



ALBERTA GRID RISK SHARING POOL

APRIL 2016 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS**RSP ALBERTA GRID****OPERATIONAL REPORT****APRIL 2016**

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2016)

The April 2016 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2016.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2016 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2015 (completed)	0.75% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio increased 2.1 points to 75.7%; discount rate decreased by 18 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.70% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio increased 8.3 points to 84.0%; accident year 2016 loss ratio increased 2.5 points to 73.7%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Mar. 31, 2016		May 2016	update valuation (roll forward):
Jun. 30, 2016		Aug. 2016	update valuation:
Sep. 30, 2016		Oct. 2016	update valuation (roll forward):

Under the proposed schedule for fiscal year 2016, the “off-half” valuation quarters ending March 31, 2016 and September 30, 2016 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

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.

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

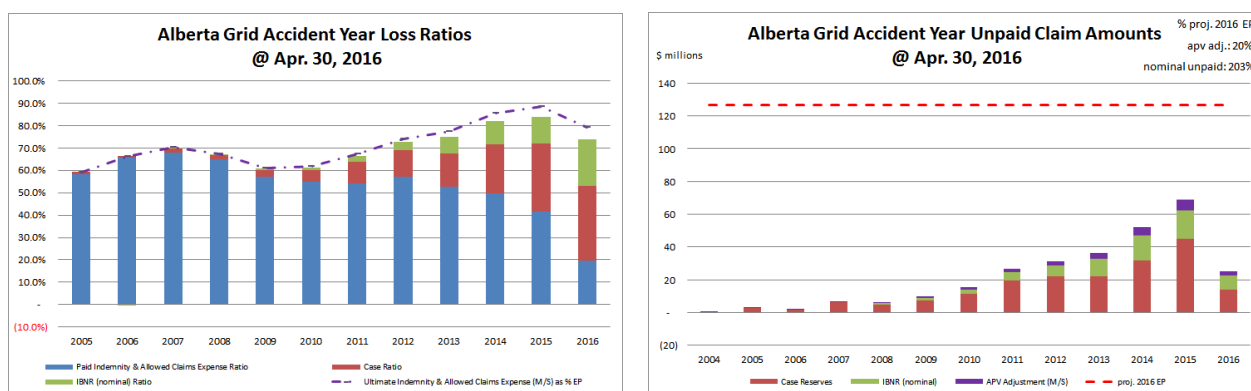
Consideration and assessment of potential impacts of legal decisions and changes in legislation /

regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

Alberta Bill 39 (Enhancing Consumer Protection in Auto Insurance Act) was introduced into the Legislature by the Minister of Finance on November 6, 2013, and received Royal Assent on December 11, 2013. Bill 39 includes various amendments and provisions such as, allowing for both mandatory and optional auto insurance premiums to be regulated by the independent Automobile Insurance Rate Board (AIRB), the introduction of an Insurer file and approve system for premium adjustments instead of an annual industry-wide rate adjustment, improved access to health care after a collision and strengthened Insurance Company solvency requirements. No specific adjustments have been made to the current valuation assumptions based on Bill 39.

1.4 Current Provision Summary

The charts immediately below show the current levels of claim liabilities¹ booked by accident year². 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 2016 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 (\$25.7 million – see table below) represents 20% of the earned premium projected for the full year 2016 (see the upper right corner of the right chart above). 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	187,270	66.4%
ibnr	68,978	24.5%
M/S apv adjust.	25,657	9.1%
M/S total	281,905	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 pool is in case reserves. Approximately 38% of the IBNR balance relates to accident years 2015 and 2016

¹Claim 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.

²Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

(see Exhibit B). Approximately 76% of the M/S total claim liabilities are related to accident years 2012-2016 inclusive (i.e. the most recent 5 accident years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	57,718	124.4%	claim	256,248	78.1%
prem def/(dpac)	(15,011)	(32.4%)	premium	42,707	13.0%
M/S apv adjust.	3,678	7.9%	M/S apv adjust.	29,335	8.9%
M/S total	46,385	100.0%	M/S total	328,290	100.0%

2 Activity During the Month of April 2016

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 Report³.

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	0	0	3,541	(54)	2	2,656	3,543	2,602
2014	(0)	(0)	653	(298)	567	1,031	1,220	733
2015	(75)	(75)	1,956	(621)	(624)	1,385	1,332	764
2016	9,895	39	3,200	(294)	2,756	(773)	5,956	(1,068)
TOTAL	9,819	(36)	9,351	(1,267)	2,700	4,298	12,051	3,031

(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”. 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.

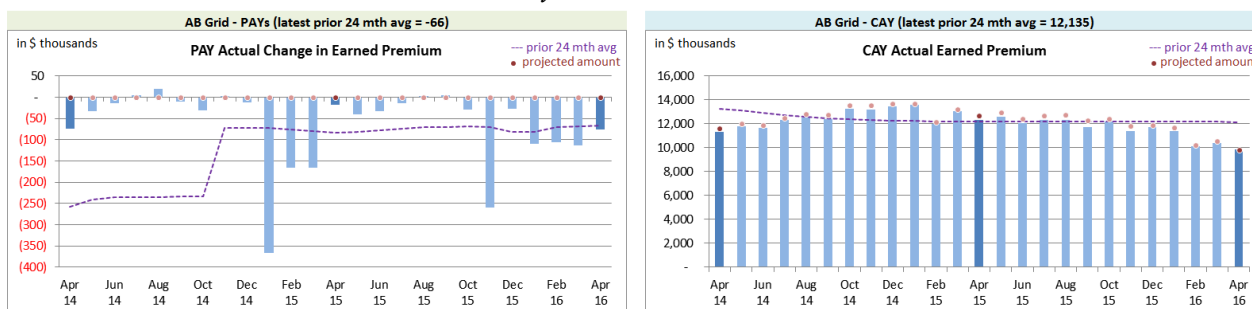
2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts at the top of the next page show actual **earned premium**⁴ 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.

³There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

⁴Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

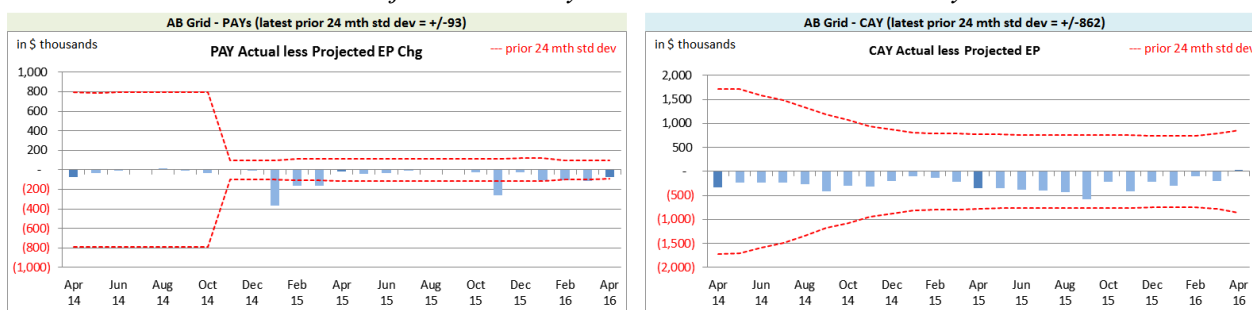
Alberta Grid RSP Actual Earned Premium by Calendar Month



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

The associated variance 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	
Mthly Avg EP Chg (prior 24 mths)	(66)	12,135
std dev	93	862
A-P <> std dev	6	-
% <> std dev	24.0%	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 generated bias⁵, with actuals generally lower than projected. However, the magnitude is not high relative to monthly premium, and the

variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

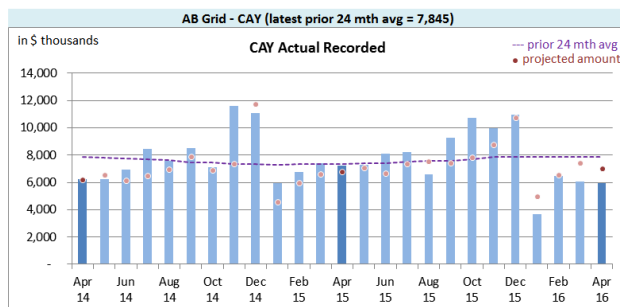
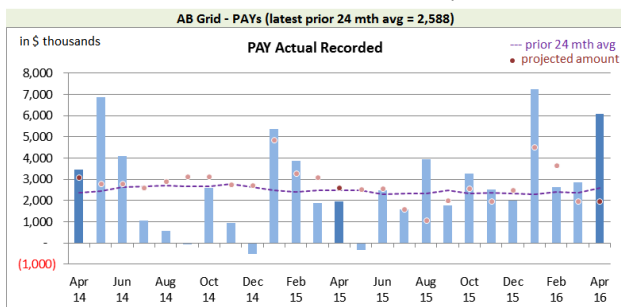
2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in

⁵The prior accident years (PAYs) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

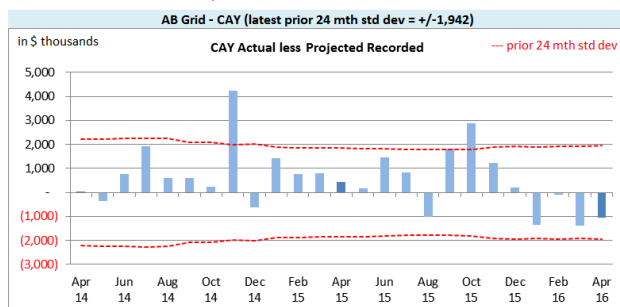
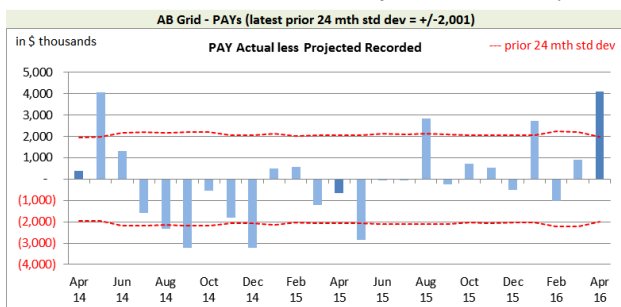
the charts immediately below, including the “prior 24-month average” level.

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.

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



On Latest \$ thousands		
	Recorded	
Mthly Avg Recorded (prior 24 mths)	2,588	7,845
std dev	2,001	1,942
A-P <> std dev	8	3
% <> std dev	32.0%	12.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 32% of the prior accident years’ (PAYs) variances (left chart above) over the last 25 months have fallen outside of one standard deviation of the actual **recorded** amounts, suggesting the projection process is performing no better than simply

projecting from the prior 24-month average. There was evidence of bias during the latter half of 2014 and first half of 2015, although the larger variances tend to correspond to months with unusually low levels of recorded activity (this is also evident in the **recorded** to beginning IBNR ratios shown in the middle of the next page). Since June of 2015, there are fewer months where **recorded** activity is below \$2 million, and there have been no months with **recorded** activity less than \$1 million (whereas between April 2014 and May 2015 inclusive, 6 of the 14 months had **recorded** activity less than \$1 million). A similar pattern is not evident in **paid** activity, suggesting there may be changes in case reserve activity. We have not noticed the same potential “case reserve” effect for the Alberta non-Grid RSP (there, both **recorded** and **paid** activity appear to be moving in tandem). If this divergence continues, we will investigate more thoroughly.

The PAY **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

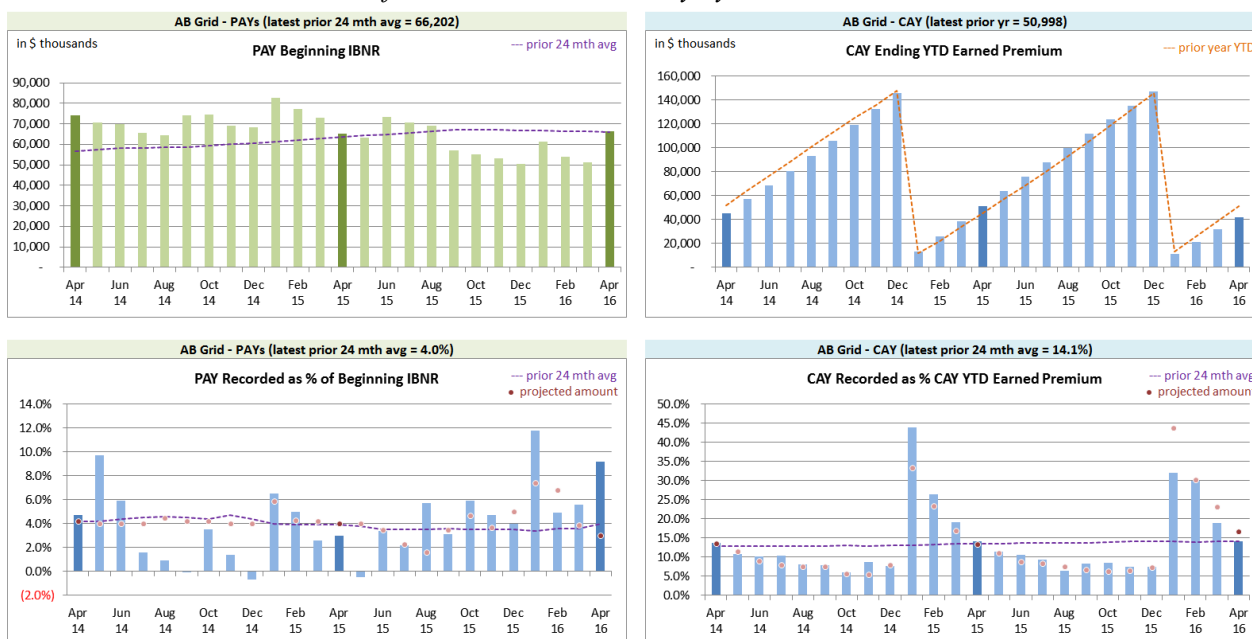
The current accident year (CAY) **recorded** variances (right chart above) may be indicating bias

(where actuals have tended to be higher than projections). That said, at 12%, the number of variances falling outside of one standard deviation of actual activity over the period is lower than indicated by the normal distribution, suggesting the projection process is better than simply projecting from the 24 month average.

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 immediately below related to levels influencing **recorded** activity.

Alberta Grid RSP Levels that influence⁶ 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:

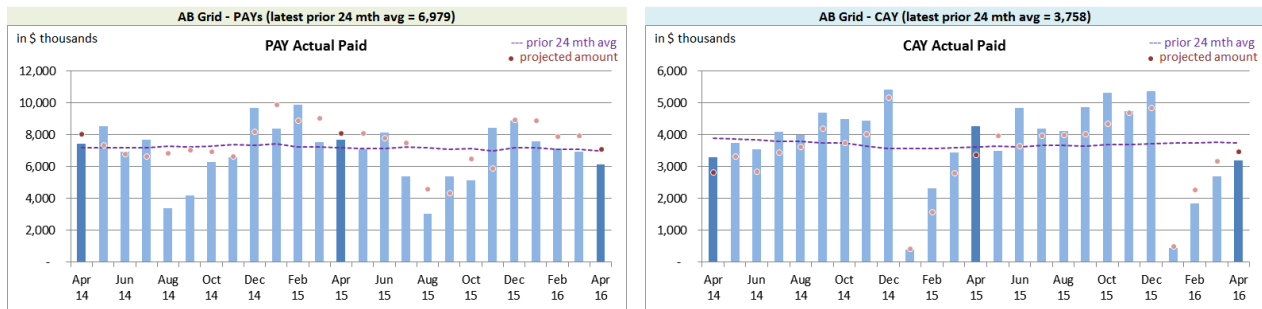
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

⁶Our 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.

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

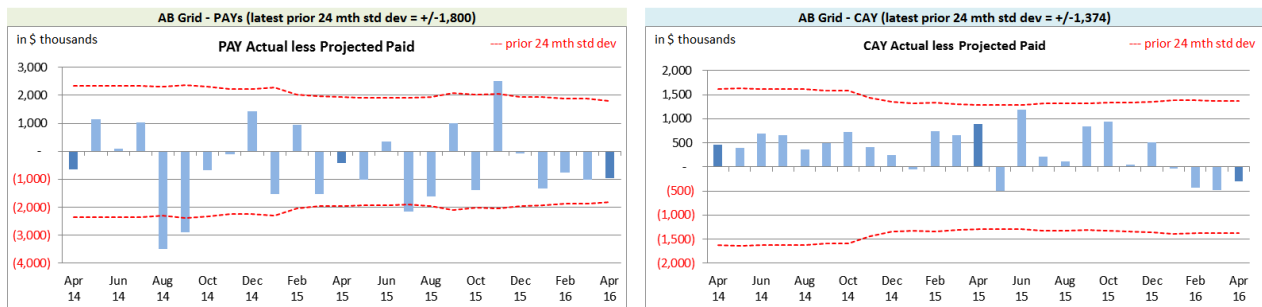
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



The charts immediately below show the actual less projected **paid** variances for the last 25 calendar months, along with bands for the “prior 24-month standard deviations” to show how the variances from projection compare with historical standard deviations.

*Alberta Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*



On Latest \$ thousands			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		6,979	3,758
std dev		1,800	1,374
A-P <> std dev		4	-
% <> std dev		16.0%	0.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, the prior accident years’ (PAYs) variances (left chart above) have fallen outside one standard deviation of the overall period 16% of the time, a lower percent than suggested by a normal distribution, indicating the projection process may be better than simply projecting

from the preceding 24-month average. However, there appears to be evidence of bias (actuals tend to be lower than projected) – as discussed with respect to **recorded** activity potentially showing bias the other way (i.e. with actuals tending to be higher than projected) this bias divergence may suggest a change in case reserve activity relative to historical norms. We will continue to monitor.

The current accident year (CAY) **paid** variances (right chart above) indicate bias (where actuals tend to be higher than our projections), but efforts to address this may be working. The CAY **paid** variances have **not** fallen outside one standard deviation of the overall period, suggesting the projection process is better than simply projecting from the preceding 24-month average.

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

Alberta Grid RSP Levels that influence⁷ 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 IBNR⁸, 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

⁷Our 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.

⁸For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".

projections and actuals were based on the applicable valuation. The table immediately below summarizes variances in provisions included in the April 2016 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		actuarial present value adjustments						
Accident Year	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	27,714	(2,600)	(2,093)	(6)	13,704	12	39,325	(2,594)
2014	15,012	(734)	(985)	(6)	6,069	38	20,096	(702)
2015	17,543	(827)	(1,435)	(13)	8,120	73	24,228	(767)
2016	8,709	1,097	(475)	(6)	2,752	40	10,986	1,131
TOTAL	68,978	(3,064)	(4,988)	(31)	30,645	163	94,635	(2,932)

The IBNR provision is \$3.1 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.

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 deferred policy acquisition cost asset included in the April 2016 Operational Report and the one-month projections from last month's Report. Note that this RSP is in a deferred policy acquisition cost asset position; actuarial present value adjustments have an impact on the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium and therefore increase the write down of the asset value. The variances noted are mainly driven by the unearned premium variance.

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:	(15,011)	(890)	3,678	219	(11,333)	(671)
balance as % unearned premium:	(26.0%)	-	6.4%	-	(19.6%)	-
actual unearned premium:	57,718					
less projected:	3,429					

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:

- Earned premium to-date
- Ultimate loss⁹ ratio per latest valuation
- Estimated ultimate incurred = (a) x (b)
- Recorded indemnity & allowed claims expense to-date
- IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table below summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹⁰, 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 74.4% rather than 73.7% (the valuation ultimate ratio for accident year 2016), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Grid RSP Summary of Operations due to rounding.)

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

Table 04

	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	17,662	42.6%	110	0.3%	17,772	42.9%	(674)	(15.4%)
CAY	30,845	74.4%	2,277	5.5%	33,122	79.9%	7,704	(0.5%)
TOTAL	48,507	117.0%	2,387	5.8%	50,894	122.8%	7,030	(15.9%)

(“% EP” based on 2016 calendar year-to-date earned premium; ratios may not total due to rounding)

⁹“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).

¹⁰Allowed 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.

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments. The loss ratio change year-to-date 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, 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 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
 0.70%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016
2004	(73)	(72)	(72)	(72)	(72)
2005	514	145	148	150	162
2006	(18)	(236)	(229)	(223)	(186)
2007	835	844	819	793	661
2008	1,874	1,616	1,567	1,522	1,267
2009	2,512	2,460	2,386	2,315	1,929
2010	4,104	3,819	3,704	3,594	2,993
2011	7,702	7,169	6,955	6,747	5,619
2012	10,630	9,222	8,946	8,676	7,227
2013	15,112	14,358	13,927	13,509	11,251
2014	21,387	20,096	19,495	18,908	15,748
2015	25,839	24,228	22,799	20,288	16,845
2016	9,238	10,986	12,238	12,381	26,982
TOTAL	99,656	94,635	92,683	88,588	90,426
Change		(5,021)	(1,952)	(4,095)	

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 Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016
51.6%	2004	(81)	(80)	(80)	(80)	(80)
59.1%	2005	284	(84)	(81)	(79)	(67)
66.2%	2006	(203)	(340)	(330)	(320)	(267)
70.0%	2007	242	268	260	252	210
67.1%	2008	1,365	1,111	1,078	1,046	871
60.7%	2009	1,691	1,675	1,625	1,576	1,313
61.2%	2010	2,871	2,594	2,516	2,441	2,033
66.5%	2011	5,602	5,088	4,935	4,787	3,988
72.7%	2012	8,034	6,723	6,521	6,325	5,268
75.0%	2013	11,450	10,759	10,436	10,123	8,431
82.1%	2014	16,233	15,012	14,562	14,125	11,765
84.0%	2015	18,938	17,543	16,315	14,031	11,688
73.7%	2016	7,373	8,709	9,562	9,388	21,054
	TOTAL	73,799	68,978	67,319	63,615	66,207
	Change		(4,821)	(1,659)	(3,704)	

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 Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016
(1) unearned premium (UP)	54,775	57,718	57,832	59,074	63,449
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	80.4%	80.4%	80.4%	80.4%	80.6%
(3) expected future costs {(1) x (2)}	44,012	46,385	46,485	47,493	51,112
(4) premium deficiency / (deferred policy acquisition cost)	(10,763)	(11,333)	(11,347)	(11,581)	(12,337)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	74.0%	74.0%	74.0%	74.0%	74.2%
(6) expected future costs {(1) x (5)}	40,523	42,707	42,799	43,727	47,060
(7) premium deficiency / (deferred policy acquisition cost)	(14,252)	(15,011)	(15,033)	(15,347)	(16,389)

EXHIBIT D
Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2016, broken down by component.

Alberta Grid ending 2016	Projected Balances as at Dec. 31, 2016 (\$000s)							
	nominal values			actuarial present value adjustments (apvs)				TOTAL
	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	
Acc Yr								
2004	-	(80)	(80)	-	-	8	8	(72)
2005	2,591	(67)	2,524	(30)	10	249	229	2,753
2006	1,161	(267)	894	(11)	4	88	81	975
2007	4,762	210	4,972	(65)	25	491	451	5,423
2008	3,545	871	4,416	(62)	22	436	396	4,812
2009	5,644	1,313	6,957	(111)	42	685	616	7,573
2010	8,977	2,033	11,010	(198)	77	1,081	960	11,970
2011	15,129	3,988	19,117	(325)	115	1,841	1,631	20,748
2012	17,160	5,268	22,428	(381)	135	2,205	1,959	24,387
2013	17,257	8,431	25,688	(462)	154	3,128	2,820	28,508
2014	24,984	11,765	36,749	(772)	294	4,461	3,983	40,732
2015	36,449	11,688	48,137	(1,107)	385	5,879	5,157	53,294
PAYs (sub-total):	137,659	45,153	182,812	(3,524)	1,263	20,552	18,291	201,103
CAY (2016)	37,897	21,054	58,951	(1,238)	472	6,694	5,928	64,879
claims liabilities:	175,556	66,207	241,763	(4,762)	1,735	27,246	24,219	265,982
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
premium liabilities:	63,449	(16,389)	47,060	(750)	281	4,521	4,052	51,112
*Total may not be sum of parts, as apvs apply to future costs within UPR								
policy liabilities:			288,823	(5,512)	2,016	31,767	28,271	317,094

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, 2016 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Dec. 31, 2015)				
Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
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%	9.5%	10.0%
2009	10.0%	10.0%	5.1%	10.0%
2010	10.0%	10.0%	8.6%	10.0%
2011	10.0%	10.0%	8.2%	9.8%
2012	10.0%	10.0%	8.8%	10.0%
2013	12.5%	10.0%	10.3%	12.4%
2014	12.5%	10.0%	10.8%	12.4%
2015	12.4%	10.0%	12.5%	12.5%
2016	12.0%	10.0%	7.1%	11.6%
prem liab	11.6%	10.0%	5.1%	9.8%
discount rate:				0.70%
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, 2016 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2016 and based on more up-to-date information). We have included both the current valuation selection (0.70%), the prior valuation assumption (0.75%) and the prior fiscal year end valuation assumption (0.75%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2016 projected Unpaid							
	0.20%	0.70%	1.20%	1.70%	2.20%	2.70%	0.75%	0.75%
2004	-	-	-	-	-	-	-	-
2005	1,574	1,561	1,547	1,534	1,521	1,508	1,560	1,560
2006	1,724	1,711	1,697	1,683	1,669	1,656	1,710	1,710
2007	4,874	4,834	4,791	4,749	4,708	4,668	4,830	4,830
2008	5,689	5,635	5,577	5,521	5,465	5,412	5,629	5,629
2009	8,240	8,156	8,065	7,976	7,890	7,805	8,146	8,146
2010	11,044	10,916	10,779	10,645	10,515	10,388	10,902	10,902
2011	17,656	17,459	17,245	17,036	16,835	16,638	17,437	17,437
2012	25,203	24,930	24,636	24,351	24,074	23,803	24,899	24,899
2013	30,922	30,554	30,157	29,774	29,402	29,041	30,513	30,513
2014	45,913	45,291	44,626	43,980	43,359	42,751	45,223	45,223
2015	58,408	57,527	56,579	55,667	54,783	53,919	57,425	57,425
2016	70,293	69,347	68,337	67,368	66,422	65,515	69,244	69,244
Total	281,540	277,921	274,036	270,284	266,643	263,104	277,518	277,518
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption



AY	Dollar Impact Relative to Valuation Assumption							
	0.20%	0.70%	1.20%	1.70%	2.20%	2.70%	0.75%	0.75%
Total	3,619	-	(3,885)	(7,637)	(11,278)	(14,817)	(403)	(403)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.20%	0.70%	1.20%	1.70%	2.20%	2.70%	0.75%	0.75%
2004	-	-	-	-	-	-	-	-
2005	0.8%	-	(0.9%)	(1.7%)	(2.6%)	(3.4%)	(0.1%)	(0.1%)
2006	0.8%	-	(0.8%)	(1.6%)	(2.5%)	(3.2%)	(0.1%)	(0.1%)
2007	0.8%	-	(0.9%)	(1.8%)	(2.6%)	(3.4%)	(0.1%)	(0.1%)
2008	1.0%	-	(1.0%)	(2.0%)	(3.0%)	(4.0%)	(0.1%)	(0.1%)
2009	1.0%	-	(1.1%)	(2.2%)	(3.3%)	(4.3%)	(0.1%)	(0.1%)
2010	1.2%	-	(1.3%)	(2.5%)	(3.7%)	(4.8%)	(0.1%)	(0.1%)
2011	1.1%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	(0.1%)	(0.1%)
2012	1.1%	-	(1.2%)	(2.3%)	(3.4%)	(4.5%)	(0.1%)	(0.1%)
2013	1.2%	-	(1.3%)	(2.6%)	(3.8%)	(5.0%)	(0.1%)	(0.1%)
2014	1.4%	-	(1.5%)	(2.9%)	(4.3%)	(5.6%)	(0.2%)	(0.2%)
2015	1.5%	-	(1.6%)	(3.2%)	(4.8%)	(6.3%)	(0.2%)	(0.2%)
2016	1.4%	-	(1.5%)	(2.9%)	(4.2%)	(5.5%)	(0.1%)	(0.1%)
Total	1.3%	-	(1.4%)	(2.7%)	(4.1%)	(5.3%)	(0.1%)	(0.1%)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	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 Grid** 
AccountCode Desc **IBNR - Discour** 

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	(73)	-	1	-	1	(1.4%)	(72)
2005	514	(9)	(360)	-	(369)	(71.8%)	145
2006	(18)	-	(218)	-	(218)	1,211.1%	(236)
2007	835	(24)	33	-	9	1.1%	844
2008	1,874	(55)	(203)	-	(258)	(13.8%)	1,616
2009	2,512	(75)	23	-	(52)	(2.1%)	2,460
2010	4,104	(123)	(162)	-	(285)	(6.9%)	3,819
2011	7,702	(232)	(301)	-	(533)	(6.9%)	7,169
2012	10,630	(318)	(1,090)	-	(1,408)	(13.2%)	9,222
2013	15,112	(437)	(317)	-	(754)	(5.0%)	14,358
2014	21,387	(589)	(702)	-	(1,291)	(6.0%)	20,096
2015	25,839	(844)	(767)	-	(1,611)	(6.2%)	24,228
2016	9,238	617	1,131	-	1,748	18.9%	10,986
Grand Total	99,656	(2,089)	(2,932)	-	(5,021)	(5.0%)	94,635

EXHIBIT G

Page 2 of 2

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

 RSP **Alberta Grid**
 AccountCode Desc **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	(81)	-	1	-	1	(1.2%)	(80)
2005	284	(9)	(359)	-	(368)	(129.6%)	(84)
2006	(203)	6	(143)	-	(137)	67.5%	(340)
2007	242	(7)	33	-	26	10.7%	268
2008	1,365	(41)	(213)	-	(254)	(18.6%)	1,111
2009	1,691	(51)	35	-	(16)	(0.9%)	1,675
2010	2,871	(86)	(191)	-	(277)	(9.6%)	2,594
2011	5,602	(168)	(346)	-	(514)	(9.2%)	5,088
2012	8,034	(241)	(1,070)	-	(1,311)	(16.3%)	6,723
2013	11,450	(344)	(347)	-	(691)	(6.0%)	10,759
2014	16,233	(487)	(734)	-	(1,221)	(7.5%)	15,012
2015	18,938	(568)	(827)	-	(1,395)	(7.4%)	17,543
2016	7,373	239	1,097	-	1,336	18.1%	8,709
Grand Total	73,799	(1,757)	(3,064)	-	(4,821)	(6.5%)	68,978