TERASEN GAS INC.

Price Risk Management Plan

Effective

April 2011 – October 2014

January 27, 2011

Table of Contents

List of Appendices

Appendix A – RiskCentrix Findings and Recommendations Report

Appendix B – Draft Order

Index of Tables and Figures

1 EXECUTIVE SUMMARY

Terasen Gas Inc. ("Terasen Gas" or "TGI" or the "Company") strives to provide safe, reliable and cost-effective service to energy customers within its service areas. The Price Risk Management Plan (the "Plan" or "PRMP") is one of the tools that Terasen Gas uses to support these goals. The British Columbia Utilities Commission (the "Commission"), per Order E-23-10 dated July 22, 2010, denied the TGI 2010 PRMP and directed TGI to conduct a review of the objectives in light of the Clean Energy Act and increased domestic natural gas supply. Upon review of the price risk management objectives, as presented in the Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc ("TGVI") Review Report (the "Review Report") dated January 27, 2011, TGI continues to believe that the primary objectives of the PRMP are to improve the likelihood that natural gas remains competitive over the term of the plan, moderate the volatility of market gas prices and their effect on rates for customers, and reduce the risk of regional price disconnects. TGI also believes that achieving these objectives at a reasonable cost is in the best interests of customers. As such, the focus of this Plan is on an effective hedging strategy and implementation to meet these objectives, rather than discussion of the objectives themselves.

The PRMP has been successful to date in meeting these primary objectives and therefore the Company continues to recommend the continuation of an effective hedging strategy to provide value for customers. In consultation with Commission staff, TGI contracted a consultant, RiskCentrix, LLC ("RiskCentrix") to provide a review of the PRMP objectives and hedging strategy. RiskCentrix reaffirmed the appropriateness of the objectives and recommended an enhanced hedging strategy to achieve them which was presented to Commission staff on November 17, 2010. This enhanced hedging strategy also provides a focus on cost effectiveness, reducing the potential for significant out-of-market outcomes.

The recommended hedging strategy includes several enhancements to TGI's previous hedging program. These enhancements include:

- Less programmatic hedging for balance of scheduled volatility reduction and reduction in hedging costs;
- Defensive hedging (using call options) to respond to potential increases in prices above specific tolerances; and
- Value hedging, with criteria, to capture favourable price opportunities.

TGI continues to recommend managing Sumas price exposure through basis swaps.

The PRMP is designed within the context of a highly volatile natural gas market and includes strategies for both high and low price situations. The Plan takes into consideration customer migration under commercial and residential commodity unbundling ("Customer Choice") and includes

hedging for both the Commodity Cost Reconciliation Account ("CCRA") and Midstream Cost Reconciliation Account ("MCRA") related annual deliveries for Terasen Gas.

1.1 Request for Commission Approval

Terasen Gas is seeking approval from the Commission to implement the enhanced hedging strategy as outlined in this 2011-2014 Plan. Terasen Gas is proposing changes to the previous hedging strategy per the consultant RiskCentrix in order to satisfy its price risk management objectives. The enhanced hedging strategy includes elements that allow for measured responses to changing market conditions. The enhanced hedging strategy includes several key elements to successfully meet the objectives. These include the following:

- Programmatic hedging for scheduled volatility reduction;
- Defensive hedging to respond to potential increases in prices above specific tolerances;
- Value hedging to capture favourable price opportunities; and
- Basis swaps for managing Sumas price exposure.

RiskCentrix recommends adding a monitor-and-respond mode of risk mitigation, rather than a primarily programmatic hedging implementation. This allows effective mitigation of rate increases for customers while also reducing the potential for intolerable hedging costs.

Programmatic hedging is an important component of the hedging strategy. It includes scheduled hedging implementation to provide market price volatility reduction. This hedging would extend out to October 2014, consistent with the three year hedging horizon in previous PRMPs. However, a reduction in the amount of programmatic hedging (with an accompanying increase in other elements of hedging) will balance volatility reduction with reducing the potential for significant out-of-market outcomes, or hedging costs.

Defensive hedging is the key element of the monitor-and-respond strategy. It includes measuring the potential for price movements above certain tolerances. If tolerances are breached then defensive hedging is implemented. Several price targets are used so that defensive hedging is layered in rather than executed all at once, which would increase the risk of out-of-market outcomes. Option instruments are an important part of defensive hedging as they provide upside price protection with downside price participation. RiskCentrix recommends using call options in this regard. Options would be subject to a higher maximum percentage of hedgeable volumes than in previous PRMPs with the remainder of the defensive hedging implemented with fixed price swaps.

Value hedging is similar to the accelerated and incremental hedging of previous PRMPs. It enables TGI to capture favourable price opportunities and targets are based on consideration of historical market prices, commodity rates and electric equivalent benchmarks. The value hedging would be implemented immediately upon reaching market price targets, subject to a forward price curve

contango screening criteria, with small weekly increments thereby limiting out-of-market outcomes if market prices continue to decline.

TGI recommends that Sumas-AECO basis swaps continue to be used for managing Sumas price exposure. Constrained regional infrastructure has led to significant Sumas price disconnections in during periods of high winter demand in the PNW in recent years. By locking in the basis differential between Sumas and a more liquid market hub such as AECO, this price disconnection risk can be effectively mitigated. TGI would use these instruments for Sumas price exposure within both the commodity and midstream portfolios, consistent with past practice. The basis swaps would be implemented within twelve months of the winter period in order to take into consideration any changes in the physical supply portfolio.

TGI proposes that the maximum volume subjected to programmatic hedging volumes would be decreased from volumes targeted in previous PRMPs approved by the Commission. In addition, the programmatic, defensive and value hedging volumes would together be subject to a maximum percentage of the hedgeable volumes for winter and summer. Should TGI feel it appropriate to hedge more than this percentage, it would file a separate written request with the Commission.

Under commodity unbundling for residential and commercial customers, Terasen Gas continues to provide customers a supply option and, as such, the rate stabilization and quarterly gas cost flow-through mechanisms will continue as well as the primary objectives of the PRMP. These mechanisms and objectives are keys to protecting existing customers and positioning natural gas as a competitive energy source in the future. The customer survey performed by Western Opinion Research Inc. in 2005 and a more recent focus group indicate that customers prefer some degree of natural gas rate stability and, as such, Terasen Gas believes consistency within its hedging strategy and these mechanisms in the commodity unbundling environment are important for customers who have made the choice to not enrol with marketers and remain with the Terasen Gas standard rate offering.

1.2 Summary

The primary objectives of the 2011-2014 Plan are to improve the likelihood that natural gas remains competitive, moderate the volatility of market gas prices and their effect on rates for customers and reduce the risk of regional price disconnects. An underlying objective is to also provide this price volatility reduction and competitiveness at a reasonable cost for customers. TGI believes this enhanced PRMP will successfully meet these objectives and recommends the approval of the 2011-2014 Plan in the interests of providing value to customers.

2 INTRODUCTION

The primary objectives of the 2011-2014 Price Risk Management Plan are to improve the likelihood that natural gas remains competitive, moderate the volatility of market gas prices and resultant rates for customers and reduce the risk of regional price disconnects. An underlying objective of the Plan is to also provide this volatility protection and competitiveness at a reasonable cost to customers. Balancing these objectives may not necessarily result in the lowest cost portfolio given the volatility in the natural gas market and hedging at only the lowest points over time is an unreasonable expectation. However, TGI believes this enhanced hedging strategy, as recommended by RiskCentrix, will meet the primary objectives and is also more responsive to changing market conditions. As a result it is expected to reduce the likelihood of significant out-of-market hedging costs. The Review Report validated these objectives and also indicated that natural gas prices may not remain depressed forever. Higher gas prices and increased volatility could return to the market in the near future and TGI believes an effective hedging strategy is prudent and appropriate in protecting and providing value for customers.

Terasen Gas believes that in order to retain customers and promote load growth it is important to ensure gas rates remain competitive with other forms of energy in the British Columbia. Energy consumers have an increasing choice of energy sources, however at this time Terasen Gas continues to use equivalent electricity rates as the best available measure of competitiveness. While provincial policies in BC have created low electricity rates and preserved the British Columbia Hydro and Power Authority ("BC Hydro") Heritage Asset benefits, BC Hydro potentially faces an era of increased costs and higher rates in striving to achieve self-sufficiency in terms of energy supply. This has improved Terasen Gas' ability to manage the electric competitiveness objective on an operating or variable cost basis, all else being equal. However, uncertainty around future natural gas market prices and electricity rates, higher up front capital costs for natural gas compared to electricity for space and water heating and the implementation of the phased-in carbon tax introduced in July 2008, increasing each year until 2012 (and uncertainty around this tax beyond 2012), will add to the Terasen Gas challenge of maintaining competitiveness in the future. The primary objectives of this Plan also remain relevant in the residential and commercial commodity unbundling environment, wherein customers that choose to remain with the Terasen Gas standard rate offering continue to desire some degree of rate stability while accessing competitive rates.

Terasen Gas' price risk management program has historically been successful in meeting the primary objectives of the Plan of reducing price volatility for customers, and maintaining competitiveness. A hedging portfolio comprised of fixed price swaps, options and basis swaps has enabled Terasen Gas to provide relatively stable rates compared to the natural gas marketplace and improved the likelihood of competitive prices. The use of option instruments has allowed Terasen Gas to participate in the market price declines when they have occurred since June 2006 while still maintaining some upward price protection during periods when prices rose. Terasen Gas and RiskCentrix both recommend an

increased use of options from amounts in previous PRMPs in achieving the objectives and reducing the potential for hedging costs.

The most significant enhancement in this proposed PRMP is a reduction in the amount of programmatic hedging from previous PRMPs. This will provide some degree of market price volatility reduction while also reducing the potential for hedging costs. Terasen Gas recommends reducing programmatic hedging to a maximum of 25% of the hedgeable volumes for winter and summer, as compared to 60% winter and 45% summer approved in previous PRMPs. The programmatic hedging and implementation schedule is discussed in Section 7.3.

Defensive hedging is a key element of the monitor-and-respond approach recommended by RiskCentrix. It involves monitoring future market price exposure compared to tolerances related to the objectives. If the tolerances are breached, then defensive hedges are layered in according to predefined percentages. The defensive hedges include the use of option instruments, specifically at-the-money call options. While there is an explicit premium for call options, they provide upward price protection and also full downside price participation in case market prices decline in the future. Therefore, the objectives of volatility reduction and competitiveness are met as well as the objective related to reasonable cost. The defensive hedging strategy is discussed in Section 7.4.

Value hedging is another key element of the recommended hedging strategy. This is similar to the accelerated and incremental hedging Terasen Gas has executed in the past. When specific market price targets are reached, the value hedging fixed price swaps are implemented in small increments [redacted] This ensures significant volumes are not implemented all at once, in case market prices continue to decline, and so prevents accumulation of significant hedging costs. The value hedging price target and implementation is provided in Section 7.5.

Tightening regional pipeline infrastructure has given strength to Sumas prices, relative to AECO prices, during the last few winters and this situation is expected to continue in the near future. Therefore, Terasen Gas recommends continuing to manage Sumas price exposure with basis swaps. These instruments have limited downside hedging cost risk, as it is the basis, rather than the underlying Sumas price, that is being hedged. These instruments are discussed in Section 7.6.

Terasen Gas proposes to limit the programmatic hedging to a maximum of 25% of the hedgeable volumes for winter and summer. This programmatic hedging, combined with any additional hedges implemented in response to market conditions through defensive or value hedges, would be limited to 60% maximum for winter and summer. This is consistent with the balanced portfolio approach (including storage and floating, or unhedged, volumes) that Terasen Gas has used in the past.

At this time, the forecasted baseload commodity volumes available for hedging, net of forecasted unbundling migration range from 256.4 TJ per day for April 2011 to October 2011 to 260.6 TJ per day for April 2014 to October 2014. Details are provided in Section 7.2.

3 REQUEST FOR COMMISSION APPROVAL

Terasen Gas requests approval for the 2011-2014 Price Risk Management Plan to allow the Company to continue to meet the objectives of improving the likelihood that natural gas remains competitive with other forms of energy, moderating the volatility of market gas prices and resultant rates for customers and reducing the risk of regional price disconnects. The hedging strategy is also more responsive to changing market conditions and, as such, reduces the potential for significant hedging costs as compared to previous PRMP's. The specific approvals requested are as follows.

- The objectives of the Price Risk Management Plan include:
    - Providing an appropriate balance of volatility reduction, energy competitiveness, reducing the risk of regional price disconnections and cost effectiveness to create value for customers.
- Terasen Gas will implement a price risk management program that is based on the following components:
    - Programmatic hedging to a maximum of 25% of the CCRA hedgeable volumes for the winter and summer periods consisting of fixed price swaps according to the predefined implementation schedule in Section 7.3;
    - Defensive hedging in response to market conditions that increase the potential for prices to exceed certain tolerances in accordance with the defensive price targets and volumes in Section 7.4. Defensive hedges will be limited to a maximum of 35% of the CCRA hedgeable volumes for the winter and summer periods and include fixed price swaps and options. The use of options for defensive hedging will be limited to a maximum of 25% of the CCRA hedgeable volumes;
    - Value hedging in response to market conditions whereby Terasen Gas will hedge [redacted] with fixed price swaps if prices fall from current forward prices to the value price target (per Section 7.5);
    - The combination of programmatic hedging, defensive hedging and value hedging will be limited to a maximum of 60% of the CCRA hedgeable volumes for the winter and the summer periods; and
    - Basis swaps will be used to hedge up to 100% of the CCRA and MCRA Sumas price exposure (winter only).

4 HEDGING STRATEGY

The hedging strategy within this Plan has been enhanced from the strategy of previous PRMPs. This enhanced strategy includes several elements specifically designed to meet the objectives of the Plan; these elements include programmatic, defensive and value hedging and provide a greater monitor-and-respond component than the primarily programmatic hedging implementation of the past, and therefore is expected to reduce the potential for significant hedging costs. The strategy is based on the analysis and scenarios provided by RiskCentrix and the determination of an optimal solution to meet the objectives. The strategy is consistent with the recommendations of RiskCentrix (detailed report provided in Appendix A) and presentation to Commission staff in November 2010.

4.1 Hedging Horizon

The hedging horizon still extends out three years out from the upcoming winter, consistent with previous PRMPs. However, given the Commission denial of the TGI 2010-2013 PRMP, summer 2011 hedging has not yet been completed, and so summer 2011 is included in the hedging horizon for this Plan.

4.2 Programmatic Hedging

The programmatic element is significantly lower than in previous PRMPs. It is subject to a maximum of 25% of the CCRA hedgeable volumes for winter and summer as compared to previous maximum percentages of 60% for winter and 45% for summer. The lower amount of programmatic hedging provides some amount of base volatility reduction while reducing the potential for significant hedging losses in the future. The programmatic hedging would be implemented according to a predefined implementation schedule with a prorated share of remaining hedges to be executed in each monthly hedging window. These hedges would be executed with AECO fixed price swaps, as opposed to options, to provide maximum volatility reduction.

4.3 Defensive Hedging

Defensive hedging utilizes value-at-risk ("VaR") analysis which involves monitoring future market price exposure compared to tolerances related to the objectives. If the tolerances related to bill increases or competitive benchmarks are breached, then defensive hedges are layered in according to predefined percentages. The defensive hedges include the use of fixed price swaps and option instruments, specifically at-the-money call options. While there is an explicit premium for call options, they provide upward price protection and also full downside price participation in case market prices decline in the future. The options are limited to a maximum of 25% of the CCRA hedgeable volumes

to provide some downside price movement participation while constraining option premium costs. Therefore, the objectives of volatility reduction and competitiveness are met as well as the objective related to reasonable cost. The defensive hedging strategy and implementation is discussed in Section 7.4.

4.4 Value Hedging

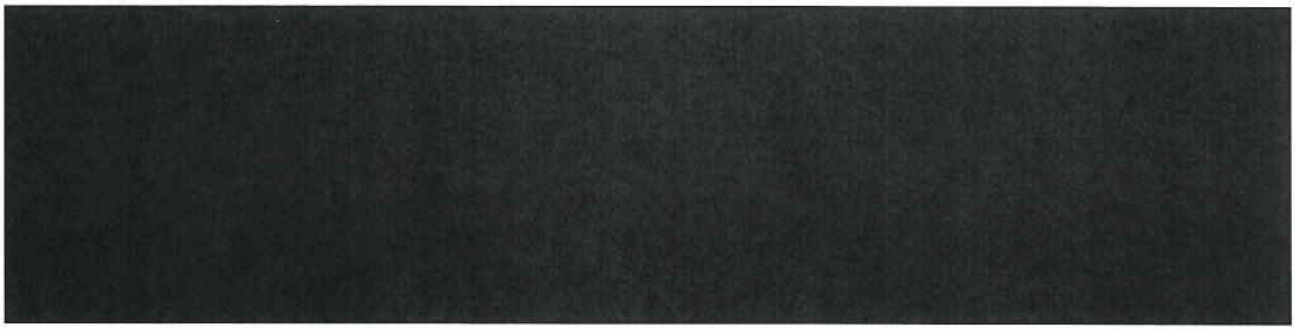
Value hedging is another important element of the recommended hedging strategy. This is similar to the accelerated and incremental hedging Terasen Gas has executed in the past and comes into play when specific favourable market price targets are reached. These targets would be based on consideration of current and previous TGI commodity rates as well as competitive benchmarks and so their execution would help meet the objectives and to lock in value for customers when prices fall below certain levels. The value hedging fixed price swaps are implemented in small increments [redacted] to ensure significant volumes are not implemented all at once, in case market prices continue to decline. The value hedging price targets and implementation is discussed in Section 7.5.

4.5 Sumas Price Exposure

TGI considers effective management of Sumas price exposure critical in ensuring a cost effective supply portfolio for customers. Constrained regional infrastructure typically leads to Sumas price disconnections during periods of peak winter demand. While often short-lived, these spot price disconnections can be significant and adversely affect monthly winter prices. Sumas-AECO basis swaps effectively manage this price risk by fixing the differential between Sumas and AECO prices. At the same time, this also allows for downside price participation in the event that prices in general decline as the AECO index component of the hedge is not fixed. TGI recommends hedging all of the commodity and midstream Sumas price exposure (related to normal demand), which is consistent with past practice and the findings of RiskCentrix.

4.6 Hedgeable Volumes

The determination of the hedgeable volumes is required to derive the maximum amount of hedging, the volume targets related to the defensive and value hedges, the maximum options volumes and the predefined implementation schedule. Terasen Gas is forecasting total required baseload gas of 311.4 TJ/d in April 2011 to 313.6 TJ/d by October 2014. Forecast marketer volumes account for about 50 TJ/d in April 2011 to 46 TJ/d by October 2014. The detailed forecasts are provided in Section 7.2. The hedges in place to date relative to the forecast of hedgeable volumes and maximum hedging volumes for summer 2011 through summer 2014 are shown in the following table.



4.7 Comparison to 2010-2013 Plan

The following table summarises the proposed 2011-2014 Plan and compares it to the 2010-2013 Plan.

Table 2: 2010-2013 Plan vs. Proposed 2011-2014 Plan

2010-2013 Plan	Proposed Plan	Changes	Benefits
36 month hedging horizon	36 month hedging horizon plus 7 months for incomplete summer 2011	Inclusion of incomplete summer 2011 hedging	Increase probability of meeting the objectives through October 2014
Programmatic Implementation targets: >= 24 months (20%) >= 18 months (25%) >= 12 months (40%) < 12 months winter (60%) < 12 months summer (45%)	Programmatic Implementation targets: Equal implementation within each monthly hedging window to maximum of 25% for winter and summer	Reduction in programmatic hedging from 60% winter and 45% summer maximums to 25% winter and summer maximums	Reduced programmatic hedging reduces out-of-market outcomes (value and defensive hedging become responses to low and high market prices)
CCRA options hedging: - winter 10% - summer 10%	CCRA options hedging: - winter max 25% - summer max 25% (for defensive hedging only)	Increase of 15% options for winter and summer	Increased options for defensive hedging (to mitigate upward price movements and limit hedging costs)
Eliminate Sumas related price exposure (basis risk) in CCRA with fixed price and 10% basis swaps	Eliminate Sumas related price exposure (basis risk) in CCRA with maximum 15% basis swaps (based on hedgeable volumes)	Increase of up to 5% (replacing Sumas fixed price swaps with Sumas basis swaps)	Continue to reduce the risk of regional price disconnects in CCRA

2010-2013 Plan	Proposed Plan	Changes	Benefits
Eliminate Sumas related price exposure (basis risk) in MCRA with up to 100% basis swaps	Eliminate Sumas related price exposure (basis risk) in MCRA with up to 100% basis swaps	No change	Continue to reduce the risk of regional price disconnects in MCRA
Immediately hedge 5-10% of CCRA volumes if prices fall significantly (accelerated hedging strategy)	Implement hedges [redacted] if prices fall below target (value hedging strategy)	Change from accelerated to value hedging strategy	Capture favourable prices if market prices decline to value targets – weekly implementation in case market prices continue to decline
Hedge up to 10% of CCRA annual volumes with only options if hedge price greater than electric equivalent	Hedge up to 35% of CCRA annual volumes with defensive hedging (with mostly options) if prices exceed defensive price targets	Defensive hedging limits exposure above predefined electric equivalent benchmarks	Provides price protection and less volatility if prices continue to move higher while maintaining downside participation if prices eventually come off

Each of these elements of the enhanced hedging strategy will be discussed in detail in the sections of this Plan, following a discussion of the objectives.

5 OBJECTIVES

The Price Risk Management Plan utilizes a balanced approach of hedging, floating and storage volumes in order to meet the objectives of competing with alternate sources of energy, reducing the impact of market price volatility and reducing the risk of regional price disconnects. In the Review Report, Terasen Gas asserted that these objectives are relevant and continue to be appropriate in providing value for customers. While it is difficult to effectively meet the objectives without incurring hedging costs over time (as some years may result in hedging gains and others in hedging costs), Terasen Gas accepts that a hedging strategy that is more responsive to changing market conditions has the potential to reduce hedging costs compared to previous PRMPs. With the recommended enhanced hedging strategy presented herein, Terasen Gas believes it can successfully achieve these objectives and reduce the potential for significant hedging costs going forward. This is in the best interests of customers in providing competitive and relatively stable rates and customer growth in the future.

5.1 Competing with Alternate Sources of Energy

Remaining competitive with alternate sources of energy over the longer term is considered a primary objective of TGI's price risk management activities. TGI believes that a primary focus for continued load retention and encouragement of new, economic load growth is to ensure consumers view natural gas as a cost effective solution to meeting their space and water heating requirements. In developing the price risk management strategies, TGI's principal measure of competiveness has been against an electric equivalent benchmark on a variable cost basis (i.e. without consideration of installation and capital cost differences). With government policies and customers' desire for "green" energy sources leading to more choices for customers, TGI recognises that using electricity as the benchmark measure does not take into account many other factors that will influence customers' decisions on their energy solutions.

Maintaining competitiveness with the current benchmark of electricity rates is important for energy consumers in British Columbia, as a whole, in the context of provincial policies in BC of low electricity rates and preservation of the BC Hydro Heritage Asset benefits for an extended period. If TGI cannot compete with electricity rates, the potential for customer migration from natural gas to electricity usage would lead to upward pressure on electricity rates, as BC Hydro would require new incremental and more costly sources of power, while, at the same time, increase TGI rates given the lower customer base. The end result would be that customers of both natural gas and electric utilities would pay more for their energy costs, as discussed in Section 4.4.1 of the Review Report.

Increasing electricity rates combined with depressed natural gas prices have improved Terasen Gas' competitive position currently. However, capital cost differences between electricity and natural gas

equipment and the uncertainty regarding future electricity rate increases, natural gas prices and volatility and carbon tax increases will greatly impact this competitive position going forward.

5.2 Reducing the Impact of Market Price Volatility

Natural gas price volatility impacts the commodity cost embedded in rates. As a result, customers change their consumption behaviour based on the real or perceived view that gas is more volatile than or uncompetitive with other sources of energy. Therefore, TGI considers moderating the volatility of market gas prices and their effect on rates for customers, a primary objective of the PRMP.

In February 2005, Terasen Gas engaged a research company to survey customers regarding their tolerance for volatility. The results of the Residential Customer Price Volatility Preferences Study, conducted in February 2005 by Western Opinion Research Inc., submitted in the 2005-2008 Price Risk Management Plan indicated that customers prefer price stability. The survey results confirmed that while customers will tolerate some volatility (on average annual bill increases of 16%) it is certainly less than the volatility that has occurred in the recent past in the natural gas market. A recent focus group study conducted by Ideba for Terasen Gas in November 2010 confirmed customers' desire for rate stability, even if the lowest price was not achieved.

While the Commodity rate adjustment mechanism serves as partial insulation against rate movements on a quarterly basis by smoothing the rate customers pay, it does not offer the same volatility reduction provided through a hedging program. Similarly, the Equal Payment Plan, which provides customers with equal bill payments for a twelve month period, acts to smooth customers' consumption via stable bill payments but does not affect underlying gas prices. Furthermore, under this Equal Payment Plan, the equal twelve month payment instalments are reviewed every three months and adjusted if necessary to reflect changes in weather, gas usage or gas rates. Hedging activity is not a substitute for the Commodity rate adjustment mechanism or the Equal Payment Plan but rather is complimentary to these mechanisms in reducing price and rate volatility for customers.

5.3 Reducing the Risk of Regional Price Disconnects

Managing Sumas price exposure becomes critical, particularly during a period of price disconnection, and so it is considered an important objective of the hedging strategy. A period of disconnection occurs when increased demand in the Pacific Northwest ("PNW") including British Columbia creates a lack of gas delivery capacity at Huntingdon causing Sumas prices to increase significantly above Station 2 and Alberta prices. This was particularly evident during the winter of 2000/01, when natural gas prices at Sumas increased dramatically, with record-high prices (peaking at $60.96/GJ on December 11, 2000) and unprecedented price volatility. During the last few years price disconnections have also occurred when periods of high winter demand occurred. While Southern

Crossing Pipeline is an example of regional infrastructure required to meet growing regional demand and has helped to reduce the magnitude of these price disconnects, further infrastructure developments are needed to meet the pace of demand growth in the region.

5.4 Cost effectiveness

Terasen Gas strives to meet these objectives at a reasonable cost. This is in the best interests of both customers and the Company as it helps ensure reasonable and competitive rates and customer growth over the long run. It should be recognized, however, that achieving the objectives without incurring any hedging costs is not practical on a consistent basis given the unpredictability and volatility in market prices. However, the benefits of volatility reduction and competitiveness should outweigh the potential hedging costs. It is important to recognize that the objectives related to price volatility reduction and maintaining competitiveness can compete, to some degree, with achieving the reasonable cost objective. For example, increasing the maximum hedging percentage above the recommended level of 60% could provide greater volatility reduction if market prices are volatile but this may also increase hedging costs if market prices decline. Therefore, the optimal balance of meeting the objectives while maintaining cost effectiveness provides the most value for customers. While Terasen Gas has incurred hedging costs during the past few years of depressed market prices, the enhanced hedging strategy provides a greater focus on cost effectiveness and limits the potential for significant hedging costs going forward. A lower amount of programmatic hedging and a greater use of options, used within the defensive hedging strategy only if tolerances are breached, are critical in this regard.

5.5 Conclusion

The primary objectives continue to be relevant and appropriate for Terasen Gas. As discussed in the Review Report, managing rate volatility and competitiveness continues to be important for customers. The enhanced hedging strategy presented herein is more responsive to changing market conditions and, as a result, reduces the potential for realizing significant hedging costs going forward.

6 ELECTRIC EQUIVALENT BENCHMARKS

As discussed, at this point in time, Terasen Gas applies equivalent electricity rates as the competitiveness benchmark for alternate sources of energy. Competitiveness to electricity in applications where the direct use of natural gas is optimal will have several benefits for customers, chiefly retention and growth of customer load helps to maintain reasonable rates for all customers. Also increasingly important is the fact that direct use of natural gas for applications such as heating and hot water versus electricity helps to ensure that heritage electricity benefits to British Columbians are conserved and reduces the cost pressures on the electric utility in procuring new supply resources to meet these energy demands.

6.1 Electric Equivalent Benchmarks

Establishing electric equivalent benchmarks based on segmented demand applications helps to illustrate the competitive challenges facing Terasen Gas as well as providing appropriate targets for the hedging strategy. The electric equivalent benchmarks were developed in Section 4.4.5 of the Review Report and the results are summarised here.

While based on current forward market gas prices, natural gas rates are currently competitive with electricity rates on a variable cost basis, this conclusion is absent consideration of any recovery of the upfront capital and ongoing maintenance cost differences between natural gas and electric space and hot water heating equipment. There are significant differences in capital costs associated with natural gas equipment for space and hot water heating and those based on electricity under consideration when building a new home or with energy appliance retrofits. The upfront cost to install a high efficiency gas furnace (90% efficiency) and associated duct work in a home is estimated to be approximately $7,000 whereas the upfront estimated cost of installing baseboard electric heating is approximately $2,500, which equates to approximately $10.31/GJ[1].

There is also a capital cost difference associated with hot water heating. The upfront cost to install a gas hot water heater in a home is estimated to be approximately $1,409 (including venting) whereas the upfront estimated cost of installing an electric hot water heater is approximately $973, which equates to approximately $2.79/GJ.

Therefore, the electric equivalent benchmarks developed within the Review Report and presented here include adjustments for these capital cost differences. The carbon tax, applicable to natural gas and not electricity, is also included. As discussed in the Review Report, Terasen has also given consideration to the amount of the projected electric rate bill impact increases, using 50% and 100% of BC Hydro's projected increases as a reasonable range of possible approved outcomes.

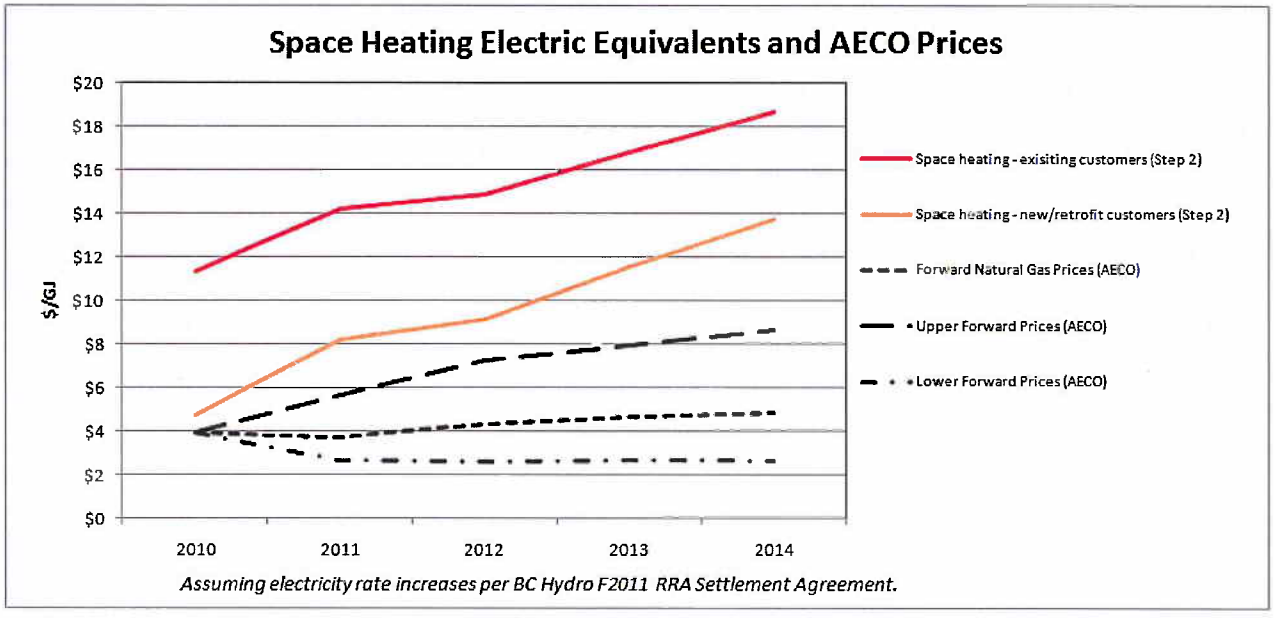
[1] Page 64 of the Terasen Gas Inc. 2010-2011 Revenue Requirements and Delivery Rates Application, dated June 15, 2009

6.1.1 SPACE HEATING BENCHMARKS

The electric equivalent benchmark for space heating differs for existing and new or retrofit customers. The difference is based on the relative efficiencies of natural gas compared to electricity and capital cost considerations. A new customer or one considering retrofitting with new equipment should consider the capital cost difference associated with natural gas versus electricity. In this case the relative efficiency of a natural gas compared to electricity would be based on that for new furnaces, in the order of approximately 90% efficiency. For existing natural gas customers, in order to continue their space heating with natural gas rather than electricity, Terasen Gas must maintain rates below the variable cost of electricity adjusted for the relative efficiency of their existing furnace. This efficiency could range from about 60% efficiency for older units to about 90% efficiency for new units. For both customer types, it is assumed that for the majority of customers who use natural gas for space heating, the appropriate electricity rate would be based on the Step 2 rate, rather than the Step 1 rate, of the RIB rate structure.

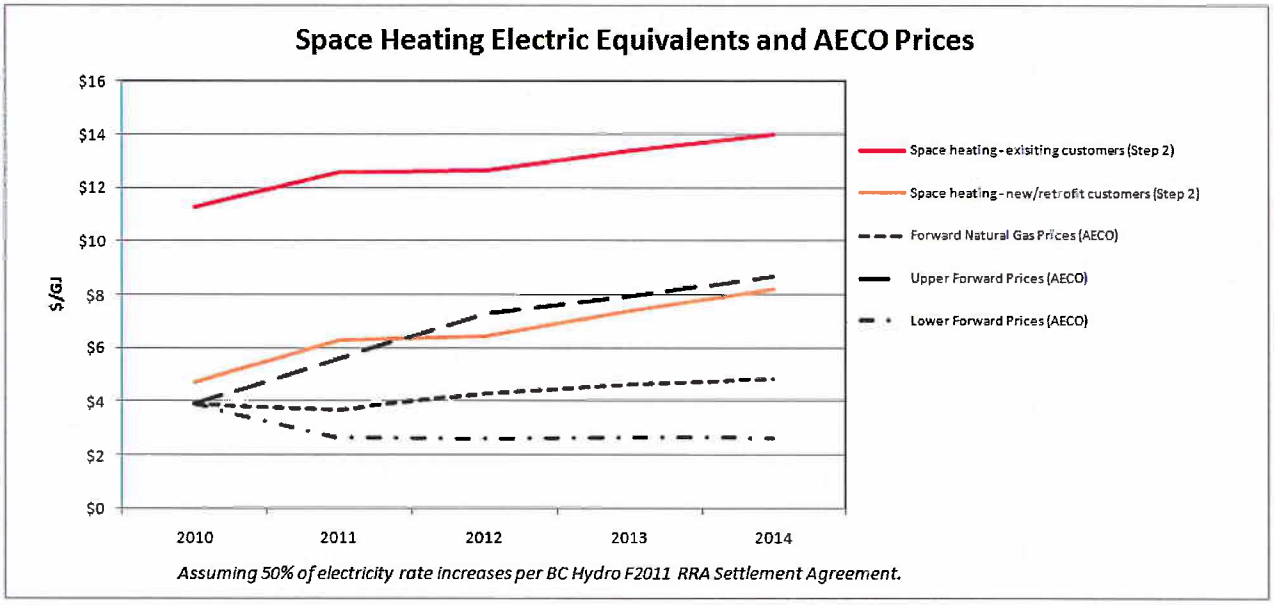
The following graph summarizes the electric equivalents for space heating, based on 100% of the BC Hydro rate projections. Also included are recent AECO forward natural gas prices and the upper and lower AECO price bands based on the implied forward volatility subject to a 95% confidence level.

Figure 1: Space Heating Electric Equivalents and AECO Price Envelope



The following graph is based on the 50% BC Hydro rate projections scenario.

Figure 2: Space Heating Electric Equivalents and AECO Price Envelope



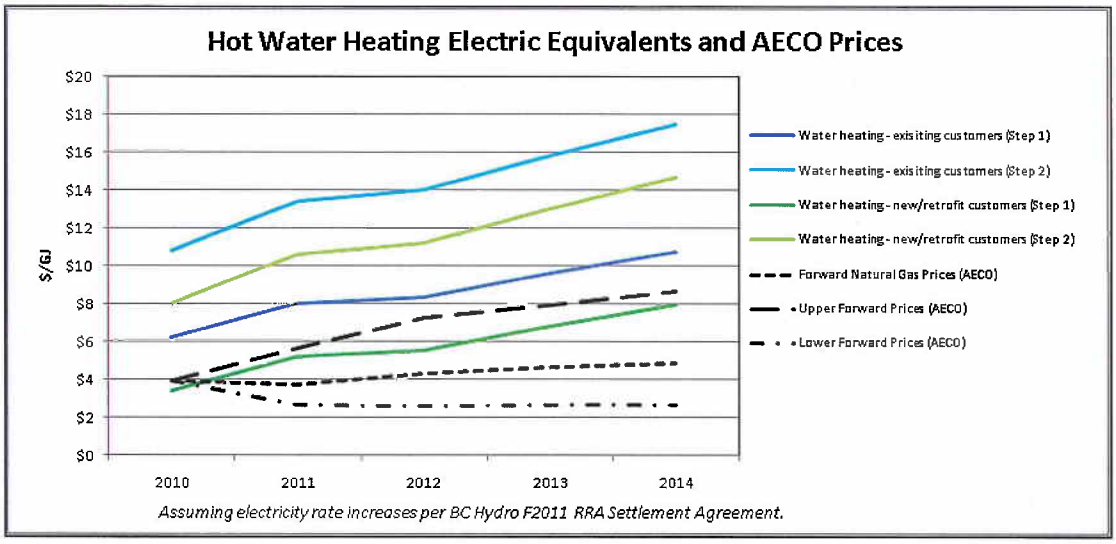
Based on these results alone, Terasen Gas believes it must focus on attracting new customers or retrofit customers, given the competitive challenge that exists should market gas prices increase in the future. As per the electric equivalent determinations and the previous graph, the benchmark for this segment of customers is in the $6/GJ to $8/GJ range.

6.1.2 HOT WATER HEATING BENCHMARKS

Natural gas is also disadvantaged in terms of competing with electricity with regard to attracting customers for hot water heating. While there is a capital cost differential related to hot water heating, the variable cost difference also challenges natural gas relative to electricity. This is because the relative efficiency of natural gas hot water heaters is typically only about 60% compared to about 90% efficiency for electric hot water heaters. It is also assumed that some customers using electricity for water heating may incur electricity rates at the Step 1 level while others may incur electricity rates at the Step 2 level. Therefore, the development of the electric equivalent benchmarks has taken this into consideration.

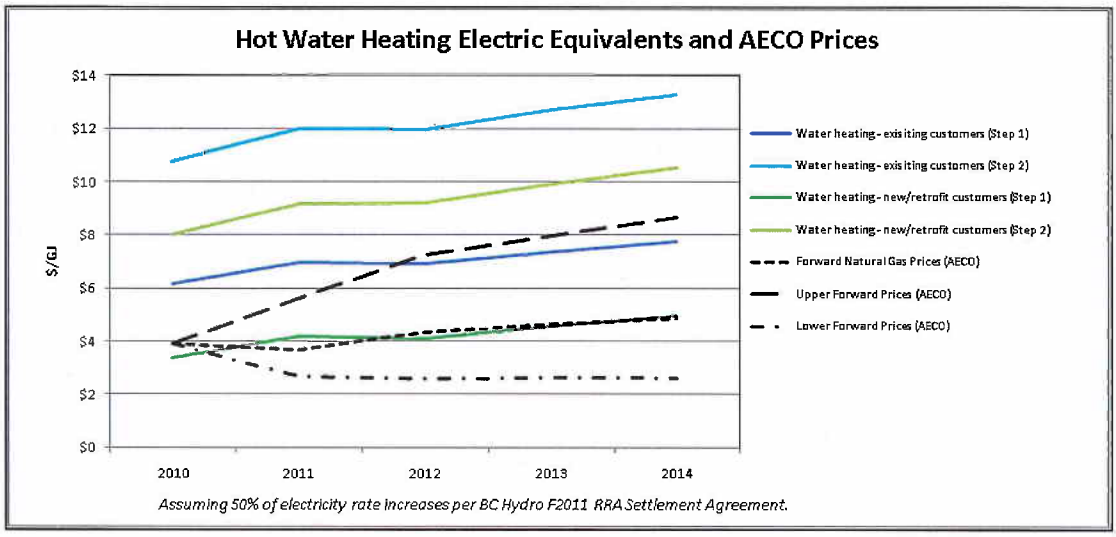
The following graph summarizes the electric equivalents for hot water heating, based on 100% of the BC Hydro rate projections. Also included are recent AECO forward natural gas prices and the upper and lower AECO price bands based on the implied forward volatility subject to a 95% confidence level.

Figure 3: Hot Water Heating Electric Equivalents and AECO Price Envelope



The following graph is based on the 50% electricity rate projection scenario.

Figure 4: Hot Water Heating Electric Equivalents and AECO Price Envelope



Based on these results alone, Terasen Gas is currently challenged in attracting new or retrofit customers for hot water heating based on the projected electricity rate increase scenarios in homes where the Step 1 rate comparison is appropriate. Furthermore, based on the recent AECO forward prices envelope (with 95% confidence level), Terasen Gas may also be challenged with maintaining existing customers (other than those existing customers with higher electricity use where the Step 2

comparison is appropriate). Based on the previous graphs, the electric equivalent benchmarks for these customers is within the $4/GJ to $8/GJ range.

6.1.3 ELECTRIC EQUIVALENT BENCHMARKS SUMMARY

These electric equivalent benchmarks will serve to provide hedging targets for both the defensive and value hedging strategies, as will be discussed in the following sections. In subsequent PRMPs the benchmarks may change as they will be updated with the latest available information regarding electricity rates, the carbon tax, customer appliances efficiencies and Terasen Gas rates.

Capturing natural gas prices, through hedging, at levels near current forward prices would help ensure that Terasen Gas is able to improve its ability, at least on a variable cost basis, to maintain existing customers and attract new customers. However, without hedging, if market gas prices migrate towards the upper end of the forecast AECO price envelope, Terasen Gas' competitive position is negatively impacted.

7 STRATEGY IMPLEMENTATION

In the following sections, Terasen Gas will examine the combination of hedge volumes, types of financial instruments, and implementation schedule that will assist in meeting the challenges of market price volatility and competing with alternate forms of energy at a reasonable cost for customers. The recommendations also take into consideration counterparty credit exposure, financial contract liquidity, and load migration to marketers under commodity unbundling.

7.1 Balanced Portfolio Approach

Terasen Gas recommends continuing with a balanced portfolio including hedging, storage and floating index priced gas. Within the following sections Terasen Gas will show that this balanced mix meets the objectives of maintaining competitiveness and sufficiently reducing volatility at a reasonable cost. While the hedging and storage components provide upside price protection, the use of options and a proportion of unhedged, or floating, supply allows for downside price participation. The following table shows the amounts of storage, ranges of possible hedging amounts and floating gas in the gas cost portfolio, based on normal demand conditions. The table shows minimum and maximum amounts for winter and summer defensive and value hedging because, depending on market condition and prices, these hedges may or may not be implemented.

Table 3: Portfolio Price Exposure

	Winter Min.	Winter Max.	Summer Min.	Summer Max.
Total Customer Load (PJ)	74.0	74.0	40.0	40.0
Marketer Share (PJ)	-7.4	-7.4	-10.2	-10.2
Terasen Share of Customer Load (PJ)	66.6	66.6	29.8	29.8
Storage Injection Demand (PJ)	0	0	22.7	22.7
Terasen Share of Total Demand (PJ)	66.6	66.6	52.6	52.6
Storage Withdrawal (PJ)	22.7	22.7	0.0	0.0
Programmatic Hedging (25%) (PJ)	9.9	9.9	14.2	14.2
Defensive & Value Hedging (0%-35%) (PJ)	0.0	13.9	0.0	19.8
Total Storage and Hedging (PJ)	32.7	46.6	14.2	34.0
Storage	34%	34%	0%	0%
Hedging	15%	36%	27%	65%
Floating	51%	30%	73%	35%

While the programmatic hedging is fully implemented to the 25% maximum of the CCRA hedgeable volumes, the defensive and value hedging may or may not be implemented depending upon whether or not the relevant price triggers are reached. With respect to the defensive hedging strategy, if price volatility increases such that the defensive triggers are breached, defensive hedges will be implemented to a maximum of 35% of hedgeable volumes and market price exposure will be

appropriately reduced. If prices fall such that the value hedging triggers are reached, value hedges would be implemented to a maximum of 35% of the hedgeable volumes, locking in favourable prices and thereby reducing market price exposure going forward. In either scenario, the maximum amount of hedging, including programmatic, defensive and value hedging, would be 60% of the CCRA hedgeable volumes. In other words, the defensive and value hedging strategies allow for response to changes in market conditions and limit market price exposure when necessary.

7.2 Determination of Hedging Volumes

The hedgeable volumes are based on Terasen Gas' total baseload commodity requirement, based on its forecast average normal load, and a deduction for the forecast customer migration associated with marketers fixed price offerings to customers for the upcoming winters and summers.

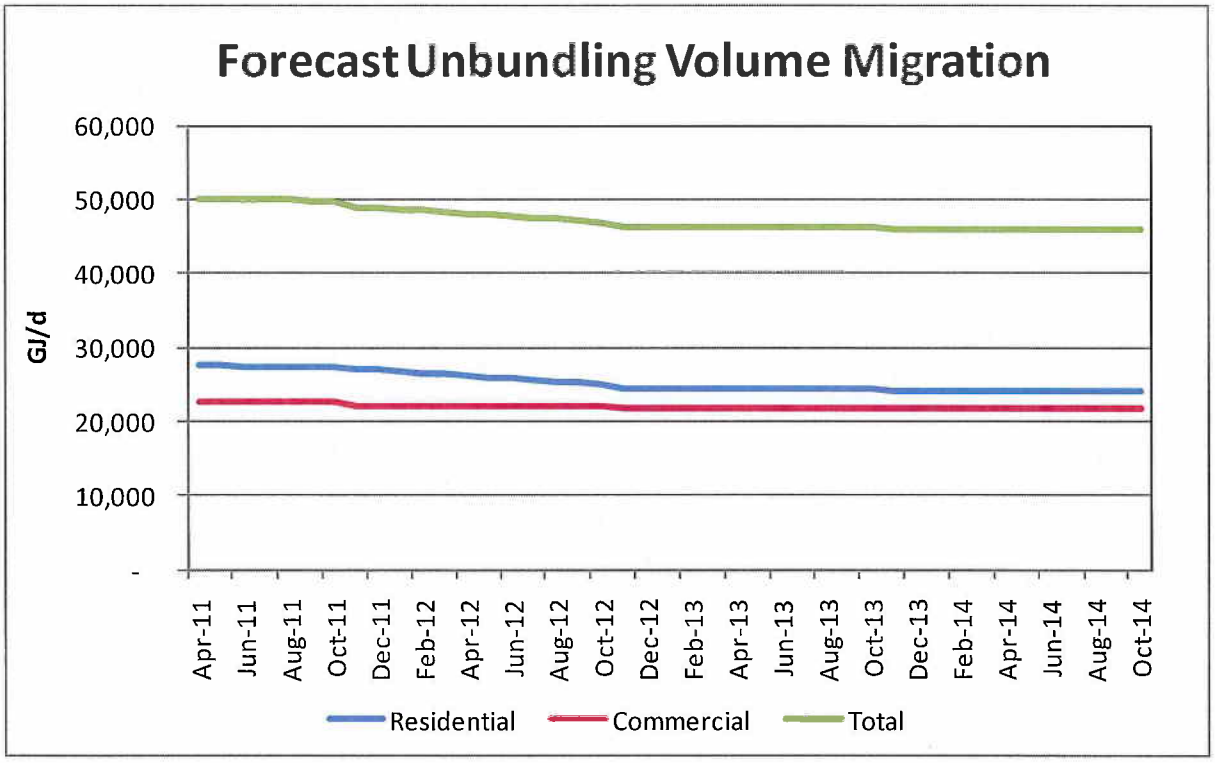
7.2.1 CUSTOMER MIGRATION FORECAST

Customer migration is forecast in order to determine the CCRA volumes available for hedging, or hedgeable volumes, as Terasen Gas does not hedge those volumes associated with marketers' fixed price offerings to customers.

To date, approximately 15%, or 112,000 residential customers, of the approximately 729,000 eligible, have migrated to marketer offerings since November 1, 2007. For commercial customers, approximately 23%, or 17,000 commercial customers, of the approximately 75,000 eligible have also signed on with marketer fixed priced offerings.

Based on the number of customers and forecast usage rates for commercial and residential customers, the forecast volume per day for residential and commercial customers is shown below.

Figure 5: Customer Migration Volume Forecasts under Commodity Unbundling



7.2.2 HEDGEABLE VOLUMES CALCULATION

The CCRA hedgeable volumes are based on the total forecast baseload commodity requirement, based on the forecast average normal load, and a deduction for the forecast customer migration volumes for the upcoming winters and summers. The CCRA hedgeable volumes for the upcoming winters and summers within the hedging horizon are shown below.

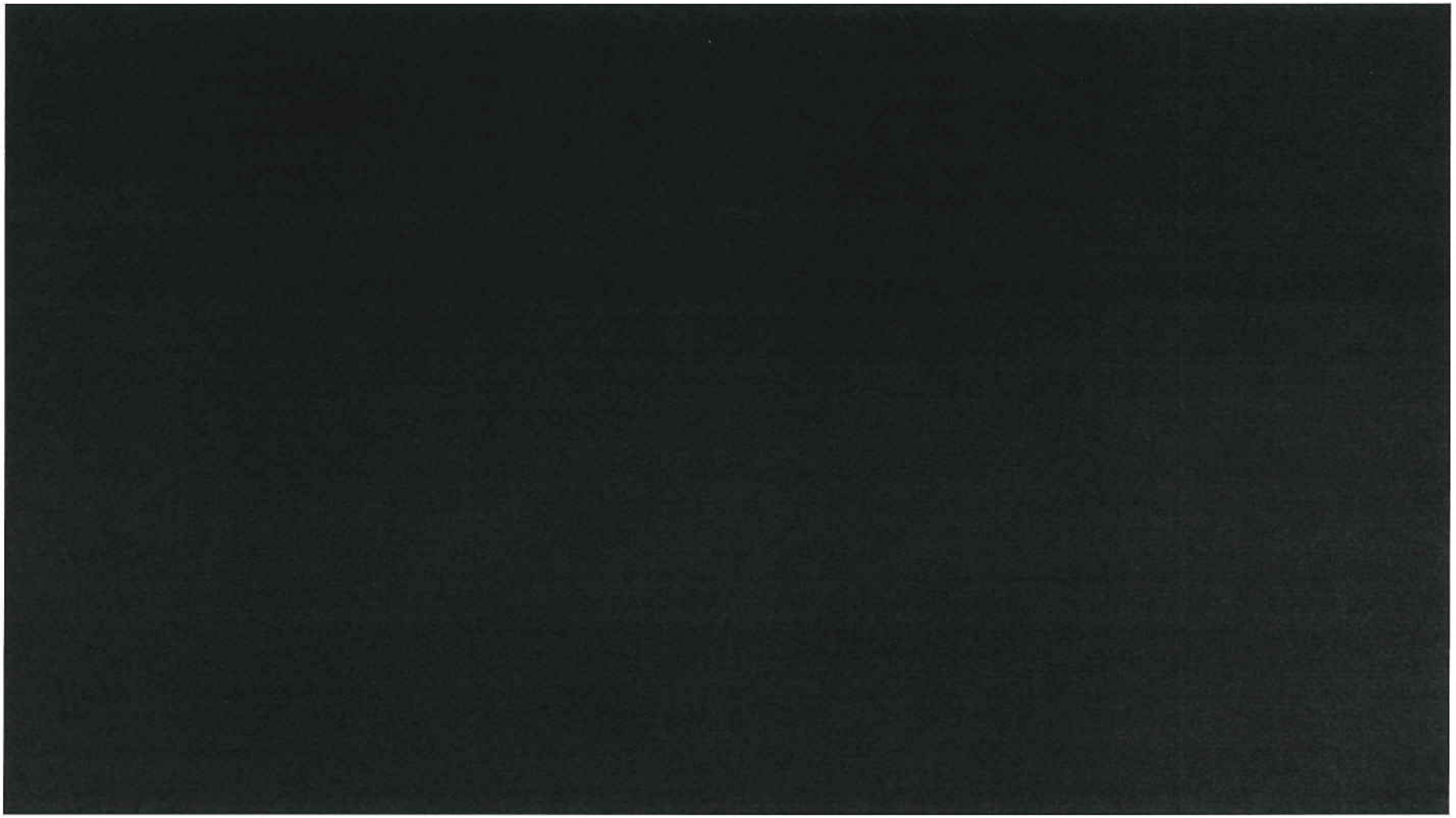
Table 4: Calculation of CCRA Hedgeable Volumes (GJ/d)

	Apr11-Oct11	Nov11-Mar12	Apr12-Oct12	Nov12-Mar13	Apr13-Oct13	Nov13-Mar14	Apr14-Oct14
Total Requirement	311,400	312,000	312,000	313,300	313,300	313,600	313,600
Forecast Migration	(50,000)	(49,000)	(47,500)	(46,000)	(46,000)	(46,000)	(46,000)
Hedgeable Volume	261,400	263,000	264,500	267,300	267,300	267,600	267,600

The relative recent stability of the customer migration volumes has reduced the probability of stranded costs or benefits within the CCRA account, resulting from actual customer migration for residential customers being significantly greater than forecast. Similarly, Terasen Gas believes the possibility of actual migration being significantly lower than forecast is also low given the recent pattern of enrolments.

7.3 Programmatic Hedging

The programmatic, or scheduled, hedging, has been reduced from that of previous PRMPs. It is subject to a maximum of 25% of the CCRA hedgeable volumes for winter and summer as compared to previous maximum percentages of 60% for winter and 45% for summer. The lower amount of programmatic hedging provides a balance of some amount of base volatility reduction while reducing the potential for significant hedging losses in the future. The programmatic hedging would be implemented according to a predefined implementation schedule with a prorated share of remaining hedges to be executed in each monthly hedging window. These hedges would be executed with AECO fixed price swaps, as opposed to options, to provide maximum volatility reduction. The implementation schedule through to the April 2012 hedging window (the anticipated implementation date of the next PRMP) is shown in the table in Figure 6 and includes consideration of periods already hedged under the prior PRMP. For example, no further programmatic hedging is required for summer 2011 and winter 2011/12 as the 25% programmatic hedging target has already been reached.



7.4 Defensive Hedging

Defensive hedging involves monitoring future market price exposure compared to tolerances related to the objectives. If the tolerances related to bill increases or competitive benchmarks are breached, then defensive hedges are layered in according to predefined percentages. The defensive hedges include the use of fixed price swaps and option instruments, specifically at-the-money call options. While there is an explicit premium for call options, they provide upward price protection and also full downside price participation in case market prices decline in the future. The options are limited to a maximum of 25% of CCRA hedgeable volumes to provide some downside price movement participation while constraining option premium costs. Therefore, the objectives of volatility reduction and competitiveness are met as well as the objective related to reasonable cost.

7.4.1 DEFENSIVE HEDGING PRICE TARGETS

The defensive price targets are based on consideration of customers' tolerable bill preferences as well as electric equivalent commodity component benchmarks (as discussed in Section 6). The customer survey of 2005 indicated that, on average, residential customers could tolerate annual bill increases of $169, which equates to about 16% of the total annual bill at that time and also today. [redacted]

The remaining tier price targets are based on the electric equivalent benchmarks based on 100% and 50% of the projected BC Hydro rate increases. If 100% of the projected electricity rate increases are approved, TGI would be competitively challenged in hot water heating application for new or retrofit customers if market prices moved above the $5/GJ to $8/GJ range from 2011 to 2014. If only 50% of the projected electricity rate increases are approved, then TGI would be challenged with respect to space heating for new or retrofit customers if commodity prices moved above about $6/GJ to $8/GJ from 2011 to 2014. Furthermore, for existing hot water customers, TGI is challenged for those customers where the Step 1 comparison is applicable if market prices move above $7/GJ to $8/GJ from 2011 to 2014. Therefore, TGI has based the tier 2 and tier 3 defensive price targets on consideration of these benchmarks.

The defensive hedging volumes for each price target for each term being hedged are presented in the following table (as a percentage of hedgeable volumes).

Table 5: Defensive Price Targets and Volumes

	Price Target ($/GJ)	Cumulative Maximum
Programmatic	N/A	25%
Tier 1	[redacted]	35%
Tier 2		50%
Tier 3		60%

The defensive price targets are tiered so that defensive hedges are not accumulated too quickly in the event that market prices subsequently decline. In the event that market prices do not decline immediately and continue upwards, the price tiers provide the necessary price protection.

The defensive hedging could be implemented for whole or partial winter or summer periods. For example, if part way through a winter period of November-March and prices for the remainder of the winter run up such that defensive triggers are breached, then defensive hedges could be implemented at that time for the remainder of the winter.

If the Terasen Gas commodity rate or market gas prices change significantly from their current levels, Terasen Gas would review these defensive price targets and determine if any changes are required. Otherwise, Terasen Gas would review and possibly adjust these targets, based on consideration of the then current CCRA or changes in the competitive benchmarks, on an annual basis within each PRMP.

7.4.2 DEFENSIVE HEDGING INSTRUMENTS

These defensive hedges would be implemented with options and fixed price swaps. The maximum options percentage would be 25% of the hedgeable volumes. Therefore, assuming the programmatic hedging was complete at 25%, the remaining 35% could be completed with defensive hedges of which about 70% would be with options (i.e. 25% options divided by 35% defensive total equals about 70%). For the options it is recommended that call options with deferred premiums be used as they provide greater downside price participation than costless collars. The defensive hedges would be implemented within two years of the term being hedged given that market price volatility is greater in the near terms than those further out in time, as recommended by RiskCentrix.

7.4.3 MONITOR-AND-RESPOND APPROACH

The defensive hedging works via a monitor-and-respond, rather than a programmatic, approach. Forward prices and recently observed market price volatility are monitored against the tolerance price targets and, if tolerances are breached, then defensive hedges are implemented. If the tolerances are not breached, then no defensive hedges are implemented. This helps prevent any unnecessary hedging costs if prices do not exhibit intolerable volatility but includes responsive hedging if market price volatility becomes intolerable. The potential price movements are based on a 95% probability (representative of two standard deviations or sigma), meant to capture the majority of potential price movements.

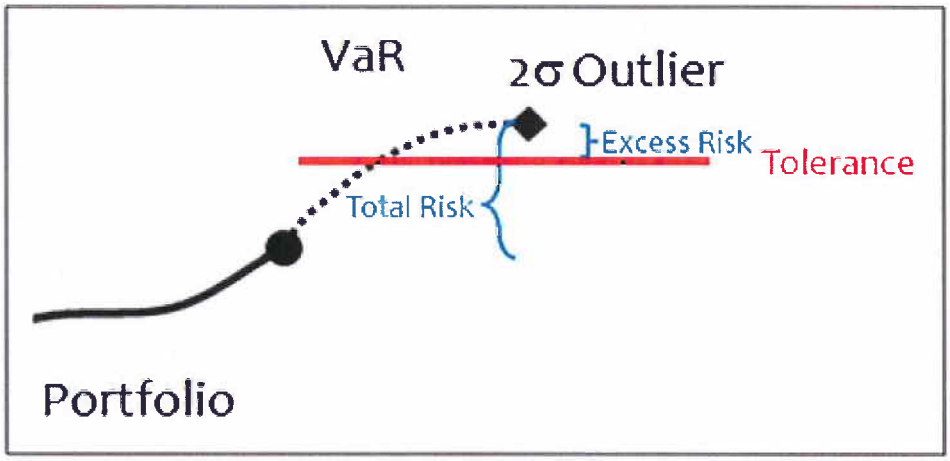
The mechanism used for this monitor-and-respond approach is based on value-at-risk ("VaR"). VaR quantifies the risk for a "holding period" that is appropriate to the response time in making and executing defensive hedge decisions. A ten day holding period risk assessment provides an appropriate cushion in the determination of assessing hedging opportunities and their effect on tolerances. Therefore, on a weekly basis, Terasen Gas would determine the VaR for the following ten day holding period to determine if defensive hedges were required.

The monitor and respond approach provides the following advantages:

- A smaller volume of initial hedges is appropriate because the monitor and respond framework allows numerous adjustments;
- Sometimes the market will fall and fewer hedges will be a good thing;
- If properly monitored, there is almost always ample time to hedge defensively when market volatility rises;
- Diversity of commitments over time reduces the chances of a big mistake; and
- All other things equal, shorter tenor provides lower risk of losses.

VaR measures the price risk exposure associated with the unhedged or open portion of the portfolio. If the cost of the unhedged portion of the portfolio (based on forward prices and volatility, subject to 95% confidence) increases such that the total commodity portfolio exceeds the tolerance targets, then, in order to eliminate the encroachment, RiskCentrix recommends adding hedges in a volume equal to a portion of the open positions defined by the ratio "Excess Risk/Total Risk" to bring the outlier down to the tolerance level. The following figure from RiskCentrix's report illustrates the mechanism.

Figure 7: VaR Outlier vs. Tolerance



In the interests of simplicity and transparency, TGI is recommending implementing defensive hedging volumes in equal increments [redacted] rather than based on RiskCentrix ratio of "Excess Risk/Total Risk", if the defensive triggers are breached. This meets the same objective as the RiskCentrix approach but provides greater simplicity and transparency with respect to the volumes implemented.

By using this VaR mechanism, Terasen Gas can delay hedge decisions until necessary, avoiding some risk of loss if market prices move down in the future while still protecting against objective-related tolerances if price continue upwards.

7.5 Value Hedging

The value hedging would be implemented if a specific favourable predefined price target was reached. TGI believes that this target should take into consideration historical commodity rates as well as competitive benchmarks. TGI's lowest commodity rate since the inception of the CCRA rate in 2004 is the $4.568/GJ rate effective January 1, 2011. Since 2004, the TGI CCRA rate has averaged about $7.00/GJ and been as high as $9.78/GJ in July 2008. As such, TGI believes that a value hedging target below the $4.568/GJ level would help maintain historically low commodity rates. Furthermore, as discussed in Section 6, TGI is competitively challenged for new or retrofit hot water heating customers where the Step 1 rate is applicable. If 50% of the BC Hydro projected rate increases are approved, this benchmark target is near $4.00/GJ to $4.50/GJ from 2011 to 2014. [redacted] By layering in the value hedges in small increments, TGI captures more downside market price movement if prices continue to decline thus avoiding greater accumulation of out-of-market costs. The value hedges would be implemented with AECO fixed price swaps.

RiskCentrix recommends screening criteria for the value hedging implementation in order to limit potential hedging costs. It is recommended that value hedges only be implemented if the forward curve has a contango, rather than backwardated, shape. In other words, near term prices should be lower than price for terms further out in time. The rationale for this is based on historical observation. Backwardated prices are typically consistent with near-term scarcity of supply or surplus demand. In such environments near-term prices tend to bid up radically while longer-dated contracts reflect an expected gradual return to equilibrium conditions. Conversely, contango markets typically reflect gas supply surplus or depressed demand, but similarly the long-term expectations and prices gravitate toward equilibrium levels. Terasen Gas agrees with this value hedging screening criteria and recommends implementing value hedges only in contango price environments.

Value hedging could be implemented for whole or partial winter or summer periods. For example, if part way through a summer period of April-October and prices for the remainder of the summer fall such that value targets are reached, then value hedges could be implemented at that time for the remainder of the summer.

7.6 Sumas Basis Hedging

RiskCentrix recommends that TGI continue with implementing Sumas-AECO basis swaps to manage winter Sumas price exposure. With these instruments, the differential, or basis, between Sumas and AECO is fixed so that Sumas price disconnections from other market prices are mitigated. These basis swaps would be implemented within twelve months of the winter period being hedged. This allows for consideration of any changes in the physical resource portfolio as defined by the Annual Contracting Plan and the fact that the price disconnections typically only occur due to high winter demand conditions. While the basis swaps provide protection against Sumas price spikes, they also enable downward price participation in periods of overall declining prices as the AECO index portion of the instrument is not fixed. The basis swaps would be used for Sumas exposure within the commodity and midstream portfolios.

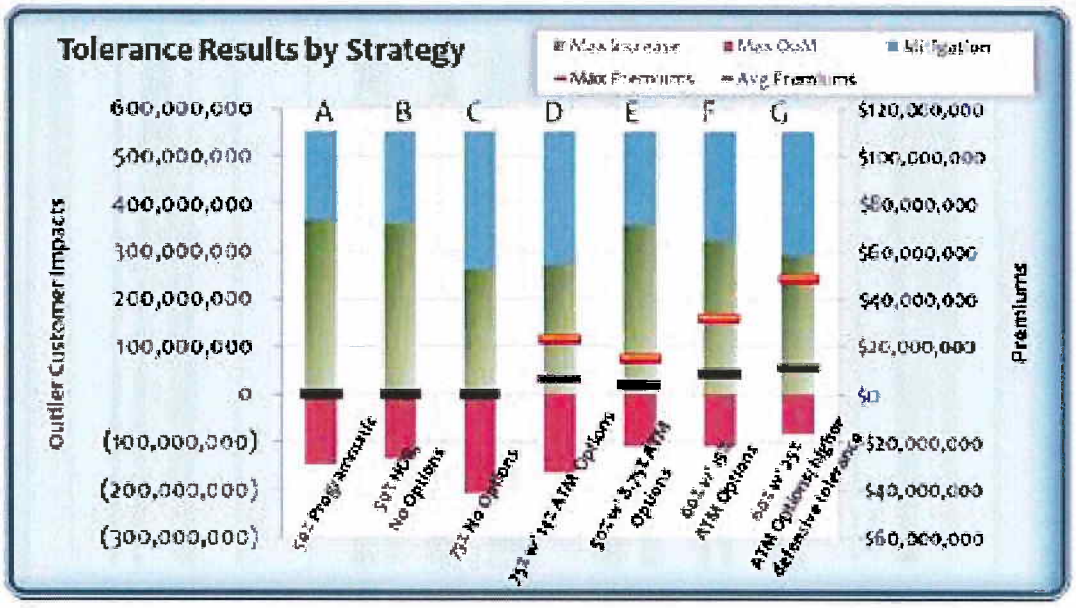
7.7 RiskCentrix Hedging Strategy Analysis

This section provides details regarding RiskCentrix's determination of the enhanced hedging strategy, as outlined in Section 7 of the Review Report and the RiskCentrix's report provided in Appendix A of this PRMP. This strategy is based on an optimal balance of the objectives, including consideration of meeting the objectives at a reasonable cost.

RiskCentrix performed analysis with respect to several different hedging strategies under several different representative market price scenarios (including high, low and mid level prices) to determine the overall effectiveness of each strategy in meeting the objectives. This was necessary to validate the recommended strategy and derive the best value for customers. The

results for each strategy are shown in the following figure. The figure shows, for each strategy, the attainable tolerances against the unmitigated customer bill increase at the top of each bar in the graph with the potential hedging costs at the bottom of the graph. The price environments underlying this chart included rising prices up to $20/GJ in high cases and falling below $1/GJ in low ones in order to stress test the strategies. Strategy G, including 25% programmatic and 25% maximum defensive options hedging with a maximum overall target of 60% of hedgeable volumes, provides the most overall cost mitigation during market price increases with the lowest potential amount of out-of-market outcomes with market price decreases. RiskCentrix recommends the strategies towards the right of this figure and Terasen Gas is recommending a strategy consistent with strategy G to provide an appropriate balance of volatility reduction, competitiveness, reducing the risk of regional price disconnections and cost effectiveness to create value for customers.

Figure 8: Hedging Strategy Scenario Results



Note: "OoM" refers to out-of-market hedging costs; "ATM" refers to at-the-money call options (i.e. strike price of calls is equal to forward prices); "Mitigation" refers to reduction in bill increases due to hedging.

The strategies to the left in the figure do not include option instruments. So while they offer some degree of volatility mitigation they incur much higher hedging costs if market prices decline. Strategies D, E and F generally offer better volatility mitigation than A and B but still incur high hedging costs due to less options than G. While the average and maximum options premiums for strategy G are higher than the other strategies and near $48 million per year (in the high price scenario), these premiums are included in the volatility mitigation and hedging cost measures where strategy G provides the optimal balance. Therefore, strategy G provides

the optimal balance of market price volatility mitigation and competitiveness with constraining out-of-market hedging costs, thereby providing the most value for customers.

The detailed results of the RiskCentrix strategy analysis is provided in the RiskCentrix report in Appendix A.

8 HEDGING INSTRUMENTS PRICING

The price indications for the hedging instruments considered for the hedging horizon as of January 14, 2011, are shown in the table below.

Table **6: Indicative Hedging Prices ($/GJ)**

Period	AECO Fixed Price Swap	AECO Call Option (Deferred Premium)	AECO Costless Collars (Put / Call)		Sumas Fixed Price Swap	Sumas-AECO Basis Swap
Apr11-Oct11	$3.69	$3.69 premium: $0.335	$3.12	$4.69	$3.84	
Nov11-Mar12	$4.19	$4.19 premium: $0.485	$3.62	$5.19	$4.73	$0.53
Apr12-Oct12	$4.05	$4.05 premium: $0.485	$3.50	$5.05	$4.16	
Nov12-Mar13	$4.50	$4.50 premium: $0.575	$3.97	$5.50	$4.99	$0.49
Apr13-Oct13	$4.24	$4.24 premium: $0.545	$3.75	$5.24	$4.32	
Nov13-Mar14	$4.71	$4.71 premium: $0.640	$4.22	$5.71	$5.17	$0.46
Apr14-Oct14	$4.44	$4.44 premium: $0.635	$4.00	$5.44	$4.49	

The costless collar indications have been shown to provide a comparison to the call options. The costless collars, with $1/GJ ceiling strike prices, offer only minimal downside price participation as indicated by the floor price. At-the-money call options provide greater downside price participation even when the premium is included.

9 CREDIT AND COUNTERPARTY RISK

Terasen Gas does not expect its effective management of counterparty credit risk to change with this recommended hedging strategy. Terasen Gas continues to be conservative in its approach to managing credit and will continue to act prudently regardless of the hedging implementation or strategy in order to limit credit risk and manage costs on behalf of its customers.

9.1 Counterparty Credit Risk

An important component of a price risk management program is to prudently and effectively manage counterparty credit exposure. Reducing future price uncertainty risk can also increase other risks, such as credit exposure to counterparties. In order to manage this credit exposure, Terasen Gas has numerous policies, procedures and controls in place, while approval procedures and signing authority levels for gas price hedging reduce the potential for imprudent trades. These policies and procedures are also subject to annual internal and quarterly external audits to confirm they are updated and approved. Hedge accounting documentation, mark-to-market data, and invoice settlements are also audited to ensure prudent reporting of financial information.

The Company's current list of counterparties includes entities that are A-rated or better. In order to manage the risk of credit default related to longer term hedging, Terasen Gas is continuing to limit transactions beyond eighteen months out to AA-rated counterparties and "A Schedule 1" rated banks only. The Company's current number of counterparties totals ten with a total credit limit of about $0.8 billion.

Consistent with the recommended hedging strategy, an increased use of options would allow Terasen Gas to reduce counterparty credit exposure, all else being equal. This is because of the premium associated with call options. If market prices exceed the call option strike price, then the counterparty owes Terasen Gas this difference less the premium that Terasen Gas owes. If market prices stay below the strike price, then there is no counterparty credit exposure.

9.2 Reporting

TGI will continue to submit, on a monthly and quarterly basis, reports regarding hedging transactions in order to inform the Commission of financial transactions in a timely fashion and to confirm that the Plan is being implemented within the guidelines presented and subject to approval by the Commission. These reports include the monthly Credit Exposure, Hedging Position and Detailed Hedge Transactions reports and the quarterly report regarding mark-to-market position, showing hedging gains and costs by month and instruments for the past two years.

In addition to this reporting, Terasen Gas anticipates enhancing the reporting to better convey the hedging results in terms of achieving the objectives. Terasen Gas would consult with Commission staff once some appropriate reporting measures are developed.

10 CONCLUSION

In summary, Terasen Gas believes this enhanced hedging program and implementation strategy is prudent and necessary in meeting the objectives of the Plan at a reasonable cost in the interests of customers. The programmatic, defensive and value hedging elements serve to meet the objectives of reducing market price volatility and maintaining competitiveness while also reducing the potential for significant hedging costs going forward. The Sumas basis swaps will continue to achieve the goal of reducing the risk of regional price disconnections, also at a reasonable cost. The Price Risk Management Plan has served to meet the objectives in the past and will continue to do so in the future, with a greater focus on increased responsiveness to changing market conditions and thereby decreasing the potential for significant hedging costs. By selecting an appropriate mix of instruments, utilizing a balanced strategy and prudently managing counterparty credit exposure and internal controls, this Plan will continue to provide value to customers in the future.

Appendix A
RISKCENTRIX FINDINGS AND RECOMMENDATIONS REPORT

RiskCentrix, LLC

Clarity in a World of Uncertainty

~~CONFIDENTIAL~~

Findings and Recommendations Regarding Energy Risk Mitigation Program

---

Prepared for Terasen Gas

December 27, 2010

Table of Contents

Introduction

This report and the studies underlying it were commissioned by Terasen Gas ("Terasen") and conducted by RiskCentrix for the purpose of reviewing and then recommending refinements to Terasen's natural gas risk mitigation program. It is consistent with RiskCentrix presentation materials discussed on November 17, 2010 with representatives of the British Columbia Utilities Commission; Terasen and RiskCentrix representatives attended those discussions.

Executive Summary, Findings and Recommendations

Studies were undertaken to assess objectives and strategies; recommend refinements; and provide tools for implementation in accordance with the following framework:

1. Assess Terasen's Risk Mitigation Objectives
    a) Quantify risk;
    b) View objectives in light of quantified risk;
    c) View regulatory feedback in light of quantified risk;
    d) Recommend refinements to objectives consistent with item 2-c below.
2. Recommend Strategies Commensurate with Refined Objectives
    a) Postulate strategies in the form of Hedging Decision Rules ("HDR");
    b) Test HDR results against simulated future price scenarios;
    c) Recommend viable hedging decision rules consistent with item 1-d above
3. Provide Excel-based tools for implementation

Note that *quantified* objectives could only be validated in light of feasible strategies, and viable strategies could only be validated in light of acceptable objectives, so items 1-d and 2-c represented an iterative process.

The review and studies were performed only with respect to Terasen's portfolio under the Commodity Cost Reconciliation Account ("CCRA") , excluding supply provided by Marketers under the commodity unbundling program. RiskCentrix did not assess Terasen's midstream portfolio or costs related to physical storage, transportation and seasonal or peaking resources. While the Midstream charge is subject to some degree of market price volatility, it is significantly less than that related to the Commodity rate.

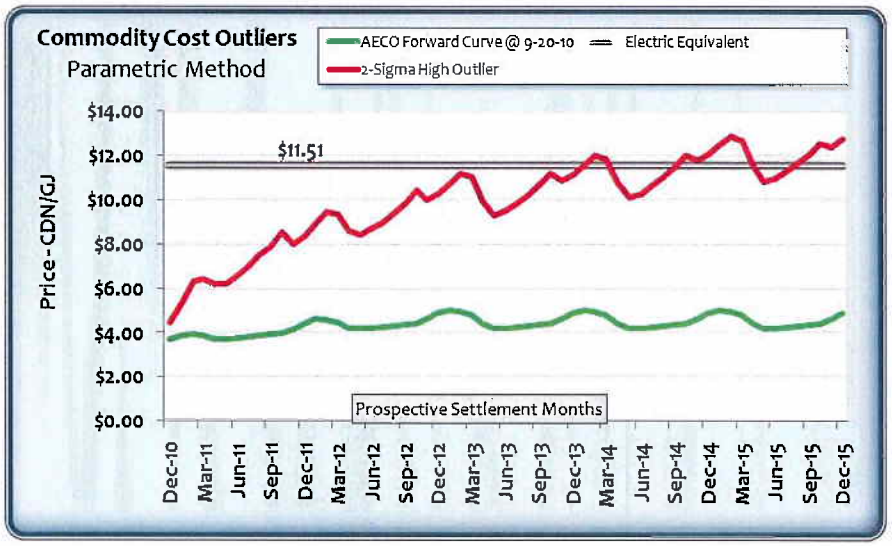
The numerous findings and recommendations contained here are complex, and nuances are critical to their understanding. Each finding and recommendation will be discussed in some detail later, but for the purpose of organizing a roadmap for the reader, they are listed here in outline form.

Key findings include the following:

As to Objectives

1) Qualitatively, objectives appear appropriate in light of Terasen's position and market realities. The net reduction of volatility is typical of utility risk programs, and more specifically, the competitiveness objective appears appropriate in light of Terasen's filed variable electricity proxy price. Terasen is currently reviewing its electric equivalent benchmark targets to provide segmentation with respect to energy applications and consideration of capital cost differentials as well. Results of that review were not available to RiskCentrix at the time of these studies, but inclusion of capital cost differentials and a broader sampling of applications could extend the competitive benchmark to lower prices. Details will be provided in a Terasen report regarding its price risk management objectives for the next Price Risk Management Plan.

   RiskCentrix worked with the electricity benchmark filed in the original PRMP. Beginning with current gas prices and measured AECO volatility, RiskCentrix constructed a price risk envelope at 95% confidence. The electricity proxy price, as filed in the original PRMP, fell within that envelope about three years into the hedge horizon as shown below.



2) Objectives could be stated with greater specificity, and thereby drive hedge decisions more directly. Specifying objectives quantitatively, at a 95% confidence level, [1] would impose discipline as to the choices that are necessarily implicit in balancing three competing tolerances - cost increases, out of market outcomes, and options expenditures.

   The studies conducted here sought to quantify attainable objectives by assessing simulated results of hedge strategies against postulated price environments, including stress conditions where unmitigated average bills could rise by 42% year over year. The various price environments used for assessments encompassed AECO hub market prices at $20/GJ highs and $1/GJ lows. Results indicate that one set of quantified objectives could consist of the following market-compatible tolerances under those stress conditions:

   A. Outlier average bill increase, exceeding 2 sigma: [2] 23% over prior year bill

   B. Outlier out-of-market outcome, exceeding 2 sigma: 10% of unhedged bill

   C. Options expenditures — Average year: $ 11 million; Outlier, >2-sigma: $ 48 million

As to Strategy

3) Terasen's current strategy includes programmatic and accelerated/incremental hedge rules, as well as contingent rules dealing with the avoidance of noncompetitive hedge accumulation. This structure, with certain refinements and the addition of defensive hedge rules, is consistent with the ultimate recommendations contained here.

4) Basis hedging is conducted in a way that mitigates exposure to seasonal spot volatilities at Sumas. This is consistent with practices adopted by most robust hedge programs and should be continued.

5) Terasen's strategy could be refined by limiting programmatic accumulation, adding defensive hedge rules, and adding value-screening criteria to accelerated/incremental hedges. The framework of multi-part Hedging Decision Rules is a proven one, while the specific design metrics (programmatic maximum, defensive tolerances and hedge levels, value criteria, etc.)

[1] Because risk mitigation programs are primarily focused on the mitigation of intolerable outcomes ("outliers"), we will discuss outliers extensively. Throughout this document the phrase "95% confidence" or "2-sigma" will be used to delineate outlier probabilities. For clarity, the term 2-sigma defines a condition where 95% of the probability distribution is contained within the 2-sigma envelope, and 5% falls outside of it - half to the top and half to the bottom of the probability distribution. We are often concerned with only one side of the probability distribution, like high prices and not low prices; in those cases 2-sigma outliers describe a 2.5% probability (one out of forty outcomes). See the graphic labeled A2, Figure 2 in Appendix 2.

[2] Stress conditions were generated via Monte Carlo simulation and then price paths exceeding 2-sigma conditions were selected for the testing of hedge decision rules and the assessment of tolerances.

have been tested here and are proposed as a starting point, subject to refinement as management completes its own assessments. Design metrics would be subject to management's judgment from time to time; it is envisioned that Terasen's Price Risk Management Committee would review such design choices annually or more frequently as conditions may dictate. RiskCentrix has tested the following:

a) Reduce Programmatic Accumulation - the proportion of hedges accumulated programmatically could be reduced from 50% of hedgeable volumes to 25%; this would constrain potential out-of-market settlements compared to current practice;

b) Add Defensive Hedge Rules - Begin monitoring the potential for price migration of Terasen's natural gas portfolio and set cascading tolerances for defensive hedge responses. By deploying Value at Risk ("VaR") metrics, described in detail later, Terasen could delay hedge decisions until necessary, avoiding some risk of loss in down markets.

c) Add Value-Screening Criteria – Terasen currently deploys price targets for accelerated or incremental hedge accumulation. Those targets are determined based on fundamental inputs including competitive benchmarks. Constrained "Value Hedging" is appropriate to utility hedge programs; yet some form of risk/reward measure can help mitigate the potential for unfavorable settlements. The problem is that perceptions of value tend to be distorted by the most recent market activity. For example, following a $12/GJ price spike (2005 or 2008), $8/GJ prices may have appeared attractive; hedges executed under such circumstances can often produce large out-of-market settlements. The recommended value-screening criteria will be discussed in some detail; it measures the degree of contango shape[3] of the forward price curve and then provides an assessment of the risk/reward tradeoff attributable to incremental hedge commitments.

6) Call options could be deployed to a greater extent to draw a better balance between bill increase mitigation and out-of-market settlement potential. Because investment in option premiums is intended to acquire upside cost mitigation without the hedge loss potential associated with fixed-price instruments, they are recommended in conjunction with defensive hedge rules. Also, since premiums increase with tenor,[4] options should be deployed in the last year or two prior to settlement. The strategy recommendations discussed later include the

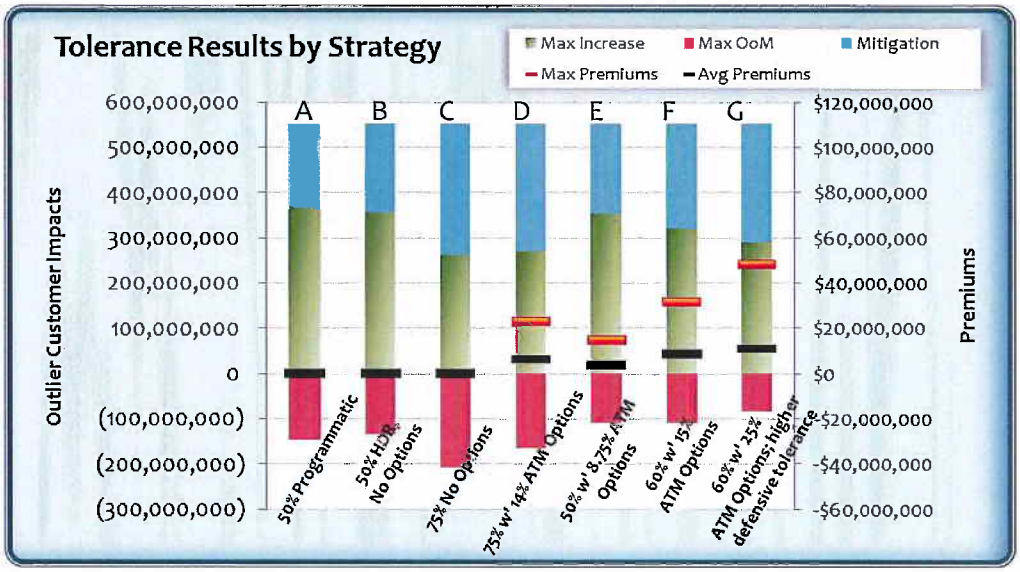
[3] Contango price curves are characterized by lower near-term prices compared to longer-term prices. Gas price curves typically cycle from contango to backwardated (higher near-term prices), and hedge commitments in backwardated markets carry greater risk as hedges may settle in dramatically lower (contango) markets later.

[4] The word "tenor" means the time horizon or term of the hedge contract

use of at-the-money call options as part of the defensive hedge strategy up to 25% of hedgeable volumes, although higher proportions could be deployed depending on the appetite for premium expenditures.

Strategy evaluations were conducted and their associated attainable tolerances assessed. The discussion entitled "Analytical Results" includes a more detailed description of the strategies and the stress conditions used for the assessment, but Figure 11, excerpted from that discussion presents a summary.

Figure 11, Strategy Assessment Results



It shows, for each strategy, the attainable tolerances against the unmitigated customer bill increase at the top of each bar in the graph. Price environments underlying this chart included rising prices up to $20/GJ in high cases and falling below $1.00/GJ in low ones.

Note that all options premiums are also included in the cost and out of market metrics, so there is no need to add them separately.

Looking at the results beginning from the left, unmitigated customer bills[5] would rise by $552 million in the unmitigated high price case, while a 50% programmatic program would mitigate that to about a $366 million increase; out of market outcomes could grow to $147 million in a severe market collapse akin to the collapse beginning in the later half of 2008. Column B indicates that adding defensive hedges would reduce the mitigated outcome to $355 million, a $10 million

[5] In all cases where bill changes are shown, non-commodity costs related to TGI fixed basic, delivery and midstream charges were assumed to be $6.37/GJ (based on rates effective October 1, 2010).

improvement; stress case out of market outcomes also improve by $12 million to $135 million. As expected, Column C indicates that a greater maximum hedge ratio improves mitigation but also risks greater out of market outcomes.

Call options produce the expected results. Column D shows that out of market settlements can be mitigated while retaining the mitigation benefits of the 75% hedge ratio. Column E may be attractive; it shows better mitigation and smaller loss potential than A or B. Finally Column F draws a balance, seeking a small loss potential with better than average mitigation effects, while Column G takes the concept a step further with greater options expenditures and looser defensive boundaries to further constrain out of market outcomes. If options expenditures are acceptable, these strategies (F & G) provide a good balance of customer bill mitigation and out of market mitigation, potentially yielding the best value for customers.

RiskCentrix would recommend strategies toward the right of the graph for their greater mitigation and lower risk of out-of-market settlements, but customized preference should dictate the decision.

Finally, deferral mechanisms were investigated. Generally deferrals do not serve as an alternative to an effective hedging program. A short-duration deferral adds modest additional stability when used in conjunction with a robust hedge program; it is inferior as a stand-alone approach in the absence of a hedge program. Any deferrals of greater than one year duration may exacerbate customer bill instability as balances grow; multi-year deferrals add financial risk in the form of large balances that strain liquidity with no benefit in short-term stability.

Background and Scope

Regulatory Background

Terasen filed its Price Risk Management Plans ("PRMPs") with the British Columbia Utilities Commission ("Commission") on May 13, 2010; the PRMPs (one for TGI and one for TGVI) were intended to cover multi-year periods beginning November 2010. In an order dated July 22, 2010, the Commission denied the request for approval of the PRMPs. The Commission ordered Terasen to suspend all market related activities associated with the PRMPs; conduct a review of the primary objectives in the context of the Clean Energy Act and increased domestic natural gas supply; and generally to consult with Commission staff regarding the subsequent regulatory process.

In discussions that followed between the Commission and Terasen, views were shared regarding the appropriateness of the competitiveness objective in light of current gas-to-electric price differentials, abundant gas supplies driven by shale resource development, and the implications

of the BC Clean Energy Act. The Commission suggested a cost-benefit analysis be conducted for the program, and Terasen suggested that a monitor-and-respond strategy be evaluated in that context as well.

Scope

On October 8, 2010 RiskCentrix was engaged by Terasen to conduct studies and make recommendations regarding the risk mitigation program including quantification of risk, the appropriateness of objectives, and prospective strategy refinements in light of those objectives. RiskCentrix was also charged with providing analytical tools for the ongoing conduct of a monitor-and-respond element if management chose to add one to Terasen's risk mitigation program.

Methodology and Approach

Certain tenets form the foundation of RiskCentrix' approach, so this section will be prefaced with a discussion of perspective to be followed by details of specific work efforts.

Perspective

There are four foundational issues that must be discussed in order to present the results of these studies with conviction; they are:

- Market View v. Risk View
- The Nature of Price Risk
- Defining Success in Risk Mitigation

Market View v. Risk View

Hedge decisions may be driven by a conviction that market prices are undervalued, overvalued, or fairly valued; such a motivation would constitute a "market view." It is a red-blooded mindset that is appropriate to investment or trading activities, but it should not be the primary driver in risk mitigation activities. In investment or trading activities a "risk view" is supplemental to a market view; it assumes a white-blood-cell posture that embraces neutrality as to valuations and guards against intolerable outcomes. In effect, the risk view focuses on the broad spectrum of uncertainty, comparing potentialities to tolerances.

Risk mitigation activities should be driven primarily by the risk view, relegating market view to a supplemental role. The primary objective of a risk program is to produce *tolerable* results on behalf of customers. Hedge accumulation and timing must be sufficient to produce high confidence in tolerable outcomes. Only within that framework should specific hedge decisions be supplemented by a market view – e.g., which deliveries to hedge in what months.

This distinction does not always come naturally to red-blooded business people because a cause-effect narrative, steeped in fundamentals, is so naturally appealing. Yet a sober reflection on the history of forecasting makes it clear that if we are to produce tolerable results, we must recognize that any market view is fraught with uncertainty and prone to error; we will embrace neutrality as to risk valuations.

So how would we incorporate fundamental factors, like the BC Clean Energy Act or the abundance of shale gas development, into our risk view without introducing bias? Unless we possess some insider knowledge, which we do not, we will accept the reality that the market price reflects a consensus assessment of those fundamental impacts. Perhaps more importantly, the observed volatility in market prices reflects collective uncertainty with respect to the confidence of that market consensus. So by measuring the price and volatility we can reach an unbiased assessment of the risk.

One final point on this - any risk assessment will be imperfect; there will always be new events that surprise us and the entire marketplace. Yet, the discipline of measuring risk and acting on its implications produces insights, management rigor, and ultimately more robust performance.

Price Risk

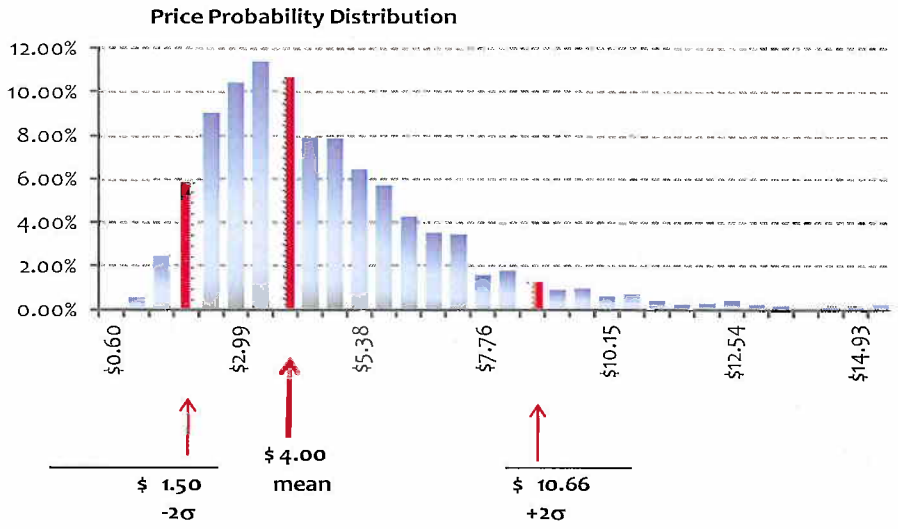
If we are to maintain neutrality in risk assessments, what methodologies produce unbiased views? The quantitative finance methodology utilized here has been deployed in the energy industry since the 1990's when futures contracts evolved as a means of managing volatile deregulated markets. The deregulation of natural gas, the emergence of NYMEX futures contracts, and later the deregulation of electricity placed a burden on energy companies and energy users; they needed to manage volatility. To do so, they turned to the principles of the finance industry. [6]

Appendix 2 presents a supplemental discussion of volatility, value at risk, and Monte Carlo simulations, but a few observations are offered here.

The following graphic shows the risk distribution of AECO prices considering a one year potential price migration, with an illustrative starting futures price of $ 4.00/GJ and using the 50% volatility as observed.

[6] RiskMetrics, a JP Morgan subsidiary, published risk methodologies in 1992 that had been developed and deployed earlier within JP Morgan. That work became a finance industry standard, and in the 1990's the same methods were adapted to the energy industry. Others have built on that work.

Figure 1, One-Year-Later Uncertain Price Distribution [7]



A few things are worth noting. Notice that the shape of the distribution is skewed to the right side. Gas prices follow this distribution (lognormal); prices are bounded by zero at the bottom, but unbounded at the top. The implication is that the magnitude of risk is greater to the high side than the low side while the more frequent outcomes are skewed to the downside. So generally hedge programs are likely to experience small losses more often than the larger, but less frequent, gains. This effect is consistent with the intent of hedging which usually involves accepting the prospect of relatively smaller pain to mitigate the potential for intolerable outcomes. The final observation is that "outliers" to the right of the 2σ band, while unlikely, can extend well beyond the range that might be considered normal in colloquial terms.

Using actual numbers for AECO, in September 2010 the prompt month of October was trading at $3.37/GJ and volatility was measured as 50%.[8] See Appendix 2 for a discussion of how volatility is measured. Considering the lognormal skew and measured volatility, the 2-sigma prompt-month risk bands for various horizons would be as follows:

[7] Figure 1 shows mean expectation and +/- 2σ outcomes for one-year-later uncertain prices. For those less familiar with statistical terminology, 95% of uncertain outcomes fall within the 2σ band; 2.5% above and 2.5% below. Outcomes outside of the 2σ band will be referred to as "outliers."

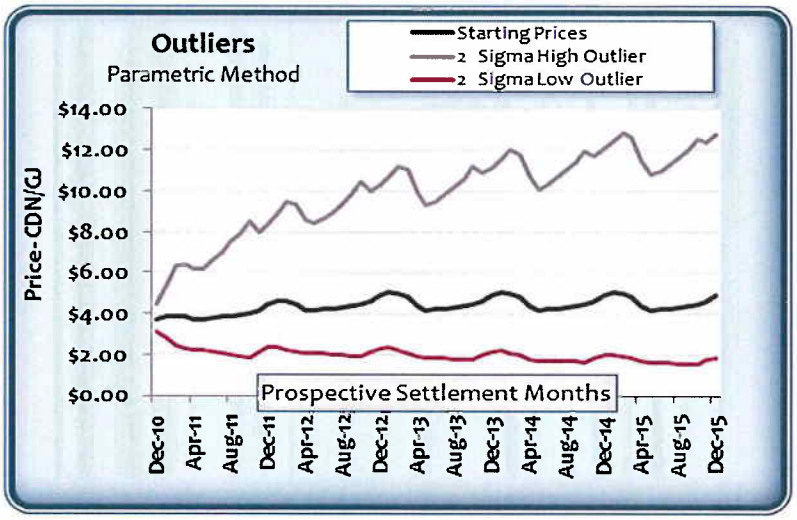
[8] Obviously the October contract will not be exposed to a full year's risk, but the prompt month will roll from October to November, etc.

Figure 2, AECO Risk Bands

	2 σ Risk Bands			Risk
	1 day	252 day	10 day	10 day
Mean	$ 3.37	$ 3.37	$ 3.37	
High	$ 3.58	$ 8.99	$ 4.10	$0.73
Low	$ 3.17	$ 1.26	$ 2.77	-$0.60

This methodology could be applied to the entire forward curve and the risk envelope could be extended years into the future. Figure 3 shows the results of such an analysis for AECO.

Figure 3, Long-Term Uncertain Price Envelope



While the risk portrayed in Figure 3 is interesting as a long-term view of risk, it does little to help manage week-to-week hedge decisions; Value at Risk or VaR is a tool for that purpose.

Value at Risk ("VaR")

Viewing risk in a longer term framework (Figure 3) tends to drive managers into unnecessarily lumpy one-time decisions. For example, fixing the price for 50% of one year's gas requirements will mitigate 50% of the potential upward price migration and eliminate 50% of downside participation; whether executed immediately or programmatically it is a big commitment. Better results can usually be attained by managing risk in smaller time increments – weekly for example - and making smaller hedge adjustments along the way. A crude but meaningful analogy would contrast the choice of fixing the steering wheel position of an automobile and watching where it goes for 52 seconds versus looking through the windshield every second, assessing the risk, and making small adjustments along the way.

Assessing risk and then making hedge decisions in weekly increments provides numerous advantages:

- A smaller volume of initial hedges is appropriate because the monitor-and-respond framework allows numerous adjustments;
- Sometimes the market will fall and fewer hedges will be a good thing;
- If properly monitored, there is *"almost always"* ample time to hedge defensively when market volatility rises;
- Diversity of commitments over time reduces the chances of a big mistake;
- All other things equal, shorter tenor provides lower risk of losses.

In a monitor-and-respond mode of risk mitigation, rather than making decisions based on long-term price potential, it is more helpful to assess the potential for migration of prices over a short "holding period." In effect, we assess the near-term risk of hedge opportunities (futures prices) migrating to an unacceptable level; the tool to do this is VaR or Value at Risk. Rekindling the automobile analogy, when making small steering adjustments, the driver does not focus on where the car might wander in the long term, the near-term directional variance is more important.

Value at Risk quantifies the risk for a "holding period" that is appropriate to the hedge manager's response time in making and executing hedge decisions. If the hedge program is designed to monitor and respond to risk on a weekly basis, a ten-day risk assessment would provide an appropriate cushion in the determination of how the decision to *forego* today's hedge opportunities might be tolerated. The ten day time span is called the "holding period" because it indicates the hedge manager's risk of holding positions unchanged for that period.

Defining Success in Risk Mitigation

Risk mitigation involves managing economics to produce tolerable results in terms of potential customer bill increases and potential out of market settlements, thereby providing value to customers. Since intolerable results occur at the outer bands of the probability distribution, success must be defined in terms of how well a strategy performs under stressful conditions. Averages are not particularly meaningful because in liquid markets hedge instruments are fairly valued, so over the long run hedged costs equal unhedged costs except for the small costs embedded in each transaction. Swaps carry very small bid-asked spreads, and even options premiums, which constitute a front-end cost, are expected to payout on average at settlement

except for small volatility increments.[9]

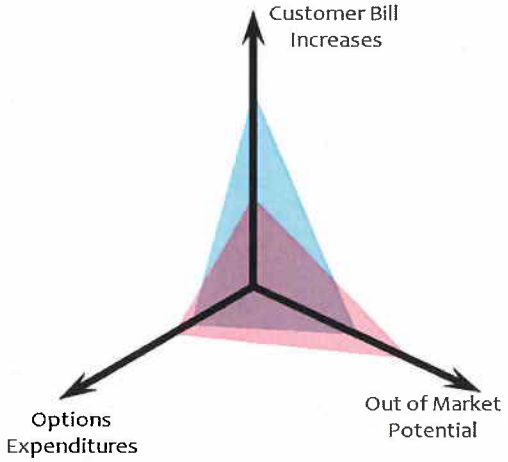
So success is defined in terms of boundary results; we will focus on the 2.5% probability outliers (2 sigma single-tail potential outcomes). At those boundaries any hedge program must balance three competing factors. For utilities the primary objective is typically constraining customers' upside price exposure. But every hedge carries the risk of loss, so pursuit of aggressive hedge accumulation runs the risk of large out-of-market settlements. Options provide a means of securing "insurance" against both, but premiums can be expensive.

So objectives, and success metrics, must balance 3 competing tolerances:

- Customer bill increase tolerance
- Out of market tolerance
- Option expenditure tolerance

In Figure 4 the blue and red triangles are alternative sets of tolerances for an assumed underlying volatility level. The blue triangle tolerates higher cost increases at the 2-sigma level in exchange for modest out-of-market results and modest premium expenditures. The red triangle substantially tightens the 2-sigma cost increases at the expense of accepting somewhat greater out-of-market outcomes and greater premium expenditures at the 2-sigma boundary. The shapes of these triangles may be modified ad infinitum, but their size will be dictated by the underlying volatility.

Figure 4, Tolerance Sets



[9] Options values are substantially determined by the volatility assumption embedded in the premium; greater volatility in the underlying contract raises the option premium. Typically options trade with a higher implied volatility than that which can be observed in the underlying commodity contract, and that produces a cost increment, but typically options premiums constitute a minor element in the utility portfolio and the incremental cost is a small fraction of that. All studies conducted here accounted for such increments.

Precisely articulated objectives, when well-founded, produce fewer disappointments, so an explicit balance as to tolerances - and the related strategy which is inextricably linked - is superior to vague intent. The approach in this work, to be described next, utilized Monte Carlo simulations to assure that both strategy and objectives are well-founded.

Approach

RiskCentrix scope of work included the following efforts:

1) Reviewing filings and other information from management
2) Quantifying observed price volatility at AECO
3) Propagating random future price paths, consistent with observed volatility, and
4) Choosing four price paths representing stress conditions for strategy testing
5) Postulating alternative hedge decision rules, and then
6) Simulating hedge decisions against stressed price conditions
7) Presenting strategy-tolerance pairings to facilitate management's selection of market-compatible objectives and a commensurate strategy.

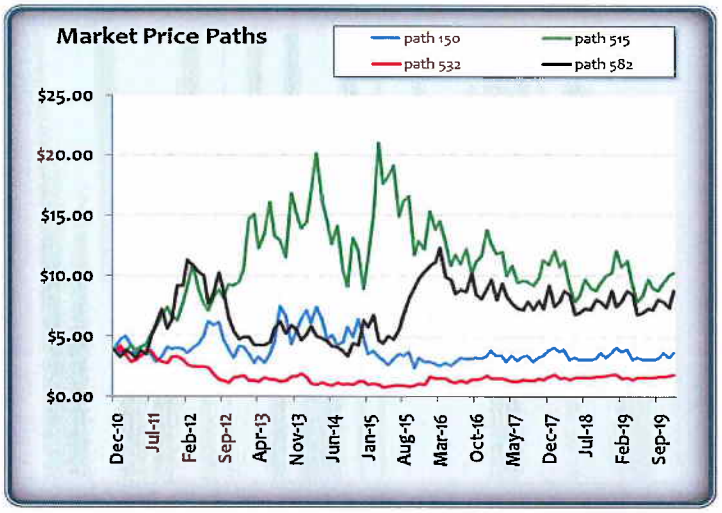
Some of these are self-explanatory or treated in the appendices, and Item 7 is covered in the results. The price paths selected and the simulation of hedge decision rules will be described here.

Price Paths for Testing Strategies

Using a Monte Carlo methodology that propagated daily random price walks, RiskCentrix generated 660 future price environments for the purpose of identifying stress cases and testing hedge decision strategies.[10] From those price paths, three paths outside of the 2-sigma envelope and one representative "normal" path were randomly selected. The price paths selected are represented in Figure 5 below.

[10] Generating price paths for the purpose of hedge strategy assessment is a computationally intensive effort because each randomly propagated path must contain a daily representation of the full forward curve consistent with volatility and correlation observations. So one sample price path, representing a ten-year random walk with 60 monthly forward contracts requires 151,00 price points, i.e., 10 years x 252 days/yr x 60 forward months.

Figure 5, Price Paths Used for Testing Hedge Strategy



Paths were numbered and characterized as follows:

Path 515 (Green):	Radical High, Extreme Case
Path 532 (Red):	Radical Low
Path 582 (Black):	High Cycle
Path 150 (Blue):	Mid-Low Cycling (within the 2-sigma envelope)

The graphic shows the settlement values for each monthly contract on each price path, but in each case and for each day simulated, the 60-month forward curves were generated along the entire price path.

Customizing Hedge Decision Rules

For the purpose of building a disciplined framework regarding ongoing risk mitigation, RiskCentrix uses a four-part segmentation for hedge decision rules. Hedge decisions have been divided into these categories:

- Programmatic — scheduled net volatility reduction
- Defensive — respond to *potential* high price by monitoring volatility, VaR, and related price holding period outliers
- Value — respond to favorable price opportunities
- Contingent — addressing other concerns, e.g. - loss potential or fixing unattractive hedges

TGI's PRMP strategy is primarily programmatic, accumulating about 50% hedge (i.e. 60% winter and 45% summer) coverage in accordance with a predetermined schedule; there are also "Value" elements[11] and "Contingent" elements. Value hedges are accumulated when prices reach a predefined price target, and the contingent element mandates limited hedge accumulation when prices rise to a noncompetitive level.

The categorization of hedge decisions described above facilitates a comparison of different hedge strategies against the price environments described earlier. Computer models can measure prices, VaR and other metrics and then simulate hedge decisions in accordance with prescribed rules. Programmatic hedges are simply "executed" on a time schedule in equal increments to diversify hedge accumulation; Defensive and Value hedges require some explanation and they are described below. Contingent strategies were not dealt with in the simulations; they are left to management's responses in the real world. Contingent responses are typically driven by ad hoc conditions like the extraordinary market collapse in 2008, unusual collateral requirements, or the 2008 financial crisis.

Defensive Hedges

Defensive hedges are the most important monitor-and-respond element in the risk toolkit. Appendix 2 provides an illustration of how VaR is calculated, and VaR is the principle concept underlying Defensive hedges. Figures 6 and 7 will serve to illustrate the mechanism deployed for defensive hedges, both in the simulations and in the actual conduct of the recommended strategy.

Figure 6, VaR in Defensive Hedges

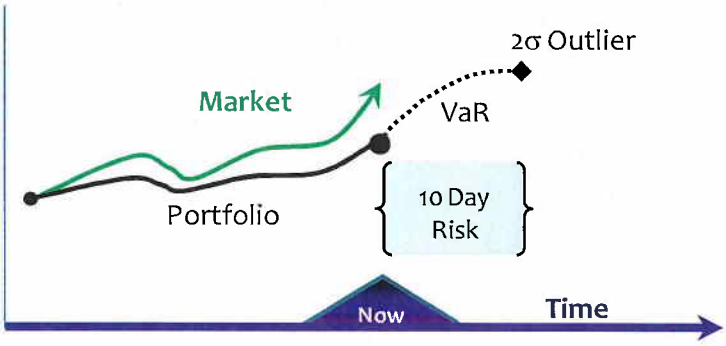
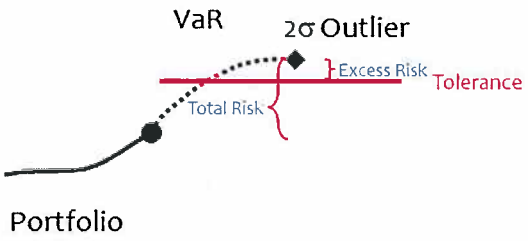


Figure 6 shows a gas supply portfolio (solid black) that happens to be tracking below rising market prices (green). The same principles apply regardless of the relationship of the portfolio to market values. The dotted line is a representation of the 10-day VaR as described in Appendix 2.

[11] Terasen uses the terms "accelerated" or "incremental."

Figure 7 expands the VaR illustration and compares the resulting 2-sigma outlier to a management-imposed tolerance that has been illustrated in red. Note that the risk outlier encroaches on the tolerance – an "encroachment." The defensive tolerance should be based on fundamental objectives such as customer rate tolerance and competitive benchmarks.

Figure 7, VaR Outlier v. Tolerance



The total risk reflects price exposure associated with the unhedged or open portion of the portfolio, so if the hedge manager desired to eliminate the encroachment, adding hedges in a volume equal to a portion of the open positions defined by the ratio "Excess Risk/Total Risk" would bring the post-hedge 2-sigma outlier down to the red tolerance. This would be a Defensive hedge; the cycle of monitoring and responding was simulated weekly as it would be performed in reality by way of routine measurement of AECO volatility.

In the strategy assessments Defensive hedges have been deployed for two forward calendar years. Empirically, futures contracts grow in volatility as they approach the prompt month. Typically the greatest prices spikes are experienced within a year of contract settlement; less so two years out. By monitoring and defending tolerances for two years forward price escalation can be mitigated effectively and the prior year, the third forward, is used as a year of programmatic accumulation.

One more design element is worthy of discussion in defensive hedge rules. If rules were designed with a single tolerance, hedges could be accumulated precipitously. So a better design would set multiple tolerances as cascading defenses, hedging up to incremental maximum hedge ratio with each cascading tolerance. So in three tiers, defensive hedge rules could be specified on top of Programmatic hedges as illustrated here:

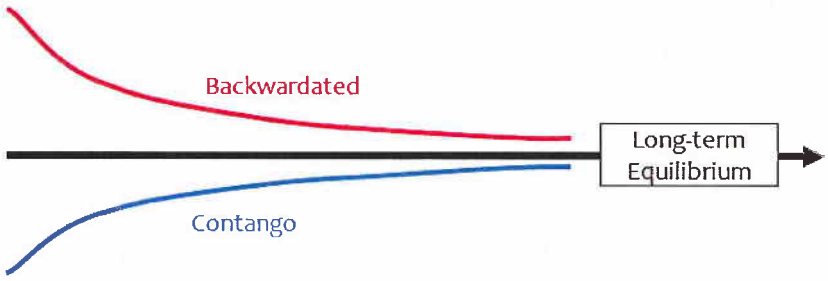
Rules	Tolerance	Max Hedge Ratio
Programmatic		25%
Defense 1	[redacted]	35%
Defense 2		50%
Defense 3		60%

Value Hedges

Capturing value opportunities can have a beneficial effect if prices are attractive relative to budget objectives, particularly if risk characteristics are observed.[12] The risk of making Value hedges is most pronounced following market peaks when budgets as well as transient perceptions of value are distorted by recently elevated prices. To avoid this perceptual trap, RiskCentrix recommends applying an objective screening criterion to such hedge decisions – a criterion that is risk oriented and not solely tied to price perception.

The recommended screening criterion makes use of the shape of the forward curve and how it relates to the future risk of loss versus "neutral" pricing. Figure 8 shows the difference between backwardated and contango forward curves.

Figure 8, Backwardated & Contango Curves



Backwardated prices are consistent with near-term scarcity of supply, surplus demand, or speculative fervor; hurricanes in the Gulf of Mexico provide one example of how such conditions arise. In such environments near-term prices tend to bid up radically while longer-dated contracts reflect an expected gradual return to equilibrium conditions. Contango markets are opposite, reflecting gas gluts or slack demand, but similarly the long-term expectations and prices gravitate toward equilibrium levels. Notice the enigma. In a contango market, while year-forward prices are higher than current prompt prices, they still reflect a potential bargain when compared to equilibrium prices. The (usually wrong) superficial response to a contango price curve could be "why would I hedge next year at $5.00 when current spot prices are at $4.00?"

It may be instructive to consider how the shape of the forward curve changes as price levels decline. Figure 9 shows a typical progression from an exuberant price spike to a price trough.

[12] Recall it has been recommended that risk mitigation decisions be dominated by the risk view, not market view. Simply timing the market can look quasi-speculative, but hedging in small increments at desirable values also tends to provide assurance that ultimate outcomes will fall into a tolerable range, particularly if hedge loss potential is mitigated as an intrinsic part of the decision process.

Note that near the peak prices are backwardated, but as prices decline the degree of backwardation moderates, becomes contango, and ultimately reaches a steep contango shape as illustrated in the heavy green forward price curve.

Figure 9, Shape Progression in a Declining Market

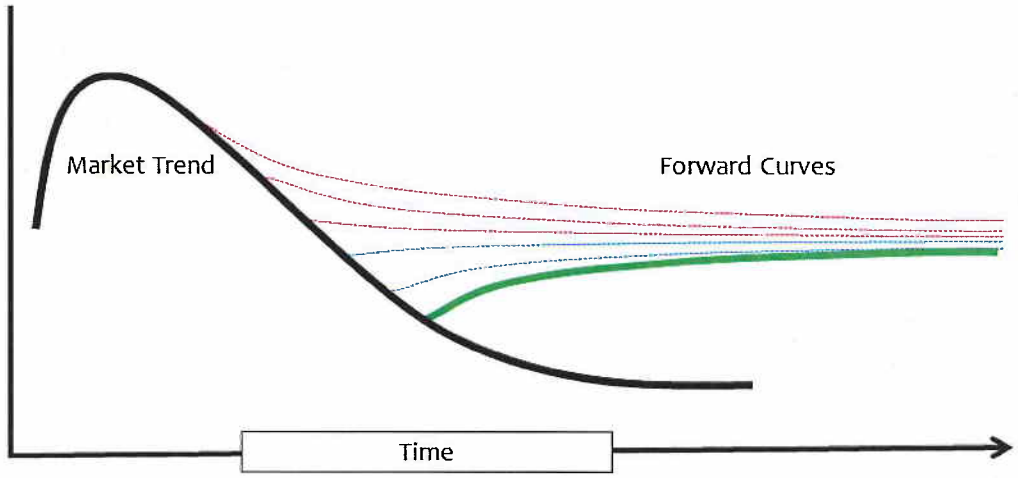
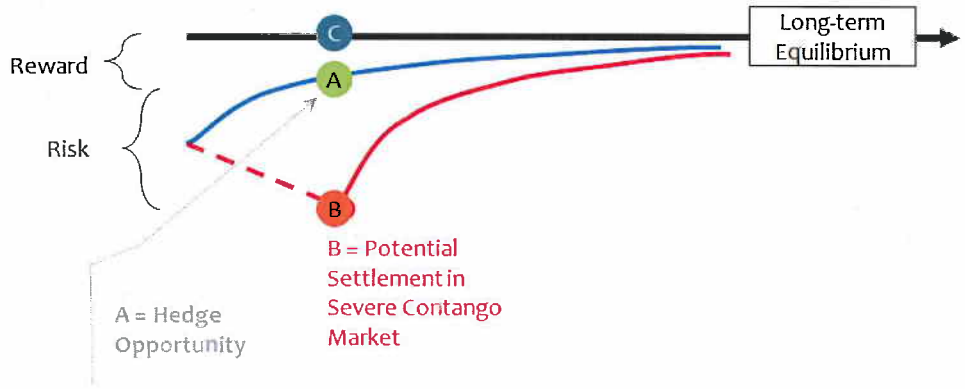


Figure 10 shows a simple screening metric that can be used to judge the risk of capturing price opportunities without relying on transient misleading perceptions.

Figure 10, Value Criterion in Contango Markets



By comparing the potential for hedge settlements at equilibrium prices to the hedge settlements in a severely contango market, a screening ratio can be determined and a standardized criterion can be formulated for the simulation process. In Figure 10 the screening criterion would be calculated as the ratio of "reward" to risk, expressed as (C-A)/(A-B). In the hedge decision

simulations, that criterion was specified at a fairly selective provision so that Value hedges contributed to the portfolio without dominating it.

Analytical Results

Studies conducted included too many simulations to summarize here, so this report will focus on seven strategies, each of which was simulated against the four price paths described earlier. Our focus was on the following indications:

- Unmitigated customer bill increase, worst year
- Mitigation effectiveness, worst year and mitigated bill increase
- Out of market settlements, worst year
- Option premium expenditures, average year
- Option premium expenditures, worst year

Note that the "worst year" for any given metric would often be a different year than another metric. High bill increases occur at different times than unfavorable settlements. For each strategy, results were tabulated against each price path and then the worst results across all years for all paths were taken as the outliers. This constitutes a stringent test because the price paths, which included $20/GJ highs and less than $1.00/GJ lows, represented greater than 2 sigma outliers, so worst case metrics reflect severe stress conditions.

The strategies of focus are summarized below.

Strategies Tested		50% Programmatic	50% HDR, No Options	75% HDR No Options
Hedge Rule				
Overall	**Max Hedge**	50%	50%	75%
Programmatic	**Horizon**	36 mos.	36 mos.	36 mos.
	Max	50%	15%	20%
Defensive	**Top Boundary Year 1, % of starting yr. portfolio value**	NA	116%	116%
	Top Boundary Year 2, % of starting yr. portfolio value	NA	121%	121%
	Options as % of Defensive Hedges	NA	0%	0%
Value	**Target, % of starting year price**	95%	95%	95%
	Increment	5%	1%	1%
	Screening Criterion	None	120%	120%

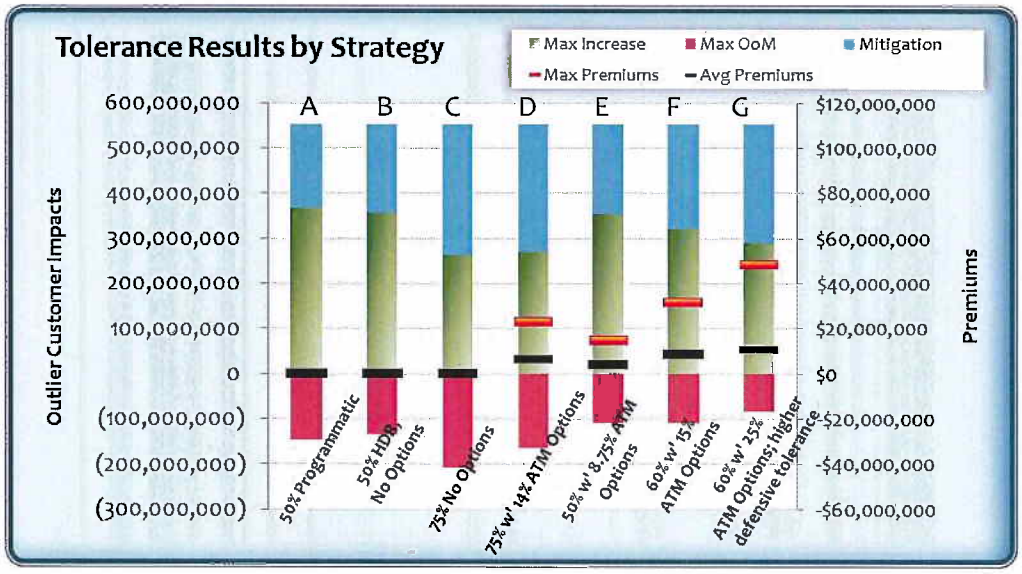
HDR indicates more than programmatic Hedge Decision Rules

		75% with Call Options	50% with Call Options	60% with Call Options	60% w' 25% ATM Options; high defensive tolerance
Overall	**Max Hedge**	75%	50%	60%	60%
Programmatic	**Horizon**	36 mos.	36 mos.	36 mos.	36 mos.
	Max	20%	15%	15%	25%
Defensive	**Top Boundary Year 1, % of starting yr. portfolio value**	116%	116%	116%	135%
	Top Boundary Year 2, % of starting yr. portfolio value	121%	121%	121%	135%
	Options as % of Defensive Hedges	25%	25%	43%	71%
Value	**Target, % of starting year price**	95%	95%	95%	95%
	Increment	1%	1%	1%	1%
	Screening Criterion	120%	120%	120%	150%

Options when deployed were at-the-money calls

The results of the hedge decision simulations are most easily displayed in graphic form as shown in Figure 11. That figure shows, for each strategy, the attainable tolerances against the unmitigated customer bill increase at the top of each bar in the graph. Recall that the price environments evaluated were dramatic ones with prices rising to $20/GJ in high cases and falling below $1.00/GJ in low ones; so expect dramatic worst case results. An expansive blue area indicates substantial mitigation of the unmitigated price peak, while a large red area shows heavy out of market settlements in the case of collapsing prices. Option premiums needs are shown by hash marks read on the right axis. Black hash marks show the average year and orange shows the worst year. Note that all options premiums are also included in the cost and out of market metrics, so there is no need to add them separately.

Figure 11, Strategy Assessment Results



Looking at the results beginning from the left, unmitigated customer bills[13] would rise by $552 million in the unmitigated high price case, while a 50% programmatic program would mitigate that to about a $366 million increase; out of market outcomes could grow to $147 million in a severe market collapse. Column B indicates that adding defensive hedges would reduce the mitigated outcome to $355 million, a $10 million improvement; stress case out of market outcomes also improve by $12 million to $135 million. As expected, Column C indicates that a greater maximum hedge ratio improves mitigation but also risks greater out of market outcomes.

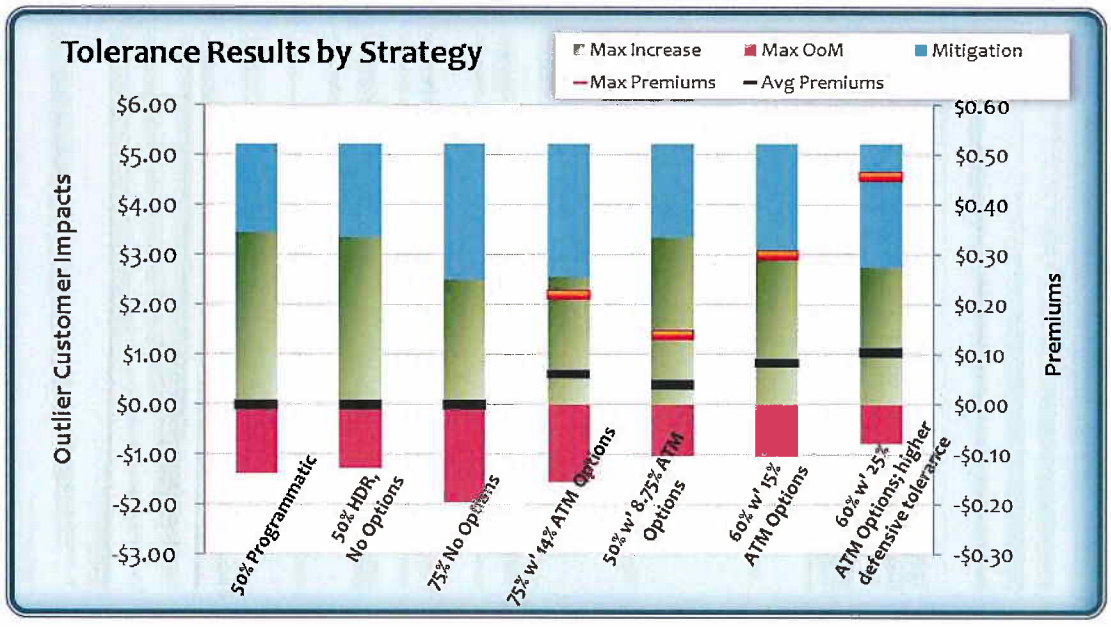
[13] In all cases where bill changes are shown, non-commodity costs were assumed to be $6.37/GJ.

Call options produce the expected results. Column D shows that out of market settlements can be mitigated while retaining the mitigation benefits of the 75% hedge ratio. Column E may be attractive; it shows better mitigation and smaller loss potential than A or B. Finally Column F draws a balance, seeking a small loss potential with better than average mitigation effects, while Column G takes the concept a step further with greater options expenditures and looser defensive boundaries to further constrain out of market outcomes. If options expenditures are acceptable, these strategies (F & G) provide a good balance of customer bill mitigation and out of market mitigation, potentially yielding the best value for customers.

Figure 11A below shows the results in $/GJ, and numerical results underlying the graphics are tallied in Appendix 1, with more detail as to particular strategy assessments provided in Appendix 3.

Figure 11A, Strategy Results in $/GJ

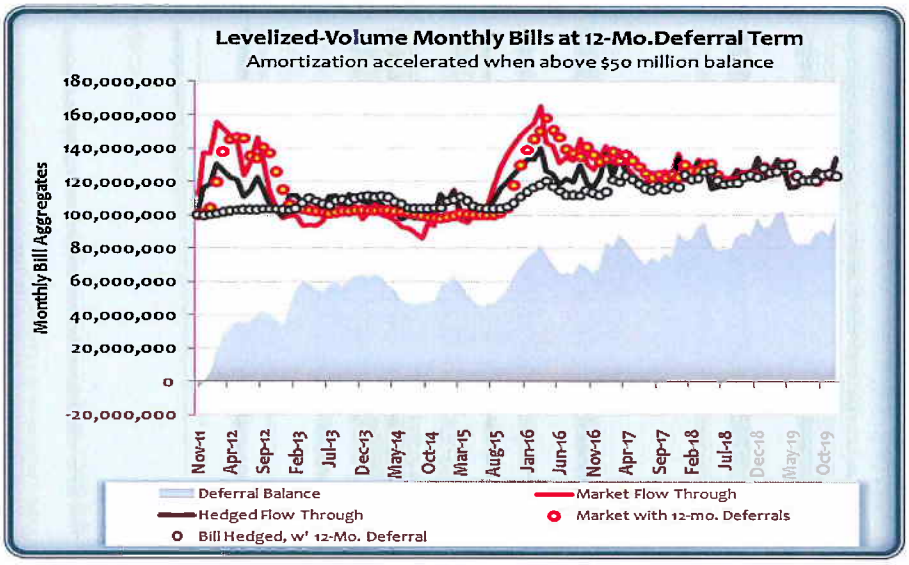
(All metrics reflect the full requirements, hedged & unhedged, as denominator)



Deferral Accounting

RiskCentrix also performed simulations of deferral accounting mechanisms of various time frames. Generally deferrals do not serve as an alternative to an effective hedging program. A short-duration deferral mechanism adds modest additional stability when used in conjunction with a robust hedge program; it is inferior as a stand-alone approach in the absence of a hedge program. Figure 13 shows the high-cycling price path with market values in red and a 12-month deferral in the lagging red circles. The black line shows the results of hedge decision rules with a 60% maximum hedge ratio. Note that the hedged line is more stable than the simple deferral. The black circles indicate that a short duration deferral of costs as hedged, provides superior stability.

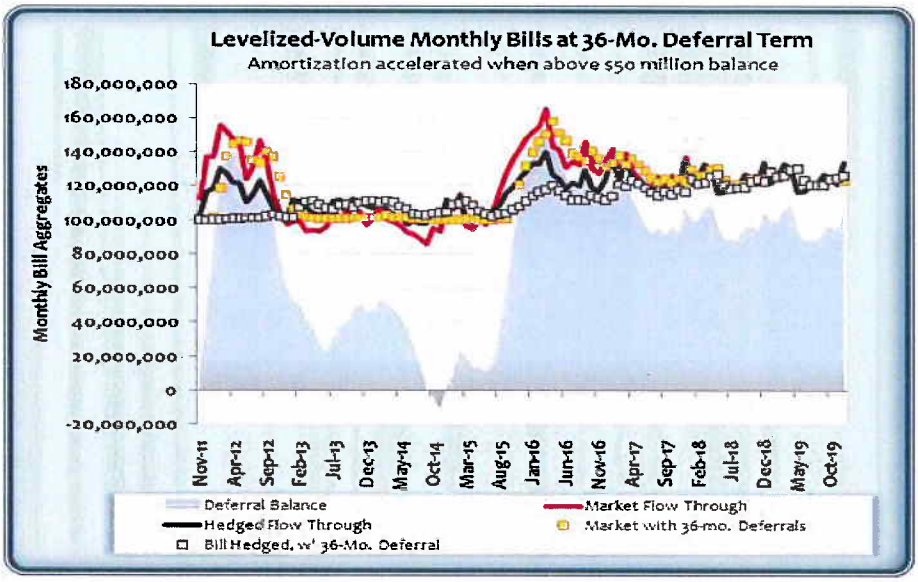
Figure 13, Comparison of 12-Month Deferrals with and Without Hedges



The risk of deferral accounting is that deferrals could accumulate to unsustainable levels resulting in the need to ultimately pass through more radical costs. To avoid a dramatically unfavorable outcome in this regard, each of the deferral simulations here assumed accelerated pass through when balances reached $50 million. The blue shaded area in Figure 13 shows how deferrals accumulate to less than $100 million over the near-decade horizon; this is probably manageable.

Figure 14 pushes the envelope to a 36-month deferral and the results indicate that deferred balances become unstable and potentially unsustainable with no material improvement in customer bill stability.

Figure 14, 36 Month Deferral



In summary, RiskCentrix views short-duration deferrals, in conjunction with a robust risk mitigation program, to be an appropriate means of further smoothing customers' bills. Yet, deferrals are not a substitute for a risk program, and any deferrals of greater than one year duration may exacerbate customer bill instability as balances grow; multi-year deferrals also add financial risk in the form of large balances that strain liquidity with no benefit in short-term stability.

Other Deliverables

As an adjunct to this report RiskCentrix has delivered to Terasen the following tools:

- The Price Propagation Tool used to perform Monte Carlo simulations
- The Hedge Decision Simulator
- A production VaR Assessment Tool for the purpose of ongoing volatility assessment and defensive hedge support

Appendices

Appendix 1: Hedge Strategy Assessment Summaries

Hedge Simulations
Master Summary

			Metric	Price Paths & Results: High Cycle Path 582 ($ 12.33 High / $ 3.14 Low)	Very High Path 515 ($ 20.99 High / $ 3.55 Low)	Very Low Path 532 ($ 4.18 High / $ 0.66 Low)	Mid-Cycle Path 150 ($ 7.44 High / $ 2.37 Low)	"Worst of Worst"
A								
Overall	Max Hedge	50%		41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	31.9%	23.9%	2.4%	9.6%	31.9%
	Max	50%	Mitigation	9.9%	10.1%	4.3%	10.2%	9.9%
Defensive	Top Boundary Year 1	NA	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	NA	Max Increase, Hedged	365,599,539	282,319,234	19,745,425	107,544,083	365,599,539
	Options, % of Defense	NA	Mitigation	132,613,263	269,585,643	31,871,636	107,520,164	186,305,337
Value	Target	95%	Max Out of Market	79,950,796	0	147,121,621	119,996,744	147,121,621
	Increment	5%	OOM / vg. Annual Bill @ Mkt.	5.7%	0.0%	17.4%	11.1%	17.4%
			Avg. Option Premiums	0.0%	0.0%	0.0%	0.0%	0 Avg
			Max-Yr. Option Premiums	0	0	0	0	0
			Mitigation (%) per OOM (%)	1.75	NA	0.25	0.92	0.57
			Mitigation ($) per OOM ($)					1.27
B								
Overall	Max Hedge	50%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	24.7%	25.2%	2.6%	8.9%	25.2%
	Max	15%	Mitigation	17.1%	8.9%	4.1%	10.9%	16.6%
Defensive	Top Boundary Year 1	116%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	121%	Max Increase, Hedged	278,807,359	355,233,552	21,572,342	100,652,257	355,233,552
	Options, % of Defense	0%	Mitigation	219,405,443	196,671,325	30,044,719	114,411,990	196,671,325
Value	Target	95%	Max Out of Market	98,311,613	0	135,471,013	120,218,346	135,471,013
	Increment	1%	OOM / Avg. Annual Bill @ Mkt.	7.0%	0.0%	16.0%	11.1%	16.0%
			Avg. Option Premiums	0	0	0	0	0 Avg
			Max-Yr. Option Premiums	0	0	0	0	0
			Mitigation (%) per OOM (%)	2.46	NA	0.26	0.98	1.04
			Mitigation ($) per OOM ($)					1.45
C								
Overall	Max Hedge	75%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	17.5%	20.2%	2.6%	5.3%	20.2%
	Max	20%	Mitigation	24.3%	13.9%	4.1%	14.6%	21.6%
Defensive	Top Boundary Year 1	116%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	121%	Max Increase, Hedged	194,564,335	263,491,437	21,311,354	58,663,648	263,491,437
	Options, % of Defense	0%	Mitigation	303,648,467	288,413,440	30,305,707	156,400,599	288,413,440
Value	Target	95%	Max Out of Market	153,330,106	0	208,036,482	186,808,591	208,036,482
	Increment	1%	OOM / Avg. Annual Bill @ Mkt.	10.8%	0.0%	24.5%	17.2%	24.5%
			Avg. Option Premiums	0	0	0	0	0 Avg
			Max-Yr. Option Premiums	0	0	0	0	0
			Mitigation (%) per OOM (%)	2.24	NA	0.17	0.85	0.88
			Mitigation ($) per OOM ($)					1.39

Hedge Simulations
Master Summary

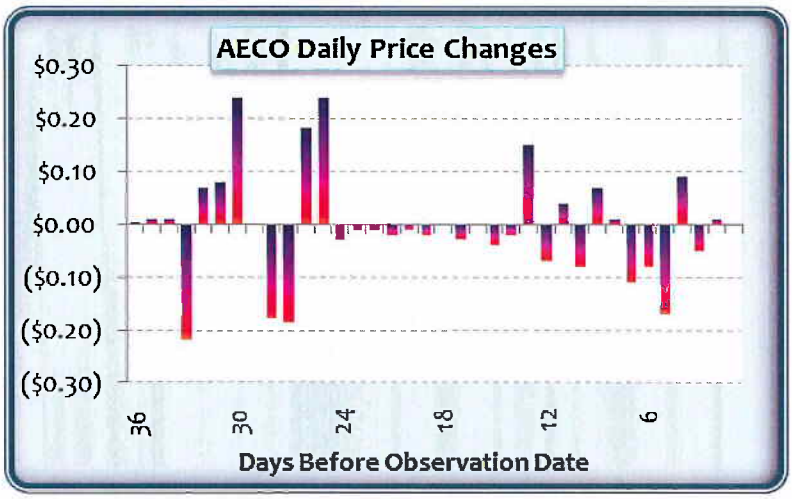
			Metric	Price Paths & Results: High Cycle Path 582 ($ 12.33 High / $ 3.14 Low)	Very High Path 515 ($ 20.99 High / $ 3.55 Low)	Very Low Path 532 ($ 4.18 High / $ 0.66 Low)	Mid-Cycle Path 150 ($ 7.44 High / $ 2.37 Low)	"Worst of Worst"
D								
Overall	Max Hedge	75%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	18.1%	20.4%	2.6%	5.7%	20.4%
	Max	20%	Mitigation	23.7%	13.7%	4.2%	14.2%	21.4%
Defensive	Top Boundary Year 1	116%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	121%	Max Increase, Hedged	201,767,764	268,731,105	21,053,778	64,609,108	268,731,105
	Options, % of Defense	25%	Mitigation	296,445,038	283,173,772	30,563,283	150,455,139	283,173,772
Value	Target	95%	Max Out of Market	128,560,197	0	165,611,115	154,457,398	165,611,115
	Increment	1%	OOM / Average Annual Bill @ Market	9.1%	0.0%	19.5%	14.2%	19.5%
			Avg. Option Premiums	7,060,000	10,620,000	2,420,000	5,460,000	6,390,000 Avg
			Max-Yr. Option Premiums	13,816,138	23,205,143	11,514,450	11,300,458	23,205,143
			Mitigation (%) per OOM (%)	2.61	NA	0.21	1.00	1.10
			Mitigation ($) per OOM ($)					1.71
E								
Overall	Max Hedge	50%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	25.1%	25.2%	2.6%	9.8%	25.2%
	Max	15%	Mitigation	16.7%	8.8%	4.1%	10.0%	16.5%
Defensive	Top Boundary Year 1	116%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	121%	Max Increase, Hedged	284,101,259	352,918,934	21,118,960	109,839,476	352,918,934
	Options, % of Defense	25%	Mitigation	214,111,543	198,985,942	30,498,101	105,224,771	198,985,942
Value	Target	95%	Max Out of Market	80,205,222	0	108,921,240	101,505,093	108,921,240
	Increment	1%	OOM / Avg. Annual Bill @ Mkt.	5.7%	0.0%	12.8%	9.4%	12.8%
			Avg. Option Premiums	4,740,000	6,860,000	1,570,000	3,570,000	4,185,000 Avg
			Max-Yr. Option Premiums	9,012,358	14,632,070	7,335,580	7,412,149	14,632,070
			Mitigation (%) per OOM (%)	2.94	NA	0.32	1.07	1.29
			Mitigation ($) per OOM ($)					1.83
F								
Overall	Max Hedge	60%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	22.7%	23.5%	2.7%	8.9%	23.5%
	Max	15%	Mitigation	19.1%	10.5%	4.0%	11.0%	18.3%
Defensive	Top Boundary Year 1	116%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	121%	Max Increase, Hedged	255,367,146	320,942,869	21,815,257	99,996,264	320,942,869
	Options, % of Defense	43%	Mitigation	242,845,656	230,962,007	29,801,804	115,067,983	230,962,007
Value	Target	95%	Max Out of Market	88,171,002	0	108,573,155	105,365,177	108,573,155
	Increment	1%	OOM / Avg. Annual Bill @ Mkt.	6.2%	0.0%	12.8%	9.7%	12.8%
			Avg. Option Premiums	9,980,387	14,639,862	3,207,076	7,479,430	8,826,689 Avg
			Max-Yr. Option Premiums	19,107,169	31,814,205	15,434,785	15,324,749	31,814,205
			Mitigation (%) per OOM (%)	3.07	NA	0.31	1.13	1.43
			Mitigation ($) per OOM ($)					2.13
G								
Overall	Max Hedge	60%	Max Market Bill Change	41.8%	34.0%	6.7%	19.8%	41.8%
Program.	Horizon	36 mos.	Max Hedged Bill Change	23.6%	20.4%	2.5%	10.4%	23.6%
	Max	25%	Mitigation	18.2%	13.7%	4.2%	9.5%	18.2%
Defensive	Top Boundary Year 1	135%	Max Increase at Market	498,212,802	551,904,876	51,617,061	215,064,247	551,904,876
	Top Boundary Year 2	135%	Max Increase, Hedged	269,790,669	290,850,406	20,390,439	116,965,010	290,850,406
	Options, % of Defense	71%	Mitigation	228,422,134	261,054,470	31,226,622	98,099,237	261,054,470
Value	Target	95%	Max Out of Market	78,790,410	0	82,650,343	60,665,019	82,650,343
	Increment	1%	OOM / Avg. Annual Bill @ Mkt.	5.6%	0.0%	9.8%	5.6%	9.8%
			Avg. Option Premiums	13,128,457	22,029,340	1,226,118	7,780,230	11,041,036 Avg
			Max-Yr. Option Premiums	37,870,476	48,343,979	9,405,451	19,729,282	48,343,979
			Mitigation (%) per OOM (%)	3.26	NA	0.43	1.69	1.86
			Mitigation ($) per OOM ($)					3.16

Appendix 2: Volatility, Monte Carlo Price Models, and VaR

Volatility

Observed volatility is typically measured by monitoring price movements over some recent, but statistically significant period. The graphic below shows AECO price changes for 36 days leading up to late September 2010. By measuring appropriate confidence bands for these price changes, daily volatility may be quantified.[14] For the September 2010 assessment, one-sigma daily volatility was estimated at 3.15%.

A-2, Figure 1

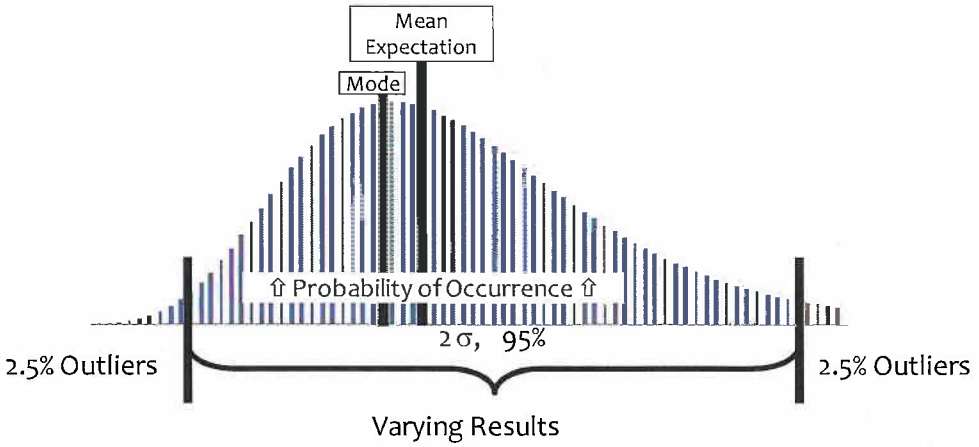


But by convention volatility would be expressed as the one-sigma variation in prices over one year. Price risk grows with the square root of time, so with 252 trading days per year (excluding weekend and holidays), annual volatility was quantified as 3.15% x SQRT(252) or 50%.

[14] Gas prices are generally considered to be lognormally distributed, meaning that they are constrained by zero on the low side but unconstrained on the high side resulting in a skewed risk distribution.

Viewed in a traditional histogram, the price risk at 2-sigma would appear as follows, where 2.5% of probable outcomes would fall outside the 2-sigma band to each side.

A-2, Figure 2

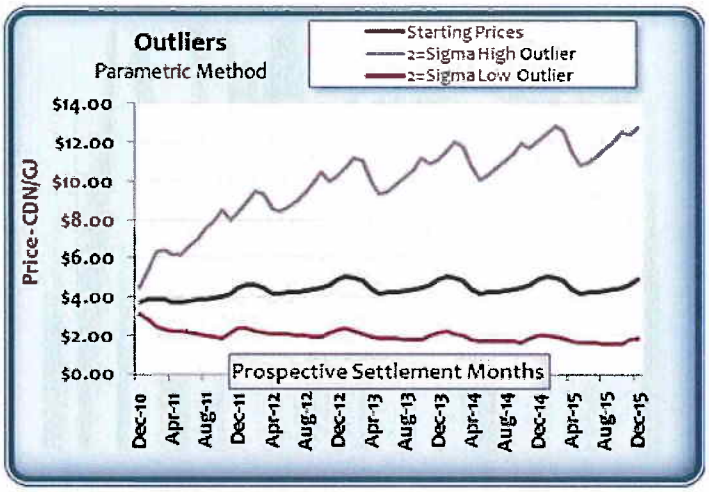


AECO volatility, as measured, would indicate the prompt month price of $3.37/GJ could migrate upward to $3.58 or downward to $3.17 over one day; as 2-sigma risk estimates these numbers would encompass all but 2.5% of the outcomes that might still fall above plus 2.5% that might fall below.

Prompt month daily volatility was measured as 3.15% and for a given futures contract, price risk is proportionate to the square root of time. So the Oct-10 contract could migrate three times as much over nine days as one day. Similarly, volatilities of further-forward futures contracts decline with distance from the prompt, so measured in December 2010, Jan-11 will be more volatile than Feb-11 which is more volatile than Mar-11, etc. When quantifying risk for any multi-month period the volatility must reflect a composite of the futures contracts for that period.

Generating risk assessments for each monthly futures contract, beginning with the forward curve as the mean expectation, the risk envelope could be extended; it would appear as follows:

A-2, Figure 3



This graphic shows a very orderly view of the 2-sigma boundaries associated with current prices and volatility. But real markets do not behave in such an orderly manner; prices may be confined to these boundaries 95% of the time, but the path by which they get there will be chaotic. Monte Carlo simulations may be used to generate random price paths to be used in the assessment of risk strategies.

Value at Risk (VaR)

A hedge program is primarily aimed at producing high confidence in tolerable outcomes. VaR provides a tool that can be deployed in hedge decisions to provide that confidence.

Value at Risk quantifies the risk for a "holding period" that is appropriate to the hedge manager's hedging decisions. If the hedge program is designed to monitor and respond to risk on a weekly basis, a ten-day risk assessment would provide an appropriate cushion in the determination of how the decision to *forego* today's hedge opportunities might be tolerated. The ten day time span is called the "holding period" because it indicates the hedge manager's risk of holding positions unchanged for that period.

So to calculate an illustrative value at risk, assume that the 2011 AECO strip exhibits a 2-sigma upward market risk over the next ten days equal to $.60 per GJ. Note that VaR relates to the market values only inasmuch as the portfolio is unhedged; our real concern is the portfolio of

customer gas requirements. If those requirements were hedged in a 40% ratio, the portfolio would be exposed to 60% of the market risk, so it would be exposed to a $.36/GJ move upward. If that portfolio represented 100 million GJ to serve customers, the VaR related to customer bill risk would be $36 million. Further, if the current portfolio price were $4.00/GJ the expected value of customer gas requirements would be $400 million and the 2-sigma outlier for hedge opportunities that might be presented 10 days from now would be $436 million. The hedge manager could make use of that outlier to determine if it is tolerable to hold current hedge positions until the next review.

Monte Carlo Models

Having quantified volatility, a Monte Carlo simulation was run to propagate random price paths (day 2 values migrate randomly from day 1 values, and so on). The day-to-day random walk was generated assuming a lognormal distribution and using standard Brownian motion techniques, including a random walk of the volatility parameter. Inter-month correlations were assumed at 99%. For each price path, daily 60-month forward curves were generated through 2019. For the hedge decision simulations week-ending values were recorded from the Monte Carlo model and strategy assessments were conducted based on weekly hedge decisions in accordance with the various rules specified.

Appendix 3: Hedge Strategy Assessments, Metrics and Graphics

Each Strategy is presented as to performance on each of four price paths.

Strategy A

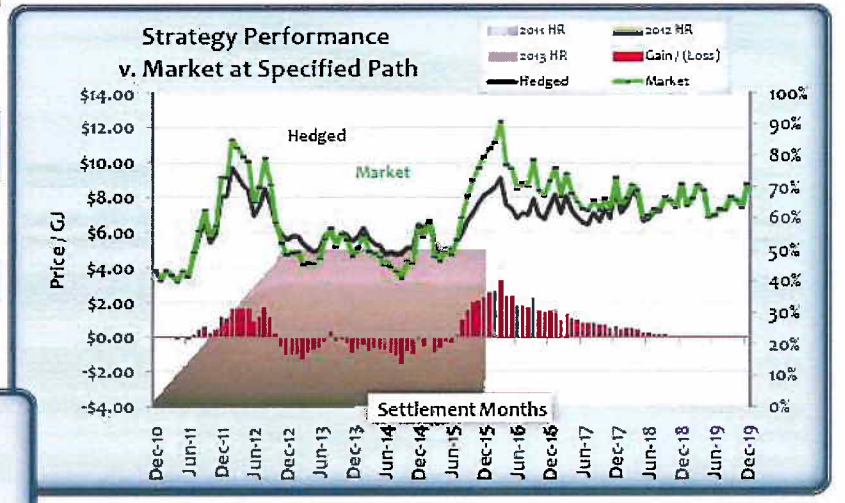
Summary of Path Results — path 582

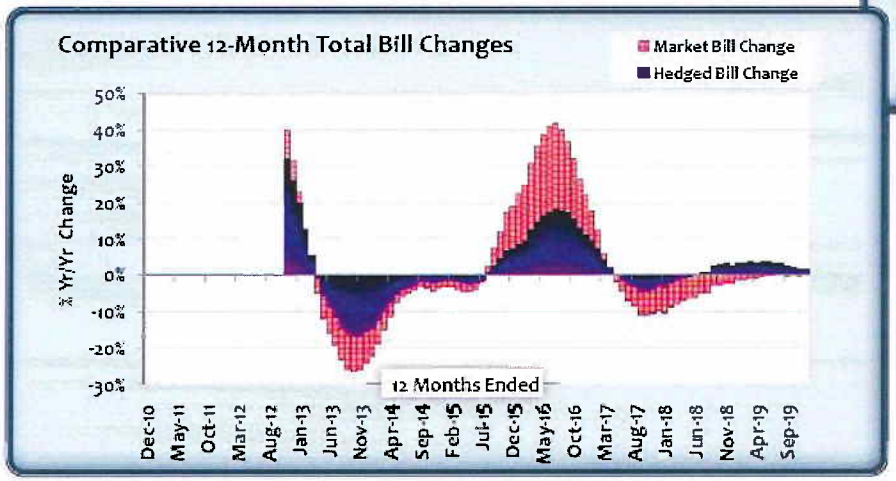
Strategy	Max Overall Hedge Ratio/Horizon	50%	36 months	Max Programmatic 50%	Boundary 3 112%	Value Target Yr 1 95%
path 582	Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr			

Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	2.0%	
Max Programmatic				50%
Min @ Month 12				50%

Defensive Rules	0 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
~~Boundary 1~~		~~105%~~	~~45%~~	~~105%~~	~~45%~~
~~Boundary 2~~		~~105%~~	~~37%~~	~~105%~~	~~37%~~
~~Boundary 3~~		~~105%~~	~~12%~~	~~105%~~	~~12%~~

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
~~Value Target Yr 1~~		95%	None	5%	50%
~~Value Target Yr 2~~		95%		3%	50%
~~Value Target Yr 3~~		0%		3%	50%





Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	365,599,539	31.9% Max
Mitigation	$ 132,613,263	9.9%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 79,950,796
% of Average Annual Bill @ Market		5.7% Max
Mitigation Ratio		
Mitigation / Out of Market		1.75

Summary of Path Results

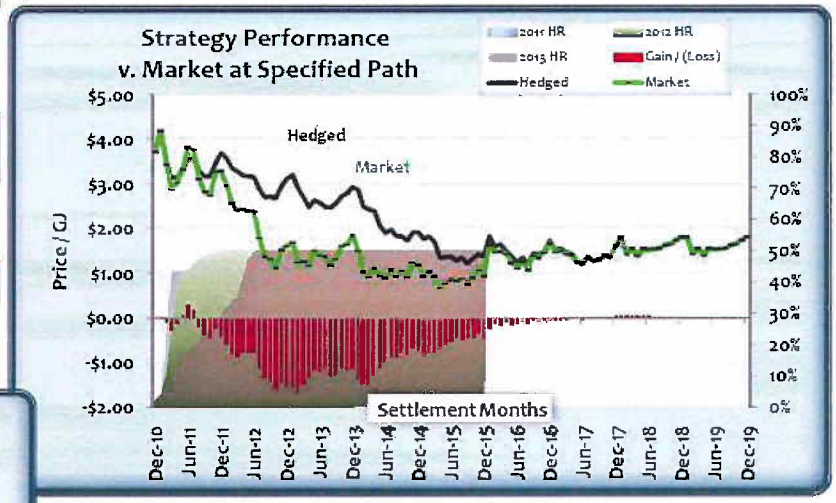
path 532

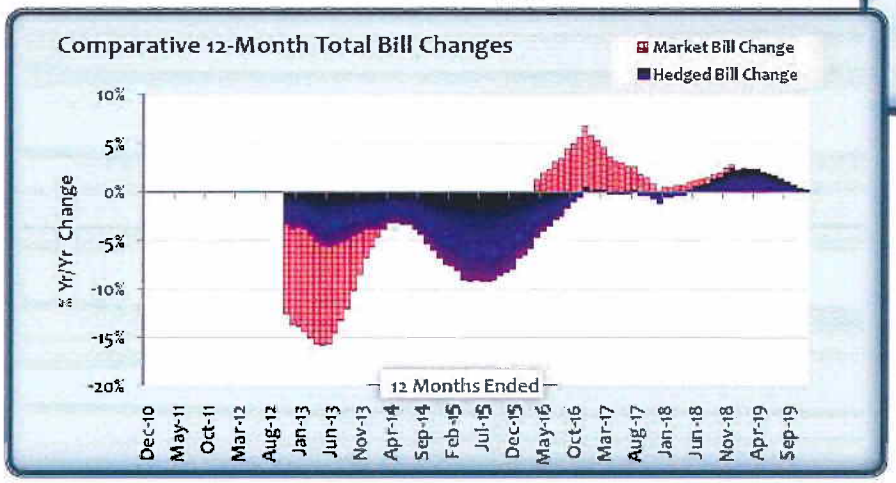
Strategy	Max Overall Hedge Ratio/Horizon	50%	36 months	Max Programmatic 50%	Boundary 3 112%	Value Target Yr 1 95%
path 532	Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr			

Programmatic Rules	1=On	Horizon	Increment	Hedge Ratio
Increment		36 Months	2.0%	
Max Programmatic				50%
Min @ Month 12				50%

Defensive Rules	0 (n=3)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
~~Boundary 1~~		~~109%~~	~~50%~~	~~116%~~	~~38%~~
~~Boundary 2~~		~~109%~~	~~75%~~	~~116%~~	~~47%~~
~~Boundary 3~~		~~112%~~	~~62%~~	~~112%~~	~~57%~~

Value Rules	1=On	Price	Risk/Reward Criteria	Increment	Cumulative Max
~~Value Target Yr 1~~		95%	None	5%	50%
~~Value Target Yr 2~~		95%		3%	50%
~~Value Target Yr 3~~		0%	-------	3%	50%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	19,745,425	2.4% Max
Mitigation	$ 31,871,636	4.3%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 147,121,621
% of Average Annual Bill @ Market		17.4% Max
Mitigation Ratio		
Mitigation / Out of Market		0.25

Summary of Path Results

path 515

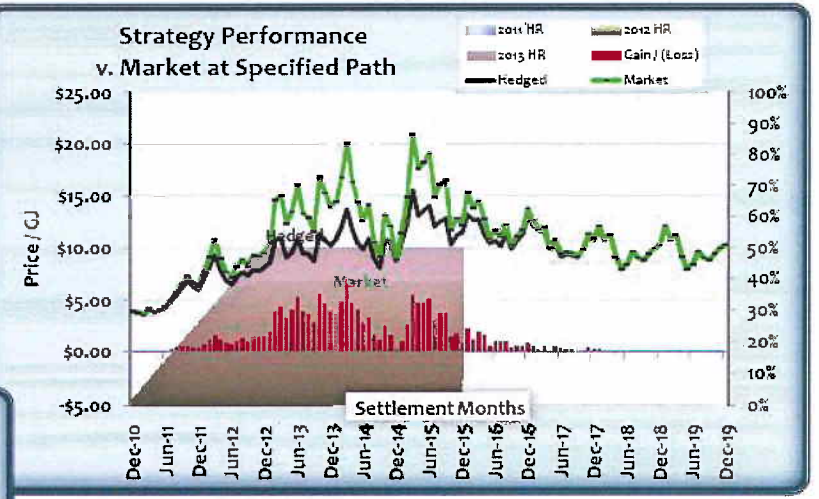
Strategy	Max Overall Hedge Ratio/Horizon	50%	36 months
path 515	Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr

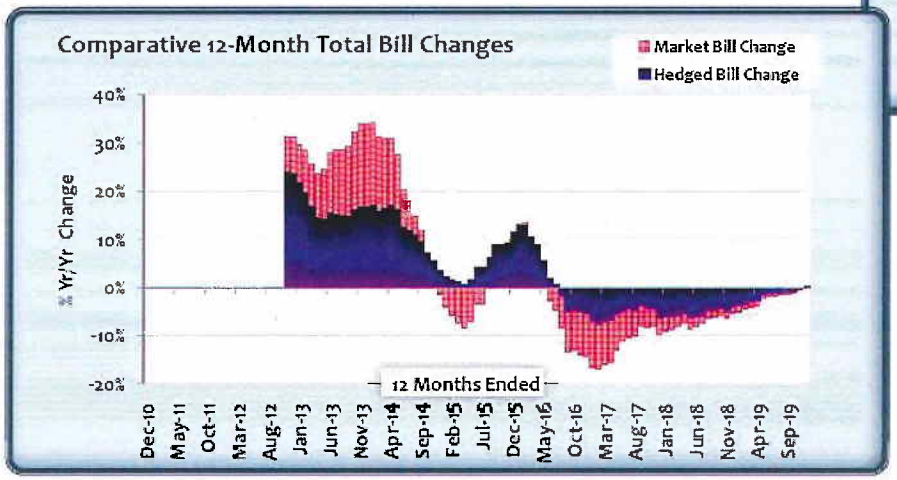
Programmatic Rules	(1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	2.0%	
Max Programmatic				50%
Min @ Month 12				50%

Defensive Rules	(1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
~~Boundary 1~~		~~105%~~	~~40%~~	~~112%~~	~~30%~~
~~Boundary 2~~		~~109%~~	~~75%~~	~~116%~~	~~45%~~
~~Boundary 3~~		~~112%~~	~~65%~~	~~119%~~	~~95%~~

Value Rules	(1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
~~Value Target Yr 1~~		95%	None	5%	50%
~~Value Target Yr 2~~		95%		3%	50%
~~Value Target Yr 3~~		0%		3%	50%

Max Programmatic 50% Boundary 3 112% Value Target Yr 1 95%





Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	282,319,234	23.9% Max
Mitigation	$ 269,585,643	10.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

Summary of Path Results

path 150

Strategy						
path 150	Max Overall Hedge Ratio/Horizon		50%	36 months	Max Programmatic 50%	Boundary 3 112%	Value Target Yr 1 95%
	Premiums Expended, ($ Mil.)		$0.00 Avg Yr	$0.00 Max Yr			

Programmatic Rules

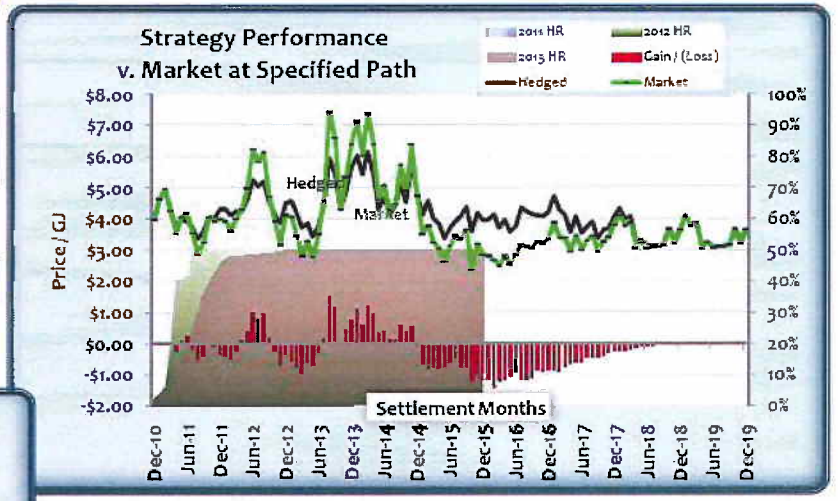
	Y (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	2.0%	
Max Programmatic				50%
Min @ Month 12				50%

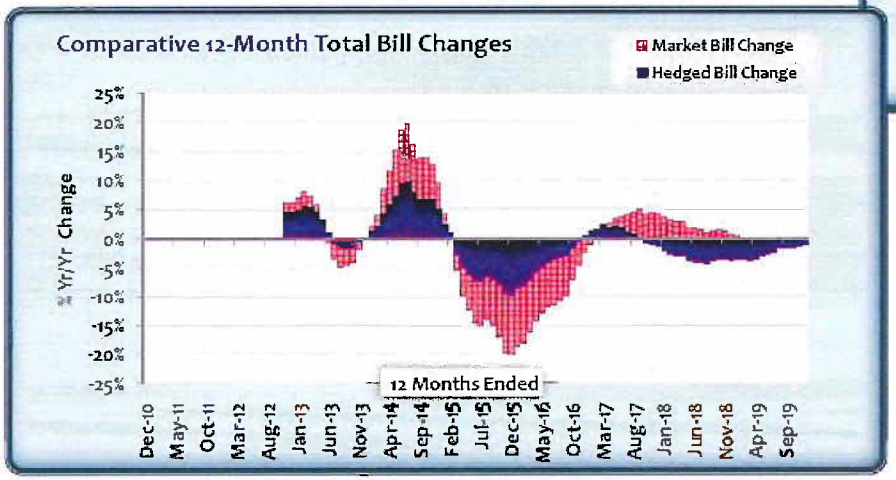
Defensive Rules

	D (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options: 25%		Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
~~Boundary 1~~		~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~Boundary 2~~		~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~Boundary 3~~		~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~

Value Rules

	Y (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
~~Value Target Yr 1~~		95%	None	5%	50%
~~Value Target Yr 2~~		95%		3%	50%
~~Value Target Yr 3~~		0%		3%	50%





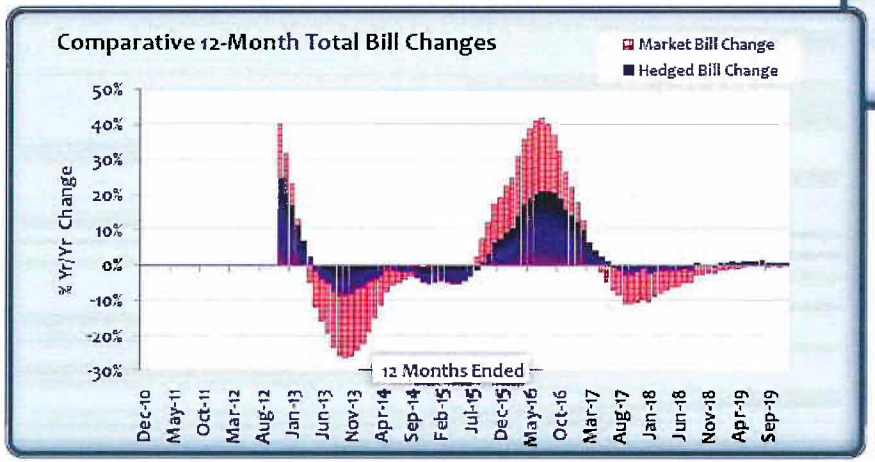
Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	107,544,083	9.6% Max
Mitigation	$ 107,520,164	10.2%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 119,996,744
% of Average Annual Bill @ Market		11.1% Max
Mitigation Ratio		
Mitigation / Out of Market		0.92

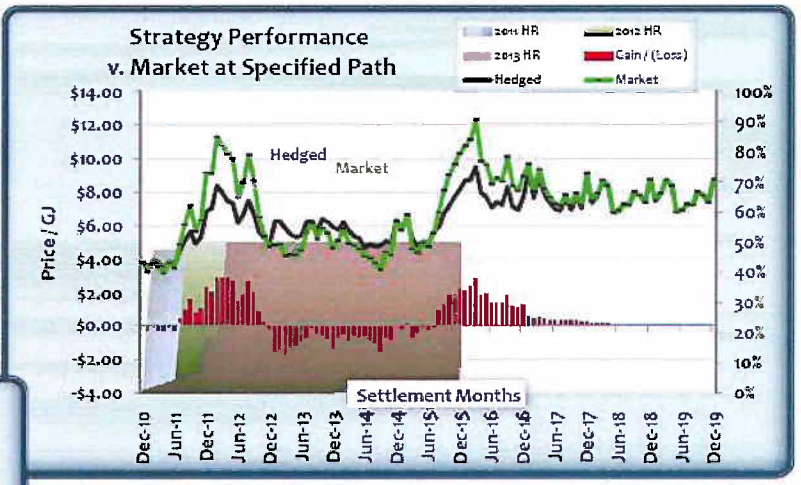
Strategy B

Summary of Path Results

path 582

Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months	Max Programmatic 15%	Boundary 3 116%	Value Target Yr 1 95%
path 582		Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr			
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio			
Increment		36 Months	0.6%				
Max Programmatic				15%			
Min @ Month 12				15%			
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year			
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio		
Boundary 1		110%	30%	115%	20%		
Boundary 2		114%	40%	119%	30%		
Boundary 3		116%	50%	121%	40%		
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max		
Value Target Yr 1		95%	120%	1%	50%		
Value Target Yr 2		95%	120%	1%	50%		
Value Target Yr 3		0%	120%	1%	50%		





Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	278,807,359	24.7% Max
Mitigation	$ 219,405,443	17.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 98,311,613
% of Average Annual Bill @ Market		7.0% Max
Mitigation Ratio		
Mitigation / Out of Market		2.46

Summary of Path Results

path 532

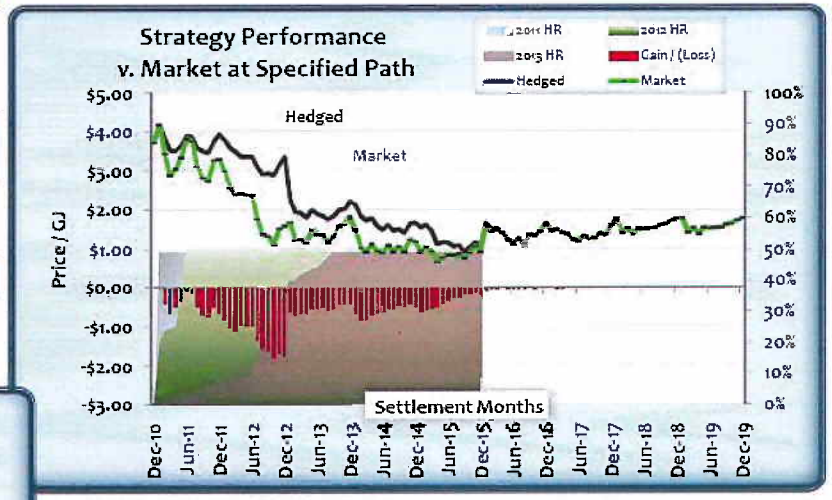
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 532		Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr

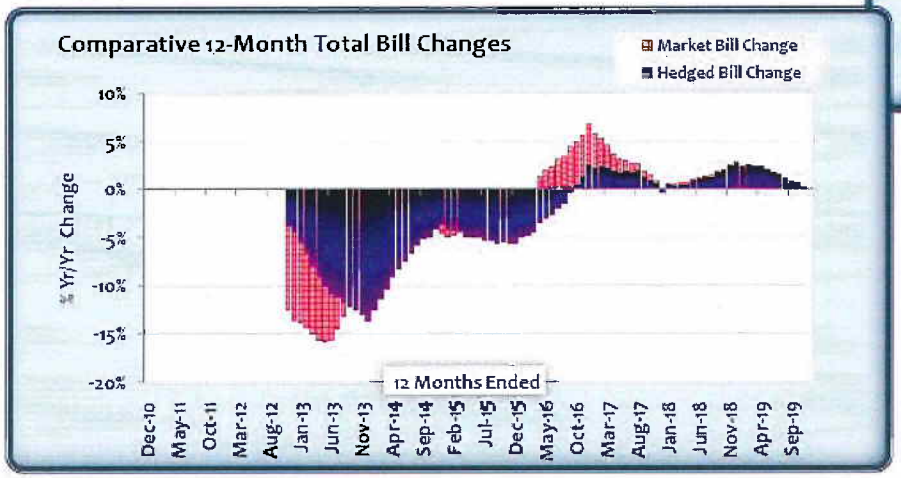
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	121%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	21,572,342	2.6% Max
Mitigation	$ 30,044,719	4.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 135,471,013
% of Average Annual Bill @ Market		16.0% Max
Mitigation Ratio		
Mitigation / Out of Market		**0.26**

Summary of Path Results

path 515

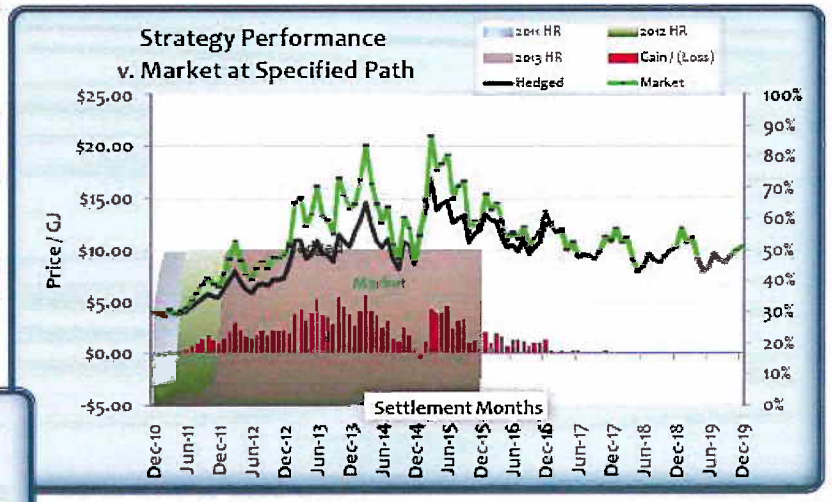
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 515		Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr

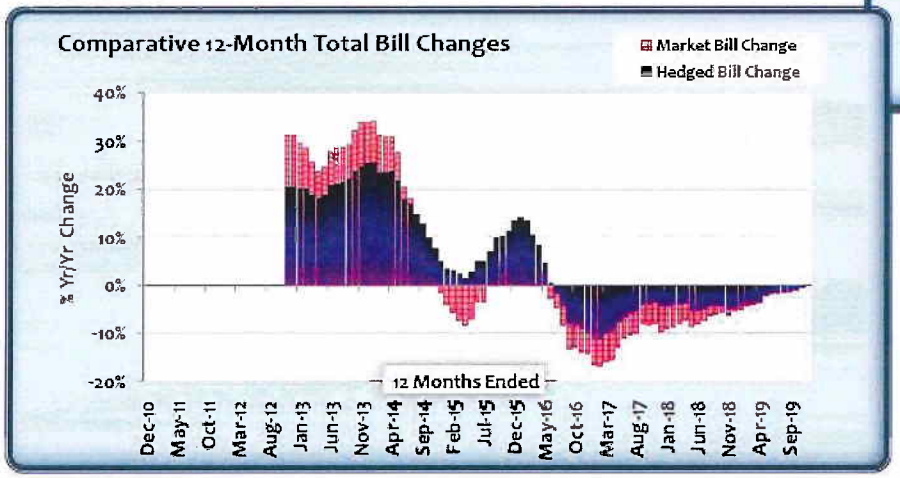
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	121%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% | Boundary 3 116% | Value Target Yr 1 95%





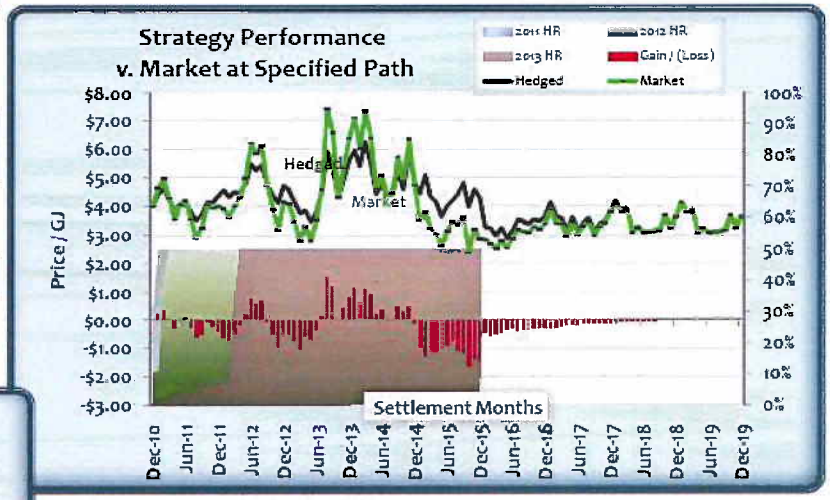
Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	355,233,552	25.2% Max
Mitigation	$ 196,671,325	8.9%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

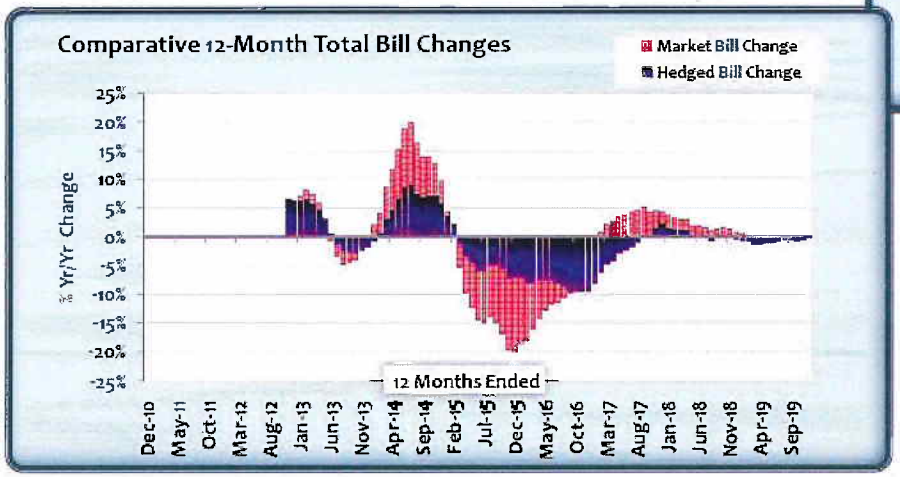
Summary of Path Results

path 150

Strategy						
path 150		Max Overall Hedge Ratio/Horizon		50%	36 months	
		Premiums Expended, ($ Mil.)		$0.00 Avg Yr	$0.00 Max Yr	
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio		
Increment		36 Months	0.6%			
Max Programmatic				15%		
Min @ Month 12				15%		
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year		
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio	
Boundary 1		110%	30%	115%	20%	
Boundary 2		114%	40%	119%	30%	
Boundary 3		116%	50%	121%	40%	
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max	
Value Target Yr 1		95%	120%	1%	50%	
Value Target Yr 2		95%	120%	1%	50%	
Value Target Yr 3		0%	120%	1%	50%	

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	100,652,257	8.9% Max
Mitigation	$ 114,411,990	10.9%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 120,218,346
% of Average Annual Bill @ Market		11.1% Max
Mitigation Ratio		
Mitigation / Out of Market		0.98

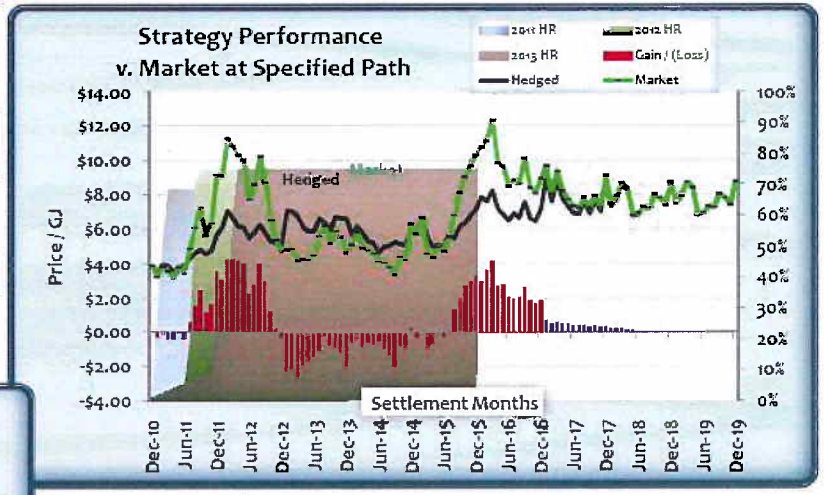
Strategy C

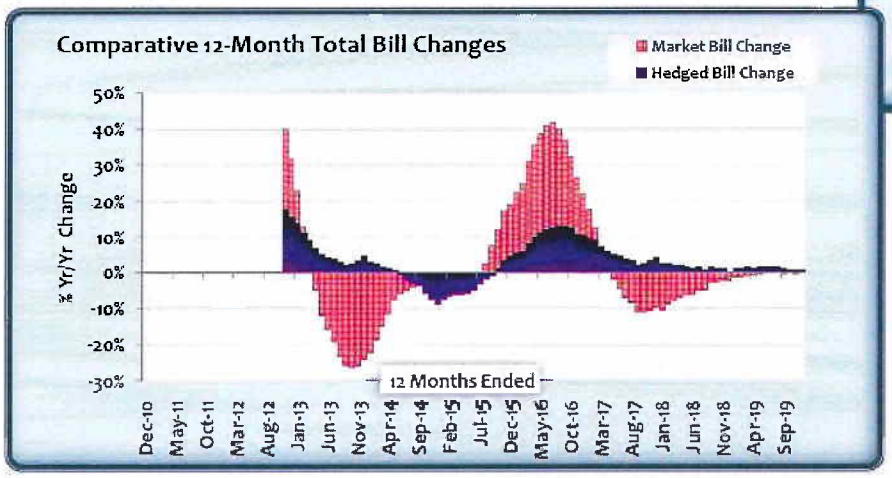
Summary of Path Results

path 582

Strategy					
path 582		Max Overall Hedge Ratio/Horizon	75%	36 months	
		Premiums Expended, ($ MM.)	$0.00 Avg Yr	$0.00 Max Yr	
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio	
Increment		36 Months	0.8%		
Max Programmatic				20%	
Min @ Month 12				20%	
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%



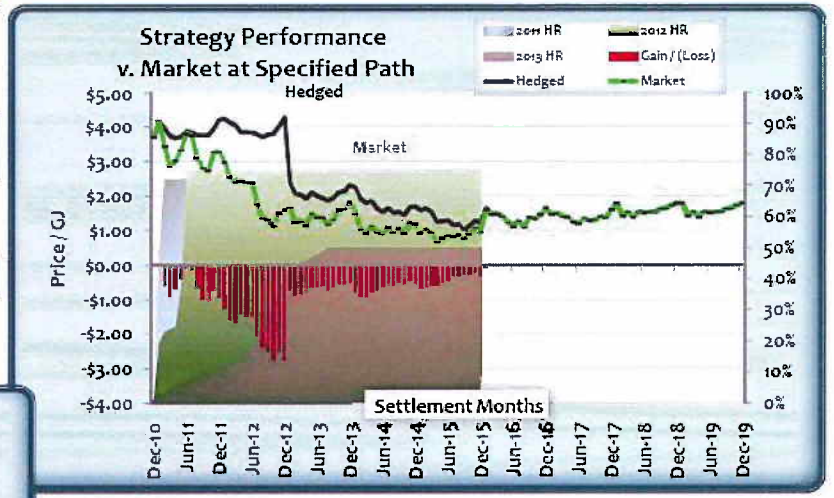


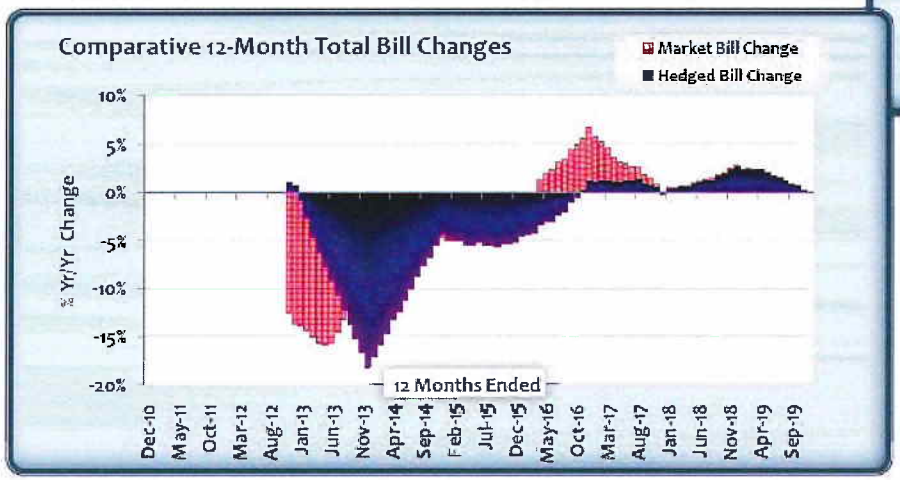
Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	194,564,335	17.5% Max
Mitigation	$ 303,648,467	24.3%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 153,330,106
% of Average Annual Bill @ Market		10.8% Max
Mitigation Ratio		
Mitigation / Out of Market		2.24

Summary of Path Results

path 532

Strategy		Max Overall Hedge Ratio/Horizon	75%	36 months	Max Programmatic 20%	Boundary 3 116%	Value Target Yr 1 95%
path 532		Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr			
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio			
Increment		36 Months	0.8%				
Max Programmatic				20%			
Min @ Month 12				20%			
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year			
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio		
Boundary 1		110%	45%	115%	35%		
Boundary 2		114%	60%	119%	50%		
Boundary 3		116%	75%	121%	60%		
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max		
Value Target Yr 1		95%	120%	1%	50%		
Value Target Yr 2		95%	120%	1%	50%		
Value Target Yr 3		0%	120%	1%	50%		





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	21,311,354	2.6% Max
Mitigation	$ 30,305,707	4.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 208,036,482
% of Average Annual Bill @ Market		24.5% Max
Mitigation Ratio		
Mitigation / Out of Market		0.17

Summary of Path Results

path 515

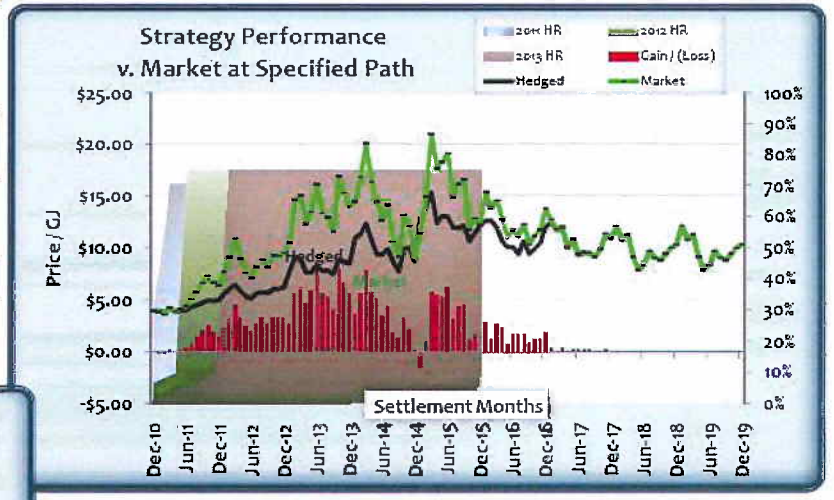
Strategy		Max Overall Hedge Ratio/Horizon	75%	36 months
path 515		Premiums Expended, ($ Mil.)	$0.00 Avg Yr	$0.00 Max Yr

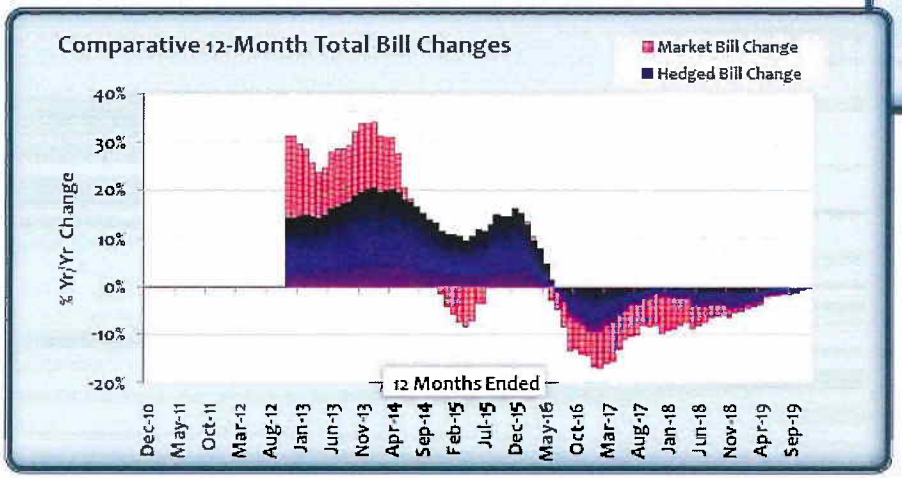
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.8%	
Max Programmatic				20%
Min @ Month 12				20%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





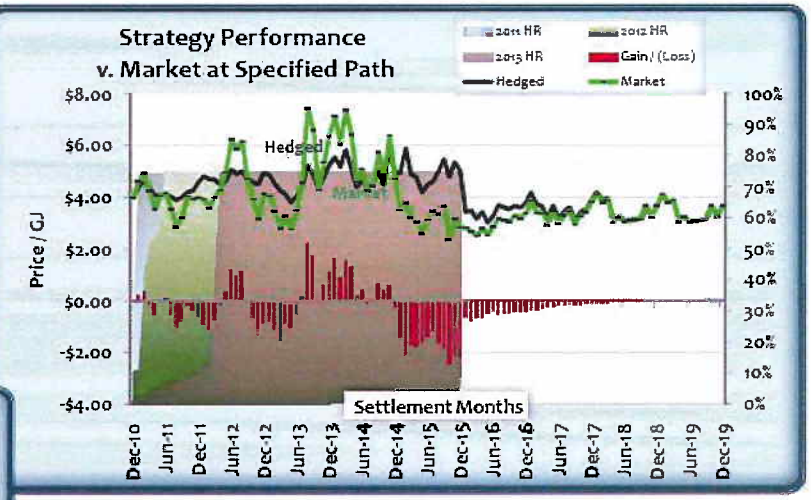
Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	263,491,437	20.2% Max
Mitigation	$ 288,413,440	13.9%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		**NA**

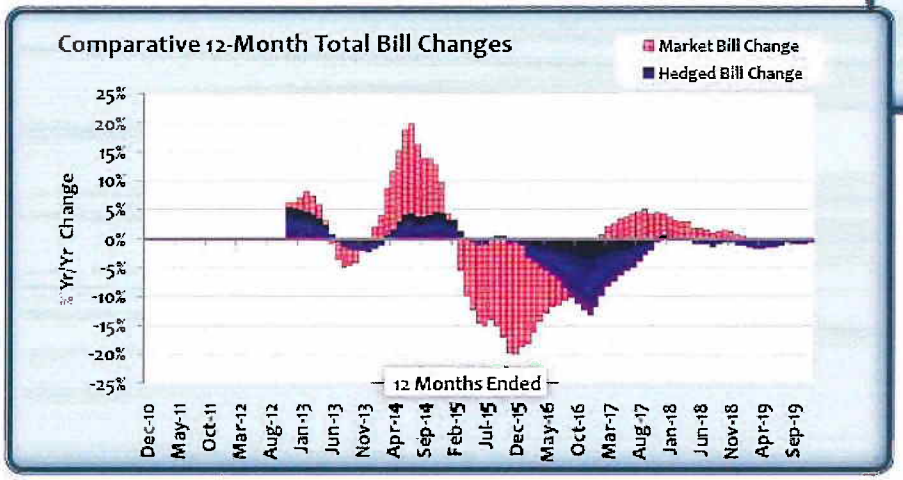
Summary of Path Results

path 150

Strategy		Max Overall Hedge Ratio/Horizon		75%	36 months
path 150		Premiums Expended, ($ Mil.)		$0.00 Avg Yr	$0.00 Max Yr
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio	
Increment		36 Months	0.8%		
Max Programmatic				20%	
Min @ Month 12				20%	
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	0%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	58,663,648	5.3% Max
Mitigation	$ 156,400,599	14.6%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 186,808,591
% of Average Annual Bill @ Market		17.2% Max
Mitigation Ratio		
Mitigation / Out of Market		**0.85**

Strategy D

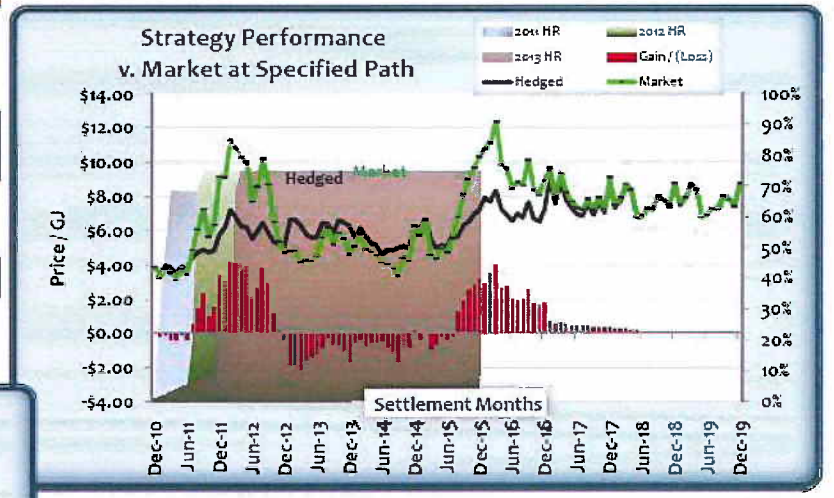
Summary of Path Results — path 582

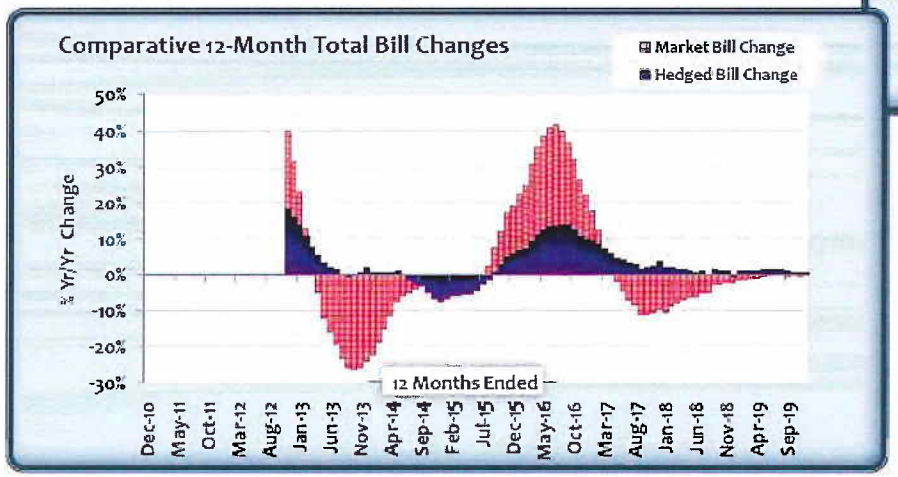
Strategy		Max Overall Hedge Ratio/Horizon	75%	36 months
path 582		Premiums Expended, ($ M/L)	$7.06 Avg Yr	$13.82 Max Yr
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.8%	
Max Programmatic				20%
Min @ Month 12				20%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





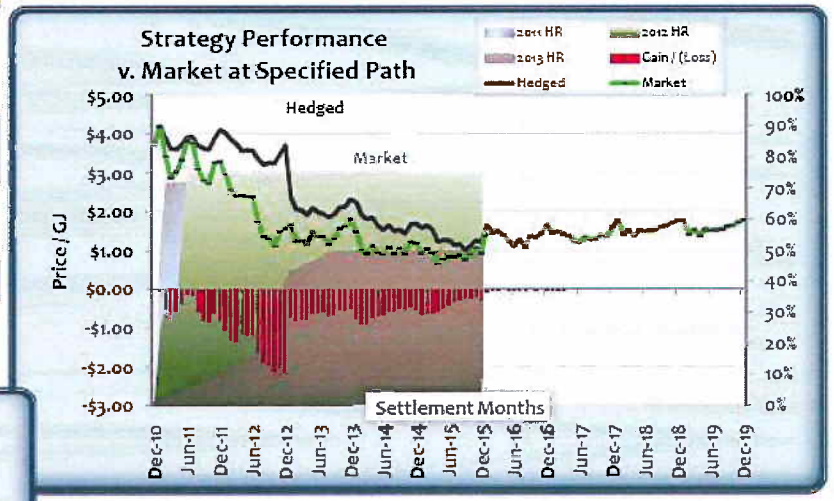
Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 3,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	201,767,764	18.1% Max
Mitigation	$ 296,445,038	23.7%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 128,560,197
% of Average Annual Bill @ Market		9.1% Max
Mitigation Ratio		
Mitigation / Out of Market		2.61

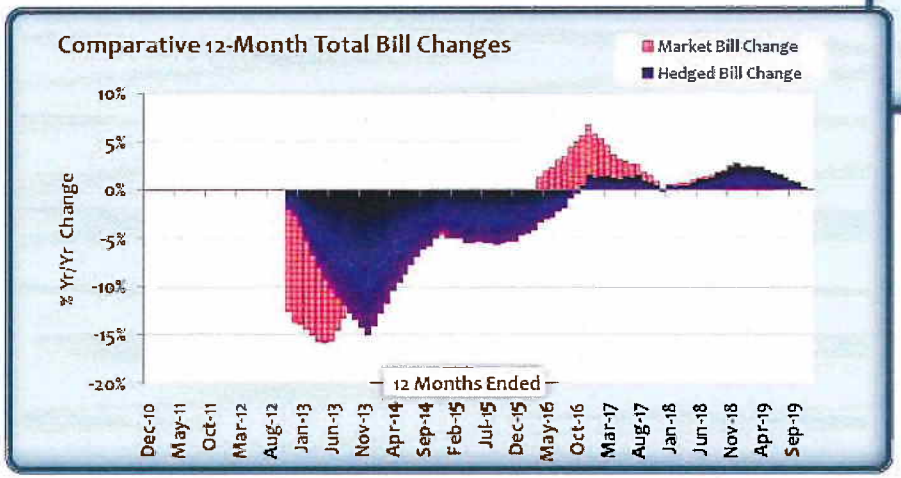
Summary of Path Results

path 532

Strategy						
path 532		Max Overall Hedge Ratio/Horizon		75%	36 months	
		Premiums Expended, ($ Mil.)		$2.42 Avg Yr	$11.51 Max Yr	
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio		
Increment		36 Months	0.8%			
Max Programmatic				20%		
Min @ Month 12				20%		
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year		
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio	
Boundary 1		110%	45%	115%	35%	
Boundary 2		114%	60%	119%	50%	
Boundary 3		116%	75%	121%	60%	
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max	
Value Target Yr 1		95%	120%	1%	50%	
Value Target Yr 2		95%	120%	1%	50%	
Value Target Yr 3		0%	120%	1%	50%	

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	21,053,778	2.6% Max
Mitigation	$ 30,563,283	4.2%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 165,611,115
% of Average Annual Bill @ Market		19.5% Max
Mitigation Ratio		
Mitigation / Out of Market		0.21

Summary of Path Results

path 515

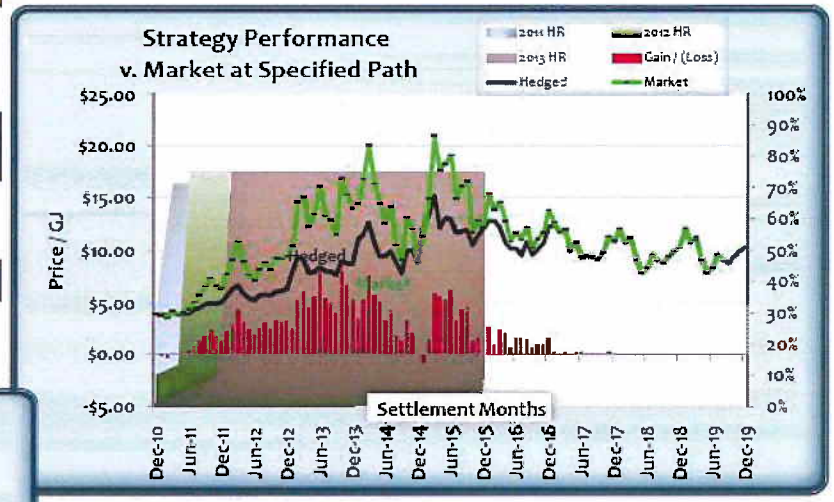
Strategy		Max Overall Hedge Ratio/Horizon	75%	36 months
path 515		Premiums Expended, ($ Mil.)	$10.62 Avg Yr	$23.21 Max Yr

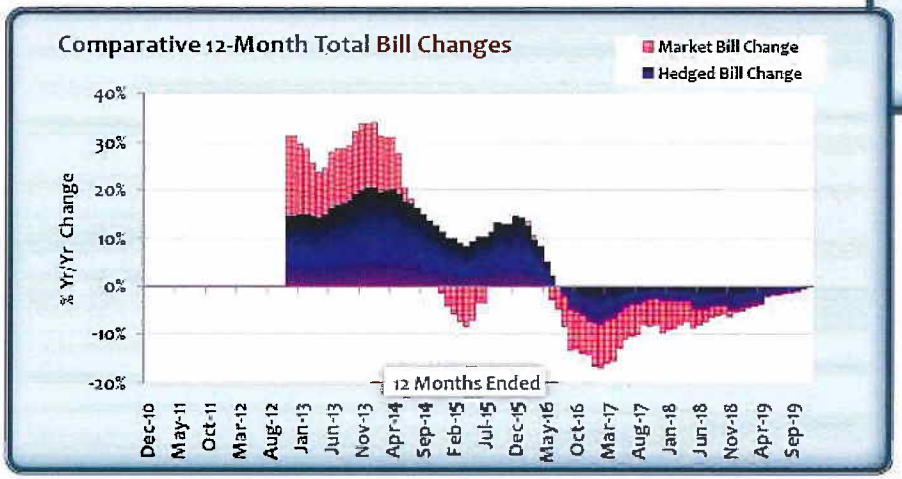
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.8%	
Max Programmatic				20%
Min @ Month 12				20%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	$51,904,876	34.0% Max
As Hedged	268,731,105	20.4% Max
Mitigation	$ 283,173,772	13.7%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

Summary of Path Results

path 150

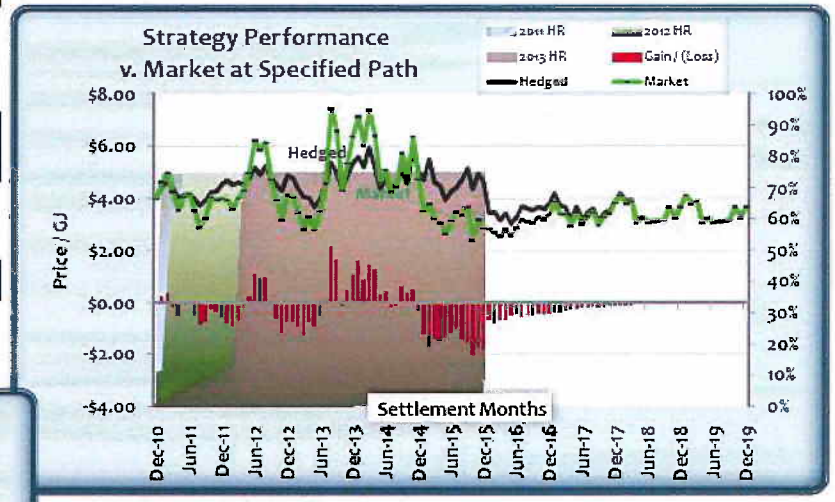
Strategy		Max Overall Hedge Ratio/Horizon	75%	36 months
path 150		Premiums Expended, ($ Mil.)	$5.46 Avg Yr	$11.30 Max Yr

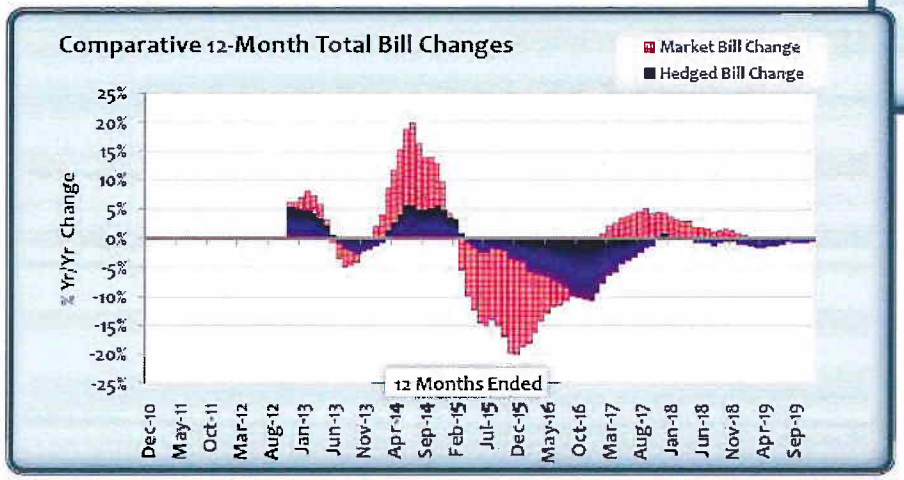
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.8%	
Max Programmatic				20%
Min @ Month 12				20%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	45%	115%	35%
Boundary 2		114%	60%	119%	50%
Boundary 3		116%	75%	121%	60%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 20% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	64,609,108	5.7% Max
Mitigation	$ 150,455,139	14.2%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 154,457,398
% of Average Annual Bill @ Market		14.2% Max
Mitigation Ratio		
Mitigation / Out of Market		1.00

Strategy E

Summary of Path Results

path 582

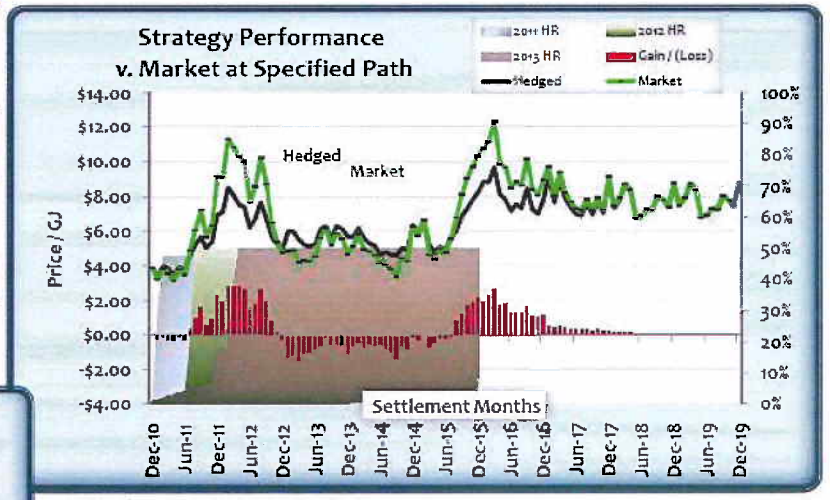
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 582		Premiums Expended, ($ Mil.)	$4.74 Avg Yr	$9.01 Max Yr

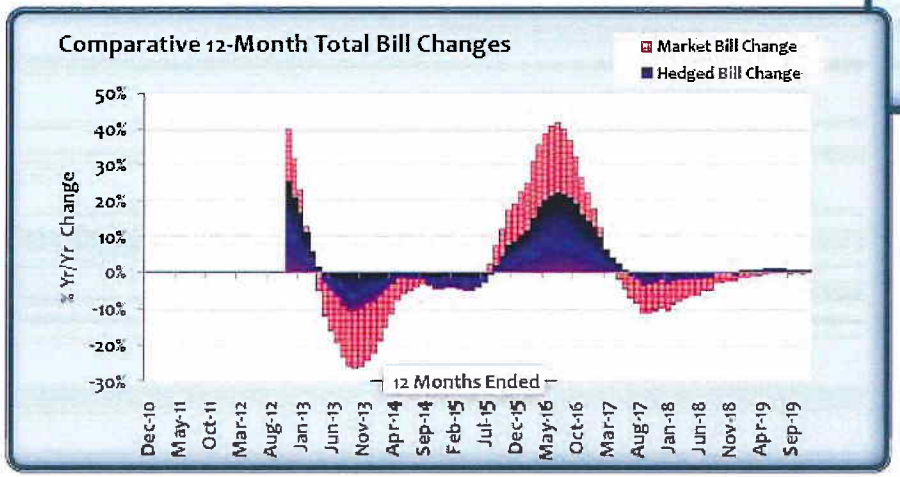
Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%

Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	121%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%





Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	284,101,259	25.1% Max
Mitigation	$ 214,111,543	16.7%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 80,205,222
% of Average Annual Bill @ Market		5.7% Max
Mitigation Ratio		
Mitigation / Out of Market		2.94

Summary of Path Results

path 532

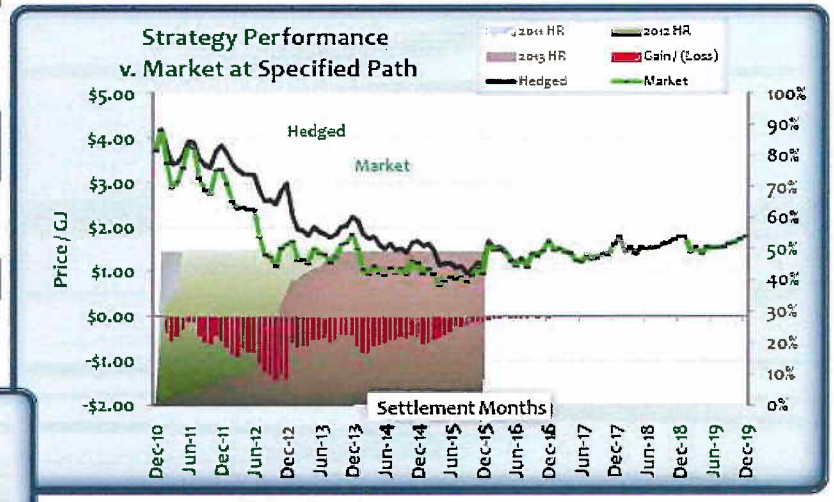
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 532		Premiums Expended, ($ Mil.)	$1.57 Avg Yr	$7.34 Max Yr

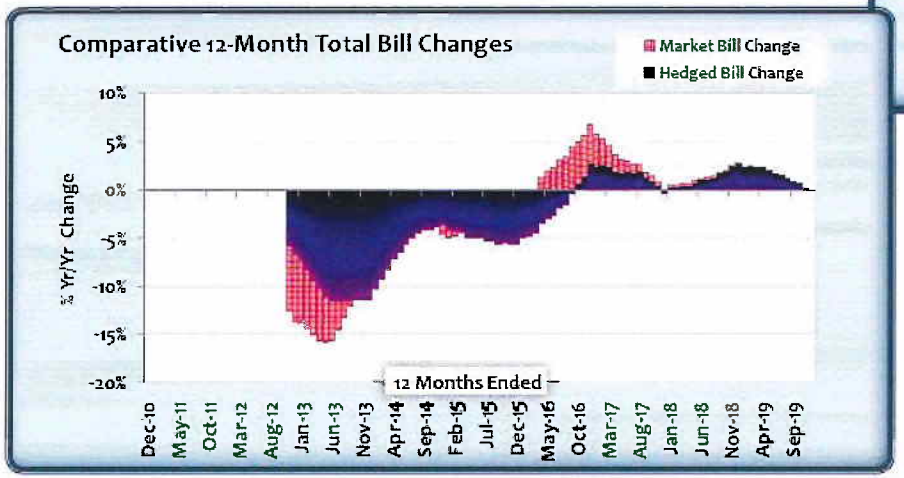
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	122%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	21,118,960	2.6% Max
Mitigation	$ 30,498,101	4.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 108,921,240
% of Average Annual Bill @ Market		12.8% Max
Mitigation Ratio		
Mitigation / Out of Market		0.32

Summary of Path Results

path 515

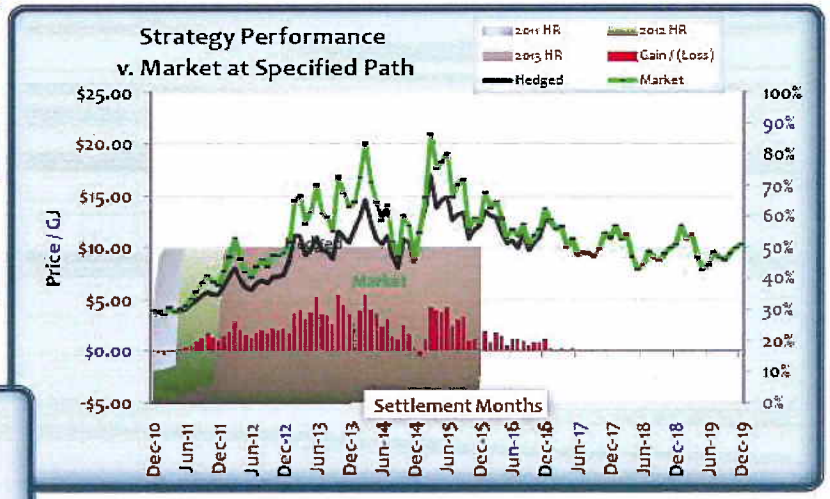
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 515		Premiums Expended, ($ MM.)	$6.86 Avg Yr	$14.63 Max Yr

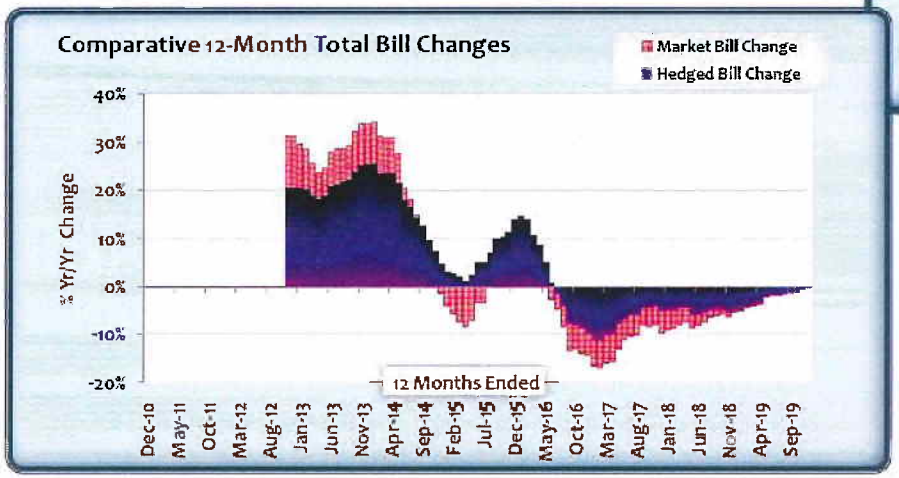
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	121%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% | Boundary 3 116% | Value Target Yr 1 95%





Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	352,918,934	25.2% Max
Mitigation	$ 198,985,942	8.8%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

Summary of Path Results

path 150

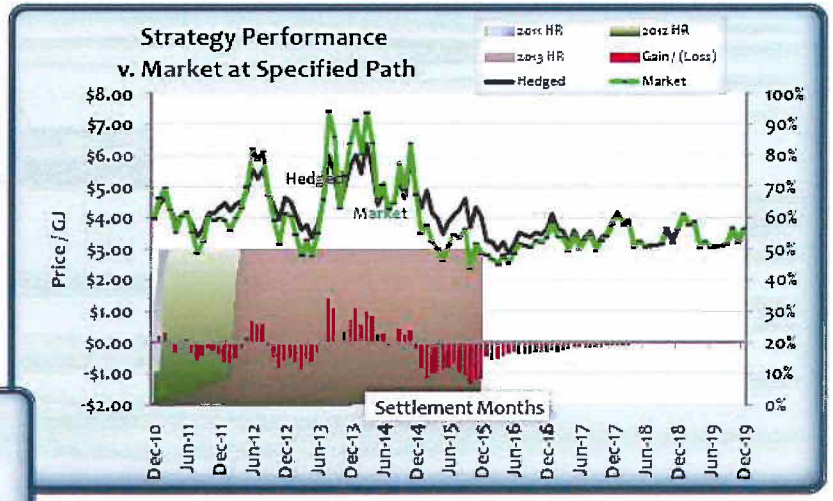
Strategy		Max Overall Hedge Ratio/Horizon	50%	36 months
path 150		Premiums Expended, ($ Mil.)	$3.57 Avg Yr	$7.41 Max Yr

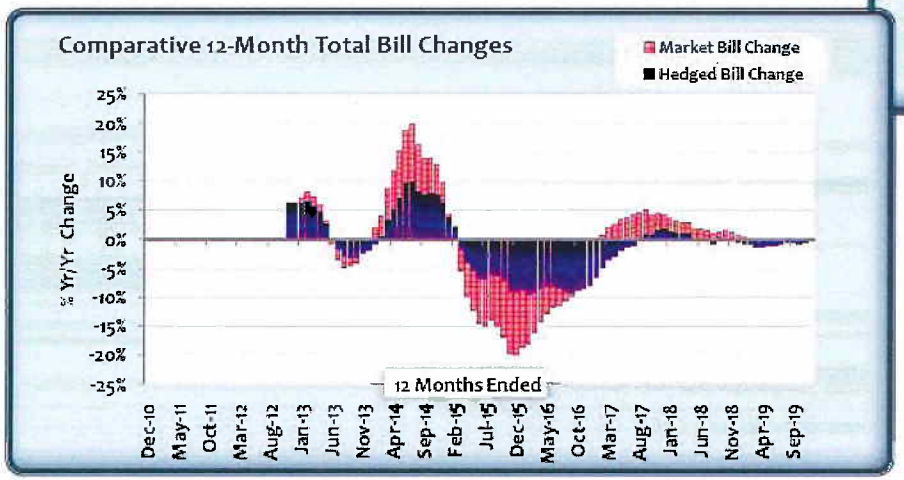
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	25%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	20%
Boundary 2		114%	40%	119%	30%
Boundary 3		116%	50%	121%	40%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





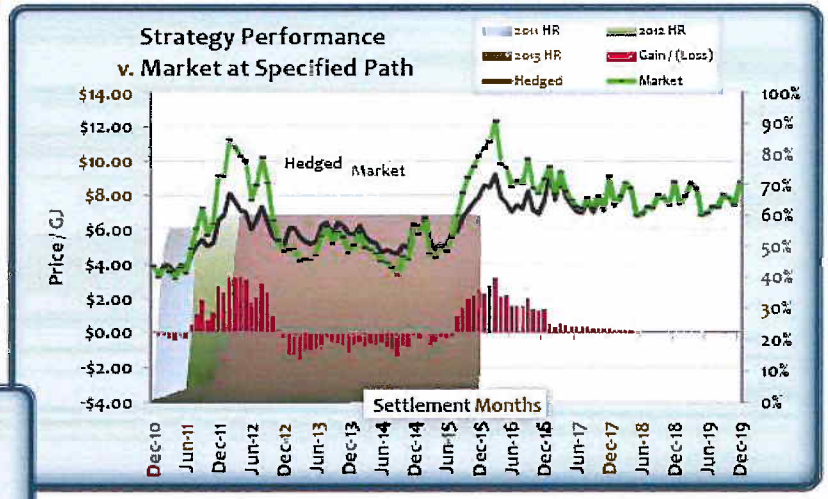
Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	109,839,476	9.8% Max
Mitigation	$ 105,224,771	10.0%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 101,505,093
% of Average Annual Bill @ Market		9.4% Max
Mitigation Ratio		
Mitigation / Out of Market		1.07

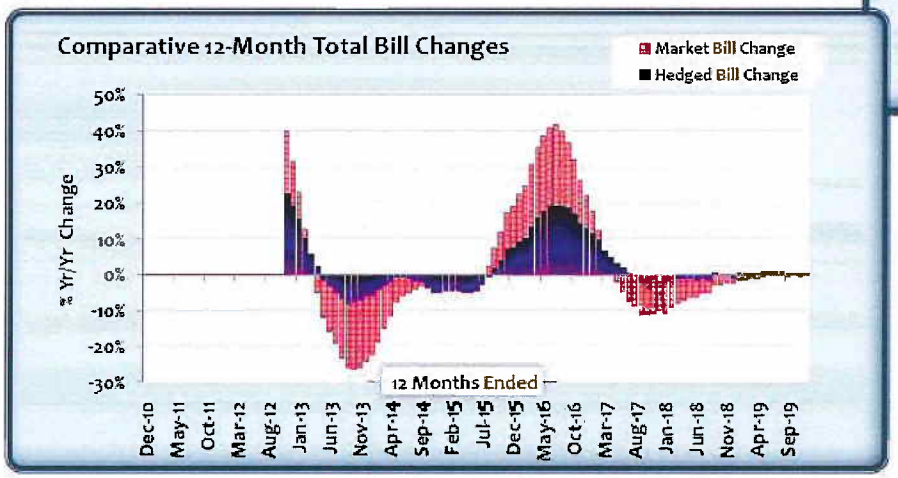
Strategy F

Summary of Path Results

path 582

Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months	Max Programmatic 15%	Boundary 3 116%	Value Target Yr 1 95%
path 582		Premiums Expended, ($ Mil.)	$9.98 Avg Yr	$19.11 Max Yr			
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio			
Increment		36 Months	0.6%				
Max Programmatic				15%			
Min @ Month 12				15%			
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year			
Percentage Options:	43%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio		
Boundary 1		110%	30%	115%	25%		
Boundary 2		114%	50%	119%	35%		
Boundary 3		116%	60%	121%	45%		
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max		
Value Target Yr 1		95%	120%	1%	50%		
Value Target Yr 2		95%	120%	1%	50%		
Value Target Yr 3		0%	120%	1%	50%		





Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	255,367,146	22.7% Max
Mitigation	$ 242,845,656	19.1%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 88,171,002
% of Average Annual Bill @ Market		6.2% Max
Mitigation Ratio		
Mitigation / Out of Market		3.07

Summary of Path Results

path 532

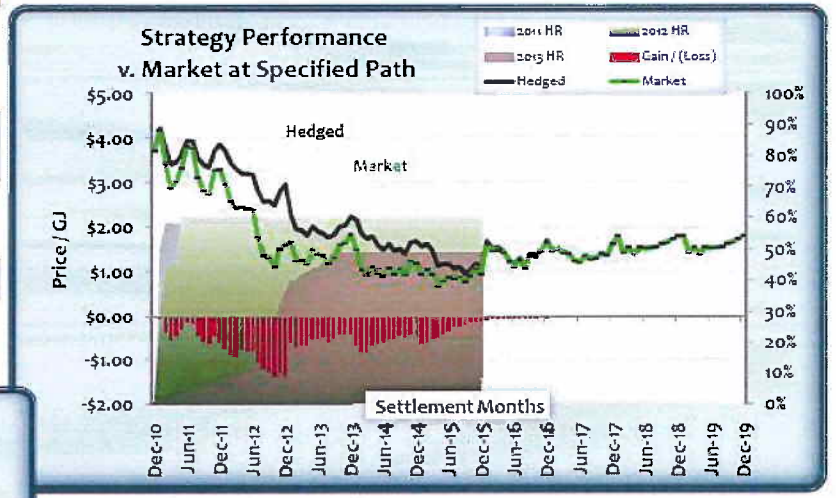
Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months
path 532		Premiums Expended, ($ Mil.)	$3.21 Avg Yr	$15.43 Max Yr

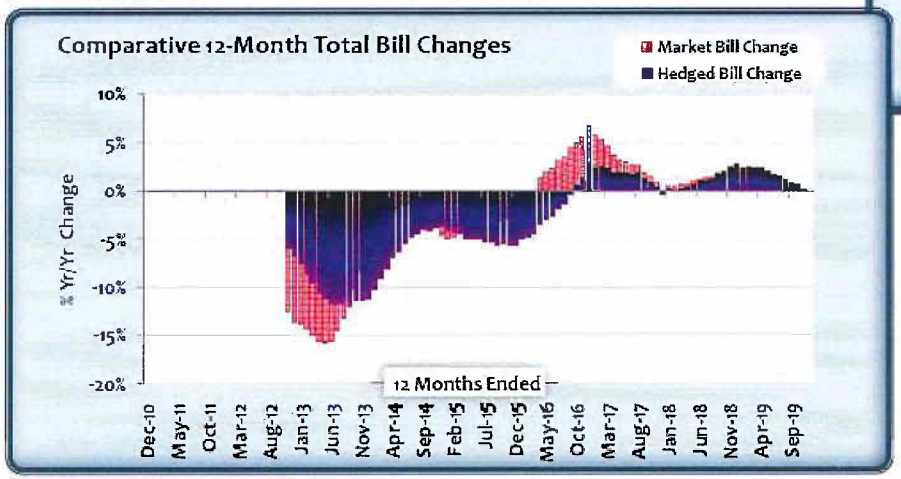
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	43%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	25%
Boundary 2		114%	50%	119%	35%
Boundary 3		116%	60%	121%	45%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	21,815,257	2.7% Max
Mitigation	$ 29,801,804	4.0%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 108,573,155
% of Average Annual Bill @ Market		12.8% Max
Mitigation Ratio		
Mitigation / Out of Market		0.31

Summary of Path Results

path 515

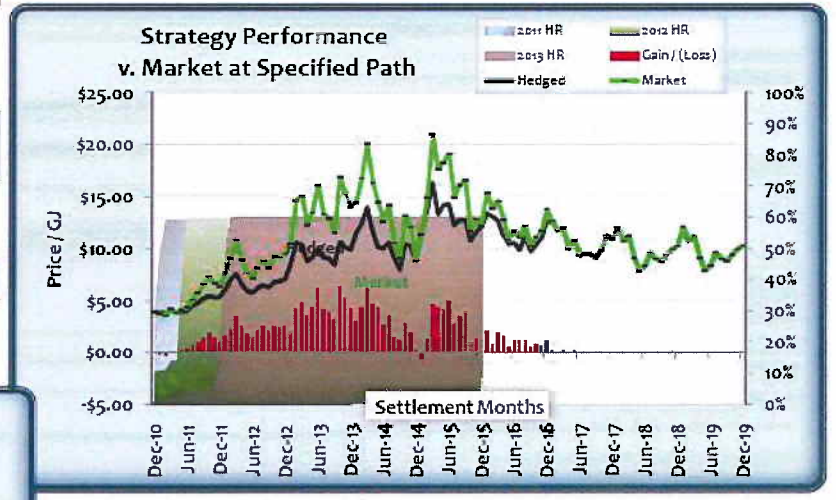
Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months
path 515		Premiums Expended, ($ Mil.)	$14.64 Avg Yr	$31.81 Max Yr

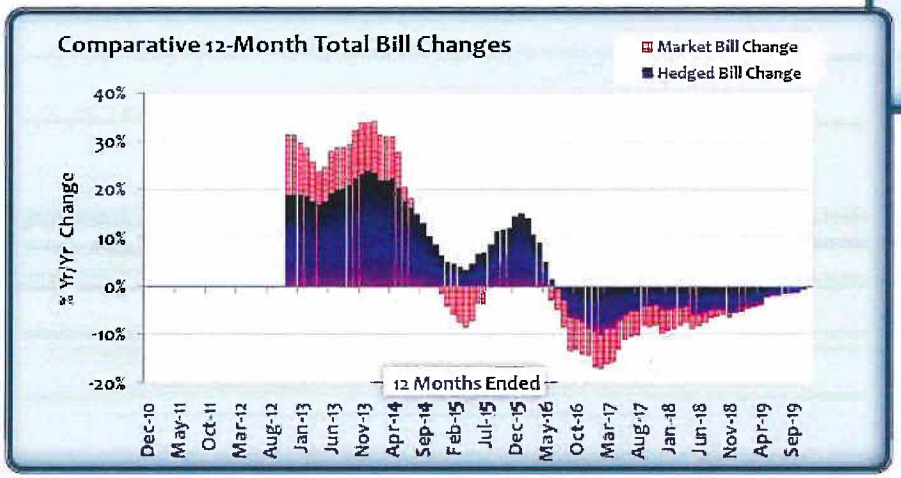
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	43%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	25%
Boundary 2		114%	50%	119%	35%
Boundary 3		116%	60%	121%	45%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	320,942,869	23.5% Max
Mitigation	$ 230,962,007	10.5%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

Summary of Path Results

path 150

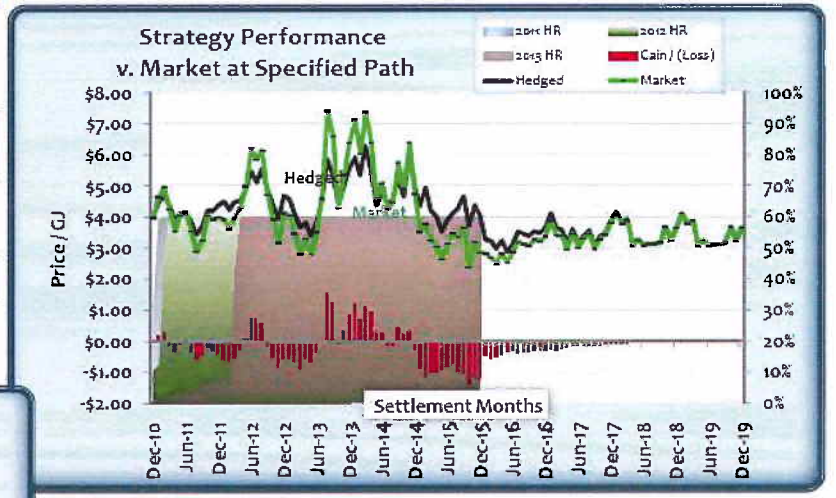
Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months
path 150		Premiums Expended, ($ Mil.)	$7.48 Avg Yr	$15.32 Max Yr

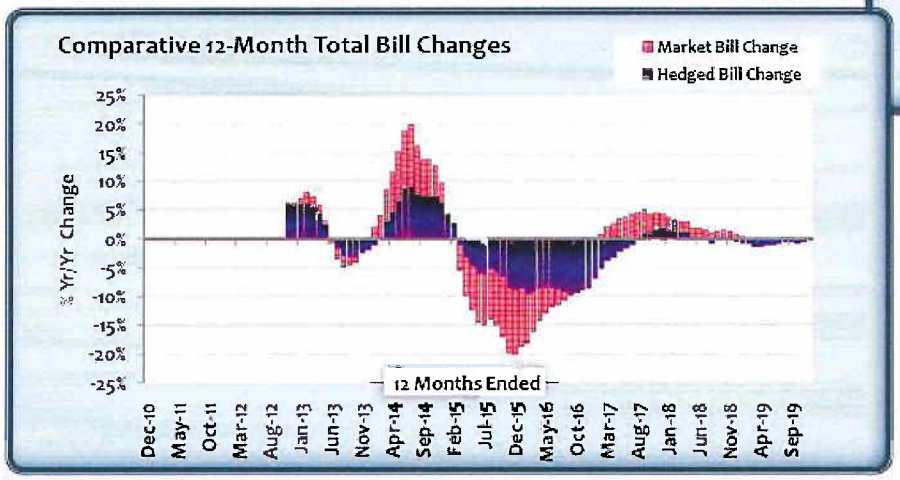
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	0.6%	
Max Programmatic				15%
Min @ Month 12				15%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	43%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		110%	30%	115%	25%
Boundary 2		114%	50%	119%	35%
Boundary 3		116%	60%	121%	45%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	120%	1%	50%
Value Target Yr 2		95%	120%	1%	50%
Value Target Yr 3		0%	120%	1%	50%

Max Programmatic 15% Boundary 3 116% Value Target Yr 1 95%





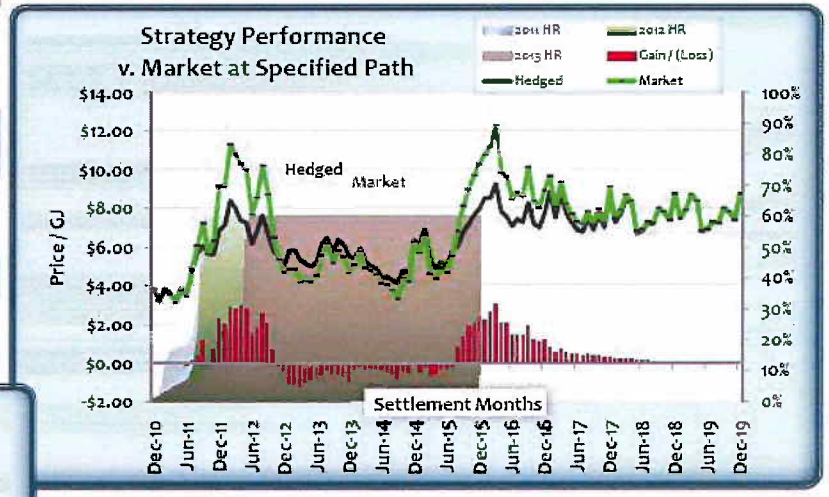
Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	99,996,264	8.9% Max
Mitigation	$ 115,067,983	11.0%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 105,365,177
% of Average Annual Bill @ Market		9.7% Max
Mitigation Ratio		
Mitigation / Out of Market		1.13

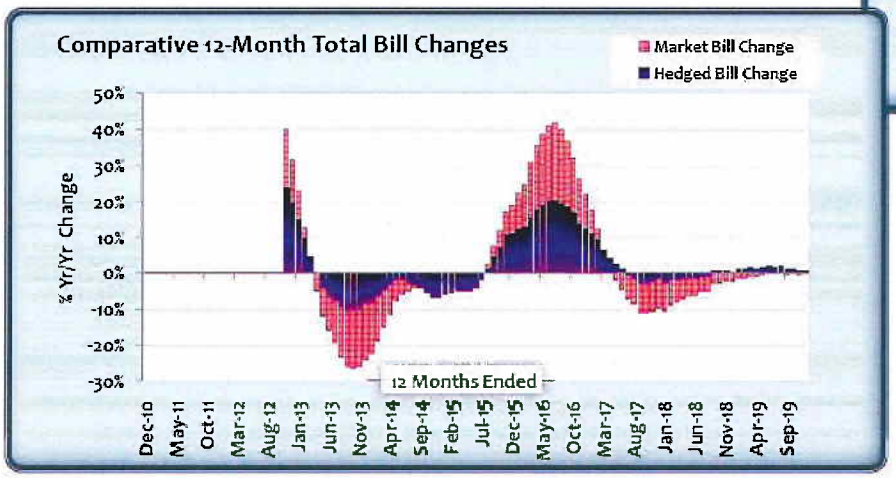
Strategy G

Summary of Path Results

path 582

Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months	Max Programmatic 25%	Boundary 3 135%	Value Target Yr 1 95%
path 582		Premiums Expended, ($ Mil.)	$13.13 Avg Yr	$37.87 Max Yr			
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio			
Increment		36 Months	1.0%				
Max Programmatic				25%			
Min @ Month 12				25%			
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year			
Percentage Options:	71%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio		
Boundary 1		120%	35%	120%	33%		
Boundary 2		130%	50%	130%	40%		
Boundary 3		135%	60%	135%	45%		
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max		
Value Target Yr 1		95%	150%	1%	50%		
Value Target Yr 2		95%	150%	1%	50%		
Value Target Yr 3		0%	150%	1%	50%		





Average Commodity Market Value		$ 6.99
Average Annual Bills at Market		$ 1,414,316,104
Worst 12-Month Total Bill Increase		
At Market	498,212,802	41.8% Max
As Hedged	269,790,669	23.6% Max
Mitigation	$ 228,422,134	18.2%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 78,790,410
% of Average Annual Bill @ Market		5.6% Max
Mitigation Ratio		
Mitigation / Out of Market		3.26

Summary of Path Results

path 532

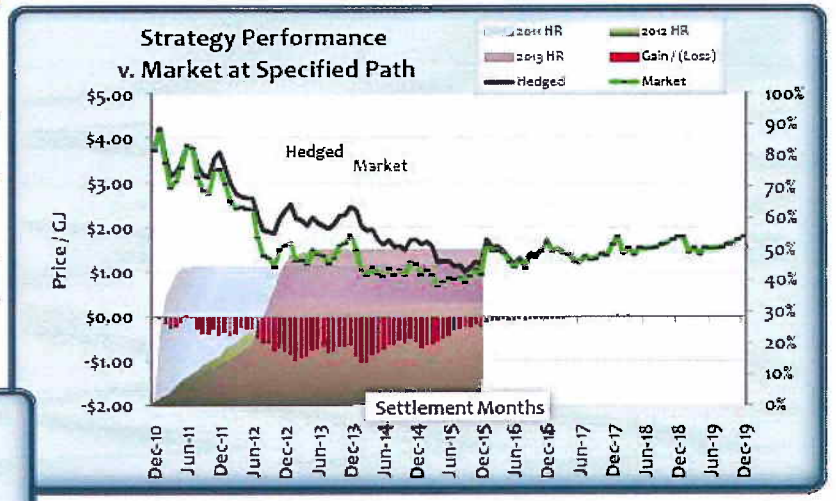
Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months
path 532		Premiums Expended, ($ Mil.)	$1.23 Avg Yr	$9.41 Max Yr

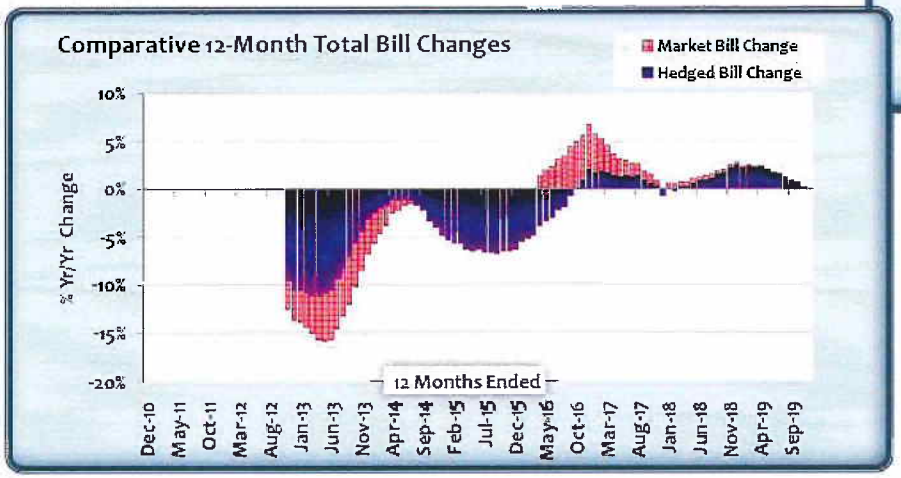
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	10%	
Max Programmatic				25%
Min @ Month 12				25%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	71%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		120%	35%	120%	33%
Boundary 2		130%	50%	130%	40%
Boundary 3		135%	60%	135%	45%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	150%	1%	50%
Value Target Yr 2		95%	150%	1%	50%
Value Target Yr 3		0%	150%	1%	50%

Max Programmatic 25% Boundary 3 135% Value Target Yr 1 95%





Average Commodity Market Value		$ 1.64
Average Annual Bills at Market		$ 847,680,622
Worst 12-Month Total Bill Increase		
At Market	51,617,061	6.7% Max
As Hedged	20,390,439	2.5% Max
Mitigation	$ 31,226,622	4.2%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 82,650,343
% of Average Annual Bill @ Market		9.8% Max
Mitigation Ratio		
Mitigation / Out of Market		**0.43**

Summary of Path Results

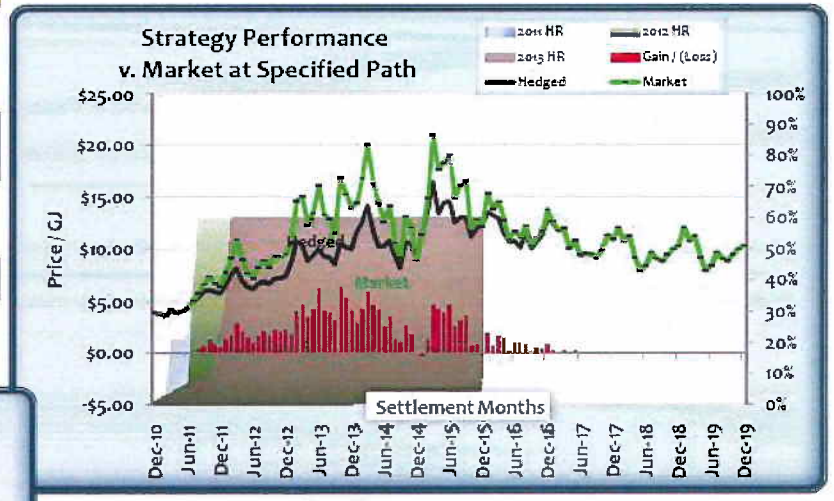
path 515

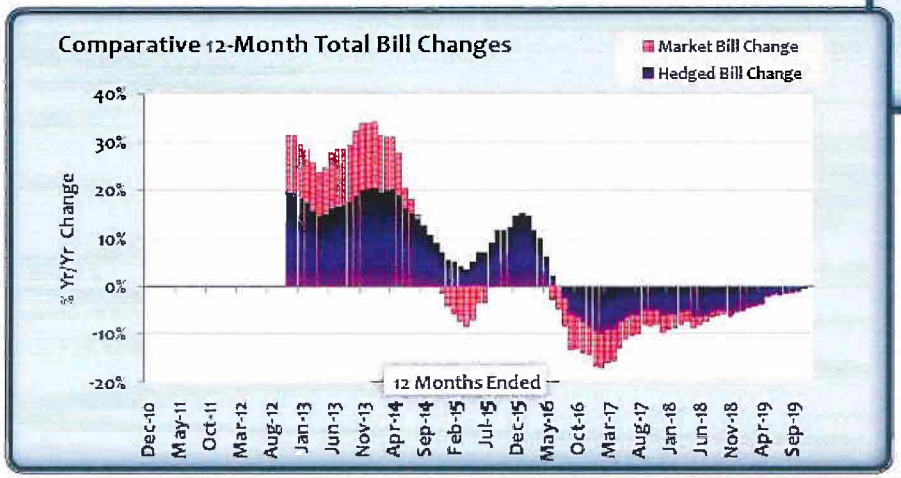
Strategy		Max Overall Hedge Ratio/Horizon	60%	36 months
path 515		Premiums Expended, ($ Mil.)	$22.03 Avg Yr	$48.34 Max Yr
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio
Increment		36 Months	1.0%	
Max Programmatic				25%
Min @ Month 12				25%

Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year	
Percentage Options:	7%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio
Boundary 1		120%	35%	120%	33%
Boundary 2		130%	50%	130%	40%
Boundary 3		135%	60%	135%	45%

Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max
Value Target Yr 1		95%	150%	1%	50%
Value Target Yr 2		95%	150%	1%	50%
Value Target Yr 3		0%	150%	1%	50%

Max Programmatic 25% Boundary 3 135% Value Target Yr 1 95%





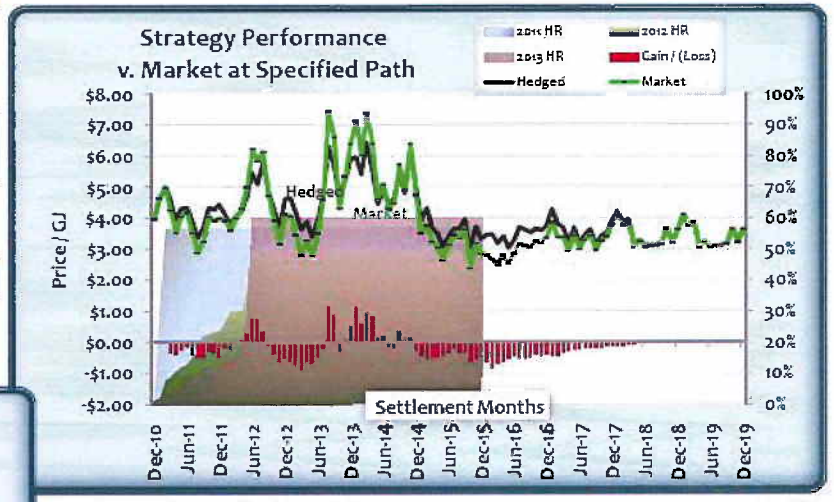
Average Commodity Market Value		$ 10.96
Average Annual Bills at Market		$ 1,834,066,556
Worst 12-Month Total Bill Increase		
At Market	551,904,876	34.0% Max
As Hedged	290,850,406	20.4% Max
Mitigation	$ 261,054,470	13.7%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 0
% of Average Annual Bill @ Market		0.0% Max
Mitigation Ratio		
Mitigation / Out of Market		NA

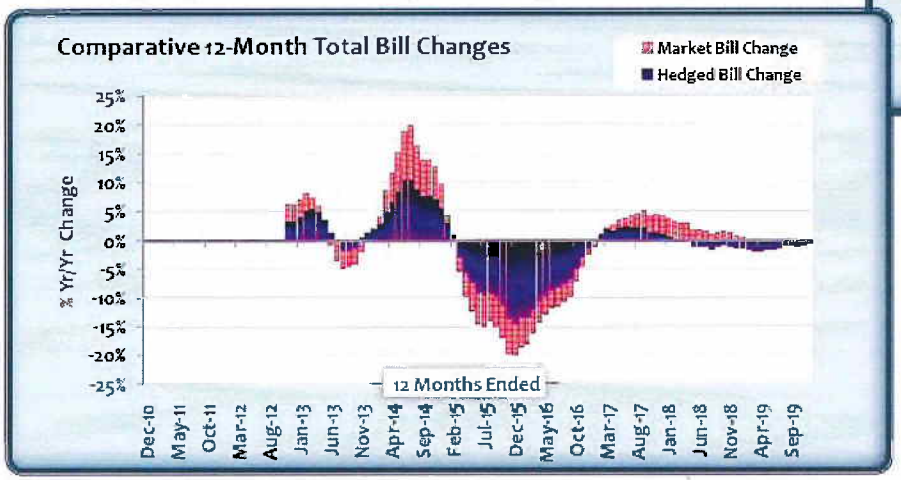
Summary of Path Results

path 150

Strategy						
path 150		Max Overall Hedge Ratio/Horizon		60%	36 months	
		Premiums Expended, ($ Mil.)		$7.78 Avg Yr	$19.73 Max Yr	
Programmatic Rules	1 (1=On)	Horizon	Increment	Hedge Ratio		
Increment		36 Months	1.0%			
Max Programmatic				25%		
Min @ Month 12				25%		
Defensive Rules	1 (1=On)	1st Calendar Year		2nd Calendar Year		
Percentage Options:	7%	Price Tolerance	Max Ratio	Price Tolerance	Max Ratio	
Boundary 1		120%	35%	120%	33%	
Boundary 2		130%	50%	130%	40%	
Boundary 3		135%	60%	135%	45%	
Value Rules	1 (1=On)	Price	Risk/Reward Criteria	Increment	Cumulative Max	
Value Target Yr 1		95%	150%	1%	50%	
Value Target Yr 2		95%	150%	1%	50%	
Value Target Yr 3		0%	150%	1%	50%	

Max Programmatic 25% Boundary 3 135% Value Target Yr 1 95%





Average Commodity Market Value		$ 3.88
Average Annual Bills at Market		$ 1,085,466,256
Worst 12-Month Total Bill Increase		
At Market	215,064,247	19.8% Max
As Hedged	116,965,010	10.4% Max
Mitigation	$ 98,099,237	9.5%
Max 12-Month Out-of-Market Variance		
$CDN Million		$ 60,665,019
% of Average Annual Bill @ Market		5.6% Max
Mitigation Ratio		
Mitigation / Out of Market		1.69

End of Report

Appendix B
DRAFT ORDER

ERICA M. HAMILTON
COMMISSION SECRETARY
Commission.Secretary@bcuc.com
web site: http://www.bcuc.com

BRITISH COLUMBIA UTILITIES COMMISSION

LETTER NO. L-XX-11

SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, B.C. CANADA V6Z 2N3
TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102
Log No. xxxx

DRAFT ORDER

VIA E-MAIL
Regulatory.Affairs@terasengas.com

February XX, 2011

Ms. Diane Roy
Director, Regulatory Affairs
Terasen Gas Inc.
16705 Fraser Highway
Surrey, BC V4N 0E8

Dear Ms. Roy:

Re: Terasen Gas Inc. ("Terasen Gas")
2011 Price Risk Management Plan (April 2011 – October 2014)

On January 27, 2011 Terasen Gas ("Terasen Gas") filed its Price Risk Management Plan ("2011 PRMP") Application for the period of April 2011 to October 2014. The Commission has reviewed the Application and as a result of that assessment, Terasen Gas is directed to implement the components as identified in the confidential Appendix A (Attached).

Yours truly,

Erica M. Hamilton
Commission Secretary

Confidential Attachment

CONFIDENTIAL

The Commission approves the following:

- Terasen Gas will maintain the primary objectives of improving the likelihood that natural gas remains competitive with other forms of energy, moderating the volatility of market gas prices and resultant rates for customers and reducing the risk of regional price disconnects.
- Terasen Gas will meet these primary objectives at a reasonable cost for customers.
- Terasen Gas will implement a price risk management program that is based on the following components:
  - Programmatic hedging to a maximum of 25% of the CCRA hedgeable volumes for the winter and summer periods consisting of fixed price swaps according to the predefined Hedging Implementation Schedule per Appendix A.
  - Defensive hedging in response to market conditions that increase the potential for prices to exceed certain tolerances in accordance with the defensive price targets and volumes described in Section 7.4 of the 2011 PRMP. Defensive hedges will be limited to a maximum of 35% of the CCRA hedgeable volumes for the winter and summer periods and include fixed price swaps and options. The use of options for defensive hedging will be limited to a maximum of 25% of the CCRA hedgeable volumes.
  - Value hedging in response to market conditions whereby Terasen Gas will hedge [redacted] with fixed price swaps if prices fall from current forward prices to the value price target (per Section 7.5 of the 2011 PRMP).
  - The combination of programmatic hedging, defensive hedging and value hedging will be limited to a maximum of 60% of the CCRA hedgeable volumes for the winter and the summer periods.
  - Basis swaps will be used to hedge up to 100% of the CCRA and MCRA Sumas price exposure (winter only).