



Metro

Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

9

**FINANCE AND BUDGET COMMITTEE
MARCH 14, 2007**

SUBJECT: COMPRESSED NATURAL GAS (CNG) HEDGING

ACTION: ADOPT A CNG HEDGING PROGRAM

RECOMMENDATION

Adopt the Compressed Natural Gas (CNG) hedging program described in Attachment A.

RATIONALE

Metro now spends about \$40 million per year on CNG to power our buses. Over the last six years Metro has experienced large positive and negative variances in the cost of CNG. Implementation of the hedging program will minimize large budget variances resulting from the volatility of natural gas prices. Hedging increases budget certainty and facilitates more effective utilization of budgetary resources.

FINANCIAL IMPACT

Use of a hedging program to stabilize the CNG natural gas budget will provide budget certainty. However, if the price of CNG remains constant or declines, higher gas prices will be incurred when compared to a declining market environment. When the CNG price increases, our budget is protected by the fixed rate in the swap transaction. For February, the Gas Company's delivered cost of gas will be about \$7.65 per decatherm. Forward pricing consistent with our hedging strategy is currently \$8.72 per decatherm.

ALTERNATIVES CONSIDERED

Metro is currently exposed to the variable rate monthly pricing of the Southern California Gas Company (the "Gas Company"). Continuing this status quo approach subjects our budget to the high price volatility experienced over the past several years.

Physical delivery hedging was evaluated and could be employed but it does not provide any advantages over use of financial hedges, while it has a higher anticipated cost as a result of transaction cost, higher forward pricing and presents a greater administrative burden in managing the commodity deliveries.

Several more advanced financial hedging alternatives were also evaluated including commodity futures, etc. However, they are not recommended at this time. After we gain experience in basic CNG hedging, we might consider more sophisticated hedging techniques.

BACKGROUND

Metro retained a hedging consultant, McDonald Partners, LLC, to evaluate various hedging alternatives. The consultant recommended that Metro establish a hedging program using “commodity swaps” to lock in a hedged cost of CNG in advance of each fiscal year, Attachment C. In a commodity swap, Metro pays a counterparty a fixed price per therm. The counterparty pays Metro a variable price based on an index that tracks closely with actual price charged by our gas provider. Use of the commodity swap alternative was recommended because it provides the best combination of low risk, hedge effectiveness, and low administrative burden.

To implement the hedges needed for the remainder of FY 2007, all of FY 2008 and the first half of the FY 2009, commodity swaps will be locked in following approval of the hedge program. Subsequent trades will follow the process outlined in Attachment D.

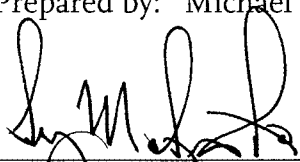
NEXT STEPS

1. Pre-negotiate master agreements with potential swap providers
2. Solicit for pricing and make award (will occur 2 to 6 times per year)
3. Finalize documentation with provider
4. Monitor program and provide reporting


ATTACHMENTS:

- A. The Compressed Natural Gas Hedging Program
- B. Risks
- C. Executive Summary from Consultant’s Report
- D. Hedge Program Additional Background
- E. Gas Pricing History

Prepared by: Michael J. Smith, Assistant Treasurer



Terry Matsumoto
Chief Financial Services Officer and Treasurer



Roger Snoble
Chief Executive Officer

Attachment A

Compressed Natural Gas Hedging Program

Expiration Date: June 30, 2010

Persons Authorized to Execute and Terminate Hedges and related documents and agreements:

- Roger Snoble, Chief Executive Officer
- Lonnie Mitchell, Chief Administrative Services Officer
- Terry Matsumoto, Chief Financial Services Officer
- Michael Smith, Assistant Treasurer

Maximum Trade Maturity:

- 30 months forward or last business day of the fiscal year being hedged.
- 12-month strips covering only the period within the fiscal year being hedged

Hedge Ratio:

- 90% to 100% of planned therms

Maximum Trade Amount:

- Number of therms in budget forecast times the Hedge Ratio divided by value for Frequency of Trades. Total therms hedged for the year may not exceed the Hedge Ratio

Frequency of Trades:

- From 2 to 6 per year as determined prior to budget process for any particular fiscal year.

Timing of Trades:

- Trades will be executed in advance of the budget year. Trade dates shall have at least 30 days separation between trades. (Note: initial trades to hedge FY2007, FY2008 and FY2009 will be exceptions to this provision in order to get the amount of hedges onto the typical timing schedule for the year)

Counterparty Credit Criteria

- | | |
|---------------------|--|
| • Aa3/AA- or better | No collateral required |
| • A3/A- or better | \$25 million limit without collateral |
| • Baa1/BBB+ | \$15 million limit without collateral |
| • Baa2/BBB | \$10 million limit without collateral |
| • Baa3/BBB- | \$2.5 million limit without collateral |

Monitoring

- Quarterly monitoring of counterparty credit ratings and collateral requirements.
- Quarterly reassessment of therms hedged to ensure the planned amount of therms for the fiscal year has not changed materially.
- CPUC actions that may affect WACOG.
- Gas Company's hedging practices.

Reporting

- Quarterly performance reports to be provided to the Board.

Mid-Term Corrections and Exceptions

- Changes in the planned amount of therms more than 10% above or below the hedged amount may result in additional hedges or partial termination of the hedges to match the current plan.
- Swaps will not be terminated for the purpose of generating a profit.
- If needed as result of CPUC actions or change in Gas Company's hedging practices, terminate part or all of the hedges.

Attachment B

Risks

Any strategy to lock-in future prices carries certain risks. The important risks and mitigation steps are identified below.

1. **Counterparty Risk** – The risk that the counterparty fails to make required payments or otherwise comply with the terms of the swap agreement.

This non-performance would usually result from financial difficulty, but could also occur for physical, legal or business reasons. This risk is mitigated by establishing minimum credit quality criteria, establishing maximum credit limits, requiring collateral on counterparty downgrade and when credit limits are exceeded, limiting the term of the agreement and employing credit rating surveillance.

2. **Forward Pricing Risk** – The risk that the forward price agreed to ultimately does not match the spot rate at the point the purchase would have otherwise been made on a current basis.
3. **Political Risk** – The risk that the hedge program maybe unjustly criticized.

Political risk is mitigated by ensuring that the Board and public are fully informed about the purpose, nature and expectations for the hedge program.

4. **Basis Risk** – The risk that there is a mismatch between the variable rate payment received from the swap provider and the variable cost paid to the Gas Company.

Basis risk is mitigated by selecting products or indices that have a strong correlation with the price changes of the cost to be hedged.

5. **Timing Risk** – The risk that a hedge is priced unfavorably relative to the average cost in the market over the relevant term.

This risk is mitigated by entering into a number of transaction over the term to improve the likelihood that the average price paid for the hedges will more closely approximate the average price in the market over the term.

6. **Termination Risk** – The risk that there will be a mandatory early termination of the commodity swap. An early termination would result in Metro either paying or receiving a termination payment.

Mandatory terminations generally result when one of the counterparties suffers degraded credit quality, illiquidity, bankruptcy or failure to perform. This risk is mitigated by establishing appropriate minimum credit requirements such as minimum credit rating and by establishing safeguards such as requiring collateral posting if credit limits are exceeded or credit ratings decline.



Natural Gas Hedging Strategy

Submitted to:

*The Los Angeles County
Metropolitan Transportation Authority*

McDonald Partners, Inc.

February 7, 2007

Executive Summary

The Los Angeles County Metropolitan Transportation Authority (“Metro”) retained McDonald Partners to assist Metro with the evaluation of hedging policies to address the variability in Metro’s budget due to fluctuations in the price of natural gas. This variability is due to the fact that Metro pays the Southern California Gas Company (“SoCal Gas”) weighted average cost of gas (“WACOG”), which varies from month to month. Since natural gas prices are largely driven by weather and tend to be very volatile, variances between budgeted and actual gas expense can be in the range of \$15-20 million during any given year.

To address this exposure, it is recommended that Metro develop and execute a commodity price hedging strategy designed to *mitigate budget uncertainty*. Such a strategy would not ensure the lowest cost of natural gas, nor would it involve speculation or require Metro policy makers and staff to take a position on the direction of market prices. Rather, the program would be designed so that total natural gas costs, inclusive of the hedge, would be within a narrow band of the natural gas component of Metro’s annual budget.

Our report examines a range of strategies for achieving this objective, including both physical and financial hedges as well as options such as caps and collars. We conclude that the ease of execution and certainty of outcome makes a commodity swap the most appropriate hedging product for Metro. With a swap in place Metro would pay a fixed price to a swap counterparty and receive a variable price based on the Southern California Border First of Month Index which correlates very closely to WACOG. This efficient and low cost hedging tool, if executed with appropriate credit protection, would provide Metro with budget assurance and no significant risk. The attached report provides numerous sensitivity analyses to support this conclusion.

The report also includes a discussion of two important variables that could influence the success of the hedge; changes in expected gas consumption (volume risk) and variability in the relationship between WACOG, and the indexed price used for the hedge (basis risk). Our analysis showed that variances in these two factors, which cannot be hedged, would not be material under most circumstances. An exception may occur in the event of a substantial change in volume due to some unforeseen event such as a labor strike, or a modification in the manner in which SoCal Gas purchases gas.

We recommend executing the commodity swap prior to adoption of the budget in at least two separate transactions with a total volume covering not less than 95% of the expected consumption of gas for the coming fiscal year. Using at least two swaps will provide Metro with a blended fixed price for the year which should reduce the risk that market shocks around the time of execution will result in Metro budgeting, and paying, significantly more for gas than other SoCal Gas customers. Covering at least 95% of the expected gas purchases will minimize budget variance.

Metro should also establish program objectives for eventual inclusion in a formal policy that will direct the program’s implementation. The hedging policy should address:

- Authorization to Transact
- Delegation to Staff
- Counterparty Credit Criteria
- Transaction Limits
- Frequency of Trades
- Monitoring and Reporting Responsibility
- Procedures for Mid-Term Corrections or Exceptions

We conclude our report with a brief and informal survey of how other transit agencies as well as public sector gas and electric utilities manage their gas price risk. We found that nearly all of the transit agencies surveyed employ some form of price risk management to ensure budgetary certainty. Strategies ranged from fixed price physical contracts to commodity swaps such as recommended for Metro. Due to the fact that the gas and electric utilities have other price risk concerns and are solving additional problems, their hedging techniques tend to be more elaborate.

Summary of Recommendations:

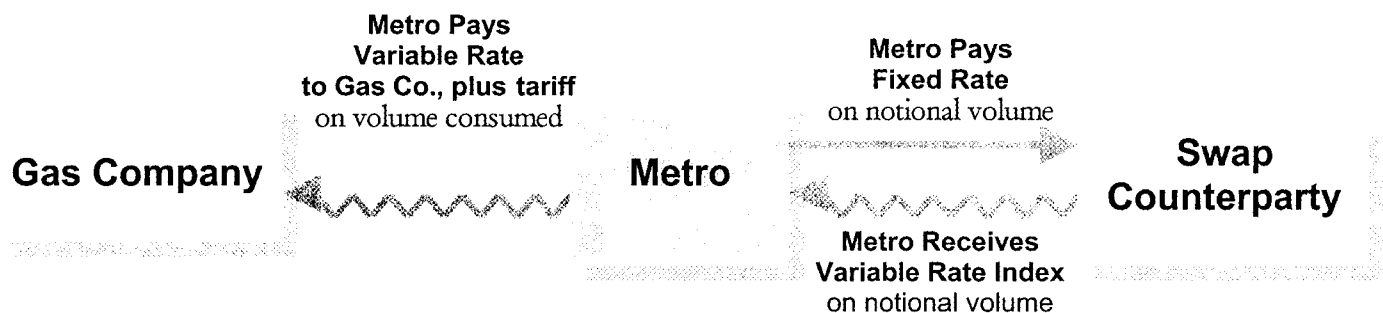
- **Develop and execute a commodity price hedging strategy designed to mitigate budget uncertainty.**
- **Implement the hedging strategy through the use of floating to fixed commodity swaps based on the SoCal Border First of Month Index.**
- **Execute the swaps in at least two separate transactions covering at least 95% of the expected volume of gas.**
- **Establish program objectives and adopt a formal policy that will direct the program's implementation.**

Attachment D

Hedge Program Additional Background

Commodity Swaps

The recommended hedging program uses commodity swaps. A commodity swap is not an agreement to purchase natural gas. The swap is an agreement to exchange fixed rate and variable rate payments between the counterparties. In this “variable to fixed” swap transaction, Metro will pay a fixed rate payment to the counterparty and will receive a variable rate payment based on an index. The variable rate swap payments received by Metro will be based on the Natural Gas Intelligence (NGI) Southern California Border Average (First of Month) Index because the Gas Company’s pricing closely resembles that index. The index is used as a proxy because it is not practical to directly hedge the Gas Company’s proprietary cost that Metro is currently exposed to. The fixed rate payment will be determined by a competitive bid process. The commodity swap is a hedge because the amount of the variable rate payments Metro will receive from the swap provider are expected to offset the amount of the actual cost of gas paid to the Gas Company, leaving the fixed rate payment to the swap provider as Metro’s cost of gas. See chart below.



Layering and Averaging

The CNG hedging program will utilize natural gas commodity swaps to provide budget certainty for gas purchased from the Gas Company. The hedge transactions may be executed as much as 30 months ahead of the month they will hedge. This lead-time is necessary to complete the hedging process before the budget development process begins. The hedge transactions will lock in fixed cost that will be the average of the 2 to 6 swaps entered into prior to the fiscal year. Each swap will have a term comprised of 12 monthly periods spanning July through June and will hedge a volume in each month that is spread proportionately among the layered hedges. So, if 4 swaps were layered, each swap would hedge 25% of the volume in each month, see chart below. Execution of the swaps will be spread over the year in order to achieve an averaging of prices in the market. With the hedges in place prior to start of the budget process, a mostly fixed cost may be incorporated in the budget, precluding any large variances.

Layer	Transaction Date	Annual Volume	FY09 Fixed Price
1	15-Feb-07	25%	\$8.50
2	15-May-07	25%	\$7.35
3	15-Aug-07	25%	\$8.25
4	15-Nov-07	25%	\$8.00
		100%	\$8.03

Reporting

While the hedges are outstanding quarterly reports will be distributed to the Board. The reports will address:

- performance of the hedge program
- performance of the hedge trades
- the credit ratings of the counterparties including their respective collateral requirements
- changes in the planned usage for the fiscal year to ensure the amount of outstanding hedges continues to match the planned usage.

Gas Price History

