Committee Direction:
The City of Hamilton’s Energy Commodity Policy approved by Council in December 2008, requires the General Manager, Finance and Corporate Services to report to Council, at least once each fiscal year, regarding any and all energy commodity price hedging agreements.

Information:
In recognition of the unique position of Energy Commodities, energy prices are set by varying market conditions (i.e. supply and demand), fluctuating hourly, daily and seasonally. Supply challenges for these commodities and varying supply and demand have contributed to price volatility and have produced forward market price and budgetary uncertainty.

Ontario energy consumers who wish to mitigate price risk may do so by executing some form of commodity price hedging agreements. This Statement of Policies and Goals lays out the strategy framework for the purchase, sale, delivery and storage of Energy Commodities and the consideration of price hedging by the City of Hamilton for all Energy Commodities.
As defined in the Policy, “Energy Commodities” means electricity, Green Power, natural gas, methane and all other petroleum based fuel products, e.g., diesel, bio-diesel, gasoline, fuel oil, lubricants, propane and any other bulk commodity primarily used by the City for the purpose of heating and cooling of buildings and other structures, electricity generation, co-generation and the fuelling of City fleets, as determined by the Manager of Energy Initiatives.

**Policy Statement**

The City of Hamilton (City) will procure the necessary quality and quantity of Energy Commodities in an efficient, timely and cost-effective manner, while maintaining the controls necessary for a public institution in accordance with this Energy Commodity Policy. The City will encourage the negotiation of fair Master Agreements, and agreements with Contract Agents, with respect to the purchase, sale, delivery and storage of Energy Commodities. The City will strive to ensure that the best value is obtained and that the financial stability of Energy Commodity suppliers meets high thresholds to ensure sustainability and reliability of supply.

The City will consider commodity price hedging agreements as a means of fixing, directly or indirectly, or enabling the City to fix the price or range of prices to be paid by the City for the future delivery of some or all of a specific Energy Commodity; or the future cost to the municipality of an equivalent quantity of the Energy Commodity, where it is advantageous for the City to do so.

The City will also consider opportunities for entering into agreements with utilities and other transportation and delivery supplier contracts (i.e., pipeline supply) to secure commodity supply and utility rates of specific Energy Commodities.

The 2010 Annual Report on Commodity Price Hedging deals exclusively with the City’s energy commodity price hedging agreements and energy rate transactions for natural gas, electricity and fuel.

**Commodity and Rate Savings**

The following Table outlines the combined energy commodity and utility rate savings for the 2010 calendar year and the accumulated total from June 2006 to December 31, 2010. The figures used are based on the City’s hedging program results relative to the hedging program offered through the Association of Municipalities of Ontario (AMO).
Combined Energy Commodity and Utility Rate Benchmark Savings

<table>
<thead>
<tr>
<th></th>
<th>2010 Savings:</th>
<th>$0.53 million</th>
<th>(79% Levy, 21% Rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated Savings to Date:</td>
<td>$9.04 million</td>
<td>(63% Levy, 37% Rate)</td>
<td></td>
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</tbody>
</table>

For 2011 budget purposes, utility cost budget guidelines accounted for a 10% increase in electricity rates and no change in natural gas rates.

**ELECTRICITY:**

Due to unfavourable market conditions in 2010, the City did not execute any financial hedges for electricity. Ontario's hybrid electricity market is not a liquid market in terms of electricity commodity hedging and electricity commodity pricing is now primarily driven by the Global Adjustment (the "GA", also previously known as the "Provincial Benefit") which is an Ontario electricity market mechanism used to transfer certain types of costs among generators, agencies and consumers. This is a non-controllable cost that all electricity consumers are obligated to pay. It is considered a non-controllable cost because it is not possible to hedge against (there is no hedging mechanism in the market). The majority of GA costs arise from contracts the Ontario Power Authority (OPA) has with generators. Most of these contracts are at fixed prices, or they have revenue guarantees that behave like fixed-price arrangements. When electricity hourly spot prices are low, generators do not earn enough revenue from power sales to meet its revenue guarantee or fixed price. The OPA pays the generator to make up the difference, and the OPA recovers that cost from consumers through the Global Adjustment. Consequently, in a month when the market price of electricity is low, the unit value of the GA will be higher and when market prices are high, the GA will be lower. This is illustrated in the Table below:

![Aggregate Monthly Electricity Price](image-url)
For the year 2010, the cost of the GA contributed approximately 43% to the total price for electricity. Irrespective of the City having hedged a portion of our electricity or not, the GA must be paid in addition to the electricity hedge.

In light of these circumstances, staff continue to monitor the Ontario electricity market to ensure the City is properly positioned to take advantage of favourable market conditions and should there be significant changes to the regulations that justify taking a hedge position.

**Global Adjustment (GA) Impacts for 2011**

Changes in how the Global Adjustment is allocated to consumers were implemented January 1, 2011. These changes will lower costs for some large users e.g. the City’s Woodward Water Treatment Facility, but increase costs for the majority of electricity consumers.

Starting January 1, 2011, consumers will be grouped into two classes and each class will be allocated a share of the GA costs. "Class A" consumers are those with average monthly demands over 5 MW (megawatts) who will pay their share of the GA based on their demand or energy consumption during the 5 highest load hours that occur in Ontario each year. This share is called the "Peak Demand Factor". The only electricity account that the City has in this class is the Woodward Avenue Water Treatment Plant (WWTP). In our forecast of anticipated results of this re-classification, we estimate a positive cost benefit impact in the order of $500,000.

All other consumers, including all City accounts (except WWTP) fall into "Class B" and will continue to pay for the GA on a postage-stamp basis. The aggregate GA dollar amount paid by Class B consumers will equal the total GA dollars less the aggregate paid by Class A consumers.

Under this method, Class A consumers will pay a smaller share of GA costs and Class B consumers will pay a higher share.

According to Aegent Energy Advisors (Aegent), in the near-term, Class A consumers will notice their aggregate share of total GA costs fall from 14.1% to about 9.2%; a relative decrease of 35%. Class B consumers will notice their aggregate share of total GA costs rise from 85.9% to about 90.8%; a relative increase of 6%.

**Global Adjustment – Future Impacts**

In 2010, total annual GA costs for Ontario were $3.85 billion, and the uniform unit GA cost to consumers was about 2.72 cents per kWh (kilowatt-hour). In 2011, there will be upward pressure on GA expenditures. Considering these and other factors, Aegent
estimates for 2011 that the total GA costs will be about $4.21 billion. With this, consumers would notice a unit GA cost of about 2.95 cents/kWh.

Over the next few years, total GA costs will rise significantly since that is the period where the majority of future Ontario electricity cost increases will show up.

An August 2010 Study by Aegent Energy Advisors for Canadian Manufacturers and Exporters, showed total annual GA costs could rise to over $10 billion by 2015. Using that total cost and assuming flat Ontario energy consumption, if there were still only one GA class of consumer in 2015, we would see a staggering GA unit cost of 7.0 cents/kWh.

The Global Adjustment is one of the most significant and complex cost items on an electricity consumer's bill. Modifications to the GA are not receiving as much attention as other changes on the bill, yet these revisions will have an important and growing impact on the net cost of electricity for each consumer.

At this time only the Woodward Avenue Water and Wastewater Treatment Plant qualifies for this adjusted method of calculating Global Adjustment charges; however, the Office of Energy Initiatives (OEI) is lobbying the Ontario Ministry of Energy (OME) to have street lighting qualify for this revised method as it too would see a cost reduction benefit.

Green Energy Rebate

For 2011, the City’s less significant electricity accounts will qualify for the Ontario Government’s Green Energy Benefit Rebate Program. This measure will give small volume consumers (typically residential class consumers) an immediate 10% rebate on their total electricity bill. From an analysis of the City’s accounts that meet this criterion, a cost-benefit of approximately $60,000 for Public Works facilities is anticipated. This initiative will commence in January 2011 and will continue for a 5-year term.

These figures exclude Hamilton City Housing (HCH) of which there are 382 HCH accounts that would be impacted by the Green Energy Benefit Rebate Program where the annual expenditure for electricity is approximately $120,000. The rebate would thereby reduce HCH’s electricity expenditure by $12,000.

Smart Meters & Time of Use Price Adjustment

Over the last few years, the Ontario’s local electricity distributors (e.g., Horizon Utilities) have installed “Smart Meters” in homes and small businesses of most consumers in the province. This initiative was mandated by the Ontario Energy Board (OEB) as a means to encourage consumers to conserve electricity by providing them with a metering device that measures electricity consumption and date/time stamps it to enable
consumers to understand what they use on what date and at what time. This is the basic premise of a Smart Meter.

To provide additional motivation for conserving electricity and to create a culture of paying the true cost of power, Time of Use (TOU) rates have also been mandated by the OEB to be applied to consumers with a Smart Meter. The TOU rate schedule has a set price for electricity used during off-peak (weekends, late nights and early morning hours), a different price for peak times (Monday to Friday during business hours) and yet another rate for the transition hours or shoulder periods that fall between off-peak and on-peak. The rates are also adjusted for summer and winter months.

The Ontario Government introduced an adjustment to the TOU price schedules whereby the on-peak times have been reduced by two hours and the off-peak hours are thus increased by two hours commencing May 1, 2011.

The previous rate schedule had an on-peak rate window of 5 p.m. – 9 p.m. The new window for on-peak will now be 5 p.m. to 7 p.m. and the overnight off-peak period will now run from 7 p.m. till 7 a.m. This modification will affect only those accounts that are billed on TOU rates.

According to Horizon Utilities, the City has 354 accounts that are charged TOU rates with an expenditure of $318,700 at the established two-tier rate schedule. It is uncertain as to what their costs will be as there is a wide variety of hourly electricity usage profiles; however, the changes announced to the rate schedule translates to a 4.3% reduction in the time weighted average price from 6.67¢/kWh down to 6.48¢/kWh. Applying this expected 4.3% reduction in rate pricing to the current expenditure of $318,700, could result in an estimated $13,700 cost reduction in 2011.

NATURAL GAS:

The City has Master Agreements for Natural Gas Supply in place with BP Canada Energy Company and with Shell Energy North America. The City is currently negotiating a new contract with Shell Energy North America. Staff expected that this new contract will be completed and executed in August 2011. As a measure to diversify our purchasing options, we are reviewing the contracts from two additional suppliers.

The City’s natural gas hedging strategies have been successful since they were implemented in June 2006. The City’s actual price per unit of natural gas in 2010 is almost 30% lower than it was in 2005. For the volume of natural gas supply that has been hedged for 2011, the City is expected to see a cost reduction of 10% from 2010 levels. In general, the City purchases about 80 to 85% of its natural gas supply needs on a forward basis as market conditions appear favourable. Some percentages are purchased, as much as 2 years in advance, to protect against market volatility and the
remaining gas volumes are balanced or purchased monthly to within the contract terms established with Union Gas Limited.

**Natural Gas – Transportation, Storage and Delivery**

The City has several contracts, in place, that are required for the transportation, delivery and storage of the City’s natural gas supply. Pipelines and suppliers include:

- Client’s gas supplier(s)
- TransCanada PipeLines
- Alliance Pipeline
- Vector Pipeline
- Union Gas
- Trunkline Pipeline
- Panhandle Pipelines

**Direct Purchase Agreements (DPA) with Union Gas**

The City has three DPA’s in place with Union Gas Limited. These agreements outline the terms of delivery of natural gas, contract volumes and storage within Union Gas’ franchise territory. The agreements are:

- SA9367 for 330 GJ’s/day – this is for Transit’s natural gas bus fleet
- SA9369 for 59 GJ’s/day – this is for 17 new accounts added to the City’s portfolio
- SA7020 for 1245 GJ’s/day – this is for 218 City natural gas accounts

**Natural Gas Expected and Actual Results**

As a result of the procurement strategy executed in previous years, the downward trend for natural gas pricing continued through 2010 and is also set to continue downward for 2011. Contracted gas volumes and natural gas purchases for 2010 decreased by 18.5% from 2009 levels and the average unit price decreased by 13% from $8.30/GJ to $7.19/GJ in 2010.

Commencing in April 2011, 85% of the City’s natural gas has been purchased until October 31, 2012. The price forecast for 2011 is 11% lower than 2010 and, taking into consideration current market conditions and outlook for future years, it is anticipated the 2012 forecast price will observe even further price reductions compared to the 2011 price.
Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.

Values: Honesty, Accountability, Innovation, Leadership, Respect, Excellence, Teamwork

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual GJ’s</th>
<th>Total Cost</th>
<th>$/GJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>723,863</td>
<td>$7,399,073</td>
<td>$10.22</td>
</tr>
<tr>
<td>2006</td>
<td>627,290</td>
<td>$6,018,534</td>
<td>$ 9.59</td>
</tr>
<tr>
<td>2007</td>
<td>624,415</td>
<td>$5,673,064</td>
<td>$ 9.09</td>
</tr>
<tr>
<td>2008</td>
<td>631,394</td>
<td>$5,367,430</td>
<td>$ 8.50</td>
</tr>
<tr>
<td>2009</td>
<td>652,391</td>
<td>$5,411,613</td>
<td>$ 8.30</td>
</tr>
<tr>
<td>2010</td>
<td>531,895</td>
<td>$3,824,180</td>
<td>$ 7.19</td>
</tr>
<tr>
<td>2011 (forecast)</td>
<td>594,829</td>
<td>$3,784,334</td>
<td>$ 6.36</td>
</tr>
</tbody>
</table>

The following Chart illustrates the City’s natural gas cost, per unit, from 2005 to 2010 with a forecasted price for 2011. The OEI is currently reviewing fixed price opportunities for the 2012-2013 period in order to take advantage of favourable natural gas market conditions. The majority of the City’s natural gas supply up until November 2012 has been hedged, taking advantage of excellent market conditions.
For comparison, the City monitors its results for natural gas procurement versus the AMO/LAS Natural Gas Program for municipalities.

The City’s self-directed natural gas program savings, compared to the AMO/LAS program for the calendar year 2010 and accumulated from June 2006 to December 31, 2010, are outlined in the following Table and Graph:

<table>
<thead>
<tr>
<th>Natural Gas Savings*</th>
<th>2010 Savings*</th>
<th>Accumulated Savings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levy (Tax) Supported Budget</td>
<td>$373,066</td>
<td>$2,519,507</td>
</tr>
<tr>
<td>Rate Supported Budget</td>
<td>$99,457</td>
<td>$440,316</td>
</tr>
<tr>
<td><strong>Total Savings:</strong></td>
<td><strong>$472,524</strong></td>
<td><strong>$2,959,823</strong></td>
</tr>
</tbody>
</table>

* Performance relative to AMO hedging program

**Note:** Cumulative savings commenced in June 2006.
FUEL SUPPLY

Fuel requirements for the City continue to be provided through a bulk purchase arrangement with two suppliers: Suncor and Shell Energy Inc., and the volumes contracted for are split approximately 60% - 40% respectively. The pricing arrangement from both suppliers is based on the daily “Rack” price for a designated delivery point with the negotiated discount, plus tax and delivery charges. This “Rack” price is equivalent to a daily market price or spot market price. In the case of bio-diesel purchases, there is an additional cost applied to the “Rack” price.

Historically, paying daily rack pricing for fuels assures consumers of getting the lowest available price in the market. However, daily rack price exposes the consumer to a high degree of volatility as there is no control over how market prices will fluctuate. While that is tolerable during a downward price trend, it can be problematic during a climbing price trend.

For the majority, 2010 daily rack prices was fairly moderate. Towards the latter part of the year, market conditions and influences created upward pressure on fuel prices such that Rack prices were higher than budget. Overall for 2010, the budget variance was positive, for both diesel and unleaded fuel, due to overall favourable pricing and a reduction in fuel consumption.

To mitigate risk going forward, the City is taking action on two key fronts. Firstly, to ensure supply contracts are in place with suppliers to enable the City to buy fuel on a forward or fixed price basis. Secondly, is the establishment of a Fuel Reserve Fund which can be used to help off-set price volatility. The Fuel Reserve Fund was established as part of the 2011 budget process.

Fuel hedging has, historically, not been an option as the forward fixed price has consistently been above the approved budget price.

CONTRACT AGENTS

The City requires the use of outside consultants (Contract Agents) from time-to-time in order to assist City staff negotiate the unstable and complicated Energy Commodity terrain. The use of these Contract Agents is imperative in that these entities are immersed daily in the Energy Commodity markets and have specialized expertise with respect to monitoring and responding to market changes. These services are highly specialized and nuanced. Therefore, the use of a competitive process whereby the “best price” is the deciding criteria is not suited for finding the appropriate Energy Commodity consultant for the City. With Council approval, the City has executed a Professional Services Agreement with Agent Energy Advisor’s to assist with the day-to-day management of the City’s natural gas portfolio.
Consistency with City Energy Commodity Hedging Policy and Goals

The agreements entered into during the reporting period are consistent with the City’s Commodity Price Hedging Policy and Goals:

- The agreements have provided for a price of natural gas that was more stable and, therefore, less risky than it would have been omitting the agreements. Rate changes with electricity have also been favourable.
- The actions taken through the authority of the Energy Commodity Policy have reduced uncertainty about energy costs, which has a direct impact on the City’s financial position. It has also enabled staff to respond to favourable market conditions.
- Credit ratings for the City’s primary natural gas suppliers remain above the minimum threshold outlined in the policy.
- Commodity hedging provides municipalities with added flexibility to potentially mitigate or manage potential price fluctuations.

Contingent Payments

The City’s natural gas supply contracts contain provisions allowing either party to terminate an existing agreement if that party has reasonable grounds regarding the other party’s ability to meet its financial obligations under the agreement and the other party is unwilling or unable to provide reasonable financial security.

The agreements also provide for the early termination of the agreements if one party fails to pay an amount due and the failure to pay is not remedied upon notice and within a specified cure period.

In the event of the early termination of a gas transaction, the difference between the value of the transaction over its remaining term and the market value of the same gas over the same term is determined. If the market value is higher than the value of the transaction, then the supplier will pay the difference to the City. If the transaction value is higher than the market value, then the City will pay the difference to the supplier.
POLICY REPORTING REQUIREMENTS

The General Manager, Finance and Corporate Services shall report to Council at least once each fiscal year with respect to any and all Energy Commodity price hedging agreements and other Energy Commodity agreements, in place. The report shall contain, at a minimum, all requirements as set out in O. Reg. 653/05 (as it exists from time to time) and shall include:

1. A statement about the status of the Energy Commodity price hedging agreements during the period of the report, including a comparison of the expected and actual results of using the agreements;

2. A statement by the General Manager, Finance & Corporate Services indicating whether, in his opinion, all of the agreements entered, during the period of the report, are consistent with this Energy Commodity Policy relating to the use of financial agreements to address commodity pricing and costs;

3. An overview of any agreements with Contract Agents (including, without limitation, actual costs, services provided and frequency of use) and a statement by the General Manager, Finance & Corporate Services indicating whether, in his opinion, all of these agreements are consistent with this Energy Commodity Policy with respect to the use of Contract Agents;

4. An overview of any Co-operative Energy Purchasing initiatives and/or agreements and a statement by the General Manager, Finance & Corporate Services indicating whether, in his opinion, all of these agreements are consistent with this Energy Commodity Policy with respect to the use of Co-operative Energy Purchasing;

5. Such other information as Council may require; and

6. Such other information as the General Manager, Finance & Corporate Services considers appropriate to include in the report.