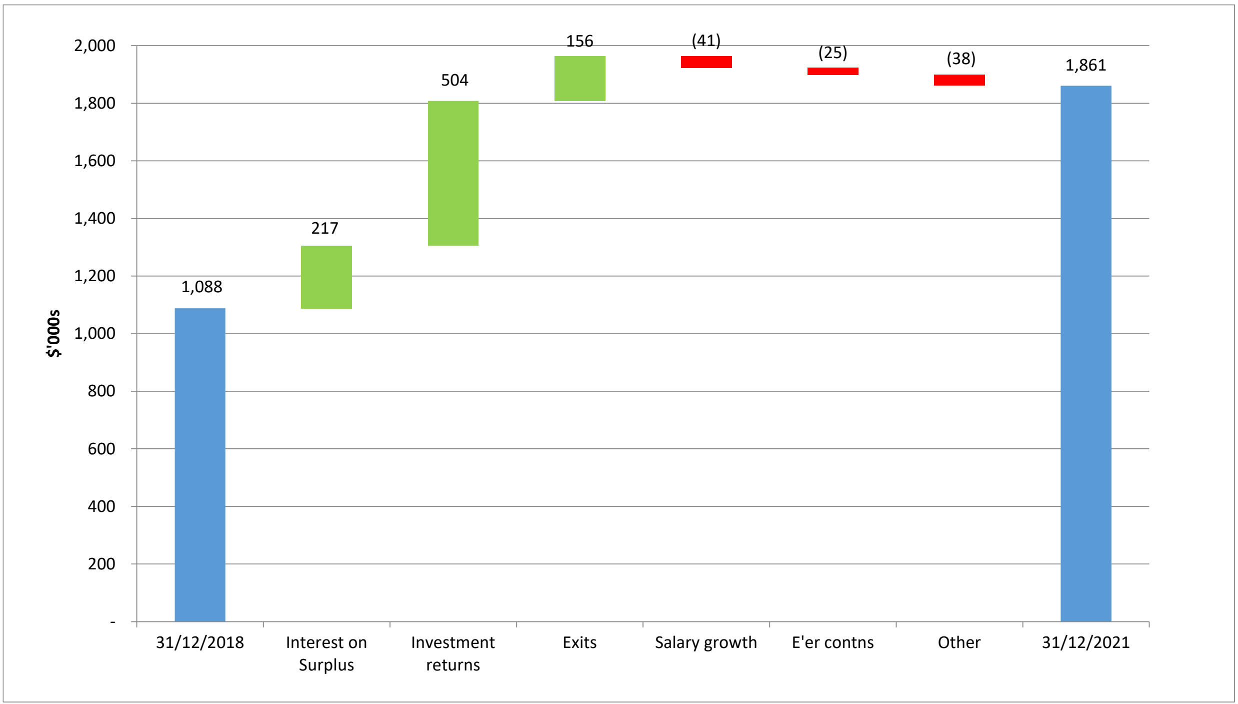
1. Allows for actual investment returns earned in the period to 31 May 2022

This shows that, even if future investment returns are 5% p.a. and all other experience is in line with assumptions, the defined benefit VBI is expected to comfortably remain at or above 100% for the next five years if the employer continues the current contribution holiday for defined benefit members, and also applies $300,000 p.a. of surplus towards funding contributions in respect of accumulation members for the next three years.

7.5 Analysis of change in financial position

The following chart summarises our analysis of the change in excess of assets over past service liabilities (subject to a minimum of vested benefits at an individual member level) between 31 December 2018 to 31 December 2021. Brief commentary is included underneath.

Analysis of change of Surplus of Assets over Past Service Liabilities ($’000)



From the analysis above, this result has been mainly due to the following:

Positive Factors:

- Earnings on the previous surplus position at 31 December 2018;
- Significantly higher than expected investment returns over the period;
- Gains on payment of exits as the vested benefit was lower than past service liability.

Negative Factors:

- Employer contributions lower than the rate of benefit accrual;
- Higher than expected salary growth.

7.6 Recommended employer contribution rates

As noted in section 7.2 above, the future service contribution rate is 22% of defined benefit salaries.

Given the VBI position at 31 March 2022 and based on the approach and assumptions adopted in this report, the recommended Employer contribution rates for defined benefit members in respect of the period from 1 January 2022 until completion of the actuarial investigation as at 31 December 2024 are:

- at least nil (0%) for defined benefit members, for the period from 1 January 2022; plus
- the Employer also meets 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf;
- additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional payment would reflect the Section's financial position and allow also for the payment of contributions tax):

  The following formula should be used for calculating top-up contributions:

  Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

  - Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
  - Benefit = the total benefit payable to the member before application of any taxes payable.

We also recommend that, subject to any administrative or legal constraints, the Trustee allow the Employer to meet up to $300,000 p.a. (net of tax) of employer contributions in respect of accumulation members in the Plan from the Section's surplus assets, for a period of up to three (3) years, subject to annual confirmation from the Section actuary that this remains appropriate (or alternative contribution holiday arrangements as agreed between the Trustee and the Employer, subject to confirmation from the Section actuary that they are broadly equivalent to the above recommendation).

In addition, we recommend that:

- the Section's financial position is monitored on a quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain the Vested Benefits Index of at least 100%; and
- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

8 Insurance arrangements

8.1 Death and TPD

Insurance cover in respect of the unfunded portion of death and total and permanent disablement (TPD) benefits is provided by MLC Limited.

The purpose of insurance is to protect the Section against adverse death and TPD experience. The "Amount at Risk" is the difference between the members' death or disablement benefit and the sum of insured amounts for all defined benefit members.

The sum insured for each member is calculated as:

- *Death Benefit less Vested Benefits*

Therefore, if the VBI is below 100%, there are insufficient assets in the Section to meet all benefits payments in the unlikely event that all members were to die or become disabled at the same time.

The table below shows the overall death and TPD benefits and insurance levels as at 31 December 2021 for defined benefit members. For simplicity, the amounts in the table exclude additional accounts subject to member investment choice.

Defined Benefit Members ($'000)	Death/TPD
Total death/TPD benefits	2,333
Less	
Accumulation benefits (for DB members)	89
Less	
Insurance amount	337
Equals	
Amount at risk	**1,907**
Assets	3,768
Excess/(shortfall) coverage	**1,861**

On this basis the Amount at Risk is less than the value of the Section's assets of $3,768,000. This shows that the current insurance arrangements in respect of death and total and permanent disablement benefits were adequate for the defined benefits section of the Section at 31 December 2021.

Given the financial position of the Section at 31 December 2021, we would expect the level of Section assets to be sufficient to cover the amount at risk over the period to 31 December 2024.

Therefore, we believe the current insurance arrangements to be adequate to protect the Section against adverse death experience, given the employer contribution rate recommended.

8.2 Total and Temporary Disablement ("TTD") Benefits

TTD benefits are also provided under a separate insurance policy with MLC. This benefit is fully insured and is adequately covered by the existing insurance arrangements.

8.3 Comments

We consider the Section's insurance arrangements are adequate to protect the Section against adverse death or disablement experience.

Appendix A: Summary of benefits

Defined benefit members receive benefits in accordance with the provisions of the Plan Summary. The Administrator has advised this is consistent with the benefit provisions provided under the Trust Deed of the Previous Plan.

A brief summary of benefits is set out below.

<u>*General*</u>

Annual Review Date:	1 January each year commencing from 1 January 2006
Plan Salary:	Member's Salary less, if the member elects and the Employer approves, an amount equal to 80% of the annual rate of "the mechanical unit rate of pay" (which is the amount payable to a "Loaderman" under the relevant award) or such other amount determined by the Employer
Final Average Salary (FAS):	The average of the member's Plan Salary over the three (3) years prior to the date of calculation
Pre 1/04/1990 FAS:	The average of the member's Plan Salary over the three (3) years prior to the date of calculation
Pre Reclassification FAS	The average of the member's Pre Reclassification Plan Salary over the (3) years prior to the date of calculation
Normal Retirement Age (NRA):	65
Early Retirement Age (ERA):	55
Member Contributions:	5%
Rate of Accrual (ROA):	XSTS: 17.5%
	XSTX: 20.0%
Pre 1/04/1990 Service Multiple:	Some members are entitled to this multiple
Pre Reclassification Multiple:	Some members are entitled to this multiple
Accrued Retirement Benefit Multiple (ARBM):	ROA times past membership
Normal Retirement Benefit Multiple (NRBM):	ROA times total membership
Member Reserve (MR):	XSTS: Discounted Accrued Retirement Benefit – i.e. the member's accrued retirement benefit reduced by a compound discount rate of 2.0% for each complete year until age 55.
	XSTX: Discounted Accrued Retirement Benefit – i.e. the member's accrued retirement benefit reduced by a compound discount rate of 2.0% for each complete year until age 55.
Vesting Factor (VF):	10% for each complete year of Membership subject to a maximum of 100%
Member Mandated Account:	Member's mandated contributions accumulated with interest
Surcharge Account:	Surcharge assessments advised by the ATO accumulated with interest

Normal Retirement Benefit (NRB) and Early Retirement Benefit (ERB)
The benefit payable on a member's retirement between the ages of 55 and 65 is a lump sum equal to:

- ARBM x FAS + Pre 1/04/1990 FAS x Pre 1/04/1990 Service Multiple + Pre Reclassification FAS x Pre Reclassification Multiple

Death Benefit (DB) and Total & Permanent Disablement Benefit (TPDB)
The benefit payable on the Death or Total & Permanent Disablement of a member prior to age 65 is a lump sum equal to:

- NRBM x Plan Salary + Pre 1/04/1990 FAS x Pre 1/04/1990 Service Multiple + Pre Reclassification FAS x Pre Reclassification Multiple

Total & Temporary Disablement Benefit (TTDB)
The benefit payable on TTD after a 90 day waiting period is equal to:

- 75% x Plan Salary payable monthly for a maximum of two (2) years

Leaving Service Benefit (LSB)
The benefit payable on withdrawal from the Section is a lump sum equal to the lesser of:

- MR; and
- Member Mandated Account + (MR – Member Mandated Account) x VF

Minimum Benefits
All benefits payable to members are subject to a minimum of their Leaving Service Benefit. In addition, a member's benefit is subject to a further minimum of the member's Minimum Requisite benefit as defined in the Section's Superannuation Guarantee Benefit Certificate.

Accumulation Benefits
Some members are also eligible to receive additional accumulation benefits on leaving the Section. This includes monies transferred from previous superannuation plans and additional contributions made to this Section.

Surcharge
Surcharge payable by the Section in respect of a member is recorded in the member's surcharge offset account. Similarly, where Division 293 taxes are not paid separately by individuals, the liability for Division 293 taxation is assumed to be met by reducing the benefits of affected members.
This account is increased with interest, with the balance of the account deducted from the benefit payable when a member leaves the Section.

Appendix B: Summary of Assumptions

Interest Rate Earned on Assets	6.0% p.a. net of investment expenses and taxes
Salary Increase Rate	3.0% p.a.

Rates of Mortality, TPD and Leaving Service

It has been assumed that members remain in the Section until age 65. No other decrements are assumed.

Future Expenses	The investment earnings rate is assumed to be net of investment expenses. Allowance for administration expenses of $17,500 p.a. in respect of the defined benefit arrangements. An allowance of 3.0% p.a. of defined benefit members' salaries was made for insurance premiums met by the employer.
Surcharge	All liability for surcharge is assumed to be met by an appropriate reduction in the benefits of affected members. Likewise, where Division 293 taxes are not paid separately by individuals, the liability for Division 293 taxation is assumed to be met by reducing the benefits of affected members.

Appendix C: Statement required by SPS 160

GlencoreSuper – Coal Section, a sub-plan in the Plum Division of the MLC Super Fund

Summary of Information included in 31 December 2021 Actuarial Report pursuant to Paragraph 23 of SPS 160

We have carried out a valuation of GlencoreSuper – Coal Section (the Section) effective 31 December 2021. Paragraph 23 of SPS 160 prescribes the following matters to be contained in actuarial reports for private sector defined benefit superannuation plans:

1. For the purposes of comparison with vested benefits and accrued benefits and in the calculation of the long-term Employer contribution rate, the net assets of the Section have been valued at $3,767,670 at 31 December 2021.

2. Pursuant to SPS 160, the *"liabilities in respect of the accrued benefits of the members of the fund"* is the present value of the expected future benefits payable from the Section to current members and their dependants in respect of membership completed to date. In our opinion, the assets valued at 31 December 2021 were sufficient to meet the liabilities of the Section in respect of accrued benefits of $1,907,306. We consider that the assumptions and valuation methods set out in this report are appropriate for determining the accrued benefit liabilities.

3. The Section's assets are also sufficient to meet the liabilities of the Section in respect of Vested Benefits of $1,907,306 as at 31 December 2021. A plan is in an *"unsatisfactory"* financial position if the value of its assets is less than the value of the benefits payable if every member voluntarily left the Section. In our opinion, the Section was in a satisfactory financial position at 31 December 2021. In our opinion, the shortfall limit does not need to be revised. Furthermore, assuming that:

   - There are no significant improvements to the benefits described;
   - Employer contributions are paid in accordance with the recommendations set out in the report on the actuarial valuation of the Section at 31 December 2021; and
   - The future experience of the Section is in accordance with the actuarial assumptions made at 31 December 2021;

   then we certify that the Section will maintain a satisfactory financial position in the period to 31 December 2024.

4. Based on the results of this investigation, the recommended Employer contribution rates for defined benefit members in respect of the period from 1 January 2022 until completion of the actuarial investigation as at 31 December 2024 are:

   - at least nil (0%) for defined benefit members, for the period from 1 January 2022; plus
   - the Employer also meets 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf;
   - additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional payment would reflect the Section's financial position and allow also for the payment of contributions tax):

The following formula should be used for calculating top-up contributions:

Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

- Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
- Benefit = the total benefit payable to the member before application of any taxes payable.

We also recommend that, subject to any administrative or legal constraints, the Trustee allow the Employer to meet up to $300,000 p.a. (net of tax) of employer contributions in respect of accumulation members in the Plan from the Section's surplus assets, for a period of up to three (3) years, subject to annual confirmation from the Section actuary that this remains appropriate (or alternative contribution holiday arrangements as agreed between the Trustee and the Employer, subject to confirmation from the Section actuary that they are broadly equivalent to the above recommendation).

In addition, we recommend that:

- the Section's financial position is monitored on an quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain the Vested Benefits Index of at least 100%; and
- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

5. Payment of Employer contributions as above, together with the assets of the Section and the expected earnings of the Section over the period from 1 January 2022 to 31 December 2024 are expected to provide adequately for the expected liability during the period to 31 December 2024. They are also expected to fully provide for the liability at the end of that period in respect of both vested benefits and accrued benefits.

6. The projected likely future financial position of the Section during the three years following the valuation date, based on our best estimate assumptions used in the actuarial investigation of the Section as at 31 December 2021 and the recommended Employer contributions above, is set out below.

Projected Date	Projected DB Assets ($000s)	Projected DB Vested Benefits ($000s)	Projected DB Vested Benefits Index
31 December 2021 (actual)	3,768	1,907	198%
31 December 2022	3,460	2,041	170%
31 December 2023	3,334	2,167	154%
31 December 2024	3,201	2,298	139%

7. The Section has not been granted a Pre-1 July 1988 funding credit, nor has it obtained such a credit by way of transfer.

8. A plan is "*solvent*" if the value of its assets exceeds the total of the Superannuation Guarantee component of each member's benefit. The section's assets are sufficient to meet the minimum benefits of the Section of $1,107,518 as at 31 December 2021. Funding and Solvency Certificates for the Section covering the period from 1 January 2019 to 31 December 2021 required by the Superannuation Industry (Supervision) Act have been provided. In our opinion, the solvency of the Section will be able to be certified in any Funding and Solvency Certificate required under the Superannuation Industry (Supervision) Regulations during the three-year period to 31 December 2024, based on the assumptions used in the actuarial investigation of the Section as at 31 December 2021.

Diane Somerville, FIAA
29 June 2022

Andrew Boal, FIAA

Appendix D: AASB 1056 Statement

GlencoreSuper – Coal Section, a sub-plan in the Plum Division of the MLC Super Fund

Actuarial Statement pursuant to Australian Accounting Standard AASB 1056

The purpose of this statement is to provide the summary of the information contained in the Actuarial Report on the investigation of the Section as at 31 December 2021, for the purposes of AASB 1056. This statement has been prepared at the request of the Trustee of the Section and is in accordance with the Professional Standards and Practice Guidelines (in particular PS402 and PG499.06) issued by the Institute of Actuaries of Australia.

Assets

The net asset value used for this valuation at 31 December 2021 was $3,767,670. This represents assets for defined benefit members only and excludes $89,151 of voluntary accumulation account balances for these members. These figures are not audited.

Vested Benefits

Vested benefits are the benefits to which members would be entitled if they voluntarily left service.

At the date of the actuarial investigation, the vested benefits were $1,907,306. This includes only defined benefit members and excludes $89,151 of voluntary accumulation account balances for these members.

The ratio of the net market value of the Section's assets to total defined benefit vested benefits was 198% at 31 December 2021, which indicates a satisfactory coverage of vested benefits as at the date of the actuarial investigation.

Accrued Benefits

The value of the accrued benefits is the present value of the expected future benefits payable from the Section to current members, but only in respect of Section membership completed up to the date of the actuarial investigation. Calculation of future retirement benefits use the normal retirement benefit formula, taking into account membership to the date of the actuarial investigation and using salary projected to the date of expected payment. We have not applied a minimum of vested benefits (at individual or total level) in the calculation of accrued benefits for the purposes of AASB 1056.

The value of the accrued death and total and permanent disablement benefits is determined to be the same proportion of the death (or disablement) benefit as the accrued retirement benefit bears to the retirement benefit at normal retirement date.

To determine the actuarial value of accrued benefits, assumptions are required concerning the potential experience of the Section over the long term. The main assumptions used to determine the actuarial value of the accrued benefits at 31 December 2021 were:

- The future rate of investment return (net of investment taxes and net of investment management fees) earned on the Section's assets would be 6.0% per annum.
- The future rate of long-term salary increases would be 3.0% per annum.

The future rate of investment return used to determine the accrued benefits is the anticipated rate of return on the Section's assets over the average expected term of the benefit liabilities, calculated to be approximately 5 years.

All other assumptions used, including demographic assumptions, are considered to be best estimate assumptions, with no allowance for conservatism.

The total value of accrued benefits (for AASB 1056 purposes) at 31 December 2021 was $1,663,390. This includes only defined benefit members and excludes $89,151 of voluntary accumulation account balances for these members.

The ratio of the assets to the value of the total accrued benefits (for AASB 1056 purposes) was 227% at 31 December 2021 in respect of the defined benefit liabilities. The assets were therefore sufficient to meet the value of the liabilities of the Section in respect of accrued benefits.

The Section's funding policy is intended to fully cover benefits by the time that they become payable. The method of funding benefits adopted is the Attained Age Normal funding method. This funding method aims to spread the cost of future benefits for current members evenly over their future working lifetimes. Under this funding method the employer contribution rate is determined as the rate required to meet benefits in respect of future membership of the Plan, adjusted for any deficit (or surplus) of assets compared to accrued benefit liabilities at the valuation date. In addition, for the valuation at 31 December 2021, a target of 100% of the members' vested benefits was adopted.

Sensitivities

AASB 1056 requires the Trustee to show sensitivities for accrued benefits (defined benefit member liabilities) in the financial statement notes.

Accordingly, we have shown the value of accrued benefits (before vested benefit minimums) based on changes in the key assumptions in the following table.

Sensitivities	31 December 2021 ($000s)	Increase/(Decrease) in Accrued Benefits Liability ($000s)
Base Case	1,663	-
Discount Rate +1%	1,592	(71)
Discount Rate -1%	1,739	76
Salary Increase Rate +1%	1,723	60
Salary Increase Rate -1%	1,605	(58)

The variations selected in the above sensitivity analyses do not indicate upper or lower bounds of all possible outcomes.

Recommended Employer Contributions

The recommended Employer contribution rates for defined benefit members in respect of the period from 1 January 2022 until completion of the actuarial investigation as at 31 December 2024 are:

- at least nil (0%) for defined benefit members, for the period from 1 January 2022; plus
- the Employer also meets 5.88% of defined benefit members' salaries from the surplus assets in the Section where the employer meets a member's contributions on their behalf; plus
- additional contributions are paid where a defined benefit payment is made from the Section during a quarter when the Section is in an unsatisfactory financial position (the amount of the additional

payment would reflect the Section's financial position and allow also for the payment of contributions tax):

The following formula should be used for calculating top-up contributions:

Top-up contribution = 1.18 x (1 – Latest VBI) x Benefit, where:

- Latest VBI = the most recently available Vested Benefits Index as determined by the actuary on a quarterly basis
- Benefit = the total benefit payable to the member before application of any taxes payable.

We also recommend that, subject to any administrative or legal constraints, the Trustee allow the Employer to meet up to $300,000 p.a. (net of tax) of employer contributions in respect of accumulation members in the Plan from the Section's surplus assets, for a period of up to three (3) years, subject to annual confirmation from the Section actuary that this remains appropriate (or alternative contribution holiday arrangements as agreed between the Trustee and the Employer, subject to confirmation from the Section actuary that they are broadly equivalent to the above recommendation).

In addition we recommend that:

- the Section's financial position is monitored on an quarterly basis to ensure the continued appropriateness of the Section contribution rate to maintain the Vested Benefits Index of at least 100%; and
- these recommendations be reviewed where the Section undergoes significant changes to its membership or benefit basis, or there is a substantial reduction in the value of the Section's investment portfolio.

Financial Condition

In our opinion, the Section was in a satisfactory financial condition at the date of the actuarial investigation.

In addition to the position reported above, the actuary projected the Section's ongoing ability to meet both Vested Benefits and Accrued Benefits over the three years following the date of the investigation. This was undertaken on the basis that:

- the actuarial assumptions as to investment, salary inflation and membership turnover would apply over the next three years; and
- the Employer will contribute to the Section at the recommended rates over the next three years.

In the light of the projections, it is anticipated that both Vested Benefits and Accrued Benefits will remain covered by defined benefit assets of the Section throughout the three years following the date of the investigation.

Diane Somerville, FIAA
29 June 2022

Andrew Boal, FIAA