

**BEFORE
THE TENNESSEE REGULATORY AUTHORITY**

PETITION OF PIEDMONT NATURAL)
GAS COMPANY, INC. FOR)
APPROVAL OF A CNG)
INFRASTRUCTURE RIDER TO ITS)
APPROVED RATE SCHEDULES AND)
SERVICE)

Docket No. 14-00086

PRE-FILED DIRECT TESTIMONY OF

CHRISTOPHER C. KLEIN, PH.D.

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

December 5, 2014

**BEFORE
THE TENNESSEE REGULATORY AUTHORITY**

PETITION OF PIEDMONT NATURAL)
GAS COMPANY, INC. FOR)
APPROVAL OF A CNG)
INFRASTRUCTURE RIDER TO ITS)
APPROVED RATE SCHEDULES AND)
SERVICE)

Docket No. 14-00086

AFFIDAVIT

I, Dr. Christopher C. Klein, Regulatory Economist, on behalf of the Consumer Advocate Division 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 Division.

Sworn to and subscribed before me
this 3rd day of Dec., 2014.

Emily Knight
NOTARY PUBLIC

My commission expires:

July 6, 2015



**BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE**

December 5, 2014

DOCKET NO. 14-00086

**PRE-FILED DIRECT TESTIMONY OF
DR. CHRISTOPHER C. KLEIN**

1 **Q1. Please state your name and your current position.**

2 **A1.** My name is Christopher C. Klein and I am a Professor in the Economics and Finance
3 Department at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee.

4 **Q2. What is your educational background?**

5 **A2.** I received a B. A. in Economics from the University of Alabama in 1976 and I received a
6 Ph. D. in Economics from the University of North Carolina at Chapel Hill in 1980.

7 **Q3. What is your professional experience involving regulated industries?**

8 **A3.** I was employed as an Economist in the Antitrust Division of the Bureau of Economics at
9 the Federal Trade Commission (FTC) in Washington, D.C., for six years starting in 1980.
10 In 1986, I was hired as the first Economist for the Tennessee Public Service Commission
11 (TPSC). Although my title changed over the years, I functioned as the Chief Economist
12 for the TPSC and, after 1996, the Tennessee Regulatory Authority (TRA), until August of
13 2002, when I moved to MTSU.

14 **Q4. What were your duties at the FTC?**

15 **A4.** I performed the economic analysis in antitrust investigations involving more than 20
16 industries and contributed to staff reports on mergers in the petroleum industry,
17 competition in grocery retailing, and the economics of predatory or sham litigation.

18

1 **Q5. What was your primary responsibility at the TPSC?**

2 **A5.** I was an expert witness for the staff of the TPSC in rate cases and other similar
3 proceedings involving telecommunications, natural gas, electric and water utilities, as
4 well as motor carriers. I testified in 36 dockets before the TPSC on the issues of cost of
5 capital, rate design, and competitive effects. I also filed testimony before the Federal
6 Communications Commission (FCC).

7 **Q6. How did your responsibilities change when the TRA supplanted the TPSC?**

8 **A6.** I oversaw the Utility Rate Division and then the Economic Analysis Division. The TRA
9 staff no longer testified in proceedings before the agency, but provided analysis and
10 advice to the TRA Directors. I was responsible for all such advice and analysis provided
11 to the Directors by these Divisions, either individually or in concert with other TRA staff,
12 in all proceedings that came before the agency for resolution. These proceedings
13 included rate cases and tariff filings by public utilities, as well as those associated with
14 the implementation of the federal Telecommunications Act of 1996.

15 **Q7. Were you a member of any regulatory committees or boards while you worked for**
16 **the TPSC and the TRA?**

17 **A7.** Yes. I was a member of the National Association of Regulatory Utility Commissioners
18 (NARUC) Staff Subcommittee on Gas. I was a member of, and Chaired, the Research
19 Advisory Committee to the Board of Directors of the National Regulatory Research
20 Institute (NRRI). I also served on the State Staff of the FCC's Federal-State Joint Board
21 in CC Docket Number 80-286 (the "Separations" Joint Board) and as a Group Leader on
22 the NARUC Staff Subcommittee on Accounts Multi-state Audit Team that produced the
23 1988 Report on Bell Communications Research.

1 **Q8. What are your responsibilities at MTSU?**

2 **A8.** I teach classes in the general area of applied microeconomics, including Principles of
3 Microeconomics, Intermediate Microeconomic Theory, Managerial Economics,
4 Economics of Antitrust and Regulation, and Econometrics, as well as undertaking
5 scholarly research, participating in various university committees, and serving on
6 dissertation committees.

7 **Q9. Have you taught at any other universities?**

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

11 **Q10. Are you a member of any professional organizations?**

12 **A10.** I am a member of the American Economic Association, the Southern Economic
13 Association, the Industrial Organization Society, and Alpha Pi Mu: the National
14 Industrial Engineering Honor Society, as well as Beta Gamma Sigma: the International
15 Honor Society for Collegiate Schools of Business.

16 **Q11. Have you published articles in professional or academic journals and presented
17 papers at professional meetings?**

18 **A11.** More than 30 of my articles have appeared in professional or academic journals such as
19 *Energy Economics*, *Utilities Policy*, *The Electricity Journal*, *The Journal of Applied*
20 *Regulation* and many others. I have made more than 50 presentations at professional
21 meetings.

22

23

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

2 **A12.** Yes. I have testified before various committees of the Tennessee General Assembly on
3 regulatory issues, especially telecommunications issues and competition in the
4 telecommunications industry, as well as before the Tennessee Advisory Commission on
5 Intergovernmental Relations and the Tennessee Regulatory Authority. A complete list is
6 provided in my Vita, attached as my Exhibit A.

7 **PURPOSE OF TESTIMONY**

8 **Q13. What is the purpose of your testimony?**

9 **A13.** I will address the public interest aspects of the proposal by Piedmont Natural Gas
10 Company, Inc., (Piedmont) in this docket.

11 **Q14. Can you summarize your recommendation?**

12 **A14.** Yes. I recommend that the TRA treat Piedmont's provision of CNG as a vehicle fuel at
13 retail as an unregulated service. In the event that the TRA does not adopt my
14 recommendation and treats CNG as a regulated service, I recommend several safeguards
15 to protect regulated ratepayers from subsidizing a profitable service.

16 **Q15. How is your testimony organized?**

17 **A15.** I will discuss the economic analysis of the public interest in the utility context first, then
18 lay out my analysis that leads to the conclusion that retail CNG vehicle fuel service
19 should be unregulated. I will then discuss my recommended safeguards for utility
20 ratepayers in the event that the TRA determines that this service is regulated.

21 **PUBLIC INTEREST ANALYSIS**

22 **Q16. Why is a finding that Piedmont's proposal is in the public interest important?**

1 **A16.** Piedmont proposes to recover its investment in CNG vehicle fueling facilities by
2 immediately adding this investment to the regulated rate base and raising its rates to
3 regulated ratepayers by roughly \$558,000 annually (Exhibit PKP-3, Page 1) to recover
4 the related capital costs (rate of return, depreciation, etc.) through a CNG Infrastructure
5 Rider (CNG IR). Piedmont claims (Supplemental Testimony of Ken Valentine, p. 12)
6 that Tenn. Code Ann. § 65-5-103(d) authorizes this under "...alternative regulatory
7 methods to allow for public utilities to recover expenses associated with infrastructure
8 and equipment targeted at alternative motor vehicle transportation fuel." But the statute
9 allows this cost recovery only if "...such expenses or costs are found by the authority to
10 be in the public interest." (TCA § 65-5-103(d)(3)(A)). Thus, a finding that Piedmont's
11 proposal is in the public interest is required for its approval by the TRA.

12 **Q17. What are the general economic criteria for a subsidy such as that proposed by**
13 **Piedmont to serve the public interest?**

14 **A17.** Economic analysis shows that subsidies are an efficient response to market failures
15 involving positive externalities. Positive externalities are benefits generated by market
16 activity that accrue to individuals who are not buyers or sellers of that particular good or
17 service. The buyers and sellers in the market do not take these external benefits into
18 account when making their buying and selling decisions. Consequently, less of the good
19 or service is provided than would occur if the external benefits were accounted for. In this
20 case, a subsidy to the production or consumption of the good or service can move the
21 market equilibrium closer to the quantity that would be produced when the external
22 benefits are recognized. Subsidies to education and vaccinations, for example, are
23 justified by the associated external benefits.

1 **Q18. Does Piedmont's proposal constitute a subsidy?**

2 **A18.** Yes. As explained in the initial testimony of Piedmont's witness Ken Valentine (p. 6),
3 "...like most new investment the incremental cost of service associated with these
4 facilities exceeds the initial revenues generated by these facilities." The CNG IR
5 proposed by Piedmont requires regulated ratepayers to cover the capital costs of CNG
6 vehicle fueling stations rather than recovering those costs from CNG vehicle fuel
7 customers. Hence, regulated ratepayers who are not CNG customers will subsidize
8 Piedmont's CNG retail operation by approximately \$558,000 annually.

9 **Q19. Is such a subsidy consistent with the intent of the legislation establishing TCA § 65-**
10 **5-103(d)?**

11 **A19.** No. TRA Chairman Jim Allison repeatedly testified before subcommittees of the
12 Tennessee General Assembly that the proposed legislation would not produce a subsidy
13 or cross-subsidy from regulated gas company rate payers to retail CNG operations.
14 During the March 6, 2013, meeting of the House Business and Utilities Subcommittee
15 (transcript attached as my Exhibit B), the following exchange occurred.

16 **Chairman Pat Marsh:** I have one other question that might be a little off. I was
17 asked to ask this by the Fuel and Convenience Store Association, is it the intent of
18 this legislation to permit regulated, natural gas companies to subsidize their retail
19 or wholesale alternative motor vehicle transportation fuel operations with rate
20 payer funds?

21
22 **Jim Allison:** The answer to that is no. The Bill, again, is procedural in nature,
23 there's no substantive change to policy to the State of Tennessee other than the
24 fact that it will hopefully streamline the regulatory process.

25
26 Then again on March 13, 2013, before the House Finance Ways and Means

27 Subcommittee (transcript attached as my Exhibit C), the following exchange took place.

28 **Representative Charles Sargent:** Chairman, thank you for that. For those, I
29 just wanted to make sure that we had that on the record. The other question I

1 have is under Section 5. Section 5 as you know where natural gas companies
2 would be able to set up, and there's been a lot of talk about this, set up their
3 own substation or sell natural gas for cars and trucks. Is that, do you see that as
4 the intent of the legislation?

5
6 **Representative Gerald McCormick:** You know Chairman, this is one that
7 just came up yesterday and I hate to make this last any longer but I don't want
8 to give you the wrong answer. If I have the Committee's permission I'd like
9 to call up possibly Chairman Allison to address that question, if that's okay
10 with the Chairman too and both Chairmen.

11
12 **Chairman Michael Harrison:** Without objection we're out of session. If you
13 would, come forward and state your name for the record.

14
15 **Jim Allison:** I'm Jim Allison, I'm the Chairman of the Tennessee Regulatory
16 Authority. The answer to your question is what it deals with is a procedural
17 change in how we will go about looking at those rates. It does not guarantee
18 recovery, it does not say that there will be any cross- subsidization of the fuel,
19 motor fuel dispenser by residential consumers or anything of that nature but the
20 alternative rate making procedures, all of them, are permissive and it would
21 require that finding that the public interest, like the Leader stated.

22
23 **Chairman Michael Harrison:** You're recognized.

24
25 **Representative Charles Sargent:** Thank you Mr. Chairman. My question is, is
26 it the intent of natural gas companies to go into set up, I'll say natural gas
27 stations through-out the state and have the rate payers paying for that
28 infrastructure and not as a commercial entity? Is there, I want to make sure
29 we don't have rate payers paying for infrastructure where we have commercial
30 entities out there that have to basically pay for their own infrastructure.

31
32 **Jim Allison:** There is no intent in this legislation to allow any other class of
33 consumers to subsidize the facilities that would go into providing natural gas as
34 a motor fuel.

35
36 **Q20. Are there positive externalities associated with CNG vehicle fueling stations?**

37 **A20.** There appear to be positive environmental benefits associated with the use of CNG
38 and/or LNG as a vehicle fuel. Piedmont witness Ken Valentine (Supplemental

1 Testimony, p. 3) claims that, relative to gasoline and diesel, "...CNG has 25% less CO₂
2 emissions..., 70% less carbon monoxide, and 87% less nitrogen oxides,..."

3 **Q21. What is the value of these externalities?**

4 **A21.** The websites provided by Piedmont in response to CAPD Supplemental Discovery
5 Request #2 and #3 support the figures stated by Mr. Valentine, but provide no
6 quantification of the value of these benefits. Hence the value of these benefits has not
7 been established and may or may not justify over \$500,000 in annual subsidies under
8 Piedmont's CNG IR.

9 **Q22. Will Piedmont's regulated ratepayers benefit from these positive externalities?**

10 **A22.** I suspect so, but anyone in the general vicinity traversed by vehicles fueled at Piedmont's
11 CNG stations will benefit, whether they are Piedmont ratepayers or not. This raises a
12 question of whether it is fair for Piedmont ratepayers to bear all of the cost of the subsidy.
13 That is, even when the subsidy may be justified by the general external benefits, it may
14 not be justified by the benefits accruing only to Piedmont's ratepayers.

15 **Q23. Can you reach a definitive conclusion on whether Piedmont's CNG IR serves the
16 public interest on the basis of this analysis?**

17 **A23.** No. Whether Piedmont's CNG IR serves the public interest or not depends on the
18 valuation of the external environmental benefits. No objective value can be placed on
19 these benefits at this time. Arguably, Piedmont has failed to meet its burden of
20 demonstrating that its CNG IR is in the public interest based on the expected positive
21 externalities.

22 **Q24. Are there benefits to buyers of CNG who may realize cost savings over gasoline or
23 diesel as fuel for their vehicles?**

A24. Any benefits of this type, even if they exist, will not justify the subsidy inherent in Piedmont's CNG IR. Moreover, in the current environment of falling prices for gasoline and diesel fuel, any such benefits of this type are also declining in value.

Q25. Why will any potential cost savings that may be realized by Piedmont's CNG vehicle fuel customers not justify the subsidy in Piedmont's CNG IR?

A25. Any cost savings of this type represent a transfer from Piedmont's ratepayers to CNG vehicle fuel customers. If CNG vehicle users buy CNG at a price lower than that available without the subsidy, the difference is made up by Piedmont's regulated service customers. In fact, the subsidy could exceed the cost savings realized by CNG vehicle operators. Consequently, there is no additional net benefit generated. In fact, the subsidy could be detrimental to the development of the CNG vehicle fuel market in and around Piedmont's Tennessee service territory.

CNG SHOULD BE UNREGULATED

Q26. Why should Piedmont's provision of CNG as a vehicle fuel be an unregulated service?

A26. There are two principal reasons. First, the CNG vehicle fuel market is not a monopoly currently, nor does the retail CNG vehicle fuel market possess the natural monopoly characteristics that justify public utility regulation. Piedmont apparently agrees with this assessment (Response to CAPD Supplemental Discovery Request #7; Response to TFCSA Supplemental Discovery Request #10). Second, subsidizing Piedmont's retail CNG vehicle fuel operations through the CNG IR may retard the development of the retail CNG vehicle fuel market and reduce the external environmental benefits from CNG as a vehicle fuel relative to the case without the subsidy. Hence, Piedmont's CNG IR is

not in the public interest. The TRA should reject Piedmont's CNG IR proposal and treat its retail CNG vehicle fuel as an unregulated service.

Q27. How could Piedmont's CNG IR retard the development of the retail CNG vehicle fuel market?

A27. Piedmont's CNG IR subsidizes its retail CNG vehicle fuel stations by shifting the capital costs associated with these stations to regulated (non-CNG) service ratepayers. Piedmont's retail CNG vehicle fuel stations will not have to recover the associated capital costs from retail CNG revenues. Any competing retail CNG vehicle fuel station operated by any entity other than Piedmont, however, will have to recover its capital costs from retail CNG revenues. Hence, Piedmont will have a cost advantage over all other actual or potential competitors in the retail CNG vehicle fuel market in or near Piedmont's Tennessee service territory. This will discourage and likely prevent the entry of competing retail CNG vehicle fuel stations in or near Piedmont's Tennessee service territory. Deterring entry into the retail CNG vehicle fuel market will retard the development of the market, resulting in less use of CNG as a vehicle fuel and reducing the external benefits to Tennessee residents than would occur otherwise.

Q28. Are there other potential detrimental effects from Piedmont's CNG IR?

A28. Yes. There is the potential for a vertical price squeeze by Piedmont. A vertical price squeeze requires that a single firm sell a good or service that is an essential input to another good or service at the wholesale level and also sell the finished good or service produced using the essential input at the retail level. If Piedmont's proposal is approved, Piedmont will sell natural gas at wholesale to CNG vehicle fuel stations and will also sell CNG vehicle fuel at retail. The squeeze is implemented by the wholesale firm selling the

1 retail good or service at a price that will not cover the full cost of production over and
2 above the wholesale cost of the essential input. The CNG IR will make a price squeeze
3 practical for Piedmont, since any shortfall in revenues at the retail CNG level will be
4 covered by regulated ratepayers up to the amount of the retail CNG capital costs. This
5 possibility further reduces the likelihood of entry by competitors into the retail CNG
6 vehicle fuel market.

7 **RECOMMENDATION: CNG UNREGULATED**

8 **Q29. What is your recommendation to the TRA if it finds that retail CNG vehicle fuel**
9 **should be unregulated?**

10 **A29.** If the TRA finds that retail sales of CNG by Piedmont should be unregulated, I
11 recommend that the TRA deny Piedmont's CNG IR petition as filed. It is possible that a
12 CNG IR could be consistent with TCA § 65-5-103(d), if it covered additions to
13 Piedmont's natural gas infrastructure and equipment, up to and including the customer's
14 meter, that were necessary to sell natural gas at wholesale to retail CNG vehicle fuel
15 stations. Further, Piedmont's Rate Schedule 342 for retail CNG sales should be denied,
16 but the "experimental" Rate Schedule 343 to provide natural gas sales for resale in CNG
17 form should be approved. Rate Schedule 343 will promote the development of the retail
18 CNG vehicle fuel market.

19 **RECOMMENDATION: CNG REGULATED**

20 **Q30. What do you recommend if the TRA finds that retail sales of CNG by Piedmont are**
21 **regulated and approves the CNG IR?**

22 **A30.** I recommend that the TRA implement safeguards for the protection of regulated rate
23 payers in the event that the retail CNG service is eventually deregulated.

1 **Q31. Why are such safeguards necessary?**

2 **A31.** Piedmont's proposed CNG IR shifts the capital costs of Piedmont's retail CNG vehicle
3 fuel operations to Piedmont's other regulated service customers. This also shifts the risks
4 associated with Piedmont's retail CNG operations to the ratepayers of Piedmont's other
5 regulated services. If Piedmont's retail CNG operation fails to make a profit, the non-
6 CNG ratepayers will make up for any shortfall up to the amount of the capital costs
7 through the CNG IR. I have not been able to formulate a safeguard against regulated
8 ratepayers picking up the bill for the retail CNG capital costs when the CNG IR is
9 approved and the CNG operation is both regulated and unsuccessful. This possibility
10 does argue against the public interest of the proposal.

11 On the other hand, if the CNG IR is approved and the retail CNG operation earns
12 a profit, but remains regulated, then the regulated ratepayers either breakeven, or benefit
13 if the retail CNG operations generates net revenue in excess of its capital costs. No
14 safeguards are necessary in this case.

15 If the CNG IR is approved, the retail CNG operation eventually yields net
16 revenue, and the retail CNG market is deregulated, however, some safeguards for the
17 remaining ratepayers are required. First, at the time that retail CNG is deregulated, any
18 and all retail CNG investment remaining in the regulated rate base should be removed.
19 There is no possible public interest justification for regulated ratepayers to subsidize a
20 profitable unregulated operation. Second, any retail CNG capital costs paid by regulated
21 non-CNG ratepayers since the approval of the CNG IR should be repaid with interest by
22 Piedmont's deregulated retail CNG operation on a schedule to be determined by the TRA
23 at the time of deregulation. That is, at the time that Piedmont's retail CNG operation is

1 deregulated, 1) all undepreciated retail CNG investment should be removed from the
2 regulated rate base and 2) all retail CNG capital costs in excess of retail CNG net revenue
3 incurred prior to deregulation should be recovered with interest from the deregulated
4 retail CNG operation going forward on a scheduled to be determined by the TRA at the
5 time.

6 SUMMARY OF RECOMMENDATIONS

7 **Q32. Please summarize your recommendations.**

8 **A32.** I recommend that the TRA find that retail CNG vehicle fuel operations are unregulated.
9 Further, the TRA should deny Piedmont's CNG IR as filed as well as Rate Schedule 342.
10 Rate Schedule 343 should be approved.

11 If the TRA finds that Piedmont's retail CNG vehicle fuel operation is regulated
12 and approves the CNG IR, then I recommend approval of Rate Schedules 342 and 343. I
13 also recommend the following safeguards in the event that Piedmont's retail CNG vehicle
14 fuel operation is deregulated at some point in the future: 1) all remaining undepreciated
15 retail CNG investment should be removed from the regulated ratebase at the time
16 deregulation is effective; and 2) all retail CNG capital costs in excess of retail CNG net
17 revenue incurred prior to deregulation should be recovered with interest from the
18 deregulated retail CNG operation going forward on a scheduled to be determined by the
19 TRA at the time that deregulation is effective.

20 **Q33. Does this conclude your testimony at this time?**

21 **A33.** Yes.

ATTACHMENT A

VITA

CHRISTOPHER C. KLEIN

EDUCATION:

Ph. D. (Economics), University of North Carolina - Chapel Hill (1980)
B. A. (Economics), University of Alabama - Tuscaloosa (1976)

EXPERIENCE:

2002-Present	Middle Tennessee State University Professor of Economics, August 2013 Associate Professor of Economics, August 2002-July 2013
2002-Present	Consultant Clients included: AGL Resources, Inc.; Reseller Coalition; Tennessee Advisory Commission on Intergovernmental Relations; Tennessee American Water Company, Inc.; Tennessee Department of Environment and Conservation; US LEC of Tennessee, Inc.; Verizon Wireless; West Virginia American Water Company, Inc.; Z-Tel Communications, Inc.
1996-2002	Tennessee Regulatory Authority Chief, Economic Analysis Division, 1997-2002 Chief, Utility Rate Division, 1996-97
1998-2001	Vanderbilt University Adjunct Associate Professor of Economics
1986-1996	Tennessee Public Service Commission Director, Utility Rate Division, 1994-96 Economist & Research Director, 1993-94 Commission Economist, 1986-1993
1990-1994	Middle Tennessee State University Adjunct Faculty, Department of Economics and Finance
1980-1986	Federal Trade Commission Economist, Bureau of Economics - Antitrust Division

PROFESSIONAL ACTIVITIES:

Editor, *Journal for Economic Educators*, 2007 to present.
Member 1994-96, State Staff, Federal-State Joint Board, Federal Communications Commission
CC Docket No.80-286 ("Separations" Joint Board).
Chair 1993-95, member 1990-95, Research Advisory Committee to the Board of Directors of the
National Regulatory Research Institute at Ohio State University.
Member 1990-95, Staff Subcommittee on Gas, National Association of Regulatory Utility
Commissioners.

Group Leader: Economics, Contracts, and Non-affiliate Revenue; NARUC* Staff Subcommittee on Accounts Multi-state Audit Team, 1988 Report on Bell Communications Research.
Referee: *Applied Economics, Contemporary Economic Policy, Eastern Economic Journal, Journal of Economic Education, Land Economics, Management and Decision Economics, Media Economics, Review of Industrial Organization, Social Science Quarterly, Southern Economic Journal.*
Memberships: American Economic Association (AEA, since 1981), Southern Economic Association (1982), Industrial Organization Society (1986), Western Economic Association (2003).

HONORS:

Beta Gamma Sigma, International Honor Society for Collegiate Schools of Business, 2008
Top 30 Score, 2003-2004 Student Evaluation of Faculty Performance, Jones College of Business, Middle Tennessee State University.
Resolution of Recognition, National Regulatory Research Institute, 1995
Listed in various Who's Who publications, 1990-
Certificate of Commendation, Federal Trade Commission, 1985
First in my class to complete the Ph. D., 1980
Alpha Pi Mu, National Industrial Engineering Honorary, 1973

GRANTS RECEIVED:

MTSU Jones College Summer Research Grant: 2004, 2005, 2007, 2012.
MTSU Faculty Research and Creative Activity Academic Year Grant: 2004-2005 (with Reuben Kyle)
MTSU Faculty Research and Creative Projects Committee Summer Salary Grant: 2006, 2009.

TEACHING

At MTSU

ECON 2420, Principles of Economics – Microeconomics
ECON 3520, Intermediate Microeconomic Theory
ECON 4400, Economics of Antitrust and Regulation
ECON 4570, Managerial Economics
ECON 4620, Econometrics and Forecasting
ECON 4720, Economic Issues in the Music Industry
ECON 7121, Seminar in Applied Microeconomic Theory (Ph.D. Program)
ECON 7250, Methods of Outcome Assessment (Ph.D. Program)
Student Internships (ECON/FIN 4890, ECON/FIN 5890, ECON/FIN 6440)

At Vanderbilt University

ECON 252, Antitrust Economics
ECON 283, Economics of Regulation

MTSU Dissertation Committees

Shea W. Slonaker, Chair, *Three Essays on the Recorded Music Industry*, Ph. D. 2009.

- Hua Liu, *U.S. Trade Deficit, Productivity Growth and Offshore Outsourcing*, Ph. D. 2006.
- Jennifer Wilgus, *A Life-Cycle Approach to Human Capital Investment and Skill-Biased Technological Change*, Ph. D. 2005.
- Anealia Sasser, *A Theoretical Examination of Title IV Financial Aid for Higher Education*, D.A. 2004.

Vanderbilt University Dissertation Committees:

- Aster Adams, *The Impact of Deregulation and Competition on Efficiency, Financial Performance, and Shareholder Wealth of Electric Utilities in the United States*, Ph. D. 2009.
- David B. Sapper, *Trial Selection and the Effects of Sentencing Reform in Criminal Antitrust Cases: A Theoretical and Empirical Analysis*, Ph. D. 2006.
- T. Randolph Beard, *Bankruptcy, Safety Expenditure, and Safety Regulation in the Motor Carrier Industry*, Ph. D. 1988

PUBLICATIONS AND WORKING PAPERS

- “Is There Evidence of Random Copying Behavior in the Recorded Music Industry in the Digital Age?” with Shea W. Slonaker, submitted to *Cultural Economics*, 2013.
- “The Price of Quality: Hedonic Estimation of Implicit Market Models for Higher Education,” with Reuben Kyle, working paper, 2013.
- “Do State Funded Merit Scholarships Reduce High School Dropout Rates?” with Elizabeth A. Perry-Sizemore, working paper, 2012.
- “Education Production Functions,” *Encyclopedia of Educational Theory and Philosophy*, Denis Phillips, ed., Sage Publications, June 2014.
- “Econometrics as a Capstone Course in Economics,” *The Journal of Economic Education*, 44(3):268-276, 2013.
- “Identifying the Best Buys in U.S. Higher Education,” with E. Anthon Eff and Reuben Kyle, *Research in Higher Education*, 53(8):860-887, 2012.
- “Chart Turnover and Sales in the Recorded Music Industry: 1990-2005,” with Shea W. Slonaker, *Review of Industrial Organization*, 36:351-372, 2010.
- “What Can We Learn from Education Production Studies?” with E. Anthon Eff, *Eastern Economic Journal*, 36:450-479, 2010.
- “Public Transportation Ridership Levels,” with Christopher R. Swimmer, *Journal for Economic Educators*, 10(1): 40-46, Summer 2010.
- “Analysis of U.S. Foreign Aid Determinants for 2003,” with Joshua M. Hill, *Journal for Economic Educators*, 9(1): 48-52, Summer 2009.
- “Intra-district Public School Funding Equity and Performance in Nashville, Tennessee,” *Journal of Education Finance*, Summer 2008.
- “A Tale of Three Inputs: Cost and Production Duality with Time Utilization of Capital,”

Applied Economics Research Bulletin, 1(1) 2008.

- "Telephone Penetration in Tennessee: Are Intrastate Universal Service Policies Effective?" with Aster R. Adams and David B. Sapper, *Journal of Applied Regulation*, 2, November 2004, pp. 87-108.
- "A Switching Regime Approach to Measuring the Effects of Technological Change in Ocean Shipping," with J. David Bass and Reuben Kyle, *Journal of Productivity Analysis*, 22:1-2, July-September, 2004, pp. 29-49..
- "The Financial Implications of Unbundling on Bell Company Profits: A Review of the Evidence," with T. Randolph Beard and George S. Ford, *CommLaw Conspectus: The Journal of Communications Law and Policy*, v. 12 n.1, Fall/Winter 2003.
- "Bell Companies as Profitable Wholesale Firms: The Financial Implications of UNE-P," with T. Randolph Beard, *Phoenix Center Policy Paper No. 17*, November 2002, www.phoenix-center.org.
- "Connecting Tennessee: Bridging the Digital Divide," with Rose M. Gregory, *NRRI Quarterly Bulletin*, vol. 21 no. 3, Spring 2001.
- "Regulation vs. Deregulation: It's All in the Externalities," *Tennessee's Business*, Middle Tennessee State University, v. 11, n. 3 (November), 2001.
- "The Role of Public Power in a Restructured Electric Power Industry," with David Sapper, *The Electricity Journal*, August/September 2001.
- "Regulator Preferences and Utility Prices: Evidence from Natural Gas Distribution Utilities," with George Sweeney, *Energy Economics*, vol. 21, n. 1, 1999.
- "Competition in Telecommunications: A Progress Report for Tennessee," *Tennessee's Business*, Middle Tennessee State University, Murfreesboro, TN; vol. 9, n. 1, 1999.
- "Technological Change and the Production of Ocean Shipping Services," with Reuben Kyle, *Review of Industrial Organization*, December 1997.
- "The Haunting of Universal Service: Open Markets, Efficient Funding and the Ghost of the Fair Rate of Return," *Proceedings of Tenth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1996.
- "Productivity Growth in Telecommunications: The Case of Tennessee," *Proceedings of Tenth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1996.
- "Capture vs. Compromise: Entry Regulation of Intrastate Trucking," with Reuben Kyle and Jennifer Wilgus, *Logistics and Transportation Review*, v. 32 n. 3, September 1996.
- "Price Discrimination: What is 'Undue' for a U.S. Utility?" *Utilities Policy*, vol. 4 no. 4, October 1994.
- "Single Service Price Variations and 'Subsidies' in the Pricing of Telecommunications Services," *Proceedings of Ninth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1994.
- "What Is Undue Price Discrimination by a Regulated Utility?" *NRRI Quarterly Bulletin*, March 1994.
- "A Comparison of Cost-Based Pricing Rules for Natural Gas Distribution Utilities," *Energy Economics*, July 1993.

- "Negotiating a Transportation Rate Under Threat of Bypass: A Case Study," *Proceedings of the Eighth Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1992.
- "A Multinomial Logit Model of Intrastate Trucking Regulation in Tennessee," with Jennifer Jose and Reuben Kyle, *Papers and Proceedings of the Nineteenth Annual Meeting of the Midsouth Academy of Economics and Finance*, v. 16, 1992.
- "Ramsey Prices for Natural Gas Distribution Utilities," *Proceedings of the Seventh NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1990.
- "Intervention as Entry Deterrence: Evidence from Sham Litigation Cases," *Proceedings of the Seventh NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, OH, 1990.
- Book Review, *Changing the Rules: Technological Change, International Competition, and Regulation in Communications*, Edited by Robert W. Crandall and Kenneth Flamm, Brookings 1989; *Review of Industrial Organization*, Fall 1990.
- "Double Leverage and Strategic Financing Decisions," *NRRI Quarterly Bulletin*, v. 11, n. 3, September 1990.
- "Predation in the Courts: Legal Versus Economic Analysis in Sham Litigation Cases," *International Review of Law & Economics*, June 1990.
- "Rate Design for Natural Gas Utilities: A Comparison of Ramsey and Cost of Service Pricing," *NRRI Quarterly Bulletin*, December 1989.
- "Dissecting Divestiture: A Telecommunications Book Review Article," *Review of Industrial Organization*, October 1989.
- The Economics of Sham Litigation: Theory, Cases, and Policy*, Bureau of Economics Staff Report, Federal Trade Commission, April 1989.
- "New Agreements, Non-affiliate Revenues, and Economic Issues," with Mike Amato and Francis Fok, in *Report on Bell Communications Research*, National Association of Regulatory Utility Commissioners, 1988.
- "Merger Incentives and Cost of Capital Regulation of Subsidiaries," *Midsouth Journal of Economics and Finance*, March 1988.
- "Strategic Sham Litigation: Economic Incentives in the Context of the Case Law," *International Review of Law & Economics*, December 1986.
- "Is There a Principle for Defining Industries? Comment," *Southern Economic Journal*, October 1985.
- "A Note on Defining Geographic Markets," with Ed Rifkin and Noel Uri, *Regional Science and Urban Economics*, February 1985.
- "Process Analysis, Capital Utilization, and the Existence of Dual Cost and Production Functions," FTC Bureau of Economics Working Paper No. 116, May 1984.
- "A General Theory of Hedonic Pricing of Capital as a Factor of Production," FTC Bureau of Economics Working Paper No. 105, December 1983.
- "The International Market for Crude Oil," with Fred Lipson and Harvey Blumenthal, in *Mergers in the Petroleum Industry*, Federal Trade Commission, 1982.

PRESENTATIONS

- “The Music Industry as a Vehicle for Economic Analysis,” Southern Economic Association Annual Conference, Atlanta, GA, November 2014.
- “The Music Industry as a Vehicle for Economic Analysis,” American Economic Association National Conference on Teaching Economics, Chicago, IL, May 2013.
- “Supply Innovation and Sales of Recorded Music: 1990-2010,” with Shea W. Slonaker, Southern Economic Association Annual Conference, New Orleans, LA, November 2012.
- “Econometrics as a Capstone Course in Economics,” American Economic Association National Conference on Teaching Economics, Boston, MA, May 2012.
- “Music Supply, Chart Turnover, and the Random Copying Hypothesis in the Digital Age,” with Shea W. Slonaker, International Industrial Organization Conference, Arlington, VA, March 2012.
- “Econometrics as a Capstone Course in Economics,” Southern Economic Association Annual Conference, Washington, DC, November 2011.
- “Do State Funded Merit Scholarships for Higher Education Reduce High School Dropout Rates for All Students?” with Elizabeth A. Perry-Sizemore, Southern Economic Association Annual Conference, Washington, DC, November 2011.
- “Do State Funded Merit Scholarships for Higher Education Improve Pre-College Academic Performance?” with Elizabeth A. Perry-Sizemore, Southern Economic Association Annual Conference, Atlanta, GA, November 2010.
- “The Effect of State Funded Merit Scholarships for Higher Education on Pre-College Academic Performance,” with Elizabeth A. Perry-Sizemore, Southern Economic Association Annual Conference, San Antonio, TX, November 2009.
- “The Effect of State Funded Merit Scholarships for Higher Education on High School Graduation Rates,” with Elizabeth A. Perry-Sizemore, Southern Economic Association Annual Conference, Washington, DC, November 2008.
- “Identifying the Best Buys in U.S. Higher Education,” with E. Anthon Eff and Reuben Kyle, Southern Economic Association Annual Conference, Washington, DC, November 2008.
- “Product Variety and Sales in the Recorded Music Industry: 1990-2005,” with Shea W. Slonaker, International Industrial Organization Conference, Arlington, VA, May 2008.
- “Identifying the Best Buys in U.S. Higher Education,” with E. Anthon Eff and Reuben Kyle, Academy of Economics and Finance Annual Meeting, Nashville, TN, February 2008.
- “Product Variety and Sales in the Recorded Music Industry: 1990-2005,” with Shea W. Slonaker, Academy of Economics and Finance Annual Meeting, Nashville, TN, February 2008.
- “Do State Funded Merit Scholarships Induce Students to Learn more in High school?” with Elizabeth A. Perry-Sizemore, Southern Economic Association Annual Conference, New Orleans, LA, November 2007.
- “The Price of Quality: Hedonic Estimation of Implicit Market Models for Higher Education,” with Reuben Kyle, Southern Economic Association Annual Conference, New Orleans, LA, November 2007.

- "The Shifting Appeal of Sham Litigation: Evidence from Appellate Decisions 1971-2006," International Industrial Organization Conference, Savannah, GA, April 2007.
- "The Shifting Appeal of Sham Litigation: Evidence from Appellate Decisions 1980-2006," Scholar's Week Poster Fair, MTSU, April 2007
- "Causality Tests for Public School Funding and Performance," Southern Economic Association Meeting, Charleston, SC, November 2006.
- "The Price of Quality: Hedonic Estimation of Implicit Market Models for Higher Education," with Reuben Kyle, Southern Economic Association Meeting, Washington, November 2005.
- "The Price of Quality: Hedonic Estimation of Implicit Market Models for Higher Education," with Reuben Kyle, International Industrial Organization Conference, Atlanta, April 2005.
- "Anticompetitive Litigation and the "Baselessness" Standard for Antitrust Liability," Southern Economic Association Meeting, New Orleans, November 2004.
- "The Price of Quality: Hedonic Estimation of Implicit Market Models for Higher Education," with Reuben Kyle, Southern Economic Association Meeting, New Orleans, November 2004.
- "VoIP: Let's Ask the Right Questions," Tennessee Regulatory Authority Forum on VoIP, Nashville Public Library, April 30, 2004.
- "Telephone Penetration in Tennessee: Are Intrastate Universal Service Policies Effective?" with Aster Rutibablira and David B. Sapper, Southern Economic Association Meeting, San Antonio, TX, November 2003.
- "Telephone Penetration in Tennessee: Are Intrastate Universal Service Policies Effective?" with Aster Rutibablira and David B. Sapper, International Industrial Organization Conference, Boston MA, April 4-5, 2003.
- "A Critique of Educational Production Functions," Southern Economic Association meeting, New Orleans, LA, November 2002.
- "Connecting Tennessee: Bridging the Digital Divide," with Rose M. Gregory, American Economic Association meeting, joint session with the Transportation and Public Utilities Group, Atlanta, GA, January 2002.
- "Long Term Contracts as Anticompetitive Devices in Telecommunications," Southern Economic Association Annual Meeting, Tampa, FL, November 2001.
- "The Role of Public Power in a Restructured Electric Power Industry," American Economic Association meeting, joint session with the Transportation and Public Utilities Group, Boston, MA, January 2000.
- "Universal Telephone Service in Tennessee: A Pre-Competition Assessment," with David Sapper, Southern Economic Association meeting, New Orleans, LA, November 1999.
- "Trucks, Planes, Trains, and Wires? Short-haul vs. Long-haul Long Distance Rates in Telecommunications," with Reuben Kyle, Southern Economic Association meeting, Baltimore, MD, November 1998.
- "The Economics of Time as a Resource," Southern Economic Association meeting, Atlanta, GA, November 1997.
- "Cost and Production Duality with Capital Utilization," Department of Economics Seminar Series, Vanderbilt University, February 1997.

- "Maximum Impropriety: The 'Baselessness' Standard for Improper Litigation," Southern Economic Association meeting, Washington, November 1996.
- "Cost and Production Duality with Capital Utilization," Southern Economic Association meeting, Washington, November 1996.
- "The Haunting of Universal Service: Open Markets, Efficient Pricing, and the Ghost of the Fair Rate of Return," Tenth NARUC Biennial Regulatory Information Conference, Columbus, OH, September 1996.
- "Productivity Growth in Telecommunications: The Case of Tennessee," Tenth NARUC Biennial Regulatory Information Conference, Columbus, OH, September 1996.
- "Productivity Growth in Telecommunications: The Case of Tennessee," Advanced Workshop in Regulation and Public Utility Economics, 15th Annual Conference, Lake George, NY, May 1996.
- "A Switching Regime Approach to Measuring the Effects of Technological Change in Ocean Shipping," with Reuben Kyle, Southern Economic Association meeting, New Orleans, November 1995.
- "Productivity Growth in Telecommunications: The Case of Tennessee," Southern Economic Association meeting, New Orleans, November 1995.
- "Local Service Price Variations and 'Subsidies' in Telecommunications," Southern Economic Association meeting, Orlando, November 1994.
- "Dynamic Effects of Regulatory Policy on Intrastate Long Distance Telephone Rates," Southern Economic Association meeting, Orlando, November 1994.
- "Single Service Price Variations and 'Subsidies' in the Pricing of Telecommunications Services," Ninth NARUC Biennial Regulatory Information Conference, Columbus, OH, September 1994.
- "Suit, Countersuit, and Settlement in Sham Litigation," Annual Meeting of the Midsouth Academy of Economics and Finance, Nashville, February 1994.
- "New Evidence on the Effect of Regulation on Intrastate Long Distance Telephone Rates," Annual Meeting of the Midsouth Academy of Economics and Finance, Nashville, February 1994.
- "What is Undue Price Discrimination for a Public Utility?" Southern Economic Association meeting, New Orleans, November 1993.
- "Regulated Utility Prices and the Preferences of Regulators," with George Sweeney, Southern Economic Association meeting, New Orleans, November 1993.
- "A Test for Strategic Behavior Under Rate of Return Regulation," Southern Economic Association meeting, Washington, November 1992.
- "New Evidence on the Effect of Regulatory Policy on Intrastate Long Distance Telephone Rates," Southern Economic Association meeting, Washington, November 1992.
- "Technological Change and the Production of Ocean Shipping Services," with Reuben Kyle, Atlantic Economic Association meeting, Plymouth, MA, October 1992.
- "Negotiating a Transportation Rate Under Threat of Bypass: A Case Study," Eighth Biennial Regulatory Information Conference, Columbus, OH, September 1992.

- "A Multinomial Logit Model of Intrastate Trucking Regulation in Tennessee," with Jennifer W. Jose and Reuben Kyle, Midsouth Academy of Economics and Finance annual meeting, Mobile, February 1992.
- "Technological Change and the Production of Ocean Shipping Services," with Reuben Kyle, Southern Economic Association meeting, Nashville, November 1991.
- "Suit, Countersuit, and Settlement in Sham Litigation Cases," Southern Economic Association meeting, Nashville, November 1991.
- "Implementing Third Best Pricing Rules for Natural Gas Distribution Utilities," Southern Economic Association meeting, Nashville, November 1991.
- "Trucking Regulation in Tennessee," with Jennifer Jose and Reuben Kyle, Southern Economic Association meeting, Nashville, November 1991.
- "Research and Development in Regulated Markets: The Case of Bell Communications Research," Southern Economic Association meeting, New Orleans, November 1990.
- "Incentives for Trial and Settlement in Sham Litigation," Southern Economic Association meeting, New Orleans, November 1990.
- "Ramsey Prices for Natural Gas Distribution Utilities," Seventh NARUC Biennial Regulatory Information Conference, Columbus, OH, September 1990.
- "Intervention as Entry Deterrence: Evidence from Sham Litigation Cases," Seventh NARUC Biennial Regulatory Information Conference, Columbus, OH, September 1990.
- "Funding Research and Development in Regulated Industries: The Case of Bell Communications Research," Ninth Annual Conference of the Advanced Workshop in Regulation and Public Utility Economics, New Paltz, NY, May 30 - June 1, 1990.
- "Incentives for Trial and Settlement in Sham Litigation," Bureau of Economics Seminar, Federal Trade Commission, February 1990.
- "Estimating Ramsey Prices for Natural Gas Utilities," Southern Economic Association meeting, Orlando, November 1989.
- "Incentives for Trial and Settlement in Sham Litigation," Department of Economics Seminar Series, Auburn University, November 1989.
- "Natural Gas Rate-Making: Now and In the Future," Associated Valley Industries Natural Gas Seminar, Nashville, October 1989.
- "Estimating Ramsey Prices for Natural Gas Utilities," Advanced Workshop in Regulation and Public Utility Economics, Eighth Annual Conference, Newport, RI, May 29-31, 1989.
- "The Role of Bell Communications Research in the Telecommunications Markets," Midsouth Academy of Economics and Finance Annual Conference, Nashville, February 1989.
- "The Organizational Structures of Public Utilities Under Different Regulatory Regimes," Southern Economic Association meeting, San Antonio, November 1988.

"New Agreements, Non-affiliate Revenues, and Economic Issues," Report on Bell Communications Research, NARUC Multi-state Audit Team, presented to NARUC Staff Sub-committee on Accounts, Kalispell, Montana, September 1988.

"Predation in the Courts: Empirical Analysis of Sham Litigation Cases," Joint Session of the Industrial Organization Society and the American Economic Association, Chicago, December 1987.

"Rate of Return on Equity," National Conference on Unit Valuation Standards, Nashville, December 1987.

"Merger Incentives and Organizational Structures Under Cost of Capital Regulation," Southern Economic Association meeting, Washington, November 1987.

"Merger Incentives and Cost of Capital Regulation of Subsidiaries," Midsouth Academy of Economics and Finance Annual Conference, Mobile, February 1987.

"The Incidence of Predatory Sham Litigation," Southern Economic Association meeting, New Orleans, November 1986.

"A Welfare Analysis of the Department of Justice Merger Guidelines," Southern Economic Association meeting, Dallas, November 1985.

"A Duality Approach to Labor Costs and Shiftwork," Southern Economic Association meeting, Atlanta, November 1984.

"Strategic Sham Litigation: Economic Incentives in the Context of the Case Law," Southern Economic Association meeting, Atlanta, November 1984.

"A General Theory of Hedonic Pricing of Capital as a Factor of Production," Southern Economic Association meeting, Washington, November 1983.

ECONOMIC TESTIMONY

Testimony before the Public Service Commissions of Alabama, Louisiana, North Carolina, and South Carolina on behalf of the Reseller Coalition, various docket numbers, August 2010.

In the United States District Court for the Middle District of Tennessee: Owner-Operator Independent Drivers Association Inc. v. Keith Bissell, No. 3-90-0251, March 1992, (Affidavit).

Before the Federal Communications Commission: Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Companies, CC Docket No. 89-624, March 1990.

Before the Tennessee General Assembly: various Committees, 1994 - present.

Before the Tennessee Advisory Commission on Intergovernmental relations:
"Report on Pole Attachment Rate Study," with Reuben Kyle, January 18, 2007.

Before the Tennessee Regulatory Authority (docket numbers in parentheses):

Testimony on behalf of the Consumer Advocate and Protection Division, Tennessee Attorney General:

Petition to Revise Performance Based Ratemaking Mechanism Rider in Atmos Energy Corporation's Tariff (13-00111), April 2014.

Petition of Navitas TN NG, LLC for a General Rate Increase (12-00068), November 2012.

Petition of Laurel Hills Condominiums Property Owners Association for a Certificate of Public Convenience and Necessity (12-00030), October 2012.

Petition of Atmos Energy Corporation for an Adjustment to Rates (12-00064), September 2012.

Petition of Tennessee American Water Company to Change and Increase Certain Rates and Charges so Far as to Permit It to Earn a Fair and Adequate Rate of Return on Its Property Used and Useful in Furnishing Water Service to Its Customers (12-00049), August 2012.

Petition of Berry's Chapel Utility, Inc. to Change and Increase Rates and Charges (11-00198), April 2012.

Petition of Piedmont Natural Gas, Inc. for an Adjustment to Its Rates, Approval of Changes to Its Rate Design, Amortization of Certain Deferred Assets, Approval of New Depreciation Rates, Approval of Revised Tariffs and Service Regulations, and Approval of a New Energy Efficiency Program and GTI Funding, (11-00144), December 2011.

Petition of Tennessee American Water Company to Change and Increase Certain Rates and Charges so as to Permit It to Earn a Fair and Adequate Rate of Return on Its Property Used and Useful in Furnishing Water Service to Its Customers, (11-00189), April 2011.

Petition of Chattanooga Gas Company for General Rate Increase, Implementation of the EnergySmart Conservation Programs, and Implementation of a Revenue Decoupling Mechanism, (09-00183), April 2010.

Petition of Piedmont Natural Gas Company, Inc. to Implement a Margin Decoupling Tracker (MDT) and Related Energy Efficiency and Conservation Programs, (09-00104), December 2009.

Testimony on behalf of Verizon Wireless:

Tennessee Rural Coalition Petition for Suspension and Modification Pursuant to 47 U.S.C. 1251(f)(2), (06-00228), May 2007.

Testimony on behalf of US LEC:

Complaint of US LEC of Tennessee, Inc. against Electric Power Board of Chattanooga (02-00562), Feb. 2004.

Before the Tennessee Public Service Commission on behalf of Staff* (docket numbers in parentheses):

BellSouth D/B/A South Central Bell (95-02614) October 1995.**

United Telephone - Southeast (95-02615) September 1995.

United Telephone - Southeast (93-04818) January 1994.**

Chattanooga Gas Company (93-06946) December 1993.

South Central Bell Tariff 93-039 (93-03038) May 1993.**

South Central Bell (92-13527, et al) April 1993.**

Kingsport Power Co. (92-04425) October 1992.

United Cities Gas Co.(92-02987) Sept. 1992.

L & L Trucking, Inc. (91-06786) February 1992.**

*
**

Written (prefiled) testimony on cost of capital, rate design, competitive effects, and/or other issues.
Oral testimony as well as written.

Chattanooga Gas Company (91-03765) October 1991.
 GTE South (91-05738) August 1991.**
 Nashville Gas Company (91-02636) August 1991.
 Intra-LATA "Competition" (89-11065, et al) Feb. 1991.
 United Intermountain Tel. Co.(90-07832) Dec. 1990.**
 Kingsport Power Company (90-05736) Nov. 1990.**
 AT&T - South Central States (90-07460) Oct. 1990.**
 L & L Trucking (90-03514; 90-04786) August 1990.**
 South Central Bell Tel. Co. (90-05953) August 1990.**
 GTE South (90-01273) June 1990.
 Radio Common Carriers (89-11234) Nov. 1989.**
 Nashville Gas Co. (89-10491) Oct. 1989.
 United Cities Gas Co. (89-10017) Sept. 1989.
 Crockett Telephone Co. (89-02325) May 1989.
 ALLTEL Tennessee (89-02324) May 1989.
 West Tennessee Telephone Co. (89-02323) May 1989.
 Peoples Telephone Co. (89-02322) May 1989.
 Ooltewah-Collegedale Telephone Co. (89-02321) May 1989.
 Kingsport Power Co. (89-02126) March 1989.**
 Chattanooga Gas Co. (88-01363) February 1989.**
 Tennessee-American Water Co. (U-87-7534) March 1988.
 Tellico Telephone Co. (U-87-7532) February 1988.
 Claiborne Telephone Co. (U-87-7508) November 1987.**
 Nashville Gas Co. (U-87-7499) October 1987.**
 Kingsport Power Co. (U-86-7472) May 1987.**
 United Cities Gas Co. (U-86-7442) February 1987.**
 General Telephone of the South (U-86-7437) Nov. 1986.**

ATTACHMENT B

TENNESSEE GENERAL ASSEMBLY

House Business and Utilities Sub Committee, March 6, 2013

Chairman Pat Marsh: Alright, we'll go to item number seven, House Bill 191. Leader McCormick, you're recognized.

Representative Gerald McCormick: thank you Mr. Chairman and I thought I'd come up here because we'll probably need to call on a couple of folks to come up here and give their opinions on the Bill, of course, with the permission of the Committee. This is the TRA Bill that's brought really jointly by the Administration and the TRA and it does several things and if I could, I'll go over the basic outline of it and focus in on one section that I think will have the most discussion on but I think this is the place to have the discussion. There are basically 5 sections that make changes, Section 1 would say that the TRA Directors are eligible for state employee health insurance benefits and those type things. That was the original intention and this makes that more clear. The second Section also clarifies some, there's actually some ambiguity relative to the conflict of interest prohibitions for the Directors, this does not make it easier, it just makes it clearer what they can and can't do and it's clean up language. Section 3 talks about implementing optional cost based services at the request of the utility and cover the cost for doing so. Again, that's not a huge change. Section 4 will realign the fee structure basically to reflect who is being regulated and let them pay the fees rather than have companies that are not being regulated, any or very much, and reduce their fees. This will also result in a savings of a little over a million dollars a year in the budget, which the TRA has worked very hard to make sure they could meet that and hopefully save rate payers over a million dollars a year in the process. Now, Section 5 is the section that I'm sure that our folks here will want to focus in on and what this does, it creates a new section authorizing the implementation of alternative regulatory methods for utility rate reviews and cost recovery. And this is in lieu of the current process where they have general rate cases every few years. Sometimes they settle them, sometimes they hire lots of lawyers and spend lots of money and take a lot of time and we read a lot about it in the newspaper and they have very contentious issues. Basically, what they are wanting to do in this is have more of an annual review and rather than having those big rate cases. Now, it won't keep us from having rate cases, we can still have them, but hopefully, we'll have less of them. In my opinion, I think a good way to say it is, is we're bringing in CPAs to review it more regularly and probably not using lawyers as much to have big rate review cases.

Chairman Pat Marsh: We have a motion on the Bill, do I hear a second? We have a motion and second. And we do have an amendment on it; do you want to talk about it?

Representative Gerald McCormick: I believe that's what I just explained, was the amendment.

Chairman Pat Marsh: Ok, alright do we have a motion on the amendment? We have a motion and second on the amendment. Does anybody have any questions on the amendment? Representative Pody?

Representative Mark Pody: Uh, yes, I've got one. Where it says it's going to empower the TRA to make these rules, are these rules come before Gov Ops? Who oversees the rules that they're making to make sure, who check them?

Representative Gerald McCormick: I think all rules have to come through Gov Ops at some point for review.

Representative Mark Pody: Even the TRA, so these rules will come? Okay.

Representative Gerald McCormick: Yes, they'll come through and I'll let them, if that's not correct they'll get a chance in a second. That is correct. And Mr. Chairman, I think it's only fair, we have had some objections to the Bill, especially for that last Section, from the Attorney General's office and with your permission I'd like to have them come up and state their case and then hopefully have the TRA Directors come up and state theirs.

Chairman Pat Marsh: We want to go ahead; do we have any more questions on the amendment? If not, I think we're going to go ahead and vote the amendment. Without objection, we'll go ahead and vote on the amendment. All in favor say aye, opposed? And that is amendment number 3640. The amendment passes, now we're back on the Bill. I think if it's okay with you Leader we'll go out of recess and hear from whoever you want to bring up or however you want to work it. We want to hear from the Attorney General? Is anybody here from the Attorney General's Office? Would you all like to come up and let us hear from you please? If you wouldn't mind stating your name and your position and then we'll hear your testimony. Turn your microphone on please sir.

Vance Broemel: My name's Vance Broemel, I'm with the Consumer Advocate and Protection Division of the Office of the Attorney General and with me here today is Ryan McGehee who is also from the Consumer Advocate and Protection Division and under the statute that created us we have the duty and authority to have cases at the Tennessee Regulatory Authority and also to participate in legislative and judicial proceedings and that's why we're here today here on this House Bill 191 and in particular, Section 5. As Leader McCormick pointed out there are numerous sections here. We are not speaking on the inspection fee portion of the Bill which has to do with fees paid by regulated companies, they're going down for some and up for others but we're not speaking on that. We simply note that those fees whatever they are can be recovered by the companies by rate payers. We're here today to speak on Section 5 which changes greatly the way rates will be set in Tennessee if it's passed. What this does, in our opinion, is make it more likely that rates will increase for businesses and households who are customers of regulated companies. And the reason for this is that this Bill greatly reduces the risk that the regulated companies/utilities, gas and water in particular, will have as businesses because they'll be allowed to recover, virtually immediately, their expenses in capital investments. Now heretofore, as was pointed out by Leader McCormick we had rate cases and in that you have a general hearing, you consider all the expenses, all the capital investments of a company and

then you project going forward what they think their expenses will be for the coming year and a rate is set on that with the addition that any investment that the company has made they get to recover a rate of return on that. And this is similar to any business. If you have a start-up company and it's difficult to attract capital you would want a high rate of return. Similarly, if you had a safe investment in bonds or a CD the rate of return would be less. What the TRA does is look at the company and decide what level of risk does it have and then that's expressed as a percentage, usually, let say just take a round figure, a utility could get a rate of return of 10%, that means that on all their investments, if they have \$50 million in investments, they get their projected expenses plus a rate of return on that \$50 million and each side presents testimony, our group has accountants that we have, now they are contract accountants and they present testimony, the TRA has a hearing and then decides the case, sets the rates. What this Bill does, is it takes the last rate case and that's still in effect, that's still there but in addition it allows companies to come and say we want recovery for this expense, we had some new project or whatever, well in traditional rate cases all those things are suppose to be figured into their projected rates and they're covered in the rates. Here what we're afraid of is that the risk, since the company is recovering these expenses virtually immediately, the risk should go down but there's nothing in the Bill to reflect that decrease or decline in risk. Therefore, we think rates will be unnecessarily high for consumers. We would point out that the TRA has full authority to do this without this Bill. They have set what's called alternative rate making mechanisms in the past, they could do this today and we think it would be better to do that because then you'd have input from concerned persons. You would have more flexibility and it wouldn't necessarily be the Legislature's framework, it would be the TRA, who, that's their responsibility to set rates and they have expertise to say how this should be done. We think it would be better in that kind of hearing. We would also point out, and I know this is fairly complicated, this Office did send a letter with a memo attached and we hope you all have it and if not we'd be glad to get it to you and the idea is that we are concerned about this potential increase in rates and we would also point out that by and large, the utilities of Tennessee, particularly the larger ones are doing very well financially. If you look at their stock prices from 2008 to the present in some cases it's virtually doubled and so they're not under financial stress, there's no idea in the Bill that that is the reason it is being done. Our concern, another one of our major concerns is not only will this likely increase rates but the way rate cases work, once this rate is set and you have a rate of return on it, if the company can become more efficient they get the benefit of the savings. In other words if you set a rate and the customer is charged say \$50 a month and the company gets real efficient and can do things for, you know, it costs them less than they projected, they get that savings. Under this system where they just simply submit a Bill and say we want reimbursement, we think they'll lose that efficiency. So in summary, that's our concern that this is a really big shift in the way rates are set. I know there's been some concern about rate case expense we agree that that can be a problem. We think that can be addressed at the TRA. I would point out that we've had three major cases with Tennessee American Water, Atmos, and Piedmont in the last few years. We've settled them. There were no hearings. The expenses were rather minimal. The expenses come when there's problems in discovery as we call it, it's kind of a legal term, we try to get information from the company. But that, we're very aware of that, we're very conscious of it and we do try to hold the expenses down. So, if there are any

questions, we'd be glad to entertain them. Either myself or Mr. McGehee. That concludes our remarks.

Chairman Pat Marsh: Okay. Mr. Broemel, in your testimony I thought you just said that they can currently do this now?

Vance Broemel: Yes.

Chairman Pat Marsh: If they can do it now, why do you object to them doing it in the Bill?

Vance Broemel: Well, because we think that it would be more input from more concerned parties and there could be more flexibility. In the Bill itself, it states that they can develop rules and procedures. We think it would be better to do that all at the same time. In the past, there was a Bill here about something called decoupling where the idea was that if consumers conserve there was concern that the companies would not be making their projected rate of return, the Legislature made a general policy statement about the TRA should hear cases where the companies can present this concern with conservation and then they will make a determination and they did that and they developed a system to cover those cases. So in other words until you really have a full case with all the implications, we think it is not a wise idea to set this kind of framework as it were in a vacuum. It would be better to have them do it when there's much more to consider.

Ryan McGehee: If I may, if you look in the specific mechanisms that you have here now, with the guaranteeing the return on equity along those, the procedures that encompass that, it makes it difficult for the TRA and our office to present safeguards for consumers, to prevent over-earning, to adjust the return on equity because the risk is being shifted to the customers. Here you're locking them in under the old system when they were slightly more riskier. Here we're moving to a system where you are shifting the risk and there should be an adjustment there, the return on equity. We actually had a company on the record agree with us in the past case that these things do shift risk but this Bill does address that and does not allow for that flexibility. Another aspect of this, of the Bill, is that it does not have a rate cap which previous legislation, in 2009, legislation or this Committee or the Commerce Committee chose to put a summer study. There was a rate cap in there but there's not one here so there are some things that are locked-in that are going to limit flexibility in the future.

Chairman Pat Marsh: I believe we have a question from Representative Curtiss?

Representative Charles Curtiss: Thank you Mr. Chairman. Toward the end of your statement you made the, I believe I heard this correctly, that in estimating what their expenses are going to be they could end up overestimating what their expense is going to be and if they were to conserve and had a savings they would keep that, retain that profit.

Vance Broemel: Right.

Representative Charles Curtiss: Then I understood that correctly. Is there anything that you can think of, we're giving through the rule making authority; the TRA is going to have to go through rule making procedures. Is there anything in this statute that's being proposed that would prevent them through rule making to recapture that money?

Vance Broemel: I don't, it's ah, I suppose they could try it but it, there's nothing in the statute that allows them to do that and we just don't know how that would work.

Representative Charles Curtiss: I'll just ask that question when they're presenting.

Chairman Pat Marsh: Leader McCormick.

Representative Gerald McCormick: Thank you Mr. Chairman and I've got a couple of questions. Did y'all say that the TRA could do this without legislation? They could basically implement this program right now? Or just that Section?

Vance Broemel: A large part, Section 5, in the past they have done extensive regulation in I believe it was the early 90s with phone companies going to what we would call an alternative form of rate making where they allowed them to have a projected rate of return and if they were over earning then they would have a review of that and recapture it. They did that all without legislation, yes.

Representative Gerald McCormick: Okay.

Ryan McGehee: There are a number of items they've already done as well like the commodity cost of gas is passed on to consumers, rates are adjusted annually for gas companies based on the weather, you know if you have a mild winter the rates go up if you have a very cold winter the rates can go down. There are already a number of pass-throughs already in effect and that's all without legislative authority. Specific, ...

Representative Gerald McCormick: And I'll ask the same question when the TRA folks get up but if they can go ahead and implement this without legislation I'd rather get 3 votes than 50 so we'll see what the TRA folks say about that. I know in Section c of 5 it says, talking about recovery operational expenses, capital cost or both associated with the investment in other programs including the rate of return approved by the Authority at the public utility's most recent general rate case, now could I take that to mean that if, let's say that the water company's electric rates go up because TVA raises them and the power board raises them in return, and they have to pay an extra \$10,000 you know, in their Bill next year, are you saying that they'll be able to charge \$11,000 if they get a 10% rate of return on a simple Bill, a simple expense like that? Or is it just things that have to do with capital improvements.

Vance Broemel: Yeah, I think it would be capital improvements and they would get a recovery of that increase, perhaps, depending on the circumstances and that's one of our concerns. When you have a rate case you take into consideration all the expenses.

Here they're singling out one that went up but see they may have gotten more efficient with their labor cost and that's gone down but there's no provision in this Bill to look at what went down. It's only what goes up and that's our concern. In a rate case you look at all expenses, some go up, some go down, you come to a global understanding but here, that's a good example. Say if electric went up they could come in with a high electric Bill and say we need to raise rates but they wouldn't be telling you that they've got a new computer system or smart meters that read meters more efficiently and they don't need as many people doing that and there's no off-set. So that's the very kind of thing we're very concerned with. About just looking at what goes up.

Representative Gerald McCormick: Would the TRA not be able to take that into account? Or would they be legally prohibited from taking that into account?

Vance Broemel: Well, there's nothing in the Bill, it just talks about you're authorized to get this expense. And in fact, it just says you look at the rate of the last rate case, there's nothing about other expenses. That's another concern, when you quoted the last rate case, we all know that capital markets can change. Some of these companies haven't been in for years and years, they might have a rate of return of say 12% and the TRA is prohibited from adjusting that and so you need, this Bill says you look at what happened at the last rate case and as we all know with the economy you need much more current financial data. And that's another concern of ours.

Representative Gerald McCormick: Okay so you're saying if a company had a good rate case 5 or 6 years ago they might never want a rate case.

Vance Broemel: Right.

Representative Gerald McCormick: But I suppose you guys could initiate a rate case, couldn't you?

Vance Broemel: We have in the past, I mean it's getting into kind of history I suppose, but we did it once with Atmos, it was expensive and very contentious, if I can use that word in the sense that they were over earning some \$5 or \$6 million a year. We did do that and brought it in and did reduce their rates so we do have that power at the current time but with this annual rate review and these trackers, it's to me, very unclear whether we'll be able to do that in the future.

Ryan McGehee: and Leader McCormick another big concern here is that not every company can decide to do annual rate review. They can cherry pick with a specific tracker and the rest of their rates would not be looked at, it would just be those expenses that flow into that tracker and the return that's guaranteed on that.

Representative Gerald McCormick: But you could still initiate a rate review but you're saying it would be very expensive and very...

Vance Broemel: Well, and it would really be a cross-purpose with this Bill. I think the company's would complain that they've chosen an annual rate review and these trackers

and they don't need to have a rate case and I, you know, I guess it just would be up in the air what would happen. We would probably ask for one but whether we would get it, I'll point out with the Atmos case, our initial request that those rates be reduced was dismissed and we had to come back again so if anybody knows the law you can make an argument, whether the agency will accept it, I don't know.

Representative Gerald McCormick: Okay. I would certainly want to have the legislative intent that a company couldn't take advantage, well for instance we had a long period of low interest rates and cheap capital and if somebody's hanging on to 14% rate of return from ten years ago, that's something we'd need to guard against and make sure in the legislative intent and if this were to pass we would want to do that. One other question is the rate cap you're talking about, what would be a reasonable rate cap as far as annual increases go, do you think? And again, put it in the law.

Ryan McGehee: I would like to see or at least I would, this is me speaking, I haven't discussed this with General Cooper specifically, you know, a rate cap not only on the annual rate review but also on the trackers themselves and you know I think just off the top of my head, a 3% cap would be good.

Representative Gerald McCormick: Well, you're not old enough to remember the 70s but if you'd done that in 1974 you could have wiped out some of these, even being monopolies, you could have wiped them out based on that.

Ryan McGehee: I know a lot of people speculate that we're heading back that way but you know we're not in that kind of inflationary period just yet.

Representative Gerald McCormick: It's coming. Thank you Mr. Chairman.

Chairman Pat Marsh: Representative Pody.

Representative Mark Pody: Thank you Mr. Chairman. I want to go back to the TRA. I thought if somebody came for a rate increase the TRA had the right to look at their entire budget, their entire profit/loss, they're not going to just look at one section so I'm not following where this would happen. If they had a profit in one area because they recouped that money, the next time they came for a rate increase that would be taken into account. Is that not correct?

Vance Broemel: That's correct under the current situation; under a rate case but this Bill changes that entirely. It, for 2 or 3 pages, it goes on and on about all, you can recover for a singled out expense, it will not look at its total expense, no.

Representative Mark Pody: So if this goes though the TRA would not have that authority?

Vance Broemel: No. I mean, whether they have the, under this Bill they wouldn't. We were speaking to Leader McCormick I suppose we could ask for an entirely new rate case but the intent of this Bill is to avoid or not have rate cases which means you

would not be looking at their entire expenses.

Ryan McGehee: And there are several mechanisms under the Bill, not just annual rate review that would allow the company to cherry pick where you don't look at the other operations and revenues.

Representative Mark Pody: Thank you.

Vance Broemel: I'd just like to point out that this Office is very concerned about investments in Tennessee and to the best of my recollection we've never opposed a capital project to put in pipes, valves, whatever, particularly with a water company in Chattanooga, so it's not that we want to cut down on recovery of capital expenses we just want to do it in a way that we think is fair to all parties.

Chairman Pat Marsh: Okay. Do we have any other questions? If not, we will let you all go back and ask the other side to come up and give their side. Is it going to be you Mr. Allison? And Tim?

Jim Allison: I'm Jim Allison, I'm the Chairman of the Tennessee Regulatory Authority and with me today are Jean Stone, our General Counsel and Ed Taylor, our Executive Director. I'll make some comments and we'll do our best to answer any comments you may have. This Bill basically does 2 things. The first thing it does is reduce the regulatory burden on the utility companies in the state of Tennessee by about \$1.1 million a year by reducing our regulatory fees. The second primary piece of the Bill is what was just discussed, the alternative regulation. I want to make it clear to the Committee that this is not new stuff. Georgia, South Carolina, Mississippi, Alabama, Virginia and a whole host of other states across this country have already done a number of these things. It's procedural in nature. It does not substantively change what the TRA can do or cannot do. Now the Attorney General's office is focused in a very narrow sense of what the Bill says on the rate of return. What they've missed is that before the Regulatory Authority will allow a company to enter into one of these alternative rate making processes is that we have to go through a process to establish and conclude that going into one of these alternative methods is in the public interest. In doing that, we will look at a whole variety of things, including the rate of return. Now, there's another piece of the alternative field that will permit company's and it's all permissive, none of the company's have to do any of this and the TRA does not have to accept any of this, we have to agree that it's in the public interest before we enter into any of these alternative methods. But another piece of the Bill would require, if a company opts into it, is annual rate, an annual rate filings. By making an annual rate filing, it will keep up more up to date on the cost, the returns, the expenses of all of these companies so that when we're dealing with the rate of return issue that was brought up earlier we're not going to being a apposition of not having looked at it for 5 or 6 or 8 years, in fact, the law requires them to have a general rate case in the last 5 years to enter into this rate review, so we'll be looking at their rates every year if they opt into this annual rate review. If their rate of review gets out of kilter with the current market conditions then the Authority can, and we have in the past, brought proceedings to open up the entire rate spectrum and we can do that here even if they go into this. As far as the trackers are concerned, again these are

in wide use around the country, it's an effort to streamline the regulatory process, the example that was used here earlier was a good one. If a water company uses a lot of power to pump their water, has a major rate increase from TVA, why open up every piece of their rates just to look at that? Now, again we would have to certify that it's in the public interest before we do that, but why not have a proceeding that would allow you to just look at that one piece. You may have just had a general rate increase last year, again we can stay on top of that on a regular basis by this annual review and we will look at that. We've got a staff that will be looking at that on a regular basis. If the rate of return gets out of kilter we can open up a rate case to look at the rate of return. There's nothing in here that prohibits us from doing that and we will continue to do that just like we've done in the past. I'm going to kind of shut-up and try to answer any questions you have but the bottom line is that the Authority has looked at this we're very comfortable that we can continue to carry out our responsibilities with this Bill as it's written. Again, it's permissive, both on the part of the utility system to opt into it and it's permissive on our part to allow them to opt into it because we have to certify that it's in the public interest.

Chairman Pat Marsh: Thank you very much. I have a question, when I heard about some of the parts of this Bill I understood that this change should help do away with a lot of legal expenses on both sides by bringing up a host of lawyers to argue and all that savings, as I understand it will go back to the rate payers? Is that correct?

Jim Allison: That's correct. The intent of this Bill is to make the process more accounting driven, analyst driven more than it is attorney driven. Again, I know there's a lot of attorneys in the Legislature so I don't want to say too much bad about attorneys but, I've been on both sides of rate cases now. I've spent my career working in the utility district, I've testified before regulatory agencies in 6 states. I know how frustrating it is to write those million dollar checks to the law firms and I also know how frustrating it is on the part of the regulator for us to have to say, okay, it's okay for you to go recover that million dollar check that you wrote to the law firm from your rate payers and what we're interested in doing is trying to make government more efficient, more streamlined and we're prepared to do everything we can at the Tennessee Regulatory Authority to make that happen and we think this Bill moves us in that direction.

Chairman Pat Marsh: I have one other question that might be a little off. I was asked to ask this by the Fuel and Convenience Store Association, is it the intent of this legislation to permit regulated, natural gas companies to subsidize their retail or wholesale alternative motor vehicle transportation fuel operations with rate payer funds?

Jim Allison: The answer to that is no. The Bill, again, is procedural in nature, there's no substantive change to policy to the State of Tennessee other than the fact that it will hopefully streamline the regulatory process.

Chairman Pat Marsh: Thank you. Leader McCormick.

Representative Gerald McCormick: Thank you Mr. Chairman and I need to ask

some questions. I'm the sponsor of the Bill and I support the Bill but also have an obligation, well not only to the rate payers of my area but to the members of my caucus and the General Assembly so I want to ask a couple of questions along those lines. You talked a minute ago, let's say about Chattanooga, the water company had a bigger electric Bill and it went up and you can look at the line item and see where it went up, would that be considered an operational expense?

Jim Allison: That is an operational expense, yes sir.

Representative Gerald McCormick: Well the law says that any operational expenses can be recovered plus the rate of return so if they're going to make it 10% or 12% profit on paying their water Bill? That's what I'm reading here.

Jim Allison: No sir. The rate of return is on invested capital. It's intended to cover for the cost of the capital, is the way we apply it to a rate case so if there is a capital component to that and I don't specifically what section you're looking at but it involves operating expenses as well as capital expenditure but the rate of return is on capital expenses not operating expenses.

Representative Gerald McCormick: Well I better read it to you then, it's in Sections 5 c and it says the Authority shall grant recovery and shall authorize a separate recovery mechanism or adjust rates to recovery operational expenses, capital costs, or both, association with the investment of other programs. So maybe that's how you get out of just paying the Bill, but certainly if I were the company I would say that my light Bill is associated investment and other programs including the rate of return approved by the Authority at the public utility's most recent rate case. Maybe we need to get somebody from the industry to come up here and say that if your light Bill goes up by \$10,000 are you going to give us a Bill for \$11,000 and let the rate payers pay for it, that's the real question.

Jim Allison: If you want the industry to address it you're welcome but it's well settled in rate case methodology that the rate of return is applied only to capital expenditures and it involves both debt as well as equity return so you have both elements of the return in there.

Representative Gerald McCormick: It may be well settled but we're changing it with this right here from the way I'm reading it, but I'm not a lawyer we may need to go to the senate and find some lawyers to come over here but I mean that's what it says so I think we probably need to find out if it says what it means or if it means something else but it specifically says recover operational expenses including the rate of return approved by the Authority of a public utility's most recent general rate case so I'll ask some of the people that are with some of these companies maybe after the meeting if they can give me some feedback.

Jim Allison: Well our attorney is here with us, she can address it more detailed if you wish too but the rate of return is intended to apply to the capital cost piece of that

paragraph. It says to recover operational expenses capital cost or both including the rate of return approved by the Authority at the public utility's most recent general rate case pursuant to, that rate of return would apply only to the capital investment not the operation expenses.

Representative Gerald McCormick: Okay. Thank you very much.

Chairman Pat Marsh: Representative Curtis.

Representative Charles Curtiss: Thank you Mr. Chairman. You heard the question I asked the Attorney General's office, they made the comment that an entity before the TRA on a rate review case they would say they were going to do some capital expenditures, there's going to be X amount of dollars and the rate was based upon that but through efficiencies they brought in way under the budget uh, you would have the ability to still look at that, that they calculated that incorrectly? I mean without that ability the incentive would be to always overestimate your expenditures to have a higher rate and reap the profits.

Jim Allison: Not only will we still have the opportunity we'll have an enhanced opportunity with the annual rate filing. Otherwise in the current situation we may look at it every three, four, five, six years now all of our utilities except 1 have been in within a fairly recent period of time for a general rate case so we don't have anybody out there that's gone 20 years without a general rate case or anything like that but this Bill would give us an enhanced opportunity to look at those expenses.

Representative Charles Curtiss: Right. The other thing that occurred to me while they were testifying, you're not preventing the Attorney General's office to ask questions about a rate setting or something of that nature? They're still going to have the ability to bring something to your attention, am I correct?

Jim Allison: That's correct and at any time and we focused earlier on some comments on the rate of return, anytime they feel like a company's rate of return is excessive they are certainly permitted by statute to file a petition requesting us to look at that and we have historically have always accepted those.

Representative Charles Curtiss: Thank you sir. I think the fact there's a little bit, it seems like it's vague, the Bill, in places but the fact that you're going to have rule making authority, that's not preventing you from being able to address all these areas that are not spelled out.

Jim Allison: That's correct sir.

Representative Charles Curtiss: Thank you.

Chairman Pat Marsh: Representative Hill.

Representative Hill: Thank you Mr. Chairman and of course Mr. Chairman thank you

so much for being here and I appreciate the intent of the legislation. Just a couple of quick questions, you said earlier in your statement, you said that this is really conforming into what other states are doing? And that, you know I think some of the questions on, I believe it's Section 5 of the legislation, do other states do that as well? As it sits?

Jim Allison: Yes, they, and I don't have the exact number but it's a long list of states that have entered into some of these alternative rate making and the Attorney General quoted our last audit report in theirs with some comments. If you read the entire paragraph it will say in there that this is clearly a national trend to move in this direction.

Representative Hill: Okay. Thank you so much.

Chairman Pat Marsh: Representative Pody.

Representative Mark Pody: Two questions. One, what would you say is a good rate of return right now that would be approved?

Jim Allison: The overall rate of return will reflect both the cost of debt as well as the cost of equity. The debt cost right now are fairly low, we've seen some rate cases and I'm going to look to staff to correct me if I misspeak here, where the overall rate of return is around 6-7% but the debt component of that is on the low end of that, the equity number's up on the higher end of that. It's set in an individual case depending on the riskiness of it. We've got some utilities that are well established with relatively low equity numbers, return numbers. We've got others that are fairly risky propositions. We've got one that just bought a company out of bankruptcy and it's a pretty risky proposition and has a higher equity rate of return than the others.

Representative Mark Pody: Ok and my last question, you said that most of the utilities are fairly current in their, you've audited and such, what's the one that's oldest? What's the longest one out there?

Jim Allison: Again, I'm going to ask the staff to correct me if I misspeak but I believe it's Kingsport Power, the electric utility we regulate up in upper East Tennessee and I believe they are somewhere around 8 or 9 years out.

Jean Stone: I believe they are more like 18 or 19 years at this point but they're rates are extremely low in comparison with other electric rates in that area.

Chairman Pat Marsh: Do we have any other questions while we're out of session? Leader McCormick.

Representative Gerald McCormick: Thank you Mr. Chairman and one more and you may have answered this and I was in a sidebar conversation but my question is in Section 5 can the TRA, do you have the authority to this without a vote of the Legislature? To make these changes?

Jim Allison: We have instituted some trackers in some fairly limited situation and again I'll defer to our attorney to comment on the legalities of it, but we feel like it's prudent to clarify the nature of these and get legislative authorization before we go further with it and that's the reason we're supporting the Bill. We think it clarifies it and resolves any questions about whether or not instituting some of these trackers is appropriate or not but I would invite Ms. Stone to comment on the legality piece of it.

Jean Stone: I think that's absolutely correct and I will just add that rate setting is traditionally a legislative function and so it is entirely appropriate in my opinion to come to the Legislature to ask you all to set the policy and the perimeters for rate setting including alternative methods.

Representative Gerald McCormick: Thank you.

Chairman Pat Marsh: Do we have any other questions while we're out of session? If not, we'll go back in session. Thank you all for coming up. Representative Towne's we're glad to see you come in today. Welcome. We're back on the Bill do we have any other discussions on the Bill? If not, are we ready to vote on the Bill? All in favor please say aye, opposed? Aye's have it. This Bill moves out to Finance Ways and Means.

ATTACHMENT C

TENNESSEE GENERAL ASSEMBLY

House Finance Ways & Means Subcommittee, March 13, 2013

Chairman Michael Harrison: Okay we'll take item 39, House Bill 191 out of order. Leader McCormick you're recognized.

Representative Gerald McCormick: Thank you Mr. Chairman. House Bill 191 is an administration bill in cooperation with the TRA. It has several components but basically it realigns the TRA's funding mechanism which will result in over \$1 Million in fee reductions passed down to utilities and hopefully to the consumers too. It also enables the adoption of best practices for more efficient rate reviews which means we're going to bring in and see...

Chairman Michael Harrison: Bill's been moved and properly seconded. Do we have questions on the bill? Chairman Sargent, you're recognized.

Representative Charles Sargent: thank you Mr. Chairman. Leader McCormick, let me, I have two questions I'd like to ask and I think you probably know what they are. One of these, we're going to do an annual rate review and normally we did a review after 4 or 5 years and they had a full blown hearing. When we do this will there actually be a review or is it just going to be that they ask for a half percent or a $\frac{3}{4}$ percent of an increase is that going to be automatic or will they actually have an annual review and see why they need that increase?

Representative Gerald McCormick: That's a good question. What they're going to do, as you know in the past, they'd wait several years, 3 to 5 years and longer sometimes and then go in and have a full blown case where a lot of lawyers were hired and a lot of fights and negotiating positions and that type thing. What this does is gives the TRA the ability to really on a constant basis keep an eye on these companies and give them some rate, usually increases I suspect, based on some expenses that they really don't have any control over. It'll be more of, I'd say, a CPA driven process rather than a legal driven process but with the clear understanding that it could turn into a legal process if the system breaks down. So, it has the safeguards of the old system but some efficiencies in the new system.

Representative Charles Sargent: You feel doing it like this, the consumers are still going to be protected and have all the protections they had before?

Representative Gerald McCormick: I do feel like it and I had some questions myself. I'm carrying the legislation but I think we need to ask tough questions about legislation that we carry not just other people's legislation and something that keeps cropping up that reassures me is that the Commission will have the ability and as the words are written to act in the public interest. Which is vaguely defined which I think gives them a lot of authority to go in if the system is being abused to step in and change things if they need to in the public interest.

Representative Charles Sargent: Chairman, thank you for that. For those, I just wanted to make sure that we had that on the record. The other question I have is under Section 5. Section 5 as you know where natural gas companies would be able to set up, and there's been a lot of talk about this, set up their own substation or sell natural gas for cars and trucks. Is that, do you see that as the intent of the legislation?

Representative Gerald McCormick: You know Chairman, this is one that just came up yesterday and I hate to make this last any longer but I don't want to give you the wrong answer. If I have the Committee's permission I'd like to call up possibly Chairman Allison to address that question, if that's okay with the Chairman too and both Chairmen.

Chairman Michael Harrison: Without objection we're out of session. If you would, come forward and state your name for the record.

Jim Allison: I'm Jim Allison, I'm the Chairman of the Tennessee Regulatory Authority. The answer to your question is what it deals with is a procedural change in how we will go about looking at those rates. It does not guarantee recovery, it does not say that there will be any cross- subsidization of the fuel, motor fuel dispenser by residential consumers or anything of that nature but the alternative rate making procedures, all of them, are permissive and it would require that finding that the public interest, like the Leader stated.

Chairman Michael Harrison: You're recognized.

Representative Charles Sargent: Thank you Mr. Chairman. My question is, is it the intent of natural gas companies to go into set up, I'll say natural gas stations through-out the state and have the rate payers paying for that infrastructure and not as a commercial entity? Is there, I want to make sure we don't have rate payers paying for infrastructure where we have commercial entities out there that have to basically pay for their own infrastructure.

Jim Allison: There is no intent in this legislation to allow any other class of consumers to subsidize the facilities that would go into providing natural gas as a motor fuel.

Representative Charles Sargent: And is also your understanding that natural gas companies do not intend to set up stations throughout the state? And they're going to lead back to the retailers of the Mapcos and the Exxons and the Shell stations of the world to do that?

Jim Allison: I can't really address what the intentions of the natural gas companies are but as the Regulatory Authority we will assure there is no cross-subsidization going on as we implement the various rates.

Representative Charles Sargent: Okay. Thank you. Thank you Mr. Chairman.

Chairman Michael Harrison: Representative Armstrong, you're recognized.

Representative Joe Armstrong: Thank you Mr. Chairman and Chairman Sargent brings up a very interesting question as it relates to, you know, natural gas vehicles and of course, realizing that natural gas is becoming the transportation fuel. Certainly I didn't know if the agency had looked at the conversion from petroleum based fuel to natural gas and setting up the rules and regulations along that line. Even if you look at the available information that's out there, all our utilities, they're converting the coal fired plants, the TVA's just converted to natural gas at some of their largest, some of their largest facilities over to natural gas and then with all of the reports about how much natural gas is available in this country with all the finings (?) or the shale gas and the fracking and all of this, have we looked at a comprehensive study of Tennessee looking at the use of natural gas and also as a transportation fuel? Because I think the last statistic that I saw that natural gas on a BTU level would cost about \$1.29 per gallon if we switched over from gas that's costing what \$4.40 a gallon now. Has this agency looked at going in that direction for natural gas fueling and for

providing those infrastructures?

Jim Allison: There's a lot of talk nationally about, not only natural gas, but other alternative fuels. For example, I drove up here from Shelbyville in an electric car yesterday. So, it's an emerging part of the technology of our country. At the TRA we have had some limited experience with natural gas as a motor fuel, we do have at least one and I think perhaps 2 natural gas companies that have established refueling stations. They are not on the side of the interstate where everybody knows where they are but they are for people who have limited natural gas vehicles already and we've established tariffs for those dispensing facilities already so we have looked at it in a limited sense but I would have to say in a comprehensive sense we have not had a formal study like you're suggesting.

Representative Joe Armstrong: And when you mention tariffs, we know we've got taxes on our fuel to pay for road costs but when it comes to electric vehicles, when it comes to natural gas vehicles, there's no money being collected for the infrastructure and I'm kind of following along with the Chairman was talking about. Certainly we can even get into how other states actually distribute gas to not only commercial but to residential, you know, in Georgia an individual gets to choose which company, which market they buy gas from and the utility is only the deliverer of that. In Tennessee we've got a different type of structure and I didn't know if you were looking at that, where the utility only charges you for the transportation but you pay a commodity price from someone else. And Texas has a totally deregulating both electric and natural gas. Are we looking at some of these because there's a significant difference in natural gas prices to consumers in Georgia is a big difference than what we pay here in Tennessee. In Tennessee we pay different rates in between different consumers. The only ones subject to any type of hedge, whether it's low or high, are the private companies but certainly those utilities out here that are making money off the commodity price, have we looked at basically talking to them and saying, hey, put in your infrastructure cost and let the consumer have a choice and let the businesses have a choice where they buy their natural gas?

Jim Allison: There is some of that going on in the natural gas industry all, already in Tennessee. For example, we have a number of large users of natural gas that buy directly from alternative sources and then use the local distribution company just for a delivery mechanism so there are situations in place in Tennessee where that's occurring as well. It hasn't been penetrated to the individual homeowner level. I used to work in Georgia it's got its plusses and minuses, to deal with that. It becomes a very complex arena but it hasn't penetrated down to the individual level here in Tennessee yet but we do have a number of large consumers who already do just that.

Representative Joe Armstrong: Okay, but your experience in Georgia, certainly, I think it would benefit the residential consumers to look at that option and see if it would be some savings on that residential user. And I didn't know if you had plans within the TRA to look at things of that nature.

Jim Allison: We don't have anything specifically planned but we'll certainly talk about it after the discussion today.

Chairman Michael Harrison: Any further questions for the Chairman? Seeing none. Thank you for being with us today. Without objection, we're back in session. Leader McCormick?

Representative Gerald McCormick: I renew my motion Mr. Chairman.

Chairman Michael Harrison: Any further questions. Seeing none. Is there objections to questions? Hearing none, all in favor of moving house bill 191 to full finance, say aye, those opposed. Bill moves out.