

December 27, 2012

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Office of the Secretary
888 First Street, N.E.
Washington, DC 20426

VIA ELECTRONIC FILING

**RE: ENE (Environment Northeast), *et al.* v. Bangor Hydro-Electric Company, *et al.*,
Docket No. EL13-_____-000**

Dear Secretary Bose:

Pursuant to Sections 206 and 306 of the Federal Power Act ("FPA")¹ and Rule 206 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission"),² ENE (Environment Northeast), Greater Boston Real Estate Board, National Consumer Law Center, and NEPOOL Industrial Customer Coalition (collectively, the "Complainants") hereby file a complaint ("Complaint") against Bangor Hydro-Electric Company; Central Maine Power Company; New England Power Company d/b/a National Grid; New Hampshire Transmission LLC d/b/a NextEra; NSTAR Electric Company; Northeast Utilities Service Company; The United Illuminating Company; Unitil Energy Systems, Inc. and Fitchburg Gas and Electric Light Company; and Vermont Transco, LLC (collectively, "New England Transmission Owners" or "TOs") seeking an order to reduce the 11.14 percent base return on equity ("Base ROE") used in calculating formula rates for transmission service under the ISO-NE Open Access Transmission Tariff ("OATT") to a just and reasonable level at 8.7 percent.

Please find the following materials attached hereto:

- Complaint;
- Exhibit C-1: Testimony of J. Randall Woolridge;
- Exhibit C-2: Service List; and
- Exhibit C-3: Form of Notice.

¹ 16 U.S.C. §§ 824e and 825e.

² 18 C.F.R. § 385.206 (2010).

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Should you have any questions or concerns, please do not hesitate to contact me.

Respectfully submitted,

McNEES WALLACE & NURICK LLC

By /s/ Vasiliki Karandrikas
Vasiliki Karandrikas

Counsel to NEPOOL Industrial Customer Coalition
and on behalf of ENE (Environment Northeast),
Greater Boston Real Estate Board, and National
Consumer Law Center

VK:mas
Attachments
cc: Service List

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ENE (Environment Northeast),
Greater Boston Real Estate Board,
National Consumer Law Center, and
NEPOOL Industrial Customer Coalition,

Complainants,

Docket No. EL13-_____

v.

Bangor Hydro-Electric Co.,
Central Maine Power Co.,
New England Power Co. d/b/a National Grid,
New Hampshire Transmission LLC d/b/a NextEra,
NSTAR Electric Company,
Northeast Utilities Service Co.,
The United Illuminating Co.,
Unitil Energy Systems, Inc. and
Fitchburg Gas and Electric Light Co., and
Vermont Transco, LLC,

Respondents.

(filed December 27, 2012)

**COMPLAINT OF ENE, *ET AL.*
CHALLENGING BASE RETURN ON EQUITY AND MOTION FOR
CONSOLIDATION**

Pursuant to Sections 206 and 306 of the Federal Power Act ("FPA")¹ and Rules 206 and 212 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission" or "FERC"),² ENE (Environment Northeast), the Greater Boston Real Estate Board ("GBREB" or "Board"), the National Consumer Law Center ("NCLC"), and the NEPOOL Industrial Customer Coalition ("NICC") (collectively, the "Complainants") hereby file this complaint against Bangor Hydro-Electric Company

¹ 16 U.S.C. §§ 824e and 825e.

² 18 C.F.R. §§ 385.206 and 385.212 (2010).

("BHE"); Central Maine Power Company ("CMP"); New England Power Company d/b/a National Grid; New Hampshire Transmission LLC d/b/a NextEra ("NHT"); NSTAR Electric Company ("NSTAR"); Northeast Utilities Service Company ("NUSCO"), on behalf of its operating company affiliates: The Connecticut Light and Power Company ("CL&P"), Western Massachusetts Electric Company ("WMECO"), and Public Service Company of New Hampshire ("PSNH"); The United Illuminating Company ("UI"); Unitil Energy Systems, Inc. and Fitchburg Gas and Electric Light Company ("Unitil"); and Vermont Transco, LLC ("Vermont Transco") (collectively, "New England Transmission Owners," "TOs," or "Respondents") seeking an order to reduce the 11.14 percent base return on equity ("Base ROE") used in calculating formula rates for transmission service under the ISO-NE Open Access Transmission Tariff ("OATT") to a just and reasonable level at 8.7 percent.³

As discussed below and demonstrated in the accompanying testimony, the Base ROE currently reflected in the ISO-NE OATT formula rates is unjust and unreasonable. That Base ROE is already the subject of ongoing hearing procedures in Docket No. EL11-66, instituted upon a Commission finding that whether the Base ROE remained reasonable or should be reduced could not be resolved without an evidentiary hearing. *See Martha Coakley, et al. v. Bangor Hydro-Electric Co., et al.* 139 FERC ¶ 61,090 (2012) ("*Bangor*"). To the extent this relief is not granted summarily, Complainants ask that this matter be set for evidentiary hearing, and that it be consolidated for purposes of hearing and decision with Docket No. EL11-66.⁴

³ The OATT is Section II of ISO-NE Inc. Transmission, Markets and Services Tariff, FERC Tariff No. 3 ("ISO Tariff").

⁴ Complainants ask that the Commission not set the matters at issue for settlement discussions. It is our understanding that such discussions were convened in Docket No. EL11-66, but were unsuccessful.

Notwithstanding the existence of the pending proceedings in Docket No. EL11-66, the docketing of a further complaint addressing the Base ROE is appropriate for at least six reasons:

One, the Commission has held that the pendency of a Section 206 investigation into a public utility's ROE does not immunize that ROE from investigation through a second Section 206 complaint proceeding. *Southern Co. Servs., Inc.*, 83 FERC ¶61,079, at p. 61,386 (1998) ("*Southern*"); *Consumer Advocate Div. of the Pub. Serv. Comm'n of W.V. et al. v. Allegheny Generating Co.*, 67 FERC ¶61,288, at p. 62,000 (1994) ("*Allegheny*"). The Commission explained that a utility's "[r]eturn on equity will change both as an individual public utility's risks change over time and as capital market conditions change over time," *Allegheny* at p. 62,000, and that "a return on equity found to be reasonable at one point in time may not be reasonable at another point in time." *Id.* A later complaint that "relies on more recent information" therefore amounts to a "new claim," not merely the reiteration of "previous allegations." *Id.* The present complaint is based upon new information, including information that points to a lower ROE than was identified in the complaint initiating Docket No. EL11-66.

Two, entertaining this further complaint will promote the Congressionally directed symmetry of remedies as between Federal Power Act Sections 205 and 206. As the Commission also recited in *Southern* and *Allegheny*, Congress amended Section 206 to add refund provisions in order "to add symmetry between the treatment of utility rate increase filings under Section 205 of the FPA, and the treatment of complaints requesting rate decreases under Section 206 of the FPA." *Id.* Because utilities "are free to file for successively higher rate increases based on later common-equity cost data without regard

to the status of their prior requests," a "fair symmetry requires that complainants also be free to file complaints requesting further rate decreases based on later common equity cost data without regard to the status of their prior complaints." *Id.* TOs retain the right to file for Section 205 rate increases, including successive rate increases filed while a prior rate increase remains under consideration, and they have availed themselves of that right in the past.⁵ Thus, even if the present Complainants were the same entities that filed the Docket No. EL11-66 complaint (and they are not), the Congressionally directed symmetry would require that their new complaint be considered on its merits.

Three, the present new complaint points to a lower ROE than was identified in the Docket No. EL11-66 complaint. Complainants are concerned that TOs will assert in the pending proceeding that whatever the evidence may show, the outcome of Docket No. EL11-66 should go no lower than the 9.2% ROE identified in the complaint initiating that docket, because the complaint itself should be deemed to establish a floor. If the weight of the evidence points to an ROE below 9.2%, Complainants seek to ensure that the Commission faces no such technical barrier to following that evidence; the present complaint will ensure that the Commission can follow the evidence at least as far down as 8.7%.⁶

Four, updating the analysis of the proxy group would reset the zone of reasonableness for the New England Transmission Owners. The Commission has used

⁵ See, e.g., *Northeast Utilities Service Company and National Grid USA*, 125 FERC ¶ 61,183 (2008), *reh'g denied*, 135 FERC ¶61,270 (2011) (approving ROE adder for the two largest TOs, filed in September 2008 prior to the completion of refunds and filing of a refund report in Docket No. ER04-157, as recited in eLibrary Submittal No. 20090210-5037); Opinion No. 267, *Montaup Elec. Co.*, 38 FERC ¶61,252 (1987).

⁶ To be clear, Complainants do not concede that the Commission's Section 206 authority in Docket No. EL11-66 is constrained by a 9.2% floor. However, an argument for such a constraint would not be utterly frivolous, and the Commission should therefore preterm it by receiving the present complaint with a lower identified ROE.

the upper end of the zone as the boundary to cap the overall ROE (base ROE plus incentives) awarded to the New England Transmission Owners' transmission projects.⁷ Reestablishing the zone of reasonableness is imperative to ensure that ROE awards for future transmission projects are just and reasonable. The upper bound of the zone of reasonableness may vary even more sensitively with updated Discounted Cash Flow ("DCF") information than does the Base ROE.

Five, Complainants wish to be the sponsors of their own Section 206 complaint, rather than merely remaining (in the case of NICC) or seeking discretionary and out-of-time leave to become (in the case of the remaining Complainants) intervenors in an existing docket. As complainants rather than intervenors, they would have greater assurance that their consent would be required to complete a settlement. The Commission's precedent calls for a new docket to be established when a new complainant comes forward, even if the rate as to which it complains is the subject of another complaint. *See, e.g.,* Opinion No. 513, *Richard Blumenthal et al. v. ISO New England Inc., et al.*, 135 FERC ¶ 61,117 (2011) (addressing two consolidated dockets established by two separately filed complaints).

Six, establishing a second complaint docket would aid the Congressionally directed symmetry between Sections 205 and 206 by establishing a further 15-month refund period. The legislative history of the 1988 "Regulatory Fairness Act" ("RFA")⁸ amendment to Section 206 that provided for refunds on Section 206 complaints indicates

⁷ *See The United Illuminating Company*, 119 FERC ¶ 61,182, at P 73 (2007) ("The resulting ROE, however, will be capped at the top of the zone of reasonable returns established in Opinion No. 489."), *reh'g denied*, 126 FERC ¶ 61,043 (2009); *see also NSTAR Electric Company*, 125 FERC ¶ 61,313, at PP 8, 81-82 (2008); *Maine v. FERC*, 454 F.3d 278, 288 (2006).

⁸ P.L. 100-473.

that a fifteen-month limitation on the refunds available on the basis of any one complaint was adopted because Congress anticipated that, with other elements of the legislation promising to expedite Section 206 proceedings, complaint cases would generally be resolved within one year. *See* S. Rep. No. 100-491, 1988 U.S.C.C.A.N. 2684, 2685 (noting that "Section 205 proceedings on average require one year for resolution," and that while pre-RFA Section 206 proceedings took twice as long on average, the RFA would redress the incentive for delay underlying that difference). The proceedings in Docket No. EL11-66 will not be resolved within the fifteen-month period established under the RFA. Considering together the Initial Decision date provided for in the Docket No. EL11-66 procedural schedule,⁹ the 50-day period for briefing of exceptions,¹⁰ and the six-month period for Commission evaluation following the completion of any such briefing as anticipated in *Bangor*,¹¹ a Commission order on exceptions cannot be expected before the end of May, 2014. A further interval might then follow before tariff sheets embodying a changed ROE would take effect. Consequently, the RFA drafters' expectation — that Section 206 procedures to fix a reduced prospective rate would normally be completed before RFA retrospective refunds were exhausted — would be served here by establishing a 15-month refund period applicable to all TO revenue requirements under the ISO-NE tariff that include the subject ROE.

The Complainants therefore request that the Commission institute a new Section 206 docket to: (1) investigate the Base ROE and establish a just and reasonable equity return to be reflected in rates for transmission service provided by the New England

⁹ The "Order Adopting Procedural Schedule" issued therein on August 14, 2012 calls for an Initial Decision on September 10, 2013.

¹⁰ *See* 18 C.F.R. § 385.711.

¹¹ *See Bangor* at P 27.

Transmission Owners under the ISO-NE OATT; (2) establish the earliest possible refund effective date (*i.e.*, the date of this complaint), consistent with Commission policy; (3) consolidate the new docket with Docket No. EL11-66; and (4) in due course, direct ISO-NE to make refunds reflecting the difference between transmission rates reflecting an 11.14 percent Base ROE and rates reflecting a just and reasonable Base ROE.

I. COMMUNICATIONS

All correspondence and communications to the Complainants in this docket should be addressed to the following individuals, whose names should be entered on the official service list¹² maintained by the Secretary in connection with these proceedings:

¹² The Complainants request a waiver of Rule 203(b)(3) to allow the inclusion of more than two persons on the official service list on the grounds that the Complainants comprise separate parties, each represented by their own counsel.

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II. THE PARTIES

A. Complainants

1. ENE is a nonprofit organization that researches and advocates innovative policies that tackle our environmental challenges while promoting sustainable economies. ENE is at the forefront of efforts to combat global warming with solutions that promote energy efficiency, clean energy, clean air, and healthy forests. ENE is an end-user member of NEPOOL and advocates for transmission planning and transmission cost allocation reforms that promote the development of cleaner energy resources, utilize the

existing wires efficiently, and support investments in energy efficiency and demand-side energy resources in a fair and equitable way. Transmission rates in New England directly affect ENE's policy work and its interest as an end user in the New England region.

2. GBREB is the oldest real estate trade association in America founded in 1889. The Board is comprised of five commercial and residential divisions, specializing in the development, management, and transactional aspects of real estate projects. GBREB's members include publicly traded companies, including some of the largest developers of commercial and rental properties in the nation, as well as small independently owned businesses, including financial institutions and banks. GBREB has over 8,000 members with expertise to finance, construct, broker and manage any type of real estate asset imaginable. The Board's members have been very concerned about the cost of reliable electricity in Massachusetts and have aggressively pursued competitive supply to manage the cost of the energy portion of their bills. In addition the Board has participated in a number of Massachusetts Department of Public Utility cases to advocate for cost reductions in the rates of the regulated distribution companies, a second portion of electricity costs. Transmission costs are the third component the Board is focusing on given the rapidity of new transmission projects and the fact that Massachusetts consumers, including commercial and industrial properties, will be paying nearly one-half of the capital and carrying costs of those projects.

3. NCLC, which has its main office in Boston, Massachusetts, is a nonprofit advocacy organization that seeks to build economic security and family wealth for low-income and other economically disadvantaged Americans. For over 40 year, NCLC had a strong focus on energy and utility issues, with the goal of making sure that low-income families obtain the utility services (electric and gas) they need to heat, cool, and light their

homes. NCLC is a customer of NSTAR Electric and its cost of electricity – as well as the cost of electricity for New England-area low-income consumers on whose behalf it advocates – is directly affected by the transmission rates charged the New England Transmission Owners under the ISO-NE Open Access Transmission Tariff.

4. NICC is an *ad hoc* coalition of industrial customers with manufacturing facilities located in New England. NICC members consume large quantities of electricity, and electricity comprises a substantial part of many NICC members' manufacturing costs. The Base ROE is used to calculate service transmission rates charged by New England Transmission Owners. NICC members purchase transmission service from one or more of the Respondents in this proceeding. As end-use customers participating in New England's wholesale power markets, NICC members will be directly impacted by the Commission's resolution of the issues in this proceeding.

B. Respondents

5. The New England Transmission Owners are owners of transmission facilities in the New England region, the operation of which is overseen by ISO-NE pursuant to the ISO-NE OATT. The TOs recover their transmission revenue requirements for regional and local service pursuant to provisions of the ISO-NE OATT, as described above. Under Article 3 of the Transmission Operating Agreement ("TOA") between the ISO-NE and the TOs, the New England Transmission Owners retain authority to make filings relating to their revenue requirements. ISO-NE collects the TO revenue requirements and disburses these monies to the TOs in accordance with the

governing tariffs and agreements. Accordingly, the New England Transmission Owners are the real parties in interest for purposes of this Complaint.¹³

6. BHE, a Maine corporation, is an electric utility primarily engaged in the transmission and distribution of electric energy and related services in Maine. It is an indirect, wholly owned subsidiary of Emera, Inc., a publicly traded utility holding company headquartered in Halifax, Nova Scotia, Canada. BHE has a principal place of business of 970 Illinois Avenue (P.O. Box 932), Bangor, Maine 04401.

7. CMP, a Maine corporation, is an electric transmission and distribution utility operating in Maine. CMP has a principal place of business of 83 Edison Drive, Augusta, Maine 04336. CMP is a subsidiary of Iberdrola USA, which in turn is a wholly owned subsidiary of Iberdrola S.A., a corporation organized under the laws of the Kingdom of Spain.

8. CL&P, PSNH, and WMECO are public utility subsidiaries of NUSCO, a Massachusetts business trust and public utility holding company. The transmission facilities are owned by CL&P, PSNH, and WMECO and are used to provide Regional Network Service and Local Network Service under the ISO-NE OATT. NUSCO has a principal place of business at 107 Selden Street, Berlin, Connecticut 06037.

9. New England Power Company is a transmission operating subsidiary of National Grid, a public utility holding company. National Grid's subsidiaries, Narragansett and Massachusetts Electric Company, have entered into Integrated Facilities Agreements with NEP pursuant to which costs of all National Grid transmission facilities in New England are combined for recovery from transmission customers under the

¹³ See, e.g., *NSTAR Elec. & Gas Corp. v. FERC*, 481 F.3d 794, 803-804 (D.C. Cir. 2007); *NRG Power Marketing, Inc. v. New York Ind. Sys. Operation, Inc.*, 91 FERC ¶ 61,346 at p. 62,165 (2000).

ISO-NE OATT. National Grid has a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451.

10. NSTAR Electric Company is a public utility subsidiary of NSTAR, a registered holding company, and owns and operates transmission facilities in the Commonwealth of Massachusetts. NSTAR Electric has a principal place of business at 800 Boylston Street, Boston, Massachusetts 02199.

11. UI is a wholly owned subsidiary of UIL Holdings Corporation and is engaged in the purchase, transmission, distribution, and sale of electricity for residential, commercial, and industrial purposes in Connecticut. UI has a principal place of business at 157 Church Street (P.O. Box 1564), New Haven, Connecticut 06506.

12. Unitil Energy Systems, Inc. and Fitchburg Gas and Electric Light Company are wholly owned subsidiaries of Unitil Corporation, a public utility holding company. Unitil has a principal place of business at 6 Liberty Lane West, Hampton, New Hampshire 03842.

13. NHT, a Delaware limited liability company, is a wholly owned subsidiary of U.S. Transmission Holdings, LLC ("USTH"), which in turn is a wholly owned subsidiary of FPL Group Resources, LLC ("FPL Group Resources"). FPL Group Resources is a wholly owned subsidiary of FPL Group Capital Inc ("FPL Group Capital"), which in turn is a wholly owned subsidiary of FPL Group. FPL Group Capital also owns NextEra Energy Resources, LLC ("NextEra") (f/k/a FPL Energy, LLC). NextEra was formed in 1998 to aggregate FPL Group's existing merchant power businesses. NextEra owns, develops, constructs, manages and operates independent power projects that sell energy, capacity, and ancillary services in a number of domestic

electricity markets outside of Florida. NHT has a principal place of business at 700 Universe Boulevard, Juno Beach, Florida 33408.

14. Vermont Transco is a Vermont limited liability corporation that owns high voltage electric transmission facilities in Vermont.¹⁴ Vermont Transco has a principal place of business at 366 Pinnacle Ridge Road, Rutland, VT.

III. COMPLAINT

15. The New England Transmission Owners recover their transmission revenue requirements through formula rates included in the ISO-NE OATT. The rates for Regional Network Service ("RNS") and certain other services are calculated annually using a formula rate for all Pool Transmission Facilities ("PTF") in ISO-NE.¹⁵ The rates for Local Network Service ("LNS") are established through formulas in LNS schedules for the individual TOs under Schedule 21 of the ISO-NE OATT. The RNS and LNS revenue requirements for all the New England Transmission Owners are calculated using a single Base ROE.¹⁶ The Base ROE is fixed and, consistent with Commission policy, does not change year-to-year as do most other formula rate inputs. The fixed ROE may

¹⁴ On June 30, 2006, Vermont Electric Power Company, Inc. ("VELCO") contributed substantially all of its operating assets to Vermont Transco, in exchange for 2.4 million Class A Membership Units and Vermont Transco's assumption of VELCO's debt. Vermont Transco is governed by an Amended and Restated Operating Agreement by and among VELCO, Green Mountain Power Corporation ("GMP"), Central Vermont Public Service Corporation ("CVPS") and most of Vermont's other electric utilities (the "Vermont Transco Operating Agreement.").

¹⁵ See ISO-NE OATT at Attachment F; *see also, e.g.*, Docket No. RT04-2-000, "Annual Informational Filing Regarding ISO Tariff Charges in Effect as of June 1, 2010 Pursuant to Docket Nos. RT04-2-000, *et al.*" (July 30, 2010) (accepted by unreported Letter Order dated October 12, 2010).

¹⁶ See *ISO New England Inc.*, 106 FERC ¶ 61,280 at PP 232-250 (2004); *Bangor Hydro-Electric Co.*, Opinion No. 489, 117 FERC ¶ 61,129 (2006) ("Opinion No. 489"), *order on reh'g*, 122 FERC ¶ 61,265 (2008), *order granting clarification*, 124 FERC ¶ 61,136 (2008).

only be changed through a filing under FPA Section 205 or Section 206, or by the Commission acting *sua sponte* under FPA Section 206 to order a change.¹⁷

16. The current Base ROE is 11.14 percent, a figure which was established in the *Bangor Hydro* proceeding based on market information from 2004, updated for bond yield information through August 2006.¹⁸ On top of the Base ROE, the Commission has granted a 50 basis point adder in RNS rates for RTO participation, but this adder does not extend to LNS rates.¹⁹ New ISO-NE-planned PTF facilities completed as of December 31, 2008 have been granted a 100 basis point ROE adder.²⁰ Transmission owners may seek ROE adders and other incentives for post-2008 transmission projects under FERC Order No. 679 on a case-by-case basis, including adders for using "advanced technologies" and the potential for inclusion of up to 100% of construction work in progress ("CWIP") in rate base.²¹ This Complaint only challenges the Base ROE and does not address any incentive adders applicable to the New England Transmission Owners' rates.

17. Due to changes in the capital markets since the *Bangor Hydro* proceeding, the 11.14 percent Base ROE is no longer just and reasonable. The attached testimony

¹⁷ See *Bangor Hydro-Electric Co.*, 120 FERC ¶ 61,093 at P 4, n.13 (2007). In originally proposing the fixed ROE, the TOs pointed out that the Commission has previously allowed changes to be made to a formula rate solely to change ROE. *Bangor Hydro-Electric Co.*, Docket No. ER04-157-000, "Joint ROE Filing of New England Transmission Owners Under the RTO New England Open Access Transmission Tariff" at 6, n.8 (November 4, 2003) (citing *Arizona Pub. Serv. Co.*, 78 FERC ¶ 61,083 at p. 61,305 (1997); *Ocean State Power*, 63 FERC ¶ 61,072 (1993); *Yankee Atomic Elec. Co.*, Op. No. 285, 40 FERC ¶ 61,372 (1987)) ("ER04-157 Application").

¹⁸ See Opinion No. 489 at PP 79-81, *reh'g*, 122 FERC ¶ 61,265 at PP 30-34.

¹⁹ See *ISO New England Inc.*, 106 FERC ¶ 61,280 at P 247.

²⁰ See *Bangor Hydro*, 122 FERC ¶ 61,265 at P 51.

²¹ *Promoting Transmission Investment through Pricing Reform*, Order No. 679, 71 FR 43294 (Jul. 31, 2006), FERC Stats. & Regs. ¶ 31,222 at P 43 (2006), *order on reh'g*, Order No. 679-A, 72 FR 1152 (Jan. 10, 2007), FERC Stats. & Regs. ¶ 31,236, *order on reh'g*, 119 FERC ¶ 61,062 (2007).

and exhibits of J. Randall Woolridge, Ph.D, Professor of Finance at the Pennsylvania State University in University Park, Pennsylvania, demonstrate that the current Base ROE is excessive and that a just and reasonable Base ROE for the New England Transmission Owners under current market conditions does not exceed 8.7 percent.

18. The analysis performed by the Complainants, at a minimum, provides sufficient information to show that the current Base ROE under the ISO-NE OATT is unjust and unreasonable. Accordingly, the Commission should institute a proceeding under Section 206 of the FPA to investigate whether the Base ROE is excessive and to determine a just and reasonable Base ROE.

19. In cases where the Commission institutes an investigation on a complaint under Section 206 of the FPA, Section 206(b) requires the Commission to establish a refund effective date that is no earlier than the date the complaint was filed, but no later than five months after the filing date.²² The Commission's general policy is to set the refund effective date at the earliest possible date, *i.e.*, the date a complaint is filed.²³ Consistent with its general policy, the Commission should establish the filing date of this Complaint as the refund effective date in its investigation of the Base ROE in order to provide maximum protection to consumers.²⁴

²² 16 U.S.C. § 824e(b).

²³ *See, e.g., Old Dominion Electric Cooperative and North Carolina Electric Membership Corporation v. Virginia Electric and Power Company*, 133 FERC ¶ 61,009 at P 36 (2010) (citing *Seminole Elec. Coop., Inc. v. Fla. Power & Light Co.*, 65 FERC ¶ 61,413, at p. 63,139 (1993); *Canal Elec. Co.*, 46 FERC ¶ 61,153, at p. 61,539, *reh'g denied*, 47 FERC ¶ 61,275 (1989)).

²⁴ *See id.*

IV. RULE 206 REQUIREMENTS

20. The Complainants hereby provide the further information required by Rule 206.²⁵

A. Good Faith Estimate of Financial Impact or Harm (Rule 206(b)(4)).

21. The Docket No. EL11-66 complaint estimated that reducing the Base ROE from 11.14 percent to 9.2 percent would reduce Regional Network Service transmission costs in New England by approximately \$113 million annually. As a rough estimate (setting aside for simplicity subsequent changes in the rate base to which the Base ROE will apply), reducing the Base ROE by a further 50 basis points to 8.7 percent would increase that \$113 million annual figure by a further \$29 million, to \$142 million. Reducing the Base ROE would also reduce Local Network Service costs.

B. Operational or Nonfinancial Impacts (Rule 206(b)(5))

22. The Complainants are not aware of any specific practical, operational or nonfinancial impacts resulting from the excessive Base ROE.

C. Whether the Matters are Pending in Any Other FERC Proceeding or Other Forum (Rule 206(b)(6))

23. The relationship of this complaint to Docket No. EL11-66 is discussed above. Otherwise, the matters raised in this complaint are not currently pending in any other Commission proceeding or in any other proceeding to which any of the Complainants is a party.

D. Documents Supporting the Complaint (Rule 206(b)(8))

24. In support of this complaint, the Complainants have included the testimony and supporting exhibits and workpapers of J. Randall Woolridge, Ph.D,

²⁵ 18 C.F.R. § 385.206 ("Rule 206").

Professor of Finance at The Pennsylvania State University in University Park, Pennsylvania.²⁶

E. Alternative Dispute Resolution (Rule 206(b)(9))

25. Because Complainants are aware of the failure of pre-filing and post-filing dispute resolution to resolve Docket No. EL11-66, they did not pursue alternative dispute resolution prior to the filing of this complaint. Complainants are prepared to discuss settlement in good faith if requested to do so.

V. SERVICE AND NOTICE

26. In accordance with Rule 206(c), the Complainants have served a copy of this complaint upon each of the Respondents simultaneous with the filing of the Complaint. The Complainants have also served copies of the complaint upon all state utility commissions in New England, as well as the New England Conference of Public Utilities Commissioners ("NECPUC") and the New England States Committee on Electricity ("NESCOE").²⁷ In addition, the Complainants have asked ISO-NE to distribute the complaint to the New England Power Pool member e-mail distribution lists. Attached hereto as Exhibit C-3 is a Form of Notice suitable for publication in the *Federal Register* in accordance with Rule 206(b)(10).

VI. MOTION FOR CONSOLIDATION

27. Although the present complaint is based upon new, updated evidence, it addresses the same existing 11.14% Base ROE that is the subject of Docket No. EL11-66. The two complaint dockets therefore share a common nucleus of operative

²⁶ See Exh. C-1.

²⁷ The complete list of parties that the Complainants served this Complaint is attached as Exh. C-3.

fact, and consolidating the two complaint dockets will therefore promote administrative efficiency. Accordingly, the Commission should consolidate the two dockets.

28. Complainants have conferred with lead counsel for the Docket No. EL11-66 State Complainants, and are authorized to state that State Complainants would not oppose consolidation.

VII. CONCLUSION

Based on the foregoing, the Complainants request the Commission to: (1) institute a new Section 206 docket to investigate the Base ROE used in calculating the transmission revenue requirements for the New England Transmission Owners for service under the ISO-NE OATT and establish a just and reasonable base return on equity; (2) establish the earliest possible refund effective date (*i.e.*, the date of this complaint), consistent with Commission policy; and (3) direct ISO-NE to make refunds reflecting the difference between transmission rates reflecting an 11.14 Base ROE and rates reflecting a just and reasonable Base ROE.

Respectfully submitted,

/s/ Vasiliki Karandrikas

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EXHIBIT C-1

**BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ENE (Environment Northeast),
Greater Boston Real Estate Board,
National Consumer Law Center, and
NEPOOL Industrial Customer Coalition,

Complainants,

Docket No. EL13-_____

v.

Bangor Hydro-Electric Co.,
Central Maine Power Co.,
New England Power Co. d/b/a National Grid,
New Hampshire Transmission LLC d/b/a NextEra,
NSTAR Electric Company,
Northeast Utilities Service Co.,
The United Illuminating Co.,
Unitil Energy Systems, Inc. and
Fitchburg Gas and Electric Light Co., and
Vermont Transco, LLC,

Respondents.

**SUMMARY OF DIRECT TESTIMONY OF
J. RANDALL WOOLRIDGE, Ph. D**

In 2006, the Federal Energy Regulatory Commission (“Commission”) established a base-level ROE for New England Transmission Owners (“NETOs”) of 11.14%. Since that time, the bubble in the housing market and the subsequent financial crisis and economic recession have had a profound impact on financial institutions and capital markets. In response, the U.S. government has employed aggressive fiscal and monetary policies. In the capital markets, one impact has been the lower yields on the obligations of the U.S. Treasury. Yields on utility bonds have also declined significantly. Based on current market data and an equity cost rate study, Dr. J. Randall Woolridge concludes that the base Return on Equity (“ROE”) set in 2006 is no longer just and reasonable, and that the just and reasonable ROE is

now lower than the 9.2% that he identified in his testimony that accompanied the complaint now pending in Docket No. EL11-66.

Dr. Woolridge applied the Discounted Cash Flow Model (“DCF”) to a proxy group of publicly-held electric utility companies (“Electric Proxy Group”). The Electric Proxy Group started with thirty-three companies. Consistent with the Commission’s recent precedent, this group is comprised of utilities throughout the U.S., and is not limited to the Northeast. Eliminating low-end and high-end outliers, pursuant to Commission precedent, yields a final proxy group of thirty companies. Dr. Woolridge presents the DCF results using the Commission’s approach and calculates the mean, midpoint, and median of the implied costs of equity of this group to arrive at a just and reasonable ROE for the NETOs.

Based on economic data and Dr. Woolridge’s DCF analysis, the current base ROE of 11.14% is excessive. In light of changed economic conditions and his DCF analysis, Dr. Woolridge concludes that the just and reasonable base ROE for the NETOs is 8.7%.

**BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ENE (Environment Northeast),
Greater Boston Real Estate Board,
National Consumer Law Center, and
NEPOOL Industrial Customer Coalition,

Complainants,

Docket No. EL13-_____

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Bangor Hydro-Electric Co.,
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New England Power Co. d/b/a National Grid,
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NSTAR Electric Company,
Northeast Utilities Service Co.,
The United Illuminating Co.,
Unitil Energy Systems, Inc. and
Fitchburg Gas and Electric Light Co., and
Vermont Transco, LLC,

Respondents.

TESTIMONY OF J. RANDALL WOOLRIDGE

1 **Q. PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.**

2 A. My name is J. Randall Woolridge, and my business address is 120 Haymaker Circle,
3 State College, PA 16801. I am a Professor of Finance and the Goldman, Sachs & Co.
4 and Frank P. Smeal Endowed University Fellow in Business Administration at the
5 University Park Campus of the Pennsylvania State University. I am also the Director of
6 the Smeal College Trading Room and President of the Nittany Lion Fund, LLC. A
7 summary of my educational background, research, and related business experience is
8 provided in Exhibit C-101.

9 **SUBJECT OF TESTIMONY AND SUMMARY OF RECOMMENDATIONS**

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

11 A. I have been asked by ENE (Environment Northeast), Greater Boston Real Estate Board,
12 the National Consumer Law Center, and NEPOOL Industrial Customer Coalition
13 (collectively, "Complainants") to prepare a study on the appropriate base-level return on
14 equity ("ROE") applicable to the New England Transmission Owners ("TOs" or
15 "NETOs"). These TOs include Bangor Hydro Electric Company (Emera), Central
16 Maine Power Company, NSTAR Electric Company, New Hampshire Transmission
17 LLC (NextEra), Northeast Utilities Service Company, The United Illuminating
18 Company, New England Power Company (National Grid), Unitil Energy Systems, Inc.
19 and Fitchburg Gas and Electric Light Company (Unitil), and Vermont Transco
20 (Vermont Electric Power Company).

21 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

22 A. First, I provide this overview and summary of my ROE recommendation. Second, I
23 provide an overview assessment of capital costs in today's capital markets. Third, I
24 develop an estimate of the cost of common equity capital for the New England
25 Transmission Owners, by identifying a proxy group of electric utilities to which I apply
26 a Discounted Cash Flow ("DCF") analysis. I have a table of contents just after the title
27 page for a more detailed outline.

1 **Q. WHAT IS THE EXISTING ROE FOR THE NEW ENGLAND TRANSMISSION**
2 **OWNERS?**

3 A. The Federal Energy Regulatory Commission (“FERC” or the “Commission”) initially
4 established a base-level ROE for New England Transmission Owners through its
5 Opinion No. 489¹ The Commission initially set the base-level ROE at 10.2%, which
6 represented the midpoint of the range of ROEs which the Commission determined to be
7 in a zone of reasonableness with a low-end ROE of 7.3% and a high-end ROE of
8 13.1%. This analysis employed the six-month average dividend yield for the period July
9 through December 2004. The midpoint of 10.2% was subsequently adjusted upwards to
10 10.4% to reflect a modified calculation of the *Value Line* projected earned rate of return
11 on equity.²

12 The Commission has traditionally required updated data to reflect changing
13 market conditions between the time of the financial market data considered at a hearing
14 and the issuance of the Commission’s Opinion. The Commission has endorsed the use
15 of the monthly yields on ten-year constant maturity U.S. Treasury Bonds as an indicator
16 of capital market trends.³ In Opinion No. 489, for the six-month period July 2004
17 through December 2004, the average monthly yield on these bonds was 4.2%, whereas
18 the updated bond yield data for the period March 2006 through August 2006 produced
19 an average monthly yield of 5.0%. The Commission adjusted the base-level ROE for
20 the going-forward period by 74 basis points to reflect changing market conditions.
21 Therefore, the base-level ROE for the TOs, adjusted for changing market conditions,
22 was set at 11.14% (10.4% + 0.74%).

23 **Q. HOW DO THESE CAPITAL COST INDICATORS COMPARE TO CURRENT**
24 **MARKET CONDITIONS?**

25 A. The bubble in the housing market and the subsequent financial crisis and economic
26 recession has had a profound impact on financial institutions and capital markets. In

¹ *Bangor Hydro-Electric Co.*, Opinion No. 489, 117 FERC ¶ 61,129 (2006).

² *Bangor Hydro-Electric Co., order on rehearing*, 122 FERC ¶ 61,265 (2008) (Opinion No. 489 Rehearing Order).

³ *See, e.g., Union Electric Company*, Opinion No. 279, 40 FERC ¶ 61,046 (1987), *order on rehearing*, Opinion No. 279-A, 41 FERC ¶ 61,343 (1987).

1 response, the U.S. government has employed aggressive fiscal and monetary policies. In
2 the capital markets, one impact has been the lower yields on the obligations of the U.S.
3 Treasury. These yields today are somewhat below those at the time of the Opinion No.
4 489 and the rehearing update noted above. Panel A of Exhibit C-105 shows the yields
5 on ten-year Treasury bonds for the periods July 2004–December 2004, March 2006–
6 August 2006, and June 2012 – November 2012. The average ten-year Treasury yields
7 for these three periods are 4.2%, 5.0%, and 1.7%, respectively. These yields indicate
8 that capital costs are lower by more than 200 basis points than at the time of Opinion
9 No. 489. Panel B of Exhibit C-105 shows the yields on long-term, A- rated, public
10 utility bonds for the same three periods (July 2004–December 2004, March 2006–
11 August 2006, and June 2012 – November 2012). The average yields for these three
12 periods are 6.0%, 6.3%, and 4.0%, respectively. These yields also indicate a similar
13 decline in utility capital costs as the change indicated by the Treasury data.

14 **Q. BASED ON THESE DATA AND YOUR EQUITY COST RATE STUDY, WHAT**
15 **IS YOUR OPINION WITH RESPECT TO THE COMMISSION’S BASE-LEVEL**
16 **ROE FOR THE NEW ENGLAND TRANSMISSION OWNERS?**

17 A. Based on these data and my equity cost rate study, it is my opinion that the current base-
18 level ROE of 11.14% is in excess of what the standards set forth by the Supreme Court
19 in the *Bluefield*⁴ and *Hope*⁵ deem necessary to: (1) maintain the financial integrity of the
20 utility, (2) enable the company to attract new capital, and (3) provide a return to
21 common equity that is commensurate with returns on investments in other utilities of
22 corresponding risk.

23 **Q. PLEASE REVIEW YOUR RECOMMENDATIONS REGARDING THE**
24 **APPROPRIATE ROE FOR THE TRANSMISSION OWNERS.**

25 A. I have applied the Discounted Cash Flow Model (“DCF”) to a proxy group of publicly-
26 held electric utility companies (“Electric Proxy Group”). The Electric Proxy Group
27 includes thirty-three companies. Consistent with recent Commission’s findings, this

⁴ *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n*, 262 U.S. 679 (1923).

⁵ *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

1 group is comprised of utilities throughout the U.S. and is not limited to the Northeast. I
2 have presented DCF results using the Commission's approach. I have concluded that
3 the appropriate equity cost rate for the TOs is 8.7%. This is summarized in Exhibit C-
4 104.

5 **Q. IS THE EXISTING ROE FOR THE NEW ENGLAND TRANSMISSION**
6 **OWNERS THE SUBJECT OF A PENDING COMPLAINT?**

7 A. Yes. That complaint has been set for hearing in Docket No. EL11-66. I gave testimony
8 that accompanied that complaint, and my direct testimony in the hearing phase of that
9 proceeding was pre-filed on October 1, 2012.⁶

10 **Q. HOW DOES THE RECOMMENDATION YOU ARE MAKING TODAY**
11 **RELATE TO THE TESTIMONY YOU HAVE PRESENTED IN DOCKET NO.**
12 **EL11-66?**

13 A. In all of this testimony, I have applied the same DCF methodology to identify the cost
14 of equity capital for each member of a proxy group of electric utilities, and the criteria
15 used to identify the proxy group members have been the same. However, the DCF
16 outcomes for the resulting proxy group have continued to decline. Where my testimony
17 that accompanied the complaint submitted on October 1, 2011 recommended a 9.2%
18 ROE, and my October 1, 2012 pre-filed direct testimony recommended a 9.0% ROE,
19 my present study points to an ROE of 8.7%. My present testimony takes account of
20 new information that is material to the ROE determination and has not previously been
21 available. For example, it looks to a later six-month period for the stock price and other
22 inputs to the DCF model, thus taking account of more recent investor expectations and
23 requirements revealed through those inputs. Similarly, as I will discuss later, a
24 December 12, 2012 Federal Reserve announcement provides an important new
25 indication that interest rates are likely to remain low for several years into the future.

⁶ Later in October 2012, two sets of minor errata were filed and/or circulated to all participants as items to be corrected at trial.

1 **Q. PLEASE DISCUSS CAPITAL COSTS IN U.S. MARKETS.**

2 A. Long-term capital cost rates for U.S. corporations are a function of the required returns
3 on risk-free securities plus a risk premium. The risk-free rate of interest is the yield on
4 long-term U.S Treasury yields. The yields on ten-year U.S. Treasury bonds from 1953
5 to the present are provided on page 1 of Exhibit C-106. These yields peaked in the
6 early 1980s and have generally declined since that time. In the summer of 2003, these
7 yields hit a 60-year low at 3.33%. They subsequently increased and fluctuated between
8 the 4.0% and 5.0% levels over the next four years in response to ebbs and flows in the
9 economy. Ten-year Treasury yields began to decline in mid-2007 at the beginning of
10 the financial crisis. In 2008 Treasury yields declined to below 3.0% as a result of the
11 expansion of the mortgage and subprime market credit crisis, the turmoil in the financial
12 sector, the government bailout of financial institutions, the monetary stimulus provided
13 by the Federal Reserve, and the economic recession. From 2008 until 2011, these rates
14 fluctuated between 2.5% and 3.5%. Over the past six months, the yields on ten-year
15 Treasuries have declined from over 2.0% to below 1.8% as the Federal Reserve has
16 continued to support a low interest rate environment and economic uncertainties have
17 persisted.

18 Panel B on page 1 of Exhibit C-106 shows the differences in yields between ten-
19 year Treasuries and Moody's Baa rated bonds since the year 2000. This differential
20 primarily reflects the additional risk required by bond investors for the risk associated
21 with investing in corporate bonds. The difference also reflects, to some degree, yield
22 curve changes over time. The Baa rating is the lowest of the investment grade bond
23 ratings for corporate bonds. The yield differential hovered in the 2.0% to 3.0% range
24 until 2005, declined to 1.5% until late 2007, and then increased significantly in
25 response to the financial crisis. This differential peaked at 6.0% at the height of the
26 financial crisis in early 2009, due to tightening in credit markets, which increased
27 corporate bond yields and the "flight to quality," which decreased treasury yields. The
28 differential subsequently declined and has been in the 2.5% to 3.5% range over the past
29 three years.

30 As previously noted, the risk premium is the return premium required by investors
31 to purchase riskier securities. The risk premium required by investors to buy corporate

1 bonds is observable based on yield differentials in the markets. The equity risk
2 premium is the return premium required to purchase stocks as opposed to bonds. The
3 equity risk premium is not readily observable in the markets (as are bond risk
4 premiums) since expected stock market returns are not readily observable. As a result,
5 equity risk premiums must be estimated using market data. There are alternative
6 methodologies to estimate the equity risk premium, and these alternative approaches
7 and equity risk premium results are subject to much debate. One way to estimate the
8 equity risk premium is to compare the mean returns on bonds and stocks over long
9 historical periods. Measured in this manner, the equity risk premium has been in the
10 5% to 7% range. However, studies by leading academics indicate the forward-looking
11 equity risk premium is actually in the 4.0% to 5.0% range. These lower equity risk
12 premium results are in line with the findings of equity risk premium surveys of CFOs,
13 academics, analysts, companies, and financial forecasters.

14 **Q. PLEASE REVIEW THE FINANCIAL CRISIS AND THE RESPONSE OF THE**
15 **U.S. GOVERNMENT.**

16 A. The mortgage crisis, subprime crisis, credit crisis, economic recession and the
17 restructuring of financial institutions have had tremendous global economic
18 implications. This issue first surfaced in the summer of 2007 as a mortgage crisis. It
19 expanded into the subprime area in 2008 and led to the collapse of certain financial
20 institutions, notably Bear Stearns, in the first quarter of 2008. Commodity and energy
21 prices peaked and began to decline in the summer of 2008, as the crisis in the financial
22 markets spread to the global economy. The turmoil in the financial sector peaked in
23 September of 2008 with the failure of several large financial institutions, Bank of
24 America's buyout of Merrill Lynch, and the government takeover of Fannie Mae and
25 Freddie Mac.

26 In response to the market crisis, the Federal Reserve ("Fed") took extraordinary
27 steps in an effort to stabilize capital markets. Most significantly, the Fed opened its
28 lending facilities to numerous banking and investment firms to promote credit markets.
29 As a result, the balance sheet of the Federal Reserve grew by hundreds of billions of
30 dollars in support of the financial system. The federal government took a series of

1 measures to shore up the economy and the markets. The Troubled Asset Relief
2 Program (“TARP”) was aimed at providing over \$700 billion in government funds to
3 the banking system in the form of equity investments. The federal government spent
4 billions bailing out a number of prominent financial institutions, including AIG,
5 Citigroup, and Bank of America. The government also bailed out other industries, most
6 notably the auto industry. In 2009, President Obama signed into law his \$787 billion
7 economic stimulus, which included significant tax cuts and government spending aimed
8 at creating jobs and turning around the economy.

9 The spillover of the financial crisis to the economy has been ongoing. According
10 to the National Bureau of Economic Research (“NBER”), the economy slipped into a
11 recession in the 4th quarter of 2007. The NBER has indicated that the recession ended
12 in the 2nd quarter of 2009. Nonetheless, the recovery of the economy has lagged behind
13 the recoveries from previous recessions. Since the 2nd quarter of 2009, economic
14 growth has only been 2.4% per year, and just 1.8% and 1.5% in the first two quarters of
15 2012. Furthermore, the muted economic recovery in the U.S. has been hindered by
16 global economic concerns, especially the continuing fiscal and monetary issues in
17 Europe and the slowing economic growth in China. As a result, the U.S. is still saddled
18 with relatively high unemployment, large government budget deficits, continued
19 housing market issues, and uncertainty about future economic growth.

20 In summary, the Federal Reserve and the U.S. government have taken
21 extraordinary actions and committed great sums of money to rescue the economy,
22 certain industries, and the capital markets. But the economy is still on an uncertain
23 path.

24 **Q. PLEASE PROVIDE ADDITIONAL INFORMATION ON THE ACTIONS OF**
25 **THE GOVERNMENT AND THEIR IMPACT ON U. S. CAPITAL COSTS.**

26 A. The yields on United States Treasury securities have declined to levels not seen since the
27 1950s. The yields on Treasury securities decreased significantly at the onset of the
28 financial crisis and have remained at very low levels. The decline in interest rates
29 reflects several factors, including: (1) the “flight to quality” in the credit markets as
30 investors sought out low risk investments during the financial crisis; (2) the very

1 aggressive monetary actions of the Federal Reserve, which were aimed at restoring
2 liquidity and faith in the financial system as well as maintaining low interest rates to
3 boost economic growth; and (3) the continuing slow recovery from the recession.

4 The credit market for corporate and utility debt experienced higher rates due to the
5 credit crisis. The short-term credit markets were initially hit with credit issues, leading
6 to the demise of several large financial institutions. The primary indicator of the short-
7 term credit market is the 3-month London Interbank Offered Rate (“LIBOR”). LIBOR
8 peaked in the third quarter of 2008 at 4.75%. It has since declined to below 0.5% as the
9 short-term credit markets opened up and U.S. Treasury rates have remained low. The
10 long-term corporate credit markets tightened up during the financial crisis, but have
11 improved significantly since 2009. Interest rates on utility and corporate debt have
12 declined to historically low levels.

13 Panel A of page 2 of Exhibit C-106 provides the yields on long-term, A and Baa
14 rated public utility bonds. These yields peaked in November 2008 and have since
15 declined by about 400 basis points. For example, the yields on long-term, ‘A’ rated
16 utility bonds, which peaked at about 7.5% in November of 2008, have declined to
17 below 4.00% as of November, 2012. Panel B of page 2 of Exhibit C-106 provides the
18 yield spreads on long-term A-rated public utility bonds relative to twenty-year Treasury
19 bonds. These yield spreads increased dramatically in the third quarter of 2008 during
20 the peak of the financial crisis and have since decreased significantly. Specifically,
21 these yield differentials peaked at 3.4% in November of 2008, declined to 1.5% in the
22 summer of 2009, and have varied between 1.25% and 1.75% since that time.

23 In sum, while the economy continues to face significant problems, the actions of
24 the government and Federal Reserve had a large effect on the credit markets. The
25 capital costs for utilities, as measured by the yields on 30-year utility bonds, have
26 declined to below pre-financial crisis levels.

1 **Q. ARE INTEREST RATES LIKELY LOW FOR SOME TIME?**

2 A. Yes. On September 13, 2012, the Federal Reserve released its policy statement relating
3 to Quantitative Easing III (“QE3”). In the statement, the Federal Reserve announced
4 the following:⁷

5 To support a stronger economic recovery and to help ensure that
6 inflation, over time, is at the rate most consistent with its dual
7 mandate, the Committee agreed today to increase policy
8 accommodation by purchasing additional agency mortgage-backed
9 securities at a pace of \$40 billion per month. The Committee also
10 will continue through the end of the year its program to extend the
11 average maturity of its holdings of securities as announced in June,
12 and it is maintaining its existing policy of reinvesting principal
13 payments from its holdings of agency debt and agency mortgage-
14 backed securities in agency mortgage-backed securities. These
15 actions, which together will increase the Committee’s holdings of
16 longer-term securities by about \$85 billion each month through the
17 end of the year, should put downward pressure on longer-term
18 interest rates, support mortgage markets, and help to make broader
19 financial conditions more accommodative.

20
21 The Federal Reserve also indicated that it intends to keep the target rate for the
22 federal funds rate between 0 to ¼ percent through at least mid-2015. These monetary
23 policy actions of the Federal Reserve, coupled with U.S. economic conditions of slow
24 economic growth, high unemployment, and low inflation, should keep U.S. interest
25 rates and capital costs low for several years. The likelihood that these conditions will
26 keep interest rates and capital costs low for U.S. businesses is reinforced by the
27 economic and political problems in Europe, as the U.S. is viewed as a safe haven for
28 investment capital around the world.

29

⁷ Board of Governors of the Federal Reserve System, “Statement Regarding Transactions in Agency Mortgage-Backed Securities and Treasury Securities,” September 13, 2012.

1 **Q. PLEASE ALSO DISCUSS THE FED'S DECEMBER 12, 2012 PRESS RELEASE**
2 **REGARDING AN EXPANSION OF THE QE3 PROGRAM.**

3 A. On December 12, 2012, the Federal Reserve expanded its bond buying program and
4 tied future monetary policy moves to unemployment rates and the level of interest rates.
5 In the release, the Federal Reserve Board indicated the following:⁸

6 Consistent with its statutory mandate, the Committee seeks to foster
7 maximum employment and price stability. The Committee remains concerned
8 that, without sufficient policy accommodation, economic growth might not be
9 strong enough to generate sustained improvement in labor market conditions.
10 Furthermore, strains in global financial markets continue to pose significant
11 downside risks to the economic outlook. The Committee also anticipates that
12 inflation over the medium term likely will run at or below its 2 percent
13 objective.

14 To support a stronger economic recovery and to help ensure that inflation,
15 over time, is at the rate most consistent with its dual mandate, the Committee
16 will continue purchasing additional agency mortgage-backed securities at a
17 pace of \$40 billion per month. The Committee also will purchase longer-term
18 Treasury securities after its program to extend the average maturity of its
19 holdings of Treasury securities is completed at the end of the year, initially at
20 a pace of \$45 billion per month. The Committee is maintaining its existing
21 policy of reinvesting principal payments from its holdings of agency debt and
22 agency mortgage-backed securities in agency mortgage-backed securities and,
23 in January, will resume rolling over maturing Treasury securities at auction.
24 Taken together, these actions should maintain downward pressure on longer-
25 term interest rates, support mortgage markets, and help to make broader
26 financial conditions more accommodative.

27
28 With respect to tying monetary policy to interest rates and unemployment, the Fed
29 indicated the following:

30
31 In particular, the Committee decided to keep the target range for the federal
32 funds rate at 0 to 1/4 percent and currently anticipates that this exceptionally
33 low range for the federal funds rate will be appropriate at least as long as the
34 unemployment rate remains above 6-1/2 percent, inflation between one and
35 two years ahead is projected to be no more than a half percentage point above
36 the Committee's 2 percent longer-run goal, and longer-term inflation

⁸ Board of Governors of the Federal Reserve System, FOMC Statement," December 12, 2012.

1 expectations continue to be well anchored. The Committee views these
2 thresholds as consistent with its earlier date-based guidance.
3

4 Overall, these recent policy announcements of the Federal Reserve Board, in which
5 the Fed has attempted to clarify its monetary policy stance and tie it to interest and
6 unemployment rates, indicate that interest rates are likely to remain low for several
7 years into the future.
8

9 THE COST OF COMMON EQUITY CAPITAL

10 A. *Overview*

11 **Q. WHY MUST AN OVERALL COST OF CAPITAL OR FAIR RATE OF** 12 **RETURN BE ESTABLISHED FOR A PUBLIC UTILITY?**

13 A. In a competitive industry, the return on a firm's common equity capital is determined
14 through the competitive market for its goods and services. Due to the capital
15 requirements needed to provide utility services and to the economic benefit to society
16 from avoiding duplication of these services, some public utilities are monopolies. It is
17 not appropriate to permit monopoly utilities to set their own prices because of the lack
18 of competition and the essential nature of the services. Thus, regulation seeks to
19 establish prices that are fair to consumers and, at the same time, are sufficient to meet
20 the operating and capital costs of the utility (i.e., provide an adequate return on capital
21 to attract investors).

22 **Q. PLEASE PROVIDE AN OVERVIEW OF THE COST OF CAPITAL IN THE** 23 **CONTEXT OF THE THEORY OF THE FIRM.**

24 A. The total cost of operating a business includes the cost of capital. The cost of common
25 equity capital is the expected return on a firm's common stock that the marginal
26 investor would deem sufficient to compensate for risk and the time value of money. In
27 equilibrium, the expected and required rates of return on a company's common stock
28 are equal.

1 Normative economic models of the firm, developed under very restrictive
2 assumptions, provide insight into the relationship between firm performance or
3 profitability, capital costs, and the value of the firm. Under the economist's ideal
4 model of perfect competition where entry and exit is costless, products are
5 undifferentiated, and there are increasing marginal costs of production, firms produce
6 up to the point where price equals marginal cost. Over time, a long-run equilibrium is
7 established where price equals average cost, including the firm's capital costs. In
8 equilibrium, total revenues equal total costs, and because capital costs represent
9 investors' required return on the firm's capital, actual returns equal required returns,
10 and the market value and the book value of the firm's securities must be equal.

11 In the real world, firms can achieve competitive advantage due to product market
12 imperfections. Most notably, companies can gain competitive advantage through
13 product differentiation (adding real or perceived value to products) and by achieving
14 economies of scale (decreasing marginal costs of production). Competitive advantage
15 allows firms to price products above average cost and thereby earn accounting profits
16 greater than those required to cover capital costs. When these profits are in excess of
17 that required by investors, or when a firm earns a return on equity in excess of its cost
18 of equity, investors respond by valuing the firm's equity in excess of its book value.

19 James M. McTaggart, founder of the international management consulting firm
20 Marakon Associates, has described this essential relationship between the return on
21 equity, the cost of equity, and the market-to-book ratio in the following manner:⁹

22 Fundamentally, the value of a company is determined by the cash
23 flow it generates over time for its owners, and the minimum
24 acceptable rate of return required by capital investors. This "cost of
25 equity capital" is used to discount the expected equity cash flow,
26 converting it to a present value. The cash flow is, in turn, produced
27 by the interaction of a company's return on equity and the annual
28 rate of equity growth. High return on equity (ROE) companies in
29 low-growth markets, such as Kellogg, are prodigious generators of
30 cash flow, while low ROE companies in high-growth markets, such
31 as Texas Instruments, barely generate enough cash flow to finance
32 growth.

⁹ James M. McTaggart, "The Ultimate Poison Pill: Closing the Value Gap," *Commentary* (Spring 1988), p. 2.

1 A company's ROE over time, relative to its cost of equity, also
2 determines whether it is worth more or less than its book value. If its
3 ROE is consistently greater than the cost of equity capital (the
4 investor's minimum acceptable return), the business is economically
5 profitable and its market value will exceed book value. If, however,
6 the business earns an ROE consistently less than its cost of equity, it
7 is economically unprofitable and its market value will be less than
8 book value.

9 As such, the relationship between a firm's return on equity, cost of equity, and
10 market-to-book ratio is relatively straightforward. A firm that earns a return on equity
11 above its cost of equity will see its common stock sell at a price above its book value.
12 Conversely, a firm that earns a return on equity below its cost of equity will see its
13 common stock sell at a price below its book value.

14 **Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE RELATIONSHIP**
15 **BETWEEN RETURN ON EQUITY AND MARKET-TO-BOOK RATIOS.**

16 A. This relationship is discussed in a classic Harvard Business School case study entitled
17 "A Note on Value Drivers." On page 2 of that case study, the author describes the
18 relationship very succinctly:¹⁰

19 For a given industry, more profitable firms – those able to generate
20 higher returns per dollar of equity – should have higher market-to-
21 book ratios. Conversely, firms which are unable to generate returns
22 in excess of their cost of equity should sell for less than book value.

<u><i>Profitability</i></u>	<u><i>Value</i></u>
<i>If ROE > K</i>	<i>then Market/Book > 1</i>
<i>If ROE = K</i>	<i>then Market/Book = 1</i>
<i>If ROE < K</i>	<i>then Market/Book < 1</i>

27 To assess the relationship by industry, as suggested above, I have performed a
28 regression study between estimated return on equity and market-to-book ratios using
29 natural gas distribution, electric utility and water utility companies. I used all
30 companies in these three industries that are covered by *Value Line* and have estimated
31 return on equity and market-to-book ratio data. The results are presented in Panels A-C

¹⁰ Benjamin Esty, "A Note on Value Drivers," Harvard Business School, Case No. 9-297-082, April 7, 1997.

1 of Exhibit C-107. The average R-squares for the electric, gas, and water companies are
2 0.52, 0.71, and 0.77, respectively.¹¹ This demonstrates the strong positive relationship
3 between ROEs and market-to-book ratios for public utilities.

4 **Q. WHAT FACTORS DETERMINE INVESTORS' EXPECTED OR REQUIRED**
5 **RATE OF RETURN ON EQUITY?**

6 A. The expected or required rate of return on common stock is a function of market-wide
7 as well as company-specific factors. The most important market factor is the time value
8 of money as indicated by the level of interest rates in the economy. Common stock
9 investor requirements generally increase and decrease with like changes in interest
10 rates. The perceived risk of a firm is the predominant factor that influences investor
11 return requirements on a company-specific basis. A firm's investment risk is often
12 separated into business and financial risk. Business risk encompasses all factors that
13 affect a firm's operating revenues and expenses. Financial risk results from incurring
14 fixed obligations in the form of debt in financing its assets.

15 **Q. HOW DOES THE INVESTMENT RISK OF UTILITIES COMPARE WITH**
16 **THAT OF OTHER INDUSTRIES?**

17 A. Due to the essential nature of their service as well as their regulated status, public
18 utilities are exposed to a lesser degree of business risk than other, non-regulated
19 businesses. The relatively low level of business risk allows public utilities to meet
20 much of their capital requirements through borrowing in the financial markets, thereby
21 incurring greater than average financial risk. Nonetheless, the overall investment risk of
22 public utilities is below most other industries.

23 Exhibit C-108 provides an assessment of investment risk for 100 industrial
24 categories as measured by beta, which according to modern capital market theory, is the
25 only relevant measure of investment risk. These betas come from the *Value Line*
26 *Investment Survey* and are compiled annually by Aswath Damodaran of New York

¹¹ R-square measures the percent of variation in one variable (e.g., market-to-book ratios) explained by another variable (e.g., expected return on equity). R-squares vary between zero and 1.0, with values closer to 1.0 indicating a higher relationship between two variables.

1 University.¹² Tracking *Value Line*'s geographic groupings, the study breaks out the
2 betas for electric utilities into east, central, and west electric utilities. The study shows
3 that the investment risk of all five resulting utility categories is very low. The average
4 betas for electric utilities (east), electric utilities (central), electric utilities (west), water,
5 and gas utility companies are 0.70, 0.75, 0.75, 0.66, and 0.66, respectively. The betas
6 for utilities are in the lowest ten percent of all industries covered by *Value Line*. These
7 are well below the *Value Line* average of 1.15. As such, the cost of equity for utilities
8 is among the lowest of all industries in the U.S.

9 **Q. HOW CAN THE EXPECTED OR REQUIRED RATE OF RETURN ON**
10 **COMMON EQUITY CAPITAL BE DETERMINED?**

11 A. The costs of debt and preferred stock are normally based on historical or book values
12 and can be determined with a great degree of accuracy. The cost of common equity
13 capital, however, cannot be determined precisely and must instead be estimated from
14 market data and informed judgment. This return to the stockholder should be
15 commensurate with returns on investments in other enterprises having comparable risks.

16 According to valuation principles, the present value of an asset equals the
17 discounted value of its expected future cash flows. Investors discount these expected
18 cash flows at their required rate of return that, as noted above, reflects the time value of
19 money and the perceived riskiness of the expected future cash flows. As such, the cost
20 of common equity is the rate at which investors discount expected cash flows
21 associated with common stock ownership.

22 Models have been developed to ascertain the cost of common equity capital for a
23 firm. Each model, however, has been developed using restrictive economic
24 assumptions. Consequently, judgment is required in selecting appropriate financial
25 valuation models to estimate a firm's cost of common equity capital, in determining the
26 data inputs for these models, and in interpreting the models' results. All of these
27 decisions must take into consideration the firm involved as well as current conditions in
28 the economy and the financial markets.

¹² Available at <http://www.stern.nyu.edu/~adamodar>.

1 **Q. HOW DO YOU PLAN TO ESTIMATE THE COST OF EQUITY CAPITAL FOR**
2 **THE COMPANY?**

3 A. I rely primarily on the DCF model to estimate the cost of common equity capital.
4 Given the investment valuation process and the relative stability of the utility business, I
5 believe that the DCF model provides the best measure of equity cost rates for public
6 utilities. I also undertook a CAPM study, based on the same proxy group as was
7 examined in my DCF study. The CAPM study resulted in a 7.5% estimate of the cost
8 of common equity capital, as shown in my exhibits. However, I give that CAPM result
9 no weight because I believe that risk premium studies, of which the CAPM is one form,
10 provide a less reliable indication of equity cost rates for public utilities. Because I am
11 placing no weight on that CAPM study, I do not discuss it further.

12 **B. Discounted Cash Flow Analysis**

13 **Q. DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF MODEL.**

14 A. According to the DCF model, the current stock price is equal to the discounted value of
15 all future dividends that investors expect to receive from investment in the firm. As
16 such, stockholders' returns ultimately result from current as well as future dividends.
17 As owners of a corporation, common stockholders are entitled to a *pro rata* share of the
18 firm's earnings. The DCF model presumes that earnings that are not paid out in the
19 form of dividends are reinvested in the firm so as to provide for future growth in
20 earnings and dividends. The rate at which investors discount future dividends, which
21 reflects the timing and riskiness of the expected cash flows, is interpreted as the
22 market's expected or required return on the common stock. Therefore, this discount rate
23 represents the cost of common equity. Algebraically, the DCF model can be expressed
24 as:

25
$$P = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n}{(1+k)^n}$$

26 where P is the current stock price, D_n is the dividend in year n, and k is the cost of
27 common equity.
28
29
30

1 **Q. IS THE DCF MODEL CONSISTENT WITH VALUATION TECHNIQUES**
2 **EMPLOYED BY INVESTMENT FIRMS?**

3 A. Yes. Virtually all investment firms use some form of the DCF model as a valuation
4 technique. One common application for investment firms is called the three-stage DCF
5 or dividend discount model (“DDM”). The stages in a three-stage DCF model are
6 presented in Exhibit C-109. This model presumes that a company’s dividend payout
7 progresses initially through a growth stage, then proceeds through a transition stage, and
8 finally assumes a steady-state stage. The dividend-payment stage of a firm depends on
9 the profitability of its internal investments, which, in turn, is largely a function of the
10 life cycle of the product or service.

- 11 1. Growth stage: Characterized by rapidly expanding sales, high profit margins, and
12 abnormally high growth in earnings per share. Because of highly profitable
13 expected investment opportunities, the payout ratio is low. Competitors are
14 attracted by the unusually high earnings, leading to a decline in the growth rate.
- 15 2. Transition stage: In later years increased competition reduces profit margins and
16 earnings growth slows. With fewer new investment opportunities, the company
17 begins to pay out a larger percentage of earnings.
- 18 3. Maturity (steady-state) stage: Eventually the company reaches a position where
19 its new investment opportunities offer, on average, only slightly attractive returns
20 on equity. At that time its earnings growth rate, payout ratio, and return on equity
21 stabilize for the remainder of its life. The constant-growth DCF model is
22 appropriate when a firm is in the maturity stage of the life cycle.

23 In using this model to estimate a firm’s cost of equity capital, dividends are
24 projected into the future using the different growth rates in the alternative stages, and
25 then the equity cost rate is the discount rate that equates the present value of the future
26 dividends to the current stock price.

27 **Q. HOW DO YOU ESTIMATE STOCKHOLDERS’ EXPECTED OR REQUIRED**
28 **RATE OF RETURN USING THE DCF MODEL?**

29 A. Under certain assumptions, including a constant and infinite expected growth
30 rate, and constant dividend/earnings and price/earnings ratios, the DCF model
31 can be simplified to the following:

$$32 \quad P = \frac{D_1}{k - g}$$

33
34

1 where D_1 represents the expected dividend over the coming year and g is the expected
2 growth rate of dividends. This is known as the constant-growth version of the DCF
3 model. To use the constant-growth DCF model to estimate a firm's cost of equity, one
4 solves for k in the above expression to obtain the following:

$$5 \quad k = \frac{D_1}{P} + g$$

8
9 **Q. IN YOUR OPINION, IS THE CONSTANT-GROWTH DCF MODEL**
10 **APPROPRIATE FOR PUBLIC UTILITIES?**

11 A. Yes. The economics of the public utility business indicate that the industry is in the
12 steady-state or constant-growth stage of a three-stage DCF. The economics include the
13 relative stability of the utility business, the maturity of the demand for public utility
14 services, and the regulated status of public utilities (especially the fact that their returns
15 on investment are effectively set through the ratemaking process). The DCF valuation
16 procedure for companies in this stage is the constant-growth DCF. In the constant-
17 growth version of the DCF model, the current dividend payment and stock price are
18 directly observable. However, the primary problem and controversy in applying the
19 DCF model to estimate equity cost rates entails estimating investors' expected dividend
20 growth rate.

21 **Q. WHAT FACTORS SHOULD ONE CONSIDER WHEN APPLYING THE DCF**
22 **METHODOLOGY?**

23 A. One should be sensitive to several factors when using the DCF model to estimate a
24 firm's cost of equity capital. In general, one must recognize the assumptions under
25 which the DCF model was developed in estimating its components (the dividend yield
26 and expected growth rate). The dividend yield can be measured precisely at any point
27 in time, but tends to vary somewhat over time. Estimation of expected growth is
28 considerably more difficult. One must consider recent firm performance, in conjunction
29 with current economic developments and other information available to investors, to
30 accurately estimate investors' expectations.

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C. Proxy Group Selection

Q. PLEASE DESCRIBE YOUR APPROACH TO DEVELOPING A FAIR RATE OF RETURN RECOMMENDATION FOR THE TOS.

A. To develop a fair rate of return recommendation for the TOs, I evaluated the return requirements of investors in the common stock of the Electric Proxy Group.

Q. PLEASE DESCRIBE YOUR PROXY GROUP OF COMPANIES.

A. The selection criteria for the proxy group include the following:

1. At least 50% of revenues from regulated electric operations as reported by *AUS Utilities Report*;
2. Listed as Electric Utility by *Value Line Investment Survey* and listed as an Electric Utility or Combination Electric & Gas Company in *AUS Utilities Report*;
3. An investment grade corporate credit and bond rating that falls within the comparable risk band;
4. Has paid a cash dividend for the past three years, with no cuts or omissions;
5. Not involved in an acquisition of another utility, and not the target of an acquisition, in the past six months; and
6. Analysts' long-term EPS growth rate forecasts available from Yahoo, Reuters, and/or Zacks.

The Electric Proxy Group includes thirty-three companies. Summary financial statistics for the proxy group are listed on page 1 of Exhibit C-110.¹³ The median operating revenues and net plant among members of the Electric Proxy Group are \$4,088.8M and \$10,071.8M, respectively. The group's median receives 81% of revenues from regulated electric operations, has a BBB+ bond rating from Standard & Poor's, has a current common equity ratio of 46.5%, and has an earned return on common equity of 9.5%.

¹³ In my testimony, I present financial results using both mean and medians as measures of central tendency. However, due to outliers among means, I have used the median as a measure of central tendency.

1 **Q. IS THE SELECTION OF YOUR ELECTRIC PROXY GROUP CONSISTENT**
2 **WITH PRIOR COMMISSION GUIDELINES?**

3 A. Yes. The companies in the group are primarily electric utilities as indicated by the
4 percent of regulated electric revenue (at least 50%). The selection process includes a
5 national group of electric utilities, which is consistent with the Commission's recent
6 findings that geographic proximity is not necessarily a determining factor in evaluating
7 risk.¹⁴ Widening the geographic focus allows me to apply relatively stringent screening
8 criteria, but still wind up with a reliably large group of proxies.

9 Page 2 of Exhibit C-110 provides the S&P corporate credit ratings of the New
10 England TOs. These ratings range from A- on the high end to BBB on the low end.
11 According to the Commission's credit rating screen or "comparable risk band"
12 approach, reference companies may be included with ratings that are one "notch"
13 higher or lower than the corporate ratings of the utility at issue, within the investment
14 grade ratings scale.¹⁵ Accordingly, the range for the group is A to BBB-. The median
15 for the TOs is A-/BBB+. On page 3 of Exhibit C-110, I have assessed the riskiness of
16 the TOs and the Electric Proxy Group using three different risk measures published by
17 *Value Line*. These measures include Beta, Safety, and Financial Strength. These
18 measures are all very similar for the TOs and the Electric Proxy Group.

19 Overall, the selection of the Electric Proxy Group is consistent with Commission
20 proxy group guidelines and is comparable in risk to the TOs.

21 **Q: WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
22 **REQUIRING THAT THE COMPANY DERIVE AT LEAST 50% OF ITS**
23 **REVENUES FROM REGULATED ELECTRIC OPERATIONS?**

24 A: This criterion is designed to select proxy group members of comparable risk to the
25 NETOs. In a case involving setting the ROE for electric utilities, it is axiomatic that the
26 proxy group should consist of electric utilities and eliminating companies from the

¹⁴ *Atlantic Path 15*, 133 FERC ¶ 61,153, at P 13 (2010); "FERC Clarifies ROE Policy for Electric Transmission Projects," *Federal Energy Regulatory Commission News* (Nov. 18, 2010); *Potomac-Appalachian Transmission Highline, L.L.C.*, 133 FERC ¶ 61,152 (2010) ("PATH Rehearing Order").

¹⁵ *Tallgrass Transmission, LLC*, 125 FERC ¶ 61,248 at P 77 (2008).

1 proxy group that are not electric utilities is consistent with Commission precedent. For
2 example, in Opinion No. 489 where the existing Base ROE was determined, the
3 Commission agreed with the Initial Decision that UGI should be excluded because it
4 was primarily a natural gas company, even though *Value Line* continued to list it as an
5 electric utility. The companies in my proxy group are primarily electric utilities as
6 indicated by the percent of revenue that derives from regulated electric operations.

7 Dr. Avera's proxy group from Exh. NETO-104 included companies for which the
8 percentage of regulated electric revenue is relatively small. His rationale for including
9 such disparate companies seemed to be that *Value Line* continues to include those
10 companies in its electric utility industry reporting. However, the frequency with which
11 *Value Line* reclassifies companies and the criteria by which it does so are not known,
12 and in any case the classification applied by any one publication is much less
13 significant in characterizing a firm's industry category than is the question where it gets
14 most of its revenues. The Commission appears to agree with that view. For example,
15 in the most recent hearing on NETOs' ROE, a major issue concerned whether UGI was
16 properly included in the proxy group, given its extensive non-electric operations. The
17 Presiding Judge and the Commission found that UGI was not an appropriate proxy, and
18 the basis for that finding was the fact that electric operations represented a small share
19 of UGI's customer base and revenues, not any labeling by *Value Line*.¹⁶

20 **Q: WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
21 **REQUIRING THAT THE COMPANY BE LISTED AS AN ELECTRIC**
22 **UTILITY OR COMBINATION ELECTRIC AND GAS COMPANY IN AUS**
23 **UTILITIES REPORT?**

24 A: This criterion provides a quick way to ensure that the proxies all have some substantial
25 level of traditional electric utility operations, and therefore share that relevant
26 characteristic with the NETOs. However, it is not as useful or as precise a criterion as
27 is my separate criterion requiring that electric utility operations provide 50% of
28 revenues. In its application here, the *AUS Utilities Report* classification criterion
29 excludes only ITC Holdings, which in any case would be screened out by other criteria.

¹⁶ *Bangor Hydro-Electric Company, et. al.*, 111 FERC ¶ 63,048 at P 58-61 (2005).

1 **Q. WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
2 **REQUIRING AN INVESTMENT GRADE CORPORATE CREDIT AND BOND**
3 **RATING?**

4 A. This test screens directly for comparable risk, as graded in corporate credit and bond
5 ratings. As I discussed above, this “comparable risk band” is well established in
6 Commission precedent.

7 **Q WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
8 **REQUIRING THAT THE COMPANY CONSISTENTLY HAS PAID A CASH**
9 **DIVIDEND FOR THE PAST THREE YEARS?**

10 A. Application of the DCF model to measure an equity cost rate requires that investors
11 expect to receive a dividend in the future. Such expectations may change if a company
12 has recently cut or omitted a dividend.

13

14 **Q WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
15 **REQUIRING THAT IN THE PAST SIX MONTHS, THE COMPANY NOT**
16 **HAVE BEEN INVOLVED IN AN ACQUISITION OF ANOTHER UTILITY**
17 **NOR THE TARGET OF AN ACQUISITION?**

18 A. Merger activity tends to distort the inputs on which the DCF model relies. For example,
19 expectations that an acquiring company will pay a premium may inflate the target’s
20 share prices, and deflate those of the acquiring company. These distortions would
21 depress the target’s study-period dividend yield, and inflate the acquiring company’s
22 study-period dividend yield. Also, whether analysts’ EPS growth rate forecasts relate to
23 the pre-merger or anticipated post-merger entity is not always known. In the post-
24 merger period, expectations can change regarding the integration and long-term
25 prospects of the merging companies.

1 **Q WHY HAVE YOU APPLIED A PROXY SELECTION CRITERION**
2 **REQUIRING THAT ANALYSTS'LONG-TERM EPS GROWTH RATE**
3 **FORECASTS BE AVAILABLE FROM YAHOO, REUTERS, AND/OR ZACKS?**

4 A. Long-term analyst forecasts of growth in earnings per share are a required input for the
5 Commission's standard DCF methodology. All three of these sources are reputable and
6 are relied upon by investors. Moreover, in the prior proceeding to set the NETOs' base
7 return on equity, the Commission stated that comparable growth projections from other
8 sources could be considered along with *Value Line* projections and what was then
9 I/B/E/S.

10 **Q: THE PROXY GROUP DEVELOPED BY DR. AVERA IN HIS TESTIMONY**
11 **FILED WITH THE NETO'S ANSWER IN DOCKET NO. EL11-66 INCLUDED**
12 **NINE COMPANIES NOT INCLUDED IN YOUR PROXY GROUP IN EXH.**
13 **JRW-8: CENTER POINT ENERGY, ENTERGY CORP., INTEGRYS ENERGY**
14 **GROUP, ITC HOLDINGS, OTTER TAIL CORP., PPL CORP., PUBLIC**
15 **SERVICE ENTERPRISE GROUP, SEMPRA ENERGY, AND VECTREN CORP.**
16 **PLEASE EXPLAIN WHY THESE COMPANIES SHOULD NOT BE INCLUDED**
17 **IN THE PROXY GROUP.**

18 A: Each of these nine companies fails to meet one or more of the proxy selection criteria,
19 according to recent *AUS Utility Reports* (October 2012) and other information for each
20 of these companies. Center Point Energy derives only 31% of its revenues from
21 regulated electric operations. Entergy Corp. is currently involved in merger activity.
22 Integrys Energy Group derives only 31% of its revenues from regulated electric
23 operations. ITC Holdings is currently involved in merger activity and is not listed as an
24 Electric Utility or Combination Electric and Gas Company in *AUS Utility Reports*.
25 Otter Tail Corp. derives only 33% of its revenues from regulated electric operations and
26 has a split corporate rating, one of which is "junk." PPL Corp. derives only 45% of its
27 revenues from regulated electric operations. Public Service Enterprise Group derives
28 only 44% of its revenues from regulated electric operations. Sempra Energy derives
29 only 30% of its revenues from regulated electric operations. And Vectren Corp. derives
30 only 28% of its revenues from regulated electric operations.

1 **Q. DO THE OVERALL RISK LEVELS OF THE PROXY GROUP THAT**
2 **RESULTS FROM YOUR CRITERIA PROVIDE ADDITIONAL ASSURANCE**
3 **THAT THOSE CRITERIA ARE SOUND?**

4 A. Yes. As I noted earlier, on page 3 of Exhibit C-110, I have assessed the riskiness of the
5 TOs and the Electric Proxy Group using three different risk measures. Again, these
6 measures are all very similar for the TOs and the Electric Proxy Group.

7 **D. Application of FERC DCF Model**

8 **Q. PLEASE DISCUSS YOUR APPLICATION OF THE COMMISSION'S DCF**
9 **MODEL.**

10 A. I have performed a DCF analysis using the Commission's DCF approach. The detailed
11 results of my DCF analysis are presented in Exhibit C-111. The DCF summary is on
12 page 1 of this Exhibit, and the supporting data and analysis for the dividend yield and
13 expected growth rate are provided on the following pages of the Exhibit. In this
14 application, the dividend yield is computed as the average low and high indicated
15 dividend yields for each utility during the six months ending December 2012.

16 **Q. PLEASE DISCUSS THE APPROPRIATE ADJUSTMENT TO THE SPOT**
17 **DIVIDEND YIELD.**

18 A. According to the traditional DCF model, the dividend yield term relates to the dividend
19 yield over the coming period. As indicated by Professor Myron Gordon, who is
20 commonly associated with the development of the DCF model for popular use, this is
21 obtained by (1) multiplying the expected dividend over the coming quarter by 4 and (2)
22 dividing this dividend by the current stock price to determine the appropriate dividend
23 yield for a firm, that pays dividends on a quarterly basis.¹⁷

24 In applying the DCF model, some analysts adjust the current dividend for growth
25 over the coming year as opposed to the coming quarter. This can be complicated
26 because firms tend to announce changes in dividends at different times during the year.

27 As such, the dividend yield computed based on presumed growth over the coming

¹⁷ *Petition for Modification of Prescribed Rate of Return*, Federal Communications Commission, Docket No. 79-05, Direct Testimony of Myron J. Gordon and Lawrence I. Gould at 62 (April 1980).

1 quarter as opposed to the coming year can be quite different. Consequently, it is
2 common for analysts to adjust the dividend yield by some fraction of the long-term
3 expected growth rate.

4 **Q. GIVEN THIS DISCUSSION, WHAT ADJUSTMENT FACTOR WILL YOU USE**
5 **FOR YOUR DIVIDEND YIELD?**

6 A. I will adjust the dividend yield by one-half (1/2) the expected growth so as to reflect
7 growth over the coming year. This is consistent with the Commission's approach.¹⁸

8 The DCF equity cost rate (K) is computed as:

9
10
$$k = \frac{D}{P} (1 + 0.5g) + g$$

11

12 **Q. PLEASE DISCUSS THE COMMISSION'S COMPUTATION OF THE DCF**
13 **GROWTH RATE COMPONENT.**

14 A. The Commission's DCF approach uses two measures of projected growth. These
15 include: (1) the projected EPS growth as forecasted by Wall Street analysts; and (2)
16 sustainable growth, as measured by the sum of internal growth (the retention rate times
17 expected ROE) and external growth (the percent of equity expected to be issued times
18 the equity accretion ratio).

19 **Q. PLEASE DISCUSS THE SERVICES THAT PROVIDE ANALYSTS' EPS**
20 **FORECASTS.**

21 A. Analysts' EPS forecasts for companies are collected and published by a number of
22 different investment information services, including Institutional Brokers Estimate
23 System ("I/B/E/S"), Bloomberg, FactSet, Zacks, First Call and Reuters, among others.
24 Thompson Reuters publishes analysts' EPS forecasts under different product names,
25 including I/B/E/S, First Call, and Reuters. Bloomberg, FactSet, and Zacks publish their
26 own set of analysts' EPS forecasts for companies. These services do not reveal: (1) the
27 analysts who are solicited for forecasts; or (2) the actual analysts who provide the EPS

¹⁸ Opinion No. 414-A, *Transcontinental Gas Pipe Line Corp.*, 84 FERC ¶ 61,084 (1998)

1 forecasts that are used in the compilations published by the services. I/B/E/S,
 2 Bloomberg, FactSet, and First Call are fee-based services. These services usually
 3 provide detailed reports and other data in addition to analysts' EPS forecasts.
 4 Thompson Reuters and Zacks do provide limited EPS forecasts data free-of-charge on
 5 the internet. Yahoo finance (<http://finance.yahoo.com>) lists Thompson Reuters as the
 6 source of its summary EPS forecasts. The Reuters website (www.reuters.com) also
 7 publishes EPS forecasts from Thompson Reuters, but with more detail. Zacks
 8 (www.zacks.com) publishes its summary forecasts on its website. Zack's estimates are
 9 also available on other websites, such as [msn.money \(http://money.msn.com\)](http://money.msn.com).

10 **Q. PLEASE PROVIDE AN EXAMPLE OF THESE EPS FORECASTS.**

11 A. The following example provides the EPS forecasts compiled by Reuters for
 12 American Electric Power (stock symbol "AEP"). Consensus Earnings
 13 Estimates

14 American Electric Power (AEP)

15 www.reuters.com

16 December 2, 2012

17

	# of Estimates	Mean	High	Low
Earnings (per share)				
Quarter Ending Dec-12	8	0.45	0.47	0.39
Quarter Ending Mar-13	6	0.83	0.90	0.80
Year Ending Dec-12	21	3.05	3.11	2.98
Year Ending Dec-13	21	3.15	3.22	3.10
LT Growth Rate (%)	5	3.36	5.00	1.40

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22 These figures can be interpreted as follows. The top line shows that eight analysts have
 23 provided EPS estimates for the quarter ending December 31, 2012. The mean, high and
 24 low estimates are \$0.45, \$0.47, and \$0.39, respectively. The second line shows the
 25 quarterly EPS estimates for the quarter ending March 31, 2012. Lines three and four
 26 show the annual EPS estimates for the fiscal years ending December 2012 and
 27 December 2013, respectively. The quarterly and annual EPS forecasts in lines 1-4 are

1 expressed in dollars and cents. As in the AEP case shown here, it is common for more
2 analysts to provide estimates of annual EPS as opposed to quarterly EPS. The bottom
3 line shows the projected long-term EPS growth rate which is expressed as a percentage.
4 For AEP, five analysts have provided long-term EPS growth rate forecasts, with mean,
5 high and low growth rates of 3.36%, 5.00%, and 1.40%, respectively.

6 **Q. WHICH OF THESE EPS FORECASTS IS USED IN DEVELOPING A DCF**
7 **GROWTH RATE?**

8 A. The DCF growth rate is the long-term projected growth rate in EPS, DPS, and BVPS.
9 Therefore, in developing an equity cost rate using the DCF model, the projected long-
10 term growth rate is the projection used in the DCF model.

11 **Q. WHAT ARE YOUR OBSERVATIONS ON THE ALTERNATIVE SOURCES OF**
12 **ANALYSTS' LONG-TERM EPS GROWTH RATE FORECASTS?**

13 A. Based on my review of previous cases, it appears that the Commission has accepted
14 analyses that use the long-term EPS growth rate forecasts as published by I/B/E/S in
15 developing a DCF equity cost rate. The Commission appears to believe that the I/B/E/S
16 growth rate projections are published on the Yahoo Finance website.¹⁹ This contention
17 cannot be verified on either the Yahoo Finance or the Thompson Reuters websites.
18 Regardless, it is my experience that there is not one single figure that represents
19 analysts' projected long-term EPS growth rate for a company. Page 2 of Exhibit C-111
20 provides analysts' projected long-term EPS growth rates for the proxy group companies
21 as published by Reuters, Yahoo, and Zacks. These are the primary providers of
22 analysts' EPS growth rate forecasts available free-of-charge on the internet. As
23 previously indicated, I/B/E/S is not a free service. These data were collected on
24 December 2, 2012. Of the thirty-three companies, only three have the same growth rate
25 forecast from the three services (Cleco, IDACORP, and Southern). Black Hills has the
26 same growth rate forecast from two providers, but is not covered by a third. In addition,
27 only eight of the companies have the same growth rate forecasts from Yahoo and

¹⁹ *B.P. Pipelines (Alaska) Inc. et. al.*, 134 FERC ¶ 63,020 at P 566 (2011).

1 Reuters, both of which have Thompson Reuters as the source of projected long-term
2 earnings growth rate forecasts.

3 All of these sources of analyst growth rate forecasts are available to investors, either
4 by subscription or publicly. Consequently, all of them have the potential to influence
5 investor expectations and share prices.

6
7 **Q. DO YOU BELIEVE THAT THERE ARE ANY ISSUES WITH RELYING ON THE**
8 **LONG-TERM EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING**
9 **AT A DCF GROWTH RATE FOR THE PROXY GROUP?**

10 A. Yes. There are several issues with using the EPS growth rate forecasts of Wall Street
11 analysts as DCF growth rates. First, the appropriate growth rate in the DCF model is the
12 dividend growth rate, not the earnings growth rate. Nonetheless, over the very long-term,
13 dividend and earnings will have to grow at a similar growth rate. Second, a recent study
14 by Lacina, Lee, and Xu (2011) has shown that analysts' long-term earnings growth rate
15 forecasts are not more accurate at forecasting future earnings than naïve random walk
16 forecasts of future earnings.²⁰ Employing data over a twenty year period, these authors
17 demonstrate that using the most recent year's EPS figure to forecast EPS in the next 3-5
18 years proved to be just as accurate as using the EPS estimates from analysts' long-term
19 earnings growth rate forecasts. In the authors' opinion, these results indicate that that
20 analysts' long-term earnings growth rate forecasts should be used with caution as inputs
21 for valuation and cost of capital purposes. Finally, and most significantly, it is well-
22 known that the long-term EPS growth rate forecasts of Wall Street securities analysts are
23 overly optimistic and upwardly biased. This has been demonstrated in a number of

²⁰ M. Lacina, B. Lee & Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

1 academic studies over the years. This issue is discussed at length in Exhibit C-102 of this
2 testimony. Hence, using these growth rates as a DCF growth rate will provide an
3 overstated equity cost rate. On this issue, a study by Easton and Sommers (2007) found
4 that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of
5 the cost of equity capital of almost 3.0 percentage points.²¹

6

7 **Q. IN THIS PROCEEDING, WHAT MEASURE OF ANALYSTS' LONG-TERM**
8 **EPS GROWTH RATE FORECASTS ARE YOU USING?**

9 A. Notwithstanding my issues with analysts' long-term EPS growth rate forecasts outlined
10 above and in Exhibit C-102, I will follow the Commission's precedent and use analysts'
11 long-term EPS growth rate forecasts. And, following the Commission's precedent, I
12 will use the Yahoo Finance long-term EPS growth rate estimates even though it cannot
13 be verified that these growth rates are I/B/E/S growth rates.

14 **Q. PLEASE REVIEW THE SUSTAINABLE GROWTH RATE.**

15 A. The second growth rate is FERC's measure of sustainable growth. The sustainable
16 growth rate is calculated as:

17
$$g = br + sv$$

18 where:
19 b = expected retention ratio;
20 r = expected earned rate of return;
21 s = percent of equity expected to be issued on an annual
22 basis as new common stock;
23 v = equity accretion ratio.
24

25 The calculation of the sustainable growth ("g") rate is provided on pages 3 and 4
26 of Exhibit C-111. On page 3 of Exhibit C-111, the expected retention ratio ("b") and
27 the expected return on equity ("r") are calculated and then averaged using *Value Line*
28 data for 2012, 2013, and 2015-2017 period. The expected retention ratio is based on
29 *Value Line's* projected EPS and DPS. The average values for r are then adjusted by the

²¹ Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. ACCT. RES. 983-1015 (2007).

1 'Adjustment Factor' since *Value Line*'s expected earned rate of return on equity is
2 based on end-of-year figure equity.²² The Adjustment Factor is calculated as $((2*(1+5-$
3 $yr\ Change\ in\ Equity)/(2+5-yr\ Change\ in\ Equity))$. The 5-Year Change in Equity is
4 computed using *Value Line*'s actual 2011 and projected 2016 equity ratios and total
5 capital figures (see page 4 of Exhibit C-111).

6 The computation of the *sv* growth factor is shown on page 4 of Exhibit C-111.
7 The percent of common equity expected to be issued annually as new common stock
8 ("s") is computed as the product of the projected market-to-book ratio and *Value Line*'s
9 projected growth in common shares. The equity accretion rate ("v") is computed as 1
10 minus the inverse of the projected market-to-book ratio (1-B/M).

11 **Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE**
12 **COMMISSION'S DCF MODEL?**

13 A. The DCF results employing the Commission's DCF approach are presented in Exhibit
14 C-111. Page 1 of Exhibit C-111 provides the summary results. The projected EPS
15 growth rates from Yahoo, Reuters, and Zacks are shown on page 2 of Exhibit C-111.
16 As noted above, only the long-term EPS growth rate projections published on the
17 Yahoo website are used in the analysis. Pages 3 and 4 show the data and calculations
18 used to compute the *br* + *sv* sustainable growth rate.

19 **Q. PLEASE DISCUSS YOUR UNDERSTANDING OF THE COMMISSION'S**
20 **POLICY OF ELIMINATING EXTREME OUTLIERS IN THE DCF RESULTS.**

21 A. It is my understanding that the Commission has a policy of applying a test of economic
22 logic and eliminating extreme DCF equity cost rate outliers.

23 The Low and High DCF equity cost rates from page 1 Exhibit C-111 are shown as
24 a histogram on page 5 of Exhibit C-111. A visual review of the Low and High DCF
25 equity cost rates suggest that there may be several low-end outliers and one or two
26 high-end outliers.

²² *Bangor Hydro Electric Company*, 122 FERC ¶ 61,265 (2008).

1 **Q. WHAT EXCLUSIONS RESULT FROM APPLYING THE COMMISSION'S**
2 **TESTS FOR EXCLUDING LOW-END OUTLIERS?**

3 A. The Commission's policy on low-end outliers was indicated in its April 15, 2010
4 decision involving *SoCal Edison*. In *SoCal Edison*, FERC indicated that, "it is
5 reasonable to exclude any company whose low-end ROE fails to exceed the average
6 bond yield by about 100 basis points or more."²³ FERC also further provided guidance
7 on applying this methodology: "As we stated in Opinion No. 489, the use of only one
8 end of the DCF calculation would skew the Commission's DCF method. Therefore,
9 when we eliminate either the high-end or low-end ROE outlier of a company, we have
10 also eliminated the corresponding low-end or high-end ROE of that company."²⁴

11 The Table below provides recent past yields on long-term, A and Baa rated utility
12 bonds. These data suggest that yield on utility bonds with a rating similar to the proxy
13 group (A3/Baa) over the 6-month study period have been in the 3.8% to 4.9% range. I
14 will use the midpoint of this range, 4.5%, as the benchmark base interest rate. This
15 figure, and FERC's bond yield plus 100 basis point threshold for the low-end outliers,
16 results in a 5.50% low-end threshold for the DCF results for proxy companies.

	Utility	Utility
Date	A	Baa
Jun-12	4.1	4.9
Jul-12	3.9	4.9
Aug-12	4.0	4.9
Sep-12	4.0	4.8
Oct-12	3.9	4.5
Nov-12	3.8	4.4

17
18 Applying the low-end screen would eliminate the low-end and high-end DCF
19 results for Ameren and PG&E.

²³ *So. Cal. Ed.*, 131 FERC ¶ 61,020 at P 56 (2010).

²⁴ *Southern Cal. Edison*, 131 FERC ¶ 61,020 at P 59.

1 **Q. WHAT EXCLUSIONS RESULT FROM APPLYING THE COMMISSION'S**
2 **TESTS FOR EXCLUDING HIGH-END OUTLIERS?**

3 A. With respect to high-end outliers, Commission policy likewise calls for excluding DCF
4 results from companies for which the high-end DCF result is illogically high. However,
5 unlike the bond yield plus 100 basis points test for excluding low-end outliers, I am not
6 aware of any specific Commission policy for quantifying how the exclusion level for
7 high-end outliers varies with current economic conditions. But symmetry and economic
8 logic require that some such exclusion level be identified. In the case that I have
9 already discussed where the TOs' existing 11.14% ROE was established, the
10 Commission found, based on capital market conditions at that time, that a DCF result
11 for which the growth component was 13.3% was unsustainable and should be
12 excluded. The total DCF result for that company was 17.7%, and the Commission has
13 indicated that the excessiveness of that total was an additional reason to exclude that
14 result. Given that the average yield for thirty-year public utility bonds at that time was
15 5.67% (as discussed earlier), the growth component and total DCF result for the
16 excluded company amounted to that average bond yield multiplied by 2.35 and by 3.12,
17 respectively. Applying the same ratios to the comparable current average bond yield of
18 4.50% suggests that under current financial market conditions, DCF results should be
19 excluded if they include a growth component of 10.58% or more, or if the total DCF
20 result is 14.04% or more. Consistent with Commission precedent which states that any
21 "natural break" in the distribution of DCF results should also be considered, I have also
22 examined the visual evidence on page 5 of Exhibit C-111.

23 Based on these considerations, I conclude that the DCF result of 14.9% for Great
24 Plains Energy is a high-end outlier. This figure exceeds the 14.04% threshold
25 discussed earlier, and is 220 basis points above the next-highest DCF observation. As
26 such, it is a high-end outlier, and the low-end and high-end DCF results for this
27 company should therefore be excluded from consideration.

28 I would also note, however, that retaining the results for Great Plains Energy
29 would have no material effect on the median ROE result for the Electric Proxy Group.
30 When those results are ranked from lowest to highest and rounded to one-tenth of a
31 percent, the middle three all-round to 8.7%, and are surrounded by other results that

1 round to 8.6% and 8.8%. Decisions as to whether to eliminate or retain Great Plains
2 Energy, and for that matter whether to retain Ameren and PG&E or eliminate them
3 from the low end as I have done, would merely move the median to a different position
4 within this tight cluster. In particular, if Great Plain Energy were retained, the rounded
5 median would not change at all.

6 **Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE**
7 **COMMISSION'S DCF MODEL?**

8 A. The summary results of the FERC DCF model are provided on page 1 of Exhibit C-111.
9 The median, mean, and midpoint of the array of the ROE values for the Electric Proxy
10 Group as identified through the FERC DCF model are 8.7%, 8.7%, and 8.5%,
11 respectively. Given these results, I believe that an ROE of no more than 8.7% is
12 appropriate, and because I believe that the median provides a reliable indicator of the
13 cost of common equity capital in the circumstances presented here, I recommend an
14 ROE of 8.7%.

15 **Q. WHEN YOU SAY THAT THE MEDIAN OF YOUR DCF RESULTS FOR THE**
16 **PROXY GROUP COMPANIES IS 8.7%, HOW ARE YOU CALCULATING**
17 **THE MEDIAN?**

18 A. After eliminating proxy companies for which either of its two preliminary DCF results
19 is a low or a high outlier, I obtain one blended DCF result for each remaining proxy
20 company by averaging the high and low preliminary DCF result for that company. That
21 sequence produces an array of 30 DCF results, one per company. The median of an
22 array containing an even number of results is defined as the average of the two middle
23 results, so in this case the median is the average of the 15th and 16th highest among the
24 30 DCF results. I identify the median by applying the "MEDIAN" function in
25 Microsoft Excel.

1 **Q. WHY DO YOU FOLLOW THAT SEQUENCE, INSTEAD OF FINDING THE**
2 **MEDIAN AMONG THE 60 UNBLENDED DCF RESULTS (TWO PER**
3 **COMPANY, ONE HIGH AND ONE LOW)?**

4 A. For two reasons. One, recent Commission decisions clearly specify that that the
5 sequence I followed is the correct one, and reject the alternative sequence about which
6 you're asking. For example, in Docket No. EL11-13, the applicant transmission owners
7 sponsored direct testimony that applied that alternative sequence, and the Commission
8 explained that the correct sequence was the one that I have followed:

9 [W]e find that AWC Companies did not calculate the median of the
10 zone of reasonableness in a manner consistent with Commission
11 precedent. The Commission has stated that the median is calculated
12 by first averaging the low end ROE and high end ROE results for
13 each member of the proxy group, and then sorting those averages
14 from lowest value to highest value, and selecting the central value in
15 the sequence. Where there is an even number of results, the median
16 is the average of the two central numbers. Instead, AWC Companies
17 calculate the median as the average of the two central numbers in the
18 range, sorted from the lowest value to the highest value that includes
19 the low end ROE result and the high end ROE result for each
20 member of the proxy group. We find that the correct median value
21 based upon AWC Companies' proxy group and DCF data is 10.09
22 percent.

23 *Atlantic Grid Operations A LLC*, 135 FERC ¶61,144 P 90 (2011). *Potomac-*
24 *Appalachian Transmission Highline*, 133 FERC ¶61,152 n.95 (2010) (“*PATH*”)
25 likewise finds the central value by first blending the low and high results for each
26 member of the proxy group, and then sorting those blended results from lowest value to
27 highest value, and selecting the central value in the sequence.

28 The second reason arises from the sequence by which each of the low and high
29 results for each proxy company are calculated (a sequence that is well established in
30 Commission precedent, and followed in my analysis). That sequence pairs each
31 company's higher dividend yields with the higher of its two growth projections. That
32 is, the higher growth factor is applied to the higher preliminary dividend yield to
33 compute the higher growth-adjusted dividend yield, and that higher growth-adjusted
34 dividend yield is then added to the higher growth projection to compute the high result
35 for that proxy. Likewise, the standard computational sequence pairs the lower growth

1 projection with the lower dividend yield. In this way, the computational sequence for
2 finding the low and high results for each proxy company automatically maximizes the
3 difference between those results. In reality, however, the analyst forecasts and other
4 inputs to each of the two growth projections are forecasts for the entire company, not
5 forecasts for a company that had only the past high share prices that produced the low-
6 end dividend yields, nor forecasts for a company that had only the past low share prices
7 that produced the high-end dividend yields. Likewise, the past lower dividend yields
8 reflect past higher prices that in turn reflect relatively optimistic growth expectations,
9 and vice-versa. Consequently, it makes sense to first blend the DCF results within each
10 proxy company before proceeding to find their central value. Skipping that step, and
11 instead relying on the alternative sequence that was rejected in *Atlantic Grid*, would
12 tend to introduce distortion and statistical “noise” that would make the resulting central
13 value a less reliable indicator of the required rate of return on common equity.

14 **Q. WHEN YOU SAY THAT THE MEAN OF YOUR DCF RESULTS FOR THE**
15 **PROXY GROUP COMPANIES IS 8.7%, ARE YOU REPORTING THE MEAN**
16 **OF THE 60 RESULTS (REPRESENTING TWO UNBLENDED RESULTS PER**
17 **COMPANY), OR THE MEAN OF THE 30 RESULTS (ONE BLENDED RESULT**
18 **PER COMPANY)?**

19 A. As with the median, I am reporting the central value that is calculated by first blending
20 (i.e., averaging) the low and high DCF results for each non-outlier proxy company, and
21 finding the central value from the resulting array. That is, I apply the same computation
22 as I did for the median, except that I substitute the “AVERAGE” for the “MEDIAN”
23 function in Microsoft Excel. The reasons I have given above as to the sequence for
24 computing the median apply here as well. In any case, both sequences for calculating
25 the mean lead to the same rounded result in this case, namely 8.7%.

26 **Q. WHEN YOU SAY THAT THE MIDPOINT OF YOUR DCF RESULTS FOR**
27 **THE PROXY GROUP COMPANIES IS 8.5%, HOW ARE YOU**
28 **CALCULATING THE MIDPOINT — IS IT THE MIDPOINT FROM 60**
29 **RESULTS (REPRESENTING TWO UNBLENDED RESULTS PER COMPANY)**

1 **OR THE MIDPOINT FROM 30 RESULTS (ONE BLENDED RESULT PER**
2 **COMPANY)?**

3 A. As with the median and mean, I am reporting the central value that is calculated by first
4 blending (i.e., averaging) the low end ROE and high end ROE results for each non-
5 outlier proxy company, and finding the central value from the resulting array. In this
6 case, because “midpoint” is not a commonly recognized or applied statistical function,
7 there is no “MIDPOINT” function in Microsoft Excel that could be applied. Instead, I
8 use the “MIN” and “MAX” functions to identify the single highest and single lowest
9 values in the array of 30 blended results, and then average those two outside values.

10 **Q. IF YOU HAD SKIPPED THE STEP OF BLENDING THE LOW AND HIGH**
11 **DCF RESULT FOR PROXY COMPANY, WOULD THE MIDPOINT AMONG**
12 **THE 60 RESULTS (REPRESENTING TWO UNBLENDED RESULTS PER**
13 **COMPANY) HAVE BEEN HIGHER OR LOWER THAN THE MIDPOINT OF**
14 **THE 30 RESULTS (REPRESENTING ONE BLENDED RESULT PER**
15 **COMPANY)?**

16 A. Unlike the median and the mean, the midpoint of the 60 unblended results would have
17 been higher than the midpoint of the 30 blended results. Specifically, it would have
18 been 9.3% rather than 8.5%.

19 **Q. IN YOUR OPINION, WOULD IT BE APPROPRIATE TO RELY ON THE**
20 **HIGHER OF THESE TWO MIDPOINTS, NAMELY THE MIDPOINT**
21 **DERIVED FROM 60 UNBLENDED RESULTS, IN IDENTIFYING THE**
22 **REQUIRED RATE OF RETURN ON COMMON EQUITY?**

23 A. No.

24 **Q. WHY NOT?**

25 A. The reasons I have given above as to the sequence for computing the median and mean
26 apply here as well. The Commission’s discussion in *Atlantic Grid* of the proper
27 sequence for identifying the “central value” should be followed whether the “central
28 value” is determined by looking to the median, mean, or midpoint, or any combination
29 of those central values. Skipping the step of blending the DCF results within each

1 proxy company before proceeding to find the central value among all proxy companies’
2 DCF results, and instead relying on the alternative sequence that was rejected in
3 *Atlantic Grid*, would tend to introduce distortion and statistical “noise” that would make
4 the resulting midpoint a less reliable indicator of the required rate of return on common
5 equity. Although I make these observations based on generally-applicable principles of
6 central tendency, I note that they are corroborated by the odd-man-out status of that
7 9.3% result. Of the six computationally feasible ways of finding a central value that we
8 have discussed (median-of-30, median-of-60, mean-of-30, mean-of-60, midpoint-of-30,
9 and midpoint-of-60), the first four ways yield results that are all clustered within about
10 20 basis points of each other, whereas the fifth way yields a result that lies 20 basis
11 points below any of the others and the sixth way yields a result that lies about 50 basis
12 points above any of the others. Consequently, to the extent any reference is made to the
13 midpoint, it should be to the version of the midpoint that lies closer to the four clustered
14 results, namely the midpoint of the 30 results that represent one blended result per
15 company.

16 **Q. BUT IN THE MIDWEST ISO CASE THAT WAS FILED IN 2002, AND THE**
17 **NEW ENGLAND CASE THAT WAS FILED IN 2004, THE COMMISSION**
18 **RELIED ON THE MIDPOINT OF ALL DCF RESULTS, WITHOUT FIRST**
19 **BLENDING THE DCF RESULTS WITHIN EACH PROXY COMPANY. DOES**
20 **COMMISSION PRECEDENT REQUIRE THAT THE BLENDING STEP BE**
21 **SKIPPED HERE?**

22 A. No. First, those cases were decided before *Atlantic Grid* and *PATH*, in which the
23 Commission refined its approach to identifying the final set of DCF results from which
24 the central value should be derived. Those more recent decisions should take
25 precedence. Second, the proxy groups that were relied upon in the Midwest ISO and
26 New England cases were regional, not national. In the 2002 Midwest ISO case, the
27 proxies were restricted to publicly-traded parents of the Midwest ISO transmission
28 owners themselves. In the 2004 New England case, the proxies were restricted to
29 publicly-traded parents of the transmission owners in New England and adjacent
30 northeastern RTO regions. In those cases, the Commission may have viewed reliance

1 on the midpoint as a way to minimize divergence between the region-wide ROE and the
2 cost of common equity capital for any one existing or prospective RTO member. But
3 that consideration does not apply here, where the proxy group is national rather than
4 regional. Here, the highest DCF result among the 60 unblended DCF results is a 12.7%
5 result for UNS Energy Corp. That company is the parent of Tucson Electric. Neither
6 Tucson Electric nor any other UNS Energy Corp. entity owns transmission facilities in
7 New England or the adjacent regions. The outcome of this proceeding therefore will
8 not determine the transmission ROE applicable to those facilities in any event, and there
9 is no reason to consider whether applying an 8.7% transmission ROE to those facilities
10 will result in under-recovery of capital costs. Accordingly, little or no reliance should
11 be placed on a midpoint result that is out of line with the median and mean results.

12 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION THAT AN 8.7%**
13 **RETURN IS APPROPRIATE FOR THE NEW ENGLAND TRANSMISSION**
14 **OWNERS AT THIS TIME.**

15 A. Based on the capital market data I have reviewed and my equity cost rate study, it is my
16 opinion that a base-level ROE of 8.7% is adequate to meet the standards set forth by the
17 Supreme Court in the *Bluefield* and *Hope* which indicate that the ROE should allow a
18 utility to: (1) maintain the financial integrity of the utility, (2) enable the company to
19 attract new capital, and (3) provide a return to common equity that is commensurate
20 with returns on investments in other utilities of corresponding risk. There are several
21 indicators supporting this observation. First, as shown on in Exhibit C-108, the electric
22 utility industry is one of the lowest risk industries as measured by *Value Line*'s beta. As
23 such, this industry has the lowest cost of equity capital in the U.S. Second, as shown in
24 Exhibit C-106, capital costs for utilities, as indicated by long-term bond yields, have
25 declined to historical low levels. Third, the 8.7% figure is supported by the application
26 of the FERC DCF model to the proxy group of electric utilities. As such, the 8.7%
27 figure is consistent with FERC ROE standards. Finally, while the financial markets
28 have recovered somewhat in the past three years, the economy has not. The economic
29 times are still viewed as being difficult, with unemployment high by historical
30 standards. As a result, interest rates and inflation are at relatively low levels, and the

1 expected returns on financial assets — from savings accounts to Treasury bills to
2 common stocks — are low. Therefore, in my opinion, the cost of common equity capital
3 invested in NETOs' transmission investments is low, and an 8.7% return is an
4 appropriate base-level ROE.

5 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

6 A. Yes.

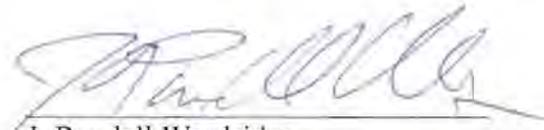
**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ENE et al.)
) Docket No. EL13-
 v.)
)
 Bangor Hydro-Electric Company, et al.)

VERIFICATION

Commonwealth of Pennsylvania)
) ss. State College
County of Centre)

I, J. Randall Woolridge, am submitting this testimony in the above-captioned proceeding for ENE, et al. My business address is 120 Haymaker Circle, State College, PA 16801. I submit this verification to verify that the Prepared Direct Testimony of J. Randall Woolridge was prepared by me with the assistance of others working under my direction and supervision, and that the contents are true to the best of my knowledge, information and belief. Executed in State College, Pennsylvania this 26th day of December 2012.



J. Randall Woolridge

SUBSCRIBED AND SWORN to before me
on this 26th day of December, 2012



Notary Public

My commission expires: 1/31/13

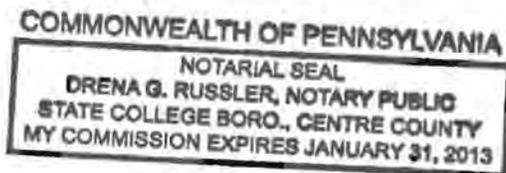


EXHIBIT C-101

Exhibit C-101
Educational Background, Research, and Related Business Experience
J. Randall Woolridge

J. Randall Woolridge is a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed Faculty Fellow in Business Administration in the College of Business Administration of the Pennsylvania State University in University Park, PA. In addition, Professor Woolridge is Director of the Smeal College Trading Room and President and CEO of the Nittany Lion Fund, LLC.

Professor Woolridge received a Bachelor of Arts degree in Economics from the University of North Carolina, a Master of Business Administration degree from the Pennsylvania State University, and a Doctor of Philosophy degree in Business Administration (major area-finance, minor area-statistics) from the University of Iowa. He has taught Finance courses including corporation finance, commercial and investment banking, and investments at the undergraduate, graduate, and executive MBA levels.

Professor Woolridge's research has centered on empirical issues in corporation finance and financial markets. He has published over 35 articles in the best academic and professional journals in the field, including the *Journal of Finance*, the *Journal of Financial Economics*, and the *Harvard Business Review*. His research has been cited extensively in the business press. His work has been featured in the *New York Times*, *Forbes*, *Fortune*, *The Economist*, *Barron's*, *Wall Street Journal*, *Business Week*, *Investors' Business Daily*, *USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest to discuss the implications of his research on CNN's *Money Line*, CNBC's *Morning Call* and *Business Today*, and Bloomberg's *Morning Call*.

Professor Woolridge's stock valuation book, *The StreetSmart Guide to Valuing a Stock* (McGraw-Hill, 2003), was released in its second edition. He has also co-authored *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation, 1999) as well as a textbook entitled *Basic Principles of Finance* (Kendall Hunt, 2011).

Professor Woolridge has also consulted with corporations, financial institutions, and government agencies. In addition, he has directed and participated in university- and company-sponsored professional development programs for executives in 25 countries in North and South America, Europe, Asia, and Africa.

Over the past twenty-five years Dr. Woolridge has prepared testimony and/or provided consultation services in regulatory rate cases in the rate of return area in following states: Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Indiana, Kansas, Kentucky, Massachusetts, Missouri, Nebraska, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Washington, D.C. He has also prepared testimony which was submitted to the Federal Energy Regulatory Commission.

EXHIBIT C-102

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

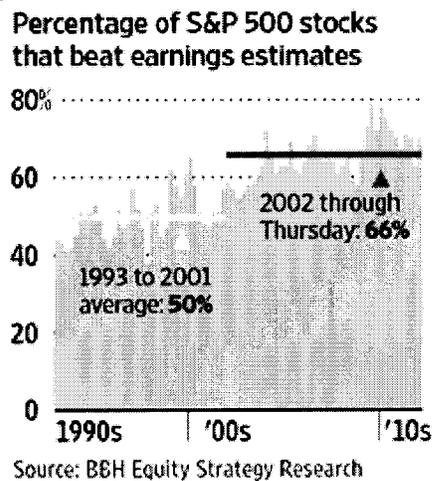
1 Most of the attention given the accuracy of analysts' EPS forecasts comes
2 from media coverage of company's quarterly earnings announcements. When
3 companies' announced earnings beat Wall Street's EPS estimates ("a positive
4 surprise"), their stock prices usually go up. When a company's EPS figure misses or
5 is below Wall Street's forecasted EPS ("A negative surprise"), their stock price
6 usually declines, sometimes precipitously so. Wall Street's estimate is the
7 consensus forecast for quarterly EPS made by analysts who follow the stock as of
8 the announcement date. And so Wall Street's estimate is the consensus EPS made in
9 the days leading up to the EPS announcement.

10 In recent years, it has become more common for companies to beat Wall
11 Street's quarterly EPS estimate. A recent *Wall Street Journal* article summarized the
12 results for the first quarter of 2012: "While this "positive surprise ratio" of 70% is
13 above the 20 year average of 58% and also higher than last quarter's tally, it is just
14 middling since the current bull market began in 2009. In the past decade, the ratio
15 only dipped below 60% during the financial crisis. Look before 2002, though, and
16 70% would have been literally off the chart. From 1993 through 2001, about half
17 of companies had positive surprises.¹ Figure 1 below provides the record for
18 companies beating Wall Street's EPS estimate on a quarterly basis over the past
19 twenty years.

¹ Spencer Jakab, "Earnings Surprises Lose Punch," *Wall Street Journal* (May 7, 2012), p. C1.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1
2
Figure 1
Percent of Companies Beating Wall Street's Quarterly Estimates



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8
A. RESEARCH ON THE ACCURACY OF ANALYSTS' NEAR-TERM EPS ESTIMATES

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17
There is a long history of studies that evaluate how well analysts forecast near-term EPS estimates and long-term EPS growth rates. Most of these studies have evaluated the accuracy of earnings forecasts for the current quarter or year. Many of the early studies indicated that analysts make overly optimistic EPS earnings forecasts for quarter-to-quarter EPS (Stickel (1990); Brown (1997); Chopra (1998)).² More recent studies have shown that the optimistic bias tends to be larger for longer-term forecasts and smaller for forecasts made nearer to the EPS announcement date. Richardson, Teoh, and Wysocki (2004) report that the upward bias in earnings growth rates declines in the quarters leading up to the

² S. Stickel, "Predicting Individual Analyst Earnings Forecasts," *Journal of Accounting Research*, Vol. 28, 409-417, 1990. Brown, L.D., "Analyst Forecasting Errors: Additional Evidence," *Financial Analysts Journal*, Vol. 53, 81-88, 1997, and Chopra, V.K., "Why So Much Error in Analysts' Earnings Forecasts?" *Financial Analysts Journal*, Vol. 54, 30-37 (1998).

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 earnings announcement date.³ They call this result the “walk-down to beatable
2 analyst forecasts.” They hypothesize that the walk-down might be driven by the
3 “earning-guidance game,” in which analysts give optimistic forecasts at the start
4 of a fiscal year, then revise their estimates downwards until the firm can beat the
5 forecasts at the earnings announcement date.

6 However, two regulatory developments over the past decade have
7 potentially impacted analysts’ EPS growth rate estimates. First, Regulation Fair
8 Disclosure (“Reg FD”) was introduced by the Securities and Exchange
9 Commission (“SEC”) in October of 2000. Reg FD prohibits private
10 communication between analysts and management so as to level the information
11 playing field in the markets. With Reg FD, analysts are less dependent on gaining
12 access to management to obtain information and therefore, are not as likely to
13 make optimistic forecasts to gain access to management. Second, the conflict of
14 interest within investment firms with investment banking and analyst operations
15 was addressed in the Global Analysts Research Settlements (“GARS”). GARS,
16 as agreed upon on April 23, 2003, between the SEC, NASD, NYSE and ten of the
17 largest U.S. investment firms, includes a number of regulations that were
18 introduced to prevent investment bankers from pressuring analysts to provide
19 favorable projections.

20 The previously cited *Wall Street Journal* article acknowledged the impact of
21 the new regulatory rules in explaining the recent results:⁴ “ What changed? One

³ S. Richardson, S. Teoh, and P. Wysocki, “The Walk-Down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives,” *Contemporary Accounting Research*, pp. 885–924, (2004).

⁴ Spencer Jakab, “Earnings Surprises Lose Punch,” *Wall Street Journal* (May 7, 2012), p. C1.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 potential reason is the tightening of rules governing analyst contacts with
2 management. Analysts now must rely on publicly available guidance or, gasp,
3 figure things out by themselves. That puts companies, with an incentive to set the
4 bar low so that earnings are received positively, in the driver's seat. While that
5 makes managers look good short-term, there is no lasting benefit for buy-and-hold
6 investors.”

7 These comments on the impact of regulatory developments on the
8 accuracy of short-term EPS estimates was addressed in a study by Hovakimian
9 and Saenyasiri (2010).⁵ The authors investigate analysts’ forecasts of annual
10 earnings for the following time periods: (1) the time prior to Reg FD (1984-2000);
11 (2) the time period after Reg FD but prior to GARS (2000-2002);⁶ and (3) the
12 time period after GARS (2002-2006). For the pre-Reg FD period, Hovakimian
13 and Saenyasiri find that analysts generally make overly optimistic forecasts of
14 annual earnings. The forecast bias is higher for early forecasts and steadily
15 declines in the months leading up to the earnings announcement. The results are
16 similar for the time period after Reg FD but prior to GARS. However, the bias is
17 lower in the later forecasts (the forecasts made just prior to the announcement).
18 For the time period after GARS, the average forecasts declined significantly, but a
19 positive bias remains. In sum, Hovakimian and Saenyasiri find that: (1) analysts
20 make overly optimistic short-term forecasts of annual earnings; (2) Reg FD had

⁵ A. Hovakimian and E. Saenyasiri, “Conflicts of Interest and Analysts Behavior: Evidence from Recent Changes in Regulation,” *Financial Analysts Journal* (July-August, 2010), pp. 96-107.

⁶ Whereas the GARS settlement was signed in 2003, rules addressing analysts’ conflict of interest by separating the research and investment banking activities of analysts went into effect with the passage of NYSE and NASD rules in July of 2002.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 no effect on this bias; and (3) GARS did result in a significant reduction in the
2 bias, but analysts' short-term forecasts of annual earnings still have a small
3 positive bias.

4 **B. RESEARCH ON THE ACCURACY OF ANALYSTS'**
5 **LONG-TERM EPS GROWTH RATE FORECASTS**
6

7 There have been very few studies regarding the accuracy of analysts' long-
8 term EPS growth rate forecasts. Cragg and Malkiel (1968) studied analysts' long-
9 term EPS growth rate forecasts made in 1962 and 1963 by five brokerage houses
10 for 185 firms. They concluded that analysts' long-term earnings growth forecasts
11 are on the whole no more accurate than naive forecasts based on past earnings
12 growth. Harris (1999) evaluated the accuracy of analysts' long-term EPS
13 forecasts over the 1982-1997 time-period using a sample of 7,002 firm-year
14 observations.⁷ He concluded the following: (1) the accuracy of analysts' long-
15 term EPS forecasts is very low; (2) a superior long-run method to forecast long-
16 term EPS growth is to assume that all companies will have an earnings growth
17 rate equal to historic GDP growth; and (3) analysts' long-term EPS forecasts are
18 significantly upwardly biased, with forecasted earnings growth exceeding actual
19 earnings growth by seven percent per annum. Subsequent studies by DeChow, P.,
20 A. Hutton, and R. Sloan (2000), and Chan, Karceski, and Lakonishok (2003) also
21 conclude that analysts' long-term EPS growth rate forecasts are overly optimistic
22 and upwardly biased.⁸ The Chan, Karceski, and Lakonishok (2003) study

⁷ R.D. Harris, "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts," *Journal of Business Finance & Accounting*, pp. 725-55 (June/July 1999).

⁸ P. DeChow, A. Hutton, and R. Sloan, "The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings," *Contemporary Accounting Research* (2000) and K.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 evaluated the accuracy of analysts' long-term EPS growth rate forecasts over the
2 1982-98 time period. They reported a median IBES growth forecast of 14.5%,
3 versus a median realized five-year growth rate of about 9%. They also found the
4 IBES forecasts of EPS beyond two years are not accurate. They concluded the
5 following: "Over long horizons, however, there is little forecastability in earnings,
6 and analysts' estimates tend to be overly optimistic."

7 Lacina, Lee, and Xu (2011) evaluated the accuracy of analysts' long-term
8 earnings growth rate forecasts over the 1983-2003 time period.⁹ The study
9 included 27,081 firm year observations, and compared the accuracy of analysts'
10 EPS forecasts to those produced by two naïve forecasting models: (1) a random
11 walk model ("RW") where the long-term EPS (t+5) is simply equal to last year's
12 EPS figure (t-1); (2) a RW model with drift ("RWGDP"), where the drift or
13 growth rate is GDP growth for period t-1. In this model, long-term EPS (t+5) is
14 simply equal to last year's EPS figure (t-1) times (1 + GDP growth (t-1)). The
15 authors conclude that that using the RW model to forecast EPS in the next 3-5
16 years proved to be just as accurate as using the EPS estimates from analysts' long-
17 term earnings growth rate forecasts. They find that the RWGDP model performs
18 better than the pure RW model, and that both models perform as well as analysts
19 in forecasting long-term EPS. They also discover an optimistic bias in analysts'
20 long-term EPS forecasts. In the authors' opinion, these results indicate that

Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," *Journal of Finance* pp. 643-684, (2003).

⁹ M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 analysts' long-term earnings growth rate forecasts should be used with caution as
2 inputs for valuation and cost of capital purposes.

3
4 **C. ISSUES REGARDING THE SUPERIORITY OF**
5 **ANALYSTS' EPS FORECASTS OVER HISTORIC AND**
6 **TIME-SERIES ESTIMATES OF LONG-TERM EPS GROWTH**
7

8 As highlighted by the classic study by Brown and Rozeff (1976) and the
9 other studies that followed, analysts' forecasts of quarterly earnings estimates are
10 superior to the estimates derived from historic and time-series analyses.¹⁰ This is
11 often attributed to the information and timing advantage that analysts have over
12 historic and time-series analyses. These studies relate to analysts' forecasts of
13 quarterly and/or annual forecasts, and not to long-term EPS growth rate forecasts.
14 The previously cited studies by Harris (1999), Chan, Karceski, and Lakonishok
15 (2003), and Lacina, Lee, and Xu (2011) all conclude that analysts' forecasts are
16 no better than time-series models and historic growth rates in forecasting long-
17 term EPS. Harris (1999) and Lacina, Lee, and Xu (2011) concluded that historic
18 GDP growth was superior to analysts' forecasts for long run earnings growth.
19 These overall results are similar to the findings by Bradshaw, Drake, Myers, and
20 Myers (2009) that discovered that time-series estimates of annual earnings are
21 more accurate over longer horizons than analysts' forecasts of earnings. As the
22 authors state, "These findings suggest an incomplete and misleading

¹⁰ L. Brown and M. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings," *The Journal of Finance* 33 (1): pp. 1-16 (1976).

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 generalization about the superiority of analysts' forecasts over even simple time-
2 series-based earnings forecasts.”¹¹

**D. STUDY OF THE ACCURACY OF ANALYSTS'
LONG-TERM EARNINGS GROWTH RATES**

3
4
5
6 To evaluate the accuracy of analysts' EPS forecasts, I have compared
7 actual 3-5 year EPS growth rates with forecasted EPS growth rates on a quarterly
8 basis over the past 20 years for all companies covered by the I/B/E/S data base.
9 In Panel A of page 1 of Exhibit SC-103, I show the average analysts' forecasted
10 3-5 year EPS growth rate with the average actual 3-5 year EPS growth rate for the
11 past twenty years.

12 The following example shows how the results can be interpreted. For the
13 3-5 year period prior to the first quarter of 1999, analysts had projected an EPS
14 growth rate of 15.13%, but companies only generated an average annual EPS
15 growth rate over the 3-5 years of 9.37%. This projected EPS growth rate figure
16 represented the average projected growth rate for over 1,510 companies, with an
17 average of 4.88 analysts' forecasts per company. For the entire twenty-year
18 period of the study, for each quarter there were on average 5.6 analysts' EPS
19 projections for 1,281 companies. Overall, my findings indicate that forecast errors
20 for long-term estimates are predominantly positive, which indicates an upward
21 bias in growth rate estimates. The mean and median forecast errors over the
22 observation period are 143.06% and 75.08%, respectively. The forecasting errors
23 are negative for only eleven of the eighty quarterly time periods: five consecutive

¹¹ M. Bradshaw, M. Drake, J. Myers, and L. Myers, “A Re-examination of Analysts' Superiority Over Time-Series Forecasts,” Workings paper, (1999), <http://ssrn.com/abstract=1528987>.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 quarters starting at the end of 1995 and six consecutive quarters starting in 2006.
2 As shown in Panel A of page 1 of Exhibit SC-103, the quarters with negative
3 forecast errors were for the 3-5 year periods following earnings declines
4 associated with the 1991 and 2001 economic recessions in the U.S. Thus, there is
5 evidence of a persistent upward bias in long-term EPS growth forecasts.

6 The average 3-5 year EPS growth rate projections for all companies
7 provided in the I/B/E/S database on a quarterly basis from 1988 to 2008 are
8 shown in Panel B of page 1 of Exhibit SC-103. In this graph, no comparison to
9 actual EPS growth rates is made, and hence, there is no follow-up period.
10 Therefore, since companies are not lost from the sample due to a lack of follow-
11 up EPS data, these results are for a larger sample of firms. The average projected
12 growth rate increased to the 18.0% range in 2006, and have since decreased to
13 about 14.0%.

14 The upward bias in analysts' long-term EPS growth rate forecasts appears to
15 be known in the markets. Page 2 of Exhibit SC-103 provides an article published in
16 the *Wall Street Journal*, dated March 21, 2008, that discusses the upward bias in
17 analysts' EPS growth rate forecasts.¹² In addition, a recent *Bloomberg Businessweek*
18 article also highlighted the upward bias in analysts' EPS forecasts, citing a study by
19 McKinsey Associates. This article is provided on pages 3 and 4 of Exhibit SC-103.
20 The article concludes with the following:¹³

¹² Andrew Edwards, "Study Suggests Bias in Analysts' Rosy Forecasts," *Wall Street Journal* (March 21, 2008), p. C6.

¹³ Roben Farzad, 'For Analysts, Things are Always Looking Up,' *Bloomberg Businessweek* (June 14, 2010), pp. 39-40.

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 ***The bottom line:*** *Despite reforms intended to improve Wall Street research, stock*
2 *analysts seem to be promoting an overly rosy view of profit prospects.*

3
4 **E. REGULATORY DEVELOPMENTS AND THE ACCURACY**
5 **OF ANALYSTS' LONG-TERM EARNINGS GROWTH RATES FORECASTS**

6
7
8 Whereas Hovakimian and Saenyasiri evaluated the impact of regulations
9 on analysts' short-term EPS estimates, there is little research on the impact of Reg
10 FD and GARS on the long-term EPS forecasts of Wall Street analysts. My study
11 with Patrick Cusatis did find that the long-term EPS growth rate forecasts of
12 analysts did not decline significantly and have continued to be overly-optimistic
13 in the post Reg FD and GARS period.¹⁴ Analysts' long-term EPS growth rate
14 forecasts before and after GARS are about two times the level of historic GDP
15 growth. These observations are supported by a *Wall Street Journal* article entitled
16 “Analysts Still Coming Up Rosy – Over-Optimism on Growth Rates is Rampant –
17 and the Estimates Help to Buoy the Market's Valuation.” The following quote
18 provides insight into the continuing bias in analysts' forecasts:

19 Hope springs eternal, says Mark Donovan, who manages
20 Boston Partners Large Cap Value Fund. “You would have
21 thought that, given what happened in the last three years,
22 people would have given up the ghost. But in large measure
23 they have not.

24 These overly optimistic growth estimates also show that,
25 even with all the regulatory focus on too-bullish analysts
26 allegedly influenced by their firms' investment-banking

¹⁴ P. Cusatis and J. R. Woolridge, “The Accuracy of Analysts' Long-Term EPS Growth Rate Forecasts,” Working Paper, (July 2008).

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 relationships, a lot of things haven't changed. Research
2 remains rosy and many believe it always will.¹⁵

3
4 These observations are echoed in a recent McKinsey study entitled
5 “Equity Analysts: Still too Bullish” which involved a study of the accuracy on
6 analysts long-term EPS growth rate forecasts. The authors conclude that after a
7 decade of stricter regulation, analysts’ long-term earnings forecasts continue to be
8 excessively optimistic. They made the following observation (emphasis added):¹⁶

9 Alas, a recently completed update of our work only reinforces this view—
10 despite a series of rules and regulations, dating to the last decade, that
11 were intended to improve the quality of the analysts’ long-term earnings
12 forecasts, restore investor confidence in them, and prevent conflicts of
13 interest. For executives, many of whom go to great lengths to satisfy Wall
14 Street’s expectations in their financial reporting and long-term strategic
15 moves, this is a cautionary tale worth remembering. This pattern confirms
16 our earlier findings that analysts typically lag behind events in revising
17 their forecasts to reflect new economic conditions. When economic
18 growth accelerates, the size of the forecast error declines; when economic
19 growth slows, it increases. So as economic growth cycles up and down,
20 the actual earnings S&P 500 companies report occasionally coincide with
21 the analysts’ forecasts, as they did, for example, in 1988, from 1994 to
22 1997, and from 2003 to 2006. Moreover, analysts have been persistently
23 overoptimistic for the past 25 years, with estimates ranging from 10 to 12
24 percent a year, compared with actual earnings growth of 6 percent. Over
25 this time frame, actual earnings growth surpassed forecasts in only two
26 instances, both during the earnings recovery following a recession. On
27 average, analysts’ forecasts have been almost 100 percent too high.

28
29
30 **F. ANALYSTS’ LONG-TERM EPS GROWTH RATE**
31 **FORECASTS FOR UTILITY COMPANIES**

¹⁵ Ken Brown, “Analysts Still Coming Up Rosy – Over-Optimism on Growth Rates is Rampant – and the Estimates Help to Buoy the Market’s Valuation,” *Wall Street Journal*, p. C1, (January 27, 2003).

¹⁶ Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, “Equity Analysts, Still Too Bullish,” *McKinsey on Finance*, pp. 14-17, (Spring 2010).

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1
2 To evaluate whether analysts' EPS growth rate forecasts are upwardly
3 biased for utility companies, I conducted a study similar to the one described
4 above using a group of electric utility and gas distribution companies. The results
5 are shown on Panels A and B of page 5 of Exhibit SC-103. The projected EPS
6 growth rates for electric utilities have been in the 4% to 6% range over the last
7 twenty years, with the recent figures approximately 5%. As shown, the achieved
8 EPS growth rates have been volatile and on average, below the projected growth
9 rates. Over the entire period, the average quarterly 3-5 year projected and actual
10 EPS growth rates are 4.59% and 2.90%, respectively.

11 For gas distribution companies, the projected EPS growth rates have
12 declined from about 6% in the 1990s to about 5% in the 2000s. The achieved
13 EPS growth rates have been volatile. Over the entire period, the average quarterly
14 3-5 year projected and actual EPS growth rates are 5.15% and 4.53%,
15 respectively.

16 Overall, the upward bias in EPS growth rate projections for electric utility
17 and gas distribution companies is not as pronounced as it is for all companies.
18 Nonetheless, the results here are consistent with the results for companies in
19 general -- analysts' projected EPS growth rate forecasts are upwardly-biased for
20 utility companies.

21
22 **G. VALUE LINE'S LONG-TERM EPS GROWTH RATE FORECASTS**

Exhibit C-102
The Research on Analysts' Long-Term EPS Growth Rate Forecasts

1 To assess *Value Line*'s earnings growth rate forecasts, I used the *Value*
2 *Line Investment Analyzer*. The results are summarized in Panel A of Page 6 of
3 Exhibit SC-103. I initially filtered the database and found that *Value Line* has 3-5
4 year EPS growth rate forecasts for 2,333 firms. The average projected EPS
5 growth rate was 14.70%. This is high given that the average historical EPS
6 growth rate in the U.S. is about 7%. A major factor seems to be that *Value Line*
7 only predicts negative EPS growth for 43 companies. This is less than two
8 percent of the companies covered by *Value Line*. Given the ups and downs of
9 corporate earnings, this is unreasonable.

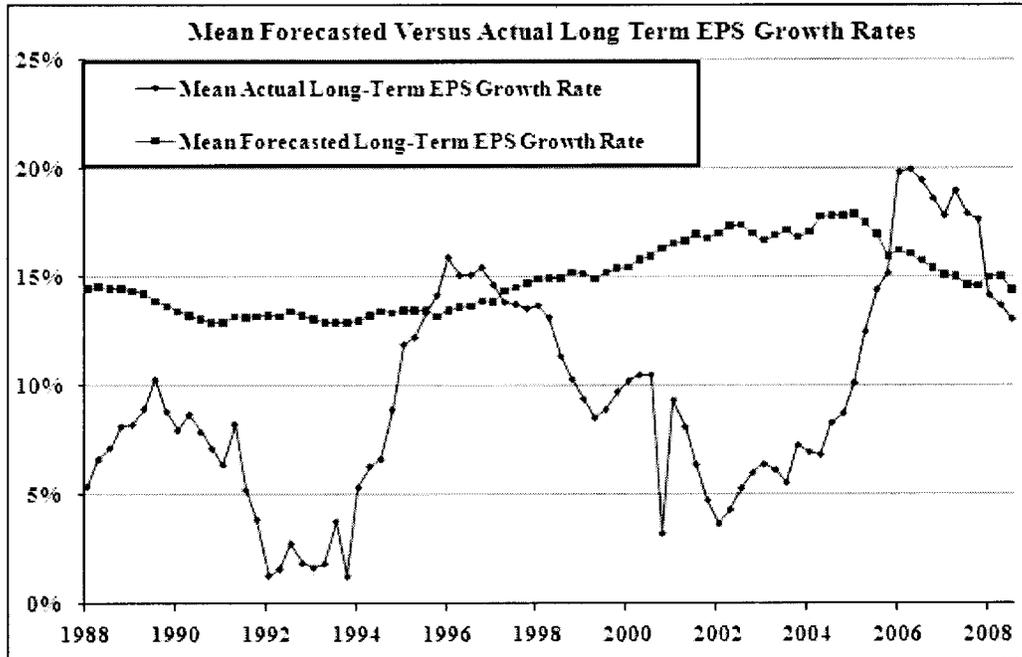
10 To put this figure in perspective, I screened the *Value Line* companies to
11 see what percent of companies covered by *Value Line* had experienced negative
12 EPS growth rates over the past five years. *Value Line* reported a five-year historic
13 growth rate for 2,219 companies. The results are shown in Panel B of page 6 of
14 Exhibit SC-103 and indicate that the average 5-year historic growth rate was
15 3.90%, and *Value Line* reported negative historic growth for 844 firms which
16 represents 38.0% of these companies.

17 These results indicate that *Value Line*'s EPS forecasts are excessive and
18 unrealistic. It appears that the analysts at *Value Line* are similar to their Wall
19 Street brethren in that they are reluctant to forecast negative earnings growth.

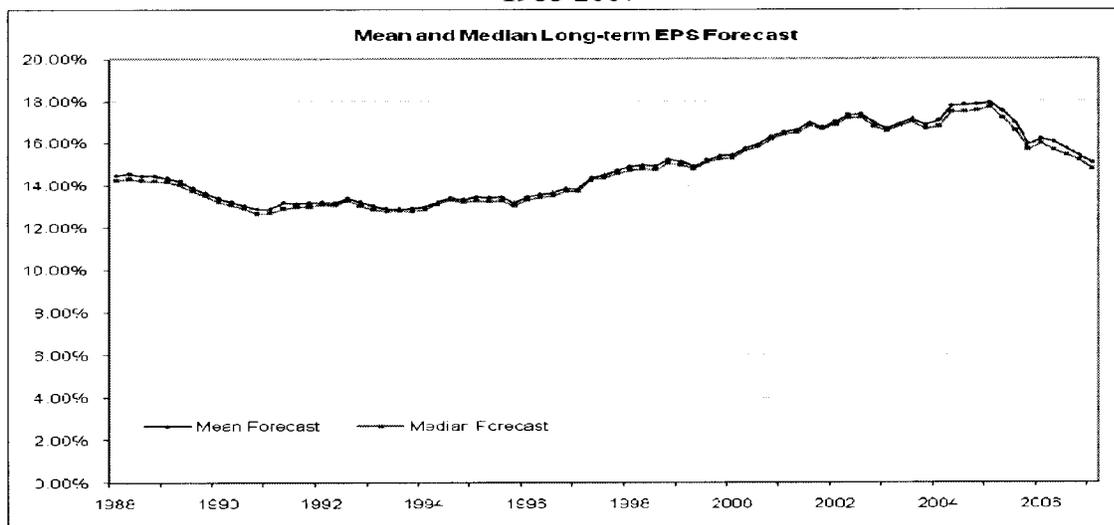
20

EXHIBIT C-103

Panel A
Long-Term Forecasted Versus Actual EPS Growth Rates
1988-2009



Panel B
Long-Term Forecasted EPS Growth Rates
1988-2007



Source: Patrick J. Cusatis and J. Randall Woolridge, "The Accuracy of Analysts' Long-Term Earnings Per Share Growth Rate Forecasts," (July, 2008).

THE WALL STREET JOURNAL.

Study Suggests Bias in Analysts' Rosy Forecasts

By **ANDREW EDWARDS**

March 21, 2008; Page C6

Despite an economy teetering on the brink of a recession -- if not already in one -- analysts are still painting a rosy picture of earnings growth, according to a study done by Penn State's Smeal College of Business.

The report questions analysts' impartiality five years after then-New York Attorney General Eliot Spitzer forced analysts to pay \$1.5 billion in damages after finding evidence of bias.

"Wall Street analysts basically do two things: recommend stocks to buy and forecast earnings," said J. Randall Woolridge, professor of finance. "Previous studies suggest their stock recommendations do not perform well, and now we show that their long-term earnings-per-share growth-rate forecasts are excessive and upwardly biased."

The report, which examined analysts' long-term (three to five years) and one-year per-share earnings expectations from 1984 through 2006 found that companies' long-term earnings growth surpassed analysts' expectations in only two instances, and those came right after recessions.

Over the entire time period, analysts' long-term forecast earnings-per-share growth averaged 14.7%, compared with actual growth of 9.1%. One-year per-share earnings expectations were slightly more accurate: The average forecast was for 13.8% growth and the average actual growth rate was 9.8%.

"A significant factor in the upward bias in long-term earnings-rate forecasts is the reluctance of analysts to forecast" profit declines, Mr. Woolridge said. The study found that nearly one-third of all companies experienced profit drops over successive three-to-five-year periods, but analysts projected drops less than 1% of the time.

The study's authors said, "Analysts are rewarded for biased forecasts by their employers, who want them to hype stocks so that the brokerage house can garner trading commissions and win underwriting deals."

They also concluded that analysts are under pressure to hype stocks to generate trading commissions, and they often don't follow stocks they don't like.

Write to Andrew Edwards at andrew.edwards@dowjones.com

Markets & Finance June 10, 2010, 5:00PM EST

Bloomberg Businessweek

For Analysts, Things Are Always Looking Up

They're raising earnings estimates for U.S. companies at a record pace

By Roben Farzad

For years, the rap on Wall Street securities analysts was that they were skills, reflexively producing upbeat research on companies they cover to help their employers win investment banking business. The dynamic was well understood: Let my bank take your company public, or advise it on this acquisition, and—wink, wink—I will recommend your stock through thick or thin. After the Internet bubble burst, that was supposed to change. In April 2003 the Securities & Exchange Commission reached a settlement with 10 Wall Street firms in which they agreed, among other things, to separate research from investment banking.

Seven years on, Wall Street analysts remain a decidedly optimistic lot. Some economists look at the global economy and see troubles—the European debt crisis, persistently high unemployment worldwide, and housing woes in the U.S. Stock analysts as a group seem unfazed. Projected 2010 profit growth for companies in the Standard & Poor's 500-stock index has climbed seven percentage points this quarter, to 34 percent, data compiled by Bloomberg show. According to Sanford C. Bernstein (AB), that's the fastest pace since 1980, when the Dow Jones industrial average was quoted in the hundreds and Nancy Reagan was getting ready to order new window treatments for the Oval Office.

Among the companies analysts expect to excel, Intel (INTL) is projected to post an increase in net income of 142 percent this year. Caterpillar, a multinational that gets much of its revenue abroad, is expected to boost its net income by 47 percent this year. Analysts have also hiked their S&P 500 profit estimate for 2011 to \$95.53 a share, up from \$92.45 at the beginning of January, according to Bloomberg data. That would be a record, surpassing the previous high reached in 2007.

With such prospects, it's not surprising that more than half of S&P 500-listed stocks boast overall buy ratings. It is telling that the proportion has essentially held constant at both the market's October 2007 high and March 2009 low, bookends of a period that saw stocks fall by more than half. If the analysts are correct, the market would appear to be attractively priced right now. Using the \$95.53 per share figure, the price-to-earnings ratio of the S&P 500 is a modest 11 as of June 9. If, however, analysts end up being too high by, say, 20 percent, the P/E would jump to almost 14.

If history is any guide, chances are good that the analysts are wrong. According to a recent McKinsey report by Marc Goedhart, Rishi Raj, and Abhishek Saxena, "Analysts have been persistently over-optimistic for 25 years," a stretch that saw them peg earnings growth at 10 percent to 12 percent a year when the actual number was ultimately 6 percent. "On average," the researchers note, "analysts' forecasts have been almost 100 percent too high," even after regulations were enacted to weed out conflicts and improve the rigor of their calculations. As the chart below shows, in most years analysts have been forced to lower their estimates after it became apparent they had set them too high.

Analysts' Long-Term Projected EPS Growth Rate Analysis

While a few analysts, like Meredith Whitney, have made their names on bearish calls, most are chronically bullish. Part of the problem is that despite all the reforms they remain too aligned with the companies they cover. "Analysts still need to get the bulk of their information from companies, which have an incentive to be over-optimistic," says Stephen Bambridge, a professor at UCLA Law School who specializes in the securities industry. "Meanwhile, analysts don't want to threaten that ongoing access by being too negative." Bambridge says that with the era of the overpaid, superstar analyst long over, today's job description calls for resisting the urge to be an iconoclast. "It's a matter of herd behavior," he says.

So what's a more plausible estimate of companies' earning power? Looking at factors including the strengthening dollar, which hurts exports, and higher corporate borrowing costs, David Rosenberg, chief economist at Toronto-based investment shop Gluskin Sheff + Associates, says "disappointment looms." Bernstein's Adam Parker says every 10 percent drop in the value of the euro knocks U.S. corporate earnings down by 2.5 percent to 3 percent. He sees the S&P 500 earning \$86 a share next year.

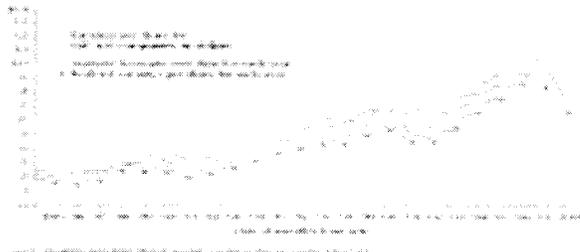
As realities hit home, "It's only natural that analysts will have to revise down their views," says Todd Salamone, senior vice-president at Schaeffer's Investment Research. The market may be making its own downward adjustment, as the S&P 500 has already fallen 14 percent from its high in April. If precedent holds, analysts are bound to curb their enthusiasm belatedly, telling us next year what we really needed to know this year.

The bottom line: Despite reforms intended to improve Wall Street research, stock analysts seem to be promoting an overly rosy view of profit prospects.

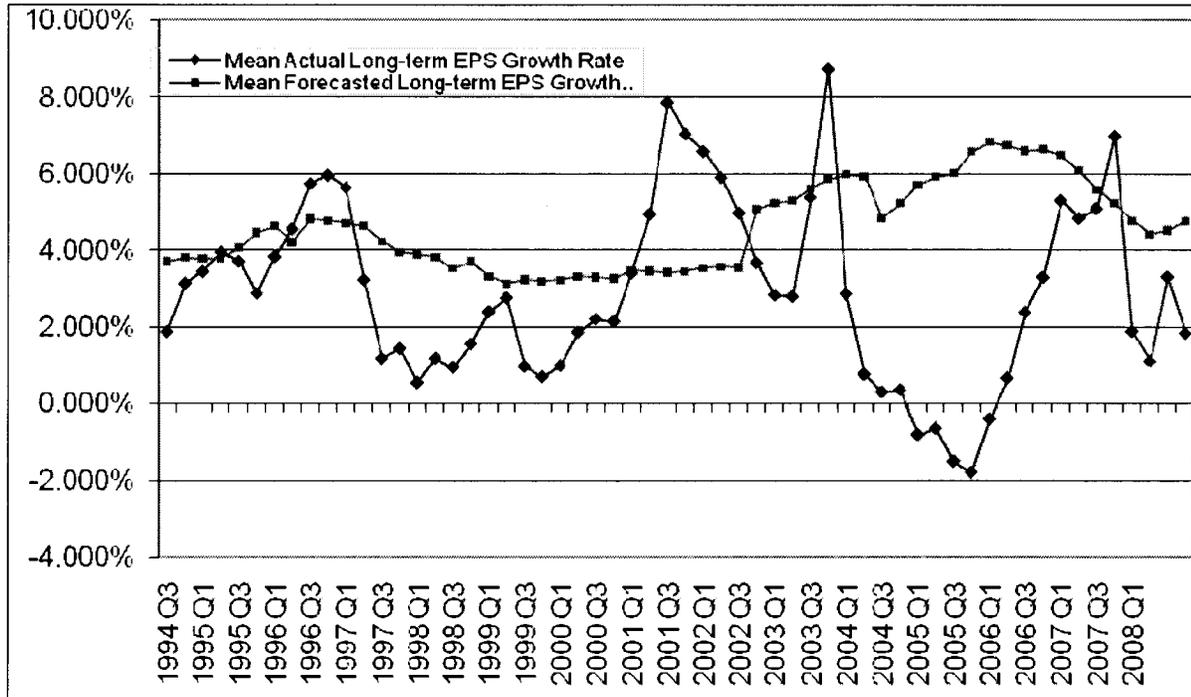
Bloomberg Businessweek Senior Writer Farzad covers Wall Street and international finance.

The Earnings Roller Coaster

Analysts have a long history of overestimating future profits. As this chart from McKinsey shows, analysts' estimates tend to start high and ratchet their estimates downward. The companies get closer to releasing their results, initial estimates proved to be too high as early as two weeks

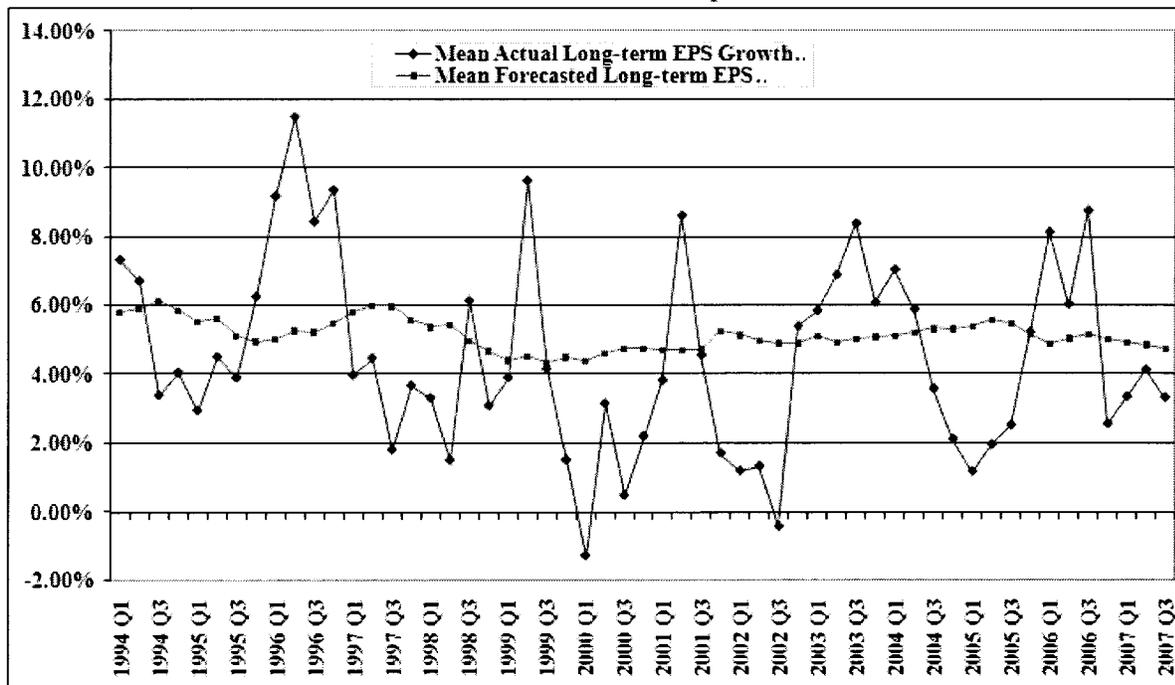


Panel A
Long-Term Forecasted Versus Actual EPS Growth Rates
Electric Utility Companies
1988-2008



Data Source: IBES

Panel B
Long-Term Forecasted Versus Actual EPS Growth Rates
Gas Distribution Companies



Panel A

Value Line 3-5 year EPS Growth Rate Forecasts

	Average Projected EPS Growth rate	Number of Negative EPS Growth Projections	Percent of Negative EPS Growth Projections
2,333 Companies	14.70%	43	1.80%

Value Line Investment Survey, June, 2012

Panel B

Historical Five-Year EPS Growth Rates for Value Line Companies

	Average Historical EPS Growth rate	Number with Negative Historical EPS Growth	Percent with Negative Historical EPS Growth
2,219 Companies	3.90%	844	38.00%

Value Line Investment Survey, June, 2012

EXHIBIT C-104

Exhibit C-104
New England Transmission Owner's ROE

Summary of ROE Results

FERC DCF Model	
Mean	8.7%
Median	8.7%
Midpoint of Range	8.5%

EXHIBIT C-105

Exhibit C-105

Panel A
Ten-Year Treasury Yields
2004, 2006, 2012

Jul-04	4.5	Mar-06	4.7	Jun-12	1.6
Aug-04	4.3	Apr-06	5.0	Jul-12	1.5
Sep-04	4.1	May-06	5.1	Aug-12	1.7
Oct-04	4.1	Jun-06	5.1	Sep-12	1.7
Nov-04	4.2	Jul-06	5.1	Oct-12	1.8
Dec-04	4.2	Aug-06	4.9	Nov-12	1.7
Average	4.2		5.0		1.7

Data Source: FRB of St. Louis, FRED Economic Data

Panel B
Moody's Long-Term, A-Rated, Public Utility Bond Yields
2004, 2006, 2012

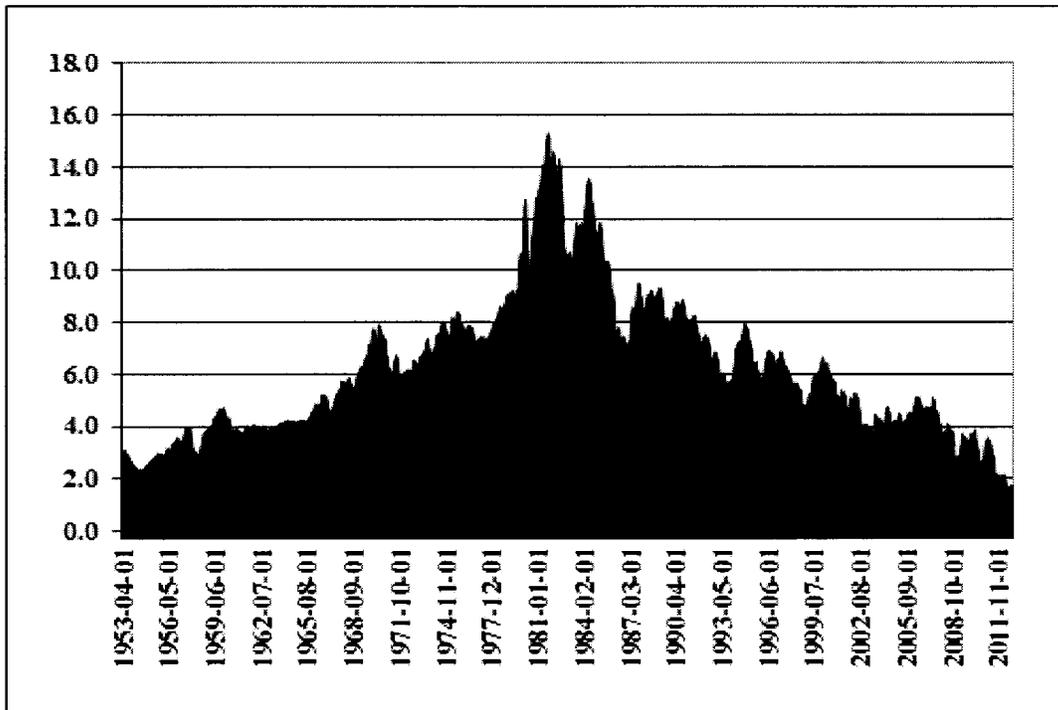
Jul-04	6.3	Mar-06	6.0	Jun-12	4.1
Aug-04	6.1	Apr-06	6.3	Jul-12	3.9
Sep-04	6.0	May-06	6.4	Aug-12	4.0
Oct-04	5.9	Jun-06	6.4	Sep-12	4.0
Nov-04	6.0	Jul-06	6.4	Oct-12	3.9
Dec-04	5.9	Aug-06	6.2	Nov-12	3.8
Average	6.0		6.3		4.0

Data Source: Mergent Bond Record

EXHIBIT C-106

Exhibit C-106

Panel A
Ten-Year Treasury Yields
1953-Present



Panel B
Long-Term Moody's Baa Yields Minus Ten-Year Treasury Yields
2000-Present

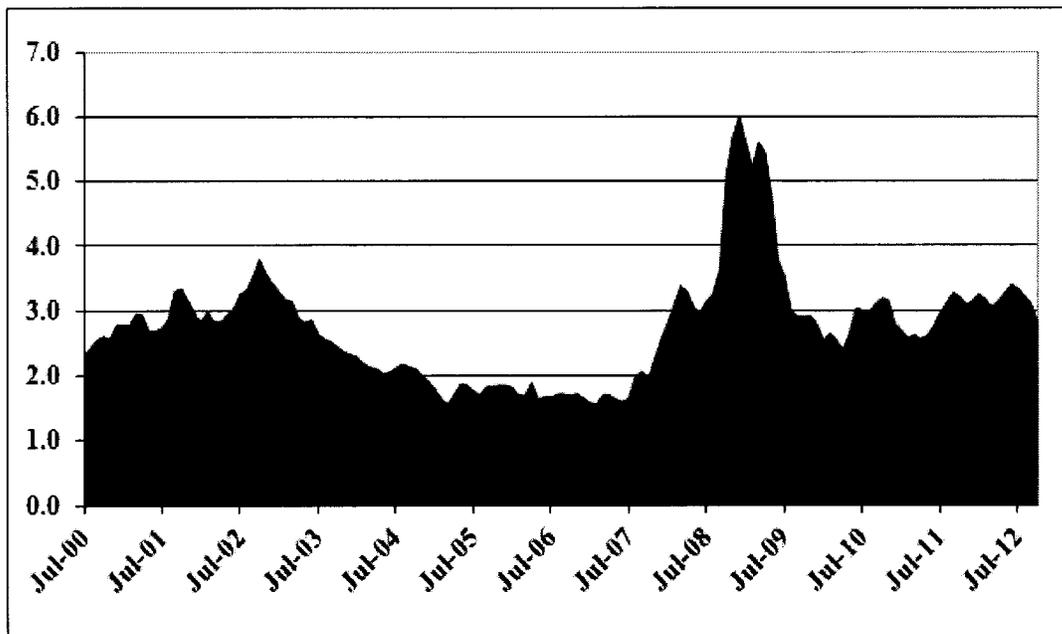
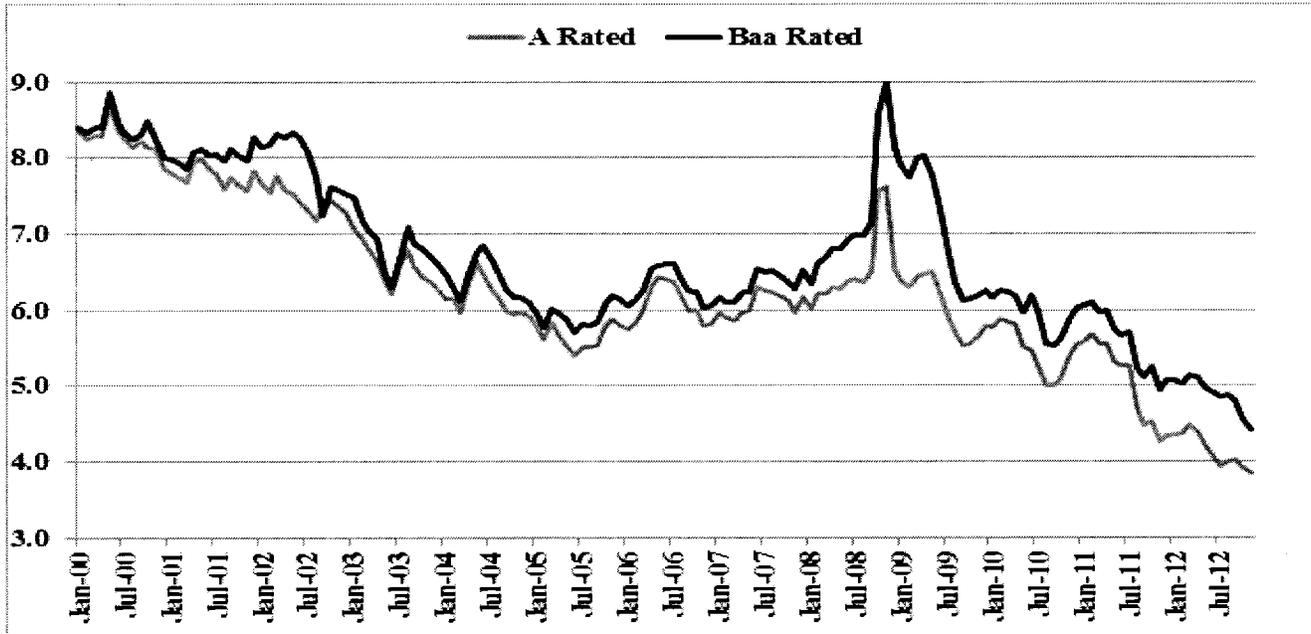
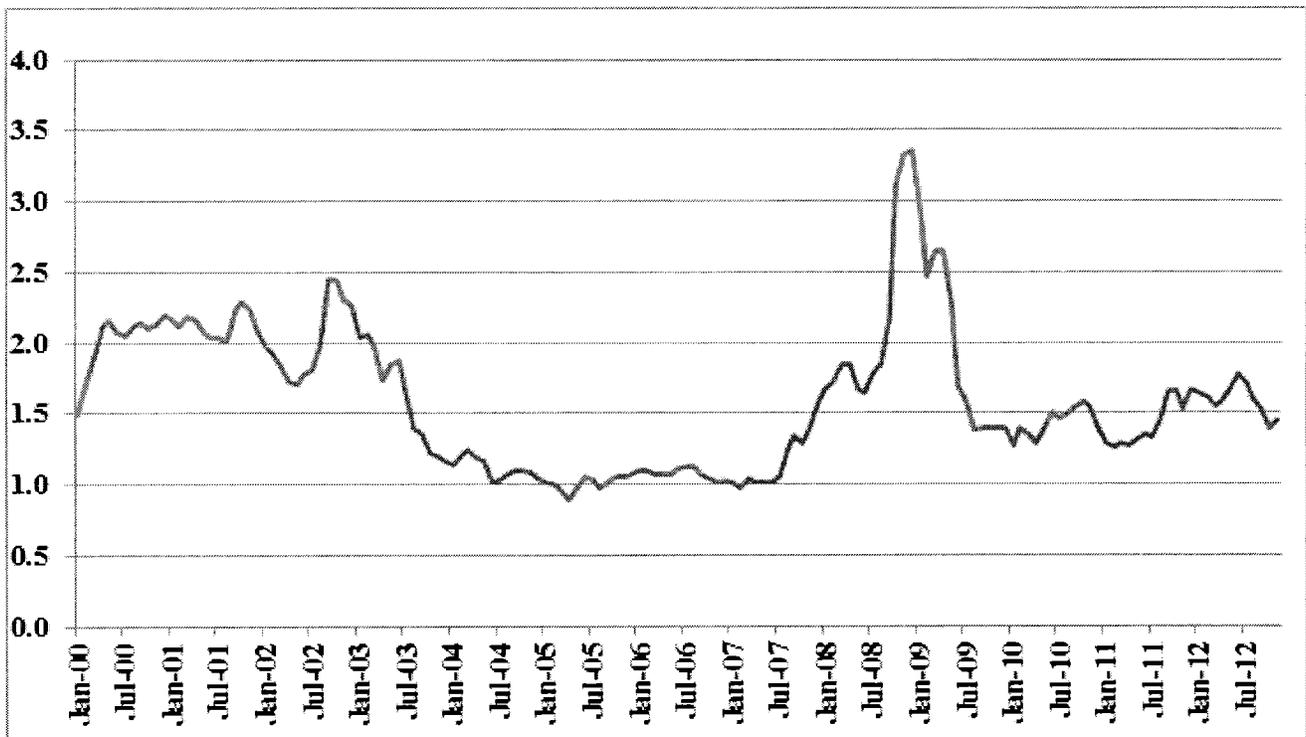


Exhibit C-106
 Panel A
 Moody's Long-Term Public Utility Bond Yields
 2000-2012



Source: Mergent Bond Record

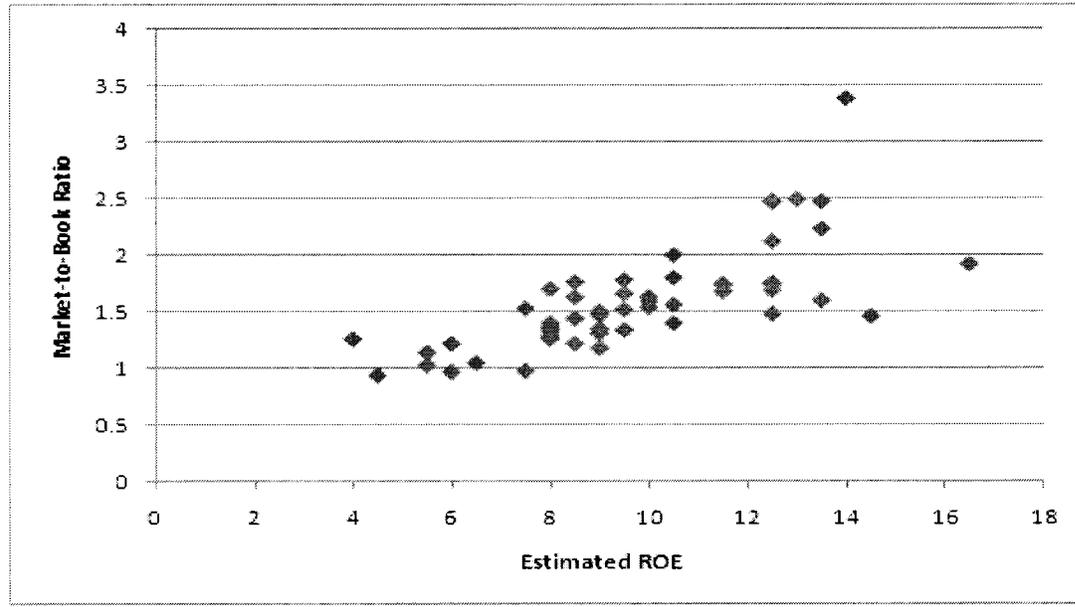
Panel B
 Moody's Long-Term, A-Rated Public Utility Bond Yields Minus Twenty-Year Treasury Bond Yields



Source: Mergent Bond Record, FRB of St. Louis, FRED Economic Data

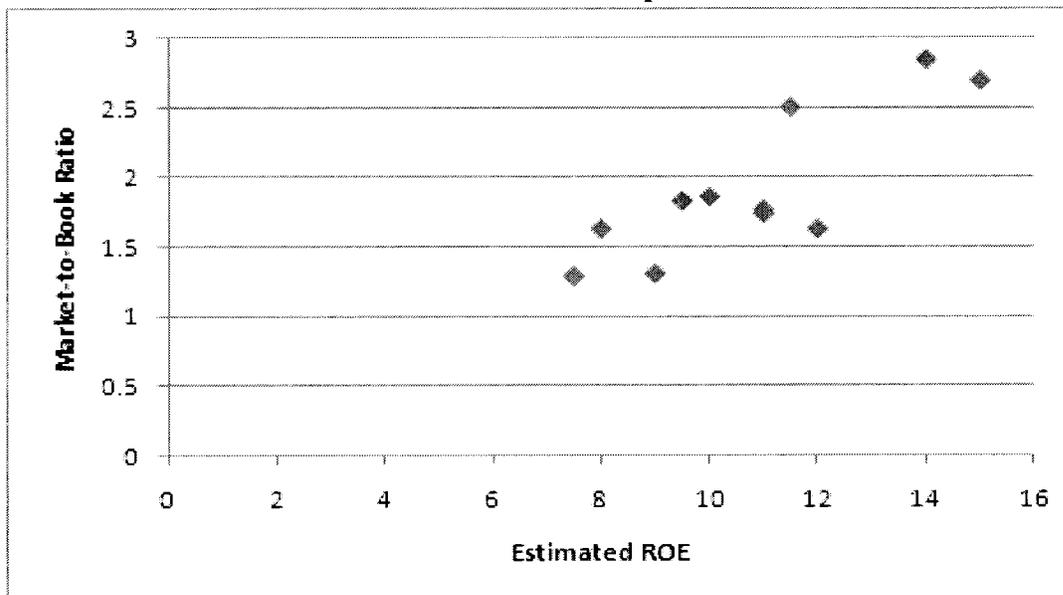
EXHIBIT C-107

Exhibit C-107
Panel A
Electric Utilities



R-Square = .52, N=51.

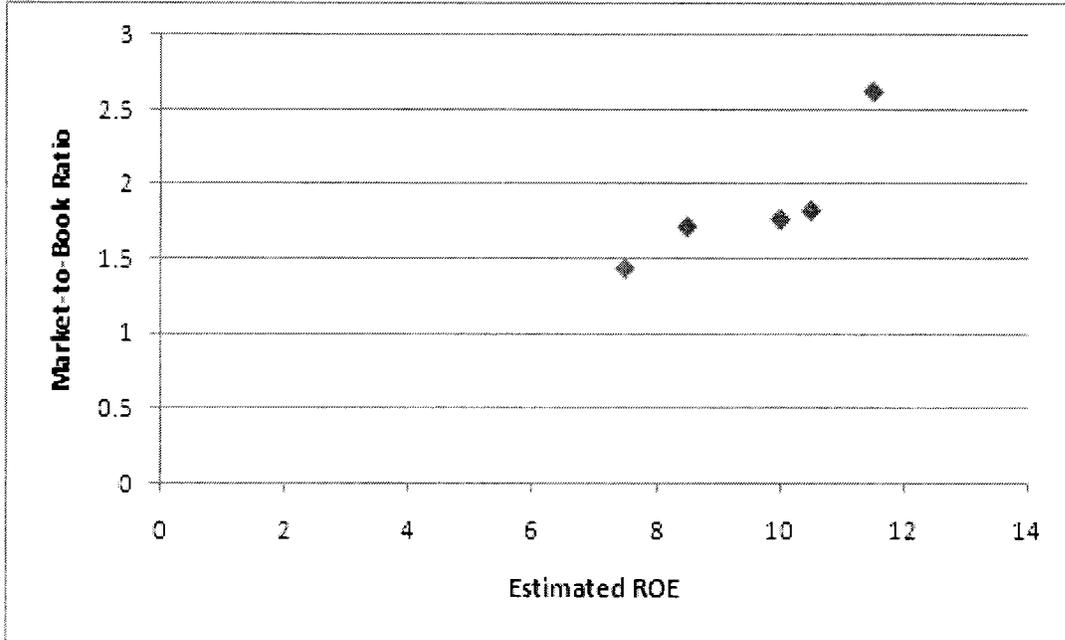
Panel B
Gas Distribution Companies



R-Square = .71, N=11.

Exhibit C-107

Panel C
Water Utility Companies



R-Square = .77, N=5.

EXHIBIT C-108

Exhibit C-108

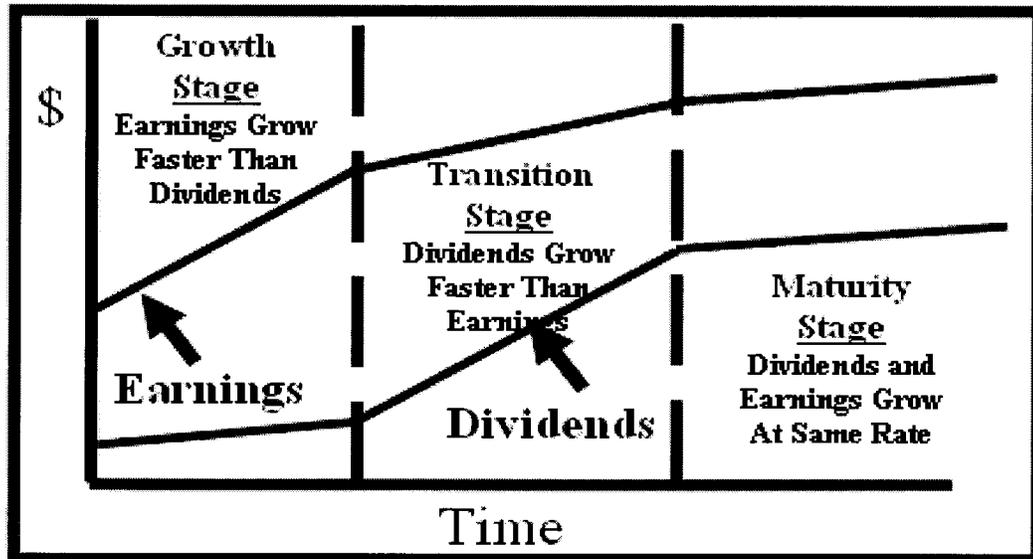
Industry Average Betas

Industry Name	No.	Beta	Industry Name	No.	Beta	Industry Name	No.	Beta
Public/Private Equity	11	2.18	Natural Gas (Div.)	29	1.33	IT Services	60	1.06
Advertising	31	2.02	Financial Svcs. (Div.)	225	1.31	Retail Building Supply	8	1.04
Furn/Home Furnishings	35	1.81	Toiletries/Cosmetics	15	1.30	Computer Software	184	1.04
Heavy Truck & Equip	21	1.80	Apparel	57	1.30	Med Supp Non-Invasiv	146	1.03
Semiconductor Equip	12	1.79	Computers/Peripherals	87	1.30	Biotechnology	158	1.03
Retail (Hardlines)	75	1.77	Retail Store	37	1.29	E-Commerce	57	1.03
Newspaper	13	1.76	Chemical (Specialty)	70	1.28	Telecom. Equipment	99	1.02
Hotel/Gaming	51	1.74	Precision Instrument	77	1.28	Pipeline MLPs	27	0.98
Auto Parts	51	1.70	Wireless Networking	57	1.27	Telecom. Services	74	0.98
Steel	32	1.68	Restaurant	63	1.27	Oil/Gas Distribution	13	0.96
Entertainment	77	1.63	Shoe	19	1.25	Utility (Foreign)	4	0.96
Metal Fabricating	24	1.59	Publishing	24	1.25	Industrial Services	137	0.93
Automotive	12	1.59	Trucking	36	1.24	Bank (Midwest)	45	0.93
Insurance (Life)	30	1.58	Human Resources	23	1.24	Reinsurance	13	0.93
Oilfield Svcs/Equip.	93	1.55	Entertainment Tech	40	1.23	Food Processing	112	0.91
Coal	20	1.53	Engineering & Const	25	1.22	Medical Services	122	0.91
Chemical (Diversified)	31	1.51	Air Transport	36	1.21	Insurance (Prop/Cas.)	49	0.91
Building Materials	45	1.50	Machinery	100	1.20	Beverage	34	0.88
Semiconductor	141	1.50	Securities Brokerage	28	1.20	Telecom. Utility	25	0.88
R.E.I.T.	5	1.47	Petroleum (Integrated)	20	1.18	Tobacco	11	0.85
Homebuilding	23	1.45	Healthcare Information	25	1.17	Med Supp Invasive	83	0.85
Recreation	56	1.45	Packaging & Container	26	1.16	Educational Services	34	0.83
Railroad	12	1.44	Precious Metals	84	1.15	Environmental	82	0.81
Retail (Softlines)	47	1.44	Diversified Co.	107	1.14	Bank	426	0.77
Maritime	52	1.40	Funeral Services	6	1.14	Electric Util. (Central)	21	0.75
Office Equip/Supplies	24	1.38	Property Management	31	1.13	Electric Utility (West)	14	0.75
Cable TV	21	1.37	Pharmacy Services	19	1.12	Retail/Wholesale Food	30	0.75
Retail Automotive	20	1.37	Drug	279	1.12	Thrift	148	0.71
Chemical (Basic)	16	1.36	Aerospace/Defense	64	1.10	Electric Utility (East)	21	0.70
Paper/Forest Products	32	1.36	Foreign Electronics	9	1.09	Natural Gas Utility	22	0.66
Power	93	1.35	Internet	186	1.09	Water Utility	11	0.66
Petroleum (Producing)	176	1.34	Information Services	27	1.07	Total Market	5891	1.15
Electrical Equipment	68	1.33	Household Products	26	1.07			
Metals & Mining (Div.)	73	1.33	Electronics	139	1.07			

Source: Damodaran Online 2012 - <http://pages.stern.nyu.edu/~adamodar/>

EXHIBIT C-109

Exhibit C-109
Three-Stage DCF Model



Source: William F. Sharpe, Gordon J. Alexander, and Jeffrey V. Bailey, Investments (Prentice-Hall, 1995), pp. 590-91.

EXHIBIT C-110

Exhibit C-110
 New England Transmission Owner's ROE

Summary Financial Statistics

Electric Proxy Group

	Company	Operating Revenue (\$mil)	Percent Elec Revenue	Percent Gas Revenue	Net Plant (\$mil)	Market Cap (\$mil)	S&P Bond Rating	Moody's Bond Rating	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
1	ALLETE, Inc. (NYSE-ALE)	944.4	90		2,239.9	1.5	A-	A2	3.6	MN,WI	53.3	7.9	1.28
2	Alliant Energy Corporation (NYSE-LNT)	3,222.8	81	12	7,384.6	4.9	BBB+	A2/A3	4.4	WS,IA,IL,MN	51.2	9.6	1.49
3	Ameren Corporation (NYSE-AEE)	6,897.0	87	13	17,833.0	7.0	BBB/BBB-	Baa1/Baa2	3.1	IL,MO	52.4	2.6	0.89
4	American Electric Power Co. (NYSE-AEP)	14,776.0	94		38,133.0	20.0	BBB	Baa2	3.4	10 States	45.4	10.3	1.31
5	Avista Corporation (NYSE-AVA)	1,575.4	61	31	2,940.5	1.4	A-	A3	3.2	WA,OR,ID	46.3	7.2	1.10
6	Black Hills Corporation (NYSE-BKH)	1,194.3	52	39	2,696.4	1.5	BBB+	A3	1.5	CO,SD,WY,MT	44.8	6.6	1.24
7	Cleco Corporation (NYSE-CNL)	999.4	95		2,974.3	2.4	BBB	Baa2	4.3	LA	53.1	11.8	1.59
8	CMS Energy Corporation (NYSE-CMS)	6,203.0	64	32	11,190.0	6.2	BBB/BBB-	Baa2	2.4	MI	30.1	11.4	1.94
9	Consolidated Edison, Inc. (NYSE-ED)	12,253.0	72	13	26,225.0	15.9	A-	A3/Baa1	3.8	NY,PA	51.6	9.5	1.35
10	Dominion Resources, Inc. (NYSE-D)	13,134.0	53	12	31,523.0	28.9	A	Baa1	3.5	VA,NC	36.0	9.9	2.45
11	DTE Energy Company (NYSE-DTE)	8,653.0	60	16	14,404.0	10.2	A	A2	3.5	MI	48.4	9.5	1.38
12	Duke Energy Corporation (NYSE-DUK)	17,297.0	77	3	69,031.0	42.8	A-	A3	3.3	NC,SC,FL,OH,KY	50.8	5.1	1.05
13	Edison International (NYSE-EIX)	12,997.0	87		33,858.0	14.4	BBB+	A1	2.2	CA	37.5	NM	1.43
14	FirstEnergy Corporation (ASE-FE)	16,161.0	52		31,441.0	17.3	BBB	Baa2	2.7	OH,PANJ,WV,MD,NY	41.8	8.0	1.29
15	Great Plains Energy Incorporated (NYSE-GXP)	2,315.8	100		7,270.3	3.1	BBB/BBB-	Baa1/Baa2	2.2	MO,KS	47.6	6.2	0.91
16	Hawaiian Electric Industries, Inc. (NYSE-HE)	3,387.9	92		3,506.5	2.4	BBB-	Baa2	4.2	HI	47.8	10.1	1.46
17	IDACORP, Inc. (NYSE-IDA)	1,060.5	100		3,506.8	2.1	A-	A2	2.5	ID	52.6	9.4	1.17
18	Nextera Energy (NYSE-NEE)	14,746.0	69		47,693.0	28.6	A	Aa3	2.7	FL	37.6	13.9	1.80
19	Northeast Utilities (NYSE-NU)	5,657.9	85	8	16,303.8	12.0	A-	A3	2.7	CT,NH,MA	50.6	7.0	1.30
20	OGE Energy Corp. (NYSE-OGE)	3,694.3	57	12	8,097.8	5.5	BBB	Baa1	4.4	OK,AR	43.7	13.3	2.00
21	Pepero Holdings, Inc. (NYSE-POM)	5,181.0	80	4	8,600.0	4.4	A-/BBB+	Baa1/Baa2	2.5	DC,MD,VA,NJ	45.1	5.9	0.98
22	PG&E Corporation (NYSE-PCG)	15,025.0	79	21	35,650.0	17.3	BBB/BBB-	A3/Baa1	3.5	CA	49.2	7.3	1.32
23	Pinnacle West Capital Corp. (NYSE-PNW)	3,276.6	100		10,071.8	5.4	BBB	Baa1	3.3	AZ	53.3	9.3	1.34
24	PNM Resources, Inc. (NYSE-PNM)	1,367.5	98		3,691.7	1.6	BBB	Baa1/Baa2	2.8	NM,TX	46.5	12.9	0.99
25	Portland General Electric Company (NYSE-POR)	1,821.0	100		4,351.0	1.9	A-	A3	2.7	OR	49.7	8.4	1.11
26	SCANA Corporation (NYSE-SCG)	4,088.0	58	20	10,597.0	6.0	BBB+	Baa1/Baa2	2.9	SC,NC,GA	42.5	10.4	1.46
27	Southern Company (NYSE-SO)	16,909.0	93		46,566.0	37.1	A	A2/A3	4.9	GA,AL,FL,MS	47.3	11.9	1.97
28	TECO Energy, Inc. (NYSE-TE)	3,127.2	63	13	5,936.0	3.5	BBB+	A3	3.2	FL	42.3	9.7	1.54
29	UIL Holdings Corporation (NYSE-UIL)	1,439.6	54	45	2,714.4	1.7	BBB	Baa2	3.0	CT	38.0	8.7	1.54
30	UNS Energy Corp. (NYSE-UNS)	1,467.4	87	9	3,260.5	1.7	BBB-	Baa2	NA	AZ	36.6	9.3	1.55
31	Westar Energy, Inc. (NYSE-WR)	2,223.9	100		7,181.2	3.5	BBB+	A3	3.0	KS	46.5	9.0	1.22
32	Wisconsin Energy Corporation (NYSE-WEC)	4,288.4	75	22	10,438.8	8.4	A-/BBB+	A2/A3	3.7	WI	45.0	13.8	2.01
33	Xcel Energy Inc. (NYSE-XEL)	10,145.5	84	15	23,401.6	12.7	A-	A3	3.1	MN,WI,ND,SD,MI	44.0	10.5	1.44
	Mean	6,591.8	79	18	16,688.2	10.1	BBB+	A3/Baa1	3.2		45.7	9.3	1.42
	Median	4,088.0	81	13	10,071.8	5.5	BBB+	A3/Baa1	3.2		46.5	9.5	1.35

Data Source: AUS Utility Reports, December, 2012; Pre-Tax Interest Coverage and Primary Service Territory are from Value Line Investment Survey, 2012.

Exhibit C-110

New England Transmission Owner's ROE

Summary Financial Statistics

RTO Issuer Credit Ratings

	S&P Issuer Credit Rating
Bangor Hydro (Emera)	BBB+
Central Maine Power Company	BBB+
NSTAR Electric Corporation	A-
New Hampshire Transmission LLC (NextEra)	A-
New England Power Company (National Grid)	A-
Northeast Utilities Service Company	A-
The United Illuminating Company	BBB
Unitil Energy Systems, Inc. & Fitchburg Gas and Electric Light Company	NR
Vermont Transmission Company (Vermont Electric Company)	NR
Indicated Rating Range	A- to BBB

Exhibit C-110
Value Line Risk Metrics

Panel A
TOs

Company Name	Industry	Beta	Safety Rank	Financial Strength
Nextra Energy (NYSE-NEE)	UTILEAST	0.75	2	A
Northeast Utilities (NYSE-NU)	UTILEAST	0.70	2	B++
UIL Holdings Corporation (NYSE-UIL)	UTILEAST	0.70	2	B++
Unitil Corporation (ASE-UTL)	UTILEAST	0.50	2	B+
Mean	UTILEAST	0.66	2.0	B+

Electric Proxy Group

Company Name	Industry	Beta	Safety Rank	Financial Strength
ALLETE	UTILCENT	0.70	2	A
Alliant Energy	UTILCENT	0.70	2	A
Amer. Elec. Power	UTILCENT	0.70	3	B++
Ameren Corp.	UTILCENT	0.80	3	B++
Avista Corp.	UTILWEST	0.70	2	A
Black Hills	UTILWEST	0.80	3	B+
Cleco Corp.	UTILCENT	0.65	1	A
CMS Energy Corp.	UTILCENT	0.75	3	B+
Consol. Edison	UTILEAST	0.60	1	A+
Dominion Resources	UTILEAST	0.65	2	B++
DTE Energy	UTILCENT	0.75	3	B+
Duke Energy	UTILEAST	0.60	2	A
Edison Int'l	UTILWEST	0.75	3	B++
FirstEnergy Corp.	UTILEAST	0.80	2	B++
G't Plains Energy	UTILCENT	0.75	3	B+
Hawaiian Elec.	UTILWEST	0.70	3	B+
IDACORP Inc.	UTILWEST	0.70	3	B+
NextEra Energy	UTILEAST	0.75	2	A
Northeast Utilities	UTILEAST	0.70	2	B++
OGE Energy	UTILCENT	0.75	2	A
Pepco Holdings	UTILEAST	0.75	3	B
PG&E Corp.	UTILWEST	0.55	3	B++
Pinnacle West Capital	UTILWEST	0.70	2	B++
PNM Resources	UTILWEST	0.95	3	B
Portland General	UTILWEST	0.75	2	B++
SCANA Corp.	UTILEAST	0.65	2	B++
Southern Co.	UTILEAST	0.55	1	A
TECO Energy	UTILEAST	0.85	2	B++
UIL Holdings	UTILEAST	0.70	2	B++
UNS Energy	UTILWEST	0.70	3	B+
Westar Energy	UTILCENT	0.75	2	B++
Wisconsin Energy	UTILCENT	0.65	1	A
Xcel Energy Inc.	UTILWEST	0.65	2	B++
Mean		0.72	2.4	B+

Data Source: *Value Line Investment Survey*, December, 2012.

Exhibit C-110
Value Line Risk Metrics

Beta - A relative measure of the historical sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A Beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "Beta coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are adjusted for their long-term tendency to converge toward 1.00. Additionally, Value Line shows betas computed based on monthly total returns for the trailing three year, five-year and 10-year periods.

Safety Rank - A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other Value Line indexes - the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

Financial Strength Rating - A relative measure of financial strength of the companies reviewed by Value Line. The relative ratings range from A++ (strongest) down to C (weakest), in nine steps.

EXHIBIT C-111

Exhibit C-111

New England Transmission Owner's ROE
 DCF Equity Cost Growth Rate Measures
 Analysts Projected EPS Growth Rate Estimates

Electric Proxy Group

Company	Yahoo	Zacks	Reuters	Average
ALLETE, Inc. (NYSE-ALE)	6.0%	5.5%	7.0%	6.2%
Alliant Energy Corporation (NYSE-LNT)	4.8%	6.1%	5.4%	5.4%
Ameren Corporation (NYSE-AEE)	-4.3%	-1.4%	-4.3%	-3.3%
American Electric Power Co. (NYSE-AEP)	3.4%	3.5%	3.4%	3.4%
Avista Corporation (NYSE-AVA)	4.0%	4.3%	4.5%	4.3%
Black Hills Corporation (NYSE-BKH)	6.0%	6.0%	n/a	6.0%
Cleco Corporation (NYSE-CNL)	3.0%	3.0%	3.0%	3.0%
CMS Energy Corporation (NYSE-CMS)	6.3%	6.0%	6.2%	6.2%
Consolidated Edison, Inc. (NYSE-ED)	3.0%	3.3%	3.2%	3.2%
Dominion Resources, Inc. (NYSE-D)	5.4%	5.0%	5.7%	5.4%
DTE Energy Company (NYSE-DTE)	4.8%	5.0%	4.6%	4.8%
Duke Energy Corporation (NYSE-DUK)	3.0%	4.0%	3.7%	3.6%
Edison International (NYSE-EIX)	3.3%	7.4%	4.5%	5.1%
FirstEnergy Corporation (ASE-FE)	2.5%	2.5%	4.0%	3.0%
Great Plains Energy Incorporated (NYSE-GXP)	10.5%	8.2%	8.3%	9.0%
Hawaiian Electric Industries, Inc. (NYSE-HE)	7.1%	6.4%	5.5%	6.3%
IDACORP, Inc. (NYSE-IDA)	4.0%	4.0%	4.0%	4.0%
Nextera Energy (NYSE-NEE)	5.4%	5.6%	5.8%	5.6%
Northeast Utilities (NYSE-NU)	6.1%	7.2%	5.9%	6.4%
OGE Energy Corp. (NYSE-OGE)	5.4%	5.4%	5.3%	5.3%
Pepco Holdings, Inc. (NYSE-POM)	5.2%	5.4%	5.2%	5.3%
PG&E Corporation (NYSE-PCG)	-1.3%	2.5%	2.2%	1.1%
Pinnacle West Capital Corp. (NYSE-PNW)	5.1%	6.0%	5.1%	5.4%
PNM Resources, Inc. (NYSE-PNM)	9.3%	8.2%	9.6%	9.0%
Portland General Electric (NYSE-POR)	2.7%	4.1%	4.0%	3.6%
SCANA Corporation (NYSE-SCG)	5.0%	4.8%	5.0%	4.9%
Southern Company (NYSE-SO)	5.2%	5.2%	5.2%	5.2%
TECO Energy, Inc. (NYSE-TE)	3.3%	1.8%	4.4%	3.2%
UIL Holdings Corporation (NYSE-UIL)	4.1%	4.5%	4.3%	4.3%
UNS Energy Corp. (NYSE-UNS)	8.0%	6.3%	n/a	7.2%
Westar Energy, Inc. (NYSE-WR)	5.2%	5.7%	5.9%	5.6%
Wisconsin Energy Corporation (NYSE-WEC)	5.5%	5.4%	6.6%	5.8%
Xcel Energy Inc. (NYSE-XEL)	5.1%	4.8%	4.9%	4.9%
Mean	4.6%	4.9%	4.8%	4.8%
Median	5.1%	5.2%	5.0%	5.2%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, December 2, 2012.

Exhibit SC-111
 New England Transmission Owner's ROE
 FERC DCF Model

Company	2011			2016			2016 Price			No. of Shares			"sv" Factor				
	Equity Ratio	Total Cap	Equity Ratio	Equity Cap	Equity Ratio	Total Cap	High	Low	Average	BVPS	M/B Ratio	2011	2016	Growth	s	v	sv
1 ALLETE, Inc. (NYSE-ALE)	55.7%	\$1,937.2	\$1,079.0	\$1,456.0	56.0%	\$2,600.0	\$50.00	\$35.00	\$42.50	\$35.00	1.21	37.50	41.50	2.05%	0.0249	0.1765	0.44%
2 Alliant Energy Corporation (NYSE-LNT)	50.9%	\$5,921.2	\$3,013.9	\$7,455.0	50.5%	\$7,455.0	\$55.00	\$40.00	\$47.50	\$32.00	1.46	111.02	115.00	0.71%	0.0103	0.3137	0.32%
3 Ameren Corporation (NYSE-AEE)	51.7%	\$14,738.0	\$7,914.3	\$16,200.0	54.0%	\$16,200.0	\$8,748.0	\$30.00	\$37.50	\$34.50	1.09	242.60	255.00	1.00%	0.0109	0.0800	0.09%
4 American Electric Power Co. (NYSE-AEP)	49.3%	\$29,747.0	\$14,665.3	\$35,900.0	51.0%	\$35,900.0	\$18,309.0	\$40.00	\$47.50	\$36.75	1.29	483.42	500.00	0.68%	0.0087	0.2263	0.20%
5 Avista Corporation (NYSE-AVA)	48.6%	\$2,439.9	\$1,185.8	\$2,850.0	47.5%	\$2,850.0	\$1,488.8	\$30.00	\$25.00	\$27.25	1.18	58.42	62.00	1.20%	0.0142	0.1543	0.22%
6 Black Hills Corporation (NYSE-BKH)	48.6%	\$2,489.7	\$1,210.0	\$2,800.0	49.0%	\$2,800.0	\$1,372.0	\$40.00	\$25.00	\$30.50	1.07	43.92	45.00	0.49%	0.0052	0.0615	0.03%
7 Cleco Corporation (NYSE-CNL)	51.5%	\$2,756.9	\$1,419.8	\$3,175.0	58.0%	\$3,175.0	\$1,841.5	\$45.00	\$40.00	\$42.50	1.40	60.29	61.00	0.23%	0.0033	0.2882	0.09%
8 CMS Energy Corporation (NYSE-CMS)	32.6%	\$9,279.0	\$3,025.0	\$10,500.0	39.5%	\$10,500.0	\$3,748.5	\$30.00	\$20.00	\$25.00	1.6	254.10	266.00	0.92%	0.0148	0.3800	0.56%
9 Consolidated Edison, Inc. (NYSE-ED)	52.5%	\$21,794.0	\$11,441.9	\$25,300.0	54.5%	\$25,300.0	\$13,788.5	\$60.00	\$50.00	\$55.00	1.2	292.89	293.00	0.01%	0.0001	0.1409	0.00%
10 Dominion Resources, Inc. (NYSE-D)	39.3%	\$29,097.0	\$11,435.1	\$36,700.0	42.5%	\$36,700.0	\$15,597.5	\$65.00	\$45.00	\$55.00	2.1	570.00	595.00	0.86%	0.0181	0.5227	0.94%
11 DTE Energy Corporation (NYSE-DTE)	49.4%	\$14,196.0	\$7,012.8	\$18,500.0	49.0%	\$18,500.0	\$9,065.0	\$70.00	\$50.00	\$60.00	1.2	169.25	181.00	1.35%	0.0163	0.1708	0.28%
12 Duke Energy Corporation (NYSE-DUK)	54.9%	\$41,451.0	\$22,756.6	\$91,200.0	48.5%	\$91,200.0	\$44,232.0	\$75.00	\$55.00	\$65.00	1.0	445.29	446.67	0.06%	0.0006	0.0423	0.00%
13 Edison International (NYSE-EIX)	40.6%	\$24,773.0	\$10,057.8	\$31,600.0	38.5%	\$31,600.0	\$12,166.0	\$55.00	\$35.00	\$45.00	1.2	325.81	325.81	0.00%	0.0000	0.1667	0.00%
14 FirstEnergy Corporation (NYSE-FE)	45.8%	\$28,996.0	\$13,280.2	\$34,600.0	45.0%	\$34,600.0	\$15,570.0	\$60.00	\$45.00	\$52.50	1.4	418.22	418.22	0.00%	0.0000	0.2905	0.00%
15 Great Plains Energy Incorporated (NYSE-GXP)	51.6%	\$5,741.2	\$2,962.5	\$6,700.0	55.0%	\$6,700.0	\$3,685.0	\$25.00	\$17.00	\$21.00	0.9	136.14	153.50	2.43%	0.0213	-0.1429	-0.30%
16 Hawaiian Electric Industries, Inc. (NYSE-HE)	53.9%	\$2,841.3	\$1,531.5	\$4,575.0	54.0%	\$4,575.0	\$2,470.5	\$30.00	\$25.00	\$27.50	1.4	96.04	122.00	4.90%	0.0666	0.2636	1.75%
17 IDACORP, Inc. (NYSE-IDA)	54.4%	\$3,045.2	\$1,656.6	\$4,000.0	52.5%	\$4,000.0	\$2,100.0	\$55.00	\$35.00	\$45.00	1.1	49.95	53.00	1.19%	0.0136	0.1256	0.17%
18 Nextera Energy (NYSE-NEE)	41.8%	\$35,753.0	\$14,944.8	\$45,300.0	47.5%	\$45,300.0	\$21,517.5	\$95.00	\$70.00	\$82.50	1.7	416.00	438.00	1.04%	0.0174	0.4061	0.71%
19 Northeast Utilities (NYSE-NU)	45.3%	\$8,856.0	\$4,011.8	\$10,706.0	51.0%	\$10,706.0	\$5,170.0	\$50.00	\$35.00	\$42.50	1.2	177.16	174.00	12.13%	0.1505	0.1941	2.92%
20 OGE Energy Corp. (NYSE-OGE)	48.4%	\$5,300.4	\$2,565.4	\$7,330.0	49.0%	\$7,330.0	\$3,601.5	\$65.00	\$50.00	\$57.50	1.6	98.10	101.00	0.58%	0.0094	0.3783	0.36%
21 Pepco Holdings, Inc. (NYSE-PDM)	50.9%	\$8,516.0	\$4,334.6	\$10,980.0	50.0%	\$10,980.0	\$5,490.0	\$30.00	\$19.00	\$24.50	1.1	227.50	255.00	2.31%	0.0263	0.1224	0.32%
22 PG&E Corporation (NYSE-PGG)	50.2%	\$24,119.0	\$12,107.7	\$31,500.0	51.5%	\$31,500.0	\$16,222.5	\$55.00	\$35.00	\$45.00	1.3	412.26	450.00	1.77%	0.0221	0.2000	0.44%
23 Pinnacle West Capital Corp. (NYSE-PNW)	55.9%	\$6,840.9	\$3,824.1	\$8,500.0	57.5%	\$8,500.0	\$4,887.5	\$60.00	\$45.00	\$52.50	1.3	109.25	118.50	1.64%	0.0207	0.2095	0.43%
24 PNM Resources, Inc. (NYSE-PNM)	48.1%	\$3,245.6	\$1,561.1	\$3,900.0	49.0%	\$3,900.0	\$1,911.0	\$30.00	\$20.00	\$25.00	1.1	79.65	85.00	1.31%	0.0146	0.1040	0.15%
25 Portland General Electric (NYSE-POR)	50.4%	\$3,298.0	\$1,662.2	\$3,700.0	54.0%	\$3,700.0	\$1,998.0	\$30.00	\$25.00	\$27.50	1.1	75.36	76.50	0.30%	0.0032	0.0545	0.02%
26 SCANA Corporation (NYSE-SCG)	45.7%	\$8,511.0	\$3,889.5	\$13,100.0	47.0%	\$13,100.0	\$6,157.0	\$55.00	\$40.00	\$47.50	1.2	130.00	155.00	3.58%	0.0428	0.1632	0.70%
27 Southern Company (NYSE-SO)	47.1%	\$37,307.0	\$17,571.6	\$52,200.0	45.0%	\$52,200.0	\$23,490.0	\$50.00	\$40.00	\$45.00	1.7	865.13	915.00	1.13%	0.0197	0.4278	0.84%
28 TECO Energy, Inc. (NYSE-TE)	45.8%	\$4,953.9	\$2,268.9	\$6,175.0	42.5%	\$6,175.0	\$2,624.4	\$25.00	\$17.00	\$21.00	1.7	215.80	215.00	-0.07%	-0.0013	0.1617	-0.05%
29 UIL Holdings Corporation (NYSE-UII)	41.4%	\$2,642.7	\$1,094.1	\$2,800.0	46.0%	\$2,800.0	\$1,288.0	\$40.00	\$35.00	\$40.00	1.6	50.65	51.00	0.14%	0.0022	0.3625	0.08%
30 UNS Energy Corp. (NYSE-UNS)	32.2%	\$2,758.6	\$888.3	\$3,950.0	28.0%	\$3,950.0	\$1,106.0	\$65.00	\$40.00	\$52.50	1.9	36.92	40.00	1.62%	0.0309	0.4771	1.47%
31 Westar Energy, Inc. (NYSE-WR)	50.0%	\$5,531.0	\$2,765.5	\$7,600.0	50.0%	\$7,600.0	\$3,800.0	\$35.00	\$25.00	\$30.00	2.0	230.49	230.50	0.00%	0.0000	0.0550	0.07%
32 Wisconsin Energy Corporation (NYSE-WEC)	46.0%	\$8,608.0	\$3,959.7	\$10,025.0	47.0%	\$10,025.0	\$4,711.8	\$45.00	\$30.00	\$40.00	2.0	230.49	230.50	0.00%	0.0000	0.04875	0.00%
33 Xcel Energy Inc. (NYSE-XEL)	48.9%	\$17,331.0	\$8,474.9	\$23,700.0	48.0%	\$23,700.0	\$11,376.0	\$35.00	\$25.00	\$30.00	1.4	486.49	515.00	1.15%	0.0156	0.2667	0.42%

Data Source: Value Line Investment Survey.

Exhibit C-111

New England Regional Transmission ROE
FERC DCF Model ROE Results

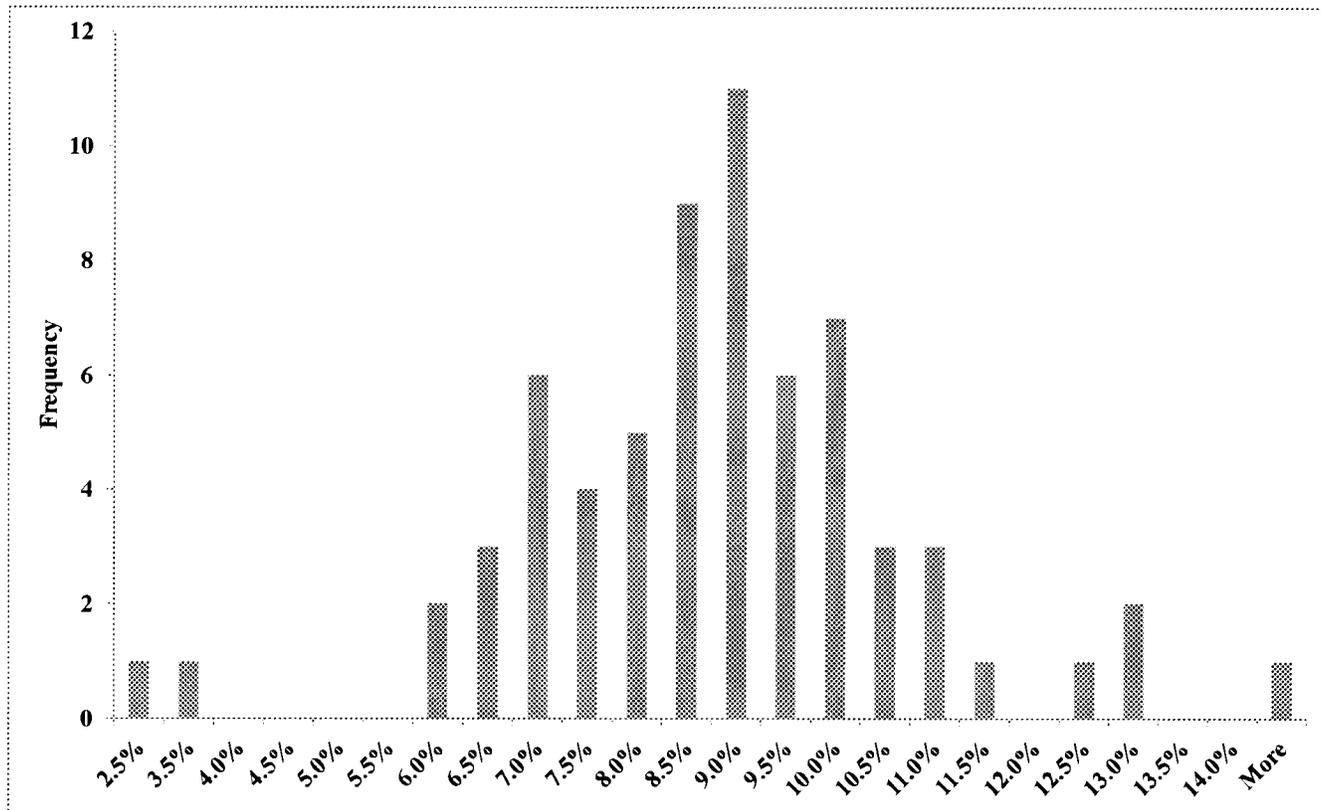


EXHIBIT C-112

Exhibit C-112

New England Transmission Owner's ROE

Capital Asset Pricing Model

Panel A
Electric Proxy Group

Risk-Free Interest Rate	4.00%
Beta*	0.72
<u>Ex Ante Equity Risk Premium**</u>	<u>5.00%</u>
CAPM Cost of Equity	7.6%

* See page 3 of Exhibit SC-112

** See pages 5 and 6 of Exhibit SC-112

Exhibit C-112

Panel A
Ten-Year U.S. Treasury Yields
January 2000-Present

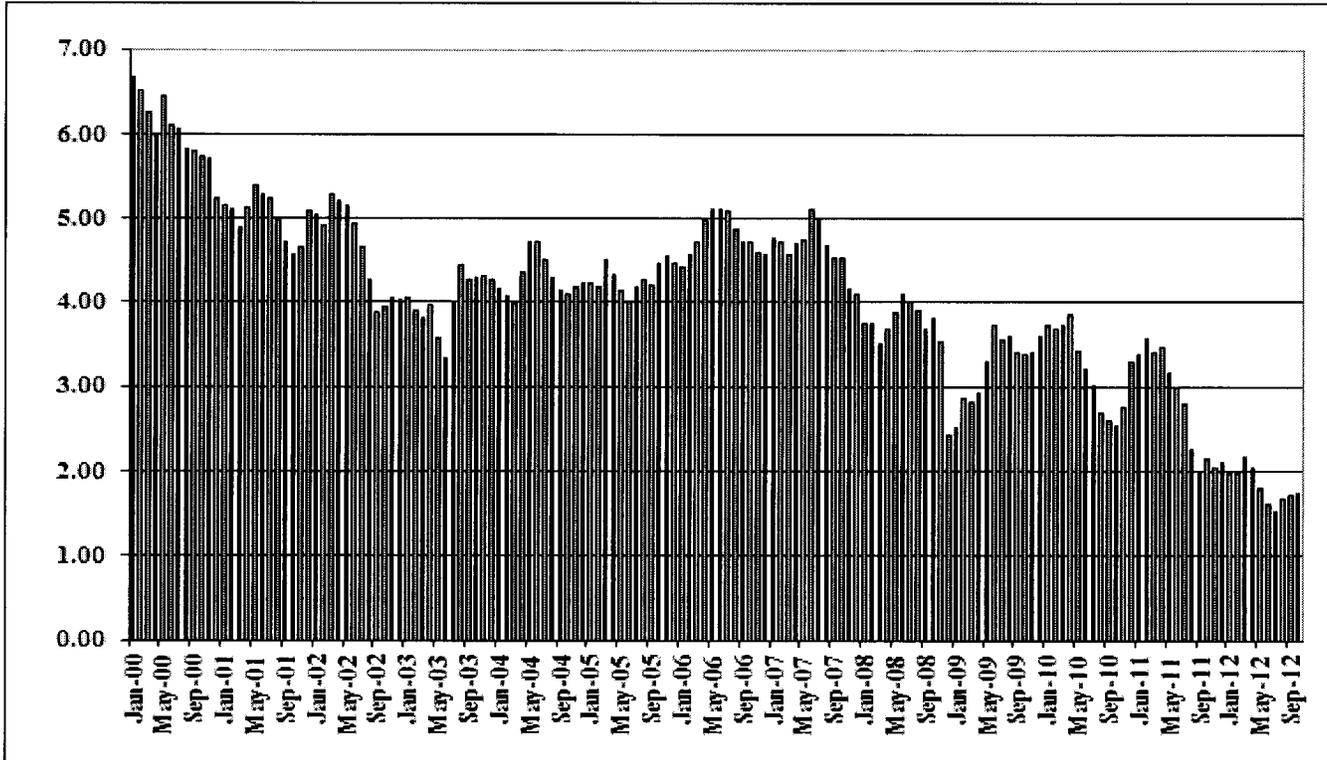
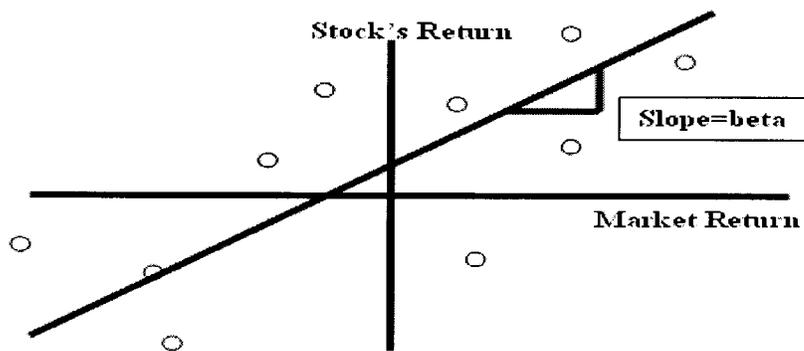


Exhibit SC-112

Panel A
Betas
Calculation of Beta



Electric Proxy Group

Company Name	Beta
1 ALLETE	0.70

Exhibit SC-112

Risk Premium Approaches

	Historical Ex Post Excess Returns	Surveys	Ex Ante Models and Market Data
Means of Assessing the Equity-Bond Risk Premium	Historical average is a popular proxy for the ex ante premium – but likely to be misleading	Investor and expert surveys can provide direct estimates of prevailing expected returns/premiums	Current financial market prices (simple valuation ratios or DCF-based measures) can give most objective estimates of feasible ex ante equity-bond risk premium
Problems/Debated Issues	Time variation in required returns and systematic selection and other biases have boosted valuations over time, and have exaggerated realized excess equity returns compared with ex ante expected premiums	Limited survey histories and questions of survey representativeness. Surveys may tell more about hoped-for expected returns than about objective required premiums due to irrational biases such as extrapolation.	Assumptions needed for DCF inputs, notably the trend earnings growth rate, make even these models' outputs subjective. The range of views on the growth rate, as well as the debate on the relevant stock and bond yields, leads to a range of premium estimates.

Source: Antti Ilmanen, "Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003).

Exhibit C-112

Capital Asset Pricing Model

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Median
Historical Risk Premium										
	Ibbotson	2012	1926-2011	Historical Stock Returns - Bond Returns	Arithmetic				5.70%	
					Geometric				4.10%	
	Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.50%	
	Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				7.00%	
					Geometric				5.50%	
	Damodoran	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.70%	
					Geometric				5.10%	
	Siegel	2005	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.10%	
					Geometric				4.60%	
	Dimson, Marsh, and Staunton	2006	1900-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%	
	Goyal & Welch	2006	1872-2004	Historical Stock Returns - Bond Returns					4.77%	
	Median									5.50%
Ex Ante Models (Puzzle Research)										
	Claus Thomas	2001	1985-1998	Abnormal Earnings Model					3.00%	
	Arnott and Bernstein	2002	1810-2001	Fundamentals - Div Yld + Growth					2.40%	
	Constantinides	2002	1872-2000	Historical Returns & Fundamentals - P/D & P/E					6.90%	
	Cornell	1999	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%	
	Easton, Taylor, et al	2002	1981-1998	Residual Income Model					5.30%	
	Fama French	2002	1951-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%	
	Harris & Marston	2001	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%	
	Best & Byrne	2001								
	McKinsey	2002	1962-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%	
	Siegel	2005	1802-2001	Historical Earnings Yield	Geometric				2.50%	
	Grabowski	2006	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%	
	Maheu & McCurdy	2006	1885-2003	Historical Excess Returns, Structural Breaks,		4.02%	5.10%	4.56%	4.56%	
	Bostock	2004	1960-2002	Bond Yields, Credit Risk, and Income Volatility		3.90%	1.30%	2.60%	2.60%	
	Bakshi & Chen	2005	1982-1998	Fundamentals - Interest Rates					7.31%	
	Donaldson, Kamstra, & Kramer	2006	1952-2004	Fundamental, Dividend yld., Returns,, & Volatility		3.00%	4.00%	3.50%	3.50%	
	Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%	
	Best & Byrne	2001	Projection	Fundamentals - Div Yld + Growth					2.00%	
	Fernandez	2007	Projection	Required Equity Risk Premium					4.00%	
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					3.22%	
	Damodoran	2012	Projection	Fundamentals - Implied from FCF to Equity Model					6.11%	
	Social Security									
	Office of Chief Actuary		1900-1995							
	John Campbell	2001	1860-2000	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%	
			Projected for 75 Years		Geometric	1.50%	2.50%	2.00%	2.00%	
	Peter Diamond	2001	Projected for 75 Years	Fundamentals (D/P, GDP Growth)		3.00%	4.80%	3.90%	3.90%	
	John Shoven	2001	Projected for 75 Years	Fundamentals (D/P, P/E, GDP Growth)		3.00%	3.50%	3.25%	3.25%	
	Median									3.75%
Surveys										
	Survey of Financial Forecasters	2012	10-Year Projection	About 50 Financial Forecasters					2.80%	
	Duke - CFO Magazine Survey	2012	10-Year Projection	Approximately 800 CFOs					4.10%	
	Welch - Academics	2008	30-Year Projection	Random Academics		5.00%	5.74%	5.37%	5.37%	
	Fernandez - Academics	2012	Long-Term	Survey of Academics					5.60%	
	Fernandez - Analysts	2012	Long-Term	Survey of Analysts					5.00%	
	Fernandez - Companies	2012	Long-Term	Survey of Companies					5.50%	
	Median									5.19%
Building Block										
	Ibbotson and Chen	2012	1926-2010	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			5.99%	4.95%	
					Geometric			3.91%		
	Woolridge		2012	Current Supply Model (D/P & Earnings Growth)					4.90%	
	Median									4.93%
Mean										4.84%
Median										5.06%

EXHIBIT C-2

COMPLAINT SERVICE LIST

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OTHER TRANSMISSION PROVIDERS

<p><u>Town of Braintree Electric Light Department</u></p> <p>William G. Bottiggi General Manager Braintree Electric Light Department 150 Potter Road Braintree MA 02184 Tel: (781) 348-1010 Fax: (781) 348-1004 wbottiggi@beld.com</p> <p>Kenneth E. Stone Energy Services Manager Braintree Electric Light Department 150 Potter Road Braintree MA 02184 Tel: (781) 348-1031 Fax: (781) 348-1003 kstone@beld.com</p>	<p><u>Central Vermont Public Service Corporation</u></p> <p>Carl D. Scott 77 Grove Street Rutland, VT 05701 Tel: (802) 747-5534 Fax: (802) 747-2187 cscott@cvps.com</p>
<p><u>Connecticut Municipal Electric Energy Cooperative & Connecticut Transmission Municipal Electric Energy Cooperative</u></p> <p>Brian E. Forshaw Director of Energy Markets Connecticut Municipal Electric Energy</p>	<p><u>The City of Holyoke Gas and Electric Department</u></p> <p>James M. Lavelle, Manager Holyoke Gas & Electric Department 99 Suffolk Street Holyoke, MA 01040</p>

<p>Cooperative 30 Stott Avenue Norwich, CT 06360 Tel: (860) 889-4088 Fax: (860) 889-8158 bforshaw@cmeeec.org</p> <p>Phillip L. Sussler, Esq. General Counsel Connecticut Municipal Electric Energy Cooperative 30 Stott Avenue Norwich, CT 06360 Tel: (860) 889-4088 Fax: (860) 889-8158 psussler@cmeeec.org</p>	<p>Tel: (413) 536-9311 Fax: (413) 536-9315 jlavelle@hged.com</p> <p>Brian C. Beauregard Superintendent - Electric Division Holyoke Gas & Electric Department 99 Suffolk Street Holyoke, MA 01040 Tel: (413) 536-9352 Fax: (413) 536-9353 bbeauregard@hged.com</p>
<p><u>Green Mountain Power Corporation</u></p> <p>Donald J. Rendall, Jr. Vice President and General Counsel Green Mountain Power Corporation 163 Acorn Lane Colchester, VT 05446 Tel: (802) 655-8420 Fax: (802) 655-8419 rendall@greenmountainpower.biz</p>	<p><u>Massachusetts Municipal Wholesale Electric Company</u></p> <p>Jeffrey Schwarz Spiegel & McDiarmid LLC 1333 New Hampshire Ave., NW, 2d Fl. Washington, DC, 20036 Tel: (202) 879-4000 Fax: (202) 393-2866 jeffrey.schwarz@spiegelmc.com</p> <p>Michael Lynch Director, Power Services Division Massachusetts Municipal Wholesale Electric Company Moody Street P.O. Box 426 Ludlow, MA 01056 Tel: (413) 589-0141 Fax: (413) 589-1585 mlynch@mmwec.org</p> <p>Senior Project Manager, Transmission Massachusetts Municipal Wholesale Electric Company Moody Street P.O. Box 426 Ludlow, MA 01056 Tel: (413) 589-0141 Fax: (413) 589-1585</p>

	<p>Gary Will Massachusetts Municipal Wholesale Electric Company Moody Street P.O. Box 426 Ludlow, MA 01056 gwill@mmwec.org</p>
<p><u>New Hampshire Electric Cooperative, Inc.</u></p> <p>Steve Kaminski VP, Power Resources and Access New Hampshire Electric Cooperative, Inc. 579 Tenney Mountain Highway Plymouth, NH 03264-3154 Tel: (603) 536-8655 Fax: (603) 536-8682 Kaminskis@nhec.com</p> <p>Fred Anderson President/CEO New Hampshire Electric Cooperative, Inc. 579 Tenney Mountain Highway Plymouth, NH 03264-3154 Tel: (603) 536-8801 Fax: (603) 536-8682 AndersonF@nhec.com</p>	<p><u>Town of Norwood Municipal Light Department</u></p> <p>Malcolm N. McDonald Superintendent Town of Norwood Municipal Light Department 206 Central Street Norwood, MA 02062 Tel: (781) 984-1100 Fax: (781) 769-0660 malcolm@norwoodlight.com</p>
<p><u>Town of Reading Municipal Light Department</u></p> <p>Vincent Cameron General Manager Reading Municipal Light Department 230 Ash Street Reading, MA 01867 Tel: (781) 942-6415 Fax: (781) 942-2409 vcameron@rmlld.com</p> <p>Jane Parenteau Energy Services Division - Manager Reading Municipal Light Department 230 Ash Street Reading, MA 01867 Tel: (781) 942-6415 Fax: (781) 942-2409 JPparenteau@rmlld.com</p>	<p><u>Taunton Municipal Lighting Plant</u></p> <p>Joseph M. Blain General Manager P. O. Box 870 55 Weir Street Taunton, MA 02780-0870 Tel: (508) 824-3101 Fax: (508) 823-6931 joebtain@tmlp.com</p> <p>Kim Meulenaere Sr. Resource Analyst P.O. Box 870 55 Weir Street Taunton, MA 02780-0870 Tel: (508) 824-3178 Fax: (508) 823-6931 kimmeulenaere@tmlp.com</p>

<p><u>Vermont Electric Cooperative, Inc.</u></p> <p>Kevin W. Perry Manager, Power Supply and Rates Vermont Electric Cooperative 42 Wescom Road Johnson, VT 05656 Tel: (802) 730-1209 Fax: (802) 635-7645 kperry@vermontelectric.coop</p> <p>Craig W. Silverstein Miller, Balis & O'Neil, P.C. 1140 Nineteenth Street, NW Suite 700 Washington, DC 20036-6600 Tel: (202) 296-2960 x3887 Fax: (202) 296-0166 csilverstein@mbolaw.com</p>	<p><u>Vermont Public Power Supply Authority</u></p> <p>Scott Corse General Manager Vermont Public Power Supply Authority 5195 Waterbury-Stowe Road Waterbury Center, VT 05677 Tel: (802) 244-7678 Fax: (802) 244-6889 scorse@vppsa.com</p> <p>Crystal Currier Controller Vermont Public Power Supply Authority 5195 Waterbury-Stowe Road Waterbury Center, VT 05677 Tel: (802) 244-7678 Fax: (802) 244-6889 ccurrier@vppsa.com</p>
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ISO NEW ENGLAND INC. AND NEPOOL

<p>Gordon van Welie CEO ISO New England Inc. One Sullivan Road Holyoke, MA 01040 gvanwelie@iso-ne.com</p> <p>David Doot Day Pitney LLP 242 Trumbull Street Hartford CT 06103-1212 dtdoot@daypitney.com</p>	<p>Raymond W. Hepper General Counsel ISO New England Inc. One Sullivan Road Holyoke, MA 01040 rhepper@iso-ne.com</p>
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STATE PUBLIC UTILITY COMMISSIONS AND OTHER REGULATORY AGENCIES

<p>Heather Hunt Executive Director NESCOE 242 Whippoorwill Lane Stratford, CT 06614 HeatherHunt@nescoe.com</p>	<p>William M. Nugent, Executive Director New England Conference of Public Utilities Commissioners 50 Forest Falls Drive, Suite 6 Yarmouth, ME 04096-6937 Bill.Nugent@myfairpoint.net</p>
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<p>Paul J. Roberti, Commissioner Nicholas Ucci Amy D'Alessandro Rhode Island Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888 Proberti@puc.state.ri.us nucci@puc.state.ri.us ADAlessandro@puc.state.ri.us</p>	<p>John J. Keene, Jr. Jason Marshall Massachusetts Department of Public Utilities One South Station Boston, MA 02110 John.j.keene@state.ma.us Jason.Marshall@state.ma.us</p>
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<p>Sarah Hofmann Director for Public Advocacy Vermont Department of Public Service 112 State Street Montpelier, VT 05620-2601 Sarah.Hofmann@state.vt.us</p>	<p>Jesse S. Reyes David A. Cetola Office of Ratepayer Advocacy Massachusetts Office of the Attorney General One Ashburton Place Boston, MA 02108 Jesse.Reyes@state.ma.us David.Cetola@state.ma.us</p>
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EXHIBIT C-3

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ENE (Environment Northeast),)	
)	
Greater Boston Real Estate Board,)	
)	
National Consumer Law Center, and)	
)	
NEPOOL Industrial Customer Coalition,)	Docket No. EL13-___-000
)	
Complainants,)	
)	
v.)	
)	
Bangor Hydro-Electric Co.,)	
)	
Central Maine Power Co.,)	
)	
New England Power Co.)	
d/b/a National Grid,)	
)	
New Hampshire Transmission LLC d/b/a NextEra,)	
)	
NSTAR Electric Co.,)	
)	
Northeast Utilities Service Co.,)	
)	
The United Illuminating Co.,)	
)	
Unitil Energy Systems, Inc. and Fitchburg Gas and)	
Electric Light Co., and)	
)	
Vermont Transco, LLC)	
)	
Respondents.)	
)	

NOTICE OF COMPLAINT

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Take notice that on December 27, 2012, ENE (Environment Northeast), Greater Boston Real Estate Board, National Consumer Law Center, and NEPOOL Industrial Customer Coalition, (collectively, "Complainants") filed a formal complaint against Bangor Hydro-Electric Company; Central Maine Power Company; New England Power Company d/b/a National Grid; New

Hampshire Transmission LLC d/b/a NextEra; NSTAR Electric and Gas Corporation; Northeast Utilities Service Company; The United Illuminating Company; Unitil Energy Systems, Inc. and Fitchburg Gas and Electric Light Company; and Vermont Transco, LLC (collectively, "New England Transmission Owners" or "TOs") seeking an order to reduce the 11.14 percent base return on equity ("Base ROE") used in calculating formula rates for transmission service under the ISO-NE Open Access Transmission Tariff ("OATT") to a just and reasonable level at 8.7 percent.

Complainants certify that copies of the Complaint were served on the contacts for the TOs and ISO-NE as listed on the Commission's list of Corporate Officials and on parties and the regulatory agencies the Complainants reasonably expect to be affected by this Complaint.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 C.F.R. §§ 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondents' answer and all interventions, or protests must be filed on or before the comment date. The Respondents' answer, motions to intervene, and protests must be served on the Complainants.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email FERCOnlineSupport@ferc.gov, or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: 5:00 pm Eastern Time on (insert date).

Kimberly D. Bose
Secretary

CERTIFICATE OF SERVICE

I hereby certify that I have this day via electronic transmission served the filing upon each party designated in the service list attached to this Complaint.

Dated at Harrisburg, Pennsylvania this 27th day of December, 2012.

/s/ Vasiliki Karandrikas

Vasiliki Karandrikas

McNees Wallace & Nurick, LLC

100 Pine Street

P.O. Box 1166

Harrisburg, PA 17108-1166

Phone: 717-237-5274

vkandrikas@mwn.com