

**STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

Docket DG 08-009

**ENERGYNORTH NATURAL GAS, INC.
d/b/a
NATIONAL GRID NH**

Rebuttal Testimony

of

**Paul R. Moul
Managing Consultant
P. Moul & Associates**

**Concerning
Cost of Capital**

December 15, 2008

1 INTRODUCTION

2 **Q. Please state your name and business address.**

3 A. My name is Paul R. Moul and I am managing consultant at P. Moul & Associates. My
4 business address is 251 Hopkins Road, Haddonfield, NJ 08033-3062.

5 **Q. Have you previously submitted testimony in this proceeding?**

6 A. Yes. My direct testimony was included as part of the Company's case-in-chief that
7 was filed on February 25, 2008.

8 **Q. What is the purpose of your testimony?**

9 A. EnergyNorth Natural Gas, Inc. d/b/a National Grid NH ("National Grid" or the
10 "Company") has requested that I comment on and rebut the testimony presented by
11 Dr. Pradip K. Chattopadhyay, a witness appearing on behalf of the Staff of the
12 Commission. I will also use this occasion to update the Company's cost of equity to
13 reflect current market conditions. The updated cost of equity, which I will discuss
14 below, provides support for the Company's revised revenue requirement in this case.

15 **Q. Are there exhibits that accompany your rebuttal testimony?**

16 A. Yes. Those exhibits are represented by Attachments PRM-21 through PRM-28, which
17 follow my rebuttal testimony.

18 **Q. Do you agree with the position set forth in the direct testimony of the Staff
19 witness in this case?**

20 A. No. For a variety of reasons that I will cover in my rebuttal testimony, the rate of return
21 on common equity proposed by Dr. Chattopadhyay is much too low. The 9.01% rate
22 of return on common equity that he proposes is based on the use of improper inputs in
23 his models, and it does not reflect a reasonable cost of equity in the current market
24 environment. I will also respond to some of the comments that were made by Dr.
25 Chattopadhyay concerning my testimony. I have not attempted to respond to every

1 point with which I disagree with Dr. Chattopadhyay, but rather have focused on what I
2 believe are some of his more significant errors.

3 **Q. After updating your analysis to reflect current market conditions, what is the**
4 **cost of equity you are recommending be approved by the Commission for**
5 **National Grid NH?**

6 A. As I discuss below, market conditions have caused an increase in the range of a
7 reasonable cost of equity for the Company. As such, a cost of equity of 12.25% would
8 now be appropriate for National Grid NH.

9 RESULTS OF UPDATED ANALYSIS

10 **Q. Why are you updating the analysis set forth in your February testimony?**

11 A. The financial markets have experienced unprecedented turmoil during the last 6
12 months. The market information that I used in my direct testimony ended with the
13 month of December 2007. Since December 2007, many critical events occurred
14 including: (i) the collapse of the major investment bank, The Bear Stearns Companies,
15 and its acquisition with the aid of the Federal Reserve Bank of New York by JPMorgan
16 Chase & Co. announced on March 16, 2008; (ii) the failure of IndyMac on July 11,
17 2008, which was at the time the third-largest banking failure in U.S. history, after a "run
18 on the bank" by depositors; (iii) the placement of the government-sponsored
19 enterprises ("GSE") -- Federal National Mortgage Association (Fannie Mae) and
20 Freddie Mac into conservatorship on September 7, 2008 by the Federal Housing
21 Finance Agency; (iv) the largest bankruptcy filing in history by Lehman Brothers
22 Holding, Inc. on September 15, 2008; (v) the acquisition of the banking operations of
23 Washington Mutual by JPMorgan Chase on September 24, 2008, which was the
24 largest U.S. savings bank (its holding company subsequently filed for bankruptcy
25 protection); (vi) the rescue by Bank of America of Merrill Lynch & Co., Inc. on
26 September 15, 2008, with assistance of the Federal government; (vii) the effective

1 nationalization of American International Group on September 23, 2008, which was the
2 world's largest insurance company, through the acquisition of 79.9% of its equity by
3 the U.S. Treasury and (viii) other significant events affecting financial markets globally.
4 In response to these events, on October 3, 2008, Congress passed and the President
5 signed the Emergency Economic Stabilization Act of 2008, which, among other
6 provisions, provides the mechanism to deploy up to \$700 billion through the Troubled
7 Asset Relief Program ("TARP") to address urgent needs created by the credit crisis the
8 country has experienced. Then, the Federal Reserve Board instituted its Commercial
9 Paper Funding Facility ("CPFF"), which was authorized on October 7, 2008, and it
10 participated in coordinated efforts by major central banks to support financial stability
11 and to maintain flows of credit in the banking system. These programs included a \$75
12 billion Term Auction Facility ("TAF"), a future TAF auction totaling \$150 billion, and an
13 increase to \$620 billion of swap authorizations with central banks in Canada, England,
14 Japan, Denmark, the European Union, Norway, Australia, Sweden, and Switzerland.
15 To determine the effect of these domestic and global events, I have performed an
16 updated analysis to measure their impacts on my rate of return on common equity
17 recommendation using current market data.

18 **Q. How did you approach your updated analysis?**

19 A. My updated cost of equity analysis used the same methodologies explained in my
20 direct testimony. The methods and models I used were: the Discounted Cash Flow
21 ("DCF") model, the Risk Premium ("RP") analysis, the Capital Asset Pricing Model
22 ("CAPM"), and the Comparable Earnings ("CE") approach. I applied these models
23 using the same comparable group of companies that were included in my direct
24 testimony.

25 **Q. Please summarize the results of your updated cost of equity analysis.**

1 A. As I pointed out in my direct testimony, the use of more than one method provides a
 2 superior foundation to arrive at the cost of equity. At any point in time, a single method
 3 can provide an incomplete measure of the cost of equity depending upon extraneous
 4 factors that may influence market sentiment. The following table provides a summary
 5 of the indicated costs of equity using each of these approaches.

	<u>Direct Testimony</u>	<u>Update</u>
DCF	9.84%	10.55%
RP	11.44%	12.71%
CAPM	13.45%	13.91%
Comparable Earnings	13.90%	13.10%
Average	12.16%	12.57%
Median	12.45%	12.91%
Mid-point	11.87%	12.23%

7 An average of the updated market-based results of the DCF, RP and CAPM models is
 8 12.39% (10.55% + 12.71% + 13.91% = 37.17% ÷ 3). I have considered the results of
 9 the Comparable Earnings method, but have not directly incorporated those results into
 10 my recommendation. This procedure was also used in my direct testimony. A 12.25%
 11 return on common equity is a reasonable representation of these results and shows
 12 that the cost of equity has increased since the preparation of my direct testimony.

13 **Q. Please discuss how your updated analysis differs from your original analysis?**

14 A. Except for the Comparable Earnings approach, each market-based model of the cost
 15 of equity has increased since my direct testimony was prepared. Although the results
 16 of the CAPM have increased in my update, the risk-free rate of return component of
 17 the CAPM has actually declined. The decline in the risk-free rate of return can be

1 traced to lower Treasury yields attributed to policy actions of the Federal Open Market
2 Committee (“FOMC”) intended to deal with the financial crisis described above and the
3 economic recession that began in 2008. Due to the financial crisis, there has been a
4 flight to quality, thereby increasing demand and reducing the yields on Treasury
5 obligations. While this situation is most pronounced at the shortest end of the yield
6 curve (i.e., obligations with the shortest duration), all Treasury yields display relatively
7 low yields by reference to other credit obligations. As such, a focus on the yields on
8 Treasury obligations can provide a misleading indication of the cost of equity at this
9 time.

10 Since we are measuring the cost of equity for a public utility, it is important to consider
11 the spreads in public utility bond yields over Treasury yields, which is shown on page 2
12 of Attachment PRM-25. In October 2008, the spread in yields on A-rated public utility
13 bonds and 20-year Treasury bonds tripled since the beginning of 2007. These
14 spreads are symptomatic of risk aversion by investors throughout the capital markets.
15 That is to say, the risk aversion of investors in both debt and equity markets has
16 translated into higher capital costs for both bonds and stocks. This means that using
17 Treasury yields will lead to an understatement of the cost of equity for a public utility.
18 Rather, the cost of both debt and equity has increased for a public utility while
19 Treasury yields reflect the high demand for these obligations due to the flight to quality.

20 RETURN ON EQUITY OVERVIEW

21 **Q. Why is it important that the Commission provide the Company with a rate of**
22 **return on common equity that is consistent with investors’ requirements?**

23 A. The return on equity set by the Commission needs to be sufficient to enable the
24 Company to attract the equity capital that is required to provide service to customers.
25 It embodies in a single numerical value a clear signal of regulatory support for the
26 utilities that it regulates. While cost allocations, rate design issues, and regulatory

1 policies relative to the cost of service are important considerations, the opportunity to
2 achieve a reasonable return on equity represents a direct signal to the investment
3 community whether they can expect that regulatory oversight of the utility will result in
4 the utility generating sufficient earnings to enable investors to earn a rate of return that
5 is reasonable in light of their other investment opportunities. In a single figure, the
6 authorized return on equity provides a common and widely understood benchmark that
7 can be compared from one firm to another and is the basis by which returns on all
8 financial assets (stocks – both utility and non-regulated, bonds, money market
9 instruments, etc.) can be measured. While varying degrees of sophistication are
10 required to interpret the meaning of specific Commission policies on technical matters
11 such as the test period, rate design issues, cost of service items, etc., the return on
12 equity figure is universally understood and communicates to investors the type of
13 return they can reasonably expect to earn from the particular utility.

14 To obtain new capital and retain existing capital, the rate of return on common equity
15 must be high enough to satisfy investors' requirements. The recommendation of Dr.
16 Chattopadhyay, which proposes an equity return of just 9.01%, would send a negative
17 signal of regulatory support for the Company. Indeed, in a recent study dated
18 December 9, 2008, prepared for the American Gas Foundation, it was noted that
19 allowed equity returns below the level required by investors may lessen a utility's
20 ability to maintain and develop systems that are necessary to provide natural gas
21 service efficiently. The report highlights the need for an adequate return that would
22 provide incentives to make discretionary investments, such as energy-conservation
23 programs, system upgrades, new pipeline connections and compression stations.

24 **RESPONSE TO CHATTOPADHYAY ANALYSIS**

1 **Q. Before proceeding with your analysis of the details of the cost of equity models**
2 **submitted by Dr. Chattopadhyay, do you have any observations regarding his**
3 **overall perspective?**

4 A. Yes. Dr. Chattopadhyay provides some general observations that indicate to me that
5 he was operating with an inherent assumption that the Company's allowed return
6 should be relatively low. I say this because he makes two statements that seem to me
7 to be contradictory since they reach a similar conclusion from diametrically opposed
8 positions. On one hand, he seems to assume a low return because the economy in
9 New England generally, and in New Hampshire in particular, is performing well in
10 comparison to other regions of the U.S. At the same time, Dr. Chattopadhyay also
11 argues for a low return because we are in a time of financial turmoil, and, he says,
12 investors are likely to gravitate toward low-risk equities and low-risk bonds, which
13 presumably include public utilities. Dr. Chattopadhyay appears to see low returns for
14 utilities in both good times (i.e., better economic conditions) and bad times (i.e., capital
15 market turmoil). It seems to me that he does not envision higher returns under either
16 circumstance. As I have previously described, the current financial market turmoil
17 clearly points to a higher cost of capital for public utilities.

18 **Q. You indicated that the proposed rate of return on common equity recommended**
19 **by Dr. Chattopadhyay is incompatible with investor expectations and current**
20 **market fundamentals. What is the basis for this assessment of Dr.**
21 **Chattopadhyay's testimony?**

22 A. There are three perspectives to assess the reasonableness of the return on equity
23 proposed by Dr. Chattopadhyay. These are (i) the levels of returns established in
24 other regulatory proceedings, (ii) the levels of returns that investors expect natural gas
25 utilities to achieve generally, and (iii) the general state of the capital markets,
26 particularly the equity markets.

1 Q. Please discuss why the proposed equity return of Dr. Chattopadhyay is too low
 2 by reference to returns established in other regulatory proceedings?

3 A. The 9.01% equity return is clearly too low by reference to returns established in other
 4 regulatory proceedings nationally and returns previously established by the
 5 Commission. The table below shows equity returns established by state regulatory
 6 agencies throughout the U.S.

Summary of Recent Nationwide Rate of Return Awards

<u>Company</u>	<u>State</u>	<u>Case</u>	<u>Type of Utility</u>	<u>Date</u>	<u>Authorized Return on Equity</u>
UNS Electric Inc.	Arizona	D-E-04204A-06-0783	Electric	05/27/08	10.00%
San Diego Gas & Electric Co.	California	Ap-06-12-009 (elec.)	Electric	07/31/08	10.70%
San Diego Gas & Electric Co.	California	AP-06-12-009 (gas)	Natural Gas	07/31/08	10.70%
Southern California Gas Co.	California	AP-06-12-010	Natural Gas	07/31/08	10.82%
SourceGas Distribution LLC	Colorado	D-08S-108G	Natural Gas	08/27/08	10.25%
Chesapeake Utilities Corp.	Delaware	D-07-186	Natural Gas	09/02/08	10.25%
Atmos Energy Corp.	Georgia	D-27163-U	Natural Gas	09/17/08	10.70%
Hawaiian Electric Co.	Hawaii	D-04-0113	Electric	05/01/08	10.70%
Avista Corp.	Idaho	C-AVU-E-08-01	Electric	09/30/08	10.20%
Avista Corp.	Idaho	C-AVU-G-08-01	Natural Gas	09/30/08	10.20%
Central Illinois Light Co.	Illinois	D-07-0585	Electric	09/24/08	10.65%
Central Illinois Light Co.	Illinois	D-07-0588	Natural Gas	09/24/08	10.68%
Central Illinois Public	Illinois	D-07-0586	Electric	09/24/08	10.65%
Central Illinois Public	Illinois	D-07-0589	Natural Gas	09/24/08	10.68%
Commonwealth Edison Co.	Illinois	D-07-0566	Electric	09/10/08	10.30%
Illinois Power Co.	Illinois	D-07-0587	Electric	09/24/08	10.65%
Illinois Power Co.	Illinois	D-07-0590	Natural Gas	09/24/08	10.68%
Consumers Energy Co.	Michigan	C-U-15245	Electric	06/10/08	10.70%
Otter Tail Corp.	Minnesota	D-E-017/GR-07-1178	Electric	07/10/08	10.43%
Empire District Electric Co.	Missouri	C-ER-2008-0093	Electric	07/30/08	10.80%
New Jersey Natural Gas Co.	New Jersey	D-GR-07110889	Natural Gas	10/03/08	10.30%
Southwestern Public Service Co	New Mexico	C-07-00319-UT	Electric	08/26/08	10.18%
Sierra Pacific Power Co.	Nevada	D-07-12001	Electric	06/27/08	10.60%
Duke Energy Ohio Inc.	Ohio	C-07-0589-GA-AIR	Natural Gas	05/28/08	10.50%
Atmos Energy Corp.	Texas	GUD-9762	Natural Gas	06/24/08	10.00%
PacifiCorp	Utah	D-07-035-93	Electric	08/11/08	10.25%
Questar Gas Co.	Utah	D-07-057-13	Natural Gas	06/27/08	10.00%
Appalachian Power Co.	West Virginia	C-08-0278-E-P	Electric	06/27/08	10.50%
All Decisions					
Median					10.55%
Average					10.47%
Natural Gas					
Median					10.50%
Average					10.44%

7 We can see that returns near the 10.5% area are common in rate case decisions for
 8 the period prior to the recent increased level of market volatility. In addition, the Rhode

1 Island Public Utilities Commission recently granted the Company's affiliated gas
 2 distribution utility a 10.5% rate of return on common equity. This clearly shows that a
 3 return below 10%, as proposed by Dr. Chattopadhyay, is well outside the mainstream
 4 of regulatory determined equity returns.

5 **Q. But how do these recent returns established by other state regulatory**
 6 **commissions stack up against equity returns established in previous rate cases**
 7 **in New Hampshire?**

8 A. Historically, the Commission has been more restrictive in its cost of equity
 9 determinations than many other state regulatory commissions. That is to say, the
 10 Commission has traditionally provided low equity returns as compared with other
 11 returns established nationally. However, even these low returns cannot be reconciled
 12 with the proposed equity return recommended by Dr. Chattopadhyay in this case. This
 13 can be demonstrated by the change in market fundamentals that have occurred since
 14 the time that previous returns were accepted by the Commission. As shown below, I
 15 have compared the equity returns contained in New Hampshire rate case decisions
 16 with the yields on A-rated public utility bonds. Those comparisons are:

<u>Company</u>	<u>State</u>	<u>Case</u>	<u>Type of Utility</u>	<u>Date</u>	<u>Authorized Return on Equity</u>	<u>Yield on A-rated Public Utility Bonds</u>	<u>Spread</u>
Unitil's Distribution Service Rates	Settlement Agreement	DE 05-178	Electric	08/24/06	9.67%	6.40%	3.27%
PSNH's Delivery Service Rates	Settlement Agreement	DE 06-028	Electric	02/26/07	9.67%	5.81%	3.86%
Hanover Water Works Rate Case	Settlement Agreement	DW 06-099	Water	04/19/07	9.75%	5.97%	3.78%
Pennichuck Water Works Rate Case	Settlement Agreement	DW 06-073	Water	03/30/07	9.75%	5.78%	3.97%
Pennichuck East Utility Rates	Settlement Agreement	DW 07-032	Water	02/26/08	9.75%	6.21%	3.54%
Granite State Electric d/b/a National Grid	Merger Settlement	DW 06-107	Electric	Aug. 2007	9.67%	6.24%	3.43%
Median							3.66%
Average							3.64%

Note: Bonds yields for cases DE 05-178, DE 06-028 and DE 06-073 taken from Response to Data Request 1-79.

1 Based on these data, and the fact that the yield on A-rated public utility bonds are now
2 approximately 7%, an update of prior New Hampshire decisions would indicate that the
3 Company's equity return in this case should be at least 10.64% (7.0% + 3.64%). This
4 would bring the Company's equity return within the range of returns set by other state
5 regulatory commissions noted above for the period prior to the recent increase in
6 market volatility.

7 **Q. You also indicated that the equity return proposed by Dr. Chattopadhyay does**
8 **not conform with the levels of returns that investors expect natural gas utilities**
9 **to earn. What is the basis for this assertion?**

10 A. The forecasted returns on equity for the natural gas utility industry, as published in the
11 September 12, 2008 edition of Value Line, are as follows:

	<u>Years</u>	<u>Composite</u>
12	2008	11.0%
13	2009	11.5%
14	2011-2013	12.0%
15		

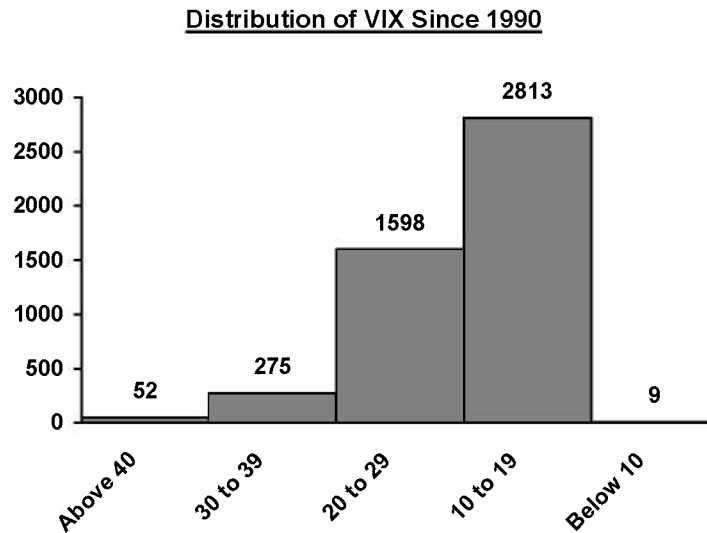
16 Knowledgeable investors are aware of these returns and price the stocks of the natural
17 gas utilities accordingly.

18 **Q. And finally, you indicated that the proposed equity return by Dr. Chattopadhyay**
19 **was not reflective of the risk associated with common stocks in today's market.**
20 **Please explain.**

21 A. The risk associated with common stocks in today's market can be measured by their
22 volatility. As volatility in the stock market increases, the cost of equity also increases.
23 The Chicago Board Options Exchange ("CBOE") Volatility Index (i.e., "VIX") can be
24 used to measure this risk. The VIX is based on real-time prices of options on the S&P
25 500 Index, and is designed to reflect investors' consensus view of future (30-day)
26 expected stock market volatility.

27 **Q. Can you present the VIX in an historical context?**

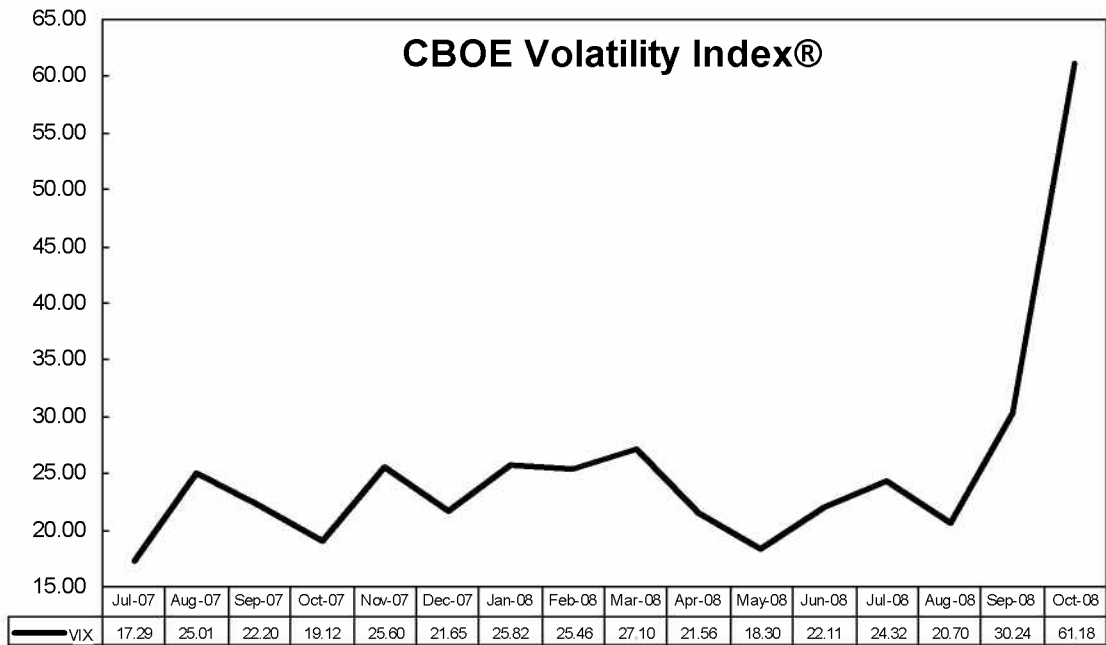
1 A. Yes. Presented below is the distribution of the history of the VIX.



2 The histogram represents the VIX daily closing index sorted into five groupings from its
3 inception on January 2, 1990 to October 31, 2008. The higher the index values, the
4 more volatility investors expect in the S&P 500. For 2008 through October 31, the VIX
5 averaged 27.96, or above its historic average of 19.37. Such volatility is not surprising
6 given investor concerns about financial market uncertainties and future economic
7 growth that I described previously.

8 **Q. Does the equity return proposed by Dr. Chattopadhyay take these current**
9 **market conditions into account?**

10 A. Not that I can see. As explained above, current market conditions indicate there is
11 significant risk present in the stock market as revealed by its high level of volatility.
12 This can be further displayed by recent performance of the VIX as shown below.



12 The graph indicates that the VIX has ballooned outside of its historical range by
 13 moving well above 40 and peaking at 80 on October 27, 2008. The volatility of the
 14 stock market is today significantly higher than in the recent past. This high volatility
 15 increases risk, which brings with it higher capital costs. Given the recent performance
 16 of the VIX, Dr. Chattopadhyay plainly has not provided adequate support for his unduly
 17 low proposed equity return.

18 **Q. What evidence leads you to that conclusion?**

19 A. I have reviewed Dr. Chattopadhyay's testimony that he submitted in NHPUC Docket
 20 DE 06-028. There, Dr. Chattopadhyay recommended a return on equity of 9.12%,
 21 which was actually higher than his proposal in this case. Yet, since December 2006,
 22 the VIX has risen five and one-half fold (i.e., from 10.96 to 61.18), and the yield on A
 23 rated public utility bonds has increased by 1.75% (i.e., from 5.81% to 7.56%). In each
 24 instance, the indication is that the cost of capital and cost of equity in particular has
 25 increased substantially. Yet, Dr. Chattopadhyay's proposal in this case has moved in
 26 the opposite direction.

DCF Model

1
2 **Q. Dr. Chattopadhyay employs the DCF model as his primary method for measuring**
3 **the Company's cost of equity. Have you detected any problems with his**
4 **approach?**

5 A. Yes. I have problems with (i) the proxy group that he employed to apply the DCF
6 model, (ii) the growth rate that he employed in his application of the DCF, and (iii) his
7 failure to adjust his results for flotation costs.

8 **Q. Please discuss the selection of proxy group companies employed by Dr.**
9 **Chattopadhyay.**

10 A. Both Dr. Chattopadhyay and I have used proxy groups comprised of seven
11 companies. Dr. Chattopadhyay employed four of the same companies contained in
12 my proxy group. Dr. Chattopadhyay added three new companies to his group and
13 removed three companies that were included in my group. The addition and deletion
14 of three companies are not necessary, and indeed his modification to my group makes
15 it less relevant for this case. For example, Dr. Chattopadhyay has not shown that the
16 addition of Laclede Group, Nicor and Southwest Gas improves on the composition of
17 the group, after excluding AGL Resources, New Jersey Resources and South Jersey
18 Industries. Indeed, from a geographic perspective the later three companies are all
19 more relevant than Southwest Gas that operates in a fairly arid region, which makes it
20 dissimilar to the other gas distribution utilities. In addition, the risk of the three
21 companies I included is marginally lower (i.e., .817 average beta) than the three new
22 companies used by Dr. Chattopadhyay (i.e., .833 average beta) in spite of the fact that
23 the percentage of regulated assets is higher for the three companies added by Dr.
24 Chattopadhyay.

1 Q. In his application of the DCF model, Dr. Chattopadhyay states that investors do
2 not use a single growth estimate and that he prefers to consider other measures
3 of growth. Do you agree?

4 A. Yes, in part. I agree that investors would not use a single measure of growth, but I
5 disagree with some of the alternative growth measures used by Dr. Chattopadhyay. In
6 addition to the forecasts by analysts of earnings growth, Dr. Chattopadhyay also
7 provides growth in dividends per share and book value per share by Value Line and
8 internal plus external growth also using Value Line forecasts. I certainly agree with his
9 use of I/B/E/S First Call and Zacks projections that are taken from forecasts by
10 analysts. The Value Line forecasts are less useful because they are based upon the
11 forecast of a single analyst, rather than the consensus forecast available from I/B/E/S
12 First Call and Zacks. A consensus of a variety of analysts is always better than a
13 single forecast because sampling from a larger population will minimize the impact of
14 outliers and potential biases.

15 As to the Value Line forecasts, the dividend growth rates used by Dr.
16 Chattopadhyay must clearly be discounted. First, earnings are the source of dividend
17 payments. Second, with the constant price-earnings ("P/E") multiple assumption of the
18 DCF, the value of the firm (i.e., its stock price) will grow at the earnings growth rate.
19 Third, Professor Myron Gordon, who is the foremost proponent of the DCF model in
20 public utility rate cases, established that analysts' earnings forecasts are the best input
21 for the DCF.¹ From a comparison of the average growth rates shown on Attachment
22 VII, it is obvious that the 2.86% dividend growth rate is an outlier. Other than the
23 4.14% book value per share growth rate forecast by Value Line, all other growth rates
24 are 5% and above. Moreover, with forecasts showing higher earnings growth rates

¹ "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management (Spring 1989).

1 than dividend growth rates, the expectation is that dividend payout ratios will decline in
 2 the future. Indeed, Value Line projects declining dividend payout ratios for the gas
 3 companies used by Dr. Chattopadhyay, which means that earnings per share and
 4 price appreciation (i.e., the capital gains yield, or growth component of the DCF) can
 5 be expected to grow at a higher rate than dividends in the future. This is shown below
 6 based on the Value Line forecasts.

<u>Company</u>	<u>2008</u>	<u>2009</u>	<u>2011-13</u>
Atmos Energy Corporation	66.0%	63.0%	58.0%
Laclede Group, Inc.	54.0%	61.0%	56.0%
Nicor Inc.	78.0%	72.0%	51.0%
Northwest Natural Gas Co.	58.0%	57.0%	56.0%
Piedmont Natural Gas Compan	66.0%	67.0%	60.0%
Southwest Gas Corporation	44.0%	42.0%	41.0%
WGL Holdings, Inc.	<u>58.0%</u>	<u>59.0%</u>	<u>61.0%</u>
Average	<u>60.6%</u>	<u>60.1%</u>	<u>54.7%</u>

7 With the forecast of declining payouts, it is obvious that dividend growth will lag
 8 earnings growth. The only purpose served by including dividend per share growth
 9 forecast is to suppress the other measures of growth.

10 **Q. Dr. Chattopadhyay also shows forecasts of book value per share growth. Please**
 11 **comment.**

12 A. Use of book value per share growth is inapplicable in the DCF analysis because
 13 stocks do not trade at constant market-to-book ratios, which makes it incorrect to use
 14 book value per share growth in the DCF analysis.

15 **Q. Among other variables that Dr. Chattopadhyay considered in his growth rate**
 16 **analysis for DCF purposes was the internal plus external growth. As he has**
 17 **used it, are there shortcomings to this approach?**

1 A. Yes. In calculating his internal growth rates, Dr. Chattopadhyay relied upon Value
2 Line. Value Line publishes its returns based upon year-end book values, rather than
3 average book values. Value Line defines “return on equity” as follows:

4 Percent Earned Common Equity – net profit less preferred
5 dividends divided by common equity (i.e., net worth less
6 preferred equity at liquidation or redemption value),
7 expressed as a percentage. See Percent Earned Total
8 Capital.

9
10 Without an adjustment to convert the Value Line forecast returns from year-end to
11 average book values, there is a downward bias in the results. This is because with an
12 increasing book value driven by retention growth, the average book value will be less
13 than the year-end book value. For that reason, the Federal Energy Regulatory
14 Commission (“FERC”) adjusts the year-end returns to derive the average yearly return,
15 using the formula $2(1 + G) / (2 + G)$ (see 92 FERC ¶ 61,070). Generally speaking,
16 this adjustment increases the retention growth rate.

17 **Q. Dr. Chattopadhyay presents his DCF results on Attachment XI. Do you have any**
18 **observation on these results?**

19 A. Yes. His DCF return of 9.82% based upon EPS growth rates is the only result that
20 might be useful because the other growth rate inputs are invalid for the reasons
21 explained above. It is clear that the other DCF calculations that provide returns of
22 8.24% and 8.95% are entirely too low. With A-rated public utility bonds yielding 7.56%
23 in October 2008, an equity return of just 8.24% is clearly unrealistic. Further, the DCF
24 return of 7.37% for Nicor, which is less than the cost of debt, cannot possibly be
25 correct. And, the other DCF returns submitted by Dr. Chattopadhyay are too close to
26 the cost of debt to be realistic.

27 **Q. Dr. Chattopadhyay also submits a method that he identifies as a Market-to-Book**
28 **ROE estimate. Is this an independent measure of the cost of equity?**

1 A. No. What he calls the Market-to-Book method is a reformation of the DCF method. It
2 is not a separate measure of the cost of equity. All he has done is to take the dividend
3 yield on book value, which he obtained from the expected return on equity multiplied
4 by the payout ratio, and divide it by the market-to-book ratio. Essentially, Dr.
5 Chattopadhyay has used a round-about method for arriving at his dividend yield. Dr.
6 Chattopadhyay then goes on to expand his analysis using the “br” plus “sv” form of the
7 DCF model as his growth component. His process does not represent a separate
8 method.

9 **Q. Dr. Chattopadhyay has failed to modify his DCF results for the flotation costs.
10 Has the omission of this adjustment resulted in an understatement of the
11 required rate of return on common equity?**

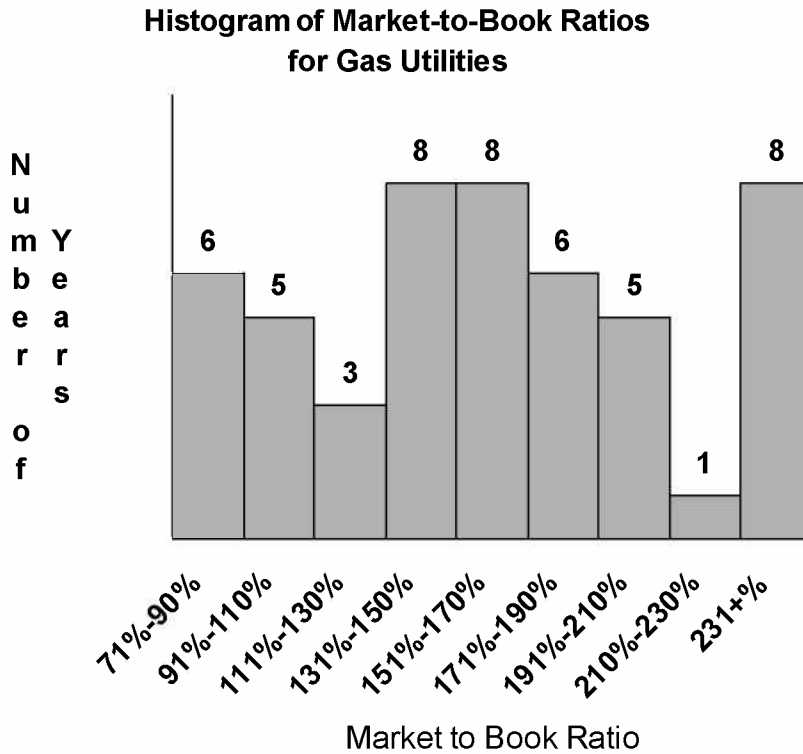
12 A. Yes. I should note that Dr. Chattopadhyay's position concerning flotation costs is
13 inconsistent with the Value Line forecasts that show that natural gas companies will be
14 issuing new common stock in the future. Indeed, he includes external financing growth
15 in his DCF analysis, which mandates a flotation cost adjustment. Moreover, the
16 industry has historically issued significant quantities of new equity (see Schedule 10 of
17 Attachment PRM-17).

18 **Market-to-Book Ratio and Leverage Adjustment**

19 **Q. Turning to specific items covered in the direct testimony of Dr. Chattopadhyay,
20 please respond to his assessment of market-to-book ratios.**

21 A. Dr. Chattopadhyay devotes a considerable portion of his testimony explaining his
22 position on market-to-book ratios. He repeatedly states that when the market-to-book
23 ratio is significantly above one, it indicates to him that the expected return on equity
24 exceeds the opportunity cost of equity. In spite of his exposition on this matter, he
25 does not provide any empirical support for his proposition, other than to show historical
26 market-to-book ratios reaching back twelve years. Yet, just because market-to-book

1 ratios have exceeded one during that period does not establish the validity of his
2 position. Indeed, I have extended the market-to-book ratios further back in time to
3 cover the past half-century, and those results are shown below.



4 As shown by the data presented above, original-cost regulation does not create a
5 tendency for the market value of utilities to approach their book value. Even though
6 the cost of equity is dynamic and changes frequently, a long history of market-to-book
7 ratios should reveal some tendency for prices to gravitate toward book value, but they
8 do not. After all, since regulators presumably set the rate of return equal to the cost of
9 equity and apply that return to an original-cost rate base, the market prices should
10 approximately equal book value. Rather, the data shown above indicates that it is
11 unusual for market prices to equal book value. This is because there are many factors
12 that influence stock prices for utilities other than book value regulation. It should be
13 recognized when assessing relative market-to-book ratios that the market valuation is

1 not solely a function of the fundamentals of a company as revealed by forecasted
2 earnings, which depends in part upon rate case outcomes. Rather, general market
3 sentiment can significantly influence the price of stocks. This is especially evident with
4 the emergence of a more global market for capital, the advent of program trading, and
5 the effect on the market of private equity funds which have boosted stock prices by
6 both shrinking the supply of shares and by fueling takeover speculation. Further,
7 market prices are reflective of the replacement cost of assets, rather than historical
8 costs represented by book values. Both regulators and investors are aware that
9 market-to-book ratios exceed 1, as noted by Dr. Chattopadhyay and as shown above.
10 Even though regulators are aware of these market-to-book ratios, they still grant
11 utilities rate increases. If Dr. Chattopadhyay were correct in his assessment of market-
12 to-book ratios, regulators would grant lower rate increases and lower authorized
13 returns on equity any time those ratios were above 1.0. Further, I do not know of any
14 commission that has stated that its rate case decisions can ensure any particular
15 market-to-book ratio.

16 **Q. Dr. Chattopadhyay asserts that your leverage adjustment would further**
17 **encourage stock prices to deviate away from book value. Please comment.**

18 A. I have already shown that it is a myth to believe that there should be some link
19 between market prices and book values. My leverage adjustment is not dependent
20 upon establishing or targeting any particular ratio of price to book value. Rather, my
21 adjustment is reflective of the risk related to financial leverage and does not address in
22 any manner the difference between expected return and opportunity cost rates, if any.
23 In his critique, Dr. Chattopadhyay has ignored the reality that the dividend yield
24 component of the DCF model will vary as the price of stock deviates from book value.
25 This is shown by the fact that as the price of stock moves above book value, the
26 dividend yield declines. Hence, my leverage adjustment actually adds stability to the

1 DCF return because the adjustment will increase or decrease as the dividend yield
2 changes. To the extent that one is truly concerned about the variation of stock price
3 vis-à-vis book value, the concern can easily be addressed by merely computing the
4 dividend yield using the book value of the stock rather than the stock price.

5 **Q. Dr. Chattopadhyay also raises other questions regarding the propriety of your**
6 **leverage adjustment. Please respond.**

7 A. My adjustment is not a market-to-book ratio adjustment and, contrary to what Dr.
8 Chattopadhyay appears to believe, the adjustment I make does not alter the use of
9 book values of common equity, preferred stock, and long-term debt in calculating the
10 weighted average cost of capital. In fact, the adjustment does not address any of the
11 factors that Dr. Chattopadhyay identifies would cause market prices to deviate from
12 book value and is not an attempt to “prop up high M/B ratios,” as he argues, because
13 it does not provide a return that supports any particular M/B ratio, high or low. Rather,
14 my adjustment is directed solely to variations in financial risk, and is based on book
15 values that are used in the ratesetting process.

16 **Q. Dr. Chattopadhyay claims that book values play a key role in the ratesetting**
17 **process and this fact somehow refutes your leverage adjustment. Please**
18 **respond.**

19 A. Dr. Chattopadhyay lists three items, which he believes argue against leverage
20 adjustment I made. As to his points one and two (see page 11 of his testimony), the
21 fact that the ratesetting process uses the book value capital structure to calculate the
22 weighted average cost of capital and the fact that investors understand that a utility’s
23 earnings are based in part on the allowed returns set in the rate case process provides
24 no basis to ignore my leverage adjustment. My leverage adjustment does not alter the
25 procedure to calculate the weighted average cost of capital, and that sophisticated
26 investors understand that ratesetting process. As to Dr. Chattopadhyay’s third point

1 (see page 11 of his testimony), the market value of the capitalization can be accurately
2 calculated and is not dependent upon any other ratesetting element. He has not
3 shown that there is any inaccuracy in my calculations of the market based capital
4 structure that provides a 68.29% common equity ratio and the 54.44% common equity
5 ratio using the book value of the capital structure. It is indisputable that there is more
6 financial risk associated with a 54.44% common equity ratio as compared to a 68.29%
7 common equity ratio. There is nothing in the formulas that I used to calculate the
8 leverage adjustment that conflicts with either of these fundamentals of the ratesetting
9 process.

10 **Q. Dr. Chattopadhyay leaves the impression that your leverage adjustment appears**
11 **to be attributable solely to differences in market prices and book value of**
12 **stocks. Is this correct?**

13 A. No. The market capitalization of a company is represented by the market value of its
14 debt, the market value of its preferred stock, and the market value of its common
15 equity. Moreover, the leverage adjustment itself is calculated with components that
16 include the marginal cost of debt and the marginal cost of preferred stock. It is an over
17 simplification of the leverage adjustment to attribute it merely to the difference in stock
18 price and book value. Indeed, it would be wrong to suggest that a market-to-book
19 adjustment is involved in my leverage adjustment, because it is not.

20 **Q. If there is no market-to-book ratio associated with your leverage adjustment,**
21 **please explain your analysis.**

22 A. I need to make it clear that my adjustment has nothing to do with a market-to-book
23 ratio. I will attempt to more clearly explain my adjustment.

24 First, the adjustment that I labeled as a leverage adjustment is merely a convenient
25 way of showing the simple DCF model (i.e., $D/P + g$) in the context of a return that
26 applies to a capital structure that is computed with book value weights rather than

1 market value weights. To do so, I identify a separate leverage adjustment, but there is
2 no need to do so other than providing separate identification for this factor. If I had
3 expressed my return solely in the context of the book value weights that we use to set
4 the weighted average cost of capital, and ignored the familiar $D/P + g$ expression, then
5 there would be no separate element to reflect the financial leverage change. This is
6 because the equity return applicable to the book value ratio of equity is equal to
7 8.43%, which is the return for my proxy group applicable to its equity with no debt in its
8 capital structure (i.e., the cost of capital is equal to the cost of equity with a 100%
9 equity ratio) plus 1.21% compensation for having a 45.29% debt ratio, plus 0.01% for
10 having a 0.26% preferred stock ratio. The sum of the parts is 9.65% (8.43% + 1.21%
11 + 0.01%) and there is no need to even address the cost of equity in terms of $D/P + g$.
12 To express this same return in the context of the familiar DCF model, I added the
13 3.86% dividend yield and the 5.25% growth rate and the 0.54% for the leverage
14 adjustment in order to arrive at the same 9.65% (3.86% + 5.25% + 0.54%) return. In
15 other words, I know of no means to mathematically solve for the 0.54% leverage
16 adjustment by expressing it in the terms of an expected return vs. opportunity cost or a
17 particular market-to-book ratio. The 0.54% adjustment is merely a convenient way to
18 bring the total return up to the 9.65% computed directly with the Modigliani & Miller
19 formulas. It is a return calculated entirely without regard to any market-to-book ratio
20 adjustment and I know of no mathematical formula that would show that it does.

21 CAPITAL ASSET PRICING MODEL

22 **Q. Dr. Chattopadhyay appears to have concerns regarding the CAPM measure of**
23 **the cost of equity. Do his concerns invalidate the CAPM as a method to**
24 **measure the cost of equity in public utility rate cases?**

25 **A. No. The CAPM is commonly used in rate cases; it is based on widely accepted**
26 **portfolio theory. CAPM has some limitations that are described by Dr. Chattopadhyay,**

1 but limitations exist with all models of the cost of equity. Such limitations arise from
2 the simplifying assumptions of investor behavior that also exist with the DCF model.

3 **Q. Dr. Chattopadhyay declines to accept the size adjustment in the CAPM. Please**
4 **comment.**

5 A. There has been extensive academic research that shows that a variety of factors
6 explain the risk compensation required by investors that exceeds the risk-free rate of
7 return (i.e., the yield on Treasury obligations). It is for this reason that multi-factor
8 models have been developed in the academic community to explain investor expected
9 returns. One of the more famous studies was conducted by Fama and French (see
10 "The Cross-Section of Expected Stock Returns," The Journal of Finance, June 1992),
11 which identified size as a separate factor that helps explain returns. Fama and French
12 identified the size of a firm as a separate factor that must be recognized in addition to
13 the beta measure of systematic risk in explaining investor expected returns. My size
14 adjustment to the CAPM is designed to provide this recognition.

15 **Q. Do you agree with Dr. Chattopadhyay that a 3.80% yield on ten-year Treasury**
16 **notes should be used as the risk-free rate of return component of the CAPM?**

17 A. No. First, I would prefer to use a longer term Treasury bond yields for 20-year or 30-
18 year maturities. Second, while Dr. Chattopadhyay may be correct that the 10-year
19 Treasury note yield was 3.80% as the average from September 19 to October 21,
20 2008, more current data shows that that rate for ratesetting purposes is too low. After
21 all, we are setting the cost of capital for the rate effective period, and the forecasts
22 show an increase in Treasury yields. For example, the November 1, 2008 issue of the
23 Blue Chip Financial Forecast shows the 10-year Treasury yield increasing to 4.2% by
24 the first quarter of 2010 (see page 3 of Attachment PRM-27). Part of the increase can
25 be attributed to the rise in yields from depressed levels today that have arisen from the
26 flight to quality during the financial crisis that I discussed previously. For this reason, I

1 used a 4.25% risk-free rate of return in the update of my CAPM cost rate (see page of
2 Attachment PRM-21).

3 **Q. Please comment on the market premium approach used by Dr. Chattopadhyay in**
4 **calculating a CAPM return on equity in his testimony.**

5 A. Dr. Chattopadhyay has used an approach similar to one of the procedures that I used
6 in my direct testimony. However, to bring some perspective to the market return
7 approach advocated by Dr. Chattopadhyay, the DCF return can also be calculated for
8 the Value Line Composite of 582 industrial, retail and transportation companies, which
9 includes 71 of Value Line's 99 industry groups and excludes financial services, utilities
10 and non-North American companies. In its semi-annual forecast dated November 7,
11 2008, Value Line forecasts growth for the Industrial Composite of 8.5% for earnings
12 per share, 8.0% for dividends per share, 8.0% for book value per share, and 14.5% for
13 percent retained to common equity. An average of these four growth rates is 9.75%
14 $(8.5\% + 8.0\% + 8.0\% + 14.5\% = 39.0\% \div 4)$. The resulting DCF return is 12.55%
15 $(2.8\% \text{ dividend yield plus } 9.75\% \text{ growth rate})$ for the Value Line composite. This DCF
16 return shows that the market return proposed by Dr. Chattopadhyay of 11.25% is too
17 low.

18 **Q. Can you state the 12.55% return on the Value Line industrial composite in terms**
19 **used by Dr. Chattopadhyay?**

20 A. Yes. Following Dr. Chattopadhyay's procedure, the Value Line industrial composite
21 return would become 7.95% $(12.55\% - 3.80\% = 8.75\% \div 1.1)$. This market premium of
22 7.95% is well above the 6.77% market premium calculated by Dr. Chattopadhyay
23 under his CAPM Method 1. The resulting CAPM Method 1 result would be 10.24%
24 $(7.95\% \times .81 = 6.44\% + 3.80\%)$ rather than the 9.28% result provided by Dr.
25 Chattopadhyay.

ADDITIONAL OBSERVATIONS

1
2 **Q. Dr. Chattopadhyay leaves the impression that your Risk Premium Model is**
3 **predominately dependent upon historical stock-price appreciation for measuring**
4 **the expected return on common equity. Please respond.**

5 A. There are several fallacies associated with his observation on page 34 of his
6 testimony. First, I measure the risk premium by reference to the achieved market
7 returns on both stocks and bonds. There is a capital gain/loss component in the
8 market returns on both asset classes. Second, by using my approach, I avoid
9 introducing a bias into the analysis because there is no attempt to segment the returns
10 into expected and unexpected market returns. As presumed Dr. Chattopadhyay is
11 troubled by high historical capital gains on stocks due to unexpected returns. To avoid
12 introducing a bias to the data, both unexpected losses and unexpected gains were
13 included in the study to the extent that they were realized by investors. Third, I have
14 not attempted to introduce my personal preference by judging a particular year's return
15 as to whether those returns represented "the true cost of equity." Most academic
16 research that employs historic time series of asset return do not tamper with the data.
17 Fourth, if the historical returns were calculated using alternative methodologies (i.e.,
18 using the DCF methodology for instance), then the analysis would become suspect
19 because the current return would be dependent upon the accuracy of the historical
20 DCF analysis, which would be subject to subjective application of the data. My
21 approach measures the risk premium with a high degree of precision. And, fifth, stock-
22 price appreciation is the primary determinant of the return that investors actually
23 realize on common stocks and its variability exceeds that of the dividend yield
24 component of the historical returns. It is the higher variability of the capital
25 appreciation component of the return that represents the basic riskiness of stocks. To
26 attack the risk premium analysis based on the role that capital appreciation plays in

1 investor expectations would represent a basic repudiation of the riskiness of common
2 equity.

3 **Q. Dr. Chattopadhyay also seems to believe that using historical data for the Risk
4 Premium approach creates problems of assigning a historical premium to a
5 prospective yield on A-rated public utility bonds. Please respond.**

6 A. There are two ways to address this issue. First, an analyst can use all reliable data to
7 establish the risk premium, thus avoiding a bias in selecting a particular period.
8 Second, an analyst can develop a risk premium from historical data that seeks to
9 emulate investors' current expectations. The value of my approach, which considered
10 both of these issues, is that it allows the risk premium to vary over time -- which is
11 what my risk premium does.

12 SUMMARY

13 **Q. Please summarize your rebuttal testimony.**

14 A. The return on equity recommended by Dr. Chattopadhyay, seriously understates the
15 Company's cost of equity. The return on equity proposed by Staff does not provide
16 National Grid the level of support it needs to be competitive in the highly volatile
17 financial markets that exist today, volatility that greatly increases investor risk and
18 therefore will require higher returns to attract capital. Therefore, Staff's proposed
19 return on equity of 9.01% should be rejected by the Commission. As I have
20 demonstrated in my rebuttal testimony, the return on equity required by National Grid's
21 investors has increased to 12.25% as a result of the ongoing financial crisis. As a
22 result, the Company has updated its cost of service to reflect this fact.

23 **Q. Does this conclude your rebuttal testimony?**

24 A. Yes.

ENERGYNORTH NATURAL GAS, INC.
d/b/a NATIONAL GRID NH

Attachments to
Accompany the
Rebuttal Testimony
of
Paul R. Moul

Concerning
Cost of Capital

EnergyNorth Natural Gas, Inc. d/b/a National Grid NH

Index of Attachments

Attachments

EnergyNorth Natural Gas, Inc. d/b/a National Grid NH Cost of Equity at 10-31-08	Attachment PRM-21
Dividend Yields	Attachment PRM-22
Historical Growth Rates	Attachment PRM-23
Projected Growth Rates	Attachment PRM-24
Interest Rates for Investment Grade Public Utility Bonds	Attachment PRM-25
Long-Term, Year-by-Year Total Returns for the S&P Composite Index, S&P Public Utility Index, and Long-Term Corporate Bonds and Public Utility Bonds	Attachment PRM-26
Component Inputs for the Capital Market Pricing Model	Attachment PRM-27
Comparable Earnings Approach	Attachment PRM-28

EnergyNorth Natural Gas, Inc. d/b/a National Grid NH

Cost of Equity
as of October 31, 2008

Discounted Cash Flow (DCF)	D_1/P_0	+	g	+	$lev.$	=	k	x	$flot.$	=	K
Gas Group	4.02%	+	5.75%	+	0.57%	=	10.34%	x	1.02	=	10.55%
Risk Premium (RP)	i	+	RP	=	K	+	$flot.$	=	K		
Gas Group	7.00%	+	5.50%	=	12.50%	+	0.21%	=	12.71%		
Capital Asset Pricing Model (CAPM)	Rf	+	β	x	$(Rm-Rf)$	+	$size$	+	$flot.$	=	K
Gas Group	4.25%	+	0.96	x	(8.89%)	+	0.92%	+	0.21%	=	13.91%
Comparable Earnings (CE)	<u>Historical</u>		<u>Forecast</u>		<u>Average</u>						
Comparable Earnings Group	14.2%		12.0%		13.10%						
	<u>All</u>		<u>DCF, RP</u>								
	<u>Methods</u>		<u>& CAPM</u>								
Average	12.57%		12.39%								
Median	12.91%										
Midpoint	12.23%										

Monthly Dividend Yields for
Gas Group
for the Twelve Months Ending October 2008

Company	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	12-Month Average	6-Month Average	3-Month Average
AGL RES INC (NYSE:ATG)	4.43%	4.38%	4.48%	4.85%	4.93%	4.99%	4.72%	4.89%	4.91%	5.09%	5.39%	5.59%			
ATMOS ENERGY CORP (NYSE:ATM)	4.97%	4.66%	4.56%	5.01%	5.13%	4.74%	4.75%	4.74%	4.96%	4.73%	4.91%	5.41%			
NEW JERSEY RES (NYSE:NJR)	3.19%	3.20%	3.61%	3.68%	3.61%	3.53%	3.39%	3.44%	3.30%	3.12%	3.13%	3.02%			
NORTHWEST NAT GAS CO (NY:NYG)	3.14%	3.10%	3.17%	3.58%	3.47%	3.34%	3.30%	3.26%	3.32%	3.09%	2.90%	3.11%			
PIEDMONT NAT GAS INC (NYSE:PNM)	3.87%	3.83%	4.17%	4.26%	3.97%	3.97%	3.88%	3.98%	3.90%	3.63%	3.26%	3.17%			
SOUTH JERSEY INDS INC (NYSE:SJI)	2.95%	3.00%	3.10%	3.18%	3.08%	2.97%	2.84%	2.90%	2.91%	3.05%	3.03%	3.18%			
WGL HLDGS INC (NYSE:WGL)	4.17%	4.22%	4.26%	4.42%	4.32%	4.34%	4.09%	4.13%	4.12%	4.44%	4.42%	4.42%			
Average	3.82%	3.77%	3.91%	4.14%	4.07%	3.98%	3.85%	3.91%	3.92%	3.88%	3.86%	3.99%	3.93%	3.90%	3.91%

Note: Monthly dividend yields are calculated by dividing the annualized quarterly dividend by the month-end closing stock price adjusted by the fraction of the ex-dividend.

Source of Information: <http://finance.yahoo.com/>
[http://ccbn.aol.com/Event/Calendar - Split/Dividend](http://ccbn.aol.com/Event/Calendar-Split/Dividend) data provided by FT Interactive Data

Historical Growth Rates

Earnings Per Share, Dividends Per Share,
Book Value Per Share, and Cash Flow Per Share

Gas Group	Earnings per Share		Dividends per Share		Book Value per Share		Cash Flow per Share	
	5 Year	10 Year	5 Year	10 Year	5 Year	10 Year	5 Year	10 Year
AGL Resources, Inc.	15.00%	7.00%	4.00%	2.50%	10.50%	6.50%	7.00%	5.50%
Atmos Energy Corp.	7.50%	3.50%	1.50%	2.50%	9.00%	7.00%	5.50%	4.00%
New Jersey Resources Corp.	6.00%	6.50%	4.00%	3.50%	10.00%	7.50%	4.50%	5.50%
Northwest Natural Gas	6.50%	3.00%	2.00%	1.50%	3.50%	3.50%	5.50%	3.00%
Piedmont Natural Gas Co.	6.00%	5.00%	4.50%	5.00%	6.50%	6.00%	7.00%	5.50%
South Jersey Industries, Inc.	12.50%	9.50%	4.50%	2.50%	12.50%	7.50%	9.00%	7.00%
WGL Holdings, Inc.	5.00%	2.00%	1.50%	1.50%	3.50%	4.00%	5.00%	3.50%
Average	8.36%	5.21%	3.14%	2.71%	7.93%	6.00%	6.21%	4.86%

Source of Information: Value Line Investment Survey, September 12, 2008

Analysts' Five-Year Projected Growth Rates
Earnings Per Share, Dividends Per Share,
Book Value Per Share, and Cash Flow Per Share

Gas Group	I/B/E/S First Call	Zacks	Value Line				Percent Retained to Common Equity
			Earnings Per Share	Dividends Per Share	Book Value Per Share	Cash Flow Per Share	
AGL Resources, Inc.	4.83%	4.80%	3.00%	4.00%	1.50%	3.50%	5.50%
Atmos Energy Corp.	5.00%	5.40%	4.50%	2.00%	3.50%	2.00%	4.00%
New Jersey Resources Corp.	6.00%	8.00%	8.50%	6.00%	9.00%	6.50%	6.50%
Northwest Natural Gas	4.83%	6.50%	7.00%	5.50%	3.50%	5.00%	5.00%
Piedmont Natural Gas Co.	7.93%	5.60%	7.00%	4.00%	4.00%	4.00%	5.00%
South Jersey Industries, Inc.	6.00%	7.80%	6.00%	5.50%	3.50%	5.00%	9.50%
WGL Holdings, Inc.	4.00%	7.50%	3.50%	2.50%	5.00%	2.50%	4.00%
Average	5.51%	6.51%	5.64%	4.21%	4.29%	4.07%	5.64%

Source of Information :

Thomson Financial, November 3, 2008
Zacks, November 3, 2008
Value Line Investment Survey, September 12, 2008

**Interest Rates for Investment Grade Public Utility Bonds
Yearly for 2003-2007
and the Twelve Months Ended October 2008**

<u>Years</u>	<u>Aa Rated</u>	<u>A Rated</u>	<u>Baa Rated</u>	<u>Average</u>
2003	6.40%	6.58%	6.84%	6.61%
2004	6.04%	6.16%	6.40%	6.20%
2005	5.44%	5.65%	5.93%	5.67%
2006	5.84%	6.07%	6.32%	6.08%
2007	5.94%	6.07%	6.33%	6.11%
Five-Year Average	<u>5.93%</u>	<u>6.11%</u>	<u>6.36%</u>	<u>6.13%</u>
<u>Months</u>				
Nov-07	5.87%	5.97%	6.27%	6.04%
Dec-07	6.03%	6.16%	6.51%	6.23%
Jan-08	5.87%	6.02%	6.35%	6.08%
Feb-08	6.04%	6.21%	6.60%	6.28%
Mar-08	5.99%	6.21%	6.68%	6.29%
Apr-08	5.99%	6.29%	6.81%	6.36%
May-08	6.07%	6.28%	6.79%	6.38%
Jun-08	6.19%	6.38%	6.93%	6.50%
Jul-08	6.13%	6.40%	6.97%	6.50%
Aug-08	6.09%	6.37%	6.98%	6.48%
Sep-08	6.13%	6.49%	7.15%	6.59%
Oct-08	6.95%	7.56%	8.58%	7.70%
Twelve-Month Average	<u>6.11%</u>	<u>6.36%</u>	<u>6.89%</u>	<u>6.45%</u>
Six-Month Average	<u>6.26%</u>	<u>6.58%</u>	<u>7.23%</u>	<u>6.69%</u>
Three-Month Average	<u>6.39%</u>	<u>6.81%</u>	<u>7.57%</u>	<u>6.92%</u>

Source: Mergent Bond Record

A rated Public Utility Bonds over 20-Year Treasuries

Year	A-rated	20-Year Treasuries		Year	A-rated	20-Year Treasuries	
	Public Utility	Yield	Spread		Public Utility	Yield	Spread
Dec-98	6.91%	5.36%	1.55%				
Jan-99	6.97%	5.45%	1.52%	Jan-04	6.15%	5.01%	1.14%
Feb-99	7.09%	5.66%	1.43%	Feb-04	6.15%	4.94%	1.21%
Mar-99	7.26%	5.87%	1.39%	Mar-04	5.97%	4.72%	1.25%
Apr-99	7.22%	5.82%	1.40%	Apr-04	6.35%	5.16%	1.19%
May-99	7.47%	6.08%	1.39%	May-04	6.62%	5.46%	1.16%
Jun-99	7.74%	6.36%	1.38%	Jun-04	6.46%	5.45%	1.01%
Jul-99	7.71%	6.28%	1.43%	Jul-04	6.27%	5.24%	1.03%
Aug-99	7.91%	6.43%	1.48%	Aug-04	6.14%	5.07%	1.07%
Sep-99	7.93%	6.50%	1.43%	Sep-04	5.98%	4.89%	1.09%
Oct-99	8.06%	6.66%	1.40%	Oct-04	5.94%	4.85%	1.09%
Nov-99	7.94%	6.48%	1.46%	Nov-04	5.97%	4.89%	1.08%
Dec-99	8.14%	6.69%	1.45%	Dec-04	5.92%	4.88%	1.04%
Jan-00	8.35%	6.86%	1.49%	Jan-05	5.78%	4.77%	1.01%
Feb-00	8.25%	6.54%	1.71%	Feb-05	5.61%	4.61%	1.00%
Mar-00	8.28%	6.38%	1.90%	Mar-05	5.83%	4.89%	0.94%
Apr-00	8.29%	6.18%	2.11%	Apr-05	5.64%	4.75%	0.89%
May-00	8.70%	6.55%	2.15%	May-05	5.53%	4.56%	0.97%
Jun-00	8.36%	6.28%	2.08%	Jun-05	5.40%	4.35%	1.05%
Jul-00	8.25%	6.20%	2.05%	Jul-05	5.51%	4.48%	1.03%
Aug-00	8.13%	6.02%	2.11%	Aug-05	5.50%	4.53%	0.97%
Sep-00	8.23%	6.09%	2.14%	Sep-05	5.52%	4.51%	1.01%
Oct-00	8.14%	6.04%	2.10%	Oct-05	5.79%	4.74%	1.05%
Nov-00	8.11%	5.98%	2.13%	Nov-05	5.88%	4.83%	1.05%
Dec-00	7.84%	5.64%	2.20%	Dec-05	5.80%	4.73%	1.07%
Jan-01	7.80%	5.65%	2.15%	Jan-06	5.75%	4.65%	1.10%
Feb-01	7.74%	5.62%	2.12%	Feb-06	5.82%	4.73%	1.09%
Mar-01	7.68%	5.49%	2.19%	Mar-06	5.98%	4.91%	1.07%
Apr-01	7.94%	5.78%	2.16%	Apr-06	6.29%	5.22%	1.07%
May-01	7.99%	5.92%	2.07%	May-06	6.42%	5.35%	1.07%
Jun-01	7.85%	5.82%	2.03%	Jun-06	6.40%	5.29%	1.11%
Jul-01	7.78%	5.75%	2.03%	Jul-06	6.37%	5.25%	1.12%
Aug-01	7.59%	5.58%	2.01%	Aug-06	6.20%	5.08%	1.12%
Sep-01	7.75%	5.53%	2.22%	Sep-06	6.00%	4.93%	1.07%
Oct-01	7.63%	5.34%	2.29%	Oct-06	5.98%	4.94%	1.04%
Nov-01	7.57%	5.33%	2.24%	Nov-06	5.80%	4.78%	1.02%
Dec-01	7.83%	5.76%	2.07%	Dec-06	5.81%	4.78%	1.03%
Jan-02	7.66%	5.69%	1.97%	Jan-07	5.96%	4.95%	1.01%
Feb-02	7.54%	5.61%	1.93%	Feb-07	5.90%	4.93%	0.97%
Mar-02	7.76%	5.93%	1.83%	Mar-07	5.85%	4.81%	1.04%
Apr-02	7.57%	5.85%	1.72%	Apr-07	5.97%	4.95%	1.02%
May-02	7.52%	5.81%	1.71%	May-07	5.99%	4.98%	1.01%
Jun-02	7.42%	5.65%	1.77%	Jun-07	6.30%	5.29%	1.01%
Jul-02	7.31%	5.51%	1.80%	Jul-07	6.25%	5.19%	1.06%
Aug-02	7.17%	5.19%	1.98%	Aug-07	6.24%	5.00%	1.24%
Sep-02	7.08%	4.87%	2.21%	Sep-07	6.18%	4.84%	1.34%
Oct-02	7.23%	5.00%	2.23%	Oct-07	6.11%	4.83%	1.28%
Nov-02	7.14%	5.04%	2.10%	Nov-07	5.97%	4.56%	1.41%
Dec-02	7.07%	5.01%	2.06%	Dec-07	6.16%	4.57%	1.59%
Jan-03	7.07%	5.02%	2.05%	Jan-08	6.02%	4.35%	1.67%
Feb-03	6.93%	4.87%	2.06%	Feb-08	6.21%	4.49%	1.72%
Mar-03	6.79%	4.82%	1.97%	Mar-08	6.21%	4.36%	1.85%
Apr-03	6.64%	4.91%	1.73%	Apr-08	6.29%	4.44%	1.85%
May-03	6.36%	4.52%	1.84%	May-08	6.28%	4.60%	1.68%
Jun-03	6.21%	4.34%	1.87%	Jun-08	6.38%	4.74%	1.64%
Jul-03	6.57%	4.92%	1.65%	Jul-08	6.40%	4.62%	1.78%
Aug-03	6.78%	5.39%	1.39%	Aug-08	6.37%	4.53%	1.84%
Sep-03	6.56%	5.21%	1.35%	Sep-08	6.49%	4.32%	2.17%
Oct-03	6.43%	5.21%	1.22%	Oct-08	7.56%	4.45%	3.11%
Nov-03	6.37%	5.17%	1.20%				
Dec-03	6.27%	5.11%	1.16%				
				Average:			
				12-months			1.86%
				6-months			2.04%
				3-months			2.37%

S&P Composite Index and S&P Public Utility Index
Long-Term Corporate and Public Utility Bonds
Yearly Total Returns
1928-2007

Year	S & P Composite Index	S & P Public Utility Index	Long Term Corporate Bonds	Public Utility Bonds
1928	43.61%	57.47%	2.84%	3.08%
1929	-8.42%	11.02%	3.27%	2.34%
1930	-24.90%	-21.96%	7.98%	4.74%
1931	-43.34%	-35.90%	-1.85%	-11.11%
1932	-8.19%	-0.54%	10.82%	7.25%
1933	53.99%	-21.87%	10.38%	-3.82%
1934	-1.44%	-20.41%	13.84%	22.61%
1935	47.67%	76.63%	9.61%	16.03%
1936	33.92%	20.69%	6.74%	8.30%
1937	-35.03%	-37.04%	2.75%	-4.05%
1938	31.12%	22.45%	6.13%	8.11%
1939	-0.41%	11.26%	3.97%	6.76%
1940	-9.78%	-17.15%	3.39%	4.45%
1941	-11.59%	-31.57%	2.73%	2.15%
1942	20.34%	15.39%	2.60%	3.81%
1943	25.90%	46.07%	2.83%	7.04%
1944	19.75%	18.03%	4.73%	3.29%
1945	36.44%	53.33%	4.08%	5.92%
1946	-8.07%	1.26%	1.72%	2.98%
1947	5.71%	-13.16%	-2.34%	-2.19%
1948	5.50%	4.01%	4.14%	2.65%
1949	18.79%	31.39%	3.31%	7.16%
1950	31.71%	3.25%	2.12%	2.01%
1951	24.02%	18.63%	-2.69%	-2.77%
1952	18.37%	19.25%	3.52%	2.99%
1953	-0.99%	7.85%	3.41%	2.08%
1954	52.62%	24.72%	5.39%	7.57%
1955	31.56%	11.26%	0.48%	0.12%
1956	6.56%	5.06%	-6.81%	-6.25%
1957	-10.78%	6.36%	8.71%	3.58%
1958	43.36%	40.70%	-2.22%	0.18%
1959	11.96%	7.49%	-0.97%	-2.29%
1960	0.47%	20.26%	9.07%	9.01%
1961	26.89%	29.33%	4.82%	4.65%
1962	-8.73%	-2.44%	7.95%	6.55%
1963	22.80%	12.36%	2.19%	3.44%
1964	16.48%	15.91%	4.77%	4.94%
1965	12.45%	4.67%	-0.46%	0.50%
1966	-10.06%	-4.48%	0.20%	-3.45%
1967	23.98%	-0.63%	-4.95%	-3.63%
1968	11.06%	10.32%	2.57%	1.87%
1969	-8.50%	-15.42%	-8.09%	-6.66%
1970	4.01%	16.56%	18.37%	15.90%
1971	14.31%	2.41%	11.01%	11.59%
1972	18.98%	8.15%	7.26%	7.19%
1973	-14.66%	-18.07%	1.14%	2.42%
1974	-26.47%	-21.55%	-3.06%	-5.28%
1975	37.20%	44.49%	14.64%	15.50%
1976	23.84%	31.81%	18.65%	19.04%
1977	-7.18%	8.64%	1.71%	5.22%
1978	6.56%	-3.71%	-0.07%	-0.98%
1979	18.44%	13.58%	-4.18%	-2.75%
1980	32.42%	15.08%	-2.76%	-0.23%
1981	-4.91%	11.74%	-1.24%	4.27%
1982	21.41%	26.52%	42.56%	33.52%
1983	22.51%	20.01%	6.26%	10.33%
1984	6.27%	26.04%	16.86%	14.82%
1985	32.16%	33.05%	30.09%	26.48%
1986	18.47%	28.53%	19.85%	18.16%
1987	5.23%	-2.92%	-0.27%	3.02%
1988	16.81%	18.27%	10.70%	10.19%
1989	31.49%	47.80%	16.23%	15.61%
1990	-3.17%	-2.57%	6.78%	8.13%
1991	30.55%	14.61%	19.89%	19.25%
1992	7.67%	8.10%	9.39%	8.65%
1993	9.99%	14.41%	13.19%	10.59%
1994	1.31%	-7.94%	-5.76%	-4.72%
1995	37.43%	42.15%	27.20%	22.81%
1996	23.07%	3.14%	1.40%	3.04%
1997	33.36%	24.69%	12.95%	11.39%
1998	28.58%	14.82%	10.76%	9.44%
1999	21.04%	-8.85%	-7.45%	-1.69%
2000	-9.11%	59.70%	12.87%	9.45%
2001	-11.88%	-30.41%	10.65%	5.85%
2002	-22.10%	-30.04%	16.33%	1.63%
2003	28.70%	26.11%	5.27%	10.01%
2004	10.87%	24.22%	8.72%	6.03%
2005	4.91%	16.79%	5.87%	3.02%
2006	15.80%	20.95%	3.24%	3.94%
2007	5.49%	19.39%	2.60%	5.20%
Geometric Mean	10.04%	8.92%	5.81%	5.45%
Arithmetic Mean	11.95%	11.24%	6.13%	5.72%
Standard Deviation	20.02%	22.43%	8.52%	7.84%
Median	13.38%	12.05%	4.11%	4.55%

**Tabulation of Risk Rate Differentials for
S&P Public Utility Index and Public Utility Bonds
For the Years 1928-2007, 1952-2007, 1974-2007, and 1979-2007**

Total Returns	<u>Range</u>		<u>Midpoint</u>	<u>Point Estimate</u>	<u>Average of the Midpoint of Range and Point Estimate</u>
	<u>Geometric Mean</u>	<u>Median</u>		<u>Arithmetic Mean</u>	
<u>1928-2007</u>					
S&P Public Utility Index	8.92%	12.05%		11.24%	
Public Utility Bonds	<u>5.45%</u>	<u>4.55%</u>		<u>5.72%</u>	
Risk Differential	<u>3.47%</u>	<u>7.50%</u>	<u>5.49%</u>	<u>5.52%</u>	<u>5.51%</u>
<u>1952-2007</u>					
S&P Public Utility Index	11.14%	14.00%		12.65%	
Public Utility Bonds	<u>6.15%</u>	<u>5.07%</u>		<u>6.45%</u>	
Risk Differential	<u>4.99%</u>	<u>8.93%</u>	<u>6.96%</u>	<u>6.20%</u>	<u>6.58%</u>
<u>1974-2007</u>					
S&P Public Utility Index	12.98%	15.94%		14.90%	
Public Utility Bonds	<u>8.45%</u>	<u>8.39%</u>		<u>8.79%</u>	
Risk Differential	<u>4.53%</u>	<u>7.55%</u>	<u>6.04%</u>	<u>6.11%</u>	<u>6.08%</u>
<u>1979-2007</u>					
S&P Public Utility Index	13.62%	16.79%		15.41%	
Public Utility Bonds	<u>8.83%</u>	<u>8.65%</u>		<u>9.15%</u>	
Risk Differential	<u>4.79%</u>	<u>8.14%</u>	<u>6.47%</u>	<u>6.26%</u>	<u>6.37%</u>

Value Line Betas

Gas Group

AGL Resources, Inc.	0.85
Atmos Energy Corp.	0.80
New Jersey Resources Corp.	0.80
Northwest Natural Gas	0.75
Piedmont Natural Gas Co.	0.80
South Jersey Industries, Inc.	0.80
WGL Holdings, Inc.	<u>0.85</u>

Average	<u><u>0.81</u></u>
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Source of Information:
Value Line Investment Survey
September 12, 2008

Hamada formula	BI	=	Bu	[1+ (1 - t)	D/E	+ P/E]
	0.81	=	Bu	[1+ (1-0.35)	0.4514	+ 0.0023]
	0.63	=	Bu				

Hamada formula	BI	=	Bu	[1+ (1 - t)	D/E	+ P/E]
	BI	=	0.63	[1+ (1-0.35)	0.8059	+ 0.0045]
	BI	=	0.96				

**Yields for Treasury Constant Maturities
Yearly for 2003-2007
and the Twelve Months Ended October 2008**

<u>Years</u>	<u>1-Year</u>	<u>2-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>7-Year</u>	<u>10-Year</u>	<u>20-Year</u>
2003	1.24%	1.65%	2.10%	2.97%	3.52%	4.02%	4.96%
2004	1.89%	2.38%	2.78%	3.43%	3.87%	4.27%	5.04%
2005	3.62%	3.85%	3.93%	4.05%	4.15%	4.29%	4.64%
2006	4.93%	4.82%	4.77%	4.75%	4.76%	4.79%	4.99%
2007	4.52%	4.36%	4.34%	4.43%	4.50%	4.63%	4.91%
Five-Year Average	<u>3.24%</u>	<u>3.41%</u>	<u>3.58%</u>	<u>3.93%</u>	<u>4.16%</u>	<u>4.40%</u>	<u>4.91%</u>
<u>Months</u>							
Nov-07	3.50%	3.34%	3.35%	3.67%	3.87%	4.15%	4.56%
Dec-07	3.26%	3.12%	3.13%	3.49%	3.74%	4.10%	4.57%
Jan-08	2.71%	2.48%	2.51%	2.98%	3.31%	3.74%	4.35%
Feb-08	2.05%	1.97%	2.19%	2.78%	3.21%	3.74%	4.49%
Mar-08	1.54%	1.62%	1.80%	2.48%	2.93%	3.51%	4.36%
Apr-08	1.74%	2.05%	2.23%	2.84%	3.19%	3.68%	4.44%
May-08	2.05%	2.43%	2.69%	3.14%	3.45%	3.88%	4.60%
Jun-08	2.42%	2.77%	3.08%	3.49%	3.73%	4.10%	4.74%
Jul-08	2.28%	2.57%	2.87%	3.30%	3.60%	4.01%	4.62%
Aug-08	2.18%	2.42%	2.70%	3.14%	3.46%	3.89%	4.53%
Sep-08	1.91%	2.08%	2.32%	2.88%	3.25%	3.69%	4.32%
Oct-08	1.42%	1.61%	1.86%	2.73%	3.19%	3.81%	4.45%
Twelve-Month Average	<u>2.26%</u>	<u>2.37%</u>	<u>2.56%</u>	<u>3.08%</u>	<u>3.41%</u>	<u>3.86%</u>	<u>4.50%</u>
Six-Month Average	<u>2.04%</u>	<u>2.31%</u>	<u>2.59%</u>	<u>3.11%</u>	<u>3.45%</u>	<u>3.90%</u>	<u>4.54%</u>
Three-Month Average	<u>1.84%</u>	<u>2.04%</u>	<u>2.29%</u>	<u>2.92%</u>	<u>3.30%</u>	<u>3.80%</u>	<u>4.43%</u>

Source: Federal Reserve statistical release H.15

Measures of the Risk-Free Rate

The forecast of Treasury yields
per the consensus of nearly 50 economists
reported in the Blue Chip Financial Forecasts dated November 1, 2008

<u>Year</u>	<u>Quarter</u>	<u>1-Year Treasury Bill</u>	<u>2-Year Treasury Note</u>	<u>5-Year Treasury Note</u>	<u>10-Year Treasury Note</u>	<u>30-Year Treasury Bond</u>
2008	Fourth	1.5%	1.6%	2.7%	3.7%	4.1%
2009	First	1.5%	1.6%	2.6%	3.6%	4.1%
2009	Second	1.5%	1.7%	2.7%	3.7%	4.2%
2009	Third	1.7%	1.9%	2.9%	3.9%	4.3%
2009	Fourth	1.9%	2.1%	3.0%	4.0%	4.5%
2009	First	2.2%	2.4%	3.3%	4.2%	4.6%

Total Market Return

Value Line Return

As of:	<u>Dividend Yield</u>	<u>Median Appreciation Potential</u>	<u>Median Total Return</u>
12-Sep-08	2.2%	+ 15.02%	= 17.22%

DCF Result for the S&P 500 Composite

D/P	(1+.5g)	+	g	=	k
2.93%	(1.0537)	+	10.74%	=	13.83%
where:	Price (P)	at	October-08	=	968.75
	Dividend (D)	for	2nd Qtr. '08	=	7.10
	Dividend (D)		annualized	=	28.40
	Growth (g)		First Call Epε	=	10.74%

Summary

Value Line	17.22%
S&P 500	13.83%
Average	<u>15.53%</u>



THE VALUE LINE

Investment Survey®

Part 1
Summary & Index

File at the front of the
Ratings & Reports
binder. Last week's
Summary & Index
should be removed.

September 12, 2008

TABLE OF SUMMARY & INDEX CONTENTS

Summary & Index Page Number

Industries, in alphabetical order	1
Stocks, in alphabetical order	2-23
Noteworthy Rank Changes	24

SCREENS

Industries, in order of Timeliness Rank	24	Stocks with Lowest P/Es	35
Timely Stocks in Timely Industries	25-26	Stocks with Highest P/Es	35
Timely Stocks (1 & 2 for Performance)	27-29	Stocks with Highest Annual Total Returns	36
Conservative Stocks (1 & 2 for Safety)	30-31	Stocks with Highest 3- to 5-year Dividend Yield	36
Highest Dividend Yielding Stocks	32	High Returns Earned on Total Capital	37
Stocks with Highest 3- to 5-year Price Potential	32	Bargain Basement Stocks	37
Biggest "Free Flow" Cash Generators	33	Untimely Stocks (5 for Performance)	38
Best Performing Stocks last 13 Weeks	33	Highest Dividend Yielding Non-utility Stocks	38
Worst Performing Stocks last 13 Weeks	33	Highest Growth Stocks	39
Widest Discounts from Book Value	34		

The Median of Estimated
PRICE-EARNINGS RATIOS
of all stocks with earnings

15.6

26 Weeks Ago	Market Low	Market High
15.5	10-9-02 14.1	7-13-07 19.7

The Median of Estimated
DIVIDEND YIELDS
(next 12 months) of all dividend
paying stocks under review

2.2%

26 Weeks Ago	Market Low	Market High
2.1%	10-9-02 2.4%	7-13-07 1.6%

The Estimated Median Price
APPRECIATION POTENTIAL
of all 1700 stocks in the hypothesized
economic environment 3 to 5 years hence

75%

26 Weeks Ago	Market Low	Market High
75%	10-9-02 115%	7-13-07 35%

ANALYSES OF INDUSTRIES IN ALPHABETICAL ORDER WITH PAGE NUMBER

Numeral in parenthesis after the industry is rank for probable performance (next 12 months).

	PAGE		PAGE		PAGE		PAGE
Advertising (78)	2370	Electric Util. (Central) (52)	687	Investment Co. (50)	948	Publishing (91)	2351
Aerospace/Defense (19)	543	Electric Utility (East) (53)	150	Investment Co.(Foreign) (49)	355	Railroad (1)	276
Air Transport (94)	245	Electric Utility (West) (62)	1781	Machinery (16)	1323	R.E.I.T. (68)	1172
Apparel (55)	1651	Electronics (67)	1020	Manuf. Housing/RV (99)	1549	Recreation (74)	2301
Auto & Truck (95)	101	Entertainment (60)	2320	Maritime (28)	268	Reinsurance (64)	1606
Auto Parts (75)	774	Entertainment Tech (82)	1589	Medical Services (35)	625	Restaurant (58)	285
Bank (96)	2501	Environmental (2)	342	Medical Supplies (20)	172	Retail Automotive (70)	1668
Bank (Canadian) (85)	1565	Financial Svcs. (Div.) (87)	2527	Metal Fabricating (38)	566	Retail Building Supply (23)	877
Bank (Midwest) (97)	608	Food Processing (43)	1481	Metals & Mining (Div.) (46)	1222	Retail (Special Lines) (77)	1710
Beverage (65)	1532	Food Wholesalers (36)	1525	*Natural Gas Utility (56)	445	Retail Store (47)	1680
Biotechnology (27)	660	Foreign Electronics (63)	1557	*Natural Gas (Div.) (13)	427	Securities Brokerage (81)	1421
Building Materials (83)	845	Funeral Services (22)	1455	Newspaper (98)	2360	Semiconductor (42)	1048
Cable TV (10)	809	Furn/Home Furnishings (90)	884	Office Equip/Supplies (84)	1127	Semiconductor Equip (76)	1085
*Canadian Energy (14)	415	Grocery (45)	1516	*Oil/Gas Distribution (57)	521	Shoe (48)	1698
Chemical (Basic) (3)	1232	Healthcare Information (15)	652	Oilfield Svcs/Equip. (5)	2390	Steel (General) (18)	576
Chemical (Diversified) (40)	2414	Heavy Construction (17)	978	Packaging & Container (54)	913	Steel (Integrated) (8)	1410
*Chemical (Specialty) (31)	457	Homebuilding (89)	863	Paper/Forest Products (73)	901	Telecom. Equipment (51)	740
*Coal (4)	510	Hotel/Gaming (92)	2335	*Petroleum (Integrated) (41)	397	Telecom. Services (61)	710
Computers/Peripherals (59)	1101	Household Products (71)	931	Petroleum (Producing) (9)	2380	Thrift (79)	1161
Computer Software/Svcs (32)	2569	Human Resources (33)	1293	Pharmacy Services (7)	765	Tobacco (30)	1572
Diversified Co. (34)	1376	Industrial Services (21)	318	Power (66)	961	Toiletries/Cosmetics (11)	798
Drug (25)	1245	Information Services (29)	369	Precious Metals (39)	1212	Trucking (12)	258
E-Commerce (26)	1438	Insurance (Life) (72)	1197	Precision Instrument (24)	113	Water Utility (86)	1415
Educational Services (6)	1579	Insurance (Prop/Cas.) (88)	585	Property Management (80)	819	*Wireless Networking (69)	489
Electrical Equipment (44)	1001	Internet (37)	2619	Public/Private Equity (93)	2637		

*Reviewed in this week's issue.

In three parts: This is Part 1, the Summary & Index. Part 2 is Selection & Opinion. Part 3 is Ratings & Reports. Volume LXIV, No. 3.

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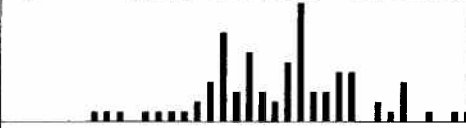
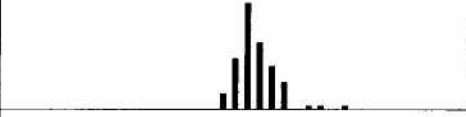
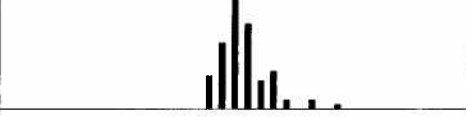
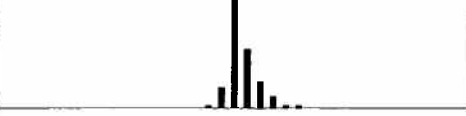
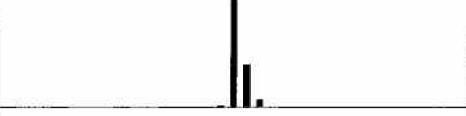
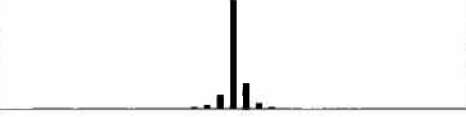
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Table 2-1

Basic Series: Summary Statistics of Annual Total Returns

Attachment PRM-27
National Grid NH
DG 08-009
Page 5 of 5

from 1926 to 2007

Series	Geometric Mean	Arithmetic Mean	Standard Deviation	Distribution
Large Company Stocks	10.4%	12.3%	20.0%	
Small Company Stocks	12.5	17.1	32.6	
Long-Term Corporate Bonds	5.9	6.2	8.4	
Long-Term Government	5.5	5.8	9.2	
Intermediare-Term Government	5.3	5.5	5.7	
U.S. Treasury Bills	3.7	3.8	3.1	
Inflation	3.0	3.1	4.2	

*The 1933 Small Company Stocks Total Return was 142.9 percent.

Comparable Earnings Approach

Five -Year Average Historical Earned Returns
for Years 2002-2006 and
Projected 3-5 Year Returns

<u>Company</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Average</u>	<u>Projected 2009-12</u>
Avery Dennison	20.1%	19.8%	22.3%	22.6%	19.4%	20.8%	16.5%
Bank of Hawaii	17.0%	21.3%	26.2%	26.3%	24.5%	23.1%	19.0%
Campbell Soup	NMF	74.7%	55.7%	38.5%	59.5%	57.1%	30.0%
Cincinnati Financial	6.2%	8.4%	9.2%	7.3%	10.3%	8.3%	8.5%
City National Corp.	15.3%	15.3%	16.1%	15.7%	13.5%	15.2%	11.5%
Commerce Bancshs.	14.2%	15.4%	16.7%	15.2%	13.5%	15.0%	11.0%
Int'l Flavors & Frag.	26.9%	21.5%	20.1%	23.6%	38.2%	26.1%	25.0%
Mercury General	14.1%	18.4%	15.1%	11.8%	12.0%	14.3%	14.0%
Northrop Grumman	4.8%	6.4%	7.4%	9.2%	9.8%	7.5%	12.5%
Old Nat'l Bancorp	9.8%	9.6%	12.1%	12.4%	11.5%	11.1%	13.5%
Pitney Bowes	52.3%	46.0%	48.1%	86.8%	93.5%	65.3%	90.5%
PNC Financial Serv.	15.5%	16.0%	15.5%	14.0%	9.9%	14.2%	12.0%
Regions Financial	14.6%	8.1%	9.4%	6.5%	7.0%	9.1%	8.0%
Reinsurance Group	8.5%	9.9%	8.9%	10.4%	11.1%	9.8%	12.0%
Scripps (E.W.) 'A'	13.6%	13.8%	13.6%	15.4%	NMF	14.1%	7.0%
Weis Markets	9.5%	10.0%	10.5%	8.9%	7.1%	9.2%	8.5%
Whitney Holding	11.7%	10.7%	10.6%	13.0%	10.7%	11.3%	9.5%
Average						<u>19.5%</u>	<u>18.2%</u>
Median						<u>14.2%</u>	<u>12.0%</u>