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A. PREAMBLE

The improvement of budget stability and accuracy requires actions that enable The Regional Municipality of Peel to mitigate risks from volatile markets and achieve manageable Commodity costs. Price volatility on Commodities purchased by the Region presents both a budgeting challenge and a financial risk. Maintaining an active Commodity portfolio and risk management strategy requires constant market presence, the ability to make sound and timely purchasing decisions, and flexibility to move between fixed Hedges and Spot Markets instantaneously. The Energy Commodity Procurement Policy addresses these challenges and supports the financial objectives of the Region.

Commodity Price Hedging Agreements provide price stability and cost certainty by fixing some portion of the future Commodity price. It would enable the Region to secure favourable pricing for Commodity purchase commitments where other means, such as long-term contracts, are not practicable.

B. PURPOSE

The Energy Commodity Procurement Policy provides the guidelines and risk management framework for the supply of the Commodity procured through Price Hedging Agreements by The Regional Municipality of Peel. It establishes objectives, responsibilities, information-based decision making, processes and reporting requirements for the prudent use of Hedging Agreements; in accordance with *Municipal Act 2001, Ontario Regulation 653/05 (0.Reg. 653/05).*

C. SCOPE

All financial commitments for the purpose of fixing future prices through Commodity price Hedging Agreements, including related agreements that are entered into by the Region, its boards and subsidiaries, and by Regional staff responsible for the control, implementation, management and purchase of Hedging Agreements for energy Commodities.

D. DEFINITIONS

1. Commodity - shall be consistent with the definition of applicable legislation, and in the context of this Policy, shall refer to electricity and natural gas Commodities.

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2. Forward Markets - an exchange where Commodity price Hedging Agreements, such as those for electricity and natural gas, may be purchased or sold.
3. Hedge or Hedging Agreement - a financial commitment to acquire a specified quantity of the Commodity, at a specific fixed price or fixed range of prices, at some future point or period in time.
4. Hedge Volume – refers to the amount or quantity of energy in kilowatt-hours (kWh) or megawatt-hours (MWh) for electricity and in cubic meters (m^3) or gigajoules (GJ) for natural gas to be procured under a Price Hedging Agreement.
5. Municipal Act, 2001 - the *Municipal Act, 2001* S.O. 2001, Chapter 25 and regulations thereunder, as amended or replaced from time to time.
6. Other Commodities - refers to commodities other than electricity and natural gas that will be subject to Commodity price Hedging Agreements, duly approved by Regional Council, including, but not limited to chemicals and fuel oils.
7. Policy-refers to the Energy Commodity Procurement Policy.
8. Region or Regional Corporation or Region of Peel - refers to The Regional Municipality of Peel.
9. Regional Council or Council - refers to the Council of the Regional Municipality of Peel.
10. Risk Appetite - The level of uncertainty an organization is willing to assume in the pursuit of its objectives and outcomes.
11. Risk Tolerance - the limit of the organization's capacity for taking risks.
12. Target Prices - the unit price of the Commodity, such as electricity prices in dollars per kilowatt-hour ($/kWh) or dollars per megawatt-hour ($/MWh), or natural gas prices in cents per cubic meter (cents/m^3) or dollars per gigajoule ($/GJ), that the Region would be willing to transact Hedging Agreements in the Forward Markets, at or below the Target Prices.
13. Spot Market - refers to a deregulated, open and competitive Commodity market, such as the electricity and natural gas market.
14. Supplier, Vendor, Agent or Consultant - refers to an entity(ies) or organization(s) acting on behalf of the Region to provide advice on Forward Markets, pricing and Hedging strategy, and/or are duly licensed by the Ontario Energy Board to execute Commodity Hedging Agreements and transportation agreements and transactions, and/or provide distributor consolidated billing services for energy.

E. OBJECTIVES OF THIS POLICY

The primary objectives of the Energy Commodity Procurement Policy are as follows, in the order of their priority:

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1. **To adhere to legislative or statutory requirements -** A Commodity price Hedging Agreement may only be undertaken by the Region if the agreement is in compliance with the relevant provisions of the *Municipal Act, 2001,* and all implementing rules and regulations thereunder.
2. **To promote financial flexibility -** The Commodity price Hedging program will be managed in such a manner consistent with other management and financial objectives in efforts to support budget stability for the Region.
3. **To maximize procurement opportunities -** The Commodity price Hedging Agreement is a mechanism for alignment to the Region's Risk Appetite, adapting to the volatility in the Commodity markets, by establishing appropriate levels of certainty for future prices, without compromising the other Policy objectives.

F. AUTHORIZED COMMODITIES FOR PRICE HEDGING

For purposes of this Policy, Commodities that may be subject to Hedging Agreements are as follows:

i. Electricity
ii. Natural Gas

Other Commodities used by the Region may be procured through Commodity Price Hedging Agreements in accordance with this Policy, subject to approval by Regional Council.

G. POLICY

1. Applicable By-Laws, Legislation and Regional Strategies

Regional staff decisions, strategies and actions under this Policy shall be governed, guided by and in compliance with the following:

i. Ontario Regulation 653/05 (Debt-Related Financial Instruments and Financial Agreements), with · regards to Commodity Price Hedging Agreements;
ii. F35-00 Region of Peel Procurement By-law 30-2018 and any amendments thereof;
iii. L00-01 Execution of Documents By-Law 32-2017 of the Region of Peel;
iv. Region of Peel's Energy and Environment Sustainability Strategy dated June 20, 2007 and any amendments thereof.

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2. Use and Award of Commodity Price Hedging Agreements

Pursuant to Ontario Regulation 653/05, The Regional Municipality of Peel will consider entering into Commodity price Hedging Agreements as a means of fixing, directly or indirectly, or enabling the Region to fix the price or range of prices to be paid by the Region for the future delivery of some or all of the Commodity or the future cost of the municipality of an equivalent quantity of the Commodity, as well as long-term contracts for Commodity transportation, delivery and/or storage to achieve the goal of this Policy and ensure stability and cost effectiveness of supply.

Contracts with Vendors or Suppliers for Commodity Hedging will be awarded on a competitive basis in accordance with the Region's Purchasing By-law and procedures. Participation in competitive bids for Commodity Hedging shall be limited to vendors or suppliers that have the appropriate and valid licenses issued by the Ontario Energy Board.

3. Establishing Energy Commodity Hedging Procurement Based on Risk Tolerance

The Hedge Volume for each type of Commodity for each period or calendar year shall be determined in accordance with the Energy Commodity Risk Framework (Appendix "A") which shall be in alignment with the Region's Risk Appetite as approved by Regional Council. The said framework shall identify the parameters in the energy markets that impact future Commodity price volatility. Market intelligence may be provided by third party market consultants with expertise in local, North American and global energy markets to be used in analyzing future or forward market condition.

4. Partnership Agreements with Other Public Sector Entities

The Region may enter into or be required to enter into partnership agreements within the public sector if it is anticipated that such agreements can achieve better financial benefit to the Region through bulk purchases. Partners may include other municipalities, universities, schools, hospitals, or buying groups organized by municipal or housing organizations such as the Housing Services Corporation (HSC) or the Association of Municipalities of Ontario (AMO).

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In the latter case, the "buying group" may act as an Agent for the Region, including executing Hedge transactions on behalf of the Region, provided they follow specific parameters established through section G.(3) above. Except for prescribed agreements required for certain housing accounts as provided for under HSC.

5. Staff Energy Commodity Working Group

The Energy Commodity Working Group (Working Group) will ensure the stewardship and effective governance of the Commodity Hedging Agreements, procurement practices to maintain regulatory compliance, financial flexibility, and maximize procurement opportunities. The Working Group shall also provide guidance and direction on the financial, demand, and market risk tolerance that the Region is willing to take or absorb with regard to electricity and natural gas procured under a price Hedging program, to ensure these are aligned with the risk appetite established by Council.

The Working Group shall be chaired by the Treasurer and Director of Corporate Finance and shall be composed of the Director of Treasury Services, , the Director of Procurement, the Manager, Peel Living FSU and the Manager of Energy Finance (in charge of energy procurement and planning). The Region's Executive Leadership Team (ELT) may appoint additional members if deemed necessary or may establish additional working groups for Other Commodities.

6. Annual Report to Council on Price Hedging by the Treasurer

Regional Council shall be informed, in compliance to Ontario Regulation 653/05, through the Annual Treasury Report to Council, if the actions taken under this Policy comply with regulations and are prudent and necessary as they relate to the procurement of Hedges for Commodities and the management of associated risks. The report shall contain information on the completed transactions based on the multi-year energy hedging strategy, any related decisions on hedging, and non-compliance and corrective actions if any.

7. Regional Facilities Operated by Third Parties

Region owned facilities to be operated by external or third parties shall have risk assessments completed by RPAM staff to determine which party would better handle the risks of energy procurement. Should the assessment show that the

Region is in better position to handle the risk, provisions in the agreements or contracts with said third parties should stipulate that the procurement of electricity and natural gas will be the responsibility of the Region.

8. Control Measures for Market and Demand Risks

i. *Market Risk* - there may be opportunity costs if the price of the Commodity falls below the purchase price in a Hedging agreement. It is a case where the Region could have benefited from the lower cost of unhedged Commodity had the Region not entered into a Hedging Agreement.

While staff involved with the recommendation of a Commodity price Hedging Agreement will be expected to monitor and consider the prevailing trend in market conditions and price of the Commodity, the key benefit of the Hedging Agreement is to ensure financial predictability for the Region. The impending financial loss from a price drop in the Spot Market may be offset by blending existing Hedging agreements with lower price Hedges where available, or by lowering the percentage to be Hedged for the Commodity, in accordance with the Energy Commodity Risk Framework. Conversely, if the Spot Market price of the Commodity increases, the Region would realize a net gain on the Hedging Agreement.

ii. *Demand Risk* - the Region may use less of the Commodity than forecasted, leading to the possibility of excess Hedging. To mitigate this risk, the Working Group shall stipulate the maximum percentage of the forecast demand to be Hedged for each period or calendar year, based on the Energy Commodity Risk Framework. Volume adjustments may be made by selling back the excess Hedge Volume to the market or to the Supplier/s of the Commodity. Conversely, should the Region consume more of the commodity than what was transacted based on forecasts, volume adjustments may be made by purchasing from the Commodity market to make up for the deficit.

9. Control Measures for Financial Risks

i. *Credit Risk or "Counterparty Risk"* - exist in the event that the amounts involved in the transactions in the financial Hedge Agreement has risen and the counterparty can no longer fulfill the terms of the agreement. Although default is considered a remote risk, risk control measures will be undertaken prior to entering into a financial Hedging Agreement. Risk control measures shall include, but are not limited to, the following:

a. Credit exposure limits for the counterparty based on credit ratings and on the degree of regulatory oversight and regulatory capital; if the counterparty's credit rating falls below BBB (S&P), Baa3 (Moody's) and/or BBB (low) (DBRS), the Region may demand Adequate Assurance of Performance. "Adequate Assurance of Performance" shall mean sufficient security in form, amount and for the term reasonably acceptable to the Region, and/or being able to provide an unconditional irrevocable letter of credit or prepayment;
b. In case where the counterparty has no credit rating, a guarantee from the parent corporation (provided the parent corporation meets the credit rating requirements above).
c. Ensuring on-going monitoring with respect to agreements.

ii. *Competitive Price Risk* - a competitive price Hedge Agreement may not be available in the market, or available only at an undesirable price which is beyond the Target Price set by the Region. Staff will continuously monitor the market and may consider other options such as resetting of Target Prices based on prevailing market conditions, purchasing on the "Spot Market", or placing financial agreements with multiple counterparties.

10. Standard of Care

All officers and employees responsible for Commodity price Hedging Agreements will follow the standard of care identified in this Policy.

i. **Ethics and Conflicts of Interest**

All officers and employees involved in the Commodity price Hedging process are expected to abide by the Region's Code of Conduct. In particular they shall:

a) Refrain from personal business activity that could conflict with the proper execution and management of the Commodity price Hedging program, or that could impair their ability to make impartial decisions;
b) Disclose any material interests in financial institutions related to Commodity Price Hedging with which they conduct business;

c) Disclose any personal financial/investment positions that could be related to the performance of their Commodity price Hedging duties; and
d) Not undertake personal financial transactions with the same individual with whom business is conducted on behalf of the Region.

ii. **Commodity Price Hedging Agreements**

Commodities to be supplied under Hedging Agreements will be acquired on a competitive basis. The Region may enter into a financial agreement with one or more institutions where apportioning the total of the Hedge Volume is expected to confer a financial advantage.

iii. **Delegation of Authority**

The Treasurer and Director of Corporate Finance will have responsibility for directing/ implementing the activities of the Commodity Price Hedging program, as well as the establishment of procedures consistent with this Policy. Such procedures shall include explicit delegation of authority to persons responsible for Commodity Price Hedging activities. No person shall be permitted to engage in a Commodity Price Hedging activity except as provided for under the terms of this Policy. The Treasurer and Director of Corporate Finance will be responsible for all activities undertaken and shall establish a system of controls to regulate the activities of staff. Notwithstanding, the Region may delegate specific authority to an "Agent" of the Region as contemplated under section G.(4.) of this Policy. The authority delegated will be strictly governed by the terms of an agency contract that will be approved by the Treasurer and Director of Corporate Finance, authorized under the Document Execution By-Law.

iv. **Requirements for Outside Advice**

Regional staff will be expected to have sufficient knowledge to prudently evaluate standard financial agreements or related contracts. However, the Region may obtain outside energy market intelligence, financial and/or legal advice as necessary.

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v. **Financial Payments**

The nature of financial agreements requires that financial transactions, whether disbursements or receipts, will be made to or from financial institutions from time to time during the term of an agreement. Staff will apply the same level of diligence to these transactions as would be expected under the normal operating procedures of the Region. Further, these transactions will be fully disclosed in the annual reporting required under section G. (6.) of this Policy.

H. RESPONSIBILITIES

1. Energy Commodity Working Group

i. Review on an annual basis the status of procurement of forward Hedge Volumes for each Commodity and actual performance of Hedges.
ii. Review the implementation of the risk-based approach to financial planning and management related to electricity, natural gas, and Other Commodity Hedge procurement programs, thus, ensuring that program objectives and Risk Tolerances are reflected in Hedging procurement practices.
iii. Review the implementation of established risk management framework which assists in the monitoring and management of Hedging Agreements.
iv. Review and recommend proposed changes to the Energy Commodity Procurement Policy and the Energy Commodity Risk Framework.

2. Treasurer and Director of Corporate Finance

i. Responsible for all administrative matters, as well as direct and implement activities pertaining to fix-price Hedging of electricity and natural gas Commodities under a price Hedging program.
ii. Approve/execute contracts and routine documents for Hedging transactions in accordance with the Region's Document Execution Bylaw required for the purpose of purchasing, securing, transporting and/or delivering Commodities covered under a price Hedging program.
iii. Establish procedures consistent with this Policy, which shall include explicit delegation of authority to persons responsible for Commodity price Hedging activities.
iv. Review the status and performance of current Hedge Agreements, a list of all active Hedging Agreements to be used at some future time, changes in

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Commodity Hedging strategies, philosophies, Policies or organization, and other issues or matters related to Hedging.

v. Review any contingent payment obligation under a Commodity price Hedging Agreement that would result in a material impact for the Region, including agreement termination provisions, variations in the Commodity price Hedging Agreement payment terms, contingent payment obligations, equipment loss, equipment replacement options, guarantees and indemnities.

vi. Procure the services of Vendors, Suppliers, Consultants and/or Agents that can provide market research, distributor consolidated billing services and market intelligence.

vii. Review and approve the multi-year energy procurement strategy, and its annual updates, containing the forward market Target Prices and proportion of Hedged Volumes for each Commodity in alignment with the Policy and the Region's established Energy Commodity Risk Tolerance.

viii. In the absence of the Treasurer and Director of Corporate Finance, the Deputy Treasurer appointed by the Region is authorized to approve transactions and documents under this Section H.2.

3. Director of Treasury Services

i. Present to Council a detailed report on the status of the Hedging Agreements for electricity, natural gas and Other Commodities, in accordance with O.Reg.653/05.

I. PROCEDURES

The Energy Commodity Risk Framework (Appendix "A") outlines the procedures and framework related to how the Commodities are procured in accordance with this Policy and in alignment to the Region's risk tolerance.

APPROVAL SOURCE:	Regional Council
ORIGINAL DATE:	December 21, 2015
LAST REVIEW DATE:	June 12, 2020
LAST UPDATE:	April 16, 2016
EFFECTIVE DATE:	
RESPONSIBILITY:	Energy Finance, Corporate Finance, Finance

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APPENDIX "A"

Energy Commodity Risk Framework

The Energy Commodity Risk Framework is created to take into account energy market conditions assessed by staff and the Region's financial and economic risk appetite set by Council. The Energy Commodity Risk Framework (Risk Framework) will inform the development of the Multi-Year Energy Procurement Strategy of the Region, updated annually based on forward market conditions and the Region's risk appetite, and associated procurement decisions in the future. This framework forms part of the Energy Commodity Procurement Policy.

1. Background

The deregulation of the energy sector in Ontario has resulted in electricity and natural gas prices being set by market conditions, leading to volatility in spot prices (current prices), as well as in the prices of forward markets. With energy commodities being a significant cost in the Region's operating budget, there was a need to have some predictability in energy prices. In June 2007, Council approved the "Energy Procurement Strategy of the Region of Peel", as an overarching plan to manage and mitigate the risks associated with competitive energy markets. In April of 2016, Council also approved the "Energy Commodity Procurement Policy" which outlines the processes and guidelines in the strategic procurement of energy commodity, which was complemented by the approval in September 2016 of the "Energy Commodity Risk Framework" by Council Risk and Audit Committee. The core component of the Strategy, Policy and Risk Framework is the use of energy hedging agreements which help manage future energy prices. Entering into a hedging agreement is a means to fix the price or range of prices to be paid by the Region for the future delivery of some or all of the electricity or natural gas commodities.

2. Purpose

Establishing an Energy Commodity Risk Framework allows the Region to enhance transparency and promote a shared understanding of risk. This in turn supports staff in setting energy hedge targets that consider market conditions and the Region's financial and economic risk appetite.

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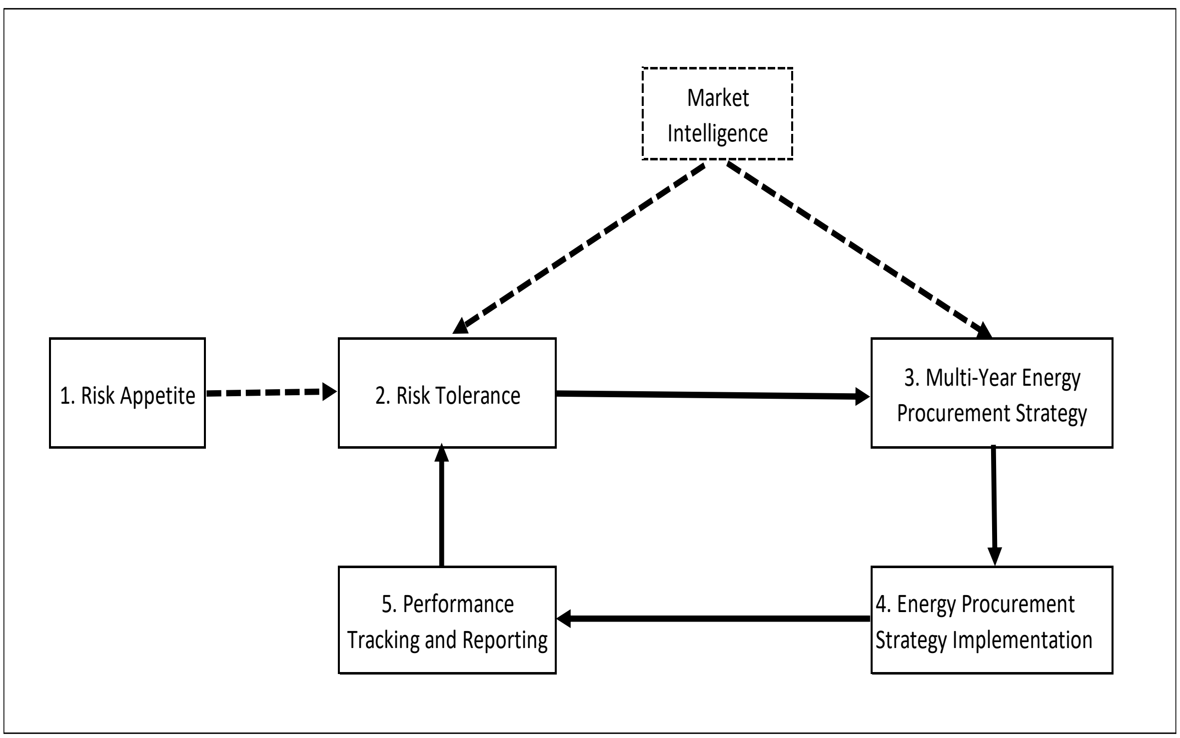
3. Energy Commodity Risk Framework

The future Region of Peel Energy Procurement Strategy should be informed by the Region's risk appetite, energy market conditions and the impact of energy costs. The essential input to the Risk Framework is the Region's risk appetite for financial and economic matters as approved by Regional Council from time to time.

The financial and economic risk appetite, in addition to market intelligence, are in turn the primary inputs that will guide decision making with respect to energy procurement, as contained in the Multi-Year Energy Procurement Strategy, which is updated on an annual basis by staff and approved by the Treasurer and Director of Corporate Finance. Figure 1 depicts the energy procurement business cycle and its relationship with these primary inputs.

Figure 1: Energy Procurement Business Cycle



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I. Establishing the Energy Risk Tolerance

To ensure transparency and a shared understanding of risk, the following Energy Commodity Risk Framework shall be implemented to support future decisions on energy hedges:

i) Market Conditions Risk Evaluation

a. Market Intelligence

Staff shall gather market intelligence of current and future market conditions for both electricity and natural gas commodities. Such market intelligence is obtained through research by staff and/or through third party energy market consultants or experts. Parameters or "Risk Factors" that impacts forward market price volatility are determined, such as but not limited to the following:

a.1 For Electricity Risk Factors
- Demand – Economic growth related
- Demand – Weather related
- Generator fuel risks – gas-fired peaking plants
- Impact of renewable generation
- Generator availability – nuclear and/or hydro
- Cap and trade cost impacts
- Global adjustment costs
- Government energy policies/legislation
- RPP rates- competing goals

a.2 For Natural Gas Risk Factors
- Demand – Gas-fired power generation
- Demand – Industrial loads
- Demand – LNG exports outside North America
- Demand – Exports to Mexico
- Supply – Rig counts
- Gas in storage – End of season balance
- Economy
- Canadian Dollar - Foreign exchange
- 5A Index Volatility and Gas Pipeline Transport Cost

The above listed Risk Factors may change from time to time based on analysis and evaluation by staff and new information from third party energy market intelligence consultants or experts. Through market intelligence information, the likelihood of occurrence and the impact to price volatility for each future year shall be determined on a monthly basis for each of the Risk Factors. The weight factor of how much each Risk Factor contributes to the whole price volatility risks shall also be established.

b. Market Condition Risk Evaluation Matrix (Risk Matrix)
The Region shall use the Market Condition Risk Evaluation Matrix (refer to Attachment I: Market Condition Risk Evaluation Matrix) to determine the "Market Attributes" for each future calendar year. Each of the Risk Factors shall be evaluated and scored based on the following:

Likelihood of Occurrence:

Score	Evaluation
1	Rare or none at all
2	Unlikely
3	Possible
4	Likely
5	Almost Certain

Impact to Price Volatility:

Score	Evaluation
1	Insignificant impact
2	Low
3	Medium
4	High
5	Severe

Based on the evaluation on likelihood and impact of occurrence, each Risk Factor is plotted on the Likelihood-Impact severity chart of the Risk Matrix, and the weighted scores of each of the Risk Factors are calculated (Likelihood score x Impact Score x Weight Factor). The total weighted score determines the Market Attribute for the Calendar Year using the following Table 1:

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Table 1: Market Attribute Table

MARKET ATTRIBUTE	TOTAL WEIGHTED SCORE
RELATIVELY STABLE MARKET	0 TO 8
MODERATE VOLATILITY	OVER 8 TO 17
HIGH VOLATILITY	OVER 17 TO 25

The resulting Market Attribute together with the Region's approved Risk Appetite shall serve as input to determining the level of hedging for the future calendar year being evaluated.

ii) An Energy Procurement Risk Tolerance Table: The table will be used to align future natural gas and electricity market conditions (Market Attributes) assessed by staff with the Region's financial and economic risk appetite set by Council (See Table 2 and 3). Each of the future market conditions (i.e. stable, moderate, and volatile), have risk tolerance ranges for the respective risk appetites.

Market condition findings (refer to Attachment I: Market Conditions Risk Evaluation Matrix) will determine what future market conditions the Region should be planning for with respect to its energy procurement. In turn, this will help determine the Region's risk tolerance within the Council endorsed risk appetite (See Table 2 and 3). It should be noted that changes in market conditions will result in shifts in the hedge targets within the three established risk tolerance ranges (Example: Table 2 moderate risk appetite has three risk tolerances (Stable, moderate and volatile) that range from 35 per cent to 65 per cent). Changes in risk appetite will require Council's direction.

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Table 2: Energy Procurement Risk Tolerance Table: Natural Gas

Risk Appetite (Council)	Market Risk Tolerance (Staff-Market Attribute)		
	Stable market and low future spot prices	**Moderate** market volatility and future spot prices	**Volatile** market and high future spot prices
Low	65-75%	75-85%	85-100%
Moderate	35-45%	45-55%	55-65%
High	0-15%	15-25%	25-35%

The electricity hedge range below has been capped at 30 per cent due to the Provincial Global Adjustment which limits the Region's exposure and control over a significant portion of the electricity rate. In the current market an electricity hedge greater than 30 per cent would be redundant.

Table 3: Energy Procurement Risk Tolerance Scale: Electricity

Risk Appetite (Council)	Market Risk Tolerance (Staff-Market Attribute)		
	Stable market and low future spot prices	**Moderate** market volatility and future spot prices	**Volatile** market and high future spot prices
Low	20%	20-25%	25-30%
Moderate	10%	10-15%	15-20%
High	0%	0-5%	5-10%

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II. Multi-Year Energy Procurement Strategy

The annual percentages of hedges for both electricity and natural gas determined through the established risk tolerances in Section I above shall inform a Multi-Year Energy Procurement Strategy (the Strategy) which shall be developed for the Region. This Strategy shall cover at least a five (5) years which includes the current year and four (4) succeeding years.

The Strategy shall establish the energy hedge transactions recommended to be made for multiple years into the future. All hedges needed for the immediate succeeding year shall be procured during the current year. The hedges for three (3) remaining future years may be procured in smaller layers as determined by staff so these can take advantage of good pricing opportunities.

The strategy shall establish the Target Prices for both electricity and natural gas for the hedges to be procured in the forward markets. The Target Prices, which is determined through market intelligence information, shall be the maximum price that a hedge shall be procured in the forward markets. Volumes shall be purchased at or below the said target prices.

Market conditions may have sudden unforeseen changes which would influence volatility as well as the average spot prices, and these changes may or may not have favourable impacts to the Region. To mitigate such impacts, sensitivity analysis shall be conducted to test performance of such Target Prices (refer to Attachment 2) and show that it would optimize avoided costs if the trend shows very high market price volatility and minimize opportunity costs if price volatility goes the other way.

The Multi-Year Energy Procurement Strategy and any amendment thereof shall be approved by the Treasurer and Director of Corporate Finance. The Strategy shall be updated and approved on an annual basis, covering the current year and the rolling four (4) future years.

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III. Energy Procurement Strategy Implementation

Procurement of Fixed Price Hedges for both electricity and natural gas for future years shall be in accordance with the Energy Commodity Procurement Policy and shall be based on the volumes and Target Prices set in the latest Multi-Year Energy Procurement Strategy. The markets shall be scanned for forward prices for the planned hedge volumes to be procured, and the Region shall transact with energy suppliers at or below the approved Target Prices. Staff shall ensure that the layers of hedge volumes for future years as set in the Strategy shall be procured during the current year. Should there be unforeseen changes in the forward markets that impacts hedge prices and render the Target Prices inapplicable or too low, these will be reassessed so that new Target Price levels can be established, and these shall be submitted to the Treasurer and Director of Corporate Finance for approval. Once a hedge transaction has been completed and confirmed the Region cannot reduce its volumes even if there would be new revisions in the risk appetite or risk tolerance that suggests that the hedge volumes should be less.

IV. Performance Tracking and Reporting

Staff shall submit an annual report to the Treasurer and Director of Corporate Finance and the Energy Commodity Procurement Working Group on the status of implementation of the Energy Procurement Strategy, indicating the volumes of hedges procured, the actual forward prices of such hedges, and the energy suppliers where such hedge volumes were transacted. The report shall also include the actual performance of delivered hedges and its financial implications. The annual report shall serve as basis for the Treasury's report to Regional Council in compliance to Ontario Regulation 654/05.

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ATTACHMENT 1

MARKET CONDITION RISK EVALUATION MATRIX (Illustration)

Market Conditions Risk Evaluation as of Mar 2020

1. Identify risk factors affecting commodity markets for a given year, assign a % weight for each risk factor.
2. Determine "Likelihood" and "Impact" of occurrence for the year and compute weighted score for each risk factor.
3. Plot the risk factors on the Impact-Likelihood chart below.
4. Using the Weighted Score, determine what the "market attribute" would be for that year.

Market Attributes	Weighted Score
Relatively Stable	= 0 to 8
Moderate Volatility	= over 8 to 17
High Volatility	= over 17 to 25

2020 Market Condition Risk Evaluation - Natural Gas

Impact					
5 - Severe	Medium	High	6 High	10 Very High	Very High
4 - High	Medium	Medium	8 7 High	1 High	4 3 Very High
3- Medium	Low	Medium	2 5 Medium	9 High	High
2 - Low	Low	Low	Medium	Medium	High
1 - Insignificant	Low	Low	Low	Medium	Medium
	1 - Rare	2 - Unlikely	3 - Possible	4 - Likely	5 - Almost Certain
	Likelihood				

Risk Factors	Likelihood	Impact	Weight (%)	Score (Likelihood x Impact x Weight)
1. Demand - Gas Fired Power Gen.	4	4	15%	2.40
2. Demand - Industrial	3	3	5%	0.45
3. Demand - LNG Exports out of N.A.	5	4	15%	3.00
4. Demand - Exports to Mexico	5	4	10%	2.00
5. Supply - Rig Count	3	3	7.5%	0.68
6. Supply - Base Supply	3	5	15%	2.25
7. Storage - End of season balance	3	4	5.0%	0.60
8. Economy	3	4	2.5%	0.30
9. Canadian Dollar	4	3	5%	0.60
10.5A Index Volatility and Transport Costs	4	5	20.0%	4.00
Weighted Score			100%	16.28

2020 Natural Gas Market Conditions Risk Evaluation Summary

1. Demand - Gas Fired Power Gen.
   - Demand expected to continue to increase, may be offset in part by wind and solar generation
2. Demand - Industrial
   - Slow growth continues year over year.
3. Demand - LNG Exports out of N.A.
   - Forecast to average over 7 Bcf/day in 2020 but may slow a bit due to trade tensions with China.
4. Demand - Exports to Mexico
   - Pipeline exports to Mexico are expected to continue to increase each year.
5. Supply - Rig Count
   - Rig count is settling down.
6. Supply - Base Supply
   - Production forecast to grow. Getting shale gas to market may be more difficult without new pipe.
7. Storage - End of season balance
   - Difficult to forecast longer term into the future. End of winter balance influences summer pricing.
8. Economy
   - Slow growth expected year over year.
9. Canadian Dollar
   - Greater chance of volatility due to economic and geo-political events (US)
10. 5A Index Volatility and Transport Costs
   - Many factors affect the 5A Index in Alberta - storage levels, winter weather severity and internal pipeline issues in Alberta. The transport adder to Dawn had been rising in the past 2 years but has dropped recently - good value to pick up outer years.

CATEGORY: FINANCIAL MANAGEMENT

SUBCATEGORY: PURCHASING

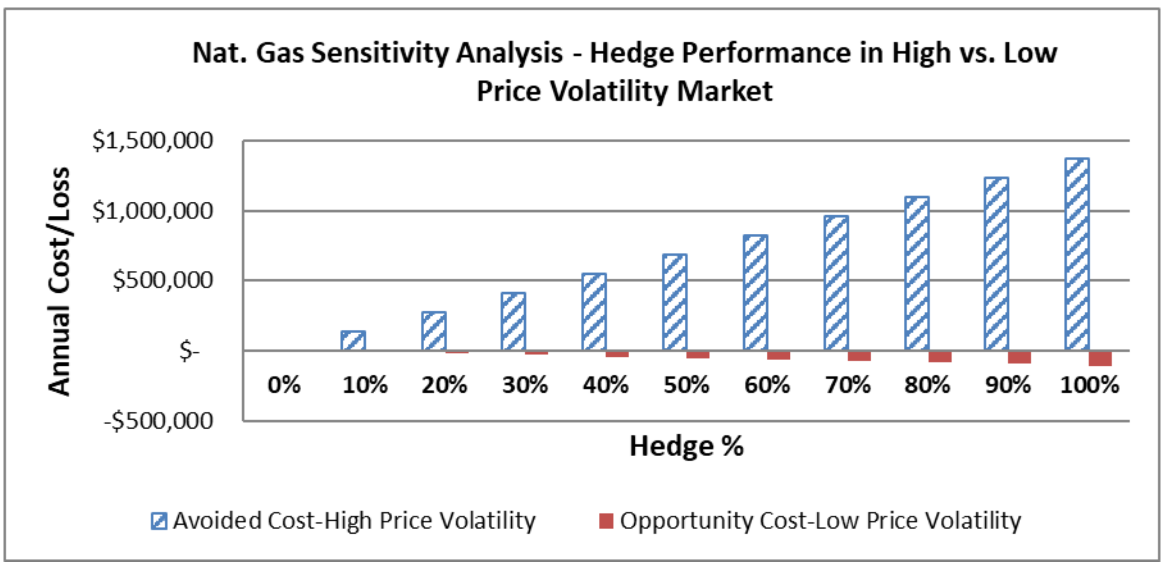
SUBJECT: ENERGY COMMODITY PROCUREMENT POLICY

ATTACHMENT 2

SENSITIVITY ANALYSIS ON SETTING TARGET PRICES (Illustration)

The Market Conditions Risk Evaluation is supported by a Sensitivity Analysis tool (Figures 2 and 3 below) which illustrates, based on a Target Price for a forward fixed- price hedge, the possible cost-avoidance of the Region in a high volatile market scenario, and the opportunity cost impact in a low price volatility scenario, at various hedge volume levels. This further connects risk tolerance decisions with financial impact.

Figure 2: Natural Gas Sensitivity Analysis



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Attachment 2 (page 2)

Figure 3: Electricity Sensitivity Analysis