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BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
NASHVILLE, TENNESSEE

Petition of Navitas TN NG, LLC for Approval of an Adjustment in the Rates, Charges, and Tariffs	)))	DOCKET NO. 19-00057

PRE-FILED DIRECT TESTIMONY OF

CHRISTOPHER C. KLEIN, PH.D.

ON BEHALF OF THE TENNESSEE ATTORNEY GENERAL
CONSUMER ADVOCATE

January 10, 2020

IN THE TENNESSEE PUBLIC UTILITY COMMISSION
AT NASHVILLE, TENNESSEE

IN RE:	)	
	)	
PETITION OF NAVITAS TN NG, LLC FOR APPROVAL OF AN ADJUSTMENT IN THE RATES, CHARGES, AND TARIFFS	)	**DOCKET NO. 19-00057**
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AFFIDAVIT

I, Christopher Klein, on behalf of the Consumer Advocate Unit of the Attorney General's Office, hereby certify that the attached Direct Testimony represents my opinion in the above-referenced case and the opinion of the Consumer Advocate Unit.

Christopher C. Klein
CHRISTOPHER C. KLEIN

Sworn to and subscribed before me
this 10th day of January, 2019.

Tiffany H Blackman
NOTARY PUBLIC

My commission expires: March 22, 2023

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
NASHVILLE, TENNESSEE

January 10, 2020

DOCKET NO. 19-00057

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

Q1. PLEASE STATE YOUR NAME AND YOUR CURRENT POSITION.

A1. My name is Christopher C. Klein. I have recently retired as Professor in the Economics and Finance Department at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee.

Q2. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A2. 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.

Q3. WHAT IS YOUR PROFESSIONAL EXPERIENCE INVOLVING REGULATED INDUSTRIES?

A3. 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 position with MTSU.

Q4. WHAT WERE YOUR DUTIES AT THE FTC?

A4. 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.

Q5. WHAT WAS YOUR PRIMARY RESPONSIBILITY AT THE TPSC?

A5. 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).

Q6. HOW DID YOUR RESPONSIBILITIES CHANGE WHEN THE TRA SUPPLANTED THE TPSC?

A6. 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.

Q7. WERE YOU A MEMBER OF ANY REGULATORY COMMITTEES OR BOARDS WHILE YOU WORKED FOR THE TPSC AND THE TRA?

A7. 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.

Q8. WHAT WAS YOUR PRIMARY RESPONSIBILITY AT MTSU?

A8. I taught 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.

Q9. HAVE YOU TAUGHT AT ANY OTHER UNIVERSITIES?

A9. I taught classes on the Economics of Regulation and on Antitrust Economics in the Economics Department at Vanderbilt University for several years while I was employed at the TRA.

Q10. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

A10. 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.

Q11. HAVE YOU PUBLISHED ARTICLES IN PROFESSIONAL OR ACADEMIC JOURNALS AND PRESENTED PAPERS AT PROFESSIONAL MEETINGS?

A11. 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.

Q12. Have you testified before any other governmental bodies in Tennessee?

A12. 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 5 of my Exhibit.

PURPOSE OF TESTIMONY

Q13. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A13. 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 the issues of capital structure, cost of debt, and cost of equity.

Q14. CAN YOU SUMMARIZE YOUR TESTIMONY?

A14. Yes. I recommend the consolidated capital structure of the Navitas companies as proposed by Navitas consisting of 67% debt and 33% common equity. I recommend a cost of equity of 14.18% in this capital structure in order to yield an interest coverage ratio of 2 in the overall return based on a 6.99% cost of debt. I exclude the 2.0% value of

a guarantee on the debt payments claimed by the equity owners of Navitas for reasons discussed below. The resulting overall rate of return is 9.36% to be applied to the rate base of Navitas TN. These recommendations are summarized on page 2 of my Exhibit.

Q15. HOW IS YOUR TESTIMONY ORGANIZED?

A15. 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

Q16. WHAT DO YOU MEAN BY COST OF CAPITAL?

A16. 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.

Q17. HOW IS THE COST OF CAPITAL RELATED TO THE LEGAL PRINCIPLES OF DETERMINING THE ALLOWED RATE OF RETURN FOR REGULATED UTILITIES?

A17. 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.

Q18. WHAT ARE THE CONSEQUENCES OF NOT SETTING THE ALLOWED RATE OF RETURN EQUAL TO THE COST OF CAPITAL?

A18. 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

Q19. WHAT WAS YOUR FIRST STEP IN ESTIMATING THE COST OF CAPITAL FOR NAVITAS TN?

A19. 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 TPUC's Minimum Filing Requirements (MFR) as well as the testimony of Navitas TN witness Mr. Hartline. Navitas proposes the target consolidated capital structure of the Navitas family of companies. These companies share certain assets across

jurisdictions and subsidiaries. This is apparently true for financing as well. 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. Navitas's historical consolidated capital structures provided in response to MFR Item No. 82 show debt:equity ratios between 2 and 3 with a projected target of 2. These historical capital structures are very heavily debt financed with debt making up more than 75% of total financing in some years. Most utilities are financed with 60% debt or less, and this would be a more prudent financial structure for Navitas as well. Since Navitas's target debt:equity ratio of 2 moves its structure in this direction, I find this reasonable under Navitas's current circumstances. For these reasons, I find it appropriate to consider the Navitas companies as a single entity with a debt:equity ratio of 2 in the consolidated capital structure shown on page 2 of my Exhibit.

Q20. HOW DID YOU ARRIVE AT THE COST OF DEBT SHOWN ON PAGE 2 OF YOUR EXHIBIT?

A20. This is the weighted average cost of long term debt and short term debt for the consolidated Navitas companies, representing historical and projected cost rates from the response to MFR Item No. 68 for 2018. I find these debt costs acceptable for a small utility.

Q21. ARE THERE OTHER ISSUES WITH THE DEBT OF NAVITAS?

A21. Yes. There is an issue regarding the value of the guarantee of debt payments made by the equity owners of Navitas and whether the ratepayers should be charged a premium for the value of the guarantee.

Q22. DOES THE GUARANTEE OF THE DEBT PAYMENTS BY THE OWNERS OF THE NAVITAS COMPANIES MEAN THAT THE DEBT IS SIMILAR TO EQUITY?

A22. 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 company's debts to include the personal assets of the owners. The equity owners could have made additional equity investment in Navitas, rather than taking on more debt, but apparently preferred to guarantee the debt payments rather than put more funds directly at risk through equity investment.

Q23. NAVITAS SUGGESTS THAT THE VALUE OF THE DEBT GUARANTEE IS 2% AND PROPOSES TO CHARGE RATEPAYERS THIS ADDITIONAL PREMIUM ON THE DEBT HELD BY THE COMPANY. DOES THIS MAKE SENSE?

A23. No. There are, in fact, at least three problems with this proposal.

Q24. WHAT IS THE FIRST PROBLEM WITH CHARGING RATEPAYERS FOR THE VALUE OF THE DEBT GUARANTEE?

A24. Firstly, Navitas has provided no calculation to show that the guarantee's value is, in fact, 2%. When asked to explain the source of this number, Navitas provided an article in response to Consumer Advocate Discovery Request No. 1-60 that lays out several methods for calculating the value of a guarantee, but Navitas apparently did not actually carry out any of these calculations. Thus, the 2% value of the guarantee lacks justification.

Q25. WHAT IS THE SECOND PROBLEM WITH CHARGING RATEPAYERS FOR THE VALUE OF THE GUARANTEE?

A25. The second problem arises because the equity owners of Navitas are also the guarantors of the debt payments. The article provided by Navitas (Gordon E. Goodman, "How to Value Guarantees," Global Association of Risk Professionals, January/February 08) envisions the equity owners of a firm paying a fee to a third-party guarantor to guarantee the firm's debt payments to a lender. The article provides several methods to calculate the fee for the guarantor in this situation. For Navitas, however, the equity owners are also acting as the guarantors. In this case, any fee for the guarantee is both paid by and received by the equity owners, resulting in a wash. That is, there is no gain or loss to the equity owners/guarantors regardless of the value of the fee. Thus, the value of the fee is irrelevant and there is no reason to recognize it for ratemaking purposes.

Q26. WHAT IS THE THIRD PROBLEM WITH CHARGING RATEPAYERS FOR THE GUARANTEE?

A26. The third issue is one of basic fairness. Navitas's ratepayers likely are better off with more equity financing and less debt, resulting in the same or lower overall cost of capital. Charging ratepayers a fee for the guarantee that allows more debt financing and may make them worse off results in an unfair situation.

COST OF EQUITY

Q27. HOW DO YOU APPROACH THE COST OF EQUITY OF NAVITAS TN?

A27. 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 and more heavily debt financed than those companies whose stock is traded. A list of natural gas utilities whose stocks are traded and are covered by ValueLine, along with Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM) cost of equity estimates for each, is provided on pages 3 and 4 of my Exhibit. Each of these companies display total capital of well over $1.0 billion, and all but one is less than 50% debt financed. Navitas, in contrast, had total assets of less than $14.0 million at the end of 2018 (MFR No. 66) and, in recent years, has been financed with over 70% debt (MFR No. 82). Hence, the cost of equity estimates for these firms are not directly applicable to Navitas but are provided as a benchmark.

Q28. CAN YOU EXPLAIN THE DISCOUNTED CASH FLOW METHOD?

A28. 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 8.045%.

Q29. CAN YOU EXPLAIN THE CAPITAL ASSET PRICING MODEL?

A29. 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 utilities of 7.00% or less. It is not unusual for the CAPM to understate the cost of equity when interest rates are extremely low, as they are now. For this reason, the CAPM estimate is best viewed as a lower bound at this time.

Q30. HOW ARE THESE COST OF EQUITY ESTIMATES RELEVANT FOR NAVITAS TN?

A30. Utilities with debt:equity ratios under one, as most of the ValueLine utilities have, are less than 50% debt financed. For these utilities, an equity return of 8% can produce an after-tax interest coverage ratio of 2 or more. The Navitas consolidated capital structure, however, with a debt:equity ratio of 2 is comprised of 67% debt. If Navitas is to earn a rate of return on rate base sufficient to yield an after-tax interest coverage ratio of 2, for the sake of discussion, then this requires an equity return of 14.18% as shown on page 2 of my exhibit.

Q31. WHAT IS THE INTEREST COVERAGE RATIO?

A31. 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.

Q32. WHY IS INTEREST COVERAGE IMPORTANT?

A32. 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 are advisable.

Q33. WHAT DO YOU CONCLUDE ON THE COST OF EQUITY FOR NAVITAS TN?

A33. 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. An interest coverage ratio of 2 suggests a cost of equity of 14.18% for Navitas TN.

CONCLUSION

Q34. CAN YOU SUMMARIZE YOUR RECOMMENDATIONS FOR COST OF CAPITAL FOR NAVITAS TN?

A34. Yes. I recommend using the consolidated capital structure and weighted average cost of debt for the Navitas companies but excluding the 2% value of the debt guarantee claimed by Navitas. I also recommend that the cost of equity be set to yield an after-tax interest coverage ratio of 2. In this capital structure, the implied equity return is 14.18%, which results in an overall return on rate base of 9.36% as shown on page 2 of my Exhibit.

Q35. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A35. Yes. I reserve the right, however, to supplement my testimony if new information becomes available.