ALBERTA GRID RISK SHARING POOL

OCTOBER 2022 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

OCTOBER 2022

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1   Summary

Note to members: this is the quarterly Actuarial Highlights we will release going forward to replace the monthly Actuarial Highlights. The next report will be available for reporting month March 2023 in April 2023, in line with the valuation implementation schedule. Please contact us with any questions or concerns in regards to this matter.

1.1   Valuation Schedule (Fiscal Year 2022)

The October 2022 Operational Report incorporates the results of an updated valuation (as at September 30, 2022) – the impact of the implementation of the valuation is discussed in section 1.2. The following table summarizes the valuation implementations scheduled for fiscal year 2021.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2022 – SCHEDULE OF VALUATIONS			
Valuation Date	**Discount Rate (per annum)**	**Operational Report**	**Description of Changes**
Sep. 30, 2021 (completed)	0.81% mfad[1] 25 bp	Oct. 2021	update valuation (roll-forward): accident year 2021 loss ratio decreased 0.8 points to 65.5%; discount rate increased 9 basis points; no change to selected margins for adverse deviations
Dec. 31, 2021 (completed)	1.04% mfad 25 bp	Mar. 2022	update valuation: accident year 2021 loss ratio increased 1.2 points to 66.7% and accident year 2022 loss ratio increased 3.3 points to 82.3%; discount rate increased 23 basis points; no change to selected margins for adverse deviations
Mar. 31, 2022 (completed)	2.24% mfad 25 bp	May. 2022	update valuation (roll-forward): accident year 2022 loss ratio decreased 0.6 points to 86.3%; discount rate increased 120 basis points; no change to selected margins for adverse deviations
Jun. 30, 2022 (completed)	3.17% mfad 25 bp	Aug. 2022	update valuation: accident year 2022 loss ratio decreased 5.8 points to 75.9%; discount rate increased 93 basis points; selected margins for adverse deviations were rolled forward one year, with no changes to selections
Sep. 30, 2022	3.52% mfad 25 bp	Oct. 2022	update valuation (roll-forward): accident year 2022 loss ratio decreased 0.9 points to 75.0%; discount rate increased 35 basis points; no change to selected margins for adverse deviations

Under the proposed schedule for fiscal year 2022, the off-half valuation quarters ending

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[1] The selected interest rate margin is limited to reducing the selected discount rate to 0%; the approach is that if the net impact is negative, the discount rate will be capped at 0%.

March 31, 2022 and September 30, 2022 would not reflect a full valuation update of assumptions, but would rather roll-forward key assumptions from the previous valuation.

1.2   New Valuation

A valuation of the Alberta Grid Risk Sharing Pool ("RSP") as at September 30, 2022 has been completed since last month's Operational Report and the results of that valuation have been incorporated into this month's Report. The valuation was completed by the Facility Association's internal actuarial group in conjunction with, and approved by, the Appointed Actuary, under the hybrid model for actuarial services.

The valuation implementation impact is summarized in the following two tables, where the abbreviations PAYs refers to prior accident years, CAY refers to the current accident year (2022), and "Prem Def" refers to premium deficiency / deferred acquisition costs impacts.

Summary of Impact ($000s) of Implementing Result of Valuation as at Sep. 30, 2022[2]

AB Grid	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	(1,438)	(86)	(1,524)	(1,765)	-	(3,289)
CAY	(2,051)	41	(2,010)	(1,194)	-	(3,204)
Prem Def	(4,986)	(687)	(5,673)	(1,211)	-	(6,884)
TOTAL	(8,475)	(732)	(9,207)	(4,170)	-	(13,377)

As indicated in the preceding table, the incorporation of the new valuation had an estimated ***$13.4 million favourable impact*** on the month's net result from operations, subtracting an estimated 5.8 points (see following table) from the **year-to-date Combined Operating Ratio** to end at **85.2%.** Due to the September valuation being a roll-forward, the favourable valuation impact is mainly driven by the increase in discounting and favourable change to the premium liabilities.

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[2]In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at Sep*. 30, 2022*

AB Grid	ytd EP	228,922	(actual)			
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(0.6%)	-	(0.7%)	(0.8%)	-	(1.4%)
CAY	(0.9%)	-	(0.9%)	(0.5%)	-	(1.4%)
Prem Def	(2.2%)	(0.3%)	(2.5%)	(0.5%)	-	(3.0%)
TOTAL	(3.7%)	(0.3%)	(4.0%)	(1.8%)	-	(5.8%)

The impact of the **nominal changes** is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was **favourable by $8.5 million** overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio). As this quarter is a roll-forward valuation, the impacts are mainly driven by claims development on short-tailed lines of business and on older accident years. Since the impact is relatively small, this indicates that claims are developing more or less as expected.

The **PAYs** overall showed a **$1.4 million favourable** nominal variance or 0.6% of the PAYs nominal unpaid balance of $222.9 million determined at the end of last month (September 2022), due to lower than expected levels of claim development.

The **CAY** and **premium deficiency** impacts are a result of the change in the selected loss ratio for accident year **2022** (decreased 0.9 points to 75.0%) and **2023** (decreased 3.5 points to 78.9%). The improvement in current year loss ratio is a result of favourable current year claims development. The improvement in 2023 loss ratios, which reduces the premium deficiency, is due to Alberta Insurance Rate Board's announced 10% rate increase to Grid rates effective Jan. 1, 2023.

The impacts related to actuarial present value ("apv") adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or "MfADs" (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the preceding summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by coverage, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of $0.7 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Updated projected cash flows were reviewed against the risk-free curve calculated monthly by the Fiera Capital Corporation[3] as at Sep. 30, 2022, which replaced the previously selected risk-free yield curve, derived from Government of Canada benchmark bond yields. Column [4] accounts for the

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[3] https://www.fieracapital.com/en/institutional-markets/cia-ifrs-17-curves

change in the **discount rate** selected (average discount rate <u>in</u>creased 35 basis points to **3.52%**), indicating a favourable impact of $4.2 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $3.0 million at October 2022 – this compares to the $3.1 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last quarter's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were also left unchanged (as per our usual practice, development margins are reviewed with the June 30 valuation).

Consideration was given to recent legal decisions and changes in legislation / regulation as noted above and outlined in section 1.4.

1.3   Appointed Actuary and Hybrid Actuarial Services Model

The Annual General Meeting of the members of Facility Association ("FA") appointed Mr. Cosimo Pantaleo as the Appointed Actuary at its meeting on March 3, 2022.

Facility Association operates under a hybrid model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association's internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

1.4   Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent (i.e. within the last five years) changes are provided below.

In the **Alberta Treasury Board and Finance Notice 04-2018** (Clarification of Minor Injury Regulation), dated **October 17, 2018**, the Alberta Superintendent of Insurance advised that clarifying amendments have been made to the definition of minor injuries under the Minor Injury Regulation (MIR). Consideration of these changes were included in the industry trend analysis supporting the calculation of our valuation expected loss ratios.

Amendments to the **Alberta Automobile Accident Insurance Benefits Regulation, Diagnostic and Treatment Protocols Regulation, and Minor Injury Regulation** came into force effective November 1, 2020, amending definitions and various benefit maximums defined in these regulations. **Alberta Bill 41** (Insurance (Enhancing Driver Affordability and Care) Amendment Act, 2020) **received royal assent on December 9, 2020**. Bill 41 amends the Insurance Act to: 1) control the use of expert witnesses in Court of Queen's Bench proceedings where damages for bodily injury or death arising from use or operation of a motor vehicle as defined in the Traffic Safety Act are claimed; 2) introduce direct compensation for property damage (DCPD) into the province; 3) amend the calculation of pre-judgment interest on damages awarded for bodily injury or death arising directly or indirectly form the use or operation of an automobile; and 4) amend provisions regarding the regulation of auto insurance rates by the Alberta Automobile Insurance Rate Board. Consideration of these changes

were included in the industry trend analysis supporting the calculation of our valuation expected loss ratios. There is an estimated 20% reduction to loss costs for Bodily Injury claims in Alberta, as well as an estimated 8% increase in accident benefits loss costs, effective Jan. 1, 2021, which have been reflected in our estimates.

In **Jackson v. Cooper, 2022 ABKB 609**, the decision, released on September 9, 2022, clarified the interest rates to be used in the calculation of pre-judgement interest awards on pecuniary damages. As described above, Bill 41 (effective December 9, 2020) amended calculation of pre-judgement interest on non-pecuniary damages in s. 585.2(2) of the Insurance Act. Up for debate was the question of whether this change applied retroactively. The court concluded it does not apply retroactively, and awarded pre-judgement interest at the old rate (4%) from the date of the accident up to the coming into force of s. 585.2(2) (December 9, 2020), and thereafter pre-judgment interest in accordance with section 4(2) of the Judgment Interest Act.

It is unclear whether the estimated impact of Bill 41 (20% reduction to loss cost for Bodily Injury claims, as described above) is affected by this decision. If the underlying assumption of that reduction was a retroactive application of the amendment to pre-judgement interest, it is possible the 20% reduction could be overstated. At this time, no changes have been made in our estimates to reflect this until we can assess whether this ruling represents a material change in the underlying Bill 41 impact assumptions.

1.5   Current Provision Summary

The following charts show the current levels of claim liabilities[4] booked by accident year. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2022 full year earned premium (the red hash-mark line) to provide some perspective.
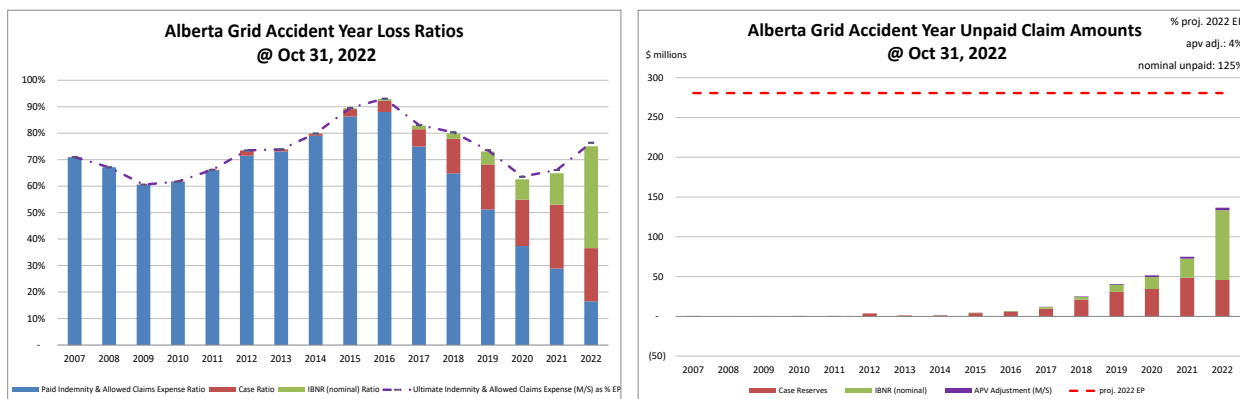
"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

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[4]Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

claim liabilities ($000s)

	amt	%
case	207,438	57.7%
ibnr	142,179	39.6%
M/S apv adjust.	9,752	2.7%
M/S total	359,369	100.0%

The current actuarial present value adjustments balance ($9.8 million – see the table above) represents 4% of the earned premium projected for the full year 2022 (see the upper right corner of the preceding chart on the right). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

The table above breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 79% of the IBNR balance relates to accident years 2021 and 2022 (see Exhibit B). Approximately 91% of the M/S total claim liabilities are related to accident years 2018-2022 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2012 and prior (i.e. prior to the most recent 10 accident years).

The following tables summarize the premium liabilities and the total policy liabilities.

premium liabilities ($000s)

	amt	%
unearned prem	180,204	125.9%
prem def/(dpac)	(39,428)	(27.5%)
M/S apv adjust.	2,361	1.6%
M/S total	143,137	100.0%

policy liabilities ($000s)

	amt	%
claim	349,617	69.6%
premium	140,776	28.0%
M/S apv adjust.	12,113	2.4%
M/S total	502,506	100.0%

2 Activity since previous valuation implementation

2.1 Recorded Premium and Claims Activity

The following table summarizes the extent to which premiums and claims amounts recorded since the prior implementation differ from the prior projection.

Alberta Grid RSP Actual vs Projected Summary: Recorded Transaction Amounts ($ thousands)

AY Group	Share Year	Share Month	Actual Earned Premium (000s)	Actual minus Projected Earned Premium (000s)	Actual Paid Claims (000s)	Actual minus Projected Paid Claims (000s)	Actual Recorded Claims (000s)	Actual minus Projected Recorded Claims (000s)
PAY	2022	September	(47)	(47)	7,792	2,281	3,864	499
		October	(2)	(2)	5,260	(539)	2,558	(930)
PAY Total			**(49)**	**(49)**	**13,052**	**1,742**	**6,422**	**(431)**
CAY	2022	September	25,468	(1,938)	5,009	1,517	10,033	847
		October	27,018	(273)	6,275	1,654	11,020	861
CAY Total			**52,486**	**(2,211)**	**11,284**	**3,171**	**21,053**	**1,708**
Grand Total			**52,437**	**(2,260)**	**24,336**	**4,913**	**27,475**	**1,277**

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

Claims transaction activity is generally volatile; changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances

are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. The variances are also reviewed as part of the quarterly valuation process, as an indicator of changes in the claims development process or potential bias in ultimate claims estimates.

More detailed analysis and commentary on actual vs. projected for the most recent reporting months is provided below.

2.1.a   Actual vs. Projected (AvsP): Earned Premium

The following charts show actual **earned premium**[5] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Alberta Grid RSP Actual **Earned Premium** by Calendar Month*
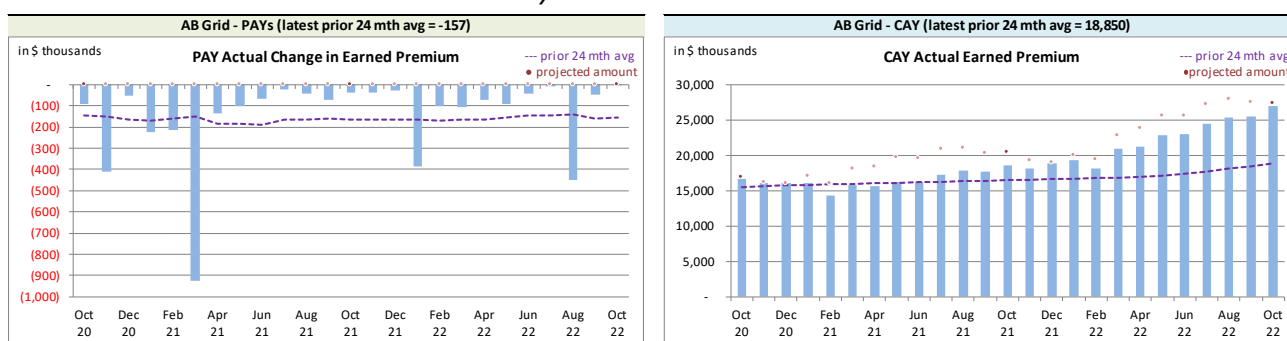
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(157)	18,850
std dev	206	3,291
A-P <> std dev	6	16
% <> std dev	24.0%	64.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	worse

The associated variances between the actual changes and the projections from the previous month are shown in the following charts. **Earned premium** change projections are all attributed to the current accident year, as the projection upload does not accept earned premium changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

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[5]Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

*Alberta Grid RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*
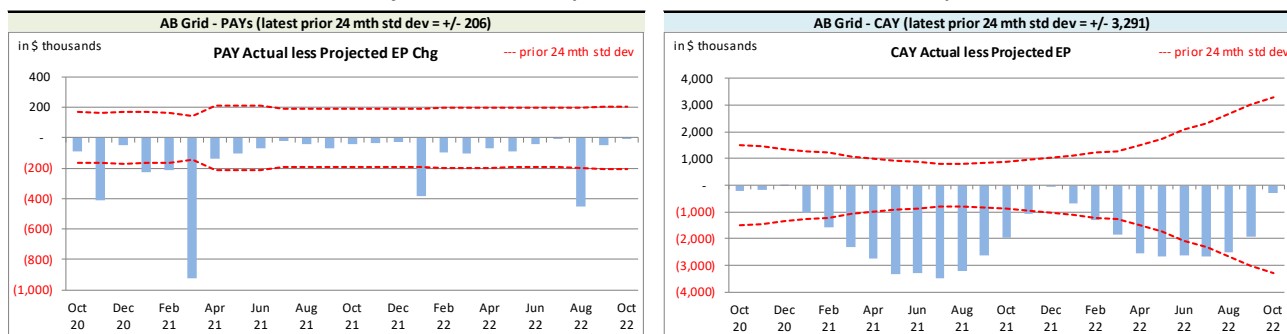
We project **earned premium** changes from known unearned premium balances and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[7], with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to address the bias issue, but it has not currently deemed as a priority.

2.1.b   AvsP: Recorded Indemnity & Allowed Claims Expense

The following charts show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Alberta Grid RSP Actual **Recorded** by Calendar Month*
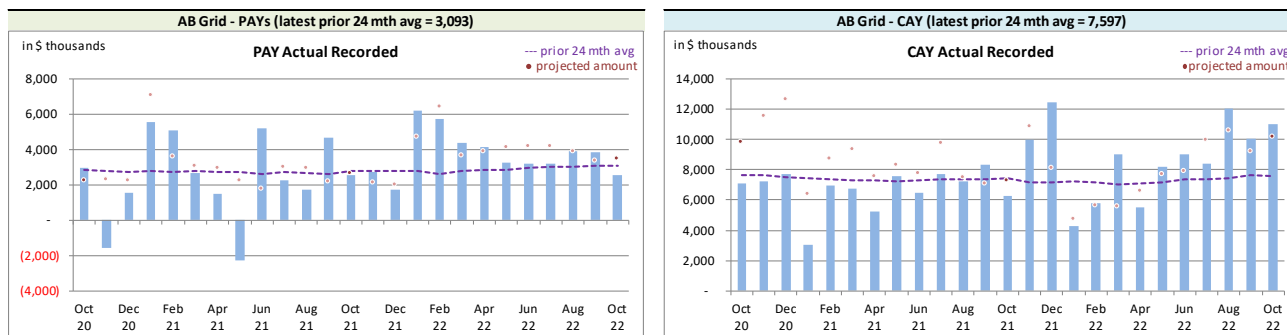
Recorded activity variances from the previous month's projections shown in the following charts, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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[6]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

[7]We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at May 2022 has only 2 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

*Alberta Grid RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*
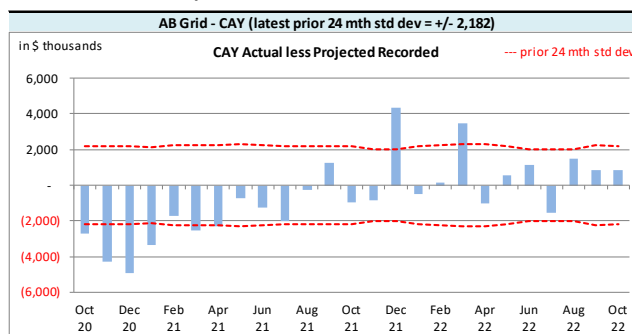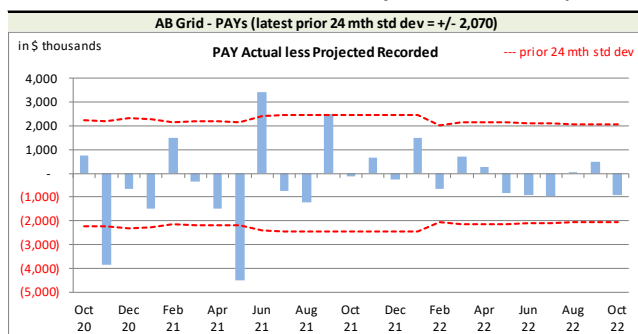
On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	3,093	7,597
std dev	2,070	2,182
A-P <> std dev	4	8
% <> std dev	16.0%	32.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	no better

With respect to **recorded** indemnity & allowed claims expense activity, 16% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias[8] has not been indicated at a 95% confidence level on a rolling 25-month basis (10 of 25 variances were positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 32% of the time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed better than simply projecting the prior 24-month average amount. Bias not been indicated at a 95% confidence level on a lagging 24-month basis (9 of 25 variances were positive).

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts below related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

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[8] For the binomial distribution with 25 trials and an assumed 50% success probability, the 95% confidence range is 8 to 17 successes. That is, favourable or unfavourable counts of 0 to 7 or 18 to 25 out of 25 outcomes would suggest bias.

*Alberta Grid RSP Levels that influence[9] **Recorded** activity by Calendar Month*
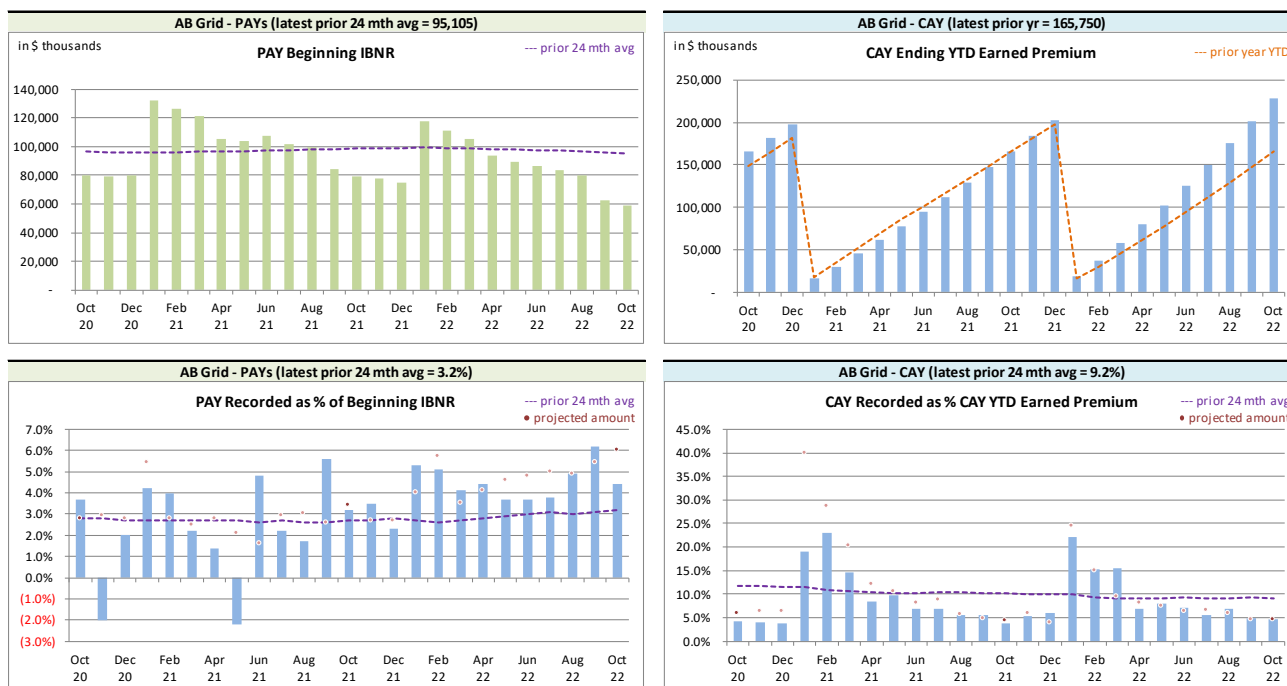
We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left of the preceding group of charts) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);

- the annual switchover as a CAY becomes a PAY (occurs in January); and

- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.1.c   AvsP: Paid Indemnity & Allowed Claims Expense

The following charts show actual **paid** activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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[9]Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

*Alberta Grid RSP Actual **Paid** activity by Calendar Month*
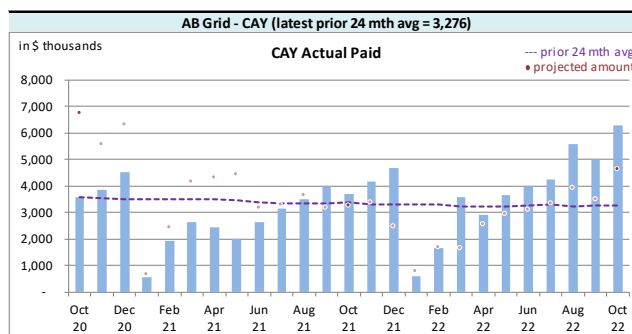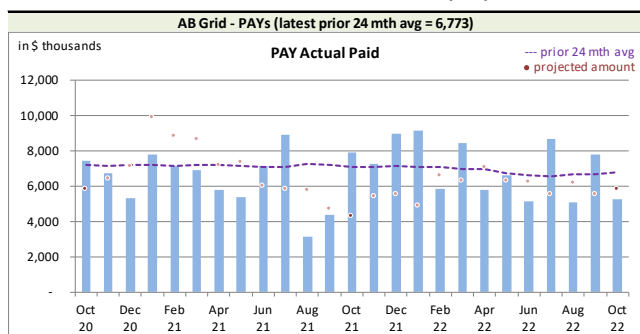
Paid activity variances from the previous month's projections shown in the following charts, including the prior 24-month standard deviation levels to show how the variances from projection compare with historical standard deviations.

*Alberta Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*
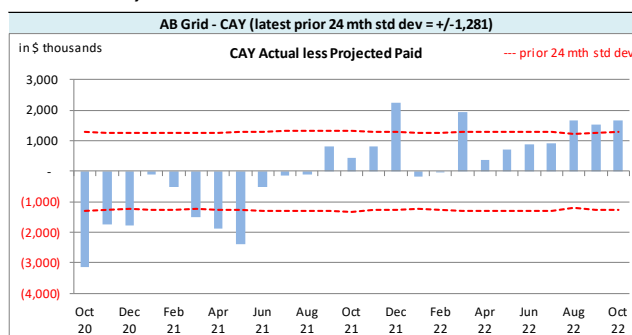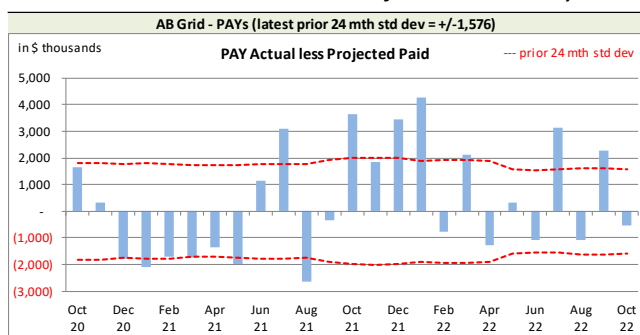
On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	6,773	3,276
std dev	1,576	1,281
A-P <> std dev	12	11
% <> std dev	48.0%	44.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	worse

With respect to **paid** indemnity & allowed claims expense, 48% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount (assuming it follows a normal distribution), and we are actively looking into the projection process for means of improving this result. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (12 of 25 variances are positive).

The PAY **paid** variance was just outside of the one standard deviation band this month (see preceding chart on the right). The lower than projected recorded activity was reviewed, and attributed to process variance.

The current accident year (CAY) **paid** variances fell outside one standard deviation 44% of the time over the last 25 calendar months (see preceding table on the left), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has been indicated at a 95% confidence level on a rolling 25-month basis (12 of 25 variances are positive).

We have included, for reference, the following charts related to levels influencing **paid** activity.

*Alberta Grid RSP Levels that influence[10] **Paid** activity by Calendar Month*
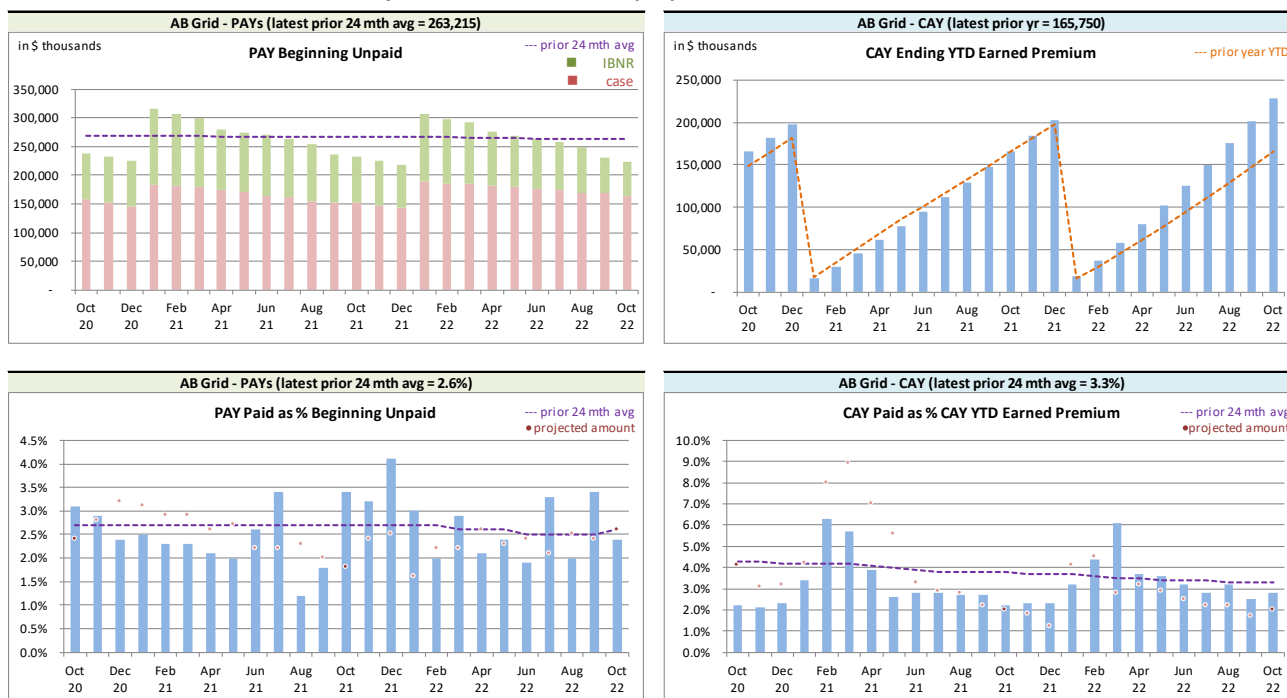
We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY beginning unpaid balance (see upper left of the preceding group of charts) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);

- the annual switchover as a CAY becomes a PAY (occurs in January); and

- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2   Actuarial Provisions

An ultimate loss ratio matching method (described in section 3) is used to determine the month's IBNR[11], and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the projections and actuals based on the applicable valuation.

Exhibit G shows the accident years IBNR amount change from last month to this month are broken

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[10]Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

[11]For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".

down:

  (i)   the change projected last month;

  (ii)   the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and

  (iii)   the additional change due to valuation implementation impacts (as applicable)

3   Ultimate Loss Ratio Matching Method

An "ultimate loss ratio matching method" continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

  (a)   Earned premium to-date
  (b)   Ultimate loss[12] ratio per latest valuation
  (c)   Estimated ultimate incurred = (a) x (b)
  (d)   Recorded indemnity & allowed claims expense to-date
  (e)   IBNR = (c) – (d)

4   Calendar Year-to-Date Results

The following table summarizes the calendar year-to-date results for indemnity & allowed claims expenses[13], including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 75.4% rather than 75.0% (the valuation ultimate ratio for accident year 2022), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Grid RSP Summary of Operations due to rounding.)

Alberta Grid RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary ($ thousands)

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(22,851)	(10.1%)	(23,833)	(10.5%)	(46,684)	(20.6%)	(3,475)	1.1%
CAY	170,887	75.4%	3,186	1.4%	174,073	76.8%	17,759	(1.5%)
TOTAL	148,036	65.3%	(20,647)	(9.1%)	127,389	56.2%	14,284	(0.5%)

("% EP" based on 2022 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations implemented. The loss

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[12]"Loss" here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances ("Expense Allowance" in the Operational Report).

[13]Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month's earned premium, and due to the impact of valuation implementation.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month's exposure and regular changes to actuarial present value adjustments as the year ages, and due to the impact of valuation implementation.

5   Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month's Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The "Total IBNR" from this exhibit shown in the Operational Report as "Undiscounted IBNR".

The ultimate loss ratios presented in section 6, Exhibit B, refer to the estimates derived based on various actuarial methodologies applied to the experience of the Alberta Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month's Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6   EXHIBITS

The exhibits listed below are provided on the pages that follow:

EXHIBIT A	IBNR for Member Sharing – includes Actuarial Present Value Adjustments
EXHIBIT B	IBNR
EXHIBIT C	Premium Liabilities
EXHIBIT D	Projected Year-end Policy Liabilities
EXHIBIT E	Discount Rate & Margins for Adverse Deviations
EXHIBIT F	Interest Rate Sensitivity
EXHIBIT G	Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A									
					Amounts in $000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Sep. 2022	Actual Oct. 2022	Projected Nov. 2022	Projected Dec. 2022	Projected Jan. 2023	Projected Feb. 2023	Projected Mar. 2023	Projected Dec. 2023
	2006	(78)	(78)	(76)	(75)	(73)	(69)	(68)	(43)
	2007	(134)	(135)	(133)	(132)	(123)	(116)	(116)	(70)
	2008	87	91	89	87	82	78	76	49
	2009	(4)	(5)	(5)	(6)	4	4	4	5
	2010	(13)	(15)	(16)	(16)	(8)	(8)	(8)	(4)
	2011	(4)	-	-	(1)	6	6	5	2
	2012	(112)	27	28	29	79	75	73	48
	2013	(1)	(23)	(22)	(21)	(8)	(8)	(7)	(5)
	2014	178	69	66	64	8	7	7	2
	2015	651	590	577	566	561	535	527	340
	2016	183	1,106	1,081	1,063	1,024	974	963	613
discount rate	2017	1,848	2,292	2,240	2,207	2,147	2,043	2,017	1,279
3.52%	2018	4,240	3,925	3,857	3,542	3,285	3,125	3,083	1,962
	2019	9,758	9,673	9,101	8,988	8,600	8,125	7,815	4,717
interest rate margin	2020	21,009	17,160	16,201	15,440	15,227	14,439	13,950	9,548
25 basis pts	2021	29,515	26,411	24,924	23,751	23,209	21,933	21,115	13,648
	2022	84,056	90,795	101,037	111,776	107,241	100,934	96,979	60,245
	TOTAL	151,225	151,931	158,997	167,308	174,340	174,688	177,827	147,206
	Change		706	7,066	8,311	7,032	348	3,139	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B

IBNR

IBNR	Ultimate Loss Ratio	Accident Year	Actual Sep. 2022	Actual Oct. 2022	Projected Nov. 2022	Projected Dec. 2022	Projected Jan. 2023	Projected Feb. 2023	Projected Mar. 2023	Projected Dec. 2023
	66.4%	2006	(81)	(81)	(79)	(78)	(75)	(71)	(70)	(45)
	71.0%	2007	(159)	(159)	(156)	(154)	(147)	(139)	(138)	(86)
	67.1%	2008	79	78	76	75	72	68	67	42
	60.6%	2009	(14)	(14)	(14)	(14)	(13)	(12)	(12)	(7)
	61.7%	2010	(23)	(23)	(23)	(23)	(22)	(21)	(21)	(13)
	66.2%	2011	(12)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
	73.5%	2012	(121)	58	57	56	54	51	50	31
	73.9%	2013	9	1	1	1	1	1	1	1
	79.9%	2014	127	32	31	31	30	28	28	17
	89.4%	2015	485	477	467	462	442	419	415	258
	93.0%	2016	(7)	945	926	917	877	831	823	511
	82.9%	2017	1,494	2,041	2,000	1,980	1,893	1,795	1,777	1,102
	79.9%	2018	3,411	3,277	3,244	2,959	2,829	2,682	2,655	1,647
	73.1%	2019	8,558	8,783	8,238	8,156	7,634	7,176	6,889	4,016
	62.6%	2020	18,398	15,123	14,216	13,505	13,113	12,352	11,907	7,906
	64.9%	2021	26,390	24,002	22,562	21,434	20,469	19,241	18,471	11,446
	75.0%	2022	80,173	87,609	97,493	107,862	103,008	96,828	92,955	57,052
		TOTAL	138,739	142,179	149,069	157,199	162,692	162,895	165,889	135,184
		Change		3,440	6,890	8,130	5,493	203	2,994	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C

Premium Liabilities

Premium Liabilities	Actual Sep. 2022	Actual Oct. 2022	Projected Nov. 2022	Projected Dec. 2022	Projected Jan. 2023	Projected Feb. 2023	Projected Mar. 2023	Projected Dec. 2023
(1) unearned premium (UP)	176,872	180,204	185,654	183,487	173,044	165,222	161,327	169,698
FOR MEMBER SHARING								
(2) expected future costs ratio {% of (1)}	82.4%	79.4%	80.0%	80.5%	80.6%	80.6%	80.7%	82.5%
(3) expected future costs {(1) x (2)}	145,786	143,137	148,469	147,793	139,400	133,149	130,125	139,966
(4) premium deficiency / (deferred policy acquisition cost)	(31,086)	(37,067)	(37,185)	(35,694)	(33,644)	(32,073)	(31,202)	(29,732)
Excluding Actuarial Present Value Adjustments								
(5) expected future costs ratio {% of (1)}	80.1%	78.1%	78.7%	79.2%	79.2%	79.3%	79.3%	81.1%
(6) expected future costs {(1) x (5)}	141,647	140,776	146,022	145,358	137,103	130,954	127,980	137,659
(7) premium deficiency / (deferred policy acquisition cost)	(35,225)	(39,428)	(39,632)	(38,129)	(35,941)	(34,268)	(33,347)	(32,039)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2022, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2022 ($000s)									
ending 2022	nominal values			actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
2006	103	(78)	25	-	-	3	-	3	3	28
2007	415	(154)	261	(4)	-	26	-	26	22	283
2008	46	75	121	-	-	12	-	12	12	133
2009	186	(14)	172	(9)	1	17	(1)	16	8	180
2010	309	(23)	286	(21)	1	29	(2)	27	7	293
2011	438	(4)	434	(39)	3	43	(4)	39	3	437
2012	3,323	56	3,379	(353)	23	338	(35)	303	(27)	3,352
2013	1,096	1	1,097	(127)	8	110	(13)	97	(22)	1,075
2014	1,086	31	1,117	(76)	5	112	(8)	104	33	1,150
2015	3,636	462	4,098	(295)	19	409	(29)	380	104	4,202
2016	5,031	917	5,948	(434)	28	595	(43)	552	146	6,094
2017	8,657	1,980	10,637	(809)	53	1,064	(81)	983	227	10,864
2018	18,949	2,959	21,908	(1,554)	101	2,191	(155)	2,036	583	22,491
2019	28,778	8,156	36,934	(2,765)	180	3,693	(276)	3,417	832	37,766
2020	33,503	13,505	47,008	(3,714)	242	5,871	(464)	5,407	1,935	48,943
2021	48,334	21,434	69,768	(5,949)	386	8,615	(735)	7,880	2,317	72,085
PAYs (sub-total):	153,840	49,337	203,177	(16,149)	1,050	23,140	(1,846)	21,294	6,195	209,372
CAY (2022)	56,047	107,862	163,909	(14,336)	926	18,984	(1,660)	17,324	3,914	167,823
claims liabilities:	209,887	157,199	367,086	(30,485)	1,976	42,124	(3,506)	38,618	10,109	377,195

	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	183,487	(38,129)	145,358	(12,360)	796	15,306	(1,307)	13,999	2,435	147,793

*Total may not be sum of parts, as apvs apply to future costs within UPR

policy liabilities:			512,444	(42,845)	2,772	57,430	(4,813)	52,617	12,544	524,988

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2022 from the valuation), followed by the selected discount rate and the associated margin for investment income.

| | Selected Claims Development MfADs | | | |
Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	Margins
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	10.0%	10.0%
2015	10.0%	10.0%	5.1%	10.0%
2016	10.0%	10.0%	10.0%	10.0%
2017	10.0%	10.0%	10.0%	10.0%
2018	10.0%	10.0%	10.0%	10.0%
2019	10.0%	10.0%	10.0%	10.0%
2020	12.5%	10.0%	12.5%	12.5%
2021	12.4%	10.0%	12.5%	12.3%
2022	12.2%	10.0%	5.5%	11.6%
2023	12.0%	10.0%	5.1%	10.6%
prem liab	12.0%	10.0%	5.1%	10.6%

discount rate:	3.52%
margin (basis points):	25

*prem liabilities as at 2022m09

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2022 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2022, and are based on more up-to-date information). We have included the most recent valuation selection (3.17%), the prior valuation assumption (2.24%) and the prior fiscal year end valuation assumption (0.20%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2022 projected Unpaid								
AY	2.52%	3.02%	3.52%	4.02%	4.52%	5.02%	3.17%	0.81%
2005 & prior	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	80	80	80	79	79	79	80	80
2007	389	388	387	386	385	385	388	393
2008	-	-	-	-	-	-	-	-
2009	200	198	197	196	194	193	198	205
2010	335	331	328	324	321	318	330	348
2011	496	490	483	477	471	465	488	519
2012	3,608	3,553	3,499	3,447	3,396	3,346	3,537	3,809
2013	1,019	1,002	985	969	953	937	997	1,083
2014	1,132	1,121	1,111	1,101	1,091	1,081	1,118	1,172
2015	4,490	4,444	4,399	4,355	4,312	4,270	4,430	4,658
2016	6,448	6,380	6,315	6,251	6,188	6,128	6,360	6,691
2017	11,183	11,061	10,942	10,826	10,714	10,603	11,025	11,625
2018	23,331	23,094	22,864	22,639	22,420	22,206	23,024	24,188
2019	38,642	38,228	37,824	37,430	37,046	36,671	38,106	40,145
2020	49,397	48,836	48,290	47,758	47,239	46,732	48,671	51,431
2021	73,537	72,633	71,753	70,896	70,061	69,247	72,366	76,823
2022	163,421	161,349	159,334	157,374	155,467	153,611	160,738	170,976
Total	377,708	373,189	368,790	364,507	360,336	356,272	371,857	394,145
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	2.52%	3.02%	3.52%	4.02%	4.52%	5.02%	3.17%	0.81%
Total	8,918	4,399	-	(4,283)	(8,454)	(12,518)	3,067	25,355
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	2.52%	3.02%	3.52%	4.02%	4.52%	5.02%	3.17%	0.81%
2005 & prior	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2005	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2006	0.2%	0.1%	0.0%	-0.1%	-0.2%	-0.4%	0.1%	0.7%
2007	0.5%	0.2%	0.0%	-0.2%	-0.5%	-0.7%	0.2%	1.3%
2008	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2009	1.5%	0.7%	0.0%	-0.7%	-1.4%	-2.1%	0.5%	4.0%
2010	2.2%	1.1%	0.0%	-1.1%	-2.1%	-3.1%	0.8%	6.1%
2011	2.6%	1.3%	0.0%	-1.3%	-2.5%	-3.7%	0.9%	7.4%
2012	3.1%	1.5%	0.0%	-1.5%	-3.0%	-4.4%	1.1%	8.8%
2013	3.5%	1.7%	0.0%	-1.7%	-3.3%	-4.9%	1.2%	9.9%
2014	1.9%	1.0%	0.0%	-0.9%	-1.8%	-2.7%	0.7%	5.5%
2015	2.1%	1.0%	0.0%	-1.0%	-2.0%	-2.9%	0.7%	5.9%
2016	2.1%	1.0%	0.0%	-1.0%	-2.0%	-3.0%	0.7%	6.0%
2017	2.2%	1.1%	0.0%	-1.1%	-2.1%	-3.1%	0.8%	6.2%
2018	2.0%	1.0%	0.0%	-1.0%	-1.9%	-2.9%	0.7%	5.8%
2019	2.2%	1.1%	0.0%	-1.0%	-2.1%	-3.0%	0.7%	6.1%
2020	2.3%	1.1%	0.0%	-1.1%	-2.2%	-3.2%	0.8%	6.5%
2021	2.5%	1.2%	0.0%	-1.2%	-2.4%	-3.5%	0.9%	7.1%
2022	2.6%	1.3%	0.0%	-1.2%	-2.4%	-3.6%	0.9%	7.3%
2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	2.4%	1.2%	0.0%	-1.2%	-2.3%	-3.4%	0.8%	6.9%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Components of Member Statement IBNR (i.e. "Discounted") Change

(September 2022 to October 2022)

RSP **Alberta Grid**
AccountCode Desc **IBNR - Discounted**   **M/S IBNR - in $000s**

AccYear	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
prior	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-
2004	(70)	16	(16)	-	-	-	(70)
2005	116	(22)	24	-	2	1.7%	118
2006	(76)	16	(18)	-	(2)	2.6%	(78)
2007	(134)	30	(30)	(1)	(1)	0.7%	(135)
2008	87	(16)	15	5	4	4.6%	91
2009	(5)	3	(2)	(1)	-	-	(5)
2010	(12)	5	(6)	(2)	(3)	25.0%	(15)
2011	(4)	2	6	(4)	4	(100.0%)	-
2012	241	(14)	(343)	143	(214)	(88.8%)	27
2013	49	(7)	(51)	(14)	(72)	(146.9%)	(23)
2014	(195)	14	409	(159)	264	(135.4%)	69
2015	750	(120)	147	(187)	(160)	(21.3%)	590
2016	250	(16)	246	626	856	342.4%	1,106
2017	1,777	(315)	768	62	515	29.0%	2,292
2018	4,221	(514)	58	160	(296)	(7.0%)	3,925
2019	11,291	(1,000)	(1,253)	635	(1,618)	(14.3%)	9,673
2020	22,678	(2,227)	(212)	(3,079)	(5,518)	(24.3%)	17,160
2021	30,410	(3,106)	580	(1,473)	(3,999)	(13.2%)	26,411
2022	74,301	23,240	(3,542)	(3,204)	16,494	22.2%	90,795
Grand Total	**145,675**	**15,969**	**(3,220)**	**(6,493)**	**6,256**	**4.3%**	**151,931**

EXHIBIT G

Components of IBNR (i.e. "Undiscounted") Change

(September 2022 to October 2022)

RSP **Alberta Grid**
AccountCode Desc **IBNR - Undiscounted**   **IBNR - in $000s**

AccYear	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
prior	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-
2004	(78)	16	(16)	-	-	-	(78)
2005	110	(22)	24	-	2	1.8%	112
2006	(79)	16	(18)	-	(2)	2.5%	(81)
2007	(159)	32	(32)	-	-	-	(159)
2008	79	(16)	15	-	(1)	(1.3%)	78
2009	(15)	3	(2)	-	1	(6.7%)	(14)
2010	(23)	5	(5)	-	-	-	(23)
2011	(12)	2	6	-	8	(66.7%)	(4)
2012	232	(15)	(342)	183	(174)	(75.0%)	58
2013	59	(8)	(50)	-	(58)	(98.3%)	1
2014	(247)	16	408	(145)	279	(113.0%)	32
2015	584	(109)	149	(147)	(107)	(18.3%)	477
2016	55	(5)	241	654	890	1,618.2%	945
2017	1,412	(291)	771	149	629	44.5%	2,041
2018	3,328	(466)	93	322	(51)	(1.5%)	3,277
2019	10,052	(954)	(1,219)	904	(1,269)	(12.6%)	8,783
2020	19,931	(2,108)	(149)	(2,551)	(4,808)	(24.1%)	15,123
2021	27,230	(2,949)	528	(807)	(3,228)	(11.9%)	24,002
2022	70,876	22,170	(3,386)	(2,051)	16,733	23.6%	87,609
Grand Total	**133,335**	**15,317**	**(2,984)**	**(3,489)**	**8,844**	**6.6%**	**142,179**