Metropolitan Council

Program Evaluation and Audit

Metropolitan Council

Energy Forward Pricing Mechanisms

March 15, 2008

INTRODUCTION

Background

In May 2004, the Metropolitan Council (Council) began using energy forward pricing mechanisms (EFPM) to assist Metro Transit and Metro Mobility manage diesel fuel costs. The Council subsequently expanded its EFPM program to include natural gas in August 2006. Energy forward pricing mechanisms are intended to help make fuel costs more predictable and stable for budgeting purposes; they are not intended as a revenue source. In fact, Minnesota Statute 473.1293, "Energy Forward Pricing Mechanisms," only allows the Council to use this program "for budget risk reduction," and Council Procedure 3-4-4a states, "The intent and design of this program is to effectively lock in the price and quantity of a certain commodity for a certain future period of time so as to offset the Council's exposure to price increases. This tool will reduce the net variability of a commodity's cost during a given budget cycle."

Futures contracts are purchased 18-24 months in advance. A futures contract is a financial instrument that enables fuel customers to fix the price of fuel that they will purchase and consume at a later date. When the later date arrives, the futures contract is sold and the gains or losses are realized in cash. The Council never intends to take delivery on the product it is purchasing; the futures market is used for pricing only. Gains offset real price increases; losses offset real price decreases.

Diesel fuel futures contracts are not traded on the EFPM market, however, the price volatility and risk characteristics of heating oil #2 are very similar to that of diesel fuel. Therefore, the Council's EFPM program uses heating oil #2 futures contracts in order to hedge its diesel fuel consumption. Natural Gas futures contracts are traded on the EFPM market. Therefore, natural gas futures contracts are used as a budget tool to hedge the cost of Metro Transit and Environmental Services natural gas consumption.

There are certain risks inherent in the Council's EFPM program. Metro Transit, Metro Mobility and Environmental Services may face hedging close-out costs if fuel and natural gas consumption falls below the levels for which futures contracts have been purchased and the price of heating oil #2 or natural gas falls from the time the contract is purchased to the time the contract is sold. For these reasons, the maximum hedge allowed for diesel is 90% of projected usage. Natural gas prices and usage are more volatile than diesel; therefore, natural gas is hedged at only 80% of projected use.

The Council has contracted with an independent consultant, Linwood Capital, LLC (Consultant), to place contract trades which are then executed by the Council's commodities broker, R. J. O'Brien (RJO) with funds drawn from Council accounts held with Dain Rauscher, the Council's hedging broker. Currently, the Consultant places about seven diesel and one-two natural gas trades each week.

Metro Transit and Environmental Services provide the Consultant with a 12-24 month rolling consumption forecast. The Consultant plans the purchase and sale of hedging contracts to correspond with forecasted diesel and natural gas usage. In the current budget period, the Consultant removes all hedges once actual consumption occurs. The consultant is not required to obtain approval from the Council prior to submitting trade choices to the broker; however, the Treasury Department manages the program through receipt of daily transaction reports from RJO and monthly transaction and management reports from the Consultant, by entering the data into the Council's SymPro investment software, booking realized gains/losses and brokerage fees each month, coordinating usage projections with Council departments and reporting results of the EFPM program to the Council's Management Committee quarterly.

Assurances

This audit was conducted in accordance with the Institute of Internal Auditor's *Standards for the Practice of Internal Auditing* and the U. S. General Accounting Office's *Governmental Audit Standards*.

Scope

Program Evaluation & Audit (Audit) was requested to review EFPM program purchasing activities and procedures, its success rate and its effectiveness. The audit focused on the EFPM program regarding diesel fuel since its inception in May 2004. In addition, the review included the EFPM program involving natural gas purchases which began in August 2006.

Methodology

To gain an understanding of the Council's EFPM program and to assess related risk, the following methods of inquiry were used:

- Treasury Department, Consultant and broker personnel were interviewed.
- Personnel at Metro Transit, Metro Mobility and Environmental Services were interviewed.
- Consultant, broker and Treasury Department trading report documentation was reviewed.
- Trading results were verified.
- Transfer of data from outside sources to Council systems was observed and verified.
- Council Committee actions and procedures were reviewed, along with Minnesota state statutes.
- Consultant and Broker contracts were reviewed.

OBSERVATIONS

Consultant Risk

The program relies heavily on assistance from the Council's Consultant. The Consultant is the only person who has worked extensively with the Council's accounts. If the Consultant were unable to continue providing services, the Council would be without such services for about three months, the time it would take to solicit and contract with another firm for similar services. During the intervening period, the Finance Department would have to fill the void. Although Council staff expertise is not as great as that of the Consultant, sufficient knowledge of the EFPM program is available within the Council to affect a minimum number of trades to assure that the Council's risk exposure would not materially increase during that period.

EFPM Program Results

The EFPM program was initiated in May 2004 to reduce the risk in determining annual budgets for diesel fuel consumption which totals about 10 million gallons per year. It was expanded in September 2006 to include natural gas. The program is not intended to make money for the Council; however, in times of rising prices realized gains do materialize. The opposite is also true, for when prices fall, the Council realizes losses. Although the EFPM program has resulted in a net gain of over $4.3 million since its inception, natural gas hedging has resulted in losses in both 2006 ($201,780) and 2007 ($620,130). A summary of realized gains and loses is at Table 1. Diesel fuel gains and loses are credited (debited) to Metro Transit (90%) and Metro Mobility (10%). Gains and losses from the natural gas EFPM program are split about one-third Metro Transit and two-thirds Environmental Services.

Table 1: EFPM Program Realized Gains and Loses

	Diesel Fuel	Natural Gas	Total
2004	637,875	0	637,875
2005	2,441,376	0	2,441,376
2006	1,686,796	(201,780)	1,485,016
2007	387,181	(620,130)	(232,949)
Total	**5,153,228**	**(821,910)**	**4,331,138**

The program has also reduced the volatility of budgeting for energy costs. For the period May 2004 through December 2007, diesel fuel cost volatility was measured at 14.88% whereas daily market price volatility was 21.23%. In addition, during 2007, the average daily market price of diesel fuel ranged from $2.03 to $3.31 per gallon (a 63% difference); however, the cost to the Council was less volatile, ranging from $2.44 to $2.80 (a 15% difference). The daily market price for natural gas during 2007 ranged from $5.55 to $7.71 (a 39% difference). The price paid by the Council was less volatile, ranging from $7.41 to $9.09 (a 23% difference).

The divisions within the Council that are affected by the EFPM program state that it is accomplishing its stated objective of lending stability to the budgeting process. Comments received from Metro Transit, Metro Mobility and Environmental Services disclosed that the EFPM program "helps to have budget stability,… allows us to monitor budgets and identify any shortfalls, … has been a very valuable tool in managing our fuel budget, … has been a positive experience," and is "a measure for budget stability."

CONCLUSIONS

1. *The Council's EFPM program for hedging diesel fuel and natural gas has shown to be an effective budgetary tool in reducing the volatility of energy costs.*

   As stated in Council Procedure 3-4-4a, "The intent and design of this program is to effectively lock in the price and quantity of a certain commodity for a certain future period of time so as to offset the Council's exposure to price increases. This tool will reduce the net variability of a commodity's cost during a given budget cycle." In addition, Minnesota Statute 473.1293, "Energy Forward Pricing Mechanisms," only allows the Council to use this program "for budget risk reduction."

   Daily market energy prices have shown to be more volatile than those paid by the Council. During 2007, the average daily market price of diesel fuel ranged from $2.03 to $3.31 per gallon (a 63% difference); however, the cost to the Council ranged from $2.44 to $2.80 (a 15% difference). The daily market price for natural gas ranged from $5.55 to $7.71 (a 39% difference), while the price paid by the Council was less volatile, ranging from $7.41 to $9.09 (a 23% difference).

2. *The EFPM program is effectively managed and with minor exceptions, sufficient internal controls exist to limit program risk.*

   The transaction placement, reporting and recording systems used by the Consultant, the Broker and the Council reconciled to each other, a good indication that the program is effectively managed and controlled. In addition Metro Transit, Metro Mobility and Environmental Services all provide input to the program, rely on program results and state that it is meeting its objective of lending stability to the budgeting process.

3. *The EFPM program relies heavily on the independent Consultant who initiates all transactions.*

   The Council's Consultant is an independent contractor. Should his services no longer be available, the Council would be without such expertise for about three months, the time it would take to solicit and contract with a firm holding similar expertise. Although Council staff expertise is not as great as that of the Consultant, sufficient knowledge of the EFPM program is available within the Council to affect a minimum number of trades to assure that the Council's risk exposure would not materially increase during that period.

RECOMMENDATIONS

Program Evaluation and Audit recommendations are categorized according to the level of risk they pose for the Council. The categories are:

- **Essential –** Steps must be taken to avoid the emergence of critical risks to the Council or to add great value to the Council and its programs. Essential recommendations are tracked through the Audit Database and status is reported twice annually to the Council's Audit Committee.
- **Significant –** Adds value to programs or initiatives of the Council, but is not necessary to avoid major control risks or other critical risk exposures. Significant recommendations are also tracked with status reports to the Council's Audit Committee.
- **Considerations –** Recommendation would be beneficial, but may be subject to being set aside in favor of higher priority activities for the Council, or may require collaboration with another program area or division. Considerations are not tracked or reported. Their implementation is solely at the hands of management.
- **Verbal Recommendation –** An issue was found that bears mentioning, but is not sufficient to constitute a control risk or other repercussions to warrant inclusion in the written report. Verbal recommendations are documented in the file, but are not tracked or reported regularly.

1. ***(Consideration) The Council should consider identifying secondary sources of EFPM expertise that could be used should the current Consultant be unable to execute his contracted responsibilities.***

The EFPM program relies heavily on the knowledge of the independent consultant without who institutes the sale and purchase of EFPM contracts. No secondary sources of similar consultant services have been identified should the current Consultant be unable to perform his duties. Although expertise is not that of the Consultant, sufficient knowledge of the EFPM program is available within the Council to affect a minimum number of trades to assure that the Council's risk exposure would not materially increase during the period required to solicit and contract with a new consultant.

Management Response*: The consulting contract is periodically sent out for bid through the Council's Request for Proposal Process. While limited to our current consultant, the Council risk/exposure is minimal as:*

a) We are generally well hedged into the future, i.e., we can go several months without buying any additional futures contracts because the nearest rolling 12-months are highly hedged (protected) by the consultant's prior efforts, and

b) In the event the consultant is unavailable for an extended period, Treasury staff will implement a rolling hedges approach to commodity price risk management. Treasury would not put significant focus on the consultant's added value role of forecasting marketplace rates; rather, Treasury would mechanically add contracts to keep full future protection on the books and remove protection as the consumption occurs.

Staff Responsible: Allen Hoppe

2. ***(Consideration) The Council should continue its periodic reiteration of the purpose of the EFPM program to Council members and Executive Management personnel to ensure a continued understanding of the program by those ultimately responsible for its results.***

The Investment Review Committee and the Management Committee are currently briefed on Program purpose and results quarterly and the Council has historically experienced a positive cash flow from the program; however, as 2007 experience indicates, this may not always be true. Both Council procedure and Minnesota Statute state that the purpose of using an EFPM program is to assist in budget management and to reduce the variance in fuel costs and specifically not to be used for revenue generation or speculation.

Management Response: Information about the EFPM program will continue to be on the schedule for quarterly/annual presentations to the Investment Review and Management Committees. Senior management will continue to be briefed periodically by the CFO. Ad hoc questions are answered as they come up.

Staff Responsible: Allen Hoppe, Mary Bogie and Beth Widstrom-Anderson