



# **ALBERTA GRID RISK SHARING POOL**

## **MARCH 2019 OPERATIONAL REPORT**

### **ACTUARIAL HIGHLIGHTS**

Related Bulletin: [F19-030 Alberta RSPs March 2019 Operational Reports](#)

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**ACTUARIAL HIGHLIGHTS****RSP ALBERTA GRID****OPERATIONAL REPORT****MARCH 2019**

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## 1 Summary

### 1.1 Valuation Schedule (Fiscal Year 2019)

The March 2019 Operational Report incorporates the results of an updated valuation (as at December 31, 2018) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2019.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2018 (completed)	2.28% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>decreased</u> 2.0 points to 89.8%; discount rate <u>increased</u> by 41 basis points; no change to selected margins for adverse deviations
Dec. 31, 2018 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 0.3 points to 88.8%; discount rate <u>decreased</u> by 35 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019		May 2019	update valuation (roll forward)
Jun. 30, 2019		Aug. 2019	update valuation
Sep. 30, 2019		Oct. 2019	update valuation (roll forward)

Under the proposed schedule for fiscal year 2019, the “off-half” valuation quarters ending March 31, 2019 and September 30, 2019 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 December 31, 2018 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. Additional detail will be provided in an “Actuarial Highlights – Quarterly Valuation” report which we anticipate will be posted to the FA website later in June 2019.

The valuation implementation impact is summarized in the tables on the next page

*Summary of Impact (\$000s) of Implementing Result of Valuation as at December 31, 2018<sup>1</sup>*

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	(15,443)	(334)	(15,777)	2,626	-	(13,151)
CAY	(122)	28	(94)	344	-	250
Prem Def	(208)	73	(135)	661	-	526
TOTAL	(15,773)	(233)	(16,006)	3,631	-	(12,375)

As indicated in the table above, the incorporation of the new valuation had an estimated **\$12.4 million favourable impact** on the month's net result from operations, subtracting an estimated 31.1 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **91.3%**.

*Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2018*

AB Grid	ytd EP		39,790	(actual)		
	IMPACT unfav / (fav) as % ytd EP 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	(38.8%)	(0.8%)	(39.7%)	6.6%	-	(33.1%)
CAY	(0.3%)	0.1%	(0.2%)	0.9%	-	0.6%
Prem Def	(0.5%)	0.2%	(0.3%)	1.7%	-	1.3%
TOTAL	(39.6%)	(0.6%)	(40.2%)	9.1%	-	(31.1%)

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 \$15.8 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).

The prior accident years overall showed a \$15.4 million favourable nominal variance driven by favourable claims development, particularly related to favourable bodily injury case reserves reductions across multiple companies reported during the quarter. The overall favourable impact is 5.0% of the prior accident years' nominal unpaid balance of \$305.9 million determined at the end of last month (February 2019).

The current accident year and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2019** (down 0.3 points to **88.8%**) and reflecting **2020** (up 0.6 points to

<sup>1</sup>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.

91.3%).

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 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 government line, 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 \$0.2 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 selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for December 2018. Column [4] accounts for the change in the **discount rate** selected (decreased 35 basis point to **1.93%**), indicating an unfavourable impact of \$3.6 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$3.0 million at March 2019 – this compares to the \$3.2 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month’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 **left unchanged** as well.

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**

Liam McFarlane of Ernst & Young LLP is Facility Association’s Appointed Actuary (effective as of June 1, 2013).

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<sup>2</sup>**

The descriptions in this section have been updated to reflect the most recent valuation (December 2018) and updates arising from the most recent industry trend analyses (June 2018). Discussion related to the Supreme Court of Canada Saadati v Moorhead decision (2017 SCC 28, rendered on June 2, 2017) was removed as at this point we do not believe this judgment will have a further impact on our valuation results.

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<sup>2</sup>This link is to a helpful guide on how bills become laws: <http://www.ontla.on.ca/lao/en/media/laointernet/pdf/bills-and-lawmaking-background-documents/how-bills-become-law-en.pdf>.

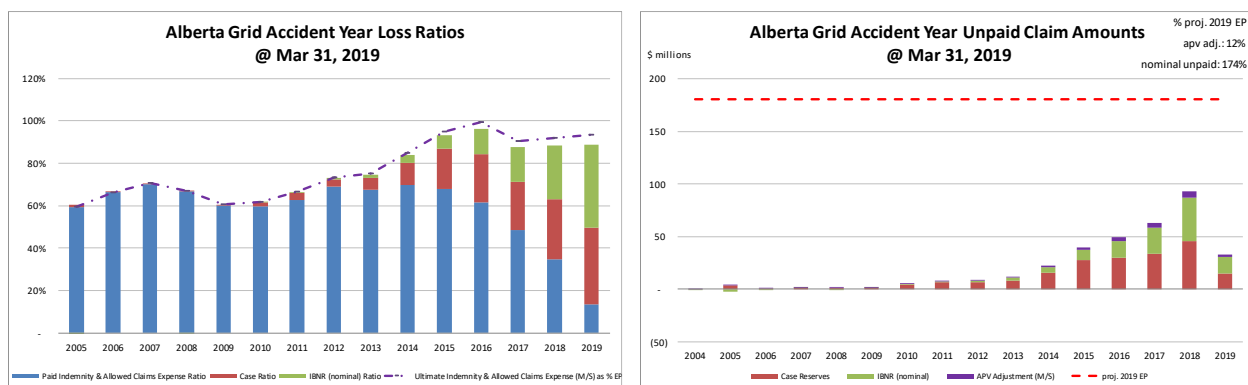
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

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 (December 31, 2018), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at June 30, 2018), impacting the selection of ultimates.

The **Minister of Treasury Board and Finance issued Ministerial Order 14/2018**, on **October 31, 2018**, which states unless otherwise directed by the Minister, the AIRB may not approve filings from insurers for cumulative rate increases on private passenger vehicles greater than +5.0% during the period between December 1, 2018 and August 31, 2019. At the current time, no explicit adjustments have been made to our valuation estimates or views based on this order.

## 1.5 Current Provision Summary

The charts immediately below show the current levels of claim liabilities<sup>3</sup> booked by accident year<sup>4</sup>. 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 2019 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.*

The current actuarial present value adjustments balance (\$21.6 million – see table at the top of the next page) represents 12% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above), with the increase in the actuarial present value adjustments from last month a result of the 2018 Q4 valuation implementation, specifically the decrease in the discount rate. 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.

<sup>3</sup>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.

<sup>4</sup>Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

**claim liabilities (\$000s)**

	amt	%
case	199,006	59.3%
ibnr	114,846	34.2%
M/S apv adjust.	21,629	6.4%
M/S total	335,481	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 50% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 83% of the M/S total claim

liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2009 and prior (i.e. prior to the most recent 10 accident years).

The tables immediately below summarize the premium liabilities and the total policy liabilities.

**premium liabilities (\$000s)**

	amt	%
unearned prem	84,144	106.2%
prem def/(dpac)	(9,024)	(11.4%)
M/S apv adjust.	4,102	5.2%
M/S total	79,222	100.0%

**policy liabilities (\$000s)**

	amt	%
claim	313,852	75.7%
premium	75,120	18.1%
M/S apv adjust.	25,731	6.2%
M/S total	414,703	100.0%

## 2 Activity During the Month of March 2019

### 2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report<sup>5</sup>.

*Alberta 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	3	3	3,157	(426)	(4,149)	(2,186)	(993)	(2,613)
2017	(7)	(7)	1,526	238	1,218	1,870	2,745	2,109
2018	(36)	(36)	2,565	(2,026)	(1,252)	2,446	1,313	420
2019	13,942	(410)	3,172	(356)	4,111	(1,417)	7,284	(1,774)
TOTAL	13,902	(450)	10,420	(2,570)	(71)	713	10,349	(1,857)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

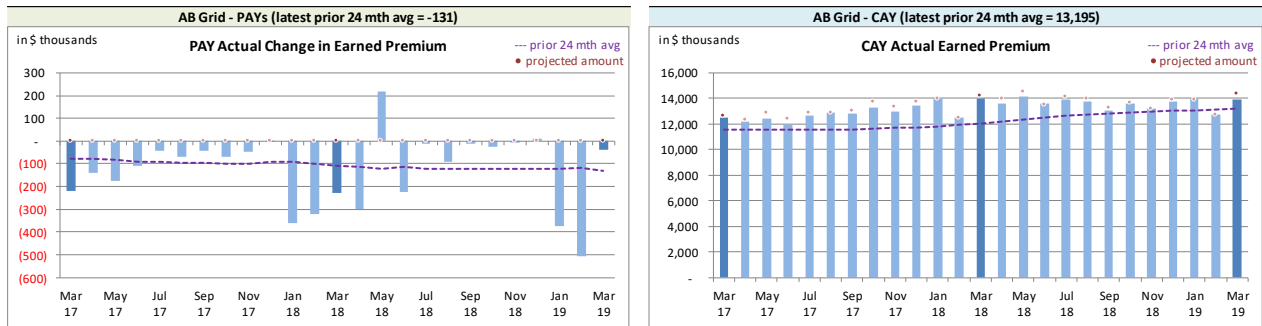
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

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

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

The charts immediately below show actual **earned premium**<sup>6</sup> 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.

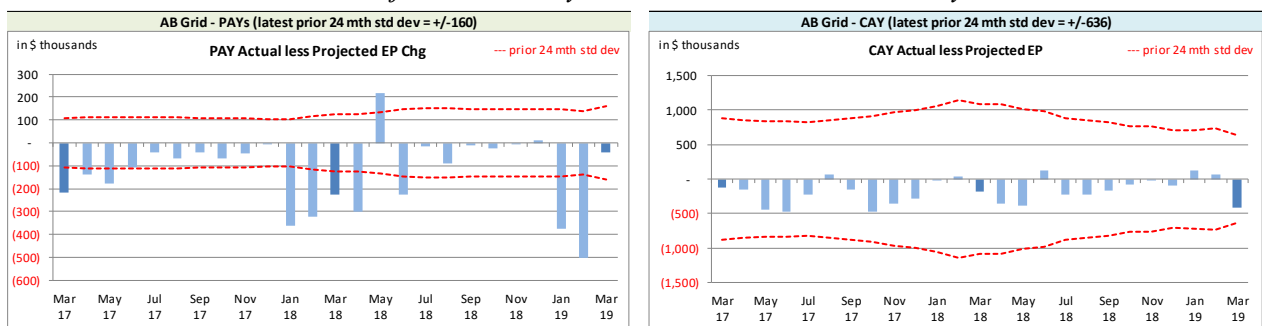
*Alberta Grid RSP Actual Earned Premium by Calendar Month*



**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.

The associated variances between the actual changes and the projections from the previous month are shown in the charts immediately below. **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.

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



On Latest \$ thousands		
	Earned Premium	
	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(131)	13,195
std dev	160	636
A-P <> std dev	11	-
% <> std dev	44.0%	0.0%
norm <> std dev	31.7%	31.7%

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

<sup>6</sup>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.



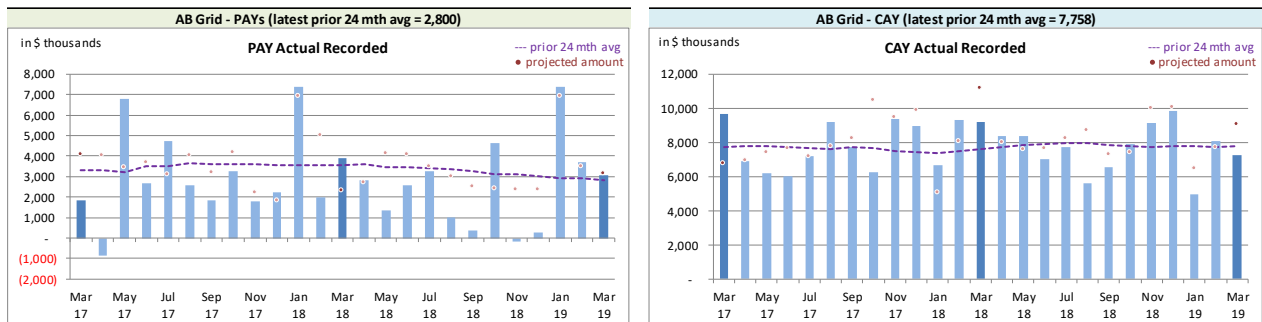
generated prior accident years' (PAYs) bias<sup>7</sup>, with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias<sup>8</sup>, with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

It is not unusual for PAYs earned premium levels in January and February to be negative, but given the 2019 magnitudes, management investigated and confirmed the results reflected activity taken by certain member companies in response to audit activity / findings. The March PAYs were not unusual.

### 2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

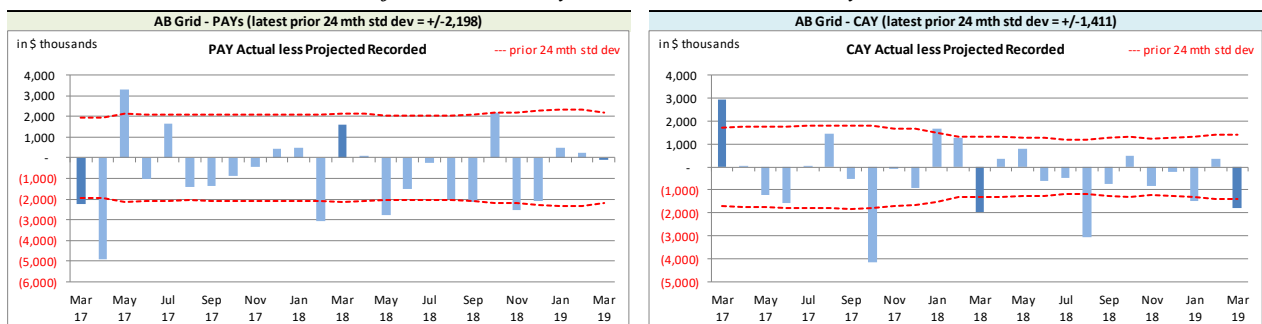
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Alberta Grid RSP Actual Recorded by Calendar Month*



**Recorded** activity variances from the previous month's projections are shown in the charts immediately below, 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: **Recorded** Variances by Calendar Month*



<sup>7</sup>The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

<sup>8</sup>We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at March 2019 has only 5 months where the actuals were higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest \$ thousands		
<b>Recorded</b>	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	2,800	7,758
std dev	2,198	1,411
A-P <> std dev	8	7
% <> std dev	32.0%	28.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 32% 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 no 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.

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 28% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The CAY **recorded** variance (see left chart at the bottom of the previous page) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

We note that there may have been a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years shown in the tables at the top of the next page. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the left table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the right table provides the February ratios for that row's calendar year.

In particular, per the left table at the top of the next page (showing average monthly ratios for each calendar year), the 2018 average **recorded** ratio at 14.9% was the 2<sup>nd</sup> highest ratio over the last 10 years, but the 2018 **paid** ratio at 5.3% was consistent with the immediately prior 5 years. These ratios overall may indicate a change in levels at around 2013/2014, to more elevated levels<sup>9</sup>.

In contrast, per the right table at the top of the next page (showing year-to-date ratios at March for each calendar year), there is statistically significant difference in the recorded ratio and the paid ratio over the periods 2009-2013 vs 2014-2019 at the 5% confidence level, although there has been a decline in both ratios at March 2019 from March 2018.

<sup>9</sup>A two-sample t-test of means for 2009-2013 vs 2014-2018 for both recorded and paid ratios result in p-values below 5%, such that we would then reject the hypothesis that the means are not different. That is, there would be less than a 5% probability of randomly having the size of differences in the mean ratios for 2009-2013 vs 2014-2018 if the ratios really are from the same overall distribution. Put another way, we have statistical evidence that the mean ratios for the period 2009-2013 and 2014-2018 are different (but not absolute proof that they are different).

The same applies to the year-to-date levels, although the latter period ends at 2019, not 2018.

## Alberta Grid RSP year-to-date CAY claims activity (ratio to EP)

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	11.5%		4.4%	
Dec 2010	10.9%	(0.6%)	4.5%	0.1%
Dec 2011	12.8%	1.9%	4.8%	0.3%
Dec 2012	12.4%	(0.4%)	4.7%	(0.1%)
Dec 2013	12.6%	0.2%	4.8%	0.1%
Dec 2014	13.8%	1.2%	5.3%	0.5%
Dec 2015	14.4%	0.6%	5.5%	0.2%
Dec 2016	14.0%	(0.4%)	5.4%	(0.1%)
Dec 2017	15.5%	1.5%	5.6%	0.2%
Dec 2018	14.9%	(0.6%)	5.3%	(0.3%)

CAY avg of mthly ratios for yr

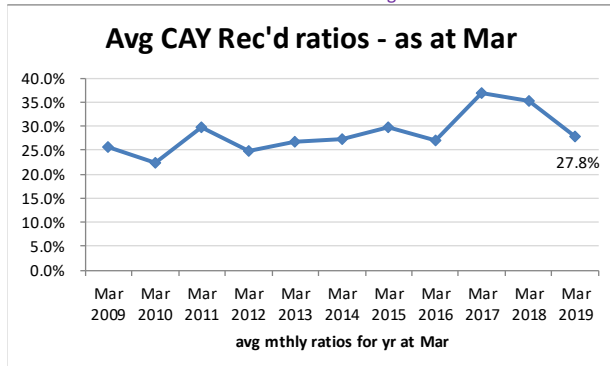
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Mar 2009	25.7%		5.5%	
Mar 2010	22.4%	(3.3%)	6.1%	0.6%
Mar 2011	29.8%	7.4%	6.1%	0.0%
Mar 2012	24.9%	(4.9%)	5.9%	(0.2%)
Mar 2013	26.8%	1.9%	5.6%	(0.3%)
Mar 2014	27.2%	0.4%	6.4%	0.8%
Mar 2015	29.8%	2.6%	6.9%	0.5%
Mar 2016	27.0%	(2.8%)	7.0%	0.1%
Mar 2017	36.9%	9.9%	8.0%	1.0%
Mar 2018	35.3%	(1.6%)	7.8%	(0.2%)
Mar 2019	27.8%	(7.5%)	6.1%	(1.7%)

There has been very strong (87%) correlation between the ytd monthly average **recorded** ratios and very strong (85%) correlation between the ytd monthly average **paid** ratios at March each year and the corresponding ytd monthly average ratios at December, suggesting the March **recorded** ratio is predictive of where the 2019 ytd monthly average **recorded** ratios will be at year-end (that is, the 12 monthly ratios Jan 2019 – Dec 2019). Using simple regression and ignoring that there may be an underlying change in ratios at around 2013/2014, we forecast the average of the 12 monthly ratios for calendar year 2019 (i.e. the average of the monthly ratios for Jan 2019 – Dec 2019) will be 13.1% (95% prediction interval of 11.2% to 14.9%) for **recorded** and 4.8% (95% prediction interval of 4.3% to 5.4%) for **paid**. The results are presented in charts at the top of the next page.

*Alberta Grid RSP average of monthly CAY claims activity ratios to EP*

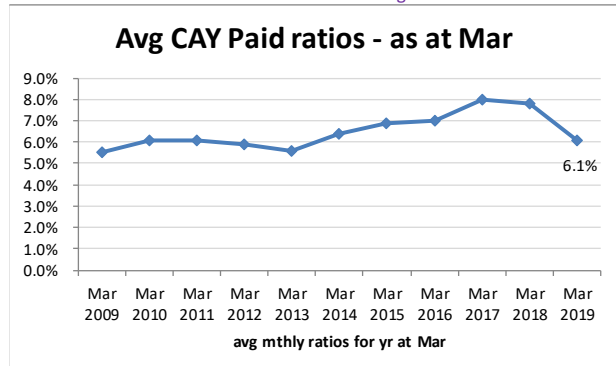
AB Grid RSP

Avg CAY Rec'd ratios - as at Mar



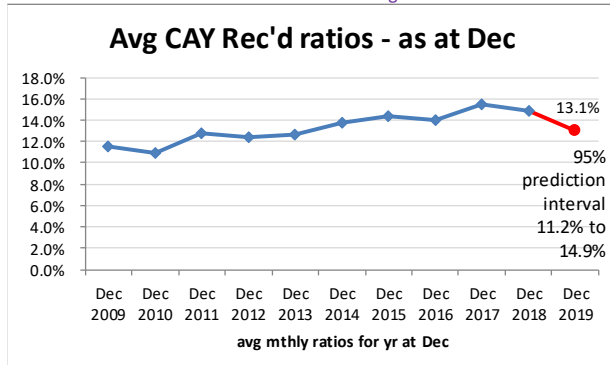
AB Grid RSP

Avg CAY Paid ratios - as at Mar



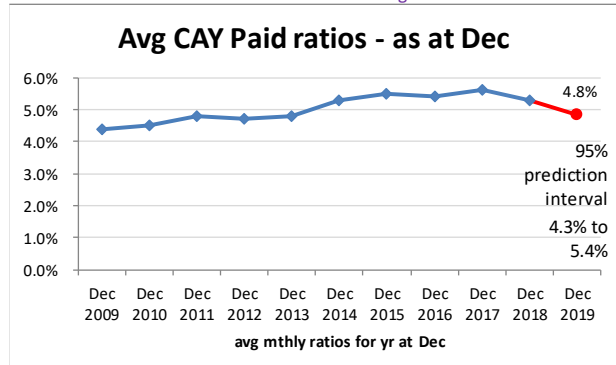
AB Grid RSP

Avg CAY Rec'd ratios - as at Dec



AB Grid RSP

Avg CAY Paid ratios - as at Dec

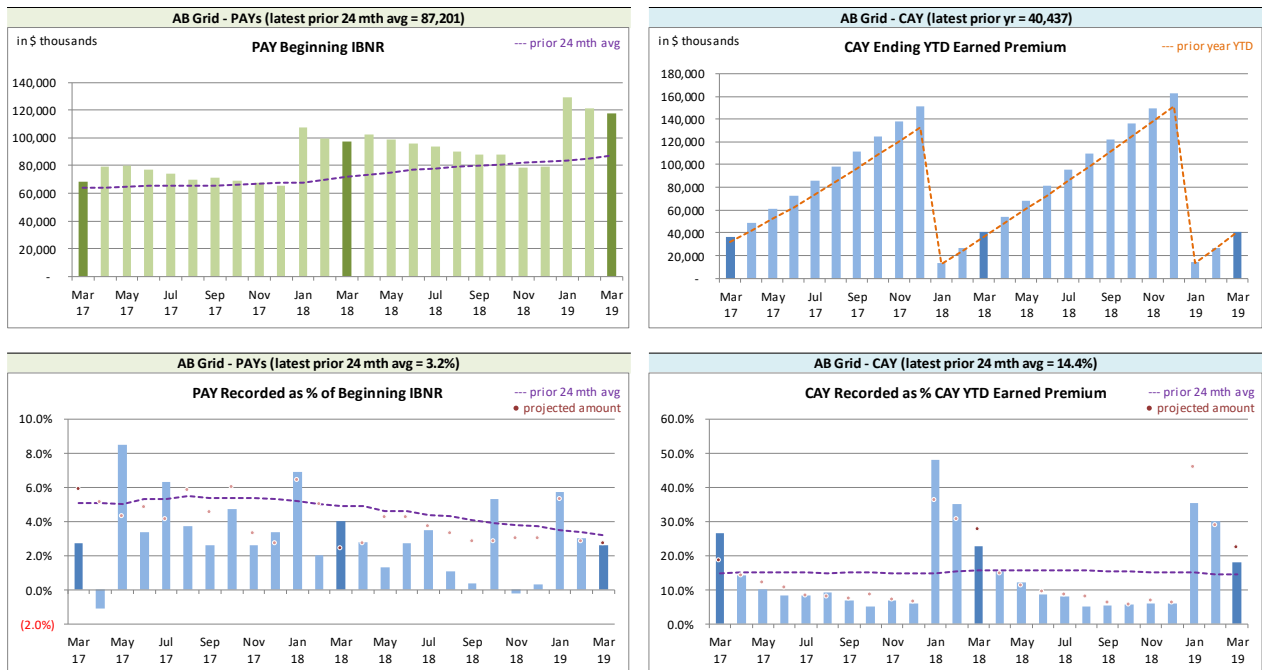


We are taking this information into consideration as part of our projection process.

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 at the top of the next page 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).

*Alberta Grid RSP Levels that influence<sup>10</sup> Recorded activity by Calendar Month*



We track beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart above) occur for several possible reasons:

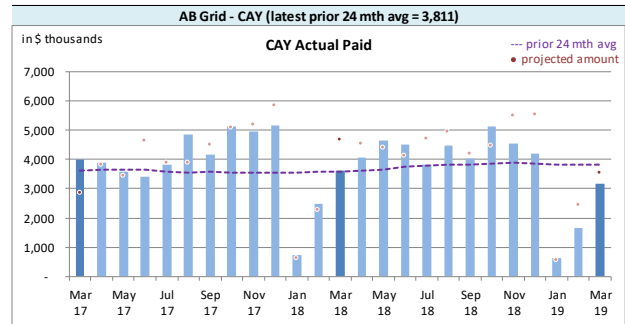
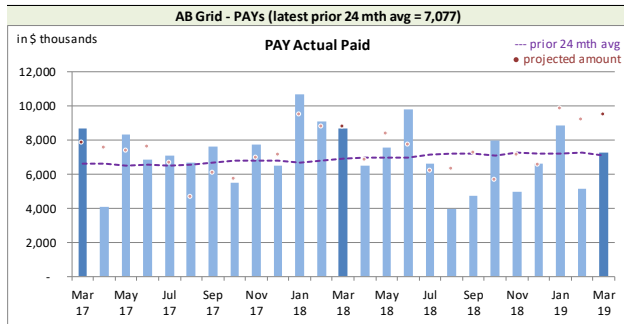
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (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 charts at the top of the next page 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.

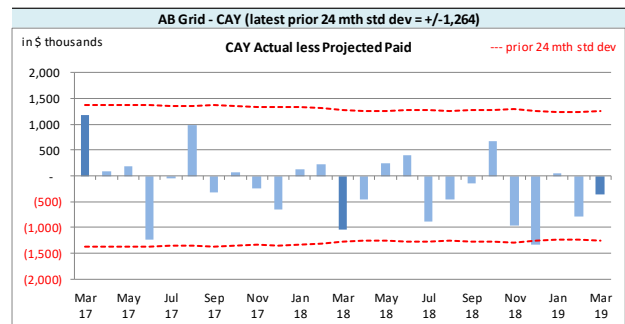
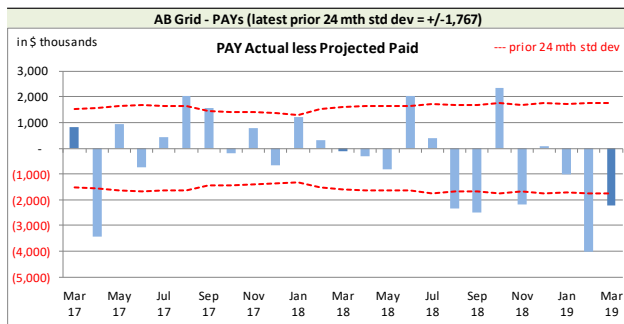
<sup>10</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected 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 are shown in the charts immediately below, 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			
	<b>Paid</b>	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		7,077	3,811
std dev		1,767	1,264
A-P <> std dev		10	1
% <> std dev		40.0%	4.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 40% 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. However, while we note that historical PAYs **paid** does appear to be adequately represented by a normal distribution, having actually used the 24-month prior average instead of our projection would have resulted in 11 months with variances beyond a standard deviation, rather than 10. This might suggest that changing volumes may be more the driver of variances, and more weight given to the paid-to-beginning unpaid ratio may improve projection accuracy. We do note that bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

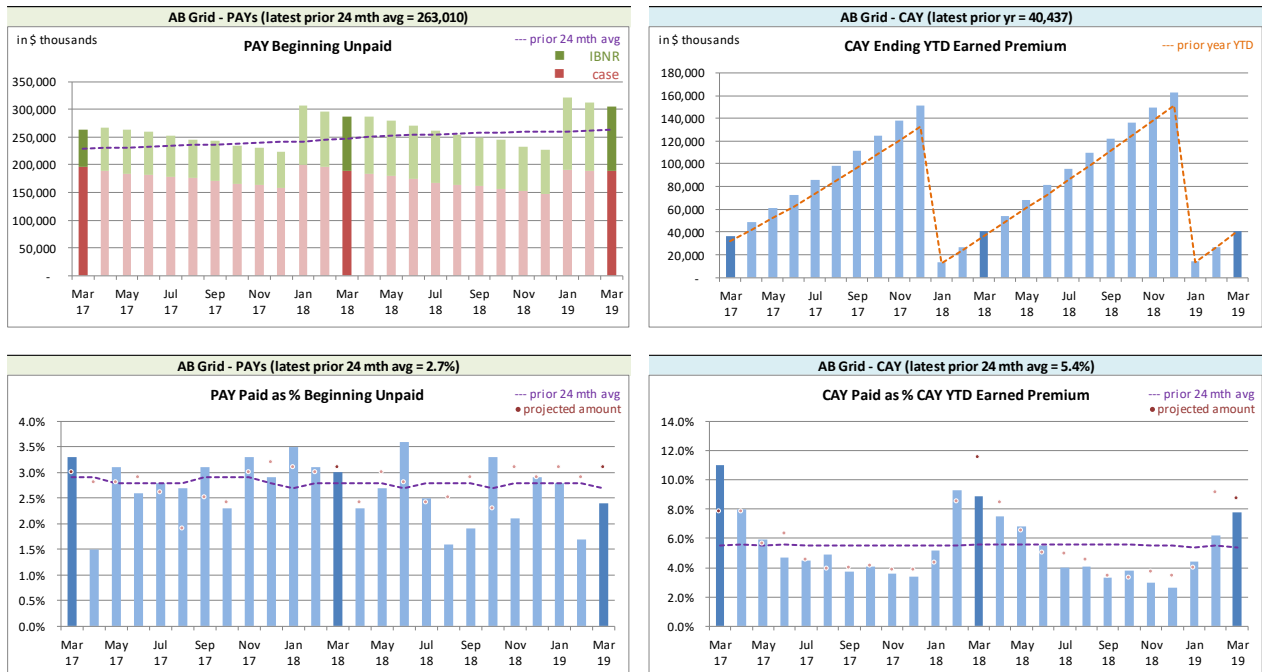
The PAYs **paid** variance was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **paid** variances fell outside one standard deviation 4% of the time over the last 25 calendar months (see table above), 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 lagging 24-month basis.

We have included, for reference, additional charts immediately below related to levels influencing **paid** activity.

*Alberta Grid RSP Levels that influence<sup>11</sup> Paid activity by Calendar Month*



We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (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

<sup>11</sup>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.



IBNR<sup>12</sup>, 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 table immediately below summarizes variances in provisions included in this month's Operational Report and the associated one-month projections from last month's Report.

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

Table 02

Accident Year	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	33,400	(6,072)	(5,523)	1,348	15,025	(773)	42,902	(5,497)
2017	24,539	(6,600)	(2,977)	872	7,275	(511)	28,837	(6,239)
2018	41,039	(2,721)	(4,869)	975	10,787	491	46,957	(1,255)
2019	15,868	1,287	(1,751)	347	3,662	25	17,779	1,659
TOTAL	114,846	(14,106)	(15,120)	3,542	36,749	(768)	136,475	(11,332)

The IBNR provision is \$14.1 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

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 table at the top of the next page 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 and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset 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, and due to the valuation implementation.

<sup>12</sup>For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".



*Alberta 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:	(9,024)	149	4,102	595	(4,922)	744
balance as % unearned premium:	(10.7%)	(0.2%)	4.9%	0.9%	(5.8%)	0.7%
actual unearned premium:	84,144					
less projected:	(3,485)					

### 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<sup>13</sup> 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 table at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses<sup>14</sup>, 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 90.8% rather than 88.8% (the valuation ultimate ratio for accident year 2019), 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.)

<sup>13</sup>“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).

<sup>14</sup>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 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	(16,266)	(40.9%)	2,337	5.9%	(13,929)	(35.0%)	(13,604)	(33.7%)
CAY	36,148	90.8%	1,911	4.8%	38,059	95.6%	13,135	(0.7%)
TOTAL	19,883	50.0%	4,248	10.7%	24,131	60.6%	(469)	(34.4%)

(\*“% EP” based on 2019 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, and due to the 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 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 is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios presented in section 6, Exhibit B, refer to the estimates derived on the basis of 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**
**IBNR + M/S actuarial present  
 value adjustments**

 discount rate  
 1.93%

 interest rate margin  
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
2004	(71)	(71)	(71)	(71)	(71)
2005	(2,743)	(2,449)	(2,449)	(2,449)	(2,449)
2006	(90)	(89)	(85)	(82)	(57)
2007	(206)	134	129	126	95
2008	22	(133)	(128)	(122)	(84)
2009	(109)	168	162	156	115
2010	905	899	868	836	617
2011	1,721	1,127	1,086	1,047	779
2012	2,178	2,043	1,966	1,892	1,382
2013	5,117	3,221	3,101	2,984	2,172
2014	7,554	6,879	6,617	6,365	4,622
2015	14,155	11,827	11,397	11,056	7,978
2016	21,803	19,346	18,367	17,852	14,241
2017	35,791	28,837	28,059	27,260	22,535
2018	49,338	46,957	45,958	44,982	38,351
2019	11,928	17,779	22,867	27,972	53,875
<b>TOTAL</b>	<b>147,293</b>	<b>136,475</b>	<b>137,844</b>	<b>139,804</b>	<b>144,101</b>
Change		(10,818)	1,369	1,960	

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

**EXHIBIT B**
**IBNR**
**TABLE EXHIBIT B**

TABLE EXHIBIT B		Amounts in \$000s					
IBNR	Ultimate Loss Ratio	Accident Year	Actual Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
	51.6%	2004	(79)	(79)	(79)	(79)	(79)
	59.5%	2005	(2,790)	(2,522)	(2,522)	(2,522)	(2,522)
	66.3%	2006	(100)	(99)	(95)	(91)	(65)
	70.7%	2007	(270)	38	36	35	24
	67.1%	2008	(25)	(182)	(175)	(168)	(119)
	60.5%	2009	(154)	104	100	96	68
	61.8%	2010	601	582	559	537	382
	66.4%	2011	1,252	646	620	595	425
	73.2%	2012	1,628	1,499	1,439	1,381	983
	74.7%	2013	4,352	2,505	2,405	2,309	1,644
	83.9%	2014	6,212	5,548	5,326	5,113	3,640
	93.4%	2015	12,121	9,637	9,252	8,974	6,263
	96.5%	2016	18,344	15,723	14,780	14,337	11,221
	87.6%	2017	31,775	24,539	23,803	23,089	18,841
	88.4%	2018	44,653	41,039	40,218	39,414	33,517
	88.8%	2019	10,851	15,868	20,417	24,956	46,841
		TOTAL	128,371	114,846	116,084	117,976	121,064
		Change		(13,525)	1,238	1,892	

*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 Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
(1) unearned premium (UP)	85,037	84,144	88,244	91,779	106,902
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	93.5%	94.2%	94.3%	94.5%	96.6%
(3) expected future costs {(1) x (2)}	79,478	79,222	83,211	86,716	103,304
(4) premium deficiency / (deferred policy acquisition cost)	(5,559)	(4,922)	(5,033)	(5,063)	(3,598)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	89.5%	89.3%	89.4%	89.6%	91.6%
(6) expected future costs {(1) x (5)}	76,079	75,120	78,904	82,227	97,955
(7) premium deficiency / (deferred policy acquisition cost)	(8,958)	(9,024)	(9,340)	(9,552)	(8,947)

**EXHIBIT D**
**Projected Year-end Policy Liabilities**

The table below presents the projected policy liabilities as at December 31, 2019, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2019 (\$000s)									
ending 2019	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
2004	-	(79)	(79)	-	-	8	-	8	8	(71)
2005	3,360	(2,522)	838	(12)	2	84	(1)	83	73	911
2006	160	(65)	95	(2)	-	10	-	10	8	103
2007	949	24	973	(27)	4	97	(3)	94	71	1,044
2008	633	(119)	514	(16)	2	51	(2)	49	35	549
2009	623	68	691	(23)	3	69	(2)	67	47	738
2010	3,024	382	3,406	(109)	14	341	(11)	330	235	3,641
2011	4,893	425	5,318	(181)	21	532	(18)	514	354	5,672
2012	4,830	983	5,813	(186)	23	581	(19)	562	399	6,212
2013	6,162	1,644	7,806	(258)	31	781	(26)	755	528	8,334
2014	11,617	3,640	15,257	(564)	76	1,526	(56)	1,470	982	16,239
2015	22,963	6,263	29,226	(1,257)	175	2,923	(126)	2,797	1,715	30,941
2016	26,830	11,221	38,051	(1,712)	190	4,756	(214)	4,542	3,020	41,071
2017	31,335	18,841	50,176	(2,559)	301	6,272	(320)	5,952	3,694	53,870
2018	37,508	33,517	71,025	(3,977)	497	8,807	(493)	8,314	4,834	75,859
PAYs (sub-total):	154,887	74,223	229,110	(10,883)	1,339	26,838	(1,291)	25,547	16,003	245,113
CAY (2019)	66,224	46,841	113,065	(6,445)	791	13,455	(767)	12,688	7,034	120,099
claims liabilities:	221,111	121,064	342,175	(17,328)	2,130	40,293	(2,058)	38,235	23,037	365,212
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	106,902	(8,947)	97,955	(4,880)	586	10,151	(508)	9,643	5,349	103,304
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			440,130	(22,208)	2,716	50,444	(2,566)	47,878	28,386	468,516

**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, 2019 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Accident Year	Selected Claims Development MfADs (Dec. 31, 2018)			
	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%	7.6%	10.0%
2013	10.0%	10.0%	9.9%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	12.5%	10.0%	12.5%	12.5%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.4%	10.0%	12.5%	12.4%
2019	12.2%	10.0%	7.4%	11.9%
prem liab	11.8%	10.0%	5.1%	10.4%

discount rate: 1.93%  
 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, 2019 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2019, and are based on more up-to-date information). We have included the most recent valuation selection (1.93%), the prior valuation assumption (2.28%) and the prior fiscal year end valuation assumption (2.28%) 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, 2019 projected Unpaid								
AY	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.28%	2.28%
2004 & prior	-	-	-	-	-	-	-	-
2005	543	541	539	537	535	533	538	538
2006	145	144	143	142	141	141	143	143
2007	786	780	775	769	764	758	771	771
2008	411	407	404	401	398	395	402	402
2009	549	544	539	535	530	526	536	536
2010	3,433	3,404	3,375	3,347	3,320	3,293	3,356	3,356
2011	4,414	4,374	4,335	4,296	4,259	4,222	4,308	4,308
2012	5,629	5,581	5,535	5,490	5,445	5,402	5,503	5,503
2013	7,779	7,712	7,646	7,582	7,519	7,457	7,601	7,601
2014	17,364	17,194	17,030	16,867	16,710	16,554	16,916	16,916
2015	29,989	29,653	29,326	29,005	28,694	28,387	29,100	29,100
2016	41,045	40,555	40,081	39,614	39,161	38,719	39,751	39,751
2017	52,549	51,831	51,144	50,460	49,805	49,159	50,663	50,663
2018	81,754	80,548	79,376	78,232	77,118	76,039	78,572	78,572
2019	109,990	108,323	106,718	105,141	103,634	102,151	105,605	105,605
Total	356,380	351,591	346,966	342,418	338,033	333,736	343,765	343,765
	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	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.28%	2.28%
Total	9,414	4,625	-	(4,548)	(8,933)	(13,230)	(3,201)	(3,201)
	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	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.28%	2.28%
2004 & prior	-	-	-	-	-	-	-	-
2005	0.7%	0.4%	-	(0.4%)	(0.7%)	(1.1%)	(0.2%)	(0.2%)
2006	1.4%	0.7%	-	(0.7%)	(1.4%)	(1.4%)	-	-
2007	1.4%	0.6%	-	(0.8%)	(1.4%)	(2.2%)	(0.5%)	(0.5%)
2008	1.7%	0.7%	-	(0.7%)	(1.5%)	(2.2%)	(0.5%)	(0.5%)
2009	1.9%	0.9%	-	(0.7%)	(1.7%)	(2.4%)	(0.6%)	(0.6%)
2010	1.7%	0.9%	-	(0.8%)	(1.6%)	(2.4%)	(0.6%)	(0.6%)
2011	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.6%)	(0.6%)
2012	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(0.6%)	(0.6%)
2013	1.7%	0.9%	-	(0.8%)	(1.7%)	(2.5%)	(0.6%)	(0.6%)
2014	2.0%	1.0%	-	(1.0%)	(1.9%)	(2.8%)	(0.7%)	(0.7%)
2015	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	(0.8%)	(0.8%)
2016	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	(0.8%)	(0.8%)
2017	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.9%)	(0.9%)	(0.9%)
2018	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	(1.0%)	(1.0%)
2019	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(1.0%)	(1.0%)
Total	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	(0.9%)	(0.9%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP **Alberta Grid**  
AccountCode Desc **IBNR - Discounted**

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	(71)	-	-	-	-	-	(71)
2005	(2,743)	-	-	294	294	(10.7%)	(2,449)
2006	(90)	2	(1)	-	1	(1.1%)	(89)
2007	(206)	7	(7)	340	340	(165.0%)	134
2008	22	(1)	(156)	2	(155)	(704.5%)	(133)
2009	(109)	3	(4)	278	277	(254.1%)	168
2010	905	(27)	213	(192)	(6)	(0.7%)	899
2011	1,721	(52)	47	(589)	(594)	(34.5%)	1,127
2012	2,178	(65)	441	(511)	(135)	(6.2%)	2,043
2013	5,117	(153)	(84)	(1,659)	(1,896)	(37.1%)	3,221
2014	7,554	(227)	1,406	(1,854)	(675)	(8.9%)	6,879
2015	14,155	(888)	281	(1,721)	(2,328)	(16.4%)	11,827
2016	21,803	(436)	506	(2,527)	(2,457)	(11.3%)	19,346
2017	35,791	(715)	(2,131)	(4,108)	(6,954)	(19.4%)	28,837
2018	49,338	(1,126)	(351)	(904)	(2,381)	(4.8%)	46,957
2019	11,928	4,192	1,409	250	5,851	49.1%	17,779
<b>Grand Total</b>	<b>147,293</b>	<b>514</b>	<b>1,569</b>	<b>(12,901)</b>	<b>(10,818)</b>	<b>(7.3%)</b>	<b>136,475</b>

EXHIBIT G

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

RSP  
AccountCode Desc

Alberta Grid  
IBNR - Undiscounted

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	(79)	-	-	-	-	-	(79)
2005	(2,790)	-	-	268	268	(9.6%)	(2,522)
2006	(100)	3	(2)	-	1	(1.0%)	(99)
2007	(270)	8	(8)	308	308	(114.1%)	38
2008	(25)	1	(158)	-	(157)	628.0%	(182)
2009	(154)	5	(6)	259	258	(167.5%)	104
2010	601	(18)	218	(219)	(19)	(3.2%)	582
2011	1,252	(38)	33	(601)	(606)	(48.4%)	646
2012	1,628	(49)	469	(549)	(129)	(7.9%)	1,499
2013	4,352	(131)	(101)	(1,615)	(1,847)	(42.4%)	2,505
2014	6,212	(186)	1,403	(1,881)	(664)	(10.7%)	5,548
2015	12,121	(848)	272	(1,908)	(2,484)	(20.5%)	9,637
2016	18,344	(367)	497	(2,751)	(2,621)	(14.3%)	15,723
2017	31,775	(636)	(2,115)	(4,485)	(7,236)	(22.8%)	24,539
2018	44,653	(893)	(452)	(2,269)	(3,614)	(8.1%)	41,039
2019	10,851	3,730	1,409	(122)	5,017	46.2%	15,868
Grand Total	128,371	581	1,459	(15,565)	(13,525)	(10.5%)	114,846