

*Exhibit No.:*  
*Issue:* *Natural Gas Purchasing Practice:*  
*Hedging*  
*Witness:* *Kwang Y. Choe*  
*Sponsoring Party:* *MoPSC Staff*  
*Type of Exhibit:* *Rebuttal Testimony*  
*Case No.:* *GR-2006-0352*  
*Date Testimony Prepared:* *October 19, 2007*

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY SERVICES DIVISION**

**REBUTTAL TESTIMONY**

**OF**

**KWANG Y. CHOE**

**SOUTHERN MISSOURI NATURAL GAS COMPANY**

**CASE NO. GR-2006-0352**

*Jefferson City, Missouri*  
*October 2007*

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1 Gas Supply Plan calling for it to hedge 60 – 75% of its winter heating-season gas supply at fixed  
2 prices.

3 Q. On page 6, lines 15 -23, Mr. Maffett explains that SMNG locked in basis  
4 differentials at historic high in the summer of 2005 to take an advantage of potentially higher  
5 discount in the future when fixing favorable pricing. Do you agree with the explanation?

6 A. No. Mr. Maffett's explanation looks at only a portion of the whole picture.  
7 Although SMNG may have been able to fix the historically high basis discounts in the summer of  
8 2005, the final natural gas prices SMNG would eventually be able to fix also depend on NYMEX  
9 prices. SMNG only negotiated and set a discount off a NYMEX price. The price of gas was not  
10 set. SMNG and thus, its customers were protected to the extent that only the discount would be  
11 deducted from NYMEX prices. No matter how high SMNG were able to get the discount off of  
12 NYMEX prices, its protection level is limited, and therefore SMNG and its customers run the risk  
13 of being exposed to potential upward NYMEX price spikes.

14 Q. Mr. Maffett explains the benefit of locking in one of the biggest basis differentials  
15 on page 7, lines 3 – 12 by taking a hypothetical example. Do you agree with his explanation with  
16 the example?

17 A. No, Mr. Maffett again tells only part of the whole story. Mr. Maffett explains that  
18 by locking in -\$0.75 basis differential as opposed to normal -\$0.20 basis differential a buyer  
19 would get the benefit of reducing NYMEX price by \$0.75 as opposed to only \$0.20 when the  
20 NYMEX price changes from \$7.00 to \$7.50, thus improving the buyer's position by \$0.55. But,  
21 what if the NYMEX price became \$10.00 from \$7.00? In this case, the buyer pays an effective  
22 price of \$9.25 even when the discount was \$0.75. By simply waiting for the NYMEX to change  
23 more favorably, which did not happen in this situation, SMNG worsened the buyer's position

1 by \$2.45 (\$9.25 - \$6.80). What all this means is that locking in only the basis discount gives no  
2 assurance of hedging protection for SMNG and its customers.

3 Q. On page 7, lines 20 – 23, Mr. Maffett states, “By locking in basis differentials in  
4 favorable markets, SMNG can secure larger discounts from the NYMEX futures index and secure  
5 a lower overall price for its customers.” Do you agree with this statement?

6 A. No. It is misleading in that Mr. Maffett does not address the situation of rising  
7 NYMEX prices and the high costs to customers when NYMEX prices are high as I explained  
8 above with a hypothetical example. This type of adverse situation is also what SMNG faced  
9 during the fall of 2005. NYMEX natural gas futures prices continued to surge during the fall  
10 of 2005.

11 Q. On page 8, Mr. Maffett concludes that SMNG effectively utilized basis differential  
12 hedging in the 2005 /2006 period. Do you agree?

13 A. No. Although SMNG locked in basis differentials on July 26, 2005 and  
14 September 2, 2005, the Company and its customers were exposed to virtually unlimited market  
15 risk until SMNG eventually fixed the natural gas prices on October 27, 2005, December 27, 2005,  
16 and January 3, 2006. While SMNG speculated that the natural gas prices would have a major  
17 downward correction, NYMEX natural gas futures prices continued to surge during the fall of  
18 2005. Consequently, SMNG and its customers were faced with a worse situation when SMNG  
19 eventually fixed the natural gas prices on October 27, 2005, December 27, 2005, and  
20 January 3, 2006 than in the summer of 2005.

21 Q. On page 8, lines 11 -13, Mr. Maffett mentions that when SMNG executed the basis  
22 swaps, there was no fundamental support for gas prices such as no significant heat waves creating  
23 electric demand, among others. Do you agree with his discussion?

1           A.     No. When SMNG locked in the first basis discount on July 26, 2005 weather was  
2 warmer than normal in major natural gas consuming regions according to National Climatic Data  
3 Center. (See Schedule 1)

4           Q.     On page 11, lines 8 – 12, Mr. Maffett states, “If SMNG had executed fixed price  
5 contracts on July 26, and September 2, 2005, as Staff is suggesting should have been done, then  
6 SMNG would have been locking in record prices substantially higher than all previous winter  
7 seasons since SMNG has been in business.” Do you agree with this statement?

8           A.     It should be clarified that Staff is not suggesting SMNG should have fixed all of its  
9 winter prices on July 26, and September 2, 2005. The purpose of hedging for the  
10 2005/2006 winter was to protect customers from potentially high prices for 2005/2006, not just  
11 hoping that prices would return to lower levels seen in prior years. It is a fact that prices were  
12 high during this period, but SMNG produces no support that prices would be decreasing in the  
13 coming winter months.

14          Q.     On pages 9 – 10, Mr. Maffett explained the market fundamentals in the  
15 April - July, 2005 time period in which he states, “Summer temperatures were also relatively mild  
16 across most of the country therefore electric A/C demand was substantially lower than expected.”  
17 (Maffett direct, p.10, ll. 8-10) Do you agree with this statement?

18          A.     No. On the contrary, summer temperatures were warmer than normal in major  
19 natural gas consuming regions, and therefore there was higher than historical average electricity  
20 demand in the U.S. during April through July, 2005. (See Schedules 1, 2, and 3)

21          Q.     On page 8, lines 17-19, Mr. Maffett states, “SMNG, as well as a number of its  
22 suppliers and other market analysts we conferred with, were of the same opinion that NYMEX  
23 was due a major price correction (downward). . . .” Do you believe that SMNG had sufficiently

1 convincing evidence to only lock in seemingly record basis differentials and to wait for NYMEX  
2 to correct downward?

3 A. No. First, SMNG did not provide Staff with such sufficiently convincing evidence  
4 on which to base its hedging decision. In order for Staff to properly evaluate SMNG's hedging  
5 decision at the time, SMNG should have provided Staff with source records / documents from  
6 which it made its own analysis. In particular, SMNG deviated from its past traditional method in  
7 executing hedging during the summer and fall of 2005 for the winter of 2005 -2006. Therefore, it  
8 was all the more necessary for SMNG to keep the source records / documents and to provide Staff  
9 with such records / documents. Second, it seems as though SMNG made its hedging decision  
10 based on some tips gained from a number of its suppliers and other market analysts that NYMEX  
11 was due for a major downward correction. However, gas purchasers need to be careful of  
12 so-called tips because market prices also take such information into account. In other words, by  
13 the time SMNG knew, based on some tips, NYMEX was due for a major downward price  
14 correction, NYMEX also took such information into account as well and the information was  
15 reflected on NYMEX (the chances are such views about market direction were already public) and  
16 thus SMNG should have been skeptical of such tips. Simply put, SMNG could not outguess  
17 NYMEX based on such tips / information.

18 Q. On page 11, lines 18-20, Mr. Maffett states that gas prices fell dramatically in  
19 January 2006. Do you believe that the price decline was to the extent SMNG viewed as a  
20 downward market correction for NYMEX?

21 A. No. NYMEX fell substantially in January 2006 after sustained spikes from two  
22 major U.S. Gulf hurricanes in the early fall of 2005. Nevertheless, the price drop was not a market  
23 correction to the extent and level described by SMNG, which back in the summer of 2005, was  
24 waiting for a major market correction to prices below those experienced prior to the hurricanes.

1 The price only came down to about the pre-hurricane level. (See Schedule 4) Additionally, the  
2 temperature in January 2006 was extremely warm, the warmest in the past 30-years. SMNG did  
3 not know when it was making decisions in July and September 2005 that January 2006 weather  
4 would be extremely warm.

5 Q. On page 12, lines 1-12, Mr. Maffett explains how much non-market fundamentals  
6 such as market speculation have adversely influenced NYMEX prices. Do you agree with his  
7 assessment?

8 A. Partially. It may be true that factors other than market fundamentals, such as  
9 market speculation and psychology, among others, are in force to affect NYMEX, though it is still  
10 an ongoing debate among market participants. But, more importantly, the question is what  
11 SMNG has to do in the presence of such phenomenon in the market place. SMNG could not  
12 reasonably take the approach of simply waiting for a downward market correction, even if the  
13 market fundamentals did not support the high NYMEX prices of the summer of 2005. SMNG still  
14 needed to take a necessary step to secure natural gas at fixed prices accordingly to the maximum  
15 extent possible. SMNG could not simply wait for the market to fall while blaming on speculators  
16 for the adverse market condition. That is not a prudent hedging strategy.

17 Q. On page 14, lines 21-25, Mr. Maffett explains SMNG's decision utilizing basis  
18 differential hedges. Are these financial instruments?

19 A. Yes, basis swaps as indicated in page 8, line 8 of Mr. Maffett's testimony, are  
20 financial derivatives, whose values are based on the prices of two other underlying financial  
21 instruments; an index price and a NYMEX futures contract price. Thus, a basis trader must have a  
22 good understanding of market supply and demand fundamentals, among others, affecting the  
23 prices of the underlying instruments at the index location and also at the NYMEX futures contract  
24 delivery location.

1           Q.     On page 16, lines 7-11, Mr. Maffett states, “Staff’s proposed adjustment (s) are  
2 based upon a comparison of what the hypothetical cost of gas would have been had SMNG  
3 utilized the purchasing strategies assumed in the Scenarios, rather than using the Company’s  
4 actual hedging and purchasing plan.” Do you agree with that?

5           A.     No. Staff’s scenarios are based on the Company’s actual hedging plan that calls for  
6 60 – 75% of winter heating-season gas supply to be secured at fixed prices. Here, a reasonable  
7 definition of the fixed prices is that the whole natural gas commodity prices, not just a portion of  
8 the commodity prices, are fixed.

9           Q.     On page 17, lines 1-10, Mr. Maffett asserts that it was right for SMNG to only lock  
10 in all-time high basis differentials as it anticipated the unsupported high natural gas prices would  
11 correct downward. Do you agree with that?

12          A.     Although I agree with the fact that SMNG locked in seemingly all-time high basis  
13 differentials, I do not agree with his conclusion that the unsupported high natural gas prices would  
14 correct downward. It was too difficult to predict in the summer of 2005 if the natural gas prices  
15 would correct downward. This was precisely what hedging was needed for. It could have  
16 provided the ratepayers protection against the uncertainty of the market and market price risks. In  
17 other words, hedging could have assured price certainty to the extent that SMNG would have  
18 known exactly what the price limit would be.

19          Q.     On page 16, lines 11 – 14, Mr. Maffett states, “Most importantly, though, the  
20 “damages” calculated by Staff are based upon the use of 20/20 hindsight, and not upon the  
21 information that was available to SMNG at the time the purchasing decisions were being made.”  
22 Do you believe Staff has sufficient information from SMNG to conclude that SMNG’s actions  
23 taken in the summer and fall of 2005 under the circumstances were reasonable?



1           A.     No SMNG did not provide sufficient information for its position that SMNG's  
2 actions were reasonable at the time its decisions were being made.

3           Q.     Please summarize the points of your rebuttal testimony.

4           A.     SMNG engaged in its alleged hedging practices in the summer and fall of 2005  
5 without any substantively supporting source information. All it did was to lock in seemingly all  
6 time high basis differentials and to wait for the natural gas prices to correct downward. In so  
7 doing, SMNG failed to secure its targeted winter hedged volumes that were called for in its  
8 hedging plan. On page 14, lines 25-27, Mr. Maffett states, "We were simply waiting for the  
9 market fundamentals to correct what we felt was a significantly overpriced and unsubstantiated  
10 NYMEX strip." However, its decisions were based only on anecdotal information, if any, that the  
11 natural gas prices would see a major downward correction. Furthermore, it failed to look at the  
12 other side of the picture that the natural gas prices would continue to rise. Thus, having not  
13 followed its hedging plan ultimately resulted in the harm to its consumers. Staff has calculated the  
14 harm to customers between \$220,453 and \$378,470.

15          Q.     Does this conclude your testimony?

16          A.     Yes it does.

**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

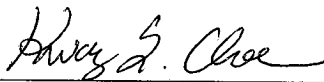
In the Matter of Southern Missouri Natural Gas )  
Company, L.P.'s Purchased Gas Adjustment (PGA) )  
Factors to be Reviewed in Its 2005-2006 Actual )  
Cost Adjustment

Case No. GR-2006-0352

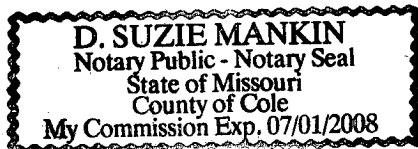
AFFIDAVIT OF KWANG Y. CHOE


STATE OF MISSOURI       )  
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COUNTY OF COLE       )       ss.

Kwang Y. Choe, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, consisting of 8 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

  
\_\_\_\_\_  
Kwang Y. Choe

Subscribed and sworn to before me this 17<sup>th</sup> day of October 2007.



  
\_\_\_\_\_  
Notary Public

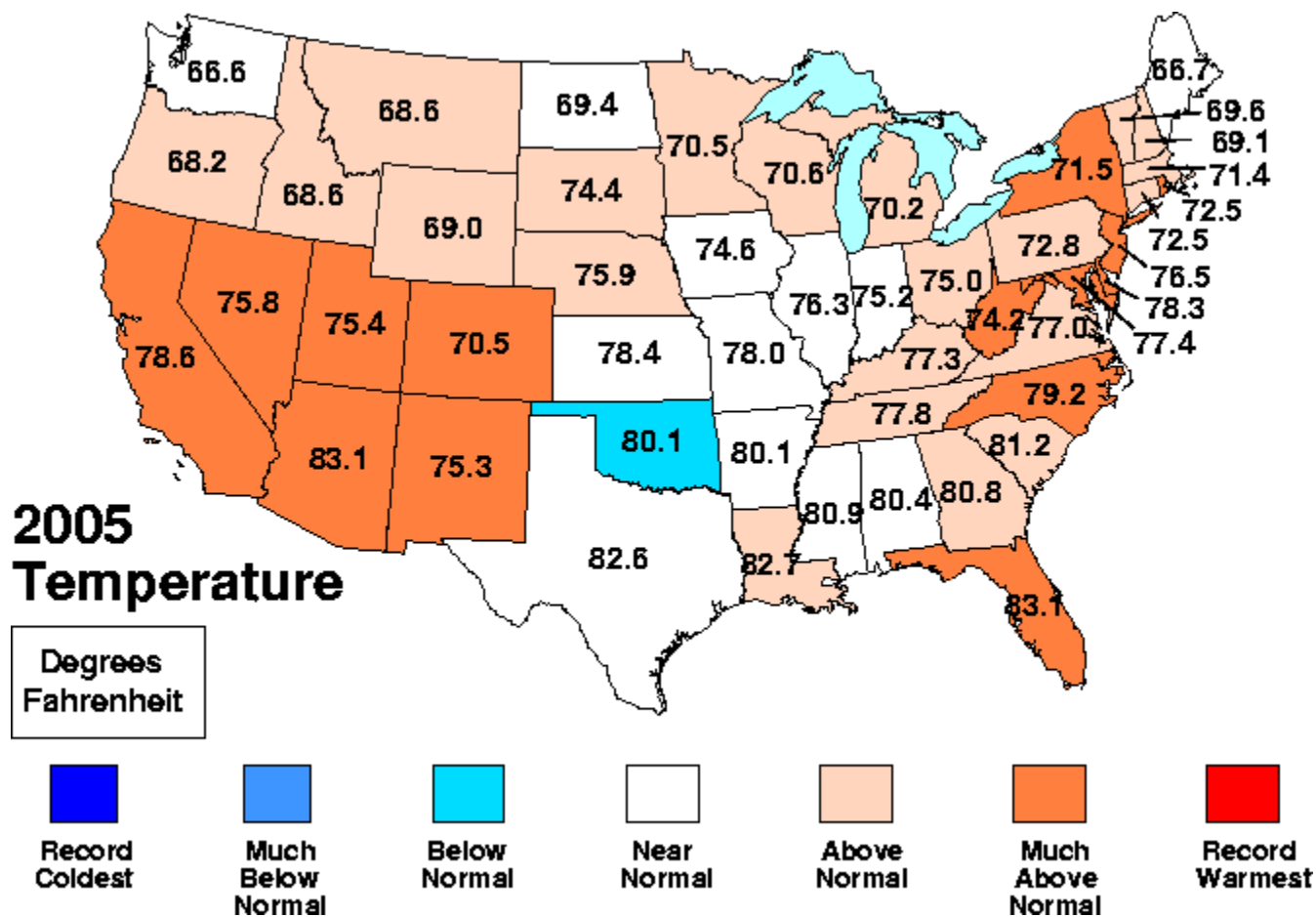


# Climate At A Glance



## July 2005 Temperature

Some of the following data are preliminary and have not been quality controlled. For official data, please contact the NCDC customer services branch at [ncdc.info@noaa.gov](mailto:ncdc.info@noaa.gov).



[Explanation of legend](#)

<http://climvis.ncdc.noaa.gov/cgi-bin/state-map-display.pl>  
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Please send questions to [Karin.L.Gleason@noaa.gov](mailto:Karin.L.Gleason@noaa.gov)  
Please see the [NCDC Contact Page](#) if you have questions or comments.

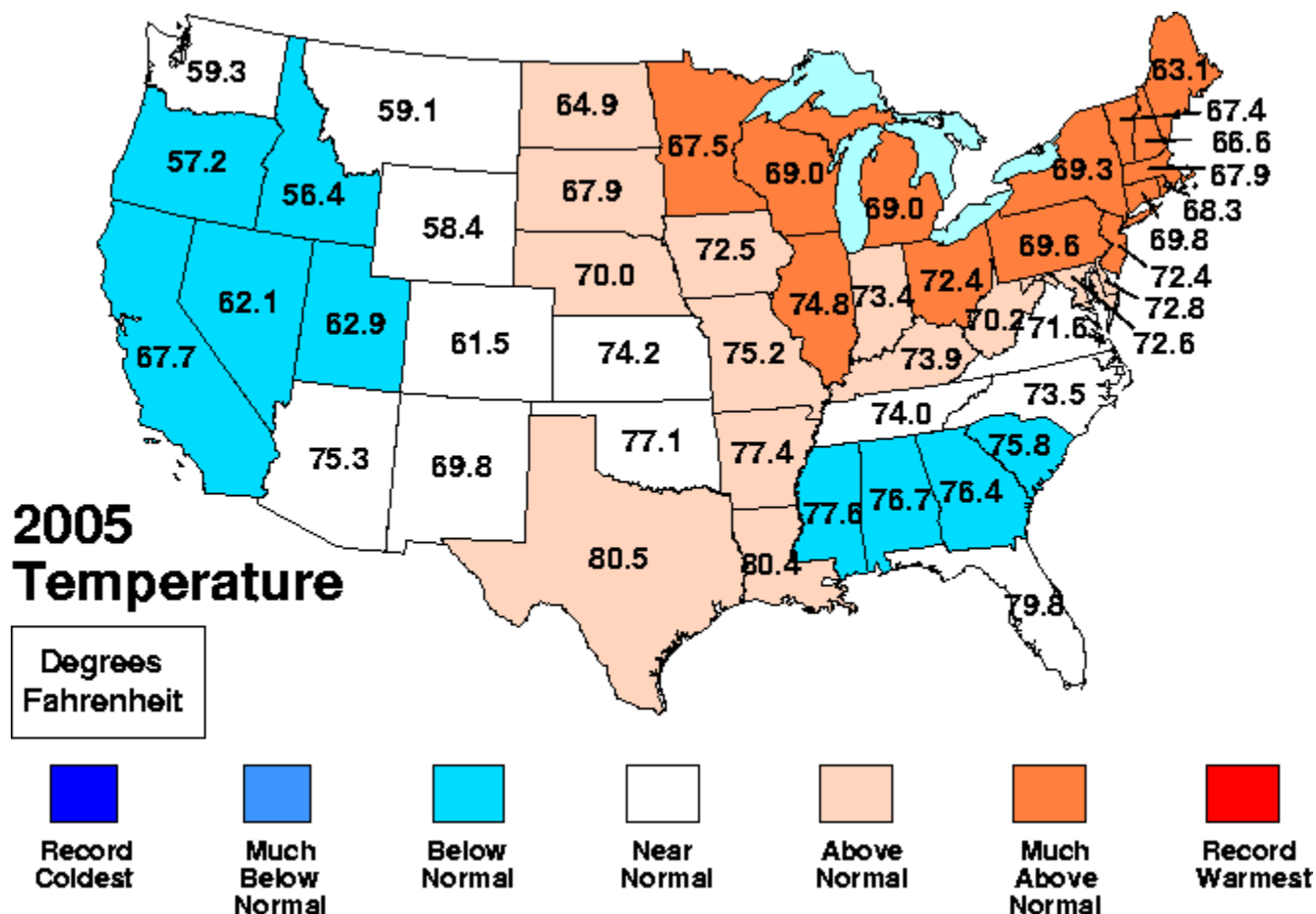


# Climate At A Glance



## June 2005 Temperature

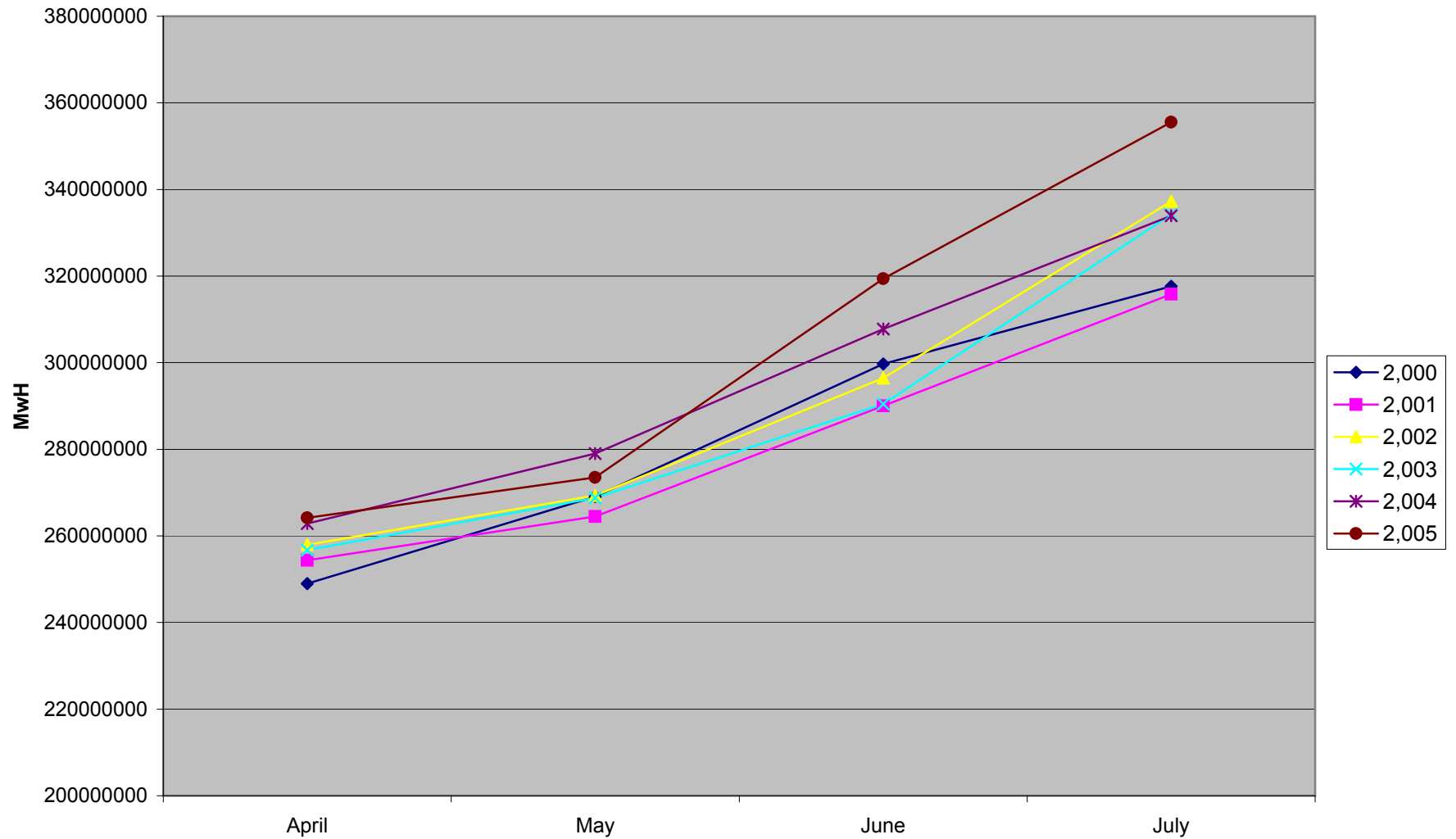
Some of the following data are preliminary and have not been quality controlled. For official data, please contact the NCDC customer services branch at [ncdc.info@noaa.gov](mailto:ncdc.info@noaa.gov).



<http://climvis.ncdc.noaa.gov/cgi-bin/state-map-display.pl>  
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Please send questions to [Karin.L.Gleason@noaa.gov](mailto:Karin.L.Gleason@noaa.gov)  
 Please see the [NCDC Contact Page](#) if you have questions or comments.

### All Sector Sales (Electricity)



Source: Energy Information Administration (EIA)

# Nymex 2005-06 FrontMonth, WinterMonth, January2006 Daily Settlement & SSCGFOM

