



2006 Annual Variance Report

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Transmission Loss Cost Recovery

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1.0 Purpose

The purpose of this document is to present the annual transmission loss cost recovery performance with a brief explanation of the analysis. An appendix containing the graphs from the analysis is included

2.0 Introduction

The AESO implemented the new loss factor methodology on January 01, 2006 along with the new methodology for balancing the deferral account. The loss factors (LF) are calculated prior to the beginning of each year for each loss factor customer based on the forecasted loss and loss factor customer volume (LFCV). The single LF calculated for each customer is applied in the application year to recover the transmission loss cost. The actual pool price and actual metered data creates a deferral amount which is balanced by the application of calibration factor (CF). The calibration factor calculation itself is based on summing hourly costs, revenues, and loss factor customer volumes x pool price - the same result will not be obtained by using the monthly values presented.

3.0 Actual and Forecast Data

Table 1 shows actual settlement data of different parameters for 2006. The parameters are shown in Table 1. The actual data shown in Table 1 are taken after the final Financial settlement completed in September 2007.

Table 1: Actual Settlement Data for 2006.

	Annual Actual (A)
Loss (TWH)	2.84
LFCV (TWH)	57.70
Loss Cost (million \$)	219.1
Loss Revenue from LF (million \$)	250.1
Loss Revenue from CF (million \$)	-22.2
Total Loss Revenue (million \$)	227.9
Average Loss (%)	4.93
2006 Carry Forward (million \$)	0.0
Average PP (\$/MWH)	80.79
Variance (Loss Revenue – Loss Cost) (million \$)	8.8

The accumulated year-end variance for 2007 is \$8.8 million which is the difference between 2007 loss cost (\$219.1 million) and 2007 total loss revenue (\$227.9 million).

The new loss factor methodology and its subsequent components started fresh on January 01, 2006 and hence the 2005 carry forward amount of \$0.

The calibration factor is a dynamic process that keeps track of variances on a

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quarterly basis and steers the transmission loss cost recovery process towards an overall minimal variance. The CF process uses the latest forecast of losses, LFCV, and pool prices. The parameters (same as the annual numbers shown in Table 1) used in the quarterly 2006 CF calculations are shown in Table 2.

Table 2: Data used for 2006 Calibration Factor calculation, Annual Basis.

	Hybrid (B)			
	Q1	Q2	Q3	Q4
Loss (TWH)	3.18	3.14	2.92	2.86
LFCV (TWH)	59.41	59	58.42	58.17
Loss Cost (million \$)	213.4	216.9	152.6	196.6
Loss Revenue from LF (million \$)	213.4	219	165.2	214.4
Loss Revenue from CF (million \$)	0.0	-2.1	-12.2	-6.3
Total Loss Revenue (million \$)	213.4	216.9	153	208.1
Average Loss (%)	5.35	5.32	5.00	4.92
2006 Carry Forward (million \$)	0.0	0	0	0
PP (\$/MWH)	68.06	69.5	51.56	67.96

The numbers shown in Table 2, used in the CF at the time of quarterly calculations, are hybrid in nature – they are a combination of forecast and settlement data. The annual forecast is updated at the time of each quarterly CF calculation. The settlement data is a combination of initial, interim and final data at time of calculation. Loss revenue from the CF shown in Table 2 represents the amount in the month before the start of the quarter in question. For example, loss revenue from the CF in Q4 is -\$6.3 million which consists of 8 months (January – August) of actual and 1 month (September) of forecast data.

The 2006 forecasted data are shown in Table 3. The four columns (quarters Q1-Q4) shows the updated parameters forecasted before the start of each quarter for the whole year. The quarter(s) (Q2-Q4) did not change the forecast for the preceding quarter(s).

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Table 3: Forecast data for 2006, Annual Basis.

	Forecast (C)			
	Q1	Q2	Q3	Q4
Loss (TWH)	3.18	3.18	3.08	3.03
LFCV (TWH)	59.41	59.41	59.41	59.41
Loss Cost (million \$)	213.4	213.4	161.4	175.0
Loss Revenue from LF (million \$)	213.4	213.4	166.4	184.0
Loss Revenue from CF (million \$)	0.00	-2.24	-12.76	-12.88
Total Loss Revenue (million \$)	213.4	211.2	153.7	171.1
Average Loss (%)	5.35	5.35	5.19	5.10
2006 Carry Forward (million \$)	0.0	0.0	0.0	0.0
Average PP (\$/MWH)	68.06	68.06	52.27	55.92
CF (%) (posted, actual)	0	-0.07	-0.78	-0.62
Average Loss used in the LF Calculation (%)	5.41			
Loss used in the LF Calculation (TWH)	3.18			
LFCV used in the LF Calculation (TWH)	58.81			

Table 3 also shows the CF, losses, and volumes used in the loss factor calculation. The loss factors calculation time frame (annual) is different from the CF calculation time frame (quarterly).

4.0 Result and Analysis

Tables 4-5 show the variance for each common parameter listed in Tables 1 and 3.

Table 4: Actual differences between actual and forecast data for 2006.

	Difference (A – C)			
	Q1	Q2	Q3	Q4
Loss (TWH)	-0.34	-0.34	-0.24	-0.19
LFCV (TWH)	-1.72	-1.72	-1.72	-1.72
Loss Cost (million \$)	5.7	5.7	57.7	44.2
Loss Revenue from LF (million \$)	36.7	36.7	83.7	66.1
Loss Revenue from CF (million \$)	-22.2	-20.0	-9.5	-9.3
Total Loss Revenue (million \$)	14.5	16.7	74.2	56.8
Average Loss (%)	-0.43	-0.43	-0.26	-0.17
2006 Carry Forward (million \$)	0.0	0.0	0.0	0.0
Average PP (\$/MWH)	12.73	12.73	28.52	24.87

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Table 5: Percentage differences between actual and forecast data for 2006.

	Percentage Difference (A - C)/A			
	Q1	Q2	Q3	Q4
Loss (TWH)	-11.87%	-11.87%	-8.42%	-6.51%
LFCV (TWH)	-2.98%	-2.98%	-2.98%	-2.98%
Loss Cost (million \$)	2.60%	2.60%	26.34%	20.15%
Loss Revenue from LF (million \$)	14.67%	14.67%	33.46%	26.44%
Loss Revenue from CF (million \$)	100.00%	89.91%	42.58%	42.04%
Total Loss Revenue (million \$)	6.34%	7.33%	32.57%	24.91%
Average Loss (%)	-8.64%	-8.64%	-5.28%	-3.43%
2006 Carry Forward (million \$)	-	-	-	-
Average PP (\$/MWH)	15.75%	15.75%	35.30%	30.78%

Table 4 shows the numerical differences for the parameters whereas Table 5 shows the percentage differences. The comparison is done based on the actual settlement data. A negative number means actual settlement data is lower than the forecast. It should be noted forecast data changes for every quarter and there are four updated forecasts used in one year for the purpose of transmission loss cost recovery. The four quarterly annual forecasts are compared against one actual settlement forecast in Tables 4 and 5.

Tables 4 and 5 show the changes in losses and LFCV are little higher (largest 11.87% in Q1 and Q2). The loss cost and total loss revenue changes are higher (largest 32.57% in Q3). This reflects the direct impact of pool price changes (largest 35.30% in Q3) on the overall transmission loss cost recovery and subsequently on the variance. The negative sign means the forecast is higher than the actual annual numbers.

Table 5-6 show the variance for each common parameter listed in Tables 2 and 3. This comparison gives a closer view of the recovery process as Table 2 data are used in the quarterly CF calculation with a goal of minimal year-end variance.

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Table 6: Actual differences between hybrid and forecast data for 2006.

	Difference (B – C)			
	Q1	Q2	Q3	Q4
Loss (TWH)	0.00	-0.04	-0.16	-0.17
LFCV (TWH)	0.00	-0.41	-0.99	-1.24
Loss Cost (million \$)	0.0	3.5	-8.8	21.6
Loss Revenue from LF (million \$)	0.0	5.6	-1.2	30.4
Loss Revenue from CF (million \$)	-	-	-	-
Total Loss Revenue (million \$)	0.0	5.7	-0.7	37.0
Average Loss (%)	0.00	-0.03	-0.19	-0.18
2006 Carry Forward (million \$)	0.0	0.0	0.0	0.0
Average PP (\$/MWH)	0.00	1.44	-0.71	12.04

Table 7: Percentage differences between hybrid and forecast data for 2006.

	Percentage Difference (B - C)/B			
	Q1	Q2	Q3	Q4
Loss (TWH)	0.00%	1.27%	5.54%	5.86%
LFCV (TWH)	0.00%	0.70%	1.70%	2.14%
Loss Cost (million \$)	0.00%	1.60%	-5.76%	11.00%
Loss Revenue from LF (million \$)	0.00%	2.55%	-0.74%	14.18%
Loss Revenue from CF (million \$)	-	-	-	-
Total Loss Revenue (million \$)	0.00%	2.64%	-0.43%	17.78%
Average Loss (%)	0.00%	-0.57%	-3.77%	-3.64%
2006 Carry Forward (million \$)	-	-	-	-
Average PP (\$/MWH)	0.00%	2.07%	-1.38%	17.72%

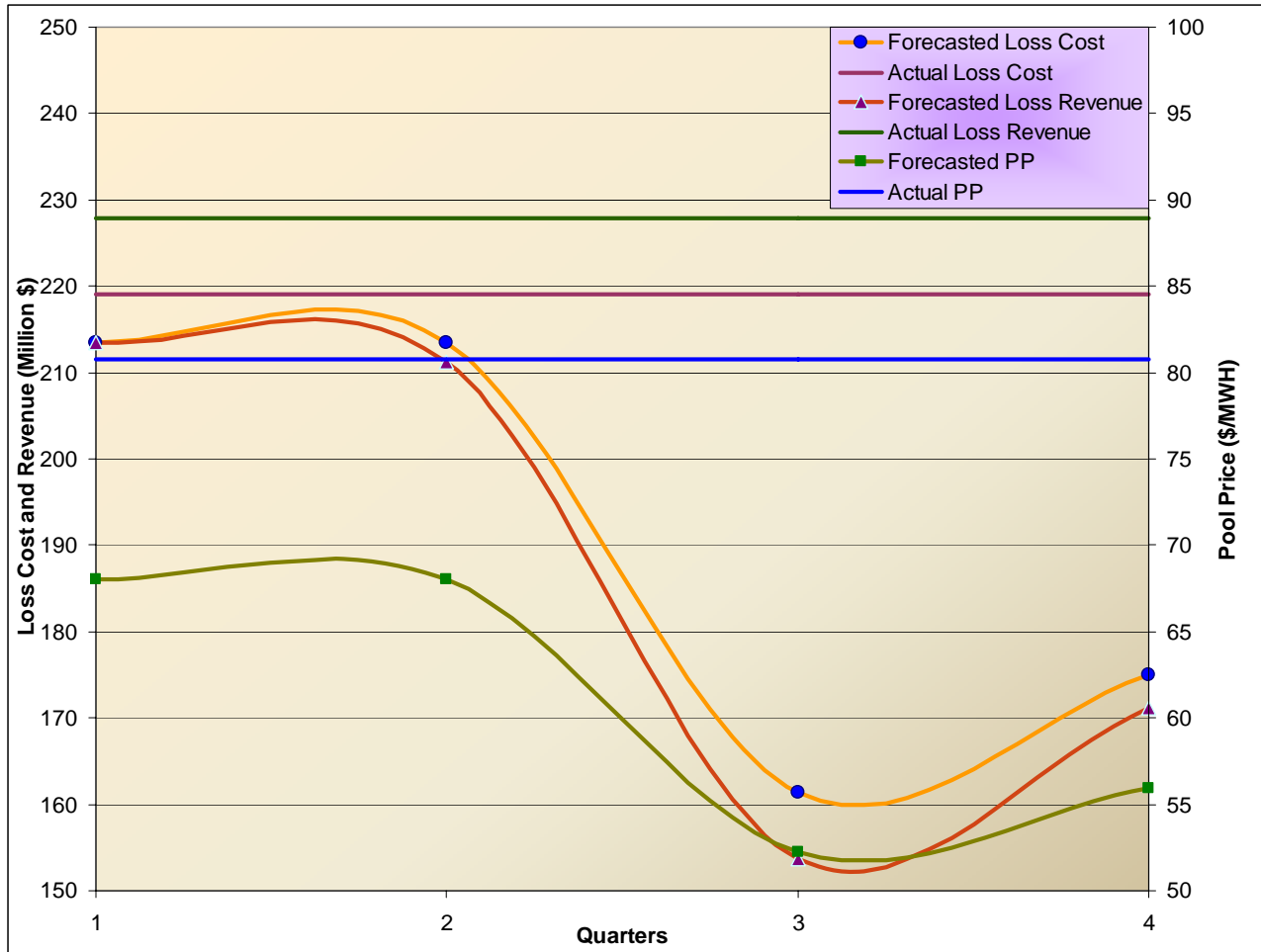
Difference for loss revenue from CF is not shown as the parameter used in the forecast is an annual number whereas it is up to date number in the hybrid data. The total loss revenue variance is relatively high (17.78% or \$37.0 million). The high variance in pool price (17.72%) is primarily responsible for this. The negative sign means the forecast is higher than the hybrid numbers.

Tables 4-7 show the changes in annual and dynamic data against the forecast. The forecast is also dynamic and updated quarterly.

Figure 1 shows the actual and forecast data for loss, total revenue and pool price. The figure clearly shows how the pool price drives the loss cost and revenue trends. The graphs showing the actual annual parameter are straight lines.

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Figure 1: impact of pool price in loss cost and recovery.



5.0 Summary

The accumulated year-end variance for 2007 is \$8.8 million which is the difference between 2007 loss cost (\$219.1 million) and 2007 total loss revenue (\$227.9 million).

The 2006 was the first year for the new loss factor methodology and its components. The loss cost recovery shows relative large variances and this is caused primarily by two factors, they are:

1. The 2006 initial loss was forecasted much higher (3.18 TWH) than what actually occurred. The loss value was gradually corrected as the year progressed and the annual loss forecast was updated to 2.84 TWH before the Q4 CF calculation occurred.
2. The pool price variance was very high and the variance between actual and forecast was as high as 35.30%.

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The carry forward amount for 2005 has been considered as zero as the new loss cost recovery process started new on January 1 2006. Tables and graphs are provided for better understanding of the process.

The dynamic process of transmission loss cost recovery helps to maintain a very low variance. Additional graphs are added in Appendix I to provide information and context on the calibration factor.

APPENDIX I. Loss Parameter Comparison in Graphs

Figure A1: Actual and forecasted annual loss.

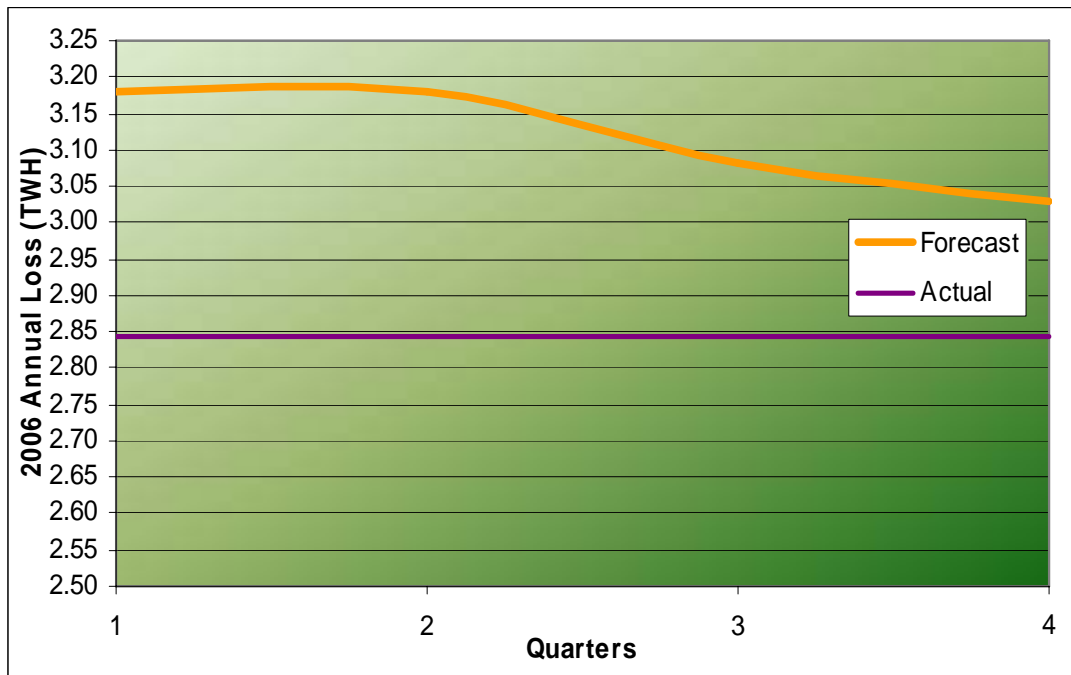
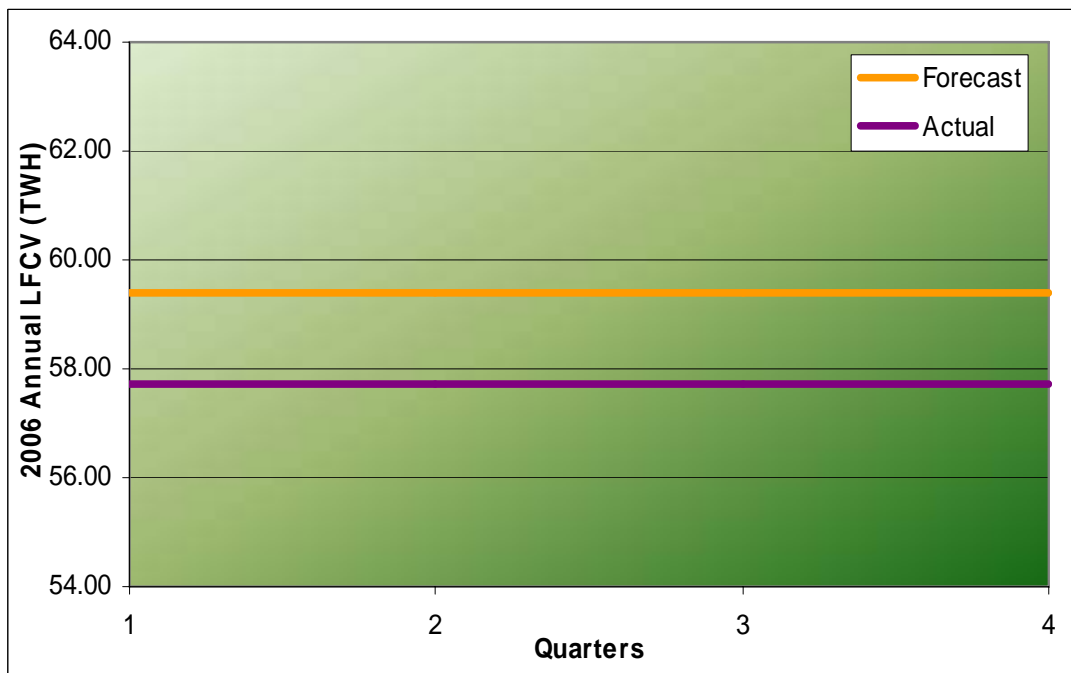


Figure A2: Actual and forecasted annual loss factor customer volume.



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Figure A3: Actual and forecasted annual loss cost.

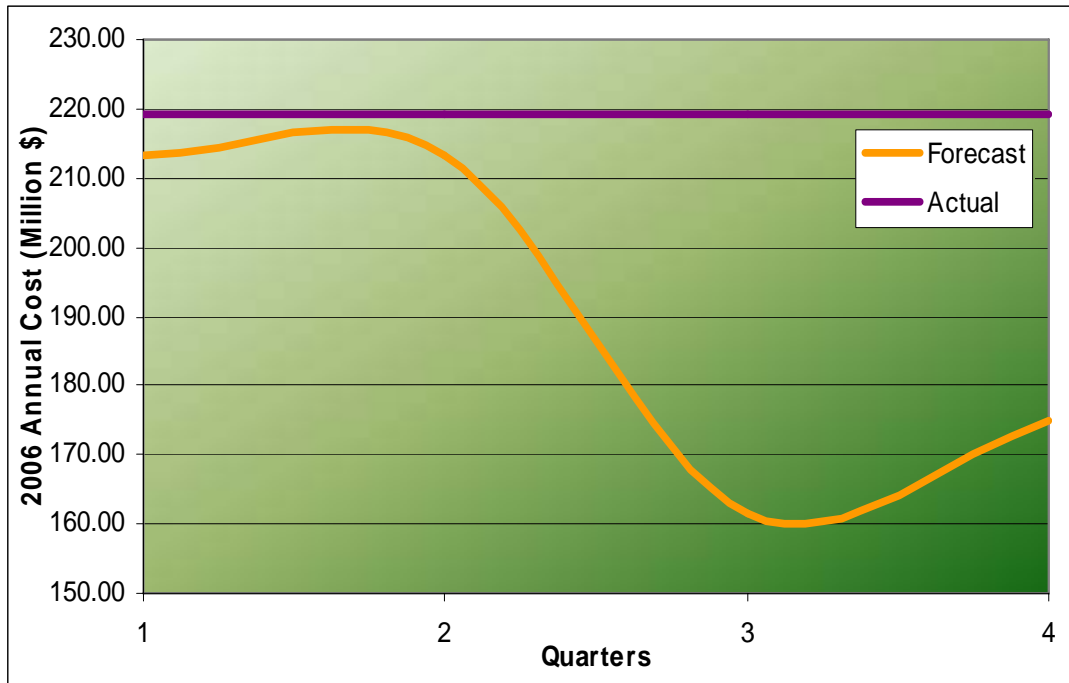
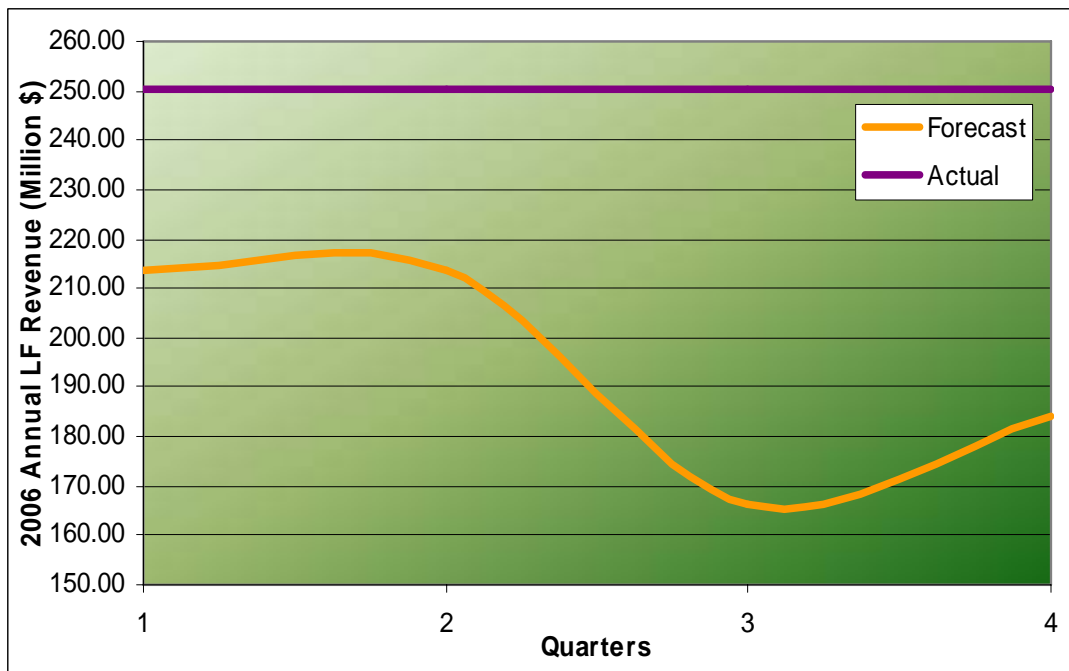


Figure A4: Actual and forecasted annual loss revenue collected through application of LF.



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Figure A5: Actual and forecasted annual loss revenue collected through application of CF.

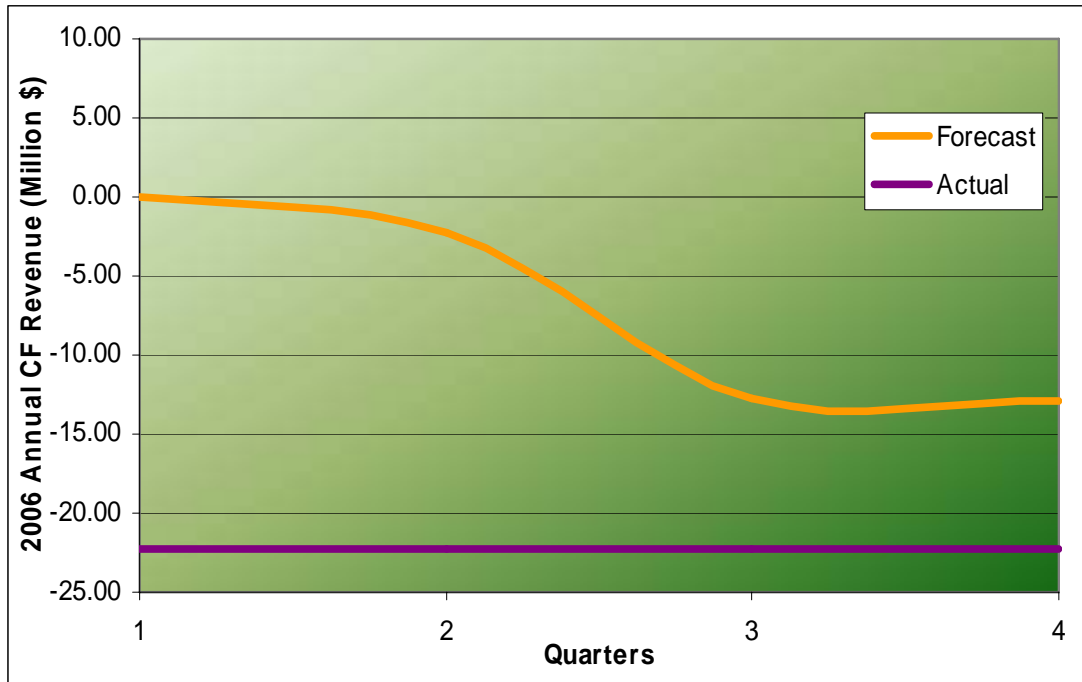


Figure A6: Actual and forecasted total annual loss revenue.

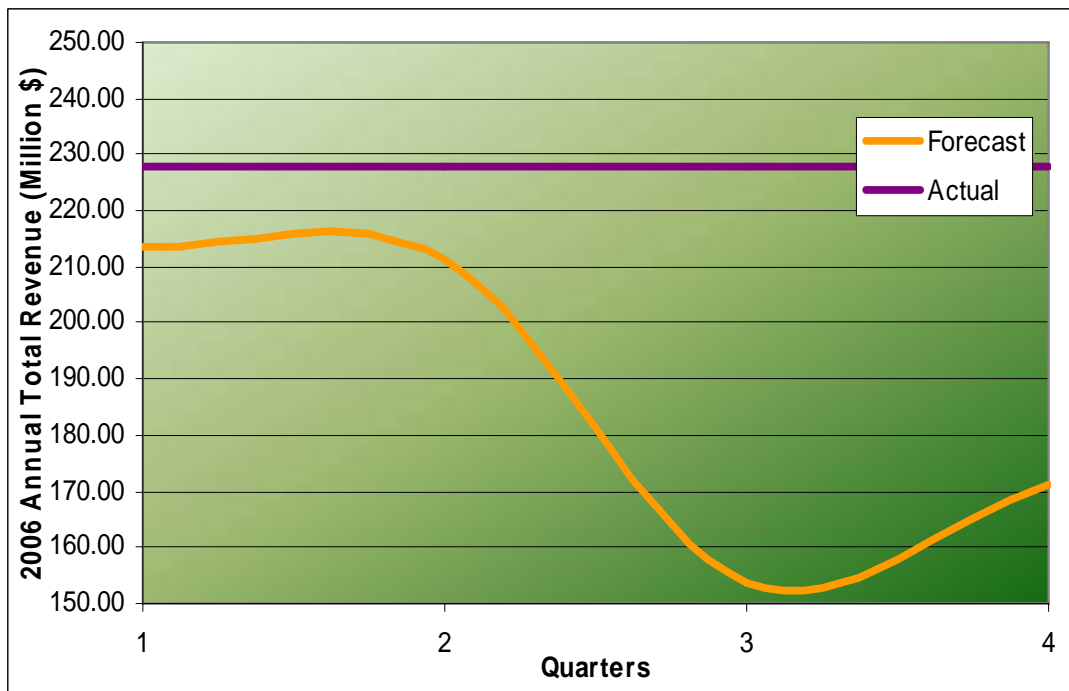


Figure A7: Quarterly calculated CFs.

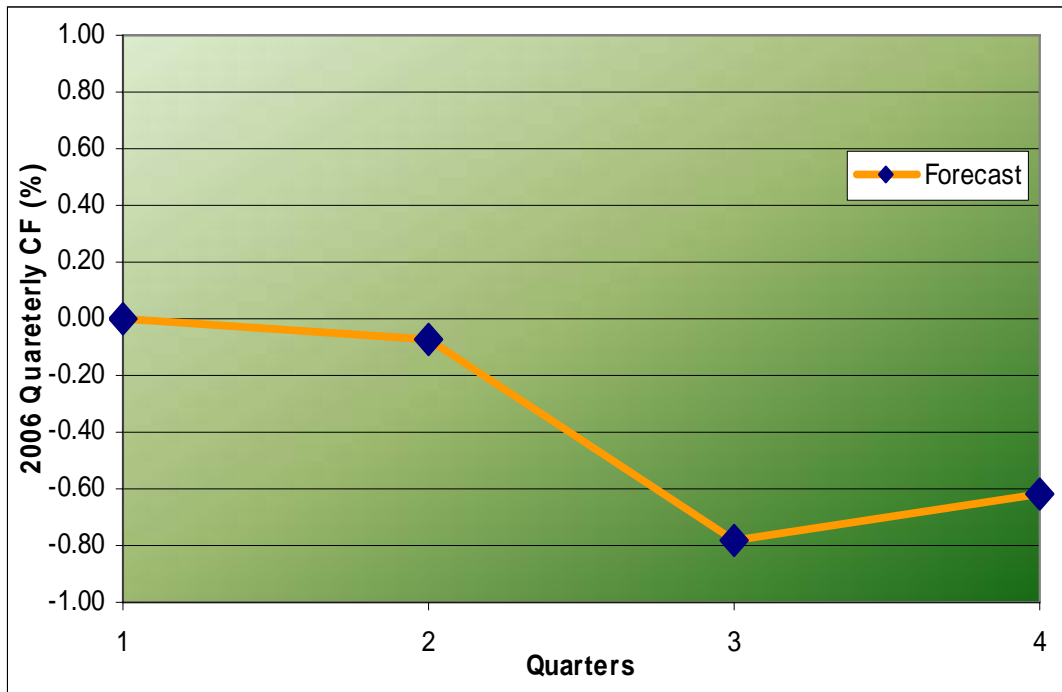
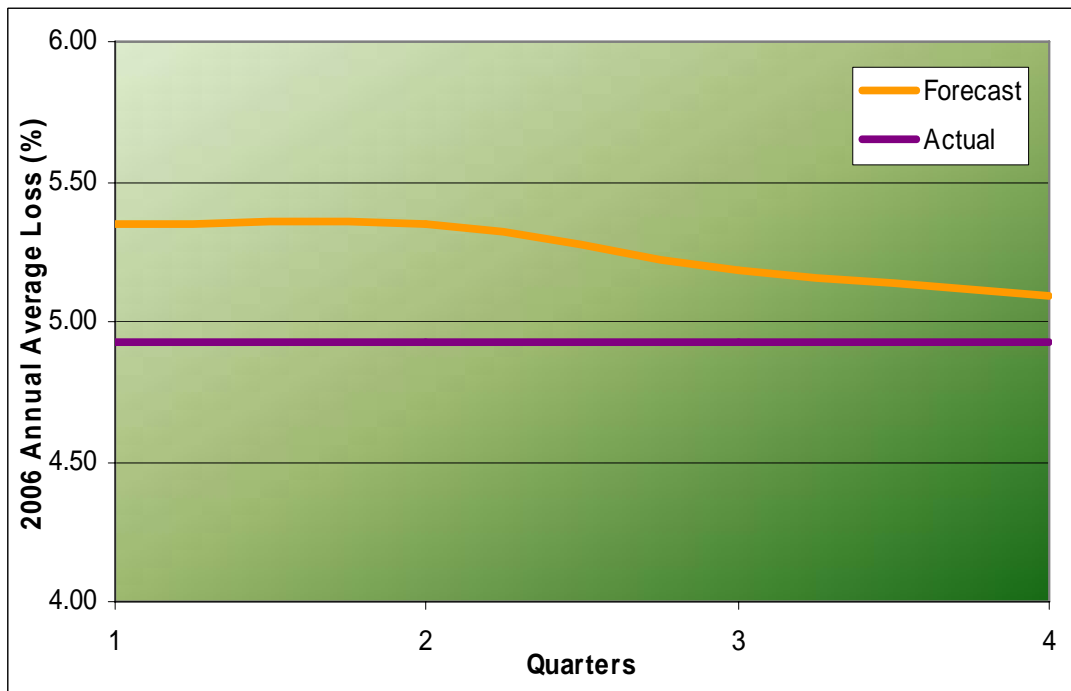


Figure A8: Actual and forecasted annual average loss.



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Figure A9: Actual and forecasted annual average pool price.

