# ALBERTA NON-GRID RISK SHARING POOL

# JANUARY 2021 OPERATIONAL REPORT

# ACTUARIAL HIGHLIGHTS

Related Bulletin: F2021-013_AB_RSP_January_2021_Operational_Reports

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**ACTUARIAL HIGHLIGHTS**

**RSP ALBERTA NON-GRID**

**OPERATIONAL REPORT**

**JANUARY 2021**

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**FACILITY Association**

# 1    Summary

**Key Points**

## 1.1    Valuation Schedule (Fiscal Year 2021)

The January 2021 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation).  The following table summarizes the valuation implementations scheduled for fiscal year 2021.

| ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2021 – SCHEDULE OF VALUATIONS | | | |
|---|---|---|---|
| **Valuation Date** | **Discount Rate (per annum)** | **Operational Report** | **Description of Changes** |
| Sep 30, 2020 (completed) | 0.22% mfad[1] 25 bp | Oct. 2020 | update valuation (roll-forward): accident year 2020 loss ratio decreased 1.7 points to 98.1%; discount rate decreased 4 basis points;  no change to selected margins for adverse deviations |
| Dec. 31, 2020 | % mfad -- bp | Mar. 2021 | update valuation: |
| Mar. 31, 2021 | % mfad -- bp | May 2021 | update valuation (roll-forward): |
| Jun. 30, 2021 | % mfad -- bp | Aug. 2021 | update valuation: |
| Sep. 30, 2021 | % mfad -- bp | Oct. 2021 | update valuation (roll-forward): |

Under the proposed schedule for fiscal year 2021, the off-half valuation quarters ending March 31, 2021 and September 30, 2021 would not reflect a full valuation update of assumptions, but would rather roll-forward key assumptions from the previous valuation.

## 1.2    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 February 20, 2020.

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.

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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%.

### 1.3   Consideration of Recent Legal Decisions and Changes in Legislation / Regulation[2]

There have been no changes in these descriptions since last month's Highlights.

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 **May 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).  With the **most recent** valuation September 30, 2020), consideration of changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2019).

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.  At the current time, no explicit adjustments have been made to our valuation estimates or views based on the amendments to the various Regulations and introduction of Bill 41.  The impact will be assessed with the next valuation (as at December 31, 2020) and as part of the next Industry valuation and trend analysis (as at June 30, 2020).

### 1.4   Current Provision Summary

The following charts show the current levels of claim liabilities[3] booked by accident year[4].  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 2021 full year earned premium (the red hash-mark line) to provide some perspective.

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[2]This url to a pdf is to a helpful guide on how bills become laws:  https://www.ola.org/sites/default/files/common/how-bills-become-law-en.pdf.

[3]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.

[4]Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.
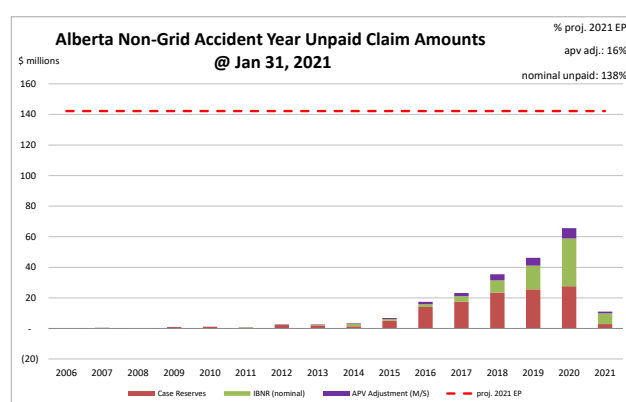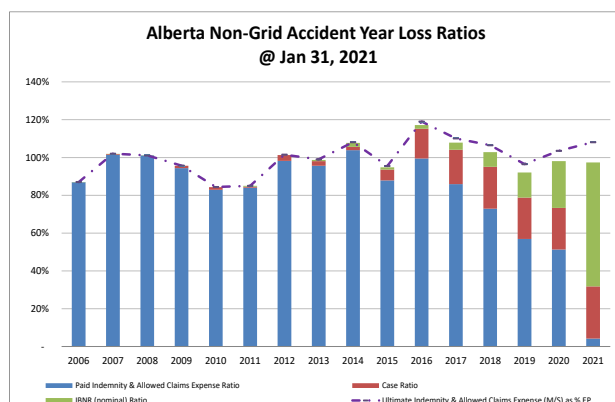
*"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.*

The current actuarial present value adjustments balance ($22.4 million – see the following table) represents 16% of the earned premium projected for the full year 2021 (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.

claim liabilities ($000s)

|  | amt | % |
| --- | --- | --- |
| case | 124,781 | 57.2% |
| ibnr | 71,050 | 32.6% |
| M/S apv adjust. | 22,358 | 10.2% |
| M/S total | 218,189 | 100.0% |

The table to the left 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 54% of the IBNR balance relates to accident years 2020 and 2021 (see Exhibit B). Approximately 83% of the M/S total claim liabilities are related to accident years 2017-2021 inclusive (i.e. the most recent 5 accident years), and approximately 2% is related to accident years 2011 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 | 61,289 | 94.5% |
| prem def/(dpac) | (1,271) | (2.0%) |
| M/S apv adjust. | 4,817 | 7.4% |
| M/S total | 64,835 | 100.0% |

policy liabilities ($000s)

|  | amt | % |
| --- | --- | --- |
| claim | 195,831 | 69.2% |
| premium | 60,018 | 21.2% |
| M/S apv adjust. | 27,175 | 9.6% |
| M/S total | 283,024 | 100.0% |

## 2    Activity During the Month of January 2021

### 2.1    Recorded Premium and Claims Activity

The following table summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[5].

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[5]There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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

| Table 01 Accident Year | Earned Premium | | Paid Indemnity & Allowed Claims Expense | | Case increase / (decrease) | | Recorded increase / (decrease) | |
|---|---|---|---|---|---|---|---|---|
| | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected |
| Prior | (2) | (2) | 2,649 | 1,431 | (2,528) | (1,905) | 121 | (474) |
| 2019 | (28) | (28) | 538 | (4) | 261 | (178) | 799 | (182) |
| 2020 | (51) | (51) | 4,028 | 881 | (1,360) | (247) | 2,667 | 633 |
| 2021 | 10,601 | (313) | 445 | (289) | 2,923 | (2,243) | 3,367 | (2,533) |
| TOTAL | 10,521 | (394) | 7,660 | 2,019 | (705) | (4,574) | 6,955 | (2,555) |

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

Claims transaction activity is generally volatile and 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. Commentary from our review is provided in the sub-sections that follow.

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

The following charts show actual **earned premium**[6] 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 non-Grid RSP Actual **Earned Premium** by Calendar Month*
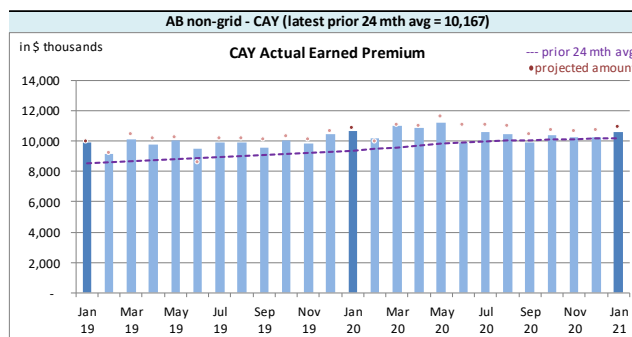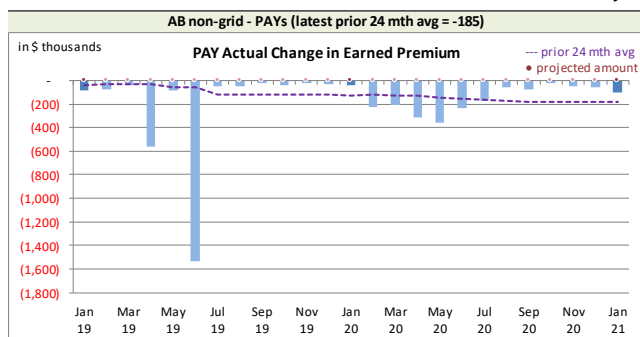


**Earned premium** changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

| On Latest $ thousands | | |
|---|---|---|
| **Earned Premium** | PAYs | CAY |
| Mthly Avg EP Chg (prior 24 mths) | (185) | 10,167 |
| std dev | 316 | 484 |
| A-P <> std dev | 6 | 3 |
| % <> std dev | 24.0% | 12.0% |
| norm <> std dev | 31.7% | 31.7% |
| performance vs 24-mth avg: | better | better |

The associated variance 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

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[6]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.

the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

*Alberta non-Grid RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*
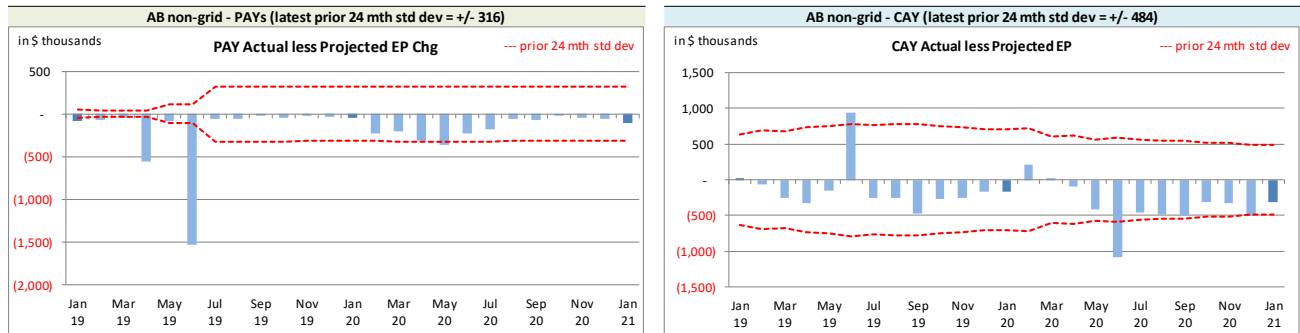


We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[7], with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[8], 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 is not currently deemed as 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 non-Grid RSP Actual **Recorded** by Calendar Month*
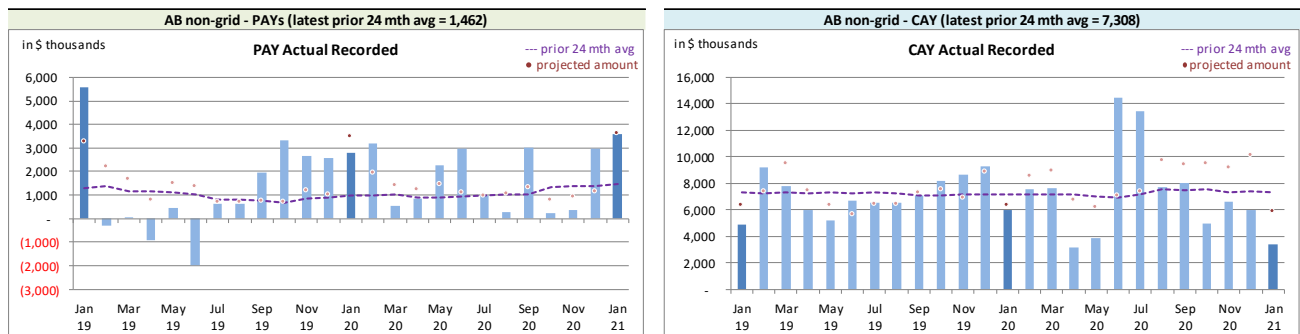


**Recorded** activity variances from the previous month's projections are shown in the following charts, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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

[8]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 January 2021 had only 4 months where the actuals was higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

*Alberta non-Grid RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*
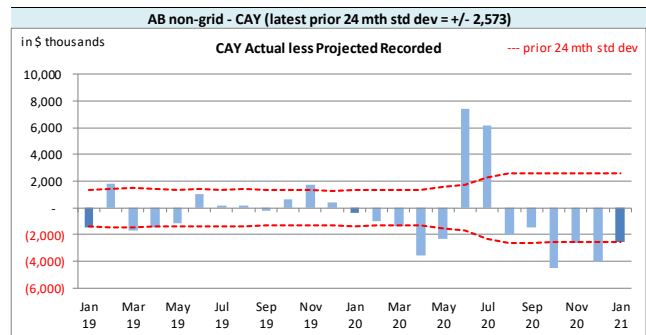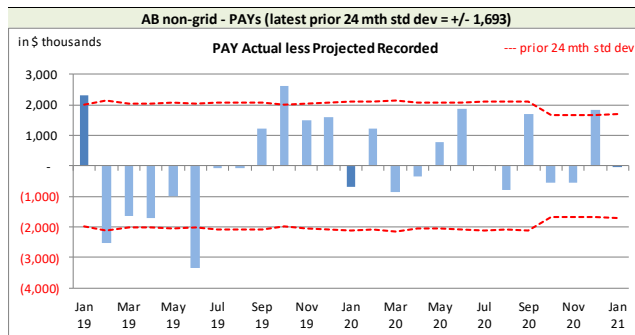




| On Latest $ thousands | | |
|---|---|---|
| **Recorded** | PAYs | CAY |
| Mthly Avg Recorded (prior 24 mths) | 1,462 | 7,308 |
| std dev | 1,693 | 2,573 |
| A-P <> std dev | 5 | 13 |
| % <> std dev | 20.0% | 52.0% |
| norm <> std dev | 31.7% | 31.7% |
| performance vs 24-mth avg: | better | worse |

With respect to **recorded** indemnity & allowed claims expense activity, 20% 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 has not been indicated at a 95% confidence level on a rolling 25-month basis (11 of 25 variances are positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 52% of the time over the last 25 calendar months (see the preceding table on the left), suggesting that the projection process has performed worse than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (9 of 25 variances are 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, the following charts related to levels influencing **recorded** activity.

*Alberta non-Grid RSP Levels that influence[9] **Recorded** activity by Calendar Month*





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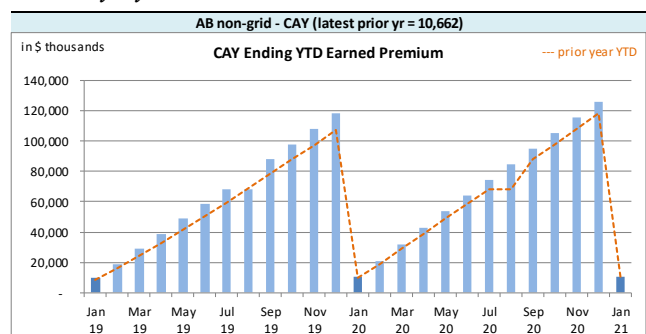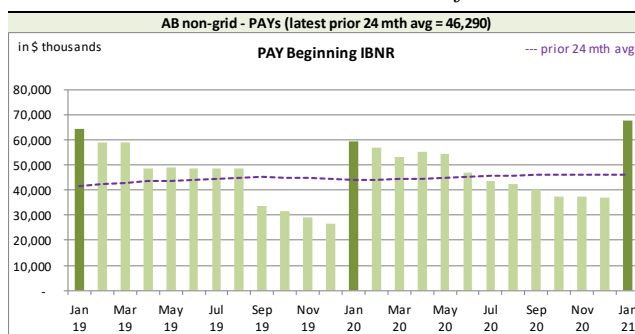
[9]Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate
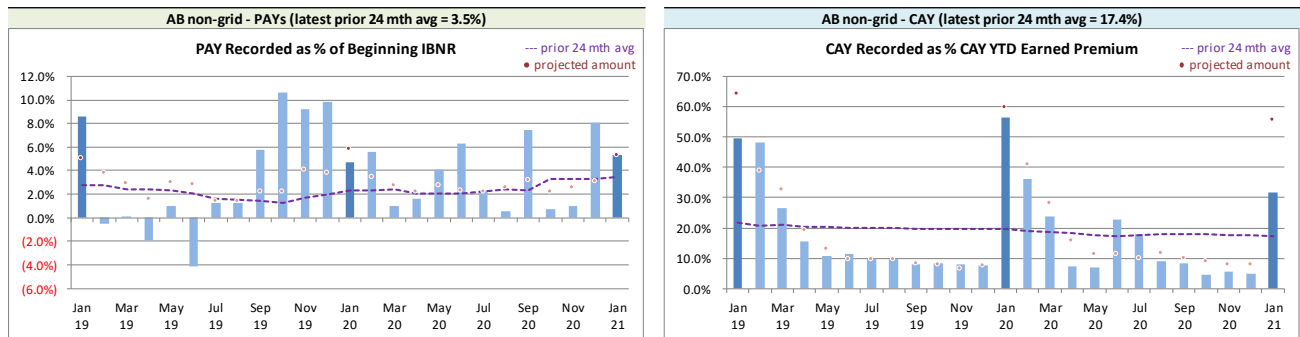
We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left of the preceding group of charts) occur for several possible reasons:

- 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.

*Alberta non-Grid RSP Actual **Paid** activity by Calendar Month*
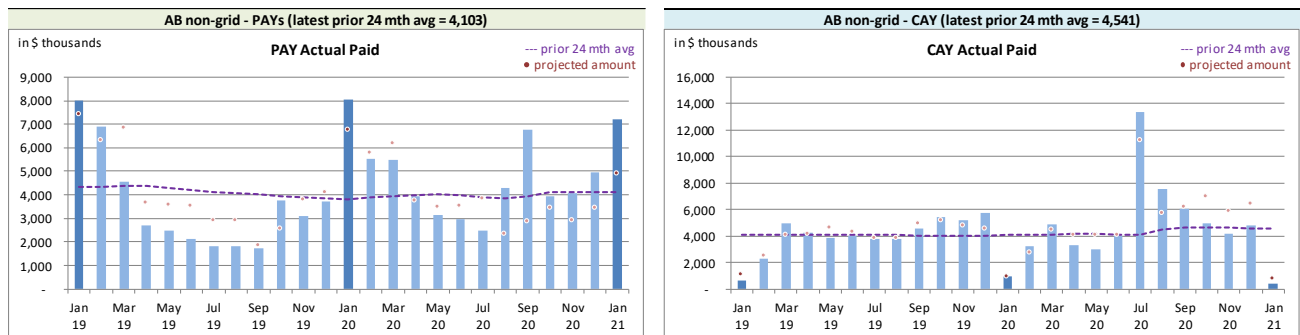


**Paid** activity variances from the previous month's projections are shown in the following charts, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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(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 non-Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*
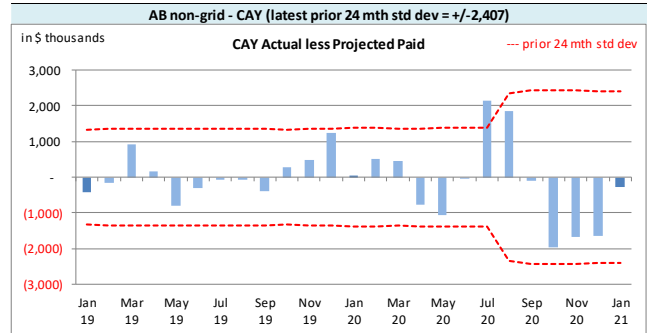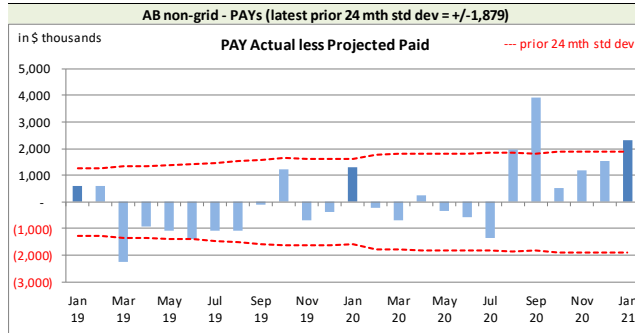




| On Latest $ thousands | | |
|---|---|---|
| **Paid** | PAYs | CAY |
| Mthly Avg Paid (prior 24 mths) | 4,103 | 4,541 |
| std dev | 1,879 | 2,407 |
| A-P <> std dev | 4 | 1 |
| % <> std dev | 16.0% | 4.0% |
| norm <> std dev | 31.7% | 31.7% |
| performance vs 24-mth avg: | better | better |

With respect to **paid** indemnity & allowed claims expense, 16% 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 better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution).

Bias has not been indicated at a 95% confidence level on a lagging 24-month basis (11 of 25 variances are positive).

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

The current accident year (CAY) **paid** variances fell outside of one standard deviation 4% of the time over the last 25 calendar months (see the preceding table), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (10 of 25 variances are positive).

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

*Alberta non-Grid RSP Levels that influence[10] **Paid** activity by Calendar Month*
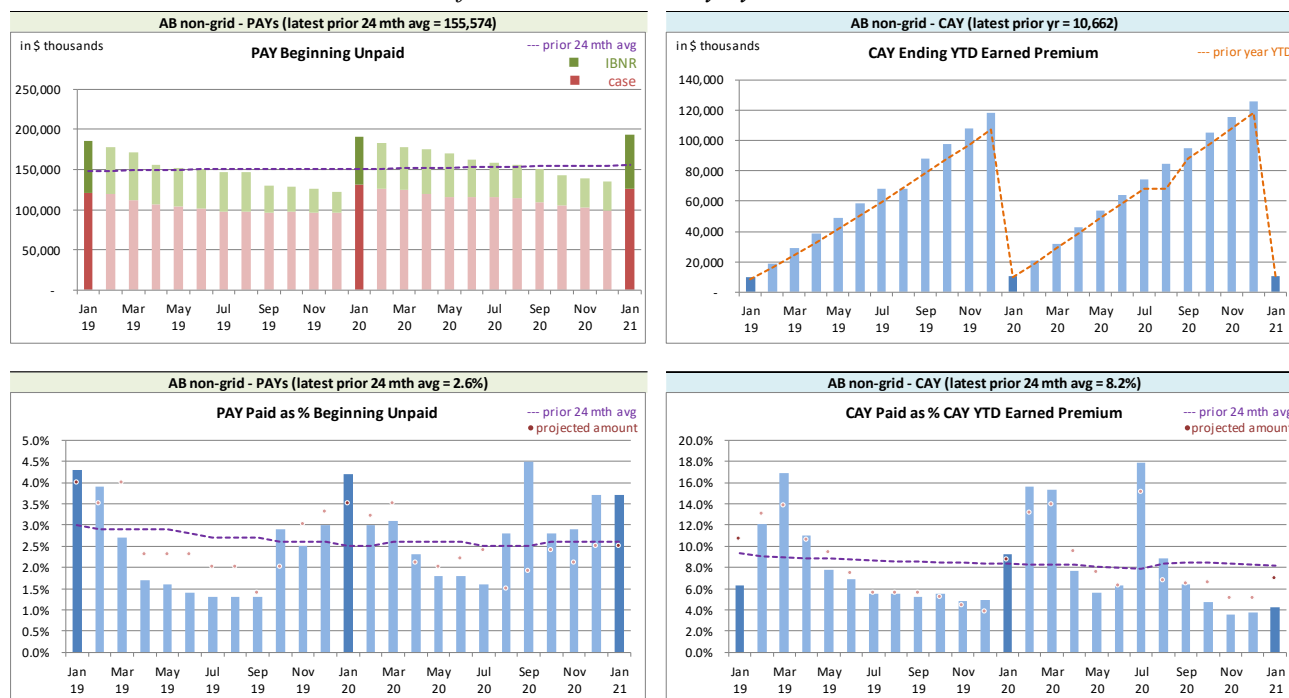


We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY beginning unpaid balance (see upper left of the preceding group of charts) occur for several possible reasons:

- 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 were based on the applicable valuation.

The following table summarizes variances in provisions included in this month's Operational Report

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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".

and the associated one-month projections from last month's Report.

*Alberta Non-Grid RSP Actual vs Projected Summary: IBNR and APV Amounts ($ thousands)*

| Table 02 | | | actuarial present value adjustments | | | | | |
|---|---|---|---|---|---|---|---|---|
| | IBNR | | Discount Amount | | Provisions for Adverse Deviations | | IBNR + actuarial present value adjustments | |
| Accident Year | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected |
| Prior | 17,383 | 447 | (514) | 10 | 9,838 | (169) | 26,707 | 288 |
| 2019 | 15,519 | 157 | (247) | - | 5,355 | (3) | 20,627 | 154 |
| 2020 | 31,190 | (683) | (353) | 6 | 7,140 | (113) | 37,977 | (790) |
| 2021 | 6,958 | 2,227 | (59) | - | 1,198 | (2) | 8,097 | 2,225 |
| TOTAL | 71,050 | 2,148 | (1,173) | 16 | 23,531 | (287) | 93,408 | 1,877 |

The IBNR provision is $2.1 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

   (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)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The following table summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's Operational Report and the one-month projections from last month's Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative amount) prior to actuarial present value adjustments while in a premium deficiency position (shown as a positive amount) after the actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

*Alberta Non-Grid RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts ($ thousands)*

| Table 03 | Premium Deficiency / (Deferred Policy Acquisition Costs) | | actuarial present value adjustments | | Premium Deficiency / (DPAC) including actuarial present value adjustments | |
|---|---|---|---|---|---|---|
| | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected |
| balance: | (1,271) | 23 | 4,817 | (99) | 3,546 | (76) |
| balance as % unearned premium: | (2.1%) | - | 7.9% | - | 5.8% | - |
| actual unearned premium: | 61,289 | | | | | |
| less projected: | (1,259) | | | | | |

## 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 98.4% rather than 97.4% (the valuation ultimate ratio for accident year 2020), 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 Non-Grid RSP Summary of Operations due to rounding.)

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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.

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

| Table 04 | YTD Nominal Values | | YTD actuarial present value adjustment | | YTD Total | |
|---|---|---|---|---|---|---|
| | Amount | % EP | Amount | % EP | Amount | % EP |
| PAYs | (102) | (1.0%) | (833) | (7.9%) | (935) | (8.9%) |
| CAY | 10,325 | 98.4% | 1,139 | 10.9% | 11,464 | 109.2% |
| TOTAL | 10,224 | 97.4% | 306 | 2.9% | 10,530 | 100.3% |

("% EP" based on 2021 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 are implemented. The loss 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.

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.

## 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 is shown in the Operational Report as "Undiscounted IBNR".

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Non-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 Dec. 2020 | Actual Jan. 2021 | Projected Feb. 2021 | Projected Mar. 2021 | Projected Dec. 2021 |
| | 2005 | 13 | 13 | 13 | 12 | 10 |
| | 2006 | 83 | 83 | 81 | 80 | 63 |
| | 2007 | 98 | 98 | 96 | 94 | 72 |
| | 2008 | 69 | 70 | 69 | 68 | 52 |
| | 2009 | 64 | 64 | 60 | 57 | 42 |
| | 2010 | 114 | 95 | 90 | 87 | 64 |
| | 2011 | 435 | 435 | 428 | 422 | 331 |
| | 2012 | 166 | 159 | 150 | 143 | 106 |
| | 2013 | 706 | 717 | 702 | 688 | 538 |
| | 2014 | 1,296 | 2,089 | 2,057 | 2,029 | 1,603 |
| | 2015 | 1,729 | 1,723 | 1,686 | 1,655 | 1,294 |
| discount rate | 2016 | 3,578 | 3,347 | 3,262 | 3,193 | 2,484 |
| 0.22% | 2017 | 5,865 | 5,744 | 5,410 | 4,993 | 3,459 |
| | 2018 | 12,889 | 12,028 | 11,512 | 10,987 | 7,507 |
| interest rate margin | 2019 | 21,522 | 20,627 | 20,002 | 19,318 | 14,719 |
| 25 basis pts | 2020 | 41,164 | 37,977 | 36,453 | 35,837 | 31,226 |
| | 2021 | - | 8,097 | 10,208 | 12,004 | 43,632 |
| | TOTAL | 89,833 | 93,408 | 92,321 | 91,709 | 107,235 |
| | Change | | 3,575 | (1,087) | (612) | |

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

EXHIBIT B

IBNR

| | TABLE EXHIBIT B | | Amounts in $000s | | | | |
|---|---|---|---|---|---|---|---|
| **IBNR** | Ultimate Loss Ratio | Accident Year | Actual Dec. 2020 | Actual Jan. 2021 | Projected Feb. 2021 | Projected Mar. 2021 | Projected Dec. 2021 |
| | 97.4% | 2005 | 5 | 5 | 5 | 5 | 5 |
| | 87.0% | 2006 | 75 | 75 | 74 | 73 | 58 |
| | 101.9% | 2007 | 62 | 62 | 61 | 60 | 47 |
| | 101.1% | 2008 | 66 | 67 | 66 | 65 | 50 |
| | 95.6% | 2009 | (22) | (22) | (22) | (22) | (18) |
| | 84.3% | 2010 | 7 | (9) | (9) | (9) | (9) |
| | 84.9% | 2011 | 361 | 361 | 357 | 353 | 279 |
| | 101.2% | 2012 | (65) | (72) | (71) | (70) | (55) |
| | 98.7% | 2013 | 455 | 467 | 462 | 457 | 363 |
| | 107.7% | 2014 | 980 | 1,774 | 1,756 | 1,737 | 1,382 |
| | 94.8% | 2015 | 1,116 | 1,112 | 1,101 | 1,089 | 866 |
| | 117.2% | 2016 | 1,876 | 1,771 | 1,753 | 1,734 | 1,380 |
| | 107.9% | 2017 | 3,732 | 3,646 | 3,347 | 2,992 | 1,839 |
| | 102.8% | 2018 | 8,847 | 8,110 | 7,632 | 7,174 | 4,367 |
| | 92.1% | 2019 | 16,343 | 15,519 | 14,960 | 14,377 | 10,600 |
| | 98.1% | 2020 | 33,907 | 31,190 | 30,005 | 29,705 | 26,029 |
| | 97.4% | 2021 | - | 6,958 | 8,263 | 9,350 | 31,884 |
| | | **TOTAL** | 67,781 | 71,050 | 69,776 | 69,106 | 79,096 |
| | | Change | | 3,269 | (1,274) | (670) | |

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

## EXHIBIT C

## Premium Liabilities

| TABLE EXHIBIT C | Amounts in $000s | | | | |
|---|---|---|---|---|---|
| Premium Liabilities | Actual Dec. 2020 | Actual Jan. 2021 | Projected Feb. 2021 | Projected Mar. 2021 | Projected Dec. 2021 |
| (1) unearned premium (UP) | 61,576 | 61,289 | 63,002 | 65,721 | 82,698 |
| FOR MEMBER SHARING | | | | | |
| (2) expected future costs ratio {% of (1)} | 105.8% | 105.8% | 105.8% | 106.0% | 108.5% |
| (3) expected future costs {(1) x (2)} | 65,128 | 64,835 | 66,683 | 69,634 | 89,703 |
| (4) premium deficiency / (deferred policy acquisition cost) | 3,552 | 3,546 | 3,681 | 3,913 | 7,005 |
| Excluding Actuarial Present Value Adjustments | | | | | |
| (5) expected future costs ratio {% of (1)} | 97.9% | 97.9% | 98.0% | 98.1% | 100.4% |
| (6) expected future costs {(1) x (5)} | 60,289 | 60,018 | 61,729 | 64,460 | 83,038 |
| (7) premium deficiency / (deferred policy acquisition cost) | (1,287) | (1,271) | (1,273) | (1,261) | 340 |

## EXHIBIT D

### Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2021, broken down by component.

| Alberta non-Grid ending 2021 | Projected Balances as at Dec. 31, 2021 ($000s) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| 2005 | 50 | 5 | 55 | - | - | 5 | - | 5 | 5 | 60 |
| 2006 | (4) | 58 | 54 | - | - | 5 | - | 5 | 5 | 59 |
| 2007 | 208 | 47 | 255 | - | - | 25 | - | 25 | 25 | 280 |
| 2008 | (29) | 50 | 21 | - | - | 2 | - | 2 | 2 | 23 |
| 2009 | 617 | (18) | 599 | - | - | 60 | - | 60 | 60 | 659 |
| 2010 | 737 | (9) | 728 | (3) | 3 | 73 | - | 73 | 73 | 801 |
| 2011 | 243 | 279 | 522 | (2) | 2 | 52 | - | 52 | 52 | 574 |
| 2012 | 1,677 | (55) | 1,622 | (10) | 10 | 162 | (1) | 161 | 161 | 1,783 |
| 2013 | 1,397 | 363 | 1,760 | (9) | 9 | 176 | (1) | 175 | 175 | 1,935 |
| 2014 | 836 | 1,382 | 2,218 | (11) | 11 | 222 | (1) | 221 | 221 | 2,439 |
| 2015 | 3,484 | 866 | 4,350 | (26) | 26 | 431 | (3) | 428 | 428 | 4,778 |
| 2016 | 9,738 | 1,380 | 11,118 | (78) | 78 | 1,112 | (8) | 1,104 | 1,104 | 12,222 |
| 2017 | 14,465 | 1,839 | 16,304 | (98) | 98 | 1,630 | (10) | 1,620 | 1,620 | 17,924 |
| 2018 | 20,903 | 4,367 | 25,270 | (152) | 152 | 3,159 | (19) | 3,140 | 3,140 | 28,410 |
| 2019 | 22,551 | 10,600 | 33,151 | (199) | 199 | 4,144 | (25) | 4,119 | 4,119 | 37,270 |
| 2020 | 19,037 | 26,029 | 45,066 | (270) | 270 | 5,228 | (31) | 5,197 | 5,197 | 50,263 |
| PAYs (sub-total): | 95,924 | 47,212 | 143,136 | (858) | 858 | 16,490 | (99) | 16,391 | 16,391 | 159,527 |
| CAY (2021) | 70,006 | 31,884 | 101,890 | (611) | 611 | 11,819 | (71) | 11,748 | 11,748 | 113,638 |
| claims liabilities: | 165,930 | 79,096 | 245,026 | (1,469) | 1,469 | 28,309 | (170) | 28,139 | 28,139 | 273,165 |

| | Unearned Premium | Premium Deficiency / (DPAC) | Total Provision | discount | investment PfAD | nominal development PfAD | development PfAD discount | development PfAD | Total apvs | TOTAL* |
|---|---|---|---|---|---|---|---|---|---|---|
| premium liabilities: | 82,698 | 340 | 83,038 | (330) | 330 | 6,692 | (27) | 6,665 | 6,665 | 89,703 |

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| policy liabilities: | | | 328,064 | (1,799) | 1,799 | 35,001 | (197) | 34,804 | 34,804 | 362,868 |

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, 2020 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30, 2020)

| Accident Year | Third Party Liability | Accident Benefits | Other Coverages | Total |
|---|---|---|---|---|
| | Margins | Margins | Margins | Margins |
| 2004 | 10.0% | 10.0% | 10.0% | 10.0% |
| 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% | 5.0% | 10.0% |
| 2014 | 10.0% | 10.0% | 9.3% | 10.0% |
| 2015 | 10.0% | 10.0% | 10.0% | 9.9% |
| 2016 | 10.0% | 10.0% | 10.0% | 10.0% |
| 2017 | 10.0% | 10.0% | 10.0% | 10.0% |
| 2018 | 12.5% | 10.0% | 12.5% | 12.5% |
| 2019 | 12.5% | 10.0% | 7.5% | 12.5% |
| 2020 | 12.2% | 10.0% | 12.5% | 11.6% |
| 2021 | 11.9% | 10.0% | 5.1% | 8.1% |
| | | | | |
| prem liab | 11.9% | 10.0% | 5.1% | 8.1% |

|  | discount rate: | 0.22% |
|---|---|---|
|  | margin (basis points): | 25 |

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2020 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2020, and are based on more up-to-date information).  We have included the most recent valuation selection (0.22%), the prior valuation assumption (0.26%) and the prior fiscal year end valuation assumption (1.46%) for comparative purposes.  A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

$ Format: $000s

| | Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2020 projected Unpaid | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| AY | 0.00% | 0.00% | 0.22% | 0.72% | 1.22% | 1.72% | 0.26% | 1.46% |
| 2004 | - | - | - | - | - | - | - | - |
| 2005 | - | - | - | - | - | - | - | - |
| 2006 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2007 | 301 | 301 | 301 | 299 | 298 | 296 | 301 | 297 |
| 2008 | - | - | - | - | - | - | - | - |
| 2009 | 802 | 802 | 801 | 794 | 787 | 780 | 801 | 784 |
| 2010 | 1,083 | 1,083 | 1,083 | 1,073 | 1,063 | 1,054 | 1,082 | 1,059 |
| 2011 | 738 | 738 | 738 | 729 | 720 | 711 | 738 | 715 |
| 2012 | 2,567 | 2,567 | 2,566 | 2,541 | 2,514 | 2,489 | 2,566 | 2,502 |
| 2013 | 3,191 | 3,191 | 3,189 | 3,156 | 3,121 | 3,087 | 3,188 | 3,105 |
| 2014 | 4,054 | 4,054 | 4,052 | 3,998 | 3,941 | 3,886 | 4,051 | 3,914 |
| 2015 | 6,867 | 6,867 | 6,862 | 6,758 | 6,651 | 6,547 | 6,860 | 6,600 |
| 2016 | 16,713 | 16,713 | 16,704 | 16,485 | 16,259 | 16,042 | 16,699 | 16,155 |
| 2017 | 23,606 | 23,606 | 23,593 | 23,305 | 23,008 | 22,723 | 23,586 | 22,870 |
| 2018 | 36,747 | 36,747 | 36,722 | 36,281 | 35,821 | 35,385 | 36,711 | 35,612 |
| 2019 | 48,433 | 48,433 | 48,401 | 47,758 | 47,092 | 46,456 | 48,385 | 46,787 |
| 2020 | 69,268 | 69,268 | 69,224 | 68,330 | 67,411 | 66,534 | 69,204 | 66,986 |
| Total | 214,371 | 214,371 | 214,237 | 211,508 | 208,687 | 205,991 | 214,173 | 207,387 |
| | 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 | 0.00% | 0.00% | 0.22% | 0.72% | 1.22% | 1.72% | 0.26% | 1.46% |
| Total | 134 | 134 | - | (2,729) | (5,550) | (8,246) | (64) | (6,850) |
| | 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 | 0.00% | 0.00% | 0.22% | 0.72% | 1.22% | 1.72% | 0.26% | 1.46% |
| 2004 | - | - | - | - | - | - | - | - |
| 2005 | - | - | - | - | - | - | - | - |
| 2006 | - | - | - | - | - | - | - | - |
| 2007 | - | - | - | (0.7%) | (1.0%) | (1.7%) | - | (1.3%) |
| 2008 | - | - | - | - | - | - | - | - |
| 2009 | 0.1% | 0.1% | - | (0.9%) | (1.7%) | (2.6%) | - | (2.1%) |
| 2010 | - | - | - | (0.9%) | (1.8%) | (2.7%) | (0.1%) | (2.2%) |
| 2011 | - | - | - | (1.2%) | (2.4%) | (3.7%) | - | (3.1%) |
| 2012 | 0.0% | 0.0% | - | (1.0%) | (2.0%) | (3.0%) | - | (2.5%) |
| 2013 | 0.1% | 0.1% | - | (1.0%) | (2.1%) | (3.2%) | (0.0%) | (2.6%) |
| 2014 | 0.0% | 0.0% | - | (1.3%) | (2.7%) | (4.1%) | (0.0%) | (3.4%) |
| 2015 | 0.1% | 0.1% | - | (1.5%) | (3.1%) | (4.6%) | (0.0%) | (3.8%) |
| 2016 | 0.1% | 0.1% | - | (1.3%) | (2.7%) | (4.0%) | (0.0%) | (3.3%) |
| 2017 | 0.1% | 0.1% | - | (1.2%) | (2.5%) | (3.7%) | (0.0%) | (3.1%) |
| 2018 | 0.1% | 0.1% | - | (1.2%) | (2.5%) | (3.6%) | (0.0%) | (3.0%) |
| 2019 | 0.1% | 0.1% | - | (1.3%) | (2.7%) | (4.0%) | (0.0%) | (3.3%) |
| 2020 | 0.1% | 0.1% | - | (1.3%) | (2.6%) | (3.9%) | (0.0%) | (3.2%) |
| Total | 0.1% | 0.1% | - | (1.3%) | (2.6%) | (3.8%) | (0.0%) | (3.2%) |
| | curr - 100 bp | curr - 50 bp | curr val assumption | curr + 50bp | curr + 100bp | curr + 150bp | prior val assumption | prior fyr end assumption |

EXHIBIT G

Page 1 of 2

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

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

| | Values | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 |
| 2005 | 13 | - | - | - | - | - | 13 |
| 2006 | 83 | (3) | 3 | - | - | - | 83 |
| 2007 | 98 | (2) | 2 | - | - | - | 98 |
| 2008 | 69 | (2) | 3 | - | 1 | 1.4% | 70 |
| 2009 | 64 | (1) | 1 | - | - | - | 64 |
| 2010 | 114 | (2) | (17) | - | (19) | (16.7%) | 95 |
| 2011 | 435 | (11) | 11 | - | - | - | 435 |
| 2012 | 166 | (1) | (6) | - | (7) | (4.2%) | 159 |
| 2013 | 706 | (16) | 27 | - | 11 | 1.6% | 717 |
| 2014 | 1,296 | (31) | 824 | - | 793 | 61.2% | 2,089 |
| 2015 | 1,729 | (39) | 33 | - | (6) | (0.3%) | 1,723 |
| 2016 | 3,578 | (79) | (152) | - | (231) | (6.5%) | 3,347 |
| 2017 | 5,865 | (146) | 25 | - | (121) | (2.1%) | 5,744 |
| 2018 | 12,889 | (394) | (467) | - | (861) | (6.7%) | 12,028 |
| 2019 | 21,522 | (1,049) | 154 | - | (895) | (4.2%) | 20,627 |
| 2020 | 41,164 | (2,397) | (790) | - | (3,187) | (7.7%) | 37,977 |
| 2021 | - | 5,872 | 2,225 | - | 8,097 | 100.0% | 8,097 |
| **Grand Total** | **89,833** | **1,698** | **1,877** | **-** | **3,575** | **4.0%** | **93,408** |

EXHIBIT G

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

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

| AccYear | Values | | | | | | |
| | 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 |
|---|---|---|---|---|---|---|---|
| 2005 | 5 | - | - | - | - | - | 5 |
| 2006 | 75 | (2) | 2 | - | - | - | 75 |
| 2007 | 62 | (2) | 2 | - | - | - | 62 |
| 2008 | 66 | (2) | 3 | - | 1 | 1.5% | 67 |
| 2009 | (22) | 1 | (1) | - | - | - | (22) |
| 2010 | 7 | - | (16) | - | (16) | (228.6%) | (9) |
| 2011 | 361 | (10) | 10 | - | - | - | 361 |
| 2012 | (65) | 2 | (9) | - | (7) | 10.8% | (72) |
| 2013 | 455 | (13) | 25 | - | 12 | 2.6% | 467 |
| 2014 | 980 | (27) | 821 | - | 794 | 81.0% | 1,774 |
| 2015 | 1,116 | (31) | 27 | - | (4) | (0.4%) | 1,112 |
| 2016 | 1,876 | (53) | (52) | - | (105) | (5.6%) | 1,771 |
| 2017 | 3,732 | (112) | 26 | - | (86) | (2.3%) | 3,646 |
| 2018 | 8,847 | (345) | (392) | - | (737) | (8.3%) | 8,110 |
| 2019 | 16,343 | (981) | 157 | - | (824) | (5.0%) | 15,519 |
| 2020 | 33,907 | (2,034) | (683) | - | (2,717) | (8.0%) | 31,190 |
| 2021 | - | 4,731 | 2,227 | - | 6,958 | 100.0% | 6,958 |
| Grand Total | 67,781 | 1,121 | 2,148 | - | 3,269 | 4.8% | 71,050 |