STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

EnergyNorth Natural Gas, Inc. d/b/a National Grid NH
Docket DG 10-017

Rebuttal Testimony
of
Robert B. Hevert

December 7, 2010

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1   **I.   INTRODUCTION**

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

3   A.   My name is Robert B. Hevert, and I am President of Concentric Energy Advisors, Inc.

4   ("Concentric"), located at 293 Boston Post Road West, Suite 500, Marlborough,

5   Massachusetts 01752.

6

7   **Q.   Are you the same Robert B. Hevert who submitted Direct Testimony in this**

8   **proceeding?**

9   A.   Yes, I filed Direct Testimony on behalf of EnergyNorth Natural Gas, Inc. (d/b/a National

10   Grid NH). As in my Direct Testimony, I use the terms "National Grid NH" and the

11   "Company" to refer to EnergyNorth Natural Gas.

12

13   **Q.   Please state the purpose of your Rebuttal Testimony.**

14   A.   The purpose of my Rebuttal Testimony is to respond to the testimony of Dr. John W.

15   Wilson on behalf of the New Hampshire Public Utilities Commission staff ("Staff") as it

16   relates to his analyses and recommendation regarding the Company's return on equity

17   ("ROE")[1], to his assertion that the ROE should be reduced by "at least 100 basis points"

18   if the decoupling proposal is implemented, and to his suggestion that short-term debt

19   should be included in the Company's capital structure for rate-making purposes. In

20   addition, my Rebuttal Testimony provides an updated set of calculations and analytical

21   results with respect to the Company's cost of equity and capital structure in this

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[1]   Throughout my Rebuttal Testimony, I alternatively use the terms "ROE" and "Cost of Equity" in
       discussing the Return on Equity.

1   proceeding. My analyses and recommendations are supported by the data presented in

2   Attachments RBH-R1 through RBH-R17, which have been prepared by me or under my

3   supervision.

4

5   **Q.   Have you updated the ROE recommendation contained in your Direct Testimony?**

6   A.   Yes, I have. In my Direct Testimony, I identified a range of ROE estimates of 10.30

7   percent to 11.30 percent, and recommended an ROE of 11.00 percent, excluding the

8   proposed 20 basis point stay-out premium. As discussed in Sections III and V, while the

9   capital market dislocation that began in late 2008 has moderated somewhat over the past

10   several months, it also is clear that market instability and investor risk aversion remain at

11   elevated levels. As a consequence, financial models that incorporate specific measures of

12   investor risk sentiment produce ROE estimates at or above the levels presented in my

13   Direct Testimony. At the same time, other models, in particular the Constant Growth

14   Discounted Cash Flow ("DCF") model, produce mean results that are 132 basis points

15   (*i.e.*, 1.32 percent) below the estimates produced earlier in the year.

16

17   In light of the continuing level of capital market instability, it would be incorrect to

18   conclude (as the Constant Growth DCF model would suggest) that the cost of equity has

19   declined by over 130 basis points at the same time that observable measures of risk

20   aversion remained constant or increased. Nonetheless, I recognize that the Commission

21   historically has placed considerable weight on Discounted Cash Flow methods.

22   Consequently, my revised recommendation places substantial weight on the Multi-Stage

1   DCF approach.[2] Based on the quantitative and qualitative analyses discussed throughout

2   the balance of my Rebuttal Testimony, and in light of the Commission's traditional

3   preference for Discounted Cash Flow methodologies, my updated and revised

4   recommended range is 10.25 percent to 11.00 percent, and within that range my revised

5   ROE recommendation is 10.75 percent.

6

7 **Q. Has anything in Dr. Wilson's testimony caused you to revise your conclusions**

8   **regarding the Company's proposed capital structure or cost of debt?**

9 A.   No. While Dr. Wilson accepts the Company's proposed 50.00 percent equity ratio, his

10   recommended capital structure also includes a short-term debt component with an

11   associated cost rate of 1.95 percent. That recommendation, however, is inconsistent with

12   Staff's concern in prior proceedings that the use of short-term debt to fund permanent

13   assets exposes the Company and its customers to interest rate risk.[3] Dr. Wilson's

14   recommendation also fails to consider that the Company's short-term debt is used

15   primarily to finance gas supply inventory balances, and that Staff has not viewed

16   borrowings under the money pool arrangement as analogous to short-term debt since the

17   repayment date extends well beyond one year.

18

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[2]   As discussed in Section III, while Dr. Wilson claims to have "updated" my Multi-Stage DCF model, his misapplication of the model substantially biases the results.

[3]   *EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England*, DG 06-122, Order No. 24,824, February 29, 2008.

1   **Q.   How is the remainder of your Rebuttal Testimony organized?**

2   A.   The remainder of my Rebuttal Testimony is organized as follows: in Section II, I provide

3   an overview of my Rebuttal Testimony, including a summary of my updated and revised

4   analyses; Section III contains my response to Dr. Wilson's ROE recommendation,

5   including his position that the cost of equity should be reduced by "at least 100 basis

6   points" if the Company's decoupling proposal is adopted; Section IV responds to Dr.

7   Wilson's proposed capital structure and cost of debt; Section V provides my updated and

8   revised analyses; and Section VI summarizes my conclusions and recommendations.

9

10   **II.   SUMMARY AND OVERVIEW**

11   **Q.   Please summarize Dr. Wilson's Direct Testimony.**

12   A.   Dr. Wilson suggests that the Company's cost of equity is within a range of 7.00 percent

13   to 9.80 percent, and recommends an ROE of 9.00 percent. Dr. Wilson further

14   recommends that if the Commission were to adopt the Company's proposed revenue

15   decoupling mechanism, the Company's ROE should be set at 8.00 percent. In support of

16   his recommendations, Dr. Wilson presents three analytical approaches, including the

17   Constant Growth DCF model, the Multi-Stage DCF model, and the Capital Asset Pricing

18   Model ("CAPM"). Dr. Wilson does not offer any quantitative or qualitative basis for his

19   proposal to reduce the authorized ROE by "at least 100 basis points" in connection with

20   the Company's proposed revenue decoupling mechanism other than his position that

21   revenue stabilization structures transfer risk from shareholders to rate payers. Dr. Wilson

22   also opposes the proposed stay-out premium if National Grid NH agrees not to file

23   another rate case for at least two years. Regarding the Company's capital structure, Dr.

1   Wilson accepts the Company's proposed equity ratio of 50.00 percent, but includes a

2   short-term debt component to which he applies a cost rate based on the average money

3   pool cost for National Grid NH during 2009.

4

5 **Q.**   **Please summarize the conclusions and recommendations which will be developed in**

6   **more detail in your Rebuttal Testimony.**

7 A.   My Rebuttal Testimony develops the following conclusions and recommendations:

8   • Dr. Wilson's recommended ROE of 9.00 percent is lower than any authorized

9   return for gas distribution utilities since at least 1992, yet he provides no support

10   as to why National Grid NH is so less risky than other gas utilities, or how the

11   capital markets are now so much more accommodating that the Company's

12   authorized ROE should establish a historical low point.

13   • Dr. Wilson fails to recognize that observable measures of investor risk aversion

14   currently are demonstrably higher than long-term norms. As a consequence, his

15   9.00 percent ROE recommendation, which represents a 54 basis point reduction

16   from the Company's currently authorized ROE, cannot be reconciled with

17   meaningful market data.

18   • The assumptions underlying the Constant Growth DCF model are at odds with

19   current market conditions and render analytical results that simply are unreliable.

20   • The Multi-Stage DCF model, which has been relied upon by the Commission and

21   Staff in prior proceedings, addresses many of the infirmities currently associated

1   with the Constant Growth DCF model and therefore provides far more

2   meaningful and relevant results.

3   • Applying the Capital Asset Pricing Model based on historical data (as Dr. Wilson

4   has done) ignores important market dynamics and assumes a level of investor risk

5   aversion that is entirely inconsistent with current conditions. Consequently, Dr.

6   Wilson's CAPM results are unreasonably low and should be given no

7   consideration in the determination of the Company's ROE.

8   • Investors frame their return requirements, at least in part, by reference to returns

9   authorized in other jurisdictions. Moreover, National Grid NH must compete for

10   capital with other utilities. Consequently, it is reasonable to consider returns

11   authorized in other jurisdictions as a means of corroborating the reasonableness of

12   ROE estimates and recommendations.[4]

13   • Other companies in the proxy group have revenue decoupling mechanisms or

14   straight fixed-variable ("SFV") rate designs in place, and the financial community

15   has come to expect that application of such structures to address the effects of

16   declining average use per customer. Therefore, an adjustment to National Grid

17   NH's authorized ROE in connection with approval of its proposed decoupling

18   mechanism is not warranted; if anything, an upward adjustment should be

19   considered if the Commission does not adopt a decoupling structure.

20   • Dr. Wilson's proposed 100 basis point adjustment for decoupling is arbitrary and

21   not supported by any quantitative analysis or other evidence.

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[4]   As discussed later in my Rebuttal Testimony, the approach used in my Direct and Rebuttal Testimonies refers to ROEs over hundreds of cases relative to the then-prevailing level of interest rates.

1   • Dr. Wilson's recommendation to include short-term debt in the capital structure is

2   not appropriate because National Grid NH's short-term debt balance is used

3   almost entirely to fund cash working capital requirements related to gas supply

4   inventory, which is not included in rate base.

5   • Dr. Wilson's recommended ROE of 9.00 percent would diminish the Company's

6   financial integrity, and should be rejected by the Commission.

7

8 **Q.   Please provide a brief summary of the analytical updates and modifications**

9 **contained in your Rebuttal Testimony.**

10 A.   As discussed in Section V, I updated the Constant Growth DCF, Multi-Stage DCF,

11   CAPM, and Risk Premium analyses included in my Direct Testimony based on data up to

12   and including November 12, 2010. Those updated analyses, together with analyses of

13   capital market conditions in general demonstrate that the assumptions underlying the

14   Constant Growth DCF model are not applicable in the current market, and that the model

15   produces unreliably low results. Consequently, my recommendation focuses on the

16   results of the Multi-Stage DCF model, which specifically addresses several of the

17   Constant Growth models' shortcomings, and which the Commission has relied upon in

18   previous proceedings as a reliable method for estimating the cost of equity. While I

19   disagree with Dr. Wilson's focus on the "fundamental growth" model, I have included

20   that approach in my Multi-Stage DCF analysis. In addition, although I did not give my

21   CAPM results any specific weight, I note that the parameters on which that model is

22   based all indicate increased, not decreased, investor return requirements.

23

1 The analyses and recommendations contained in my Rebuttal Testimony also take into

2 consideration the continuing instability in the capital markets and the need for utilities

3 such as National Grid NH to maintain access to capital when and as needed. In that

4 regard, my Rebuttal Testimony reviews certain measures of investors' risk aversion,

5 including comparatively high levels of expected market volatility, the inversion of the

6 proxy company dividend yields relative to Treasury yields, and increased correlations in

7 utility "ROE" returns relative to the broad market. All of those measures are directly

8 relevant to the estimation of the Company's cost of equity.

9

10 Table 1 (below) summarizes my updated and revised analytical results through

11 November 12, 2010.

1   **Table 1: Summary of Results**

	Mean Low	Mean	Mean High
Constant Growth DCF			
30-Day Average	7.29%	8.34%	9.74%
90-Day Average	7.44%	8.49%	9.88%
180-Day Average	7.54%	8.59%	9.99%
	Wilson Fundamental Growth Rate		**Hevert GDP Growth Rate**
Multi-Stage DCF			
Gordon Growth Terminal Value			
30-Day Average	10.10%		10.37%
90-Day Average	10.29%		10.55%
180-Day Average	10.41%		10.67%
P/E Ratio Terminal Value			
30-Day Average	9.87%		10.05%
90-Day Average	10.29%		10.47%
180-Day Average	10.57%		10.75%
Risk Premium Approaches			
	Current 30-Yr Treasury	**Midpoint**	**Projected 30-Yr Treasury**
Capital Asset Pricing Model			
Sharpe Ratio			
Current Beta	11.96%	12.02%	12.08%
Historical Beta	10.30%	10.37%	10.43%
Market-Based DCF			
Current Beta	12.29%	12.35%	12.41%
Historical Beta	10.57%	10.63%	10.69%
	Low	**Mean**	**High**
Bond Yield Plus Risk Premium	10.22%	10.25%	10.31%
Flotation Cost	0.11%	0.11%	0.11%

2

3 **Q.   Please now briefly summarize your response to Dr. Wilson's ROE analyses and**

4 **recommendation.**

5 A.   As discussed more fully in Section III, while Dr. Wilson and I disagree as to certain

6   methodological aspects of our Constant Growth DCF models, as a practical matter those

7   differences are of minor consequence. More important is the fact that Dr. Wilson gives

1   considerable weight to DCF results that are far below any reasonable measure of the

2   Company's cost of equity.[5]   At issue is whether ROE estimates less than 9.00 percent (or

3   less than 8.00 percent based on his use of dividend and book value growth rates) can

4   reasonably be considered a reliable estimate of the Company's cost of equity at a time

5   when observable measures of risk aversion remain at demonstrably elevated levels.

6

7   As to Dr. Wilson's CAPM analysis, I disagree both with his application of the model, and

8   with his conclusion that an ROE estimate of 6.40 percent (using the 90-day Treasury

9   security as the risk-free rate) or 7.26 percent (using the average 10-year Treasury yield

10   over the last five years) should be given any consideration in the determination of the

11   Company's cost of equity.[6]   In my view, Dr. Wilson's use of a risk-free rate of 3.00

12   percent, a Beta coefficient of 0.675, and a market risk premium of 5.00 percent produce

13   CAPM results that simply cannot be reconciled with several broadly observed and well-

14   understood market metrics. Consequently, Dr. Wilson's view that his CAPM results of

15   6.40 percent or 7.26 percent (depending on which risk free rate he uses) have any

16   analytical meaning is misplaced on its face, but more importantly points out the difficulty

17   inherent in applying financial models without giving due consideration to the

18   reasonableness of the inputs, assumptions and results.

19

20   In light of the substantial flaws and inconsistencies in his Constant Growth DCF and

21   CAPM analyses, the only relevant analysis presented in Dr. Wilson's testimony is the

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[5]   *See* Direct Testimony of John W. Wilson, at 19. Dr. Wilson indicates that he used the CAPM analysis to check the reasonableness of his DCF results.

[6]   *Ibid.*, at 31.

1   Multi-Stage DCF model. Even that analysis, however, is significantly biased by Dr.

2   Wilson's use of the retention growth rate (or what he refers to as "fundamental growth")

3   as the measure of terminal growth rather than the Gross Domestic Product ("GDP")

4   growth rate.[7] Further, while Dr. Wilson claims to have updated my Multi-Stage DCF

5   model, he significantly misapplied the approach and arrived at estimates that are plainly

6   unreasonable. Correcting Dr. Wilson's misapplication of my model produces ROE

7   estimates that range from 10.37 percent to 10.67 percent, levels that are more consistent

8   with the results of other methods for estimating the ROE and with other indicators of

9   market sentiment.

10

11 **Q.**   **Please summarize your response to Dr. Wilson's position regarding the proposed**

12   **100 basis point reduction in ROE if the Commission approves the Company's**

13   **revenue decoupling mechanism.**

14 A.   I strongly disagree with Dr. Wilson's position that it would be necessary to reduce the

15   authorized ROE by "at least 100 basis points" if the Commission approves the

16   Company's proposed revenue decoupling mechanism. Dr. Wilson fails to recognize that

17   the relevant analytical question is not whether the Company is so less risky with or

18   without the revenue decoupling mechanism, but whether the Company is less risky

19   relative to the proxy group such that investors would measurably reduce their return

20   requirements as a result. Given that the companies in the proxy group already have

21   revenue decoupling mechanisms or SFV rate designs in place, there is no need to make a

22   further adjustment for a risk differential, even assuming that such a differential exists.

---

[7]   *Ibid.*, at 25.

1

2   Moreover, Dr. Wilson fails to properly incorporate the concept of "risk," which relates to

3   the uncertainty of an event deviating from its expected outcome, in his assessment of the

4   effect of revenue stabilization mechanisms on the cost of equity. Given the near-certain

5   reduction in use-per-customer that is the inevitable result of active and passive energy

6   conservation and efficiency improvements, there is little uncertainty regarding declining

7   use per customer. That is a point that investors have recognized; as discussed later in my

8   Rebuttal Testimony, gas utilities that implement revenue decoupling or SFV rate designs

9   tend to trade in a manner that is more closely aligned with their peers after the

10   implementation of those structures (if Dr. Wilson were correct, the companies would

11   have trading patterns that are measurably different than their peers). From the

12   perspective of fixed income investors, no company has received a credit ratings increase

13   as a direct result of decoupling structures. And while Dr. Wilson provides a brief

14   summary of a handful of rate cases that address both decoupling and ROE, a more

15   comprehensive review clearly demonstrates that in the vast majority of over 70 such

16   cases, no specific ROE adjustment was authorized. In summary, there is no basis to

17   conclude, as Dr. Wilson has done, that investors would consider the Company so much

18   less risky than its peers as a direct result of its decoupling structure, that they would

19   specifically and substantially reduce their return requirements.

20

1   **Q.**   **Please summarize your response to Dr. Wilson's position regarding the Company's**

2   **proposed capital structure and cost of debt.**

3   **A.**   While I agree with Dr. Wilson that the appropriate equity ratio for National Grid NH is

4   50.00 percent,[8] I disagree that short-term debt should be included in the ratemaking

5   capital structure. Importantly, in DG 06-122 the Commission approved a Settlement

6   Agreement, which specified that the capital structure to be used in the next rate case

7   should consist of 50.00 percent common equity and 50.00 percent long-term debt.[9] In

8   addition, Dr. Wilson's recommendation fails to recognize that in prior proceedings, Staff

9   has pointed to the risks associated with using short-term debt to finance permanent assets.

10   Finally, Dr. Wilson's recommendation does not reflect the fact that the Company's short-

11   term debt primarily relates to supply-related gas inventory balances, which are not

12   included in its rate base.[10]

13

14   **III.**   <u>**RESPONSE TO THE PRE-FILED TESTIMONY OF DR. WILSON**</u>

15   **Q.**   **Please summarize Dr. Wilson's analyses and recommendations in this proceeding.**

16   **A.**   Dr. Wilson suggests that the Company's cost of equity is within a range of 7.00 percent

17   to 9.80 percent, and recommends an ROE of 9.00 percent unless the Commission

18   approves the Company's proposed revenue decoupling mechanism, in which case Dr.

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[8]   Direct Testimony of John W. Wilson, at 33.

[9]   *EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England,* DG 06-122, Petition to Consolidate and Increase Short Term Debt Limits, Settlement Agreement, Appendix B.

[10] As explained in the Company's response to Request No. OCA 1-75, it is my understanding that National Grid NH excluded short-term debt from the capital structure because the average balance for the twelve month period ending September 30, 2009 was almost entirely used to fund fuel in inventory and gas supply related cash working capital, both of which are not included in rate base and have a carrying charge rate that is below the Company's overall cost of capital.

1   Wilson recommends an ROE of 8.00 percent.[11] Dr. Wilson's recommendation is derived

2   from the results of various Constant Growth DCF, Multi-Stage DCF, and CAPM

3   analyses. Dr. Wilson's Constant Growth DCF model considers a variety of growth rates,

4   including earnings per share, dividends per share, book value per share, together with

5   what he refers to as "fundamental growth" rates. Those analyses produce a range of

6   results from 6.92 percent to 8.66 percent. (*See* Exhibit __(JW-8)) Dr. Wilson's

7   testimony also includes a Multi-Stage DCF model, which is based on a terminal (*i.e.*,

8   Year 15) growth rate calculated based on the "fundamental growth" model, and which

9   produces a range of results from 9.19 percent to 9.31 percent (*see*, Exhibit_(JW-5)). In

10   addition to his DCF-based analyses, Dr. Wilson develops two different CAPM analyses,

11   which produce a range of results from 3.02 percent to 9.84 percent. Dr. Wilson also

12   reasons that the Company's proposed revenue decoupling mechanism would be so risk-

13   reducing (to shareholders) that it warrants a 100 basis point reduction to the Company's

14   cost of equity, resulting in an ROE of 8.00 percent. In addition, Dr. Wilson opposes the

15   proposed 20 basis point stay-out premium if the Company agrees not to file another rate

16   case for at least two years. Finally, Dr. Wilson recommends that the Company's capital

17   structure for rate-making purposes include the short-term debt balances observed as of

18   June 30, 2009, at a cost rate equal to the average test year cost of short-term debt for

19   National Grid NH.

20

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[11]   As I have noted elsewhere, Dr. Wilson's analyses produce a range of results from 3.02 percent to 9.80 percent, but he utilizes a range from 7.00 percent to 9.80 percent without explaining why he excluded the extraordinarily low results produced by his CAPM analyses. It appears that Dr, Wilson recognizes that such low results are not credible under any economic or capital market conditions.

1   Q.   **What are the specific areas in which you disagree with Dr. Wilson's analyses and**

2   **recommendations?**

3   A.   There are several areas in which I disagree with Dr. Wilson, including: (1) the

4   reasonableness of Dr. Wilson's ROE estimates and recommendation; (2) the implications

5   of the current capital market environment for the Company's cost of equity; (3) the

6   application of the Constant Growth DCF model, and the relevance of ROE estimates

7   produced by that model under current market conditions; (4) Dr. Wilson's application of

8   the Multi-Stage DCF model; (5) Dr. Wilson's application of the CAPM, and the

9   relevance of ROE estimates as low as 3.02 percent in any economic environment; (6) the

10   importance of considering authorized ROEs in other jurisdictions to ensure that the ROE

11   established in this proceeding meets the capital attraction and financial integrity standards

12   of *Hope* and *Bluefield*; (7) the effect of the Company's proposed revenue decoupling

13   mechanism on its authorized ROE; and (8) Dr. Wilson's conclusions regarding the

14   appropriate capital structure and cost of short-term debt. I discuss each of those issues in

15   turn, below.

16

17   In Appendix A to my Rebuttal Testimony, I also discuss: (1) Dr. Wilson's criticism of the

18   regression analysis related to earnings growth presented in my Direct Testimony; (2) Dr.

19   Wilson's assertion that market/book ratios in excess of unity suggest authorized returns in

20   excess of allowed returns; (3) the consideration of a small size premium for National Grid

21   NH; (4) the inclusion of common equity flotation costs in determining the cost of equity;

22   and (5) an event study that tests the effect of decoupling on investor's return expectations

23   for the proxy group companies that have implemented decoupling.

1   **(1)   The Reasonableness of Dr. Wilson's ROE Estimates and Recommendation**

2 **Q.   Please summarize the basis for Dr. Wilson's 9.00 percent ROE recommendation.**

3 A.   Dr. Wilson's 9.00 percent ROE recommendation is toward the upper end of a range that

4   extends from 7.00 percent to 9.80 percent. The low end of Dr. Wilson's range is set by

5   his Constant Growth DCF analysis, which, he concludes, produces a range of 7.40

6   percent to 9.70 percent based on earnings per share growth rates,[11] approximately 7.00

7   percent based on dividend per share growth rates,[12] and 8.50 percent assuming book

8   value per share growth rates.[13] The upper end of Dr. Wilson's range is established by

9   reference to his CAPM analysis, which produces a range of 3.02 percent to 9.80

10   percent.[14] Finally, Dr. Wilson's Multi-Stage DCF analysis produces a range of results

11   from 9.19 percent to 9.31 percent,[15] although those results reflect Dr. Wilson's improper

12   application of my Multi-Stage DCF model.

13

14 **Q.   Do you believe that Dr. Wilson's ROE estimates and recommendation are**

15   **reasonable, especially in light of current economic and capital market conditions?**

16 A.   No, I do not. ROE estimates as low as 3.02 percent have no analytical meaning and point

17   out the risk of not questioning the applicability of models and their underlying

18   assumptions in the current market environment. As a point of reference, of the 399

19   natural gas rate cases reported by Regulatory Research Associates from January 1992

20   through November 12, 2010, there have been *no* ROE authorizations of 9.00 percent or

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11   Direct Testimony of John W. Wilson, at 16.
12   *Ibid.*, at 18.
13   *Ibid*.
14   *Ibid.,* at 32.
15   *Ibid.*, Exhibit_(JW-8). Includes South Jersey Industries.

1   lower. Rather, the average ROE award during that time period has been 10.85 percent

2   (*see* Chart 1, below).

Chart 1: Natural Gas ROE Awards (1/1/1992 – 11/12/2010)
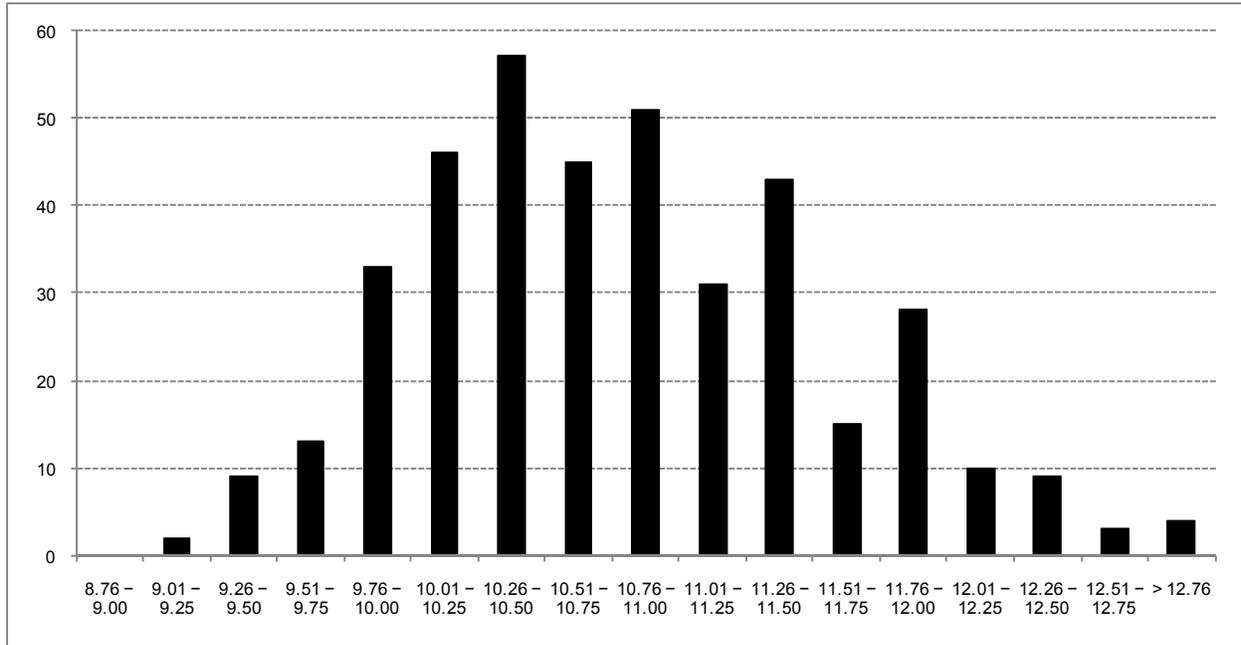
5   Further, as shown in Chart 2 (below), over the last 12 months, the vast majority of

6   authorized ROE awards has been in the range between 10.01 percent to 11.00 percent;

7   there have been no awards at or below Dr. Wilson's estimate of 9.00 percent.

8

1   **Chart 2: Natural Gas ROE Awards (11/12/2009 – 11/12/2010)**

2

3   While I recognize that the New Hampshire PUC has been reluctant to consider authorized

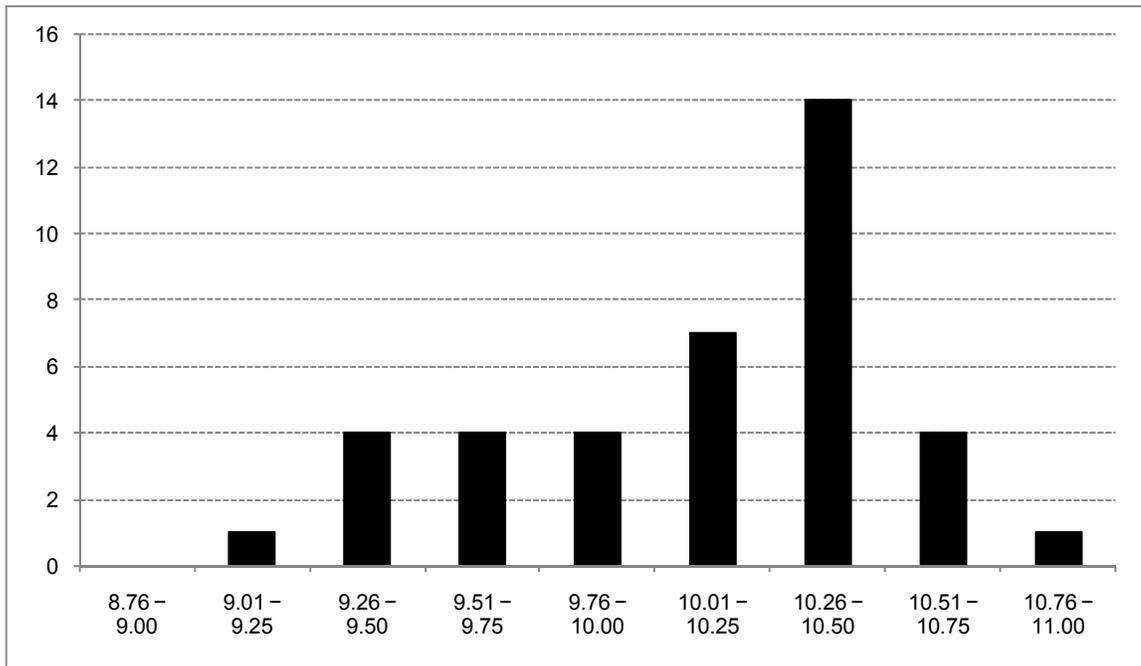4   ROEs in other jurisdictions as a relevant benchmark in assessing the reasonableness of

5   ROEs in New Hampshire, I respectfully observe that National Grid NH must be able to

6   compete for equity capital with other utilities that have comparable risk profiles. The

7   capital attraction standard is one of the fundamental requirements of the *Hope* and

8   *Bluefield* decisions, and is an important practical standard by which to evaluate the

9   reasonableness of ROE recommendations. While I further recognize that any one ROE

10   authorization may be affected by the particular instances of that case, that concern is

11   largely mitigated by the use of hundreds of cases over multiple jurisdictions. From that

12   perspective, Dr. Wilson's recommended ROE of 9.00 percent would not allow National

13   Grid NH to compete for equity capital, when investors have the opportunity to invest in

1   comparable utilities that have the opportunity to earn significantly higher authorized

2   returns.

3

4   Moreover, many of Dr. Wilson's ROE estimates from his various analyses are only

5   slightly higher than the 2010 average yield on Baa-rated long-term utility debt of 5.96

6   percent.[16] For example, Dr. Wilson's Constant Growth DCF model based on projected

7   dividend growth rates produces a range from 6.92 percent to 7.18 percent. Similarly, his

8   CAPM analysis produces average results of 6.37 percent using the 90-day Treasury

9   security as the risk free rate, and 7.26 percent using the five-year average of the 10-year

10   Treasury yield as the risk free rate. Such ROE estimates offer equity investors almost no

11   additional premium for the risks associated with ownership. As explained in my Direct

12   Testimony, a fundamental principle of finance is that equity investors bear the residual

13   risk associated with ownership and therefore require a premium over the return they

14   would have earned as a bondholder.[17] Consequently, Dr. Wilson's ROE estimates and

15   recommendation are not reasonable under any economic or capital market conditions and

16   should not be relied upon by the Commission in establishing the authorized ROE for

17   National Grid NH.

18

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[16]   Source: Bloomberg Financial. Average daily yield for Moody's Baa-rated long-term utility debt from January 1 through November 12, 2010.

[17]   *See* Direct Testimony of Robert B. Hevert, at 67.

1   **(2)   The Implications of the Current Capital Market Environment for the**

2   **Company's Cost of Equity**

3   **Q.   Does Dr. Wilson address current capital market conditions in his pre-filed**

4   **testimony?**

5   A.   Dr. Wilson acknowledges that the current economic environment is uncertain, and

6   arguably more uncertain than in prior periods.[18] Nonetheless, Dr. Wilson states that he is

7   not aware of "any time when the economic environment was certain or settled," and that

8   "in times of relative uncertainty, investments in companies like ENNG and National Grid

9   that sell essential services in monopoly franchised markets and that enjoy legal

10   protections permitting price increases in relation to costs even in depressed economic

11   times, are typically viewed as less risky than companies that are exposed to the vagaries

12   of competitive markets."[19]

13

14 **Q.   What is your general response to Dr. Wilson on those points?**

15 A.   While I agree with Dr. Wilson that economic conditions are very uncertain, and that

16   natural gas distribution companies generally are viewed as somewhat less risky than the

17   broader market, I strongly disagree that an ROE recommendation of 9.00 percent is

18   reasonable in the context of current market conditions given that economic conditions are

19   *more* uncertain than they have been for many years. Moreover, Dr. Wilson fails to

20   consider several very visible and relevant measures of investor risk aversion (discussed

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[18]   Direct Testimony of John W. Wilson, at 37.
[19]   *Ibid.*, at 37-38.

1   below) which when reviewed, argue for a higher, not lower return than was authorized in

2   the Company's last rate proceeding.

3

4 **Q.**   **Please explain the effect that capital market volatility has on investor behavior, and**

5   **the implications for certain cost of equity models such as the CAPM.**

6 A.   During times of capital market instability, risk aversion increases, which causes investors

7   to seek the relative safety of U.S. Treasury debt, resulting in lower Treasury yields.   At

8   the same time, current and expected market volatility, as measured by indicators such as

9   the Chicago Board Options Exchange Volatility Index ("VIX"), increase. A direct result

10   of elevated volatility is a corresponding increase in the risk premium required by

11   investors as compensation for taking on the risks associated with equity ownership. In

12   addition, correlations of returns across industry segments increase, indicating that no one

13   sector, including utilities, is a reliable "safe haven". A direct result of those increased

14   correlations is an increase in the Beta coefficient. Since the CAPM addresses all three

15   elements, *i.e.*, the correlation of returns (via Beta), the equity market volatility (via the

16   market risk premium), and Treasury yields (*i.e.*, the risk free rate), all three should be

17   appropriately reflected in the CAPM analysis. Given that Dr. Wilson's focus on

18   historical information in the application of his CAPM analysis fails to consider these

19   fundamental market dynamics, it is not surprising that his analytical results are

20   unreasonably low.

21

1   **Q.   Have you reviewed specific measures of investor risk sentiment to assess whether**

2   **investors' current return requirements reasonably could be assumed to be**

3   **substantially lower than the long-term average?**

4   A.   Yes, I considered several widely-recognized measures of investor risk sentiment,

5   including: (1) credit spreads; (2) equity market volatility; (3) the relationship between the

6   proxy company dividend yields and Treasury yields; and (4) the correlation of returns

7   between the proxy companies and the broad market.   In each case, I compared current

8   market conditions to the long-term historical average from January 2000 through

9   November 12, 2010. A shown on Table 2 (below), the metrics indicate that current levels

10   of risk aversion are significantly higher than the long-term average. The following

11   section of my Rebuttal Testimony briefly discusses each indicator.

1   **Table 2: Risk Sentiment Indicators – November 2010 vs. Long-Term Average[20]**

	November 2010[21]	Long-Term Average
*Credit Spread*s (Moody's Utility Bond Index)		
A-rated bond to 10 year Treasury	2.40%	2.19%
Baa-rated bond to 10-year Treasury	2.96%	2.60%
Baa-rated bond to A rated bond	0.56%	0.41%
Market Volatility		
CBOE VXV and CBOE VIX Futures[22]	27.01%	20.47%[23]
Dividend Yield Spreads		
Proxy Group to 10-year Treasury	-1.14%	0.07%
Return Correlations		
Utility Index to S&P 500 Index	87.93%	57.06%

2

3   *Credit Spreads*

4   The "credit spread" is the incremental return required by debt investors to take on the

5   default risk associated with securities of differing credit quality. Since U.S. Treasury

6   securities are considered to have no default risk, credit spreads typically are measured by

7   reference to benchmark Treasury securities. From January 2000 through November 12,

8   2010, the credit spread associated with the Moody's A-rated utility bond index relative to

9   the ten-year Treasury rate averaged approximately 2.19 percent (*i.e.*, 219 basis points),

10   and the Moody's Baa-rated utility bond index credit spread averaged approximately 2.60

11   percent (260 basis points). As Chart 3 demonstrates, both the A and Baa utility bond

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[20]   Source: Bloomberg Professional Service.

[21]   90-trading day average as of November 12, 2010, except as noted otherwise.

[22]   *See,* Attachment RBH-R15. Please note that the VIX is a one-month measure of volatility, while the VXV is a three-month measure.

[23]   Represents the long-term average VIX. Please note that the historical average market volatility of large company total returns as reported by Morningstar, the source relied upon by Dr. Wilson in his CAPM analyses is 20.50 percent. *See* Morningstar, Inc. 2010 Ibbotson Stock, Bonds, Bills and Inflation Valuation Yearbook, at 23.

1   index credit spreads are higher for the 90 days ending November 12, 2010 than the long-

2   term average. Specifically, the average credit spread associated with the Moody's A-

3   rated utility bond index relative to the ten-year Treasury currently is 2.40 percent (*i.e.*,

4   240 basis points), and the average credit spread for the Moody's Baa-rated utility bond

5   index currently is 2.96 percent (296 basis points).

6   **Chart 3: Moody's A and Baa Utility Bond Index Credit Spreads**

90-DAY AVERAGE ENDING NOV. 12, 2010
MOODY'S A SPREAD = 2.40%
MOODY'S BAA SPREAD = 2.96%

MOODY'S BAA SPREAD HIST. AVG. = 2.60%

MOODY'S A SPREAD HIST. AVG. = 2.19%

– – – MOODY'S A − 10 YR. TREAS. SPREAD   ⎯⎯ MOODY'S BAA − 10 YR. TREAS. SPREAD
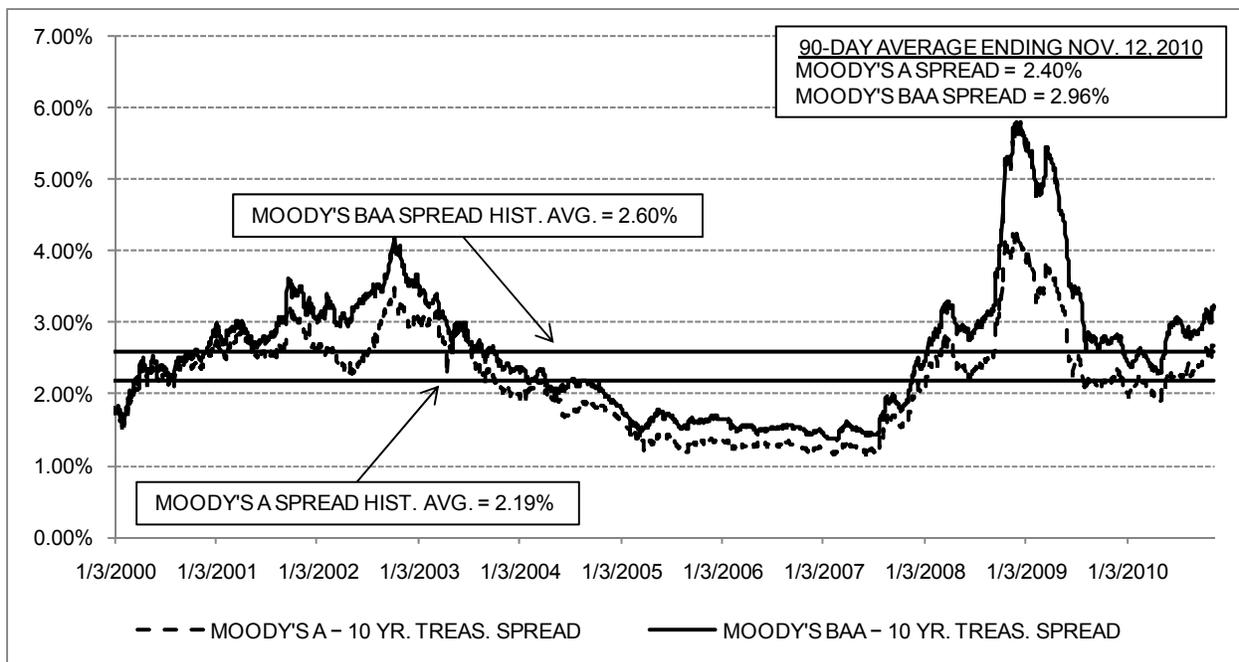
7
8

9   It also is important to note that the difference between the Baa and A-rated Utility Bond

10   Index credit spreads is higher in November 2010 than the long-term average (*see* Chart 4,

11   below). In fact, as Chart 4 indicates, the incremental cost of a Baa credit rating relative to

12   an A credit rating is currently more than 36.00 percent higher than the average long-term

13   cost (*i.e.*, 56 basis points in November 2010 compared to 41 basis points since January

14   2000).   In addition to the obvious point that maintaining a strong financial profile

15   (resulting in a higher credit rating) helps to minimize the cost of borrowing, that finding

1   also indicates that debt investors are now more concerned with incremental deteriorations

2   in credit quality. From that perspective, it is reasonable to conclude that risk aversion is

3   higher in the current market environment than the long-term average.

Chart 4: Moody's Utility Bond Index Baa-A Credit Spread
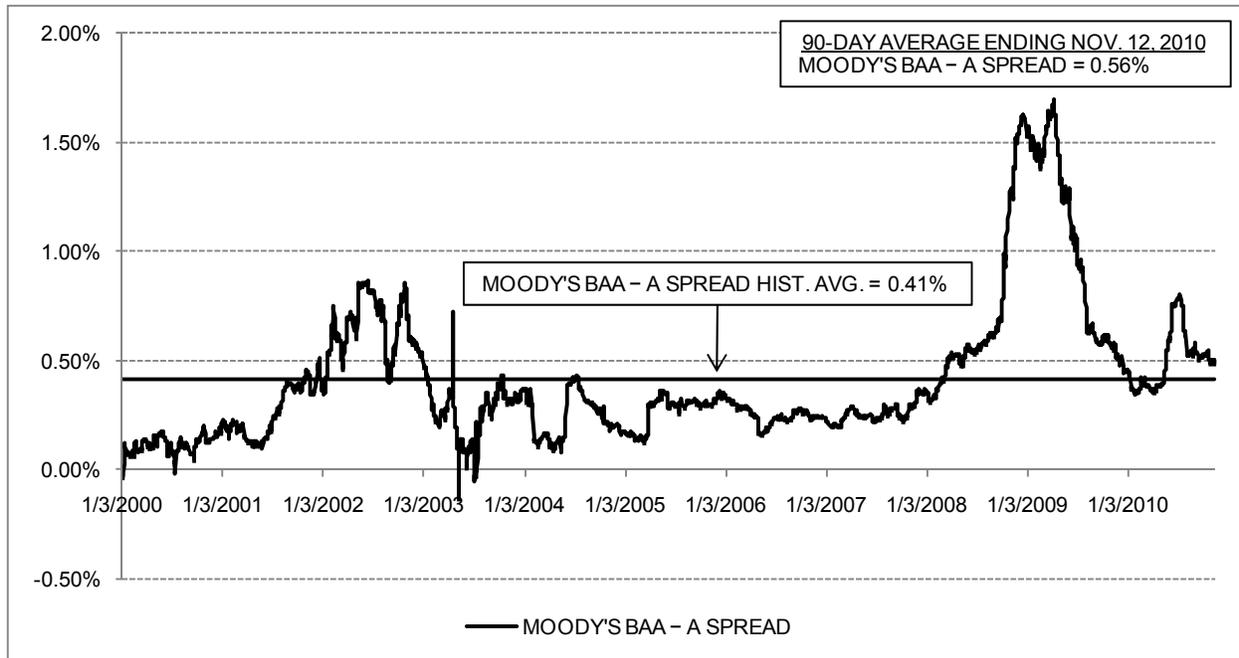
6 **Q.** **What are the implications of higher credit spreads as compared to the long-term**

7   **average?**

8 A.   To the extent that credit spreads have increased, it is an observable measure of the capital

9   markets' increased risk aversion; increased risk aversion clearly is associated with an

10   increased cost of equity. In addition, as noted in my Direct Testimony, there is a clear

11   and well-established inverse relationship between the level of interest rates and the equity

12   risk premium.[24] At the same time, it is understood that the equity risk premium increases

13   with the level of credit spreads. Consequently, lower utility bond yields, which are a

---

[24]   Direct Testimony of Robert B. Hevert, at 71.

1   function of lower Treasury yields but higher credit spreads, do not imply a

2   correspondingly lower cost of equity.

3

4   Moreover, as discussed elsewhere in my Rebuttal Testimony, the currently low level of

5   Treasury yields is the result of substantial government intervention in the capital markets;

6   it is not the result of historically low levels of investor risk aversion or capital market

7   uncertainty. Importantly, the Federal market intervention may itself be creating further

8   uncertainty. As a recent Wall Street Journal article notes:

9   The Fed's latest "quantitative easing" program is designed to bring down
10   interest rates, but some are moving up instead…Rates, which rise as the
11   price falls, have risen lately as investors avoid U.S. government debt—
12   including a new 30-year bond auctioned on Wednesday. That has
13   generated market anxiety that the Federal Reserve has lost control of rates
14   and inflation expectations.[25]
15

16   *Equity Market Volatility*

17   Equity investors also perceive higher levels of expected volatility in the current market

18   environment than they have on average since the index's inception in 1990. Although the

19   Chicago Board Options Exchange Volatility Index (the "VIX"), which is a widely

20   recognized measure of equity market volatility, is only slightly higher than the long-term

21   average (*i.e.*, approximately 22.57 percent for the 90-days ending November 12, 2010

22   versus the long-term average of 20.41 percent since 1990), the expected volatility as

23   measured by the VXV and futures contracts on the VIX for February 2011 through April

---

[25]   *'QE2' in the Dock: Some Yields Are Going Up*, The Wall Street Journal, Mark Gongloff, November 11,
2010.

1   2011 is approximately 27.01 percent, which suggests that future expectations for market

2   volatility remain well above the long-term average.[26]

3

4   *Yield Spreads*

5   While the VIX is a broad measure of continuing market instability, it also is instructive to

6   consider the proxy companies' trading behavior in particular. One commonly referenced

7   measure of gas utility stock valuation levels is the "yield spread", or the relationship of

8   the dividend yield to Treasury yields.[27] From January 2000 through September 15, 2008

9   (the time of the Lehman Brothers bankruptcy filing), the average yield on ten-year

10   Treasury securities exceeded the proxy group average dividend yield by approximately

11   seven basis points.[28] Since late 2008, however, the proxy group average dividend yield

12   has consistently traded above the ten-year Treasury yield. As Chart 5 indicates, the 90-

13   day average yield spread as of November 12, 2010 was negative 114 basis points.

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[26]   *See* Attachment RBH-R15.

[27]   *See*, for example, Credit Suisse, *A Thought...Regulated Utilities = Investment Opportunity?*, March 10, 2009.

[28]   It is common for utility stocks to trade such that their dividend yield is less than the ten-year Treasury yield. *See*, for example, Credit Suisse, *A Thought...Regulated Utilities = Investment Opportunity?*, March 10, 2009, at 30.

1   **Chart 5: Proxy Company Yield Spread**

2

3   *Increasing Return Correlations*

4   As equity volatility has continued, the correlation of returns among various asset classes

5   and equity sectors has begun to increase, indicating that there are fewer "safe harbor"

6   sectors for investors to seek. As recently noted in The Wall Street Journal, "stocks are

7   trading in lock-step more than at any time since the 1987 crash, and the trend has some

8   analysts concerned."[29] As with other asset classes and equity market segments, gas

9   utility stocks also have exhibited an increasing correlation with the broad market over the

10   past several months. Attachment RBH-R1 demonstrates that since January 2000, the

11   average correlation between the proxy group and the S&P 500 has been approximately

---

[29]   *The Herd Instinct Takes Over*, The Wall Street Journal, July 12, 2010. *See* also *"Macro" Forces in Markets Confound Stock Pickers*, The Wall Street Journal, September 24, 2010.

1   57.06 percent, while the average correlation for the 90 days ended November 12, 2010

2   was 87.93 percent.[30]

3

4   There are two practical implications of those findings. First, as the correlation between

5   the proxy group and the broad market increases, it is less likely that investors will see

6   natural gas utility shares as "defensive" investments that would provide meaningful

7   diversification benefits. Consequently, market data does not support Dr. Wilson's

8   assertion that the economic and capital market environments somehow support his 9.00

9   percent ROE recommendation. Second, as the correlation increases, it is reasonable to

10   expect that the Beta coefficient (which measures the relationship between the return on

11   the broad market and the return on the subject security) also will increase. As discussed

12   later in my Rebuttal Testimony, the latter point supports the use of Beta coefficients

13   (used in the CAPM) calculated over periods shorter than two or five years.

14

15 **Q.**   **What conclusions do you draw from these analyses?**

16 A.   First, these data clearly demonstrate that the current capital market continues to

17   experience levels of risk aversion, volatility and instability that exceed their long-term

18   averages. As noted in the June 2010 Federal Reserve Open Market Committee

19   ("FOMC") Minutes, during the period from April to June 2010, "[t]he spread between the

20   staff's estimate of the expected real return on equities over the next 10 years and an

21   estimate of the expected real return on a 10-year Treasury note—a measure of the equity

---

[30]   Based on monthly returns, excluding dividends. Correlations are calculated over 90 days.

1   risk premium—*increased from its already elevated level.*"[31]   In addition, as shown by

2   the increased correlations between the returns of the proxy group companies and the

3   broader market, investors do not necessarily perceive utility companies as safe-haven

4   investments during periods of financial market instability. The result, of course, is that

5   utility investors require a comparatively higher rate of return. Finally, as discussed in

6   Section V, Dr. Wilson's recommended ROE, capital structure and cost of debt would

7   place pressure on the credit profile and financial integrity of National Grid NH.

8

9   **(3)   Application of the Constant Growth DCF Model in Determining the ROE for**

10   **National Grid NH**

11 **Q.**   **As a preliminary matter, do you believe that the assumptions underlying the**

12   **Constant Growth DCF model hold under current market conditions?**

13 A.   No, I do not. As discussed in my Direct Testimony, the Constant Growth DCF model is

14   predicated on several assumptions,[32] including: (1) a constant average growth rate for

15   earnings and dividends in perpetuity; (2) a stable dividend payout ratio; (3) a constant

16   price-to-earnings multiple; and (4) a discount rate that is greater than the expected growth

17   rate. As also discussed in my Direct Testimony, to the extent that any of those

18   assumptions is violated, the need to apply reasoned judgment in the assessment of the

19   model's results increases.

20

---

[31]   *Minutes of the Federal Open Market Committee*, June 22-23, 2010, at 6. *Emphasis added.*
[32]   Direct Testimony of Robert B. Hevert, at 35.

1 **Q. From a practical perspective, how do you determine whether the assumptions**

2 **underlying the Constant Growth DCF model have been violated?**

3 A. As a practical matter, the results themselves indicate that the model's assumptions are

4 inconsistent with market realities. My updated mean Constant Growth DCF results range

5 from 8.34 percent to 8.59 percent, depending on the averaging period used to calculate

6 the dividend yield.[33] As noted earlier in my Rebuttal Testimony, there has not been an

7 ROE award of 9.00 percent or less for a natural gas distribution company since at least

8 1992.   Similar to the discussion in my Direct Testimony regarding why I did not

9 incorporate the mean low DCF results (which are now similar to the mean DCF results), a

10 comparison of the updated Constant Growth DCF results relative to the 2010 average

11 yield on Baa-rated long-term utility debt of 5.96 percent reveals an implied equity risk

12 premium of 2.38 percent to 2.63 percent.[34] By contrast, data presented by Citigroup

13 indicates that the average equity risk premium has been approximately 4.40 percent in

14 years during which the Baa-rated long-term utility bond yield has been approximately

15 6.00 percent,[35] indicating an ROE of approximately 10.36 percent. It is clear, therefore,

16 that the Constant Growth DCF model has limited (or no) applicability in the current

17 market environment.

18

19 **Q. Please elaborate on the factors that have contributed to the significant decline in the**

20 **Constant Growth DCF model results, and explain why those factors suggest that the**

---

[33] See Attachment RBH-R11.
[34] Direct Testimony of Robert B. Hevert, at 57.
[35] Source: Citigroup Global Markets, Inc., *Utility ROEs: An Overview*, April 2008. This relationship is corroborated by Chart 4 in my Direct Testimony, which appears on page 71.

1   **underlying assumptions of the model are inconsistent with current market**

2   **conditions.**

3 A.   The average earnings growth rate for the proxy group in my updated Constant Growth

4   DCF analysis is 4.55 percent, which represents an 89 basis point decrease from the

5   analyses contained in my Direct Testimony. Equally important, the 90-day average

6   expected dividend yield for the proxy group has declined from 4.37 percent at the end of

7   January 2010, to 3.93 percent in mid-November 2010. The 44 basis point decline in the

8   dividend yield indicates that yields have not increased in conjunction with reduced

9   earnings growth estimates, as the model essentially assumes they would. Further, as

10   Table 3 (below) demonstrates, the dividend payout ratio for the proxy group is projected

11   to fall in the near term from the current level of 61.00 percent in 2010 to approximately

12   55.63 percent in 2013-2015. Moreover, the historical average payout ratio is

13   approximately 65.00 percent, and it is reasonable to assume that the proxy group average

14   will revert to that level over time. As such, it clearly is not the case that the proxy

15   companies' earnings and dividends are expected to grow at the same constant rate in

16   perpetuity.

1   **Table 3: Projected Dividend Payout Ratios[36]**

Company	Ticker	2010	2011	2013-15
AGL Resources	AGL	58.00%	57.00%	55.00%
Laclede Group	LG	70.00%	62.00%	57.00%
NICOR, Inc.	GAS	68.00%	66.00%	61.00%
Northwest Natural Gas	NWN	61.00%	61.00%	54.00%
Piedmont Natural Gas	PNY	71.00%	68.00%	67.00%
South Jersey Industries	SJI	51.00%	49.00%	47.00%
Southwest Gas Corp.	SWX	44.00%	45.00%	43.00%
WGL Holdings, Inc.	WGL	65.00%	63.00%	61.00%
Mean		61.00%	58.88%	55.63%

2

3   Finally, both the mean and the mean high Constant Growth DCF results (based on the 90-

4   day averaging convention) have fallen by 132 basis points, respectively, since January

5   2010, at the same time that investor risk aversion has remained persistently high (as

6   discussed above). Consequently, I conclude that the Constant Growth DCF model's

7   fundamental assumptions are inconsistent with current market conditions, and that its

8   results are unreliable. Given the unreliable nature of those results, it is my view that the

9   updated Constant Growth DCF model results should be given no weight in determining

10   the Company's ROE.

11

---

[36]   Source: Value Line.

1   **Q.**   **Setting aside your concerns with the results produced by the Constant Growth DCF**

2   **model, please summarize the differences between you and Dr. Wilson in the**

3   **selection of growth rates in your respective Constant Growth DCF analyses.**

4   A.   As discussed in my Direct Testimony, my Constant Growth DCF analysis relied on

5   analysts' earnings growth projections, together with an estimate of "Sustainable Growth."

6   Dr. Wilson's analysis includes projected growth in Dividends per Share ("DPS"), Book

7   Value per Share ("BVPS"), and Earnings per Share ("EPS"), as well as projected

8   measures of what he refers to as "Fundamental Growth" (which is similar to my

9   "Sustainable Growth" or "Retention Growth" rates). While Dr. Wilson relies on Value

10   Line for his projected DPS, BVPS, EPS, and Fundamental Growth rates, he includes

11   consensus earnings growth projections from Zack's Investor Service and Thomson First

12   Call. For the reasons discussed below, I disagree with Dr. Wilson's use of projected DPS

13   and BVPS growth rates.

14

15   **Q.**   **Why do you disagree with Dr. Wilson's assertion that dividend or book value**

16   **growth rates are appropriate inputs to the Constant Growth DCF model?**

17   A.   As a preliminary matter, it is important to realize that earnings growth is ultimately the

18   source of both dividend *and* book value growth. As noted in my Direct Testimony,

19   earnings are the fundamental driver of a company's ability to pay dividends.[37] Corporate

20   decisions to manage the dividend payout ratio for the purpose of minimizing future

21   dividend reductions, or to signal future earnings prospects can influence dividend growth

22   rates in near-term periods in a manner that is disproportionate to earnings growth.

---

[37]   Direct Testimony of Robert B. Hevert, at 37-38.

1   Similarly, book value can increase over time only through the addition of retained

2   earnings, or with the issuance of new equity. Both of those factors are derivative of

3   earnings; retained earnings increases with the amount of earnings not distributed as

4   dividends, and the price at which new equity is issued is a function of the earnings per

5   share and the then-current Price/Earnings ratio.

6

7   I also note that Dr. Wilson's use of dividend and book value growth rates is misplaced

8   because the only scenario in which dividend growth rates and book value growth rates are

9   relevant is when the fundamental assumptions underlying the Constant Growth DCF

10   model essentially hold. Under those fundamental assumptions, the Constant Growth

11   DCF model produces the same result whether the stock is held in perpetuity or sold after

12   an assumed holding period (*see* Attachment RBH-R2), and the assumed growth rate

13   equals the rate of capital appreciation (*i.e.*, the stock price growth rate). As noted above,

14   however, current market conditions are such that the strict assumptions underlying the

15   Constant Growth DCF model do not hold. For example, Dr. Wilson's use of dividend

16   growth rates biases his DCF results downward because, as noted in Table 2 (above),

17   Value Line projects the proxy group average payout ratio to decrease from approximately

18   61.00 percent in 2010 to 55.63 percent in 2014. Moreover, given that investors tend to

19   value common equity on the basis of P/E ratios, the required return on equity is a

20   function of the long-term growth in earnings, not dividends or book value.

21

1   Finally, as Dr. Wilson correctly notes, "there is no consensus value for the dividend

2   expectations that investors hold."[38]   Value Line is the only service noted in Dr. Wilson's

3   testimony that provides either DPS or BVPS growth projections. To the extent that the

4   earnings projections services used by both Dr. Wilson and me represent consensus

5   estimates, the results are less likely to be biased in one direction or another as a result of

6   an individual analyst. In fact, it is for that reason that one of the criteria used to develop

7   my proxy group is that the subject company must be followed by at least two utility

8   industry equity analysts.[39]

9

10 **Q.**   **Does Dr. Wilson express any specific concerns with your use of analysts' earnings**

11   **growth projections in the Constant Growth DCF model?**

12 A.   Yes, Dr. Wilson asserts that analysts' earnings forecasts "tend to be somewhat bullish"

13   and that the fact that "analysts' forecasts are somewhat more bullish than investors'

14   actual expectations is evident from stock market prices, which are typically lower than

15   analysts' price forecasts."[40]   Dr. Wilson further questions whether investors accept

16   analysts' earnings forecasts at face value and without any discounting," and reasons that

17   the "task of the rate of return analyst is to determine what dividend growth rate investors

18   are expecting, not to forecast a growth rate that analysts expect."[41]

19

---

38   Direct Testimony of John W. Wilson, at 10.
39   Direct Testimony of Robert B. Hevert, at 25.
40   Direct Testimony of John W. Wilson, at 10.
41   *Ibid.*, at 11.

1   **Q.   What is your response to Dr. Wilson in that regard?**

2   A.   First, it is important to note that Dr. Wilson has provided absolutely no evidence that any

3   of the EPS growth rates used in my DCF analysis is the result of a consistent and

4   pervasive upward bias on the part of analysts. Rather, Dr. Wilson relies on an essentially

5   unsupported statement that analysts' earnings estimates "tend to be somewhat bullish." In

6   light of restrictions imposed by the October 2003 Global Research Analyst Settlement,

7   however, it is unclear how or why utility analysts' estimates would continue to be biased.

8   That settlement required financial institutions to insulate investment banking from

9   analysis, prohibited analysts from participating in "road shows", and required the settling

10   financial institutions to fund independent third-party research.[42] To that point, a 2010

11   article in <u>Financial Analyst Journal</u> found that analyst forecast bias has declined

12   significantly or disappeared entirely since the final judgment was issued in October 2003:

13   Introduced in 2002, the Global Settlement and related regulations had an
14   even bigger impact than Reg FD on analyst behavior. After the Global
15   Settlement, the mean forecast bias declined significantly, whereas the
16   median forecast bias essentially disappeared. Although disentangling the
17   impact of the Global Settlement from that or related rules and regulations
18   aimed at mitigating analysts' conflicts of interest is impossible, forecast
19   bias clearly declined around the time the Global Settlement was
20   announced. These results suggest that the recent efforts of regulators have
21   helped neutralize analysts' conflicts of interest.[43]
22

23   Regardless of whether Dr. Wilson believes that analysts' growth rate projections are

24   systemically biased, the relevant analytical question is whether investors rely on those

---

[42]   The 2002 Global Financial Settlement resolved an investigation by the U.S. Securities and Exchange
        Commission and the New York Attorney General's Office of a number of investment banks related to
        concerns about conflicts of interest that might influence the independence of investment research provided
        by equity analysts.
[43]   Armen Hovakimian and Ekkachai Saenyasiri, *Conflicts of Interest and Analyst Behavior: Evidence from
        Recent Changes in Regulation*, Financial Analysts Journal, Volume 66, Number 4, July/August 2010, at
        195.

1   estimates in making their investment decisions. There is, in fact, a substantial body of

2   academic research supporting that conclusion.[44] Moreover, as noted in my Direct

3   Testimony, an analysis of the proxy company growth rates and valuation multiples

4   confirms that earnings growth rates are the proper input to the Constant Growth DCF

5   model. (*See* also Appendix A for my response to Dr. Wilson's observations regarding

6   that analysis.)

7

8 **Q.   Do you agree with Dr. Wilson's conclusions regarding his "fundamental growth"**

9 **DCF model?**

10 A.   No, I do not. In Exhibit__ (JW-4), Dr. Wilson presents his "fundamental growth"

11   approach, which relies on Value Line's projected dividend yield and the projected growth

12   in retained earnings, which itself is the product of the projected return on common equity

13   and the projected retention ratio. By adopting Value Line's earned ROE estimates, Dr.

14   Wilson has effectively pre-supposed the return on common equity projected by Value

15   Line for the proxy group companies. Notwithstanding that he has assumed the

16   reasonableness of Value Line's projections, Dr. Wilson's fundamental growth DCF

---

[44]   In *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, published in Financial Management, Spring 1985, Brigham, Shome and Vinson noted that "evidence in the current literature indicates that (1) analysts' forecasts are superior to forecasts based solely on time series data; and (2) investors do rely on analysts' forecasts." Similarly, in a review of literature regarding the extent to which analyst forecasts are reflected in stock prices (*Using Analyst's Growth Forecasts to Estimate Shareholder Required Rates of Return*, Financial Management, Spring 1986), Harris noted: "VanderWeide and Carleton recently compare consensus [financial analyst forecasts] of earnings growth to 41 different historical growth measures. They conclude that 'there is overwhelming evidence that the consensus analysts' forecast of future growth is superior to historically-oriented growth measures in predicting the firm's stock price…consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making stock buy and sell decisions.'" The VanderWeide and Carleton study was updated in 2004 under the direction of Dr. VanderWeide. The results of the updated study were consistent with the original study's conclusions.

1   estimate of 8.70 percent is approximately 300 basis points (3.00 percent) below the proxy

2   group average projected return on common equity.

3   **Table 4: Value Line Projected Returns on Common Equity[45]**

Company	Ticker	Projected Return
AGL Resources	AGL	12.0%
Laclede Group	LG	11.0%
NICOR, Inc.	GAS	11.0%
Northwest Natural Gas	NWN	12.0%
Piedmont Natural Gas	PNY	13.0%
South Jersey Industries	SJI	14.5%
Southwest Gas Corp.	SWX	9.0%
WGL Holdings, Inc.	WGL	11.0%
Mean		**11.69%**

4

5 **Q.** **What are your conclusions regarding the Constant Growth DCF model?**

6 A. For the reasons discussed in this section of my Rebuttal Testimony, my conclusion is that

7   the Constant Growth DCF model does not produce reliable results under current market

8   conditions, and should not be relied upon to establish the cost of equity for National Grid

9   NH in this proceeding.

10

11 **(4)** **Dr. Wilson's Application of the Multi-Stage DCF Model Is Fundamentally**

12   **Flawed**

13 **Q.** **Has the Commission relied on the Multi-Stage DCF model in prior proceedings?**

14 A. Yes. As indicated in my Direct Testimony, the Commission has relied on the Multi-

15   Stage DCF model on more than one occasion.[46] In a January 2004 order for Verizon

---

45   Source: Value Line Investment Survey, September 10, 2010.

1   New Hampshire, the Commission explained the value of considering the Multi-Stage

2   DCF model as follows:

3   Staff testimony supports the view that a three-stage version of the DCF
4   represents a valuable refinement to the DCF method of estimating the cost
5   of capital looking forward over the long term. We agree. Given the
6   computing power available to analysts today, it is possible to more closely
7   match growth rate estimates to varying growth expectations over longer
8   time horizons. Mr. Schlegel used a staged approach to reflect the
9   likelihood that, in the longer term, Verizon's growth rate will converge on
10   the overall growth rate of the economy as a whole. The ability of the
11   three-stage version to represent this convergence is an improvement over
12   the traditional single-stage version, which assumed that early-year growth
13   rates would persist to infinity. It is reasonable to assume that no firm can
14   stay in business over the long term while consistently performing well
15   above or well below the growth rate of the economy as a whole.
16
17   Evaluating the three-stage version of the DCF, we find that refining a
18   model over time is not unreasonable. The model takes account of the fact
19   that the expected growth rates of earnings and dividends quoted by
20   financial publishing companies like Value Line and I/B/E/S may reflect
21   expectations in the medium term but are, by the statements of these
22   publishing companies, not intended to reflect expectations for the long
23   term. The three-stage version takes account of this inherent limitation in
24   the data and ensures that long term growth rates do not exceed the
25   productive capacity of the economy itself. Such a scenario would imply
26   that some companies will grow faster than the economy *ad infinitum,* an
27   implication we cannot accept. At the same time, the three-stage version
28   ensures that long term growth rates are not so low that some investors
29   remain under-compensated. In this manner, the three-stage version strikes
30   a balance that we find is appropriate in this proceeding.[47]
31

32   Similarly, the Commission adopted the Multi-Stage DCF model for Public Service

33   Company of New Hampshire in a June 2005 order, stating that:

34   We address next the growth rate approach used by Ms. Sirois and her
35   selection of the three-stage DCF methodology. While three-stage DCF may
36   not be appropriate in every case, it nevertheless is sound in this instance and

[46]   Direct Testimony of Robert B. Hevert, at 51.
[47]   Verizon New Hampshire; DT 02-110, Order No. 24,265, January 16, 2004.

1   was not challenged by the parties. Consequently, we will employ her
2   approach here.[48]
3

4   I am aware that there are a number of other cases where Staff relied on three-stage DCF

5   model as the basis for its position, but the DCF methodology is not reflected in the

6   Commission's decision because the cases ultimately were settled.

7

8 **Q. Why do you believe it is appropriate to rely on the Multi-Stage DCF model in**

9   **setting National Grid NH's authorized ROE in this proceeding?**

10 A. Quite simply, the Multi-Stage form of the DCF model enables the analyst to address

11   many of the problems associated with the Constant Growth form of the model. Of

12   particular relevance, the Multi-Stage model (1) sets long-term growth rates at an

13   appropriate level that is consistent with the productive capacity of the economy; (2)

14   allows for the dividend payout ratio to change and revert toward the long-term historical

15   industry average over time; and (3) allows for the calculation of the expected price-to-

16   earnings ratio in the terminal stage to ensure that the results are consistent with expected

17   valuation levels.

18

19 **Q. As a preliminary matter, please provide a brief description of the Multi-Stage DCF**

20   **model included in your Direct Testimony.**

21 A. The Multi-Stage DCF model included in my Direct Testimony is a three-stage model that

22   sets the stock price equal to the present value of projected cash flows over three separate,

---

[48]   Public Service Company of New Hampshire, DE 04-177, Order No. 24,473, June 8, 2005.

1   but related, stages.[49]   In all three stages, cash flows are represented by expected

2   dividends, although the third stage includes the "terminal value," or the price at which the

3   stock would be expected to be sold at the end of the forecast period. The terminal stock

4   price is calculated by the Gordon model, which sets the price equal to the expected

5   dividend divided by the difference between the discount rate (*i.e.*, the ROE) and the

6   expected growth rate or by applying a projected Price/Earnings ("P/E") ratio to the

7   terminal year earnings per share. The first stage projects earnings and dividends based on

8   analysts' estimates (including Value Line), and the third stage is based on long-term

9   nominal GDP growth, while the second stage allows for a transition between the two.

10   Similarly, the first stage Payout Ratios in my Direct Testimony are based on Value Line's

11   company-specific projections, and the third stage assumes the industry average long-term

12   Payout Ratio, while the second stage allows for the transition between the two.

13

14   As discussed in my Direct Testimony, a principal advantage of the three-stage model

15   with a terminal value is the ability to calculate the projected P/E ratio in the terminal

16   stage.[50] To the extent that the projected P/E ratio is consistent with expected valuation

17   levels, the analyst can take greater comfort in the reasonableness of the model's results.

18   Similarly, and quite importantly, this structure also enables the analyst to model the

19   terminal value as the product of the expected P/E ratio and the projected EPS.

20

---

[49]   Direct Testimony of Robert B. Hevert, at 51-52.
[50]   *Ibid.*, at 52-53.

1 **Q.   Does Dr. Wilson comment on your application of the Multi-Stage DCF analysis in**

2 **his pre-filed testimony?**

3 A.   Yes, he does. Dr. Wilson's primary concern with my application of the Multi-Stage

4   model is that I relied on the long-term GDP growth rate in the third, or "terminal" stage

5   of the model. Dr. Wilson asserts that the "growth rate that is relevant in the DCF cost of

6   capital model is the rate of growth in dividends <u>per share</u> of stock – not total economic

7   growth."[51] He goes on to state that "the two measures are substantially different because

8   a large part of total economic growth reflects growth in the number of shares, not just

9   growth per share," and that "earnings growth per share will be the same as total earnings

10   growth only if all growth is attributable to existing shares."[52]

11

12 **Q.   What is your response to Dr. Wilson on those points?**

13 A.   As a preliminary matter, Dr. Wilson fails to point out that in prior proceedings, Staff and

14   the Commission have relied on estimates of long-term nominal GDP growth as the

15   terminal growth estimate for Multi-Stage DCF models. For example, in adopting Staff

16   witness Sirois' approach in the June 2005 order for Public Service Company of New

17   Hampshire, the Commission indicated that GDP growth was the appropriate growth rate

18   for the third-stage of the DCF model: "As a proxy for long-run growth, Ms. Sirois used a

19   combination of Real Gross Domestic Product and inflation producing a third-stage

20   growth rate of 5.5 percent."[53]

21

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[51]   Direct Testimony of John W. Wilson, at 22.
[52]   *Ibid.*, at 22-23.
[53]   Public Service Company of New Hampshire, DE 04-177, Order No. 24,473, June 8, 2005

1   That position is consistent with financial literature; even a brief survey of finance texts

2   speaks to the use of long-term GDP growth as a reasonable estimate for the terminal

3   period. For example, Dr. Roger Morin writes: "It is useful to remember that eventually

4   all company growth rates, especially utility services growth rates, converge to a level

5   consistent with the growth rate of the aggregate economy."[54]Consequently, Dr. Wilson's

6   view regarding the basis of my long-term growth estimate is at odds with Staff's prior

7   positions, and inconsistent with financial literature.

8

9   Equally important, Dr. Wilson's assessment overlooks the fact that the terminal value

10   estimate in the Multi-Stage DCF model also can be calculated as the product of the

11   projected Earnings per share and the expected Price/Earnings ratio.[55] The fact that many

12   of the proxy group company P/E ratios are inconsistent with expected levels (as provided

13   by Value Line), or long-term average levels, indicates that the Constant Growth DCF

14   results do not apply in the current market environment. One means of addressing that

15   concern is to apply the expected P/E ratio to the expected EPS to arrive at the terminal

16   value. Doing so mitigates any concerns with issues surrounding the appropriate terminal

17   growth rate. While the disagreement as to the proper terminal growth rate is exacerbated

18   by the fact that such rates are unobservable, the expected P/E ratio can be derived based

19   on Value Line projections and long-term averages. As discussed below, doing so

20   produces an ROE estimate that substantially exceeds Dr. Wilson's 9.00 percent

21   recommendation.

---

[54]   Morin, Roger A., New Regulatory Finance, Public Utilities Report, Inc., 2006, at 308.
[55]   Direct Testimony of Robert B. Hevert, at 53.

1

2   **Q.**   **Do you agree with Dr. Wilson's concern that nominal GDP growth applies to**

3   **macroeconomic factors while the terminal growth estimate is a per-share measure?**

4   A.   No, I do not. The essence of Dr. Wilson's concern seems to be that macroeconomic

5   variables such as the expansion of existing enterprises and the introduction and growth of

6   new enterprises are developed in aggregate, rather than on a per-share basis. That also

7   appears to be the point of Dr. Wilson's hypothetical scenarios; if share growth does not

8   equal earnings growth,[56] earnings per share will grow at a rate different than earnings.

9

10   Dr. Wilson's scenarios, however, overlook certain market realities. If, for example, the

11   earnings and market value were to double over some period of time, it is highly unlikely

12   that the firm would manage itself such that the valuation multiples to become so out of

13   line with its peers that it would be difficult to sell new equity. To that point, the proxy

14   group average P/E ratio has remained rather consistent across firms and over time. As

15   Attachment RBH-R3 shows, even companies that temporarily had P/E ratios well beyond

16   the proxy group average eventually saw the ratios revert toward the group mean over

17   time. Consequently, while it may be true that absent any efforts by management to align

18   valuation multiples with peer companies the aggregate and per-share growth estimates

19   may differ, as a practical matter that is unlikely to be the case for a viable enterprise, in

20   perpetuity.

21

---

[56]   I note that the examples provided by Dr. Wilson are based on earnings, rather than dividends.

1   Moreover, Dr. Wilson's own assumptions do not necessarily assume constant per share

2   growth in perpetuity. As discussed below, Dr. Wilson's "fundamental growth" model

3   assumes that the proxy company payout ratios will fall from the long-term average of

4   65.00 percent to the short-term expected average of 58.75 percent. To the extent that the

5   payout ratios subsequently revert to the long-term expected level, growth in dividends

6   and earnings per share will not be equal.

7

8 **Q.   Please explain the ways in which Dr. Wilson misapplied your Multi-Stage DCF**

9 **model.**

10 A.   While Dr. Wilson claims to have updated my Multi-Stage DCF model with more recent

11   data, he did not consider certain important elements of the model's construction and

12   assumptions. First, Dr. Wilson's updated model assumes that the hypothetical investor

13   would receive the first cash distribution or dividend payment on September 21, 2011, one

14   year from the valuation date of September 21, 2010. As a practical matter, dividends are

15   paid on a quarterly basis and as such, it is reasonable to assume that an investor

16   purchasing a stock on September 21, 2010 would receive the third and fourth quarterly

17   dividends for 2010.

18

19   In addition, while Dr. Wilson accepted the assumed long-term payout ratio of 65.00

20   percent to establish the transition between the second and third stages, his "fundamental

21   growth" estimate assumes the payout ratio for 2014. That is, in calculating the

22   fundamental growth estimate, which is the "br + sv" model discussed in my Direct

23   Testimony, Dr. Wilson assumed the considerably higher retention ratio ("b") projected

1   for 2014 rather than the lower estimate that his model otherwise assumes in 2023.

2   Absent that inconsistency, Dr. Wilson's average terminal growth rate would have been

3   4.72 percent (*i.e.*, 34 basis points lower than his 5.06 average estimate), and his average

4   multi-stage ROE estimate would have been 8.98 percent. As discussed throughout my

5   Rebuttal Testimony, there is no observable market data that could justify such an

6   unreasonably low cost of equity estimate. Finally, Dr. Wilson made several data input

7   errors in his Multi-Stage DCF model, which was based on the information contained in

8   the September 10, 2010 issue of Value Line. For example, by starting with the Value

9   Line EPS projections for 2010 and then applying consensus estimates of EPS growth for

10   2011 through 2015, Dr. Wilson has incorrectly lengthened the first stage of the Multi-

11   Stage model to six years and shortened the intermediate stage to four years.

12

13 **Q.** **Have you corrected Dr. Wilson's application of the Multi-Stage DCF model for the**

14   **issues you have identified?**

15 A.   Yes, I have. I have made three major corrections to Dr. Wilson's Multi-Stage DCF

16   model and presented the incremental effect of each correction on the ROE result in Table

17   (below; *see* also Attachment RBH-R4).

1   **Table 5: Corrections to Dr. Wilson's Multi-Stage DCF Model**

	30-day	**90-day**	**180-day**
As Filed (*see* Exhibit__(JW-5), pgs. 1, 3, 5): • Data as of Sept. 21, 2010	**9.19%**	**9.26%**	**9.31%**
Step 1: Adjust timing and correct erroneous data • Initial EPS value equals 2009 actual EPS • EPS growth rates transition to long-term growth rate in 2015 • 3rd and 4th quarter dividend payments received on Dec. 31, 2010 • Subsequent dividend payments received July 1 • Erroneous Value Line data corrected	*+0.56%*	*+0.57%*	*+0.58%*
Step 2: Adjust long-term growth rate • Long-term growth rate equals GDP growth	*+0.53%*	*+0.52%*	*+0.53%*
Step 3: Update prices and EPS growth rates • Data as of Nov. 12, 2010	*-0.31%*	*-0.22%*	*-0.16%*
Step 4: Update to reconcile with Attachment RBH-R13 • Include retention growth in average EPS growth rate • Long-term payout ratio equals long-term industry average	*+0.40%*	*+0.42%*	*+0.43%*
TOTAL	**10.37%**	**10.55%**	**10.67%**

2

3   **Q.   Please explain each step in your analysis to correct Dr. Wilson's application of your**

4   **Multi-Stage DCF model.**

5   A.   I began with Dr. Wilson's Multi-Stage DCF, which are based on 30-, 90-, and 180-day

6   average stock prices as of September 21, 2010. In Step 1 of my analysis, I corrected four

7   miscalculations and revised ten Value Line data inputs which were incorrectly entered

8   from the Value Line Investment Survey published on September 10, 2010. To update my

9   model, Dr. Wilson used earnings-per-share projections for 2010 published by Value Line

10   as his initial value. In my analysis, I use the most recent full year of actual data (2009)

11   and apply the consensus estimates of earnings growth to arrive at estimates of earnings-

12   per-share for 2010 through 2014. I then begin the gradual transition from consensus

13   estimates to the long-term growth rate over a period of five years (2015-2019).

1

2   In addition, to correct for the timing of dividend payments, I have included one half of

3   the annual projected dividend for 2010 as the initial cash flow to be paid on December

4   31, 2010. Subsequent dividends are assumed to be paid in the middle of the year on July

5   1 to approximate the even distribution of dividends throughout a calendar year. The final

6   correction made in Step 1 of my analysis is to correct ten erroneous data inputs in Dr.

7   Wilson's "fundamental" growth calculation (to correctly reflect the data reported by

8   Value Line on September 10, 2010). In aggregate, the corrections made in Step 1 add

9   between 56 and 58 basis points to Dr. Wilson's original Multi-Stage DCF results.

10

11   Earlier in this section, I discussed the rationale for using projections of long-term GDP

12   growth in the terminal stage of the Multi-Stage DCF model. Applying my updated

13   estimate of long-term GDP growth of 5.77 percent[57] adds an additional 52 to 53 basis

14   points to Dr. Wilson's original Multi-Stage DCF results, as shown in Step 2 of Table 5.

15

16   In Step 3 of my analysis, I updated the 30-, 90-, and 180-day average prices to include

17   data through November 12, 2010. I also updated analyst estimates of earnings growth

18   from Thomson First Call and Zacks Investment Research. This step reduces the Multi-

19   Stage DCF results by 31, 22, and 16 basis points for the 30-, 90-, and 180-day averaging

20   periods, respectively.

---

[57]   The 5.77 percent estimate of long-term GDP growth is the combination of a future inflation estimate and actual growth in real GDP between 1929 and 2009. Real GDP growth (3.28%) is derived from data provided by the Bureau of Economic Analysis and estimates of future inflation are provided by the Energy Information Administration's Annual Energy Outlook (2.34%) and by Blue Chip Financial Forecasts (2.50%). $5.77\% = ((1 + 3.28\%) \times (1 + \text{Average}(2.34\%, 2.50\%))) - 1$.

1

2   The final step of my analysis, Step 4, includes my estimate of retention growth in the

3   average earnings growth estimates, and adjusts the payout ratio in the third stage of the

4   model to reflect the long-term industry average. These two changes add between 40 and

5   43 basis points to Dr. Wilson's original Multi-Stage DCF results to arrive at my final

6   results of 10.37 percent, 10.55 percent, and 10.67 percent for the 30-, 90-, and 180-day

7   periods, respectively.

8

9 **Q.**   **What are your conclusions regarding Dr. Wilson's Multi-Stage DCF estimates?**

10 A.   In light of the significant problems and inconsistencies identified with Dr. Wilson's

11   application of the Multi-Stage DCF analyses, it is my view that the results of his model

12   should be given no weight in determining the Company's ROE.

13

14   **(5)**   **Dr. Wilson's Application of the CAPM Is Fundamentally Flawed and**

15   **Produces Results As Low As 3.02 Percent, Which Have No Relevance Under**

16   **Any Economic Circumstances**

17 **Q.**   **Please summarize Dr. Wilson's Capital Asset Pricing Model analysis.**

18 A.   Dr. Wilson's CAPM analyses rely on two different measures for the risk-free rate (the

19   90-day average Treasury yield and the five-year average of the ten-year Treasury yield),

20   Value Line Beta coefficients, and an estimated market risk premium between 3.00

21   percent and 7.00 percent.

22

1 **Q.   Do you agree with Dr. Wilson's application of the Capital Asset Pricing Model?**

2 A.   No, I do not. In particular, I disagree with Dr. Wilson's choice of the risk-free rate

3   component of the model, his use of longer-term Beta coefficients, and his estimation of

4   the market risk premium. More important than our methodological differences, however,

5   are our respective conclusions regarding the reasonableness and reliability of an analysis

6   that produces an ROE estimate of 6.37 percent (using the 90-day Treasury yield as the

7   risk free rate) and 7.26 percent (using the five year average of the 10-year Treasury

8   yield).

9

10   As noted earlier in my Rebuttal Testimony, the 2010 average yield on Baa-rated long-

11   term utility debt has been 5.96 percent. Dr. Wilson's CAPM results range from 41 to 130

12   basis points above that level, which essentially provides no premium to compensate

13   equity holders for the incremental risks associated with ownership. As noted earlier,

14   Citigroup has observed that the equity risk premium above corporate bond yields has

15   been approximately 440 basis points during years in which the average yield on the Baa-

16   rated bond has been around 6.00 percent.[58] Applying that equity risk premium to Dr.

17   Wilson's recommended cost of debt of 6.89 percent would produce a cost of equity of

18   approximately 11.30 percent for National Grid NH. Finally, Dr. Wilson's CAPM

19   analyses produce results that are not consistent with the *Hope* decision, in which the court

20   determined that the specific means of arriving at a fair return are not controlling, only that

21   the end result leads to just and reasonable rates.[59]

---

[58]   Source: Citigroup Global Markets, Inc., Utility ROEs: An Overview, April 2008.
[59]   *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591 (1944).

53

1

2   **Q.**   **Do you have any general comments regarding Dr. Wilson's CAPM analysis?**

3   A.   Yes, I do. First, the current low Treasury yields assumed in Dr. Wilson's analysis are due

4   to the high level of risk aversion that continues to persist on the part of equity investors,

5   and the trading positions taken by investors in anticipation of the Federal Reserve's

6   second round of "Quantitative Easing". As noted earlier, investors are so concerned with

7   taking on equity risk (*i.e.*, the risk of ownership) that they have been willing to accept

8   historically low Treasury yields rather than invest in common stock. It would be

9   incorrect to assume, as Dr. Wilson has done, that the current level of Treasury yields is

10   indicative of a cost of equity that is only slightly higher than the 2010 average yield on

11   the Moody's Baa-rated utility bond index. Consequently, the first term in the CAPM

12   (*i.e.*, the risk-free rate) is lower than it would have been absent the elevated degree of risk

13   aversion.

14

15   Second, the extraordinary loss in equity values that occurred in 2008 actually resulted in

16   a *decrease* in the historical risk premium from the prior year (*i.e.*, from 7.10 percent to

17   6.50 percent), even as other indicators of investment risk, including credit spreads and

18   market volatility significantly *increased*. The notion that the risk premium required by

19   equity investors would decrease at the same time that observable measures of risk

20   aversion were at historically high levels is counter-intuitive, and supports the use of a

21   forward-looking (*ex-ante*) market risk premium estimate.   Moreover, Dr. Wilson's

22   substantial reliance on surveys taken prior to the 2008 market dislocation as evidence of

23   his 5.00 percent equity risk premium fails to reflect the consequences of the worst

1   financial event since 1929. That is, it is inappropriate to rely on surveys taken during

2   periods in which the economic and financial climate were measurably more benign than

3   current conditions.[60]

4

5 **Q.**   **Do you agree with Dr. Wilson's use of the average 90-day Treasury yield and the**

6   **average 10-Year Treasury yield for the risk-free rate?**

7 A.   No, I do not. In determining the security most relevant to the application of the CAPM, it

8   is important to select the term (or maturity) that best matches the life of the underlying

9   investment. As noted by Morningstar:

10   The horizon of the chosen Treasury security should match the horizon of
11   whatever is being valued… If an investor plans to hold stock in a company
12   for only five years, the yield on a five-year Treasury note would not be
13   appropriate since the company will continue to exist beyond those five
14   years.[61]
15

16   Because utility companies represent long-duration investments, the 30-year Treasury is

17   the appropriate measure of the risk-free rate for the purpose of the CAPM. Neither the

18   90-day Treasury yield nor the 10-year Treasury yield matches the risk-free rate with the

19   useful life of the underlying assets.

20

---

[60]   As also discussed below, the Welch survey results taken in 2002 and 2003, (*i.e.*, during the prior market
contraction) were considerably higher than the results reported by Dr. Wilson. Moreover, even a brief
review indicates over 50 articles written on the types of the equity risk premium; Dr. Wilson addresses only
a small handful of such articles.

[61]   Morningstar, Inc., 2010 Ibbotson Stocks, Bonds, Bills and Inflation, Valuation Yearbook, at 44.

1 **Q.** **Please define the term "duration" and explain its relevance to the selection of the**

2 **risk free rate term of the CAPM.**

3 A. In finance, "duration" (whether for bonds or equity) typically refers to the present value-

4 weighted time to receive the security's cash flows. In terms of its practical application,

5 Duration is a measure of the percentage change in the market price of a given stock in

6 response to a change in the implied long-term return of that stock. A common investment

7 strategy is to match the duration of investments with the term of the underlying asset in

8 which the funds are invested, or the term of a liability being funded. Since the term of

9 the risk free rate should match the life of the underlying investment, it is appropriate to

10 consider the equity duration of the proxy companies when selecting the Treasury yield

11 used as the risk free rate in the CAPM.

12

13 **Q.** **Were you able to calculate the Equity Duration of Dr. Wilson's proxy group based**

14 **on his Constant Growth DCF model?**

15 A. Yes, I was. As shown in Attachment RBH-R5, based on the stock prices, dividends, and

16 growth rates that produce Dr. Wilson's 8.65 percent "mean" Constant Growth DCF result

17 (*see* Exhibit (JW-1), Page 2 of 4), the average equity duration is approximately 27.14

18 years.[62]

19

---

[62] The implication of that finding is that for each 1.00 percentage point change in the cost of equity, the proxy
group average stock price would change by approximately 27.00 percent.

1   **Q.   What is the average useful life of the assets in the Company's rate base?**

2   A.   As noted in my Direct Testimony, the composite depreciation rate for National Grid NH

3   in DG 08-009 was approximately 2.84 percent, suggesting an average useful life of assets

4   of approximately 35.20 years.[63]

5

6   **Q.   What are your conclusions regarding the appropriate risk-free rate to be used in the**

7   **CAPM?**

8   A.   As discussed above, the tenor of the risk-free rate employed in the CAPM analysis should

9   match the expected life of the assets being financed. Assuming an average useful life of

10   approximately 35 years, and assuming, as noted in my Direct Testimony, there is a strong

11   statistical relationship between the proxy group average dividend yield and the 30-year

12   Treasury yield,[64] it continues to be my view that the 30-year Treasury yield is the

13   appropriate measure of the Risk Free rate for the purposes of the CAPM analysis.

14

15   **Q.   What is the source of Dr. Wilson's Beta coefficients in his CAPM analyses?**

16   A.   Dr. Wilson relies on Beta coefficients provided by Value Line, which are calculated over

17   a five year period.[65]

18

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[63]   *See* Direct Testimony of Robert B. Hevert, at 65.
[64]   *Ibid.*, at 66.
[65]   Direct Testimony of John W. Wilson, Exhibit __(JW-7).

1 **Q.   Do you agree that Beta coefficients calculated over a five year period are**

2 **appropriate?**

3 A.   No, I do not. First, as discussed in my Direct Testimony, during the early stages of the

4 financial crisis, the relationship between the proxy group average return and the return on

5 the overall market diverged significantly.   As a result of that dislocation, Beta

6 coefficients calculated based on market data during that period were lower than would be

7 expected; as noted in my Direct Testimony, the pre-crisis average Beta for the proxy

8 group was approximately 0.87[66] (relative to my calculated Beta of 0.735 and Dr.

9 Wilson's average Value Line Beta of 0.675). Moreover, as noted earlier in my Rebuttal

10 Testimony, there is little question that correlations of returns among asset segments have

11 increased in recent months. Since correlations include the relationship between the proxy

12 group and the broad market (as measured by the S&P 500), it is reasonable to conclude

13 that investors would expect higher Beta coefficients for the utility sector during periods

14 of increased correlation with the broader markets.   This is especially true among

15 institutional investors who own (on average) 59.34 percent of the proxy companies'

16 shares,[67] and would be aware of those market dynamics and construct their analyses

17 accordingly.

18

19 Finally, I note that financial data services such as Bloomberg enable analysts to specify

20 the analytical period (*e.g.*, six, twelve, twenty-four, sixty months, etc.), the holding period

21 (*e.g.*, daily, weekly, monthly, etc.), and the index (*e.g.*, S&P 500, Dow Industrial, etc.)

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[66]   Direct Testimony of Robert B. Hevert, at 64.
[67]   *See* Attachment RBH-R6.

1   used to calculate Beta coefficients.[68]   It is clear, therefore, that Bloomberg recognizes

2   that analysts and investors consider the nature of the current market environment,

3   determine when the default calculation is less relevant than alternative specifications, and

4   develop Beta coefficients in a more meaningful manner.   The calculation of Beta

5   coefficients based on more current data therefore is consistent with the actual practice of

6   analysts and investors.

7

8   **Q.   Please comment on the equity risk premium used by Dr. Wilson in his CAPM**

9   **analysis.**

10 A.   Dr. Wilson establishes his 3.00 percent to 7.00 percent equity risk premium based on his

11 review of two articles,[69] and two surveys of finance and economics professors by

12 Professor Ivo Welch of Brown University.[70]   As a preliminary matter, it is important to

13 note that the documents cited by Dr. Wilson represent only a small portion of the

14 academic literature devoted to the equity risk premium; a 2007 article published by the

15 Research Foundation of the CFA Institute provided an annotated bibliography of over 50

16 such articles.[71]   Even authors cited by Dr. Wilson reached different conclusions in

17 articles not cited by Dr. Wilson.   In September 2002, for example, Dimson, Marsh and

---

[68]   Please note that my twelve-month Beta coefficients in my Direct Testimony are identical to those calculated by Bloomberg, assuming the same inputs.

[69]   The two articles to which Dr. Wilson refers are authored by (1) Dimson, Marsh and Staunton (SIC), and (2) Fama and French.

[70]   Although Dr. Wilson refers to Professor Welch as a professor at Yale University, Professor Welch joined Brown University in 2004. *See* www.ivo-welch.info/vitae.

[71]   Zhiyi Song, CFA, *The Equity Risk Premium: An Annotated Bibliography*, the Research Foundation of the CFA Institute, 2007.

1   Staunton pointed to a long-term equity risk premium of 7.50 percent, and noted the

2   volatility of risk premium estimates derived from survey data.[72]

3

4   As to the Welch survey, there are several important observations in the 2001 article that

5   Dr. Wilson failed to note. First, Professor Welch observes that the survey is intended to

6   be a consensus in the academic profession. Professor Welch goes on to note that:

7   [t]he consensus estimate can be a number of some relevance in classroom,
8   courtroom, and boardroom discussions, even if it may not be the best
9   estimate of the equity premium itself. Then again, if there was agreement
10   on how to calculate the best estimate, there would be no need for a survey
11   of financial economists to begin with. Still surveys in general, and this
12   survey in particular have shortcomings…[73]
13

14   In the 2008 update to his survey, Professor Welch noted that:

15   …I do not advocate that the academic professional consensus equity
16   premium estimate should be seen as the best available estimate. Instead
17   this estimate should be seen as the best "common practices" estimate for
18   use in an academic setting.[74]
19

20   Given the intent and "shortcomings" associated with the Welch survey, I believe it is

21   inappropriate to substantially rely on its results as Dr. Wilson has done.

22

23   In addition, Dr. Wilson fails to recognize that market conditions, in particular equity

24   market volatility, are substantially different now than they were when the Welch surveys

25   were administered. As noted by Harris and Marston, the forward-looking equity risk

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[72] Elroy Dimson, Paul Marsh, Mike Staunton, *Global Evidence on the Equity Risk Premium*, September 2002 as Forthcoming in the Journal of Applied Corporate Finance.

[73] Ivo Welch, *View of Financial Economists on the Equity Risk Premium and on Professional Controversies*, Journal of Business, 2000, Vol. 73, No. 4.

[74] Ivo Welch, *The Consensus Estimate for the Equity Premium by Academic Financial Economists in December 2007*, January 18, 2008, at 2.

1   premium is a function of several factors, including the level of interest rates and market

2   volatility.[75] Similarly, Dimson, Marsh and Staunton's 2002 article refers to the need to

3   develop "estimates of expected future risk premia that are conditional on current

4   predictions of future volatility."[76]

5

6   At the time the first Welch survey was administered (October 6, 1997), market volatility,

7   as measured by the 90-day average VIX, was 21.86 percent relative to the expected

8   volatility for February through April 2011 of 28.40 percent.[77] By that measure, the

9   market is now expecting somewhat higher volatility than it was experiencing during the

10   first Welch survey. In addition, the 90-day average 30-year Treasury yield was

11   considerably higher in 1997 than its current level (6.36 percent and 3.88 percent in 1997

12   and 2010, respectively), and given that the risk premium varies inversely with the level of

13   interest rates, it follows that the current risk premium would be at least as high as the 7.00

14   percent estimate resulting from the first Welch survey.

15

16   While Dr. Wilson is correct in pointing out that the 2007-2008 geometric mean survey

17   results were in the 4.00 percent to 6.00 percent range (Welch reports arithmetic mean

18   results of approximately 5.70 percent), he fails to note that the implied volatility

19   associated with those estimates was approximately 12.00 percent to 15.00 percent.[78] The

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[75]   Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, 2001.

[76]   Elroy Dimson, Paul Marsh, Mike Staunton, *Global Evidence on the Equity Risk Premium*, September 2002 as Forthcoming in the Journal of Applied Corporate Finance.

[77]   Based on data contained in Attachment RBH-R15.

[78]   *See* Ivo Welch, *The Consensus Estimate for the Equity Premium by Academic Financial Economists in December 2007,* January 18, 2008, Table 2.

1   market dislocation that began in September 2008 created volatility (*i.e.*, VIX) levels as

2   high as 80.00 percent, and expected volatility remains at over 28.00 percent.

3   Consequently, the 5.70 percent risk premium is conditional upon a level of volatility that

4   is less than one-half of the current expected volatility (*see* Attachment RBH-R15).[79]

5   Given the substantial difference between the 2007 implied volatility and current expected

6   volatility, I disagree with Dr. Wilson's conclusion that the 5.70 percent 2007 survey

7   estimate is relevant to the current market.

8

9   **Q.   Do you agree with Dr. Wilson's use of historical data in estimating the equity risk**

10   **premium?**

11   A.   No, I do not. Simply relying on the historical equity risk premium may produce results

12   that are not consistent with investor sentiment and current conditions in capital markets.

13   As shown on Table 6 (below), from 2007-2009, the market risk premium as calculated

14   using historical data decreased even as market volatility (the primary statistical measure

15   of risk) significantly increased.

---

[79]   Assuming the 5.00 percent geometric mean reported by Welch and the 28.00 percent expected volatility noted above, the arithmetic average risk premium would be $.05 + (.28^2/2) = .0892$, or 8.92 percent. That estimate is only five basis points different than my Sharpe Ratio bond equity risk premium estimate of 8.87 percent.

1   **Table 6: Historical Market Risk Premium and Market Volatility**

	Market Volatility	Historical Market Risk Premium[80]
2009	31.48	6.80%
2008	32.69	6.50%
2007	17.54	7.10%

2

3   The assumption that investors would require a lower risk premium during periods of

4   increasing volatility is counter-intuitive,[81] and as noted above, leads to unreliable

5   analytical results. The relevant analytical issue in the application of the CAPM is to

6   ensure that all three components of the model (*i.e.*, the risk-free rate, Beta, and the market

7   risk premium) are consistent with market conditions and investor perceptions. Assuming

8   a lower market risk premium during periods of high volatility is at odds with that

9   premise. As discussed in Section V, the *ex-ante* market risk premium estimates used in

10   my CAPM analysis specifically address that concern.

11

12 **Q.   What are your conclusions with respect to Dr. Wilson's application of the CAPM?**

13 A.   Dr. Wilson's CAPM analyses produce results as low as 3.02 percent, which has no

14   relevance under any economic circumstances. Dr. Wilson's application of the CAPM

15   relies on historical measures of Beta coefficients and the equity risk premium, and fails to

16   take into consideration the ongoing instability in financial markets. Finally, the period of

17   Dr. Wilson's risk-free rate is not consistent with the useful life of the utility assets that

---

[80]   Morningstar, Inc., 2010 Ibbotson Stocks, Bonds, Bills and Inflation, Valuation Yearbook at 23. Historical
        market risk premium equals total return on large company stocks less income only return on long-term
        government securities.

[81]   *Minutes of the Federal Open Market Committee*, June 22-23, 2010, at 6.

1   are being financed. As such, it is my view that Dr. Wilson's application of the CAPM

2   should not be relied upon in establishing the authorized ROE for National Grid NH in

3   this proceeding.

4

5   **(6)   Application and Relevance of the Bond Yield Plus Risk Premium Approach**

6   **Q.   Does Dr. Wilson present a Risk Premium Analysis other than his CAPM analysis?**

7   A.   No, Dr. Wilson does not present any additional risk premium analysis in his Direct

8   Testimony.

9

10 **Q.   Why do you believe the Bond Yield Plus Risk Premium analysis is a relevant**

11   **method for estimating the ROE for National Grid NH?**

12 A.   As a preliminary matter, the use of the Bond Yield Plus Risk Premium analysis allows

13   the analyst to determine the reasonableness of the recommended ROE with regard to

14   alternative utility investments available to equity investors. As indicated in my Direct

15   Testimony, the Bond Yield Plus Risk Premium analysis is based on the fundamental

16   financial tenet that equity investors require an additional premium above the interest rate

17   paid to bondholders in order to compensate them for the risks associated with equity

18   ownership. An important finding associated with the Bond Yield Plus Risk Premium

19   approach is that there is an inverse relationship between interest rates and the equity risk

20   premium. Therefore, contrary to Dr. Wilson's view that low Treasury yields and low

21   inflation rates support the conclusion that equity costs are correspondingly low, the Bond

22   Yield Plus Risk Premium approach suggests that the low level of government bond rates

1 is not indicative of a historically low equity risk premium, or of a correspondingly lower

2 cost of equity capital.

3

4 **Q.** **Do you agree that the historically low level of Treasury yields is indicative of a**

5 **correspondingly low cost of equity?**

6 A. No, I do not. Although yields on 30-year and 10-year Treasury securities have fallen

7 significantly in recent months, as noted earlier, credit spreads between Treasury bonds

8 and Moody's A and Baa-rated utility debt have remained persistently high during this

9 period. At the same time, the yield spread between Treasury bonds and the proxy group

10 average dividend yield has become inverted, and the correlation in returns between utility

11 stocks and the broader market has been at historically high levels throughout 2010.

12 Therefore, it is clear that the declines in interest rates on long-term government debt have

13 not been accompanied by similar declines in corporate bond yields or required equity

14 costs. Those directly observable market metrics, together with the widely recognized

15 finding that the equity risk premium is inversely related to the level of interest rates,

16 indicate that Dr. Wilson's position regarding the effect of low interest rates on the

17 Company's cost of equity is misplaced.

18

1   **Q.**   **Have you performed a study that addresses the Commission's concern that some of**

2   **the authorized ROEs reported by Regulatory Research Associates are the result of**

3   **settlement agreements, which may reflect an unknown tradeoff between equity**

4   **returns and other components of the rate case proceeding?**

5   A.   Yes, I have. While I continue to believe that my original analysis addressed the

6   Commission's concern by considering hundreds of natural gas rate decisions since 1992,

7   I have reviewed each decision in which an ROE was specified to determine whether the

8   ROE was established by the Commission in a litigated proceeding, or whether the

9   Commission approved a settlement agreement which contained the authorized ROE. The

10   average authorized ROE since 1992 for natural gas companies has been 10.85 percent.

11   As shown on Attachment RBH-R7, among the ROE decisions that have been litigated,

12   the average authorized ROE has been 10.93 percent, while among those cases which have

13   been resolved through settlement agreements, the average authorized ROE has been

14   10.70 percent. In order to ensure that my results were not skewed by a period when

15   market conditions were much more robust, I also examined the same information since

16   January 2000. Since that time, the average authorized ROE for natural gas companies

17   has been 10.51 percent, the average authorized ROE for litigated cases has been 10.58

18   percent, and the average authorized ROE for settled cases has been 10.42 percent.

19

1 **Q.** **Based on that research, what are your conclusions regarding the relevance of**

2 **considering litigated returns in other jurisdictions as a benchmark for National**

3 **Grid NH's authorized ROE in this proceeding?**

4 A. My research has demonstrated that the average authorized ROE for natural gas

5 companies in litigated proceedings has been somewhat higher than the average ROE in

6 cases that were resolved through settlement. These returns are a relevant benchmark

7 against which the Commission may evaluate the reasonableness of its authorized ROE for

8 National Grid NH in this proceeding. Investors rely on this information in setting their

9 return requirements, and the Company must be able to compete for capital with other

10 utilities of commensurate risk. An ROE of 9.00 percent, as recommended by Dr. Wilson,

11 would place National Grid NH at a significant disadvantage in terms of competing for

12 capital, and is not consistent with returns available elsewhere to investors.

13

14 **(7)** **Dr. Wilson's Assertion That the Proposed Revenue Decoupling Mechanism**

15 **Should Result In a 100 Basis Point Reduction to the Authorized ROE for**

16 **National Grid NH**

17 **Q.** **Does Dr. Wilson recommend an adjustment to National Grid NH's authorized ROE**

18 **if the Commission approves the Company's proposed revenue decoupling**

19 **mechanism?**

20 A. Yes, Dr. Wilson indicates that he does not endorse the Company's proposed revenue

21 decoupling mechanism, and that if the Commission were to adopt this mechanism, the

1   authorized ROE should be reduced by "at least 100 basis points."[82]   Dr. Wilson also

2   asserts that any risk-mitigating effect of the proposed decoupling structure should be

3   viewed in isolation and not in the context of the proxy companies.[83]

4

5   **Q.   Do you agree with Dr. Wilson that approval of the Company's proposed revenue**

6   **decoupling mechanism justifies a downward adjustment to National Grid NH's**

7   **allowed ROE?**

8   A.   No, I do not. As discussed in my Direct Testimony, the relevant analytical issue is not

9   whether the Company's earnings would be less volatile following the implementation of

10   the proposed decoupling mechanism than without it; rather, the pertinent issue is whether

11   the Company would be more or less risky with its proposed decoupling mechanism as

12   compared to the proxy group.[84]   In that regard, there is no basis for a downward

13   adjustment to the allowed ROE.

14

15   Substanitally, all of the proxy group companies have decoupling mechanisms or SFV rate

16   designs in place, which de-link the recovery of fixed costs from volumetric sales.

17   Because National Grid NH does not currently enjoy this protection, the Company is more

18   risky than the proxy group. Therefore, approval of the proposed decoupling mechanism

19   would simply bring National Grid NH more in-line with the risk profile of the proxy

20   group, and therefore would not justify a downward adjustment to the Company's

21   authorized ROE. Similarly, as shown in Attachment RBH-10 to my Direct Testimony,

---

[82]   Direct Testimony of John W. Wilson, at 35.
[83]   *Ibid.*, at 14.
[84]   Direct Testimony of Robert B. Hevert, at 75.

1   many of the proxy group companies have other revenue stabilization and cost recovery

2   mechanisms (*i.e.*, capital cost tracking mechanisms, weather normalization clauses, bad

3   debt trackers, exogenous costs, etc.) which are similar to the proposal in National Grid

4   NH's filing in this proceeding.[85]   As such, approval of those ratemaking mechanisms

5   would not render the Company less risky than the proxy group, and would not require a

6   decrease in the Company's authorized ROE.

7

8   **Q.   Does Dr. Wilson offer any evidence to support his 100 basis point adjustment?**

9   A.   Dr. Wilson did not offer any evidence in his Direct Testimony to support his 100 basis

10   point adjustment.   In response to a data request from National Grid NH, Dr. Wilson

11   states: "It is Dr. Wilson's judgment that the risk reduction associated with revenue

12   decoupling would warrant an ROE allowance at the lower end of the zone of

13   reasonableness.   When decoupling has been adopted in other jurisdictions it has usually

14   been recognized that an ROE reduction was in order."[86]   Dr. Wilson then cites a limited

15   number of instances in which Commissions have explicitly reduced the authorized ROE

16   while approving a revenue decoupling mechanism, but fails to offer a more

17   comprehensive analysis.

18

---

[85]   *Ibid*.

[86]   *See* Staff Response to Data Requests of National Grid, Grid-Staff 83, provided by John W. Wilson, November 23, 2010.

1   **Q.** **Have you analyzed whether an adjustment is typically made to the authorized ROE**

2   **when Commissions in other jurisdictions have approved either a revenue**

3   **decoupling mechanism or SFV rate design?**

4   A.   Yes. I have researched all rate case decisions known to me in which the presiding

5   commission made a determination involving both the authorized ROE and a request for

6   implementation of either a revenue decoupling mechanism or SFV rate design. As shown

7   on Attachment RBH-R8, there have been over 71 such cases. The presiding commissions

8   have adjusted the authorized ROE due to approval of revenue decoupling or SFV rate

9   design in only 18.00 percent of those cases, and the average adjustment has been

10   approximately 16 basis points. From an investor's perspective, therefore, the likelihood

11   of a specific downward adjustment is less than 20.00 percent, and the average adjustment

12   of 16 basis points is well below the 100 basis point adjustment recommended by Dr.

13   Wilson.

14

15 **Q.** **Putting aside Dr. Wilson's lack of empirical support for his proposed 100 basis**

16   **point adjustment, do you agree that it is appropriate to view the Company's**

17   **proposed decoupling structure without considering similar structures in place at the**

18   **proxy companies?**

19 A.   No, I do not. Importantly, Dr. Wilson and I agree that the estimation of the cost of equity

20   is a comparative analysis; that is why we use proxy companies and look to the *Hope* and

21   *Bluefield* comparability standards in applying our respective analyses. Moreover, while

22   Dr. Wilson's proposed adjustment is based entirely on his limited review of rate case

23   decisions and his subjective judgment, observable data from both the debt and equity

1   markets demonstrate that the incremental effect, if any, of the proposed revenue

2   decoupling structure already is reflected in the proxy companies' share prices.

3   Consequently, Dr. Wilson's proposed adjustment would have the effect of substantially

4   and inappropriately reducing the Company's ROE to a level that has not been observed in

5   practice.

6

7   **Q.   Looking first to the debt markets, have you considered rating agency comments**

8   **regarding the proxy companies' risk profiles?**

9   A.   Yes, I have. In particular, I focused on S&P's rating "Rationale" as it relates to the proxy

10   company's business risk profile, financial risk profile, regulated, and unregulated

11   operations. Those comments are provided in Attachment RBH-R9. In each case, S&P

12   based its rating on both the regulated and non-regulated operations, and in every case,

13   S&P concluded that the subject company had an "excellent business risk profile." In

14   several instances, S&P noted the "low operating risks" and supportive regulatory

15   environments, and in several instances, S&P pointed to specific "supportive regulatory

16   measures" (*e.g.*, the decoupling and infrastructure replacement programs in place at

17   South Jersey Gas). Moreover, while KeySpan Corporation currently has Long Term

18   Issuer credit ratings of A- from S&P and FitchRatings, and Baa1 from Moody's,

19   respectively, S&P has assigned Northern Illinois Gas, Northwest Natural Gas, Piedmont

1   Natural Gas, South Jersey Gas, and Washington Gas Light higher senior unsecured

2   ratings.[87]

3

4 **Q.**   **Have you reviewed other rating agency information regarding revenue stabilization**

5   **mechanisms in particular?**

6 A.   Yes, I have. While Attachment RBH-R9 summarizes comments and ratings by S&P, I

7   also considered the method by which Moody's assigns credit ratings to utility companies.

8   In an August 2009 report, Moody's described its ratings methodology as focusing on four

9   rating factors, including: (1) Regulatory Framework; (2) Ability to Recover Costs and

10   Earn Returns; (3) Diversification; and (4) Financial Strength and Liquidity.[88]   Table 7

11   (below) summarizes the factors and weightings that Moody's applies to each.

12   **Table 7: Moody's Ratings Factors**[89]

Rating Category	Weight
Regulatory Framework	25%
Ability to Recover Costs and Earn Returns	25%
Diversification	10%
Financial Strength, Liquidity, and Key Financial Ratios	40%

13

---

87   In the case of unsecured notes, the issuer's ability to service the debt (*i.e.*, to pay both interest and principal on a timely basis) is supported only by the creditworthiness of the issuer, and not by the pledge of specific collateral. Senior secured notes, by contrast, are secured by a claim on underlying assets that can be liquidated in the case of default. If the issuer has both secured and unsecured debt outstanding, the secured bondholders have a claim that is senior to unsecured bondholders on funds that are available to creditors in an event of default.

88   *Rating Methodology, Regulated Electric and Gas Utilities*, Moody's Global Infrastructure Finance, August 2009, at 1.

89   *Ibid.*, at 4.

72

1   As Moody's describes its methodology, each factor is assigned an alpha-numeric grade,

2   based on several sub-factors. In the case of the "Ability to Recover Costs and Earn

3   Returns", Moody's explains that:

4   …this factor addresses in a more specific manner the ability of an
5   individual utility to recover its costs and earn a return. The ability to
6   recover prudently incurred costs in a timely manner is perhaps the single
7   most important credit consideration for regulated utilities as the lack of
8   timely recovery of such costs has caused financial stress for utilities on
9   several occasions.[90]
10

11   In a subsequent report, Moody's focused on this particular factor, and provided the letter

12   rankings within that factor for regulated gas utilities. As shown on Table 8 (below), of

13   the eight companies included in the proxy group, four were rated "A", and four were

14   rated "Baa".

15   **Table 8: Moody's Factor 2 Ability to Recover Costs and Earn Returns**

Factor 2 Rating	
A	**Baa**
Atlanta Gas Light Company	Laclede Gas Company
Northwest Natural Gas Company	Northern Illinois Gas Company
Piedmont Natural Gas Company	Southwest Gas Corporation
South Jersey Gas Company	Washington Gas Light Company

16

17   It is apparent, therefore, that both Moody's and S&P have reflected the effect of specific

18   regulatory mechanisms in their ratings actions.

19

20   Based on rating agency commentary, it appears that some form of revenue decoupling is

21   expected for gas distribution companies, and those utilities without this revenue

---

90   *Ibid.*, at 7.

1   protection are considered more risky than average. For example, as noted by Moody's in

2   2006:

3   While [Revenue Decoupling] may have originally begun as a regional
4   concept in certain jurisdictions, it has quickly become a nationwide
5   phenomenon that will challenge regulators and gas utilities alike, as they
6   seek to correct a structural imbalance in their rate design that has become
7   increasingly difficult to ignore.[91]

8

9   Moreover, based on actual rating actions, it appears that rating agencies will not

10   necessarily upgrade the credit of a utility for the approval of a decoupling mechanism;

11   however, a company without full revenue decoupling stands a greater risk of potential

12   downgrade. For example, in its June 2006, Special Report on Revenue Decoupling and

13   Local Gas Distribution Companies, Moody's stated that:

14   LDCs that have, or soon expect to have, RD [Revenue Decoupling] stand
15   a better chance than others in being able to maintain their credit ratings or
16   stabilize their credit outlook in face of adversity. This difference between
17   those companies that have RD and those that do not will tend to be further
18   accentuated as the credit demarcation reflected through rating actions
19   becomes more evident.[92]

20

21   As a case-in-point, in March 2006, Moody's placed Southwest Gas Corporation

22   ("Southwest Gas", or "SWX") under review for a possible downgrade "following the

23   company's recent announcement that the Arizona Corporation Commission issued a final

24   decision not to adopt the company's proposed rate design for balance accounts, thereby

25   exposing it to continuing earnings risks associated with weather volatility and declining

---

[91]   Moody's, *Local Gas Distribution Companies: Update on Revenue Decoupling and Implications for Credit Ratings*, June 2006. [Clarification added.]

[92]   *Ibid.*

1   customer use resulting from the effects of gas conservation."[93] Upon the conclusion of

2   its review in May 2006, Moody's downgraded Southwest Gas' senior unsecured debt. As

3   Moody's explained:

4   The downgrade reflects the view that the credit measures of SWX remain
5   weak when compared with its gas utility peers in light of its continued
6   rapid growth and sensitivity to decline in earnings on account of warmer
7   than normal weather and the absence of revenue decoupling in Arizona
8   (54% of gross margins) and Nevada (37% of gross margins) that would
9   serve to protect this company from weather variation and customer
10   conservation.[94]

11

12   It is apparent, therefore, that rating agencies view revenue decoupling mechanisms in the

13   context of a set of revenue stabilization mechanisms, and the implementation of such

14   structures as the status quo for natural gas utilities. The implication is that some form of

15   revenue stabilization is expected, and companies without such protection may be

16   susceptible to negative actions from the rating agencies. Importantly, while SWX was

17   downgraded partially as a result of the denial of its proposed decoupling mechanism,

18   there is no instance of which I am aware in which a company's credit rating was

19   upgraded due to the implementation of a decoupling mechanism.

20

21 **Q.   Did you perform any empirical analyses to assess investors' reactions to the**

22   **implementation of decoupling structures?**

23 A.   Yes. To the extent that investors perceive significantly lower risk for companies that

24   implement decoupling structures (as Dr. Wilson assumes to be the case), the

---

[93]   Moody's Investors Service, *Moody's Places the Baa2/Negative Outlook Senior Unsecured Debt of Southwest Gas Corporation Under Review for Possible Downgrade*, March 10, 2006.

[94]   Moody's Investors Service, *Moody's Downgrades Senior Unsecured Debt of Southwest Gas Corporation to Baa3 from Baa2; Outlook is Stable*, May 30, 2006. (Clarification included)

1   implementing companies' returns should be less volatile with the decoupling mechanism

2   in place than they were prior to the implementation of the mechanism. As discussed in

3   Appendix A, that hypothesis was tested by analyzing the relationship between the

4   implementing company's stock returns and an index of gas utility returns prior to the

5   implementation of decoupling with the relationship after the implementation of the

6   decoupling mechanism.   As part of that analysis, I considered two different "event dates"

7   that define the prior and post periods; the actual date of the Commission order approving

8   decoupling and the midpoint of the filing date and the order.[95]

9

10   As shown in Appendix A and Attachment RBH-R10, the results of these analyses

11   demonstrate that there is no meaningful change in the relationship between the

12   implementing company's stock returns and the market index as a result of the

13   implementation of the decoupling mechanism. Therefore, my empirical analyses find no

14   support for the proposition that investors would measurably reduce their return

15   requirements as a direct result of the Company's proposed decoupling structure.

16   Consequently, I have concluded that investors do not reduce their return requirements

17   relative to comparable investments specifically as a result of the implementation of

18   decoupling structures.

19

---

[95]   The latter case was tested since it is possible that the market reflected the effect of decoupling at an earlier point in the regulatory process than the Commission order date.

1 **Q.** **Please summarize your conclusions regarding Dr. Wilson's recommendation that**

2 **the Commission reduce the authorized ROE by at least 100 basis points if National**

3 **Grid NH's proposed revenue decoupling mechanism is approved.**

4 A. I strongly disagree with Dr. Wilson's recommendation to reduce National Grid NH's

5 authorized ROE by 100 basis points if the Commission approves the Company's revenue

6 decoupling mechanism. The wide majority of proxy group companies have revenue

7 decoupling mechanisms or SFV rate designs, so that no further adjustment is required to

8 the authorized ROE if the Commission approves implementation of National Grid NH's

9 proposed revenue decoupling mechanism. Approval of the decoupling mechanism would

10 serve to make National Grid NH more similar in terms of its risk profile relative to the

11 proxy group companies. Since bond investors appear to expect revenue decoupling and

12 equity investors do not reduce their return expectations after revenue decoupling is

13 implemented, there is no market evidence that would support a downward adjustment in

14 the authorized ROE. Moreover, the majority of other jurisdictions have not made an

15 explicit quantitative adjustment to the ROE when decoupling mechanisms have been

16 approved, and when adjustments have been made they have been much smaller than the

17 arbitrary adjustment recommended by Dr. Wilson.

18

19 **IV.** **CAPITAL STRUCTURE AND COST OF DEBT**

20 **Q.** **Please summarize Dr. Wilson's position regarding the Company's capital structure**

21 **and cost of debt.**

22 A. Dr. Wilson supports the Company's equity ratio of 50.00 percent; however, he

23 recommends an adjustment to the debt component of the capital structure to include

1   short-term debt of $13.6 million and long-term debt of $80 million, and proposes a cost

2   rate for short-term debt of 1.95 percent, based on the Company's average test year

3   monthly short-term debt cost rate.[97] In support of his recommendation, Dr. Wilson

4   reasons that short-term debt is at historically low cost rates and is beneficial in reducing

5   current overall capital costs.[98]

6

7 **Q. Do you have any concerns with Dr. Wilson's position on this issue?**

8 A.   Yes, I have two primary concerns with Dr. Wilson's position. First, Dr. Wilson's

9   recommendation is not consistent with the traditional utility approach to financing rate

10   base assets, wherein the term of the debt generally matches the life of the assets. In

11   addition, financing long-lived assets with short-term debt, simply because the current cost

12   rates on that short-term debt are low, increases the risk to customers of rising interest

13   rates that can otherwise be avoided by matching the term of the debt to the life of the

14   assets.

15

16 **Q. Please discuss the traditional utility financing of ratebase assets.**

17 A.   The capital structure that is established in this case should reflect the Company's

18   investment in permanent assets used to provide regulated gas distribution service (*i.e.*, the

19   Company's rate base). This permanent investment is financed with permanent capital

20   (*i.e.*, long-term debt and common equity). Short-term debt is typically used to fund

21   seasonal working capital needs, including fuel supplies, fluctuations in accounts

---

97   Direct Testimony of John W. Wilson, at 33.
98   *Ibid.*

1   receivable and accounts payables, and Construction Work In Progress. During periods of

2   substantial investment, short-term cash needs grow over time, reflecting the higher than

3   normal capital expenditures until the company is able to finance with permanent capital.

4   Therefore, Dr. Wilson's proposal to include short-term debt in the Company's permanent

5   capital structure is not reflective of the traditional utility approach to financing rate base

6   assets.

7

8 **Q. Has the Commission made any prior determinations as to the Company's use of**

9   **short-term debt and how short-term debt should be considered in its permanent**

10   **capital structure?**

11 A.   Yes, it has. In Order No. 24,824, the Commission approved a Settlement Agreement that

12   established separate short-term debt limits for the Company to fund gas inventories and

13   short-term debt not related to gas inventories. In that order, the Commission specifically

14   found that it was necessary to increase the limit on short-term debt not related to gas

15   inventories in order to fund ongoing environmental remediation costs. It is important to

16   note, however that the short-term debt levels agreed to in that proceeding were not

17   established with the intention of replacing long-term debt in the Company's permanent

18   capital structure, but rather were authorized to meet the Company's short-term cash needs

19   related to ongoing environmental remediation efforts. As part of the Settlement

20   Agreement approved by the Commission in Order No. 24,824, the parties agreed that the

1   Company's capital structure for its next base rate filing would include 50.00 percent

2   common stock and 50.00 percent long-term debt.[98]

3

4   **Q.   Has Staff specifically commented on the use of short-term debt to produce short-**

5   **term interest rate benefits for customers?**

6   A.   Yes. In Docket No. DG 06-122, Staff raised concerns regarding $80 million of long-

7   term debt that the Company had refinanced at lower short-term debt cost rates. In that

8   case, Staff stated that:

9   [t]he Company replaced fixed-rate debt with variable rate debt, thus
10   **increasing interest rate risk**. Staff noted that while the Company
11   received the benefit of the interest cost savings in the short run, if interest
12   rates were to rise prior to the filing of a rate case or rates went up forcing
13   the filing of a rate case, ratepayers would be asked to absorb the increased
14   costs of the debt.[99] (Emphasis added.)
15

16   In supporting the short-term debt limits that were implemented in the Order Approving

17   the Settlement Agreement in DG 06-122, Staff also observed:

18   In Staff's view, the short-term debt limit prevents utilities from financing
19   long-term assets with anything other than long-term debt and equity.
20   Coupled with regulatory oversight over the issuance of debt and equity,
21   this helps prevent utilities from making unwise decisions or manipulating
22   the capital structure in a way that **could jeopardize their long-term**
23   **financial health or negatively impact ratepayers**.[100] (Emphasis added.)
24

25   Finally, Staff commented on the possible effect that short-term debt might have on credit

26   ratings as follows:

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[98]   *EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England*, DG 06-122, Petition to
       Consolidate and Increase Short Term Debt Limits, Settlement Agreement, Appendix B.
[99]   *EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England*, DG 06-122, Order No.
       24,824, February 29, 2008.
[100] *Ibid.*

1 Staff further stated that it had some concern that extensive use of short-
2 term debt in lieu of long-term debt might affect credit ratings. Staff
3 explained that even though inter-affiliate money pool borrowings are
4 considered short-term debt, in this case, the debt was not going to be paid
5 within one year, if ever. Staff was concerned that the Company's
6 **financial ratios on which credit agencies and investors rely might be**
7 **distorted**.[101] (Emphasis added.)

8

9 **Q. Has the Commission commented on the use of short-term debt to meet long-term**

10 **financing needs?**

11 A. Yes, it has. In Order No. 24,824, the Commission approved the conversion of $80

12 million of short-term debt to a new fixed-rate long-term debt, noting that the new long-

13 term debt "eliminates the risk of harm to ratepayers from possible increases to short-term

14 interest rates".[102] The Commission further noted that "[e]ven at a time of historically low

15 interest rates in 2001, we expressed caution about over-reliance on variable rate long-

16 term financing by utilities".[103]

17

18 It is clear, therefore, that both the Commission and Staff have been concerned that the use

19 of variable rate short-term debt to fund permanent assets (1) could expose ratepayers to

20 interest rate risk; (2) could jeopardize the Company's long-term financial health; and (3)

21 might affect credit ratings and distort financial ratios relied on by investors. Those

22 continue to be extremely relevant concerns in the current capital market environment,

23 where short-term borrowing costs are below 1.00 percent; there is significant risk that

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[101] *Ibid.*
[102] *Ibid.,* at 11.
[103] *Ibid. See* also Public Service Company of New Hampshire, Order No. 23,841 (2001), 86 NHPUC 756, 761-762.

1   rising short-term interest rates could expose ratepayers to substantially higher costs if the

2   Company were to use short-term debt to finance permanent utility assets.

3

4   Q. **What is your conclusion regarding the appropriate capital structure for National**

5   **Grid NH?**

6   A. For the reasons stated above, I continue to support the Company's position that the rates

7   in this proceeding should be based on a capital structure consisting of 50.00 percent

8   common equity and 50.00 percent long-term debt.

9

10 **V.   UPDATED AND REVISED ANALYSES**

11 Q. **Please summarize the updated and revised analyses presented in your Rebuttal**

12   **Testimony.**

13 A. I updated all analyses using data as of November 12, 2010. As discussed below, my

14   updated analyses also reflect certain changes made in response to Dr. Wilson's pre-filed

15   testimony.

16

17 Q. **Please summarize your updated Constant Growth DCF Model results.**

18 A. For the reasons discussed earlier, I have continued to use projected earnings growth rates

19   in developing my Constant Growth DCF model. As shown in Table 9 (below; *see* also

20   Attachment RBH-R11 and RBH-R12), and as discussed earlier in my Rebuttal

21   Testimony, the Constant Growth DCF model results have declined significantly since the

22   filing of my Direct Testimony.

1   **Table 9: Updated Constant Growth DCF Results**

	Mean Low	Mean	Mean High
Constant Growth DCF			
30-Day Average	7.29%	8.34%	9.74%
90-Day Average	7.44%	8.49%	9.88%
180-Day Average	7.54%	8.59%	9.99%

2

3   **Q.   Did you give the Constant Growth DCF results any weight in arriving at your ROE**

4   **recommendation?**

5   A.   No, for the reasons discussed in my response to Dr. Wilson, I did not give any weight to

6   the updated Constant Growth DCF results. As a practical matter, there is no reasonable

7   benchmark that could rationalize a mean result as low as 8.34 percent. That is especially

8   true given the continuing level of investor risk aversion that persists in the equity

9   markets. Those findings lead me to believe that the Constant Growth DCF model's

10   results cannot be considered a reasonable and reliable estimate of the Company's cost of

11   equity.

12

13   **Q.   Please now describe your updated and revised Multi-Stage DCF analyses.**

14   A.   Similar to the analyses presented in my Direct Testimony, I have included updated Multi-

15   Stage DCF analyses. For each of those analyses, I calculated the terminal stock price

16   based on (1) the Gordon Model, assuming nominal long-term GDP growth as the relevant

17   growth rate; and (2) the product of the projected Earnings Per Share and the expected

18   Price/Earnings ratio. I also considered the incremental effect of assuming that the long-

19   term payout ratio would revert to its historical average (on a company-by-company

1   basis). I also have updated my estimate for long-term GDP growth to reflect the most

2   current information available, which results in a terminal growth rate of 5.77 percent

3   rather than the 5.87 percent used in my Direct Testimony.

4

5 **Q.**   **What were your specific assumptions with respect to the payout ratio?**

6 A.   As noted in my Direct Testimony, for the first two periods I relied on the first year and

7   long-term projected payout ratios reported by Value Line[104] for each of the proxy group

8   companies. As part of my updated and revised analysis, I then assumed that by the end

9   of the second period (*i.e.*, the end of year 10), the payout ratio will converge to the long-

10   term company median payout ratio. Given the elevated level of capital expenditures that

11   the industry is facing over the coming three to five years, I believe that it is reasonable to

12   assume that in general, payout ratios will decline in the near term, but revert to the

13   historical median over the long term.[105] I estimated the long-term payout ratio of each

14   proxy group company to be the median of the historical payout ratio for that company for

15   the period from 1990 through the present.

16

17 **Q.**   **Please summarize your updated Multi-Stage DCF results.**

18 A.   As shown in Table 10 (below) and Attachment RBH-R13 the results produced by my

19   updated and revised Multi-Stage DCF analyses are consistent with the Multi-Stage DCF

20   results presented in my Direct Testimony. Table 10 also includes Multi-Stage DCF

21   results using Dr. Wilson's "fundamental growth" rate as the terminal growth rate.

104   As reported in the December 11, 2009 Value Line Investment Survey for Natural Gas Utilities as "All Div'ds to Net Prof."

105   KeyBanc Capital Markets Inc. Equity Research, *Electric Utilities Quarterly 1Q10*, June 2010, at 7.

1   Moreover, as shown in Attachment RBH-R13, the calculated terminal value P/E ratios

2   derived from the Multi-Stage DCF analyses employing the Gordon Growth Terminal

3   Value methodology continue to produce reasonable results when considered in the

4   context of the range of historical median P/E ratios attributable to the proxy group

5   companies.

6   **Table 10: Updated Multi-Stage DCF Results**

	Wilson Fundamental Growth Rate	Hevert GDP Growth Rate
Gordon Growth Terminal Value		
30-Day average	10.10%	10.37%
90-Day average	10.29%	10.55%
180-Day average	10.41%	10.67%
P/E Ratio Terminal Value		
30-Day average	9.87%	10.05%
90-Day average	10.29%	10.47%
180-Day average	10.57%	10.75%

7

8   **Q.   Please now summarize your updated CAPM analysis.**

9   A.   I have continued to use the same inputs used in my Direct Testimony, updated through

10   November 12, 2010.

11

12   **Q.   What market changes does your updated CAPM analysis reflect?**

13   A.   Since the filing of my Direct Testimony, the twelve-month Beta coefficients have

14   increased markedly. In large measure, that increase is the result of the increase in return

15   correlations discussed earlier in my Rebuttal Testimony. Chart 6 (below; *see* also

16   Attachment RBH-R14) demonstrates the relationship between the average covariance of

1   weekly returns for the proxy group and the variance of the S&P 500, the two components

2   of the Beta calculation.

3   **Chart 6: Proxy Group Covariance and S&P 500 Variance**
4   **(Rolling 12 month calculation)**
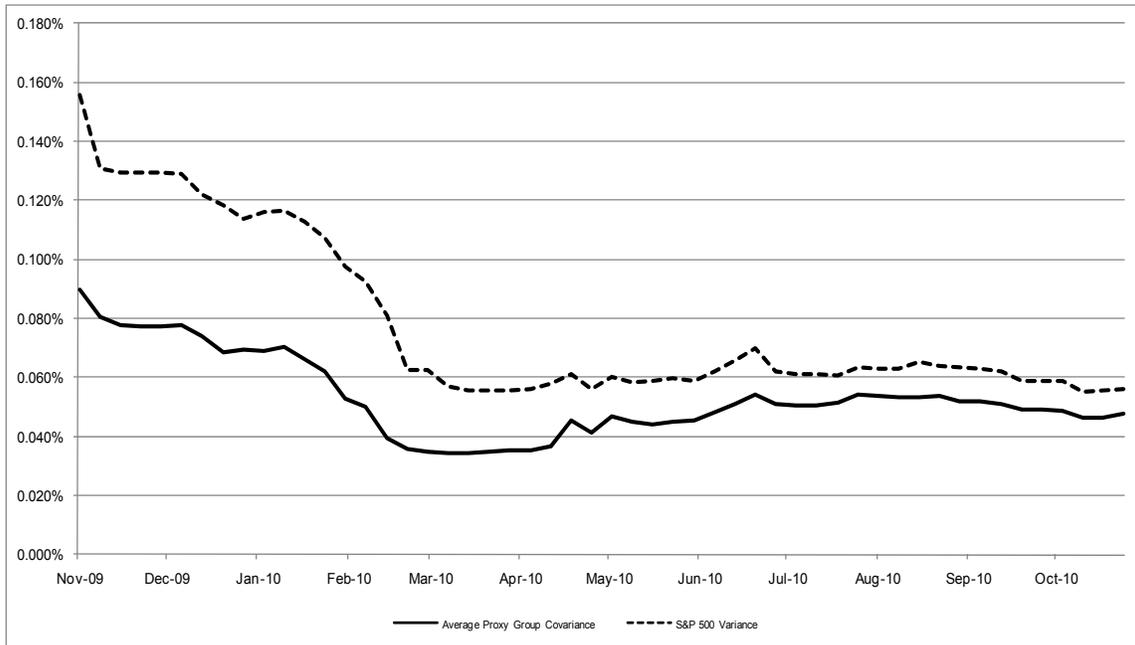
5
6

7   As Chart 6 demonstrates, the difference between the average covariance for the proxy

8   group and the variance in the S&P 500 weekly returns has continued to narrow since my

9   Direct Testimony was filed. Since Beta is the ratio of the covariance to the variance, that

10   increasingly small difference indicates that the proxy company stock prices have become

11   even more volatile relative to the broad market. Consequently, since the filing of my

12   Direct Testimony, the proxy group average Beta has continued to increase, indicating

13   higher levels of "systematic" risk.

14

1   I recognize that the recent significant increase in return correlations may not be a long-

2   term dynamic in the equity markets. That said, it is unclear whether correlations will

3   revert toward lower levels in the near future. Moreover, Beta coefficients calculated

4   based on two and five-year data are substantially similar, indicating that neither would

5   appropriately reflect the current market conditions. On balance, a reasonable method of

6   reflecting both the current level of return correlations, while giving effect to periods

7   during which correlations were lower, is to calculate Beta coefficients over a twelve-

8   month period. As such, my updated CAPM results continue to be based on twelve-month

9   Beta coefficients.

10

11 **Q.**   **What are your updated CAPM results?**

12 A.   As shown in Attachment RBH-R15, based upon updated market information, my CAPM

13   analyses produce a range of ROE estimates of between 10.30 percent and 12.41 percent.

14

15 **Q.**   **Have you placed any specific reliance on your CAPM results?**

16 A.   No, I have not. As I noted in my Direct Testimony, I rely on my CAPM analyses solely

17   to corroborate the results of my other analyses.[106]

18

19 **Q.**   **What then is the relevance of your updated CAPM results?**

20 A.   Given the current market circumstances, the CAPM results shown in Attachment RBH-

21   R15 display the significant level of market uncertainty that continues to persist.

22   Moreover, the results demonstrate that utilities in the proxy group have indeed become

---

[106]   Direct Testimony of Robert B. Hevert, at 58.

1   more correlated to the broader market than the historically measured Beta coefficients

2   suggest. While I realize that this elevated degree of correlation is symptomatic of the

3   currently unsettled market conditions, I also recognize that over the long-term, indices

4   such as correlation coefficients, yield inversion, and other measures of investors' risk

5   sentiments may revert toward pre-financial crisis levels. Thus, although I have not relied

6   explicitly upon the updated CAPM results, those results do inform the high end of the

7   current market-required return for the proxy group. Those analyses also provide

8   empirical data that counter many of Dr. Wilson's arguments for a lower ROE.

9

10   **Q.**   **Please summarize your updated Bond Yield Plus Risk Premium analysis.**

11   A.   My updated Bond Yield Plus Risk Premium analysis includes authorized ROEs as

12   reported by Regulatory Research Associates through November 12, 2010. For the

13   purpose of calculating the expected risk premium and ROE, I have used current averages

14   of the Moody's Baa-rated utility bond index. As shown in Attachment RBH-R16, my

15   updated results range from 10.22 percent to 10.31 percent, with a mean of 10.25 percent.

16

17   **Q.**   **Have you updated your estimate of flotation costs?**

18   A.   Yes, as shown in Attachment RBH-R17, I updated my flotation cost analysis to reflect

19   the current Constant Growth DCF results using a 90-day averaging period. Those results

20   support a flotation cost of approximately 11 basis points. As in my Direct Testimony, I

21   have not included a specific adjustment to my ROE estimates to reflect flotation costs.[107]

22

---

[107]   As noted earlier, my discussion of the Company's flotation cost is included in Appendix A.

1 **Q.** **Have you considered whether your recommended return meets the standard of a**

2 **fair rate of return?**

3 A. Yes. As I noted in my Direct Testimony, my recommendation is based upon my

4 understanding of the *Hope* and *Bluefield* standards, wherein:

5 …the authorized ROE for a public utility should allow the company to
6 attract investor capital at reasonable cost under a variety of economic and
7 financial market conditions. The ability to attract capital on reasonable
8 terms is especially important for utilities that must invest considerable
9 amounts of capital in projects designed to maintain and enhance system
10 reliability.[108]

11

12 That assessment also reflects the Company's intention to attract capital at terms similar to

13 those offered to companies of similar risk. Therefore, a recommendation that diminishes

14 the Company's ability to compete for capital in the open market does not meet that

15 standard.

16

17 **Q.** **Does Dr. Wilson test whether his recommended ROE meets that standard?**

18 A. No. Dr. Wilson does not present any analyses that test whether the combination of his

19 recommended ROE, capital structure and cost of debt would allow the Company to

20 maintain its financial integrity, or attract capital at terms offered to companies of similar

21 risk.

22

---

[108] *See*, Direct Testimony of Robert B. Hevert, at 12-13.

1   **Q.**   **Have you considered the effect of Staff's recommendations on the Company's credit**

2   **profile?**

3   A.   Yes, I have. While Dr. Wilson's proposed ROE, if authorized, would severely limit the

4   Company's ability to earn a just and reasonable return, and degrade its measured credit

5   metrics, such an ROE, if authorized, would have secondary effects on the Company's

6   perceived risk in the eyes of credit rating agencies. S&P, for instance, notes that "we

7   concentrate on whether established base rates fairly reflect the cost structure of a utility

8   and allow management an opportunity to earn a compensatory return that provides

9   bondholders with a financial cushion that promotes credit quality."[109]

10   Moreover, Regulatory Research Associates ("RRA") ranks the New Hampshire

11   regulatory risk as in the lower third of all state regulatory rankings from an investor's

12   perspective.[110] Dr. Wilson's recommended ROE would only increase the perceived risk

13   from an investor's perspective.

14

15   To that point, as noted above, in determining a company's credit rating, Moody's assigns

16   a 40.00 percent weight to the financial coverage ratios produced by an analysis of the

17   company's cash flows.[111] As also noted above, a significant proportion of the

18   Company's credit rating is also determined by the perceived credit supportiveness of the

19   regulatory jurisdiction and the rate structures in place to allow for timely cost recovery.

20   In fact, Moody' considers those factors to be 50.00 percent of the calculation of a

---

[109]   Standard and Poor's, *Assessing U.S. Utility Regulatory Environments*, March 11, 2010, at 4.
[110]   Regulatory Research Associates, Regulatory Focus, State Regulatory Evaluations, October 8, 2010.
[111]   *See*, *Rating Methodology, Regulated Electric and Gas Utilities*, Moody's Global Infrastructure Finance, August 2009, at 17.

1   regulated utility's credit rating.[112]   Therefore, the practical implication of reduced

2   financial integrity would be to affect not only the Company's calculated credit metrics,

3   but also the perception of the regulatory climate in which the Company operates, putting

4   further pressure on National Grid NH's credit profile. As noted in Section III, the current

5   spread between A and Baa-rated long-term utility debt is approximately 56 basis points,

6   which is more than 36.00 percent above the historical average spread. Thus, Dr.

7   Wilson's proposed ROE, capital structure, and cost of debt increase the potential (all else

8   being equal) that the Company will be forced to pass along *higher* capital costs to

9   customers in order to fund its continuing operations over the long term.

10

11 **VI.**   **<u>CONCLUSIONS AND RECOMMENDATIONS</u>**

12 **Q.**   **Please summarize the recommendations contained in your Rebuttal Testimony.**

13 A.   My updated and revised analytical results are provided in Table 11 (below). While many

14   of the results presented in Table 11 are consistent with the results contained in my Direct

15   Testimony (in particular, the Multi-Stage DCF model), the Constant Growth DCF results

16   have significantly decreased and no longer provide a reliable estimate of the Company's

17   required cost of equity. As discussed throughout my Rebuttal Testimony, the Multi-

18   Stage DCF model addresses many of the infirmities of the Constant Growth DCF model

19   under current market conditions; therefore, I have placed significant weight on the Multi-

20   Stage DCF results. At the same time, certain of the CAPM results have increased, largely

21   as a result of increased Beta coefficients. As in my Direct Testimony, I have viewed the

22   CAPM results as a means of informing the range of analytical results. Moreover, the

---

[112]   *Ibid.,* at 15.

1   authorized ROEs for natural gas distribution companies in other jurisdictions that were

2   derived through litigated proceedings also support my recommended range of analytical

3   results. Finally, as shown in Chart 2, my recommended range is fully supported by the

4   range of authorized ROEs granted over the last 12 months. Based on that data, and in

5   light of the information discussed throughout my Rebuttal Testimony, my updated and

6   revised range of ROE estimates is from 10.25 percent to 11.00 percent, and my revised

7   recommendation is 10.75 percent.

1   **Table 11: Summary of Results**

	Mean Low	**Mean**	**Mean High**
Constant Growth DCF			
30-Day Average	7.29%	8.34%	9.74%
90-Day Average	7.44%	8.49%	9.88%
180-Day Average	7.54%	8.59%	9.99%
	Wilson Fundamental Growth Rate		**Hevert GDP Growth Rate**
Multi-Stage DCF			
Gordon Growth Terminal Value			
30-Day Average	10.10%		10.37%
90-Day Average	10.29%		10.55%
180-Day Average	10.41%		10.67%
P/E Ratio Terminal Value			
30-Day Average	9.87%		10.05%
90-Day Average	10.29%		10.47%
180-Day Average	10.57%		10.75%
Risk Premium Approaches			
	Current 30-Yr Treasury	**Midpoint**	**Projected 30-Yr Treasury**
Capital Asset Pricing Model			
Sharpe Ratio			
Current Beta	11.96%	12.02%	12.08%
Historical Beta	10.30%	10.37%	10.43%
Market-Based DCF			
Current Beta	12.29%	12.35%	12.41%
Historical Beta	10.57%	10.63%	10.69%
	Low	**Mean**	**High**
Bond Yield Plus Risk Premium	10.22%	10.25%	10.31%
Flotation Cost	0.11%	0.11%	0.11%

2

3   Finally, I continue to support the Company's proposed capital structure which consists of

4   50.00 percent common equity and 50.00 long-term debt, as well as its 6.99 percent cost

5   of long-term debt.

6

1 **Q.   Does that conclude your Rebuttal Testimony?**

2 A.   Yes, it does.