

FILE

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Distribution Service.

Case No. 07-829-GA-AIR

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of an Alternative Rate Plan for its Gas Distribution Service

Case No. 07-830-GA-ALT

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval to Change Accounting Methods

Case No. 07-831-GA-AAM

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with a Pipeline Infrastructure Replacement Program Through an Automatic Adjustment Clause, And for Certain Accounting Treatment

Case No. 08-169-GA-ALT

In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with Automated Meter Reading Deployment Through an Automatic Adjustment Clause, and for Certain Accounting Treatment

Case No. 06-1453-GA-UNC

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**SUPPLEMENTAL TESTIMONY OF
MICHAEL J. VILBERT
ON BEHALF OF
DOMINION EAST OHIO**

- ☐ Management policies, practice and organization
- ☐ Operating income
- ☐ Rate base
- ☐ Allocations
- ☒ Rate of return
- ☐ Rates and tariffs
- ☐ Other

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I. INTRODUCTION AND SUMMARY

Q1. Please state your name for the record.

A1. My name is Michael J. Vilbert.

Q2. Are you the same Michael J. Vilbert who filed Direct Testimony (“Vilbert Direct”) on behalf of The East Ohio Gas Company d/b/a Dominion East Ohio (“DEO”) in this proceeding on September 13, 2007?

A2. Yes.

Q3. What is the purpose of your supplemental testimony?

A3. I have been asked by the Company to provide supplemental testimony that responds to the Staff of the Public Utilities Commission of Ohio’s Report (“Staff Report”) regarding the rate of return findings.¹ Specifically, I address the Company’s Objections 14 through 23.

Q4. Please summarize your supplemental testimony.

A4. This supplemental testimony first addresses the importance of financial risk. The Staff Report underestimates the cost of equity for DEO because it does not recognize the degree to which leverage impacts return on equity (“ROE”). The Staff Report relies on the *book value* capital structure of its comparable companies in setting ROE and thus does not recognize that financial markets consider *market value* capital structures. Second, the Staff Report eliminates companies with beta estimates above 0.85 from consideration, which leads to a bias in the sample selection. Specifically, comparable companies should be selected based on their inherent, individual business risk characteristics. Third, Staff did not properly apply its discounted cash flow (“DCF”) and capital asset pricing models (“CAPM”). Fourth, the Staff Report’s suggestion that the implementation of a decoupling mechanism may reduce the cost of equity capital fails to recognize that (a) the cost of capital is affected only by *systematic risk* (and not all risks)

¹ A Report by the Staff of the Public Utilities Commission of Ohio, The East Ohio Gas Company d/b/a Dominion East Ohio, Case No. 07-829-GA-AIR, Case No. 07-830-GA-ALT, Case No. 07-831-GA-AAM, Case No. 06-1453-GA-UNC, dated May 23, 2008. (“Staff Report”)

1 and no showing has been made that decoupling reduces systematic risk; and (b) several of
2 the Staff Report's comparable companies already have a decoupling mechanism in place,
3 meaning that any impact of decoupling on systematic risk is already incorporated in the
4 analysis of those sample companies.

5 II. FINANCIAL RISK AND CAPITAL STRUCTURE

6 **Q5. What does this section of your supplemental testimony address?**

7 A5. This section, which addresses DEO's Objection No. 22, first discusses financial risk and
8 how it is properly measured by reference to a company's market value capital structure,
9 not its book value capital structure. It then explains how the after-tax weighted-average
10 cost of capital ("ATWACC") approach addresses the issue of differences in financial risk
11 among the sample companies and relative to that of the Company.

12 **Q6. Please define financial risk.**

13 A6. As explained in my Direct Testimony (DEO Exhibit 9.0), business risk is the risk of a
14 company's assets if the company used no debt to finance the assets. Financial risk is the
15 additional risk imposed on equity holders from the use of debt when a company finances
16 its assets. Changing a company's capital structure by replacing equity with debt
17 increases the risk that remaining equity holders bear. This is because debt holders are
18 paid a fixed payment stream before any payments are available to equity holders, but the
19 total risk of the underlying assets is unchanged by debt financing. As the percentage of
20 equity in the capital structure decreases, more of the residual risk is left to be shouldered
21 by a smaller equity base. The interaction of capital structure and financial risk are
22 discussed in my direct testimony in Appendix E.

23 **Q7. Did the Staff Report consider financial risk?**

24 A7. Yes. The Staff Report considers DEO's higher leverage and recommends that the
25 average book capital structure of its sample of comparable companies be used for DEO.²
26 However, the Staff Report relies on the comparable companies' book value capital
27 structures rather than on their market value capital structures, the latter of which is what

² Staff Report p. 20

1 matters for investors. Relying on book value capital structure results in underestimation
2 of the Company's cost of equity.

3 **Q8. Why is financial risk important?**

4 A8. The required rate of return relies on market information and hence market value capital
5 structures. If the difference between the Company's regulatory capital structure and the
6 capital structure underlying the cost of capital estimates is not taken into account, the rate
7 of return allowed for the regulated company may not fully compensate equity holders for
8 the risks that they in fact face. For example, two otherwise identical companies with
9 different capital structures will have different costs of equity.

10 **Q9. How did your Direct Testimony take financial risk into account?**

11 A9. In my direct testimony in Section II.C, I used the ATWACC approach to compensate for
12 differences in financial risk. The fundamental premise of the ATWACC approach is that
13 the risk of the assets of a company is divided between the debt holders and equity holders,
14 *i.e.*, the company's investors.³ This reflects perhaps the most basic and fundamental
15 concept in corporate finance theory and practice. When estimating the cost of equity
16 using standard models, the estimated cost of equity reflects *both* the business risk and the
17 financial risk of the sample company, based upon the sample company's *market value*
18 capital structures. In particular, note that if the market value capital structures were
19 different, the estimated cost of equity would be different as well because of the
20 differences in financial risk.

21 The ATWACC approach takes the effect of capital structure into account and allows
22 computation of the market cost of equity for any capital structure within a broad range.⁴
23 The details of this approach are discussed in Section II.C of my direct testimony. Briefly,
24 the ATWACC approach estimates the overall weighted-average cost of capital of the
25 sample companies. The overall cost of capital estimate captures the market cost of the
26 underlying business risk. Unlike the cost of equity which varies with capital structure

³ Preferred equity is ignored for simplicity, but the principles do not change with the addition of preferred stock to the capital structure.

⁴ That is, a capital structure that does not include extreme leveraging or very little debt.

1 even for otherwise identical companies, the overall cost of capital does not. If a firm with
2 60 percent equity and an 8 percent overall cost of capital were to refinance itself into a
3 firm with 50 percent equity, leaving assets unchanged, then its cost of equity would rise,
4 but the overall cost of capital would stay at 8 percent. This approach therefore enables an
5 “apples to apples” comparison among sample companies with similar business risk but
6 different capital structures. This is why the ATWACC approach is the best way to
7 estimate the cost of equity. The overall cost of capital is the only cost common to all
8 companies of similar business risk and therefore provides the most reliable basis for
9 comparing companies and estimating the cost of equity.

10 III. SELECTION OF SAMPLE COMPANIES

11 **Q10. Are there any problems with the sample companies relied upon in the Staff Report?**

12 A10. Yes. This portion of my testimony is in support of the Company’s Objections No. 14 and
13 15. The most troublesome part of the Staff Report’s sample selection procedures is the
14 decision to omit any company with a reported *Value Line* beta greater than 0.85. In
15 addition, the Staff Report eliminated investment grade companies whose bond ratings
16 were in the high or low end of the scale.⁵

17 **Q11. How did Staff select its group of sample companies?**

18 A11. According to the Staff Report and Staff’s workpapers, Staff looked at natural gas
19 distribution utilities (in Global Energy’s Energy Velocity Suite) traded on the New York
20 Stock Exchange with operating revenues in excess of \$500 million. In addition the
21 companies were required to have no dividend cuts during the past four years, a beta of
22 0.85 or less, and a bond rating from Standard & Poor’s of A, A-, BBB+, or BBB.⁶

23 **Q12. Do you have any concerns with the Staff Report’s “comparable” companies?**

24 A12. Yes. Companies should be selected for inclusion in the sample because they are of
25 comparable business risk. Recall that business risk is the risk of the assets if financed

⁵ Staff Report p. 21

⁶ Staff Report p. 20-21

1 entirely by equity. The Staff Report screens out companies with a beta above 0.85, but
2 companies with betas greater than 0.85 may simply be companies with more debt in their
3 capital structures. It is a fundamental scientific principle, however, that the screening
4 process should not drive the results themselves, which is exactly what may happen when
5 companies with high systematic risk are removed from the sample. In other words,
6 companies with a higher beta should be removed from the sample only if those
7 companies are shown to be not comparable—not simply because they have a higher beta.

8 **Q13. Why is it inappropriate to exclude companies with beta greater than 0.85?**

9 A13. It is inappropriate to exclude sample companies with high betas if the companies have
10 comparable risks to those of DEO, and it is inappropriate to automatically exclude high-
11 beta companies when low-beta companies are not also excluded. In this case, Laclede
12 Gas and Vectren both currently have *Value Line* betas of 0.90, but met all of the other
13 criteria specified in the Staff Report.⁷ For example, these two companies are publicly
14 traded entities on the New York Stock Exchange, reported by Energy Velocity as gas
15 distribution companies, have a bond rating in the range of A through BBB, pay dividends
16 and had operating revenues in excess of \$500 million in 2007. Adding Laclede Gas and
17 Vectren to the other five companies in the Staff's group of comparable companies would
18 increase the sample's estimated return on equity by 5 to 10 basis points.

19 As noted above, the purpose of sample selection criteria is to ensure that the sample
20 companies and the target utility or utilities are of comparable business risk. The selection
21 of sample companies should be based on the risk characteristics of the underlying assets,
22 not on a measure, *e.g.*, beta, of the company's cost of capital.

23 **Q14. What is the basis for your concern that the Staff Report eliminated companies with**
24 **a bond rating higher than A or below BBB?**

25 A14. The Staff also omits two companies (NW Natural Gas and WGL) that are covered by
26 *Value Line* as natural gas LDCs but are not listed in Velocity as gas distribution utilities.
27 Both have betas of 0.85 or less and meet all of the Staff's other restrictions for inclusion
28 in the sample except that both have a bond rating of AA. The Staff relies upon *Value*

⁷ Vectren had a *Value Line* beta of 0.95 at the time I filed my Direct Testimony.

1 *Line* for the beta estimates for the sample companies so there is no reason to have omitted
2 these companies from the sample.

3 **IV. IMPLEMENTATION OF THE CAPM AND DCF METHODOLOGIES**

4 **Q15. Please discuss Staff Report's implementation of the CAPM.**

5 A15. This area of my supplemental testimony addresses DEO's Objections No. 16, 17, and 18.
6 The Staff and I both relied on *Value Line* reported betas to apply to the selected
7 comparable companies, and we both used a similar market risk premium of 6.5%.⁸
8 However, to determine the risk-free rate, Staff took the average of the yield on 10-year
9 and 30-year Government bonds over a period of 52 weeks. Because the intent is to
10 estimate the cost of equity going forward, the use of the average risk-free rate over 52
11 weeks seriously weakens one of the strengths of the CAPM model, i.e., that changes in
12 interest rates are reflected in the cost of equity estimates. The data from as long as a year
13 ago would be representative of today's environment only by coincidence. An average
14 over a shorter period is much more likely to be representative of the cost of capital in the
15 market. For example, I use an average bond yield over a period of 15 trading days (about
16 3 weeks) consistent with the time period the cost of equity models were estimated.⁹
17 Further, the reliance on an average of two interest rates is unlikely to be consistent with
18 the relied upon market risk premium which necessarily is measured against a specific
19 risk-free instrument. At this time, the Staff Report's choice of methodology does not
20 impact the estimated cost of equity in a measurable fashion, but the procedure is still not
21 recommended because it is likely to inject a bias into the CAPM estimates.¹⁰

22 Staff also failed to adjust for the fact that the CAPM is well known to underestimate the
23 cost of equity for companies with betas less than 1.0 and overestimate the cost of equity

⁸ Staff Report p. 137 and Vilbert Direct, Table No. MJV-10

⁹ See Vilbert Direct, Table No. MJV-9

¹⁰ As of February 21, 2008 the 15-day average yield on 30-year government bonds was 4.44 percent while the 63-day average yield on 30-year government bonds was 4.48 percent. The Staff Report calculates a risk-free rate of 4.44 percent (Staff Report, Schedule D-1.2).

1 for companies with betas greater than 1.0.¹¹ I adjusted for this empirical fact by use of
2 the Empirical CAPM ("ECAPM"). The combination of omitting companies with betas
3 greater than 0.85 with the failure to recognize that the slope of the security market line
4 for the CAPM is less steep with a higher intercept than predicted by the model results in
5 an underestimation of the cost of equity of about 25-30 bps.

6 **Q16. Please describe the Staff Report's implementation of the DCF model.**

7 A16. This portion of my testimony addresses the Company's Objections No. 19, 20, and 21.
8 The DCF methodology used in the Staff Report is described as a so-called non-constant
9 growth rate DCF or multi-stage DCF model. During the first five years, dividend and
10 earnings are assumed to grow at a company-specific rate derived from security analysts'
11 forecasts. From year 25 onwards, the growth rate is assumed to equal an economy-wide
12 GNP growth rate. The growth rates during years 6 to 24 linearly transition from the
13 company-specific rate to the economy-wide rate. Further, the Staff Report relies on
14 company-specific growth rates from several sources: Reuters, MSN, Yahoo, and two
15 *Value Line* estimates. The relied-upon growth rate for each company is an average of the
16 growth estimates from these four data sources. The economy-wide rate is calculated as
17 the average of the U.S. GNP growth over the period 1929 to 2005.

18 **Q17. Are there problems with the implementation of the DCF model in the Staff Report?**

19 A17. Yes. There are several problems with the Staff Report's described implementation of the
20 multi-stage DCF model. First, Staff's model is an annual version of the multi-stage DCF
21 model, which fails to recognize that dividends are paid quarterly. The result is a
22 downward bias in the cost of equity estimates because the dividend used in the annual
23 model is calculated as the sum of the most recent four quarterly dividends instead of
24 "annualizing" the most recent quarterly dividend by multiplying the most recent dividend
25 by four. The DCF model is developed based upon the assumption that dividends grow at
26 a constant rate. To the extent that dividends have increased over the most recent four
27 quarters, the current dividend will be higher than the four-quarter average. Moreover, the

¹¹ A matter compensated for with the use of the Empirical Capital Asset Pricing Model (ECAPM) as discussed in detail in the Vilbert Direct, p. 23-25

1 current stock price will reflect the fact that the current quarterly dividend is higher.
2 Failing to recognize that the dividend has increased results in a mismatch between the
3 stock price and the dividend in the model.

4 Second, the analysts' forecasts growth rates provided by Reuters, MSN, and Yahoo
5 overlap. In other words, some individual analyst's forecasts may be counted more than
6 once in the average upon which the Staff Report relies. The reliance on several sources
7 does not necessarily provide additional information and is likely to lead to an unknown
8 bias in the estimated growth rates. For example, if an individual analyst's forecast which
9 is either very high or very low is included in each source, the impact of that estimate is
10 multiplied by the number of sources used, whereas an analyst reported in only one source
11 gets less weight. It is impossible to know how large the bias may be that results from
12 using duplicative data sources, because there is no way to know which of the security
13 analysts' forecasts have been counted multiple times. The solution is to rely upon one
14 source of analyst forecasts as I have done.

15 Finally, the stock price used in the model is a 52-week average price. The use of such a
16 long historical period obviates one of the primary advantages of the DCF model, i.e., that
17 it is forward looking. Prices over a full calendar year cover the payment of at least four
18 quarterly dividends and represent stale information. The estimated returns on equity will
19 be too high if prices have generally been increasing or be too low if prices have generally
20 decreased. In either case, the estimated cost of equity is not as accurate as it would be by
21 relying on a shorter period to determine the initial price for use in the model.

22 **Q18. What is the effect of averaging prices, dividends and interest rates over a full year**
23 **for use in the models?**

24 A18. At this time, the effect of using a year-long average for the dividend, stock prices and
25 interest rates is minimal, but this happy outcome is only by chance. If stock prices or
26 interest rates were trending either higher or lower over the past year, the estimates from
27 the Staff's models would be biased. For example, if interest rates were to increase
28 substantially due to concerns about inflation, the annual-average interest rate would likely
29 be substantially below the actual interest rates during the period that rates would be in
30 effect.

V. REVENUE DECOUPLING AND THE RELEVANT RETURN ON EQUITY

Q19. Which Objections do you address in this section?

A19. I address DEO's Objection No. 23 regarding the Staff Report's discussion of decoupling mechanisms and cost of equity.

Q20. What is the issue related to revenue decoupling?

A20. The Staff Report concludes

These [revenue decoupling and a pipeline replacement cost recovery mechanism] measures, if adopted by the Commission, would reduce the risks that the Company faces with respect to revenues and cost recovery. Inasmuch as the cost of capital reflects risks, the reduction in business and regulatory risks should be considered.¹²

Q21. Do you agree with this conclusion?

A21. No. As explained in my Direct Testimony (Appendix C, Section I.C), investors get compensated for bearing risk that cannot be diversified away. The risk that cannot be diversified away is called non-diversifiable risk or systematic risk. The cost of capital of a company depends on the systematic risk inherent in the returns it generates for investors. Thus, the adoption of a decoupling mechanism would only affect DEO's cost of capital if it impacts DEO's *systematic risk*. Stated differently, for there to be a reduction in the cost of capital following the adoption of a decoupling mechanism, it needs to be demonstrated that the decoupling mechanism will lead to a reduction in DEO's systematic risk.

Q22. Are there other considerations on this matter?

A22. Yes. Currently, natural gas utilities in a number of jurisdictions operate under some sort of decoupling mechanism, so that comparable companies may be subject to the same reduction in systematic risk, if any. For example, the Staff Report's comparable companies include Atmos Energy Corporation, Piedmont Natural Gas, and South Jersey Industries—all of which currently operate under some form of decoupling mechanism in

¹² Staff Report p. 22

1 all or part of their service territory.¹³ Furthermore, those companies may have other
2 mechanisms, such as weather normalization clauses, that would reduce their risk below
3 that of DEO, which has no such clause. Therefore, before any impact on the cost of
4 capital of a decoupling mechanism can be assessed, the degree to which such an impact
5 already is included in the analysis of the comparable companies would have to be
6 determined.

7 **Q23. What do you conclude regarding the impact of a decoupling mechanism on the cost**
8 **of equity for DEO?**

9 A23. It is not likely that a decoupling mechanism will substantially affect the cost of equity for
10 DEO for two reasons. First, Staff cites no evidence that decoupling will impact
11 systematic risk. Unless an impact on systematic risk can be demonstrated, there should
12 be no effect on the cost of equity. Second, several of the comparable companies in the
13 Staff Report, as well as all companies except Laclede in my sample, already operate
14 under a decoupling mechanism. Therefore, any impact on the systematic risk from a
15 decoupling mechanism is reflected in the cost of capital estimates for the sample
16 companies with decoupling mechanisms in place.

17 **Q24. What are your comments on the Staff's recommended range of 9.85 to 10.88% for**
18 **return on equity?**¹⁴

19 A24. As noted above, not recognizing the difference between the financial risk used in the
20 estimation process and that of DEO result in a cost of equity estimate that is downwardly
21 biased. Similarly, eliminating companies with *Value Line* beta estimates above 0.85
22 artificially reduces the cost of equity estimate. On the other hand, the Staff increased the
23 recommended equity percentage in the regulatory capital structure which offsets, in part,
24 the downward bias in the Staff's estimation methods. On balance, the Staff Report's
25 cost-of-equity estimates are still too low.

¹³ See the sample companies' 2007 10-Ks. In addition, National Fuel Gas has applied for a decoupling mechanism in New York State.

¹⁴ See Staff Report p. 22

- 1 **Q25. Does this conclude your Supplemental Testimony?**
- 2 A25. Yes.