STATE OF TENNESSEE

Office of the Attorney General

ROBERT E. COOPER, JR.
ATTORNEY GENERAL AND REPORTER

LUCY HONEY HAYNES
CHIEF DEPUTY ATTORNEY GENERAL

LAWRENCE HARRINGTON
CHIEF POLICY DEPUTY

CORDELL HULL AND JOHN SEVIER STATE OFFICE BUILDINGS

MAILING ADDRESS
P.O. BOX 20207
NASHVILLE, TN 37202

BILL YOUNG
SOLICITOR GENERAL

TELEPHONE (615) 741-3491
FACSIMILE (615) 741-2009

November 21, 2012

Kelly Cashman-Grams, Esq.
Hearing Officer
Tennessee Regulatory Authority
460 James Robertson Pkwy.
Nashville, TN 37243-0505

filed electronically in docket office on 11/21/12

Re: Petition of Navitas TN NG, LLC for an Adjustment to Its Natural Gas Rates and Approval of Revised Tariffs - TRA Docket No. 12-00068

Dear Ms. Cashman-Grams:

On November 15, 2012, Christopher C. Klein, PH.D. filed direct testimony and exhibits in this docket on behalf of the Tennessee Attorney General Consumer Advocate and Protection Division.

On page two of Dr. Klein's exhibits there is an error in the Cost Rate for Common Equity. The exhibit showed a Cost Rate of 15.04% and it should have been 15.40%. This error adjusts the total for the Weighted Cost of Capital to 8.71% rather than 8.70%. An amended copy of page two of Dr. Klein's exhibit is attached to correct this error.

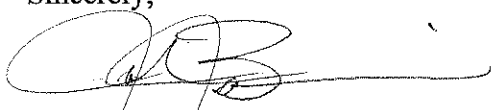
As a result of this error, Dr. Klein's direct testimony is also amended as follows:

Direct Testimony pages 5 (line 16); page 10 (line 11); page 11 (line 10); and page 15 (line 1) should be 15.40% instead of 15.04% and page 5 (line 18) and page 15 (line 2) should be 8.71% instead of 8.70%.

An amended copy of Dr. Klein's direct testimony is also attached for filing in this docket.

We apologize for any inconvenience this causes.

Sincerely,



John J. Baroni
Assistant Attorney General

cc: All parties of record

AMENDED
Navitas Consolidated
Capital Structure and Cost of Capital
2011

Component	Amount	%	Cost Rate	Wtd. Cost
Short Term Debt	$481,889	4.26%	6.89%	0.29%
Long Term Debt	$7,631,609	67.5%	6.017%	4.06%
Common Equity	$3,187, 038	28.24%	15.40%	4.35%
Total	$11,300,536	100%		8.71%

AMENDED

BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

Petition of Navitas TN NG, LLC for a General Rate Increase	)))	DOCKET NO. 12-00068

PRE-FILED DIRECT TESTIMONY OF

CHRISTOPHER C. KLEIN, PH.D.

ON BEHALF OF THE TENNESSEE ATTORNEY GENERAL
CONSUMER ADVOCATE AND PROTECTION DIVISION

November 15, 2012

BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

November 15, 2012

DOCKET NO. 12-00068

PRE-FILED DIRECT TESTIMONY AND EXHIBITS OF DR. CHRISTOPHER C. KLEIN

Q. Please state your name and your current position.

A. My name is Christopher C. Klein and I am an Associate Professor in the Economics and Finance Department at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee.

Q. What is your educational background?

A. I received a B. A. in Economics from the University of Alabama in 1976 and I received a Ph. D. in Economics from the University of North Carolina at Chapel Hill in 1980.

Q. What is your professional experience involving regulated industries?

A. I was employed as an Economist in the Antitrust Division of the Bureau of Economics at the Federal Trade Commission (FTC) in Washington, D.C., for six years starting in 1980. In 1986, I was hired as the first Economist for the Tennessee Public Service Commission (TPSC). Although my title changed over the years, I functioned as the Chief Economist for the TPSC and, after 1996, the Tennessee Regulatory Authority (TRA), until August of 2002, when I assumed my current position with MTSU.

Q. What were your duties at the FTC?

A. I performed the economic analysis in antitrust investigations involving more than 20 industries and contributed to staff reports on mergers in the petroleum industry, competition in grocery retailing, and the economics of predatory or sham litigation.

Q. What was your primary responsibility at the TPSC?

A. I was an expert witness for the staff of the TPSC in rate cases and other similar proceedings involving telecommunications, natural gas, electric and water utilities, as well as motor carriers. I testified in 36 dockets before the TPSC on the issues of cost of capital, rate design, and competitive effects. I also filed testimony before the Federal Communications Commission (FCC).

Q. How did your responsibilities change when the TRA supplanted the TPSC?

A. I oversaw the Utility Rate Division and then the Economic Analysis Division. The TRA staff no longer testified in proceedings before the agency, but provided analysis and advice to the TRA Directors. I was responsible for all such advice and analysis provided to the Directors by these Divisions, either individually or in concert with other TRA staff, in all proceedings that came before the agency for resolution. These proceedings included rate cases and tariff filings by public utilities, including those associated with the implementation of the federal Telecommunications Act of 1996.

Q. Were you a member of any regulatory committees or boards while you worked for the TPSC and the TRA?

A. Yes. I was a member of the National Association of Regulatory Utility Commissioners (NARUC) Staff Subcommittee on Gas. I was a member of, and Chaired, the Research Advisory Committee to the Board of Directors of the National Regulatory Research Institute (NRRI). I also served on the State Staff of the FCC's Federal-State Joint Board in CC Docket No.80-286 (the "Separations" Joint Board) and as a Group Leader on the NARUC Staff Subcommittee on Accounts Multi-state Audit Team that produced the 1988 Report on Bell Communications Research.

Q. What is your primary responsibility at MTSU?

A. I teach classes in the general area of applied microeconomics, including Principles of Microeconomics, Intermediate Microeconomic Theory, Managerial Economics, Economics of Antitrust and Regulation, and Econometrics, as well as undertaking scholarly research, participating in various university committees, and serving on dissertation committees.

Q. Have you taught at any other universities?

A. I taught classes in the Economics of Regulation and in Antitrust Economics in the Economics Department at Vanderbilt University for several years while I was employed at the TRA.

Q. Are you a member of any professional organizations?

A. I am a member of the American Economic Association, the Southern Economic Association, the Industrial Organization Society, and Alpha Pi Mu: the National Industrial Engineering Honor Society, as well as Beta Gamma Sigma: the International Honor Society for Collegiate Schools of Business.

Q. Have you published articles in professional or academic journals and presented papers at professional meetings?

A. More than 30 of my articles have appeared in professional or academic journals such as *Energy Economics*, *Utilities Policy*, *The Electricity Journal*, *The Journal of Applied Regulation* and many others. I have made more than 50 presentations at professional meetings.

Q. Have you testified before any other governmental bodies in Tennessee?

A. Yes. I have testified before various committees of the Tennessee General Assembly on regulatory issues, especially telecommunications issues and competition in the telecommunications industry, as well as before the Tennessee Advisory Commission on Intergovernmental Relations and the Tennessee Regulatory Authority. A complete list is provided in my Vita, beginning on page 9 of my Exhibit.

PURPOSE OF TESTIMONY

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

A. I will address the Cost of Capital for Navitas TN NG, LLC (Navitas TN) and recommend an allowed rate of return to be adopted for ratemaking purposes. This includes issues regarding capital structure, cost of debt and cost of equity.

Q. Can you summarize your testimony?

A. Yes. I recommend the consolidated capital structure of the Navitas companies as of December 31, 2011, and the associated weighted average costs of short term and long term debt. I recommend a cost of equity of 15.40% in this capital structure in order to yield an interest coverage ratio of 2, comparable to other Tennessee utilities. The resulting overall rate of return is 8.71% to be applied to the rate base of Navitas TN. These recommendations are summarized on page 2 of my Exhibit. I also recommend that Navitas TN's payments on the debt incurred by Fort Cobb Fuel Authority for the acquisition of the Tennessee natural gas utility operation not be included in the calculation of the revenue requirement in order to avoid a double recovery of capital costs.

Q. How is your testimony organized?

A. I will address the concept of cost of capital first, then capital structure and cost of debt. This is followed by cost of equity. I conclude with my recommended overall weighted cost of capital.

COST OF CAPITAL

Q. What do you mean by cost of capital?

A. I mean the rate of return necessary to induce investors to hold the debt and stock of a company. This rate of return should be equal to that available to investors on alternative investments of similar risk.

Q. How is the cost of capital related to the legal principles of determining the allowed rate of return for regulated utilities?

A. The cost of capital concept embodies the economic principles for determining the allowed rate of return set out by the U.S. Supreme Court in *Bluefield Water Works v. P.S.C.* (262 U.S. 679, 1923) and *F. P. C. v. Hope Natural Gas Co.* (320 U. S. 591, 1944). For instance, the Court stated in Hope that, "…the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital." (320 U.S. 603) In my opinion, the allowed rate of return on the capital employed by a utility should be set equal to its cost of capital.

Q. What are the consequences of not setting the allowed rate of return equal to the cost of capital?

A. If the allowed rate of return is set below the cost of capital, then the company's credit rating will fall and its cost of debt will rise. The price of its stock will decline to reflect the lower expected return. Eventually, the company may face difficulties in financing investments in new plant and equipment, causing the quality of its products and services to decline.

If the allowed rate of return is set above the cost of capital, then the firm's stockholders realize a capital gain as the price of the firm's stock rises to reflect the higher return. Moreover, the capital gain is paid for by the firm's customers in the form of excessively high prices.

Clearly, failure to set the allowed rate of return equal to the firm's cost of capital is detrimental to the firm's customers as well as its stockholders.

CAPITAL STRUCTURE AND COST OF DEBT

Q. What was your first step in estimating the cost of capital for Navitas TN?

A. My first step was to determine the appropriate capital structure and cost of debt for Navitas TN. I started with the capital structure related items in Navitas TN's responses to the TRA's Minimum Filing Requirements as well as the testimony of Navitas TN witness Mr. Hartline. Mr. Hartline states that the Navitas companies share certain assets across jurisdictions and subsidiaries. This is apparently true for financing as well. For example, Fort Cobb Fuel Authority, another subsidiary of Navitas Assets, LLC, the parent of

Navitas TN, obtained the debt that was used to acquire the former Gasco properties in Tennessee now operated as Navitas TN. Navitas Assets owns several subsidiaries that own the assets of the various Navitas operations, including natural gas operations in Kentucky, Oklahoma, and Tennessee. The natural gas operations are actually operated by another related company, Navitas Utility Corporation, whose equity owners are also majority equity owners of Navitas Assets. See Navitas TN's responses to MFR item 3. Further, the Navitas companies' loan covenants require a debt to equity ratio of 4 to one or less on a consolidated basis. The capital structures for 2010 and 2011 provided in response to MFR item 66 consolidate the Navitas Assets companies and Navitas Utility Corporation. For these reasons, I find it appropriate to consider the Navitas companies as a single entity with the year-end 2011 consolidated capital structure shown on page 2 of my Exhibit.

Q. How did you arrive at the cost of debt shown on page 2 of your Exhibit?

A. This is the weighted average costs of long term debt and short term debt for the consolidated Navitas companies calculated from the response to MFR item 68. The Navitas cost rates for debt are comparable to the cost rates for debt reported by Atmos Energy and Tennessee American Water Company in their recent rate cases (TRA Dockets 12-00049 and 12-00064). Consequently, I find these debt costs to be reasonable.

COST OF EQUITY

Q. How do you approach the cost of equity of Navitas TN?

A. Ordinarily, one examines stock market data on comparable firms to determine a utility's cost of equity. The stock of the Navitas companies, however, is not traded and the consolidated company is much smaller in size than those companies whose stock is traded. A list of natural gas and water utilities whose stock is traded, along with Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM) cost of equity estimates for them, is provided on pages 3 and 4 of my Exhibit. These pages are reproduced from my Exhibit in the recent Atmos Energy rate case (12-00064).

Q. Can you explain the Discounted Cash Flow method?

A. Yes. The DCF method views investors as valuing a company's stock based on the present value of the cash flows a stockholder expects to receive from owning the stock over an infinite time horizon. These cash flows from stock ownership are just the dividends paid by the company. Consequently, some simple mathematics show that the rate of return an investor expects on stock ownership in a company is the dividend yield for the current period plus the expected growth rate in that dividend. The dividend yield is just the expected dividend divided by the current price of the stock. The DCF estimates of the cost of equity for natural gas and water utilities shown on page 3 of my Exhibit have a mid-point of 8.15%.

Q. Can you explain the CAPM?

A. Yes. In the CAPM, an investor's required return on an investment is based on the relative riskiness of the investment. That is, an investor must be compensated with a higher expected return for investing in a riskier investment. The CAPM begins by estimating the risk premium required on a broad portfolio of common stocks relative to a risk-free asset. This risk premium is then adjusted for a particular stock's riskiness

relative to the market – that is, the broad portfolio of stocks. This is done by using the stock's beta, which measures the riskiness of the stock relative to the market. The resulting CAPM cost of equity consists of the risk-free return plus beta times the market risk premium. The CAPM cost of equity estimates shown on page 4 of my Exhibit suggest a cost of equity for natural gas and water utilities of 8.20% or less.

Q. How are these cost of equity estimates relevant for Navitas TN?

A. An equity return of 8% or so produces an after-tax interest coverage ratio of 1.5 to 2.5 for these utilities that are approximately 50% debt financed. The Navitas consolidated capital structure, in contrast, is comprised of over 70% debt. If Navitas is to earn a rate of return on rate base sufficient to yield an after-tax interest coverage ratio of 2, say, then this requires an equity return of 15.40% as shown on page 2 of my exhibit.

Q. What is the interest coverage ratio?

A. The interest coverage ratio is generally calculated as Earnings Before Income Tax and Interest Charges divided by Interest Charges. Here I have calculated it as the overall rate of return divided by the weighted cost rate for long term and short term debt. Since the overall return will be "grossed up" for income taxes before it is applied to the rate base to get its contribution to the revenue requirement, my calculation understates the before-tax interest coverage.

Q. Why is interest coverage important?

A. The interest coverage ratio indicates the ability of a company to pay its debts. According to Investopedia (www.investopedia.com/articles/basics/04/040804.asp): "The 'coverage' aspect of the ratio indicates how many times the interest could be paid from available earnings, thereby providing a sense of the safety margin a company has for paying its

interest for any period. A company that sustains earnings well above its interest requirements is in an excellent position to weather possible financial storms." The appropriate interest coverage for a firm in any particular industry depends upon the risks it faces. A before-tax interest coverage ratio of 1.5 is often considered a minimum, while a ratio of 2 is considered acceptable for a regulated utility. For firms in more volatile industries, higher values would be required.

Q. What do you conclude on the cost of equity for Navitas TN?

A. Although a comparable firms analysis of the cost of equity using stock market data is not possible for Navitas, calculating an equity return consistent with a comparable interest coverage ratio can be done. This suggests a cost of equity of 15.40% for Navitas TN.

OTHER ISSUES AFFECTING THE COST OF CAPITAL

Q. What other issues regarding the cost of capital are raised by Navitas?

A. There are two such issues that deserve comment. These issues arise from (1) payments by Navitas TN to Fort Cobb Fuel Authority (FCFA) on the debt incurred to acquire the Tennessee utility operation; (2) claims by the majority equity owners of the Navitas companies, Mr. Hartline and Mr. Varner, that their personal guarantees of the payments on the FCFA debt imply that this debt should be treated as equity in Navitas TN.

Q. What issue is raised by the payments on the FCFA debt?

A. Since Navitas TN is being charged for payments on the debt used to acquire the Tennessee gas utility, also allowing a return on the full value of the rate base would result in a double recovery of capital costs. I recommend allowing Navitas TN a return on rate

base that is built into rates for its consumers, but not including the payments to FCFA in the calculation of rates and charges (i.e., the revenue requirement). Other ways of preventing the double recovery are likely possible, but this seems the easiest route to follow.

Q. What issues arise with respect to the proposal to treat the debt investment in Navitas TN as equity?

A. There are at least two issues. The first is the same as that just discussed: double recovery of capital costs. This occurs if the debt payments from Navitas TN to FCFA are included in calculating a revenue requirement and a return on rate base is also allowed.

Assuming the first issue is resolved as I recommend above, the proposal also seems to suggest that Navitas TN should have an all-equity capital structure, even though the consolidated Navitas companies are financed with a combination of debt and equity. I recommend against adopting an all-equity capital structure for Navitas

Q. Does the guarantee of the debt payments by the owners of the Navitas companies mean that the debt is similar to equity?

A. No. In fact, the acceptance by the owners of the responsibility for the debt in the event that the Navitas companies cannot make the required payments gives up the limited liability granted to equity owners of corporations. The resulting business organization becomes more similar to a partnership, in which the partners are liable for the debt of the business, rather than a stock corporation. The debt, however, retains characteristics of debt in the sense that debt payments must be made before any profits are paid out to the equity owners. In the event of bankruptcy the claims of creditors still take precedence over those of the equity owners. The guarantee just extends the assets available to the

creditors for payment of the companies' debts to include the personal assets of the owners. Certainly, this increases the owners' risks compared to limited liability, but it does not turn the debt into equity.

Q. How would the TRA's past practice treat a subsidiary that was all-equity financed?

A. The TRA's practice is to apply double leverage to the subsidiary of a parent holding company in order to calculate a capital structure. If the subsidiary is all equity financed, then double leverage will simply substitute the capital structure of the parent for that of the subsidiary.

Q. How is double leverage defined?

A. Double leverage "usually refers to a situation where a holding company raises debt and downstreams it as equity capital, or subordinated debt, to a subsidiary, i.e., it is the use of debt by both the parent company and the subsidiary, in combination with the company's equity capital, to finance the assets of the subsidiary." (www.ventureline.com/accounting-glossary/D/double-leverage-definition/, accessed August 13, 2012.) In the regulatory context, "double leverage…as commonly propounded instructs that the weighted average cost of capital of the parent company of a subsidiary be used as a measure of the cost of equity of a subsidiary." (Michael S. Rozeff, "Modified Double Leverage – A New Approach," *Public Utilities Fortnightly*, March 31, 1983.) Or more simply, double leverage states that the equity of a subsidiary is "part equity and part the debt of the parent." (Kolbe, A. Lawrence, James A. Read, Jr. and George R. Hall, "The Cost of Capital," Cambridge:MIT Press, 1984, p. 146.)

Q. What is the purpose of the double leverage approach to capital structure?

A. The purpose of the double leverage approach is to recognize the parent-subsidiary relationship by sharing some of the benefits of that relationship with rate payers. Double leverage also discourages strategic financing behavior aimed only at raising a regulated subsidiary's regulated rate of return by manipulating the subsidiary's capital structure, while recognizing the role of the parent company in providing funds to the subsidiary.

Q. Do you recommend the use of double leverage to derive a capital structure for Navitas TN?

A. No. Despite the parent-subsidiary structure of the Navitas companies, it is clear that the companies are financed as a group with lenders imposing debt/equity ratio requirements on the consolidated entity. Under these circumstances, debt acquired by any subsidiary will affect the ability of any of the related companies to obtain additional debt by changing the consolidated debt/equity ratio. Hence, I have recommended the consolidated capital structure for use in setting the allowed rate of return for Navitas TN. Whether the investment in Navitas TN is treated as debt or equity is irrelevant in this context. Double recovery of capital costs, however, must be avoided.

CONCLUSION

Q. Can you summarize your recommendations for cost of capital for Navitas TN?

A. Yes. I recommend using the consolidated capital structure and weighted average cost of debt for the Navitas companies. I also recommend that the cost of equity be set to yield an after-tax interest coverage ratio of 2, comparable to other Tennessee natural gas and

water utilities. In this capital structure, the implied equity return is 15.40% which results in an overall return on rate base of 8.71% as shown on page 2 of my Exhibit. Whether the investment in Navitas TN is treated as debt or equity is irrelevant, but the double recovery of capital cost that results from Navitas TN's payments on the debt of FCFA in addition to a return on rate base must be avoided.

Q. Does this conclude your testimony at this time?

A. Yes.