

EXHIBIT

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Issue(s):

SNG's Commitments to Insulate
Customers from Risk/
Additional Revenue
Requirement Issues/
Customer Response to
the proposed Rate Increases/
Response to the Staff and
Company Rate Design Proposals/
Consolidation of Tariffs and Misc. Fees/
Other Tariff Issues

Witness/Type of Exhibit:

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Case No.:

Meisenheimer/Rebuttal

Public Counsel

GR-2014-0086

REBUTTAL TESTIMONY

OF

BARBARA MEISENHEIMER

Submitted on Behalf of
the Office of the Public Counsel

SUMMIT NATURAL GAS

Case No. **GR-2014-0086**

CPC Exhibit No. 202
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July 11, 2014

NP

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**REBUTTAL TESTIMONY
OF
BARBARA A. MEISENHEIMER**

SUMMIT NATURAL GAS

CASE NO. GR-2014-0086

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

3 **A. Barbara A. Meisenheimer, Chief Utility Economist, Office of the Public Counsel,**
4 **P.O. Box 2230, Jefferson City, Missouri 65102.**

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

6 **A. My rebuttal testimony addresses five issues related to the proposed rate increase**
7 **and tariff modifications proposed by Summit Natural Gas of Missouri, Inc. (SNG**
8 **or the Company). The first issue I address is Public Counsel's recommendation**
9 **that the filed tariff sheets associated with the Company's proposal to raise base**
10 **rates should be rejected. I base my recommendation primarily on the Company's**
11 **failure to demonstrate compliance with both its past commitments and**
12 **Commission directives to insulate customers from the risks associated with**
13 **service area expansions. Public Counsel does not oppose a limited uniform**
14 **increase to base rates to recover the cost of the low-income weatherization**
15 **expenditures as discussed in the rebuttal testimony of Public Counsel's witness,**

1 Geoff Marke. Second, I address economic and other customer impacts that Public
2 Counsel encourages the Commission to consider in rejecting the Company's
3 proposed increase. Third, I address rate design, including the Company and Staff
4 proposed rates for general service residential and small commercial customers.
5 Public Counsel strongly opposes the Staff proposal to have all residential and
6 small commercial customers pay the same distribution charges regardless of use.
7 Fourth, I address the Company's proposal to consolidate the terms and conditions
8 of service and the miscellaneous service fees for the previous Southern Missouri
9 Natural Gas (SMNG) and Missouri Gas Utility (MGU) service areas. Public
10 Counsel does not oppose working toward a consolidated tariff, but recommends
11 that the process be conducted in a manner that minimizes detrimental customer
12 impacts. For example, where the SMNG and MGU tariffs currently reflect
13 different fees for a like service, Public Counsel suggests that instead of allowing
14 the higher of two fees the Commission should instead allow a consolidated rate
15 set at the lower of the two fees. If particular terms and conditions differ between
16 the tariffs, the Commission should only allow consolidation if the more customer-
17 friendly term or condition is adopted. Finally, I will address miscellaneous tariff
18 issues, including the Company's proposal to revise its flexible pricing provision
19 for commercial and industrial classes and its proposal for approval of a
20 conversion incentive program.

21 Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?

1 A. No.

2 Q. IN PREPARING TESTIMONY WHAT MATERIAL DID YOU REVIEW?

3 A. I have reviewed SNG's initial filing requesting an increase in its service rates, its
4 minimum filing submission and its proposed tariff. I also have reviewed the direct
5 testimony, and supporting documentation of Michelle A. Moorman, Tyson D.
6 Porter, Kent D. Taylor and Martha R. Wankum filed on behalf of SNG; the Cost
7 of Service Report and the Class Cost Of Service And Rate Design Report filed on
8 behalf of the Staff of the Missouri Public Service Commission (Staff); Staff work
9 papers supporting the Reports; the direct testimony of Staff witness Tom Imhoff;
10 materials from past certification and rate cases related to the service areas that
11 SNG serves; customer complaints and comments filed with the Commission
12 regarding the proposed increase in this case; customer comments at public
13 hearings; and data request responses provided to the Staff and Public Counsel by
14 SNG.

15 Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND.

16 A. I hold a Bachelor of Science degree in Mathematics from the University of
17 Missouri-Columbia and have completed the comprehensive and qualifying exams
18 for a Ph.D. in Economics from the same institution. My two areas of
19 concentration were Quantitative Economics and Industrial Organization. My
20 outside field of study was Statistics.

1 I have been with the Office of the Public Counsel since January 1996. I
2 have testified on economic issues and policy issues in the areas of
3 telecommunications, gas, electric, water and sewer. In rate cases, my testimony
4 has addressed class cost of service, rate design, miscellaneous tariff issues, low-
5 income and conservation programs, and revenue requirement issues related to the
6 development of class revenues, billing units, low-income program costs, incentive
7 programs and fuel cost recovery. A list of my filed testimony is attached to this
8 testimony. In addition to preparing filed testimony, I have regularly participated
9 in meetings, workshops and settlement negotiations regarding issues before the
10 Commission.

11 Over the past twenty years I have also taught courses for the following
12 institutions: University of Missouri-Columbia, William Woods University, and
13 Lincoln University. I currently teach undergraduate and graduate level economics
14 courses for William Woods University.

15 **Q. WHAT IS YOUR EXPERIENCE REGARDING CASES RELATED TO THE SNG**
16 **NATURAL GAS SERVICE AREA?**

17 **A.** I participated in the negotiations in Case No. GO-2005-0120, in which MGU
18 received initial approval of a Certificate of Convenience and Necessity (CCN) to
19 serve as a local gas distribution company (LDC) in Missouri. I reviewed the
20 certification applications as MGU expanded its service area first into areas which
21 are currently part of the Gallatin Division, later into the Warsaw area and finally

1 into the Lake of the Ozarks region. I also filed testimony in Case. No. GR-2008-
2 0060, related to MGU's request for an increase in base rates.

3 Regarding Southern Missouri Natural Gas case, I have participated in the
4 review and negotiation of issues related to the Company. My earliest work on
5 issues related to Southern Missouri Natural Gas occurred in 2005, in Case No.
6 GE-2006-0156. In that case, the Company sought a waiver of the Commission's
7 Promotional Practices Rule in order to offer a water heater rebate program. I also
8 participated in negotiations which led to the resolution of Public Counsel's
9 Complaint against Southern Missouri Natural Gas in Case No. GC-2006-0180,
10 regarding the Company's gas procurement and hedging practices. In GR-2010-
11 0347, SMNG sought an increase in base rates and I participated in initial meetings
12 and reviewed the initial disposition agreement between Staff and the Company.

13 **II. SNG'S COMMITMENTS TO INSULATE CUSTOMERS FROM RISK**

14 Q. AT PAGE 6 OF HER DIRECT TESTIMONY, SNG WITNESS MICHELLE MOORMAN
15 IDENTIFIES CERTAIN REQUIREMENTS FROM PREVIOUS COMMISSION CASES
16 THAT THE COMPANY ADDRESSES IN THIS CASE. WHAT ADDITIONAL
17 REQUIREMENTS SHOULD THE COMPANY ADDRESS PRIOR TO RECEIVING
18 APPROVAL TO INCREASE RATES?

19 A. SNG and its predecessors have pursued aggressive expansion over the past 20
20 years. For each incremental expansion, the Company filed an Application for a
21 CCN. As part of the documentation supporting these Applications, the Company

1 submitted feasibility studies which the Company asserted justified the proposed
2 expansions. Public Counsel, the Staff and other parties questioned the projected
3 customer conversions, growth and cost assumptions contained in the feasibility
4 studies. In order to secure Commission approval of the Applications, the
5 Company consistently committed to bear the financial risk associated with the
6 expansions and the Commission ordered the Company to bear such financial risk.
7 The Company should be required to demonstrate how the proposed rate increase
8 for each Division does not result in customers bearing the risk of the Company's
9 decisions to expand.

10 Q. PLEASE PROVIDE EXAMPLES OF SNG'S EXPANSION AND COMMITMENTS
11 RELATED TO THE GALLATIN SERVICE AREA.

12 A. The development of the Gallatin Division in Northwest Missouri is associated
13 with six certificate cases, one rate case and a financing case.

14 GO-2005-0120: MGU's Application for a CCN to serve Harrison, Daviess, and
15 Caldwell Counties, and to Acquire the Gallatin (460 customers) and Hamilton
16 (277 customers) systems. A feasibility study was submitted in support of the
17 Application. Many conditions were stipulated to by the parties, including the
18 following risk of project success: *"The Company shall be responsible in future*
19 *rate cases for any failure of this system to achieve forecasted conversion rates*
20 *and/or its inability to successfully compete against propane."* (Nonunanimous
21 Stipulation and Agreement Case No. GO-2005-0120, 12/8/2004)

1 **GA-2007-0421:** MGU's Application for a CCN for expansion in Daviess County
2 to serve a single customer, Landmark Manufacturing Co. A feasibility study was
3 submitted in support of the Application. While the Company and Staff indicated
4 that additional customers could be served by the proposed extension, the
5 Company's feasibility study suggested that the project revenue would cover the
6 projected cost in a short period of time.

7 **GR-2008-0060:** MGU Rate Case.

8 **GA-2008-0078:** MGU CCN expansion in Harrison County to serve Maschhoffs,
9 Inc. A feasibility study was submitted in support of the Application.

10 **GA-2008-0321:** MGU CCN expansion into Harrison County per franchise with
11 Ridgeway, Mo. A feasibility study was submitted in support of the Application.

12 **GA-2008-0322:** MGU CCN expansion into Daviess County per franchise
13 agreement with Plattonsburg, Mo. A feasibility study was submitted in support of
14 the Application.

15 **GA-2008-0348:** MGU CCN expansion into Daviess County per franchise
16 agreement with Jamestown, Mo. A feasibility study was submitted in support of
17 the Application.

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4 Q. PLEASE PROVIDE EXAMPLES OF SNG'S EXPANSION AND COMMITMENTS
5 RELATED TO THE WARSAW SERVICE AREA.

6 A. The development of the Warsaw Division in Central Missouri is associated with
7 eight certificate cases.

8 **GA-2009-0264:** MGU's CCN for expansion into Pettis and Benton Counties
9 including Green Ridge, Cole Camp, Lincoln and Warsaw. A feasibility study was
10 submitted in support of the Application. The PSC ordered 6 conditions,
11 including, "*MGU's shareholders are totally responsible for the success of this*
12 *project, with no liability or responsibility put on customers.*"

13 **GA-2009-0422:** MGU's Application for a CCN expansion into Benton County, to
14 serve Green Ridge, Cole Camp, Lincoln and Warsaw. The Company stated that it
15 needed to use an alternate route for the main line route proposed in GA-2009-
16 0264. The Company incorporated the feasibility study from Case No. GA-2009-
17 0264. The PSC ordered 6 conditions, including, "*MGU's shareholders are totally*
18 *responsible for the success of this project, with no liability or responsibility put on*
19 *customers.*" (Report and Order p. 8, Case No. GA-2009-0422)

1 **GA-2010-0189** MGU's CCN for expansion into Greene, Polk and Dallas
2 Counties. A feasibility study was submitted in support of the Application.
3 Approval included the condition, "*MGU's shareholders are totally responsible*
4 *for the success of this project, with no liability or responsibility put on*
5 *customers.*" (Report and Order p. 8, Case No. GA-2010-0189)

6 **GA-2010-0289:** MGU's CCN to serve Pettis and Benton Counties. A feasibility
7 study was submitted in support of the Application. Approval included the
8 condition, "*MGU's shareholders accept full financial responsibility for the*
9 *success of these projects, with no liability or responsibility falling on customers.*"
10 (Report and Order p. 4, GA-2010-0289. Case Nos. GA-2010-0290 and GA-2010-
11 0291 were consolidated with GA-2010-0289).

12 **GA-2012-0044:** MGU's CCN for expansion in Benton County. A feasibility
13 study was submitted in support of the Application. The Commission's approval
14 included the condition, "*MGU's shareholders shall be fully responsible for the*
15 *success of the project, with no liability or responsibility put on MGU's existing*
16 *customers.*" (Report and Order p. 4, Case No. GA-2012-0044)

17 **GA-2013-0404:** Summit's CCN expansion in Pettis and Benton Counties. A
18 feasibility study was submitted in support of the Application. The Commission's
19 approval included the condition, "*SNG's shareholders are totally responsible for*
20 *the success of this project, with no liability or responsibility put on customers.*"
21 (Report and Order p. 4, Case No. GA-2013-0404)

1 Q. HAS THE WARSAW SYSTEM ACHIEVED THE PROJECTED CUSTOMER COUNTS
2 AND SALES VOLUMES REFLECTED IN THE FEASIBILITY STUDIES SUBMITTED IN
3 SUPPORT OF THE SERVICE AREA EXPANSIONS?

4 A. No. The Company has not achieved the projections. This conclusion is based on
5 my review of the projected customer counts and projected sales volumes
6 contained in the service area feasibility studies compared to information reflected
7 in the Company's current filing. In an effort to provide a very conservative
8 comparison, Table 2 compares the customer counts and volumes referenced in the
9 feasibility studies compared to the Company's reported customer current counts
10 and volumes. Projections for the third-year period were used for most expansions.
11 Case No. GA-2012-0044 reflects a more recent expansion and reflects only a
12 Year 2 projection. Similarly, Case No. GA-2013-0404 reflects only a Year 1
13 projection. A copy of the Applications and feasibility studies used in my analysis
14 are included in Schedule I-Warsaw HC.

15 **

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1 Q. HAS THE BRANSON SYSTEM ACHIEVED THE PROJECTED CUSTOMER COUNTS
2 AND SALES VOLUMES REFLECTED IN THE FEASIBILITY STUDIES SUBMITTED IN
3 SUPPORT OF THE SERVICE AREA EXPANSIONS?

4 A. No. The Company has not achieved the projections. This conclusion is based on
5 my review of the projected customer counts and projected sales volumes
6 contained in the service area feasibility studies compared to information reflected
7 in the Company's current filing. In an effort to provide a very conservative
8 comparison, Table 3 compares the customer counts and volume for the third-year
9 period referenced in the feasibility studies compared to the Company's reported
10 current customer counts and volume. A copy of the Applications and feasibility
11 studies used in my analysis are included in Schedule 1-Branson HC. The original
12 feasibility studies filed in the CCN case, and the copy provided to Public Counsel
13 in this case, are missing sheets that contain customer and volume data that I use in
14 my analysis. I was able to obtain a copy of the data from Exhibit 22, filed in EFIS
15 in Case No. GA-2007-0168. The copy quality is poor, so I may need to update
16 the customer and volume calculations once I am able to obtain a more legible
17 copy.

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**Q. PLEASE PROVIDE EXAMPLES OF SNG'S EXPANSION AND COMMITMENTS
RELATED TO THE ROGERSVILLE SERVICE AREA.**

7

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**A. The development of the Rogersville Division in South Central Missouri is
associated with five certificate cases.**

9

10

**GA-94-127: Tartan Energy Co, L.C., d/b/a Southern Missouri Gas Company's
(Tartan) Application for a CCN to serve Wright, Texas, Howell, Webster, Greene
and Douglas Counties, including the cities of Cabool, Houston, Licking,
Mountain Grove, Mountain View, West Plains, Ava, Mansfield, Marshfield, and**

11

12

13

1 Willow Springs. A feasibility study was submitted as a late-filed exhibit. The
2 Commission's Report & Order conditioned approval of the Application on terms
3 contained in a Stipulation and Agreement. The Stipulation and Agreement
4 included the following conditions: (1) Tartan consented to achieve a capital
5 structure reflecting 40%-42% common equity to total capital ratio; and (2) Tartan
6 imputed a volume level of at least 1,797,000 Mcf (for all future rate cases), which
7 results in a conversion rate based on Tartan's conversion estimate. The
8 imputation reflected that Staff's predicted conversion rate was much lower. Other
9 conditions also applied. At Page 25, of the Commission's Report & Order, the
10 Commission discussed the Company's desire to move forward with the project
11 despite the Company's concession to use an imputed level of volumes and despite
12 a Company conducted sensitivity study showing that a lower conversion rate
13 might result in a single digit return.

14 **GA-95-349:** Tartan's CCN for Mountain View was requested because the
15 Company did not have franchise authority in time to get approval in GA-94-127.

16 **GA-2007-0212:** SMNG's CCN for Lebanon. This case was consolidated with
17 GF-2007-0215 and GA-2007-0310. The Commission granted SMNG a CCN for
18 Lebanon, Licking, and Houston conditioned upon shareholders, rather than
19 ratepayers, being deemed responsible for the detrimental effects of a loss resulting
20 from inaccurate estimations of customer conversion or usage rates. (Report and
21 Order p. 25, Case No. GA-2007-0212)

1 **GA-2010-0114:** SMNG's CCN for expansion into Laclede County to serve
2 Willard Asphalt Paving. The Commission approved the CNN "conditioned on
3 SMNG's shareholders assuming total responsibility for any loss associated with
4 this project, with no liability or responsibility put on customers." (Report and
5 Order p. 4, Case No. GA-2010-0114)

6 **Q. HAS THE ROGERSVILLE SYSTEM ACHIEVED THE PROJECTED CUSTOMER**
7 **COUNTS AND SALES VOLUMES REFLECTED IN THE FEASIBILITY STUDIES**
8 **SUBMITTED IN SUPPORT OF THE SERVICE AREA EXPANSIONS?**

9 **A.** No. The Company has not achieved the projections. This conclusion is based on
10 my review of the projected customer counts and projected sales volumes
11 contained in the service area feasibility studies compared to information reflected
12 in the Company's current filing. In an effort to provide a very conservative
13 comparison, Table 4 compares the customer counts and volumes for the third-year
14 period referenced in the feasibility studies compared to the Company's reported
15 current customer counts and volumes. For customer counts and volumes related
16 to the areas reflected in the CCN granted in GA-94-127, I used the imputed
17 volumes approved by the Commission. A copy of the Applications and feasibility
18 studies used in my analysis are included in Schedule 1-Rogersville HC.

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Q. DOES THE COMPANY ACKNOWLEDGE THAT ITS LOWER RATE OF RETURN HAS
6 BEEN CAUSED BY FEWER CUSTOMERS CONNECTING, LOWER GAS
7 CONSUMPTION, CONSTRUCTION DELAYS, DELAYS IN CUSTOMERS
8 CONNECTING AND HIGHER CONSTRUCTION COSTS?

9

A. Yes, In response to Public Counsel Data Request No. 4 **

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13

** The Company's response to Public Counsel Data Request

14

No. 4 is attached to this testimony as Schedule 2HC.

1 Q. DOES THE COMPANY ALSO ACKNOWLEDGE THAT COMPETITION FROM
2 ALTERNATIVE FUELS HAS IMPACTED THE COMPANY?

3 A. In response to Public Counsel Data Request No. 5 Company witness James
4 Anderson describes alternative fuels, particularly propane, as increasing the
5 perceived risk associated with the Company. He also acknowledges it has affected
6 the Company's ability to gain customers.

7 The Company's response to Public Counsel's Data Request No. 5 is attached to
8 this testimony as Schedule 3.

9 **III. ADDITIONAL REVENUE REQUIREMENT ISSUES**

10 Q. HAS THE COMPANY CLAIMED ANY OF THE FINANCIAL RISK FOR THE SYSTEMS
11 FALLING SHORT OF PROJECTED CUSTOMERS AND VOLUMES?

12 A. Only to a limited extent. The Company claims to have made "management policy
13 decisions" to reduce the requested increase for Branson and Warsaw. The
14 Company's reasoning is that the Branson system is still growing and the
15 Company does not want to assign the full cost of the system to early movers.
16 The decision to reduce the request for Warsaw relates to a mainline shared with
17 the Lake of the Ozarks system. The Company decided to reduce its request
18 pending growth on the Lake of the Ozarks system.

19

1 Q. IS THIS METHOD OF ADJUSTING ITS REVENUE REQUIREMENT TRANSPARENT
2 OR ADEQUATE IN DEMONSTRATING THAT IT HAS MET ITS COMMITMENTS TO
3 INSULATE CUSTOMERS FROM THE RISK OF NOT ACHIEVING FORECASTED
4 CONVERSION RATES AND/OR CUSTOMER GROWTH PROJECTIONS IN EACH
5 DIVISION?

6 A. No.

7 Q. FOR THE PURPOSE OF DETERMINING REVENUE REQUIREMENT FOR THE
8 ROGERSVILLE DIVISION, HAS THE COMPANY IMPUTED THE VOLUMES OF AT
9 LEAST 1,797,000 MCF AS IT AGREED TO DO IN CASE NO. GA-94-127?

10 A. No. Schedule TDP-1 Exhibit 1 and Schedule TDP-1 Exhibit 3, attached to the
11 direct testimony of Company witness Tyson Porter and included in Schedule 4 of
12 this testimony, indicate that the Company is using a volume level of only
13 1,755,522 for purposes of determining its claimed current revenues. Using the
14 lower volume level produces a lower current revenue estimate and a higher
15 revenue requirement estimate than would result from using the required
16 imputation.

17 Q. SHOULD SNG BE ALLOWED TO RECOVER IN RATES THE PURCHASE DISCOUNT
18 ASSOCIATED WITH THE SALE OF SMNG TO MGU APPROVED IN CASE NO. GM-
19 2011-0354?

1 A. No. Public Counsel witness Keri Roth identifies the level of bargain purchase
2 discount as ** which resulted from the sale of SMNG to MGU. In
3 this case, MGU, the buyer, appears to have recorded the booked value for rate
4 making purposes instead of the lower value reflective of the discounted price
5 paid.

6 The difference should not be charged to ratepayers for two reasons. The first
7 relates to SMNG's commitments and Commission decisions requiring that if the
8 Company failed to meet the projections in its original CCN case and subsequent
9 CCN and rate cases, any risk associated with this failure would not be passed on
10 to ratepayers. As described above, the seller SMNG has historically failed to
11 achieve its projected customer counts and sales volumes. The SMNG assets were
12 eventually sold to MGU for an amount significantly below the recorded book
13 value. The lost value should be borne by shareholders.

14 The second reason the Company should be allowed to recover only the
15 discounted sale price rather than the booked value paid for SMNG's assets relates
16 to the Commission's Affiliate Transaction Rules. At the time of the sale the seller
17 and buyer, SMNG and MGU, were under common ownership as discussed at
18 Page 2, of the direct testimony of MGU witness Michael Earnest in the merger
19 case GM-2011-0354. A copy of his testimony is attached as Schedule 5. Under
20 common ownership, both MGU and SMNG should have acted in accordance with
21 the pricing standards of the Affiliate Transaction Rule.

1 4 CSR 240-40.015 (2) (A) states:

2 A regulated gas corporation shall not provide a financial
3 advantage to an affiliated entity. For the purposes of this
4 rule, a regulated gas corporation shall be deemed to provide
5 a financial advantage to an affiliated entity if –

6 1. It compensates an affiliated entity for goods or
7 services above the lesser of –

8 A. The fair market price; or

9 B. The fully distributed cost to the regulated
10 gas corporation to provide the goods or
11 services for itself; or

12 2. It transfers information, assets, goods or services
13 of any kind to an affiliated entity below the
14 greater of –

15 A. The fair market price; or

16 B. The fully distributed cost to the regulated
17 gas corporation.

18 Under the Rule, SMNG should have documented the fair market price and
19 sold the assets at the higher of fully distributed cost or the fair market price.
20 MGU as the buyer, should have documented the fair market price and bought the
21 assets at the lower of fully distributed cost or the fair market price.

22 While at this point there appears to be no clear way to determine the fair
23 market price as might have occurred in an “arms length” transaction, it is at least
24 reasonable to have expected SMNG to have received the booked cost as a
25 representation of fully distributed cost of the assets. To conform to the Affiliate
26 Transaction Rules while also accepting the discounted sale price, SMNG should
27 have written off a portion of the booked value. Likewise, since the transaction

1 was not an arms length transaction, MGU should not be allowed any advantage by
2 valuing the assets at a value higher than it paid for the assets.

3 **Q. SHOULD SNG BE GRANTED INCREASES WHEN IT HAS NOT DEMONSTRATED**
4 **THAT IT HAS MET ITS BURDEN TO INSULATE CUSTOMERS FROM RISK?**

5 A. No. As I have demonstrated the Company has consistently failed to meet
6 projections and other commitments, it has also failed to demonstrate that
7 ratepayers have been sheltered from its aggressive growth strategy.

8 **IV. CUSTOMER RESPONSE TO THE PROPOSED RATE INCREASES**

9 **Q. MANY RESIDENTIAL CUSTOMERS FILED COMMENTS WITH THE COMMISSION**
10 **OR TESTIFIED AT ONE OF THE LOCAL PUBLIC HEARINGS REGARDING SNG'S**
11 **PROPOSED RATE INCREASE. WERE ANY ISSUES RAISED IN THOSE COMMENTS**
12 **THAT ARE CONCERNING TO YOU?**

13 A. Yes, there were many issues raised in the public comments that are of great
14 concern. The majority of customers are distraught over the size of the proposed
15 increase and the impact it would have on their bills and their budgets. Many
16 customers in SNG's service territory are elderly or low-income and living on a
17 low fixed income such as social security, and the size of the proposed increase
18 would pose a significant burden to these customers. The common theme among
19 the customer comments is that the magnitude of SNG's request is extremely

1 excessive, with many customers referencing the 100% increase in the customer
2 charge for two SNG districts, and a 60% increase in the commodity rate.

3 Q. HOW DOES SNG'S REQUESTED INCREASE COMPARE TO RATE INCREASE
4 REQUESTS FILED BY OTHER NATURAL GAS COMPANIES IN MISSOURI?

5 A. Excluding SNG's current request, in the past five (5) years the average requested
6 rate increase by natural gas companies is \$65.54 annually. See Table 5 below.

7 Table 5

Natural Gas Company	<i>Proposed Annual Increase for Average Residential Customer</i>	Case Number
Summit Natural Gas	\$346.61 to \$228.32 ¹	GR-2014-0086
Missouri Gas Energy	\$27.96 ²	GR-2014-0007
Laclede Gas Company	\$59.16 ³	GR-2013-0171
Ameren Missouri	\$87.00 ⁴	GR-2010-0363

¹ Request for Approval of Proposed Customer Notice, filed April 10, 2014. The Warsaw District has the lowest proposed average impact of \$228.32, while the Branson District has the highest proposed average impact of \$346.61. The Gallatin and Rogersville Districts proposed average impacts are \$244.50 and \$289.70 respectively.

² Direct Testimony of Steve Lindsey, GR-2014-0007, p. 10, line 5.

³ Direct Testimony of Steve Lindsey, GR-2013-0171, p. 4, line 1.

⁴ Case No. GR-2010-0363, UE Exhibit No. 1, General Information, Schedule 4, page 1 of 1.

So. Mo. Natural Gas	\$54.50 ⁵	GR-2010-0347
Atmos Energy Corp.	\$105.72 ⁶	GR-2010-0192
Laclede Gas Company	\$67.08 ⁷	GR-2010-0171
Empire District Gas Co.	\$57.36 ⁸	GR-2009-0434

1 For the Branson District, SNG is requesting a rate increase that is *five times*
2 greater than the average. It is certainly understandable why so many SNG
3 customers are angry and distressed over the magnitude of SNG's request.

4 **Q. WERE CONCERNS SIMILAR TO THOSE RAISED BY RESIDENTIAL CUSTOMERS**
5 **ALSO RAISED BY OTHER CLASSES OF CUSTOMERS?**

6 **A.** Yes. Based upon my experience, it is uncommon in local public hearings
7 regarding natural gas rate increase proposals to have many small business and
8 commercial customers testify. However, SNG's public hearings are noteworthy

⁵ *Order Approving Small Company Rate Increase and Approving Tariff*, Case No. GR-2010-0347, January 19, 2011. This number is based on the *approved* rate request rather than the proposed increase because the impact of the proposed increase was not available. It should be noted that the approved increase was \$300,000 higher than the requested increase.

⁶ Direct Testimony of Kevin Akers, GR-2010-0192, p. 6, line 3.

⁷ Case No. GR-2010-0171, Laclede Letter to Commission Secretary, December 4, 2009.

⁸ Case No. GR-2009-0434, Empire General Information filing, June 5, 2009.

1 for the number of small business and commercial customers that have expressed
2 concern over their ability to afford the large bill increase proposed by SNG.
3 Many are concerned that the increase will force them into bankruptcy. In the
4 public hearing held in the City of Warsaw, for example, several chicken farmers
5 raised concerns over bankruptcy if the proposed increase is approved. Mr. Jeffrey
6 Miller testified that his chicken farming business spends approximately \$40,000
7 annually on natural gas, and that SNG's proposal would increase his gas bill by
8 26.5%, or over \$10,000, which could force his business into bankruptcy.⁹

9 **Q. DO YOU HAVE ADDITIONAL CONCERNS THAT A PORTION OF SNG'S**
10 **CUSTOMERS BELIEVE THEY WERE MISLED INTO SUBSCRIBING TO SNG'S GAS**
11 **SERVICE?**

12 **A.** Yes. This is another area of great concern. Many customers expressed feelings of
13 being misled by SNG regarding future rates when they originally switched from
14 propane to natural gas. During the local public hearing in the City of Branson,
15 Ms. Reanne Presley, Mayor of Branson, explained:

⁹ Transcript (Tr.), Vol. 4, pp. 15-17.

1 On behalf of our citizens and business owners within the City of
2 Branson, Missouri, I would like to raise a voice of concern about the
3 proposed level of increase in the price of natural gas. It appears that
4 much of the requested increase is due to the installation of the
5 distribution system in our area. Before this installation took place, the
6 community was not given adequate notification that the cost of this
7 construction was not built into the current rate structure. It was not
8 clear that the utility expected to recoup these expenses in future years
9 with rate increases. I have learned, since, that this is a common
10 practice, but I must say that it was not made clear to our community, I
11 think neither to our citizens, nor to our businesses, nor to our city
12 staff.¹⁰

13 Ms. Gail Meyer, a SNG customer with a degree in chemical and petroleum
14 refining and engineering, echoed similar feelings.¹¹ Ms Meyer testified that when
15 she originally subscribed for gas service for her commercial properties, “there was
16 a substantial amount of salesmanship” to convince her to switch to natural gas.¹²
17 For this reason, Ms. Meyer urges the Commission to “go to the lower end of the

¹⁰ Tr., Vol. 6, p. 6.

¹¹ *Id.*, p. 14.

¹² *Id.*, p. 15.

1 return on investment.”¹³ Many other customers raised similar concerns throughout
2 the public hearing testimony and filed comments. I strongly encourage the
3 Commission to read through the comments and public hearing testimony and
4 factor customer feedback into the Commission’s deliberations as it determines
5 whether to grant SNG a rate increase.

6 Q. WOULD IT BE COST PROHIBITIVE FOR SOME CUSTOMER TO SWITCH BACK TO
7 PROPANE ONCE THEY HAVE CONVERTED TO NATURAL GAS?

8 A. Yes. Staff requested information from SNG regarding the cost for customers to
9 convert to propane from natural gas. The Company estimated that depending on
10 the number of appliances and manufacturer of the appliances, the cost to the
11 customer could be between \$100 and \$450. For low income customers and
12 customers living on fixed incomes, an up-front cost of \$100 to \$450 can be cost
13 prohibitive. The Company’s response was unclear on whether there might be
14 additional costs related to renting or buying a propane tank or paying for a
15 minimum initial propane delivery.

16 **V. RESPONSE TO THE STAFF AND COMPANY RATE DESIGN PROPOSALS**

17 Q. PLEASE DESCRIBE THE COST ASSIGNMENTS AT ISSUE IN THIS CASE.

¹³ *Id.*, p. 16.

1 A. Natural gas commodity costs, which are recovered through the Purchased Gas
2 Adjustment (PGA) and Actual Cost Adjustment (ACA) mechanisms, are not at
3 issue in this case. The remaining costs associated with providing natural gas
4 service, referred to as margin costs, are at issue. Margin costs are the cost of
5 physical plant, including: land, structures, mains, measuring and regulating
6 equipment, service lines, meters, house regulators, facilities used to deliver
7 natural gas to customers throughout the local service area, and other equipment.
8 In addition to plant costs, margin costs include costs related to the operation and
9 maintenance of physical plant; service related costs such as meter reading, billing,
10 records and collections, advertising and marketing; administrative and general
11 costs and taxes.

12 **Q. PLEASE DESCRIBE THE PARTIES' PROPOSED METHODS FOR RECOVERING THE**
13 **COST TO PROVIDE SERVICE TO SMALL RESIDENTIAL AND COMMERCIAL**
14 **CUSTOMERS.**

15 A. Traditionally, rate designs that recover margin costs have been constructed to
16 include a fixed monthly customer charge and a volumetric charge.

17 The customer charge collects those costs exclusive to serving a particular
18 customer, such as the service line which carries gas from the main running along
19 the street to the customer meter, as well as, the cost of the meter and regulator
20 located at the customer premises. Assuming that customers in the customer class:
21 have sufficiently similar characteristics, they are served by the same size meter

1 and regulator, are served by a line similar in length and diameter, their installation
2 costs are similar, then, in mathematical terms, the relationship between the costs
3 and the number of customers is a direct relationship; each customer adds a
4 uniform amount to costs. Serving each customer in a customer class also results
5 in incurring similar costs for meter reading, issuing a bill, processing payment and
6 recording activity on a customer's account. The cost of physical plant at the
7 customer premises, related operations and maintenance expenses, and customer
8 service expenses directly related to the customer are costs that have, in the past,
9 been included in the monthly customer charge.

10 Other costs, such as the cost of mains, are driven by a need to satisfy demand
11 during peak periods and total consumption throughout the year. These types of
12 costs traditionally have been recovered through a volumetric charge.

13 This Company, like most regulated gas distribution and electric utilities,
14 collects costs through the combination of a customer charge and a volumetric
15 charge. In the current case, both the Public Counsel and the Company propose to
16 continue the use of this traditional two-part rate structure. Staff, however,
17 proposes to implement a Straight Fixed Variable (SFV) rate design that would
18 recover all the margin costs assigned to the residential and small commercial
19 classes through a single fixed monthly charge.

20 **Q. WHAT RATE LEVELS DOES THE COMPANY PROPOSE TO IMPLEMENT FOR THE**
21 **RESIDENTIAL AND SMALL GENERAL SERVICE COMMERCIAL CUSTOMERS?**

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A. The Company's proposed rates are shown in Table 6.

Table 6

Summit Current and Proposed Small Customer Rates				
	Customer Charge		Commodity Charge (Ccf)	
	Existing	Proposed	Existing	Proposed
Gallatin				
GS-residential	\$15.00	\$20.00	\$0.44	\$0.72
GS-commercial	\$15.00	\$20.00	\$0.44	\$0.72
Warsaw				
GS-residential	\$15.00	\$15.00	\$0.55	\$0.95
GS-commercial	\$15.00	\$15.00	\$0.55	\$0.95
Rogersville				
GS-residential	\$10.00	\$20.00	\$0.47	\$0.74
GS-residential-optional			\$0.71	\$1.21
GS-commercial	\$15.00	\$40.00	\$0.46	\$0.68
GS-commercial-optional			\$0.70	\$1.27
Branson				
GS-residential	\$10.00	\$20.00	\$0.57	\$0.94
GS-residential-optional			\$0.81	\$1.41
GS-commercial	\$15.00	\$40.00	\$0.56	\$0.88
GS-commercial-optional			\$0.80	\$1.47

Q. WOULD THE PROPOSED INCREASES BE DETRIMENTAL TO RESIDENTIAL AND SMALL GENERAL SERVICE COMMERCIAL CUSTOMERS?

A. Yes, the increases would be detrimental, especially to the most vulnerable customers such as low-income consumers and consumers living on fixed incomes. The Company proposes that the customer charge *increase by a third* for residential customers in the Gallatin District *and double* for residential customers in the Rogersville and Branson Districts. Later in this testimony I explain how high fixed charges are detrimental not only to the affected customer, but also to other customers on the shared system. The Company's proposed increase to the Small General Service customer charge for commercial customers is even larger

1 at an increase of 167%. Further, the Company proposes volumetric increases
2 ranging from 43% to 80%.

3 **Q. SHOULD THE COMMISSION APPROVE THE COMPANY'S PROPOSED RATES FOR THE**
4 **RESIDENTIAL AND SMALL GENERAL SERVICE COMMERCIAL CUSTOMERS?**

5 A. No. The Company has failed to demonstrate that the increases it proposes should
6 be borne by ratepayers.

7 **Q. WHAT RATE LEVELS DOES THE STAFF PROPOSE TO IMPLEMENT FOR THE**
8 **RESIDENTIAL AND SMALL GENERAL SERVICE COMMERCIAL CUSTOMERS?**

9 A. Neither the Class Cost of Service Report nor testimony identify the specific rates
10 that the Staff proposes based on an SFV rate design. I have used information
11 from the Staff's Class Cost of Service Report, Staff's Class Cost of Service work
12 papers and Staff's filed Accounting Schedules to quantify the rates that would
13 result from the Staff's proposal to implement a SFV rate design. The rates are
14 shown in Table 7.

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Table 7.

Staff Proposed Small Customer Rates					
Distribution Charge Calculation from CCOS					
	<u>Margin Increase</u>	<u>Current Revenue</u>	<u>Resulting Revenue</u>	<u>No. of Bills</u>	<u>Dist. Charge</u>
<u>Gallatin</u>					
General Service	7.84%	\$638,738	\$688,831	15,845	\$43.47
<u>Warsaw</u>					
General Service	103.47%	\$393,886	\$801,443	10,295	\$77.85
<u>Rogersville</u>					
GS-residential	18.34%	\$3,717,806	\$4,399,583	117,964	\$37.30
GS-residential-optional					
GS-commercial	18.34%	\$1,895,892	\$2,243,563	28,601	\$78.44
GS-commercial-optional					
<u>Branson</u>					
GS-residential	165.10%	\$184,071	\$487,977	6,518	\$74.87
GS-residential-optional					
GS-commercial	165.10%	\$344,529	\$913,356	3,278	\$278.63
GS-commercial-optional					

Q. WOULD THE STAFF'S PROPOSED SFV DISTRIBUTION RATES BE DETRIMENTAL TO CUSTOMERS?

A. Staff's proposed monthly rates are excessive. In support of its proposal, the Staff has provided no customer bill analysis to demonstrate the impact on customers at different usage levels.

Q. DOES ANY REGULATED NATURAL GAS DISTRIBUTION COMPANY USE AN SFV RATE DESIGN?

A. No. The only two local distribution companies that have ever used an SFV rate design have discontinued its use, agreeing instead to a traditional rate design.

1 Q. WHAT POPULATION WOULD BE MOST NEGATIVELY IMPACTED BY A STRAIGHT
2 FIXED RATE DESIGN THAT REQUIRES LOW-USE CUSTOMERS TO PAY THE SAME
3 DISTRIBUTION RATE AS HIGH-USE CUSTOMERS?

4 A. Rate designs that recover all distribution costs through a fixed charge, and without
5 a volumetric rate, require low-use customers to pay more for their distribution
6 service than rate designs that include both a fixed charge and a volumetric rate.
7 This negatively impacts those households that use less than average amounts of
8 natural gas, which historically includes low-income households.

9 Q. WOULD IT BE BEST TO PRICE SERVICE SO HIGH THAT THOSE CUSTOMERS WITH
10 VERY LOW USE DISCONNECT SERVICE?

11 A. Absolutely not. If low-use customers are paying the customer-related costs
12 dedicated to serving them, such as the cost of the meter, service and meter reading
13 and, in addition, are making some contribution to the shared system costs, then
14 having that customer on the system benefits other customers.

15 Q. IF THE LOW-USE CUSTOMER PAYS LESS TOWARD SHARED SYSTEM COSTS THAN
16 DOES A HIGH USE CUSTOMER, DOES THAT MEAN THAT THE LOW-USE
17 CUSTOMER'S SERVICE IS SUBSIDIZED?

18 A. No. While the low-use customer may provide a lower return than a high use
19 customer, if the low-use customer is paying the customer-related costs and

1 making some contribution to shared system costs, the low-use customer's service
2 is not subsidized.

3 **Q. MIGHT HIGH CUSTOMER CHARGES PROVIDE AN INCENTIVE FOR LOW-USE**
4 **CUSTOMERS TO DISCONNECT SERVICE?**

5 A. Yes, high customer charges may result in pricing some low-use customers out of
6 the market. This would be an undesirable and potentially harmful outcome. A
7 high customer charge could also result in an increase in customers disconnecting
8 service during the summer when space heating is not necessary.

9 **Q. DO LOW-INCOME MISSOURI HOUSEHOLDS TEND TO CONSUMES LESS NATURAL**
10 **GAS THAN THE AVERAGE INCOME HOUSEHOLD?**

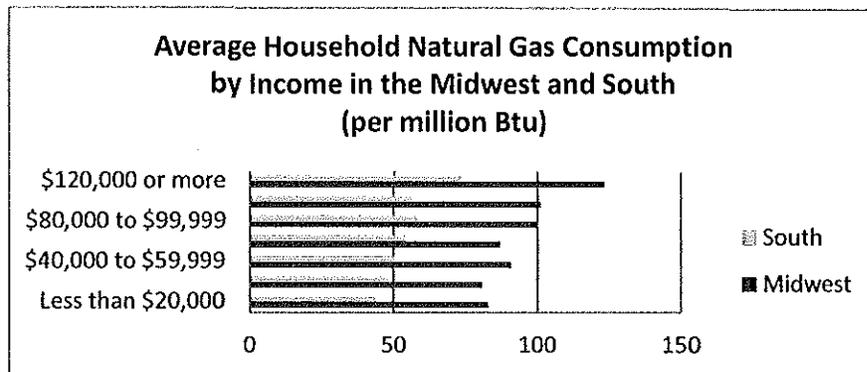
11 A. Yes. Although low-income consumers tend to live in less energy efficient
12 housing, they tend to use less energy due to living in housing units with less
13 square footage.

14 **Q. WHAT EVIDENCE SUPPORTS YOUR CONCLUSION THAT THE AVERAGE LOW-**
15 **INCOME MISSOURI HOUSEHOLD CONSUMES LESS NATURAL GAS THAN THE**
16 **AVERAGE HOUSEHOLD?**

17 A. The U.S. Energy Information Administration's (EIA) 2009 Residential Energy
18 Consumption Survey (RECS) provides statistics on energy consumption in the
19 U.S. This statistical evidence is gathered and published to assist in the
20 establishment of sustainable energy policies, such as an energy policy that

1 recognizes the needs of vulnerable low-income households. The RECS energy
2 consumption data in Diagram 1 shows that average household natural gas usage
3 increases with income in both the Midwest region, which includes Missouri, and
4 the South region, which borders Missouri to the south.¹⁴ This shows that low-
5 income households in colder regions and in warmer regions use below average
6 amounts of natural gas. Accordingly, rates that harm low-volume users are
7 disproportionately harmful to low-income households.

8 Diagram 1



9
10 Q. ARE THERE PUBLIC HEALTH CONCERNS ASSOCIATED WITH A RATE DESIGN THAT
11 PLACES MORE COST RESPONSIBILITY ON LOW-INCOME HOUSEHOLDS?

¹⁴ Source: U.S. Energy Information Administration, 2009 Residential Energy Consumption Survey, Final Energy Consumption and Expenditures Tables CE2.3 and CE2.4 (See Schedule 6). The 12-state Midwest region includes Missouri and the bordering states of Illinois, Iowa, Kansas, and Nebraska. The 15-state South region includes Arkansas, Oklahoma, and Tennessee that border Missouri to the south.

1 A. Yes. Access to affordable home energy is a serious matter of health and safety for
2 low-income households. High gas bills force low-income households to go
3 without service or to lower their home temperatures to levels that threaten the
4 health of vulnerable populations, particularly children and the elderly. There is a
5 direct link between body temperature, health, and safety. Cold weather
6 “challenges the body’s ability to maintain a steady core temperature. Anything
7 that impairs the body’s ability to regulate its own temperature heightens
8 vulnerability.”¹⁵ This poses a “significant risk factor” for children and the elderly
9 and those already suffering from chronic diseases such as heart disease, stroke,
10 respiratory disease like asthma, and diabetes.¹⁶ This risk is higher in low-income
11 households because they are likely to have seniors, disabled members, or children
12 in the home. In fact, ninety percent (90%) of low-income homes receiving energy
13 assistance have a household member that is among these vulnerable populations,¹⁷
14 and in 19% of low-income households an illness was caused by keeping the home
15 too cold.¹⁸ “Financial stresses on households facing high home energy bills mean
16 that some will go without food or a full dose of medically necessary prescription

¹⁵ *Affordable Home Energy and Health: Making the Connections*, by Lynn Page Snyder, PhD, MPH, National Energy Assistance Directors Association, and Christopher A. Baker, AARP Public Policy Institute, June 2010. (see Schedule 7)

¹⁶ *Id.*

¹⁷ National Energy Assistance Directors Association (NEADA), <http://neada.org/program-policy-reports/>

¹⁸ *Id.*

1 medicines,” posing further threats to public health.¹⁹ The Commission has an
2 opportunity to make a meaningful impact on low-income households with a rate
3 design that helps low-income gas users stay connected and maintain an adequate
4 level of service, resulting in positive health benefits for children, disabled, and
5 elderly that are most vulnerable to cold weather.

6 **Q. ARE THERE PUBLIC SAFETY CONCERNS ASSOCIATED WITH A RATE DESIGN THAT**
7 **PLACES MORE COST RESPONSIBILITY ON LOW-INCOME HOUSEHOLDS?**

8 A. Yes. The inability to afford natural gas causes many households to move to an
9 auxiliary heat source such a kitchen oven or a portable electric space heater. The
10 Missouri Department of Public Safety, Office of the State Fire Marshall, reports
11 on its website that “space heaters account for about one-third of home heating
12 fires and 80 percent of home heating fire deaths annually, according to the
13 National Fire Protection Association.”²⁰ A rate design that places more cost
14 responsibility on low-income households increases these threats to public safety.

15 **Q. WHAT REASONS DO THE STAFF GIVE IN THE STAFF CLASS COST OF SERVICE**
16 **REPORT IN SUPPORT OF THE SFV RATE DESIGN?**

17 A. Staff argues that collecting the residential and small commercial customers’ cost-
18 of-service in a fixed monthly Delivery Charge is an equitable and reasonable way

¹⁹ *Id.*

²⁰ <http://www.dfs.dps.mo.gov/safetytips/home-heating-safety.asp>

1 to recover cost. Staff claims that the difference in the cost of serving two
2 customers within the residential or small commercial rate class is not driven by
3 the customer load. Staff reasons that any difference in the cost to serve these
4 classes is more likely driven by factors other than customer size, such as distance
5 from the transmission pipeline, customer density in the area, the terrain in the
6 customer's geographical area, or the exact age and depreciated cost of the
7 equipment serving the customer.

8 **Q. DOES THE SFV RATE DESIGN MEET THE OBJECTIVE OF DESIGNING RATES BASED**
9 **ON COST CAUSATION?**

10 **A.** No. The SFV rate design is inappropriate for recovering all distribution costs
11 because, while the SFV recovers costs in a one-size-fits-all fee, a portion of
12 distribution costs vary with use and would be best recovered on a volumetric
13 basis. Businesses generally have certain costs, such as building and equipment
14 costs that are fixed over a period of time. Once those investments are made, they
15 may be considered fixed costs but that does not dictate the manner in which the
16 fixed cost should be recovered or the proportion of the cost that should be
17 recovered from each customer. For example, the cost of mains, once placed, may
18 be considered a fixed cost but the cost depends, in part, on the level of demand
19 reflected in planning for capacity requirements. Design day demand, which is
20 used for planning capacity requirements is developed based on historic demand
21 during extremely cold weather that reflects variation in use across customers.
22 Higher anticipated demand causes larger capacity mains to be placed and a larger

1 level of total mains investment. Because the level of fixed cost in mains
2 investment depends in part on demand that varies among customers, the
3 investment should not be recovered in a uniform fixed charge but would be better
4 recovered through charges that reflect variations in customer demand.

5 In this case, both the Company and Staff cost of service studies allocate
6 the cost of mains on a volumetric basis. As described in Schedule 8 which is a
7 copy of an email that I received in response to an inquiry to Dan Beck, the
8 witness that developed the Staff's mains allocator, Mr. Beck describes that both
9 the Company and Staff mains allocations are based on customer class usage for
10 the months of January and February. This means that customers within a
11 customer class who use more in peak winter months contribute to greater costs
12 being assigned for recovery from the customer class. It is reasonable and
13 appropriate to design rates to include a volumetric component that recovers more
14 costs from those customers with greater use.

15 Because Staff and the Company allocate costs to the small customer classes
16 relative to other classes based on the peak winter month volumes consumed, the
17 mains costs are not directly related to the number of residential customers, but
18 instead are related to usage characteristics. Schedule 4 illustrates the portions of
19 the Staff workpapers showing that costs are allocated to the customer classes
20 based on usage factors. The costs Staff allocates to small customer classes based
21 on volumetric usage include, the cost of plant investment and all associated

1 expenses, such as operations and maintenance expense and a portion of
2 overheads.

3 Since individual small customer usage characteristics including total
4 consumption and peak period consumption contribute to developing the
5 allocations of costs to the small customer classes, it is again perfectly reasonable
6 that rates are constructed so that customers within the class who use more overall,
7 and use more in peak demand periods, pay more. A traditional rate design which
8 combines a uniform customer charge with a volumetric rate component has the
9 flexibility to recover a basic level of costs from all customers, and to recover the
10 remaining costs incrementally consistent with use. The SFV is inflexible and
11 does not recover costs consistent with volumetric cost drivers.

12 Q. HAS THE STAFF PREVIOUSLY REJECTED PROPOSALS TO RECOVER ALL
13 DISTRIBUTION COSTS THROUGH A FIXED CHARGE DUE TO CONCERNS
14 REGARDING THE POTENTIAL DETRIMENT TO LOW-USE CUSTOMERS?

15 A. Yes. The detrimental impact on low-use customers of full non-gas recovery
16 through a fixed flat rate was foreseen by Staff witness Dr. Michael Proctor in his
17 Surrebuttal Testimony in Laclede Gas Case No. GR-2002-356. In testimony
18 responding to Laclede's proposed weather mitigation rate design proposal, Dr.
19 Proctor explained: "While the Staff favors using rate design as a weather
20 mitigation measure, because of the detrimental impact on small users, the Staff
21 was not willing to recommend recovering all of the non-gas costs in either the

1 **customer charge**, first block rate or a combination of these rate components....”
2 (emphasis added) The SFV has exactly the effect that Dr. Proctor rejected
3 because it is designed to collect all distribution costs through a monthly customer
4 charge.

5 **Q. THE STAFF ARGUES THAT THE SFV RATE DESIGN IS DESIGNED TO COLLECT IN**
6 **RATES THE COSTS ASSOCIATED WITH ACTUALLY SERVING CUSTOMERS, SUCH AS**
7 **COSTS FOR METERING THE CUSTOMER’S USAGE, PREPARING BILLING, AND**
8 **COSTS RELATING TO THE DISTRIBUTION SYSTEM USED TO SUPPLY NATURAL GAS**
9 **TO CUSTOMERS. THE STAFF ALSO ARGUES THAT THESE TYPES OF COSTS DO NOT**
10 **VARY WITH INDIVIDUAL CUSTOMER USAGE BUT ARE FIXED IN NATURE. PLEASE**
11 **RESPOND TO THE STAFF’S POSITION.**

12 **A.** The key to determining what costs can reasonably be recovered in a uniform
13 customer charge is to identify the costs that are directly related to serving a
14 particular customer irrespective of the commodity used. The cost of customer
15 dedicated plant, such as the cost of meters and service lines located at the
16 customer premise, associated expenses, meter reading and arguably some
17 customer service expenses for billing, can reasonably be recovered through the
18 customer charge. Capacity-related common costs that are used to provide service
19 to multiple customers and have associated costs driven by use characteristics
20 related to peak demand or total consumption should not be treated as customer
21 related for purposes of assigning costs. While the Staff’s policy position on rate
22 design may not acknowledge that distribution costs vary with individual customer

1 use, as I provided evidence of above, its cost studies do assign costs to the small
2 customer classes based, in part, on individual customer volumetric usage
3 characteristics.

4 To understand the magnitude of this cost assignment issue, the
5 Commission should note that while the Staff proposes to recover all distribution
6 costs in the fixed customer charge, in its class cost of service study, on a revenue
7 neutral basis, it assigns only a fraction of costs as direct customer costs. The Staff
8 then adds a significant increment per customer in other common costs to arrive at
9 what it considers cost-based fixed delivery charges. A copy of the portion of
10 Staff's work papers showing these calculations is included as Schedule 10. The
11 amount of costs collected in the delivery charge far exceeds a level of costs that
12 reasonably can be considered as customer-related costs.

13 **Q. THE STAFF ALSO ARGUES THAT AN SFV RATE DESIGN MORE CLOSELY ALIGNS**
14 **THE COMPANY'S AND CUSTOMERS' INTERESTS REGARDING CONSERVATION, AND**
15 **ENABLES GAS UTILITIES TO ACTIVELY PROMOTE CONSERVATION WITHOUT**
16 **HARMING THEIR SHAREHOLDERS, BECAUSE REVENUES FROM RESIDENTIAL AND**
17 **SMALL GENERAL SERVICE CUSTOMERS NO LONGER DEPEND ON RESIDENTIAL**
18 **AND SMALL GENERAL SERVICE CUSTOMERS' USAGE. PLEASE RESPOND TO THE**
19 **STAFF'S POSITION.**

20 **A.** The SFV relieves shareholders only of not the risk of reduced usage due to
21 conservation and efficiency measures, but also all risk associated with warmer

1 than normal weather. In addition, Companies generally are allowed to recover the
2 cost of conservation and efficiency programs in rates. In contrast, customers lose
3 the ability to reduce the portion of the bill related to distribution charges and still
4 face the risk of adverse market movements that increase the commodity cost of
5 natural gas. Staff's position on this issue does not reasonably balance the interests
6 of the Company and its customers.

7 A factor related to the potential impact of conservation and efficiency
8 programs that influenced the Commission's past limited approval of the SFV rate
9 design was that extensive conservation and efficiency programs *might* lower the
10 commodity cost of natural gas at the national level, which in turn might benefit
11 Missouri consumers. Unlike electric utilities that have significant control over
12 generation costs, Missouri's LDC's have limited opportunities to influence the
13 price consumers pay for the gas commodity. The cost effectiveness of natural gas
14 conservation and efficiency programs are tied to the price of the natural gas
15 commodity. In recent years, the price of delivered natural gas has fallen
16 significantly and become less volatile. In turn, this has lowered customers' bills
17 and reduced the risk of upward volatility. These factors have reduced the cost
18 effectiveness and net benefit of natural gas conservation and efficiency programs
19 to Missouri customers. This is not to say that we should abandon cost effective
20 conservation and efficiency efforts, but it is reasonable to reevaluate what
21 customers receive in exchange for the SFV rate design. A traditional rate design

1 allows customers to benefit directly and immediately through their own
2 conservation and efficiency efforts.

3 Q. DO YOU BELIEVE THAT A TRADITIONAL RATE DESIGN THAT RECOVERS A
4 PORTION OF COSTS IN A CUSTOMER CHARGE AND A PORTION IN A VOLUMETRIC
5 RATE PER UNIT PROVIDES A BETTER INCENTIVE FOR CONSERVATION THAN
6 RECOVERING ALL COST IN A FIXED FLAT RATE?

7 A. Yes. The traditional rate design provides a better incentive for customer to
8 conserve than does the SFV rate design, because under traditional rate design
9 increasing consumption increases the distribution charges a customer must pay.
10 Under the SFV rate design, a customer using little or no natural gas in a month
11 pays just as much in distribution cost recovery as a customer using limitless
12 natural gas. Setting distribution rates in a manner that recovers a portion of costs
13 based on volumes creates a financial incentive for a customer to turn back the
14 thermostat and to reduce the gas used for cooking and water heating.

15 Q. HAS THE COMMISSION RECENTLY MADE FINDINGS CONSISTENT WITH YOUR
16 CONCERNS ABOUT COST ALLOCATIONS, CONSERVATION INCENTIVES AND
17 CUSTOMERS' ABILITY TO CONTROL THEIR BILLS?

18 A. Yes. In recent electric cases, the Commission has rejected proposals to recover a
19 greater proportion of distribution costs through the customer charge requiring that
20 some distribution costs be recovered on a volumetric basis. The Commission also
21 recognized that high customer charges diminish efforts toward conservation and

1 reduce low-use customers' ability to control their bill. For example, in Case No. ER-
2 2012-0166 the Commission made the following findings related to these issues.

3 **Case No. ER-2012-0166 -Findings of Fact:**

4 10. The chief difference between the various cost of service studies
5 is the amount of distribution plant that each expert assigned to
6 customer-related usage. Ameren Missouri's study tends to overstate
7 the amount of the distribution system that would appropriately be
8 allocated to customer-related usage. On that basis, for this purpose,
9 the Commission finds the cost of service studies submitted by Staff
10 and Public Counsel to be more reliable.

11 11. Regardless of their details, the Commission is not bound to
12 set the customer charges based solely on the details of the cost of
13 service studies. The Commission must also consider the public policy
14 implications of changing the existing customer charges. There are
15 strong public policy considerations in favor of not increasing the
16 customer charges.

17 12. Recently, in File Number EO-2012-0142, the Commission
18 approved Ameren Missouri's first energy efficiency plan under the
19 Missouri Energy Efficiency Investment Act. (MEEIA). Shifting
20 customer costs from variable volumetric rates, which a customer can
21 reduce through energy efficiency efforts, to fixed customer charges,

1 that cannot be reduced through energy efficiency efforts, will tend to
2 reduce a customer's incentive to save electricity.

3 13. Admittedly, the effect on payback periods associated with
4 energy efficiency efforts would be small, but increasing customer
5 charges at this time would send exactly to [sic] wrong message to
6 customers that both the company and the Commission are encouraging
7 to increase efforts to conserve electricity.

8 In Case No. ER-2012-0176, the Commission also rejected a proposal to
9 increase monthly customer charges recognizing that it was more appropriate to
10 increase volumetric charges because those charges are more within the customer's
11 control to consume or conserve.

12 **Q. HOW HAVE CONSUMERS RESPONDED TO THE SFV RATE DESIGN?**

13 A. Consumers who have commented on this rate design when it was implemented for
14 other LDCs have overwhelmingly opposed it. In comment after comment customer
15 responses demonstrated that customers viewed the SFV rate design as burdensome
16 and unfair. The clearest evidence of customer opposition to the SFV rate design was
17 conveyed to the Commission in Case GR-2009-0355 by the Commission's
18 Consumer Services Manager Ms. Gay Fred. She testified that her department
19 received and read all of the approximately 12,000 comment cards received by the
20 Commission. Ms. Fred personally read about 9,000 of the 12,000 comments. She
21 testified that customers appeared unhappy with the adverse effect of the new SFV

1 rate design and described the overall customer reaction to the SFV rate design as
2 negative. Ms. Fred also testified that the Consumer Services Department received a
3 lot of calls complaining of the SFV, but did not receive a single call in support of the
4 high fixed charge rate design. The negative public reaction to the high fixed charge
5 is indicative of the negative impact a high fixed charge has on rate affordability.

6 **Q. WHAT IMPACT DOES THE SFV RATE DESIGN HAVE UPON RATEPAYER**
7 **CONSERVATION AND ENERGY EFFICIENCY INCENTIVES?**

8 **A.** The SFV rate design has a negative impact on conservation and energy efficiency
9 because it reduces the ratepayer's incentive to implement energy efficiency
10 measures and conserve usage. This negative impact was recognized in the 2006
11 National Action Plan for Energy Efficiency, which is described as "a plan
12 developed by more than 50 leading organizations in pursuit of energy savings and
13 environmental benefits through electric and natural gas energy efficiency." The
14 Plan was funded by the U.S. Department of Energy (DOE) and the U.S.
15 Environmental Protection Agency (EPA), and included input from all sectors of
16 the utility industry, including public utility companies. The Plan includes a
17 chapter on rate design, which addresses rate designs similar to the SFV and
18 concludes that "they create a barrier to customer adoption of energy efficiency
19 because they reduce the savings that customers can realize from reducing

1 usage.”²¹ It further states that “volumetric rates are more favorable for energy
2 efficiency promotion.” Key findings regarding rate design include:

- 3 • Rate design is a complex process that balances numerous regulatory and
4 legislative goals. It is important to recognize the promotion of energy
5 efficiency in the balancing of objectives.
- 6 • Utility rates that are designed to promote sales or maximize stable
7 revenues tend to lower the incentive for customers to adopt energy
8 efficiency.
- 9 • Rate forms like declining block rates, or rates with large fixed charges
10 reduce the savings that customers can attain from adopting energy
11 efficiency.

12 The Plan concludes its chapter on rate design with a section titled
13 Recommendations and Options, and recommends “eliminating rate designs that
14 discourage energy efficiency by not increasing costs as customers consume more
15 electricity or natural gas.”

16 **Q. IS THE NATIONAL ACTION PLAN FOR ENERGY EFFICIENCY CRITICAL OF THE SFV**
17 **RATE DESIGN SPECIFICALLY?**

²¹ National Action Plan for Energy Efficiency, U.S. Department of Energy and U.S.
Environmental Protection Agency, July 2006, page 5-2.

1 A. Yes. In 2009, the EPA and DOE released a comprehensive study titled Customer
2 Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design:
3 A Resource of the National Action Plan for Energy Efficiency (See Schedule 4).²²
4 Its purpose is to address “the issues and approaches involved in motivating
5 customers to reduce the total energy they consume through energy prices and rate
6 design.”²³ Under a list of four “specific findings,” the first finding states:

- 7 • Shifting costs from volumetric to fixed charges, through rate designs such
8 as straight fixed-variable, does not encourage customer energy
9 efficiency.²⁴

10 Adopting a rate design that includes a flat customer charge coupled with a
11 volumetric rate will maintain the additional incentive to reduce usage through
12 energy efficiency investments and conservation.

13 Q. ARE THERE ADDITIONAL STUDIES THAT SUPPORT THE D.O.E. AND E.P.A.
14 NATIONAL ACTION PLAN CONCLUSION THAT SFV RATE DESIGNS ARE HARMFUL

²² Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design: A Resource of the National Action Plan for Energy Efficiency, U.S. Department of Energy and U.S. Environmental Protection Agency, September 2009.

²³ *Id.*

²⁴ *Id.*

1 **TO ENERGY EFFICIENCY AND CONSERVATION GOALS?**

2 A. Yes. According to The Regulatory Assistance Project (RAP), “some studies have
3 estimated that SFV pricing can cause usage to go up 10% or more, enough to
4 offset much or all of the benefit of energy efficiency programs.”²⁵ The RAP is
5 “a global, non-profit team of experts focused on the long-term economic and
6 environmental sustainability of the power and natural gas sectors, providing
7 assistance to government officials on a broad range of energy and environmental
8 issues.”²⁶ The RAP study identified the following “adverse side effects” of SFV:
9 (1) Energy prices are set far below long-run marginal cost, leading to uneconomic
10 usage; (2) Small users, particularly seniors and apartment dwellers, pay much
11 higher electric and gas bills; and (3) Consumers investment in energy efficiency is
12 discouraged.²⁷

13 **VI. CONSOLIDATION OF TARIFFS AND MISCELLANEOUS FEES**

²⁵ Revenue Regulation and Decoupling: A Guide to Theory and Application, June 2011, The
Regulatory Assistance Project, www.raponline.org/document/download/id/902. [emphasis
added].

²⁶ www.raponline.org.

²⁷ *Id.*

1 Q. SNG WITNESS MARTHA WANKUM DESCRIBES THE COMPANY'S PROPOSAL TO
2 CONSOLIDATE THE SMNG SERVICE AREA TARIFF AND THE MGU SERVICE
3 AREA TARIFF. DOES PUBLIC COUNSEL SUPPORT THIS PROPOSAL?

4 A. Public Counsel does not oppose working toward a consolidated tariff provided
5 that the process is not detrimental to customers. Where the SMNG and MGU
6 tariffs currently reflect different fees for a like service, Public Counsel suggests
7 that instead of allowing the higher of two fees, as the Company suggests, the
8 Commission should instead allow a consolidated rate set, at most, at the lower of
9 the two fees. For example, as the Company currently applies charges for the
10 disconnection and reconnection of service for a residential customer during
11 normal business hours, the Company would charge a customer \$70 in the SMNG
12 service area and \$80 in the MGU area. The SMNG rate of \$70 is already high,
13 yet the Company proposes to charge that customer \$80 under a consolidated
14 tariff.

15 Q. WOULD YOU OPPOSE ANY INCREASE IN LATE PAYMENT CHARGES DUE TO
16 CONCERNS REGARDING THE IMPACT ON LOW-INCOME HOUSEHOLDS?

17 A. Yes. In a 1994 journal article, Roger Colton, a well know expert on low-income
18 affordability issues, explained the potential harm of imposing late payment fees
19 on low-income customers;

20 A fourth component of addressing low-income energy problems is
21 to provide regulatory protections against actions that tend to

1 A. If particular terms and conditions differ between the tariffs, the Commission
2 should allow consolidation only if the more lenient term or condition is adopted.
3 For example, in the SMNG territory, the Company currently offers customers a
4 175 foot main extension at no charge and \$3.00-\$9.00 per additional foot. Under
5 the consolidated tariff, the Company would offer customers a 200 foot main
6 extension at no charge and \$3.00 per additional foot. In this case, new SMNG
7 customers would benefit from a consolidated tariff while new MGU customers
8 are made no worse off.

1 **VII. Other Tariff Issues**

2 **Q. SNG WITNESS MARTHA WANKUM DISCUSSES SNG'S PROPOSAL TO IMPLEMENT**
3 **A FREE CONVERSION PROGRAM. WHAT ARE OPC'S CONCERNS WITH SNG'S**
4 **FREE CONVERSION PROGRAM PROPOSAL?**

5 A. First, the proposal is not adequately explained in the testimony or in the tariff
6 sheets to provide the reader with a good understanding of what exactly is being
7 offered for "free" to new customers, and whether consideration is being offered
8 for conversions, installations, neither or both. Second, OPC opposes giving
9 ratepayer-funded consideration to a new customer to switch to natural gas when
10 the low price of natural gas alone provides a significant incentive for existing
11 propane customers to switch to natural gas from propane. Third, the proposal
12 violates the Commission's promotional practices rules in several respects, further
13 explained below.

14 **Q. SNG HAS NOT LABELED ITS PROPOSED FREE CONVERSION PROGRAM AS A**
15 **PROMOTIONAL PRACTICE. WOULD THE PROPOSED FREE CONVERSION**
16 **PROGRAM CONSTITUTE A PROHIBITED PROMOTIONAL PRACTICE?**

17 A. Yes. Commission rule 4 CSR 240-14.010 (6)(L) defines promotional practices as
18 "any consideration offered or granted by a public utility...to any person for the
19 purpose, express or implied, of inducing the person to select and use the
20 service...of the utility or to select or install any appliance or equipment designed
21 to use the utility service, or for the purpose of influencing the person's choice or

1 specification of the efficiency characteristics of appliances, equipment, buildings,
2 utilization patterns or operating procedures.” SNG’s proposal would appear to
3 offer some form of consideration to applicants for new service for the sole
4 purpose of inducing the applicant to install a gas furnace and/or thermostat and
5 become a new SNG customer. For this reason, the free conversion program
6 would constitute a promotional practice. It also would constitute a prohibited
7 promotional practice under 4 CSR 240-14.020, which prohibits promotional
8 practices that offer consideration to induce a person to subscribe to the services of
9 the utility.

10 **Q. HAS SNG REQUESTED A VARIANCE FROM THE COMMISSION TO AUTHORIZE A**
11 **PROHIBITED PROMOTIONAL PRACTICE?**

12 **A.** No. Commission Rule 4 CSR 240-14.010(2) states that the Commission may
13 grant a variance from the promotional practice rules “for good cause shown.”
14 SNG has not requested a variance, nor as SNG explained what good cause exists
15 to allow the prohibited promotional practice. In addition, SNG has not shown
16 proof of service that it served a copy of the request on other public utilities
17 operating in the SNG service area, which is also required when seeking such a
18 variance.

19 **Q. ARE THERE SPECIFIC FILING REQUIREMENTS FOR PROMOTIONAL PRACTICES**
20 **THAT SNG DID NOT COMPLY WITH REGARDING ITS FREE CONVERSION**
21 **PROGRAM PROPOSAL?**

1 A. Yes. SNG's proposal does not comply with Commission Rule 4 CSR 240-3.255,
2 Filing Requirements for Gas Utility Promotional Practices. Specifically, SNG's
3 proposed tariff sheets do not identify the proposed program as a promotional
4 practice, and they do not include a description of the promotional practice with a
5 statement of its purpose or objective. Moreover, the proposed tariff sheets do not
6 adequately explain the terms of the program. The direct testimony of SNG
7 witness Ms. Martha Wankum describes the "free conversion program" as being
8 offered "for a charge" to new customers. Customers would be charged for the
9 actual cost of pipe and fittings to customers, and customers would pay a
10 "technician-only hourly labor charge of \$30 and a technician and truck hourly
11 labor charge of \$40." Not explained in the testimony or in the tariff is what
12 precisely would be "free," and the tariffs do not adequately explain that customers
13 will be charged for pipe and fittings. Furthermore, the proposed free conversion
14 program tariff sheets also address installations without an adequate description of
15 what is included in the installations and whether all or any costs of installations
16 are the customer's responsibility.

17 Q. PLEASE SUMMARIZE OPC'S OBJECTIONS TO THE PROPOSED FREE
18 CONVERSION PROGRAM.

19 A. OPC objects to the program because it is vague, it would require customers to pay
20 for SNG's growth initiatives, good cause has not been shown, and the proposal
21 violates the Commission's promotional practices rules.

1 Q. SNG WITNESS MARTHA WANKUM ALSO DISCUSSES SNG'S PROPOSAL TO
2 MODIFY THE COMMODITY CHARGE FLEX PROVISIONS. THE PROPOSAL WOULD
3 ALLOW THE COMPANY TO FLEX BETWEEN TWO DIFFERENT COMMODITY
4 RATES FOR CONTRACT COMMERCIAL SERVICE CUSTOMERS AS WELL AS
5 LARGE GENERAL SERVICE, LARGE VOLUME AND TRANSPORT CUSTOMERS.
6 WHAT ARE OPC'S CONCERNS WITH SNG'S PROPOSAL TO MODIFY THE FLEX
7 PROVISIONS?

8 A. This proposal, like the conversion program discussed above, appears to qualify as
9 a promotional practice and should conform to the requirements discussed above.
10 Another concern is that it allows the Company substantial discretion in granting a
11 significantly different rate to customers that do not necessarily reflect unique
12 characteristics which justify extending such extraordinary discounts. For
13 example, the qualifying criteria are simply that a Commercial Service class
14 customer using 3,000 Ccf per year and agreeing to a contract of one year could
15 potentially pay a flex rate of \$0.25 per Ccf while another Commercial Service
16 customer also using 3,000 Ccf per using could pay as much as \$1.00 per Ccf. In
17 addition to the discriminatory treatment that might occur within a customer class,
18 I am also concerned that the Company ultimately will seek to recover the shortfall
19 associated with this offering on an inter-class basis.

20 Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.

21 A. The Commission should reject the Company's proposal to raise rates based on the
22 Company's failure to demonstrate compliance with its past commitments and

1 Commission directives to insulate customers from the risks associated with
2 service area expansions. The Company has failed to achieve the level of customer
3 growth it projected and now seeks rate increases at levels that are extremely
4 excessive to customers. Customers are concerned about their ability to afford
5 service, and some expressed feeling misled by SNG regarding future rates when
6 they originally switched from propane to natural gas. Public Counsel strongly
7 opposes the Staff proposal to have all residential and small commercial customers
8 pay the same distribution charges regardless of use. High fixed charges are
9 detrimental to low-use customers and provide customers with less incentive to
10 conserve and less ability to control their bills. The traditional method of designing
11 rates to include both a monthly customer charge and a volumetric rate fairly
12 recovers costs and promotes greater use of the shared system. Consolidation of
13 the Company's terms and conditions of service and miscellaneous service fees
14 should be done in a manner that minimizes detrimental customer impacts.
15 Finally, the Company's proposal to revise its flexible pricing provision for
16 commercial and industrial classes, and its proposal for approval of a conversion
17 incentive program, should be rejected.

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

19 **A. Yes.**

Case	Company	Direct	Rebuttal	Surrebuttal
TO-99-615	AT&T		√	
TO-99-483	Provisioning of MCA	√		
TT-99-428	Mid-MO Group			√
EO-99-599	UE & Ozark		√	
TA-99-425	Payroll Advance		√	
GT-99-303	Laclede		√	√
TO-2000-374	North American Numbering Plan	√	√	√
TM-2000-182	Spectra		√	
TT-2000-22	AT&T		√	
GT-2001-329	Laclede		√	√
TR-2001-344	Northeast Missouri Rural Telephone		√	
TT-2001-347	AT&T		√	
TO-98-329	USF	√	√	√
TO-2001-467	Southwestern Bell	√		√
WC-2002-155	Warren County Water & Sewer	√		√
SC-2002-160	Warren County Water & Sewer	√		
TR-2001-65	Investigation of Exchange Access	√	√	√
TT-2002 472	Southwestern Bell		√	
GR-2002-356	Laclede Gas Company		√	
TM-2002-465	NE Missouri Rural Telephone Co.			√
GT-2003-0117	Laclede	√		
IO-2003-0012	BPS Telephone Company	√		
IO-2003-0281	Sprint Missouri		√	√
IT-2004-0015	Southwestern Bell		√	
WR-2003-0500	Missouri-American Water Co.	√	√	√
GR-2004-0072	Aquila	√	√	
TR-2002-251	Sprint Missouri			
GR-2004-0209	Missouri Gas Energy	√	√	√
IR-2004-0272	Fidelity Telephone	√		
TO-2004-0527	WWC License (Cellular One)		√	
ER-2004-0570	Empire District	√	√	√
TO-2005-0035	Southwestern Bell		√	√
TO-2005-0325	Mid Missouri Cellular		√	
TT-2002-129	AT&T		√	
TO-2005-0384	USCOC of Greater Missouri		√	
EO-2002-384	Aquila	√	√	√
TO-2006-0102	Southwestern Bell		√	
ER-2005-0436	Aquila	√	√	√
TO-2005-0423	Chariton Valley Telecom		√	
IO-2005-0144	Greenwood MCA Case	√		
TO-2006-0172	Mark Twain Rural		√	
TO-2005-0466	Northwest Missouri Cellular		√	
ER-2006-0315	Empire District Electric	√	√	
GC-2006-0318	Laclede Gas Company	√		√
ER-2006-0314	Kansas City Power & Light	√	√	√
GR-2006-0387	Atmos Energy Corporation	√	√	√

GR-2006-0422	Missouri Gas Energy	√	√	√
TO-2007-0053	Southwestern Bell	√		√
ER-2007-0002	AmerenUE	√	√	√
GR-2006-0003	AmerenUE	√		
GR-2007-0208	Laclede Gas Company	√		
WR-2007-0216	Missouri-American Water Co.	√	√	√
ER-2007-0291	Kansas City Power & Light		√	
GR-2008-0060	Missouri Gas Utility	√		
ER-2008-0093	Empire District Electric	√		√
TC-2008-0346	Winstar Communications	√		
ER-2008-0318	AmerenUE	√		√
WR-2008-0311	Missouri-American Water Co.	√	√	√
GT-2008-0374	Laclede Gas Company		√	√
ER-2009-0089	Kansas City Power & Light	√	√	√
GT-2009-0056	Laclede Gas Company		√	√
GR-2009-0355	Missouri Gas Energy	√	√	√
GR-2009-0434	Empire Gas Company	√		
ER-2010-0036	AmerenUE	√	√	√
ER-2010-0130	Empire District Electric	√		√
WR-2010-0131	Missouri American Water Company		√	
GR-2010-0171	Laclede Gas Company	√	√	√
GR-2010-0192	Atmos Energy Corporation	√		
GR-2010-0363	AmerenUE	√		
ER-2010-0355	Kansas City Power & Light	√	√	
ER-2010-0356	Kansas City Power & Light (GMO)	√		
ER-2011-0028	AmerenUE	√	√	√
ER-2011-0004	Empire District Electric	√	√	√
GC-2011-0098	Laclede Gas Company		√	
WR-2011-0337	Missouri American Water Company	√	√	√
GE-2011-0282	Missouri Gas Energy		√	
ER-2012-0166	AmerenUE	√	√	√
ER-2012-0174	Kansas City Power & Light	√		
ER-2012-0175	Kansas City Power & Light (GMO)	√	√	
ER-2012-0345	Empire District Electric	√	√	√
GR-2014-0007	Missouri Gas Energy	√	√	√
EO-2014-0095	Kansas City Power & Light		√	√

**BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI**

In the matter of the Application of Southern)
Missouri Gas Company, L. P. d/b/a Southern)
Missouri Natural Gas for a certificate)
of public convenience and necessity)
authorizing it to construct, install, own, operate,)
control, manage and maintain a natural gas)
distribution system to provide gas service in)
Branson, Branson West, Reed's Spring)
and Hollister, Missouri.)

Case No. GA-2007-0168

FIRST AMENDED APPLICATION

COMES NOW Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, ("SMNG" or "Applicant"), by and through its counsel, and for its Application pursuant to Section 393.170, RSMo 2000,¹ and 4 CSR 240-2.060(1) and 4 CSR 240-3.205 for a certificate of public convenience and necessity, respectfully states as follows:

1. Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, a Missouri limited partnership, ("SMNG") owns and operates a natural gas transmission and distribution system located in southern Missouri which serves approximately 7,500 residential, commercial and industrial customers. SMGC is a "gas corporation" and "public utility" under the jurisdiction of the Missouri Public Service Commission, pursuant to Chapters 386 and 393, RSMo. 2000. The Company's street and mailing address is: 301 E. 17th Street, Mountain Grove, Missouri 65711. The Company's telephone number is: (417) 926-7533.

¹All statutory references are to Revised Statutes of Missouri 2000, unless otherwise indicated.

2. All correspondence, pleadings, orders, and documents in this proceeding should be addressed to:

James M. Fischer
Fischer & Dority, P.C.
101 Madison Street--Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Email: jfischerpc@aol.com

Mike Lumby, General Manager
Southern Missouri Gas Company, L.P.
301 E. 17th Street
Mountain Grove, Missouri 65711
Telephone: (417) 926-7533
Email: mlumby@smng.biz

Randal T. Maffett
Sendero Asset Management, LLC
1001 Fannin--Suite 550
Houston, Texas 77022
Telephone: (713) 655-0523
Email: rmaffett@sendero.biz

3. Copies of SMNG's Certificate Of Good Standing from the Missouri Secretary of State and its Fictitious Name Registration were previously filed in Case No. GA-2007-0212 and GN-2006-0203, respectively, and are incorporated herein by reference.

4. As explained in the Motion To Substitute Parties filed in this proceeding by SMNG on June 29, 2007, SMNG and Alliance Gas Energy Corporation ("AGE") entered into an Asset Purchase Agreement (dated June 29, 2007) under which SMNG acquired the assets of Alliance Gas Energy, including the assignment of the Branson and Hollister, Missouri

Franchises, needed to provide natural gas service in the Branson and Hollister, Missouri area.² As a result, AGE's interest in this proceeding has been effectively transferred to SMNG, and the Commission on July 11, 2007, granted SMNG's motion for substitution of party.

5. Attached hereto and marked as Appendix A are maps of the location of the proposed service area. Attached hereto and marked as Appendix B is a metes and bounds legal description of the proposed boundaries of the certificated area.

6. Attached hereto as Appendix C is SMNG's Feasibility Study and a summary of the plans and specifications for the project including the estimated cost of construction. SMNG's plans for financing this project were previously filed on December 8, 2006, with the SMNG Application in Case No. GF-2007-0215 and are incorporated herein by reference.

7. A list of ten persons residing in or who are landowners within the proposed service area was previously included in the AGE Application filed on October 26, 2006, and is incorporated herein by reference.

8. As explained in the original Application filed by AGE on October 26, 2006, AGE obtained a franchise from the City of Branson, Missouri to provide natural gas service to customers in Branson, Missouri which was included in the AGE Application filed on October 26, 2006, and is incorporated herein by reference. This franchise has been assigned to SMNG, pursuant to the Asset Purchase Agreement dated June 29, 2007. On July 23, 2007, the City Council of Branson, Missouri approved the assignment of the Branson Franchise to SMNG. A copy of this governmental approval is contained Appendix D. In addition, SMNG is seeking to obtain approval of the assignment of the Hollister franchise from the municipal authorities, and

² AGE originally requested a certificate of convenience and necessity to serve the Reed's Spring municipality. However, SMNG does not intend to pursue this request, and hereby withdraws the request for a certificate of convenience and necessity to serve Reed's Spring, Missouri.

this approval will be filed upon receipt. SMNG is continuing to seek a franchise from the municipality of Branson West, Missouri. A copy of the franchise will be provided to the Commission upon receipt. Approval to use the right-of-way of the respective counties in the proposed service area is also being sought, and will be provided upon receipt. SMNG does not believe it will not require any additional franchises or permits from municipalities, counties, or other governmental authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

9. Applicant proposes to use its existing approved rates and regulations for natural gas service in the proposed service area. However, Applicant proposes to add a \$2.00 per customer per month to the customer service charge for customers in the proposed service area to recover distribution system costs in the proposed service area. This additional customer service charge is intended to ensure that the expansion into the proposed service area will not be detrimental to SMNG's customers in its existing service area.

10. There is no same or similar utility service, regulated or nonregulated, available in the area requested.

11. The granting of this Application is required by the public convenience and necessity since natural gas service is not presently available in the proposed certificated area, and the availability of natural gas to Branson, Branson West, and Hollister, Missouri will promote the public interest since natural gas is an economical, safe, and reliable source of energy for residential, commercial, industry, municipal and other customers.

12. The Applicant has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court which involve customer service or rates which has occurred within three (3) years of the date of the Application.

13. The Applicant has no annual report or assessment fees that are overdue.

WHEREFORE, SMNG respectfully requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public in Branson, Branson West, and Hollister, Missouri, pursuant to its proposed rates, rules, and regulations, as more fully described herein.

Respectfully submitted,

/s/ James M. Fischer

James M. Fischer Mo. Bar No. 27543
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ATTORNEYS FOR
APPLICANT

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, or transmitted by facsimile or electronic mail to all counsel of record this 10th day of August, 2007.

/s/ James M. Fischer

James M. Fischer

VERIFICATION

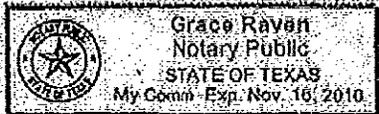
STATE OF TEXAS)
)
COUNTY OF HARRIS) ss.

Randal T. Maffett, being first duly sworn, on his oath and in his capacity as managing partner states that he is authorized to execute this Application on behalf of Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas and has knowledge of the matters stated herein, and that said matters are true and correct to the best of his knowledge and belief.



Randal T. Maffett

Subscribed and sworn to before me this 10th day of August, 2007.



Notary Public

My Commission Expires: Nov. 16th 2010

APPENDIX C
FEASIBILITY STUDY
(HIGHLY CONFIDENTIAL)

**BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI**

In the matter of the Application of Southern)	
Missouri Gas Company, L. P. d/b/a Southern)	
Missouri Natural Gas for a certificate)	
of public convenience and necessity)	
authorizing it to construct, install, own, operate,)	Case No. GA-2007-0168
control, manage and maintain a natural gas)	
distribution system to provide gas service in)	
Branson, Branson West, Reed's Spring)	
and Hollister, Missouri.)	

SECOND AMENDED APPLICATION

COMES NOW Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, ("SMNG" or "Applicant"), by and through its counsel, and for its Second Amended Application pursuant to Section 393.170, RSMo 2000,¹ and 4 CSR 240-2.060(1) and 4 CSR 240-3.205 for a certificate of public convenience and necessity, respectfully states as follows:

1. During discussions with the Staff in this proceeding, two errors in the First Amended Application that was filed by SMNG became apparent. This Second Amended Application is intended to correct the First Amended Application filed on August 10th, 2007, by interlineation.

2. Appendix B of the First Amended Application incorrectly stated the metes and bounds legal description of the proposed service area. Attached hereto is a revised Appendix B (HC) which contains the corrected metes and bounds legal description of the proposed service

¹All statutory references are to Revised Statutes of Missouri 2000, unless otherwise indicated.

area, and is incorporated herein by reference.

3. Paragraph 9 of the First Amended Application contained an incorrect description of the proposed rates that would be utilized in the proposed service area. The following Paragraph 9 corrects that error and is hereby incorporated into the First Amended Application filed on August 10th, 2007:

“9. Applicant proposes to use its existing approved rates and regulations for natural gas service in the proposed service area. However, Applicant proposes to add a \$.20 per Ccf charge in the distribution charges for all usage for all customer classes in the proposed service area to recover distribution system costs in the proposed service area. This additional distribution charge is intended to ensure that the expansion into the proposed service area will not be detrimental to SMNG’s customers in its existing service area.”

WHEREFORE, SMNG respectfully requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public in Branson, Branson West, and Hollister, Missouri, pursuant to its proposed rates, rules, and regulations, as more fully described herein.

Respectfully submitted,

/s/ James M. Fischer /

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Email: jfischerpc@aol.com

ATTORNEYS FOR
APPLICANT

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, or transmitted by facsimile or electronic mail to all counsel of record this 5th day of November, 2007.

/s/ James M. Fischer

James M. Fischer

APPENDIX C
FEASIBILITY STUDY
(HIGHLY CONFIDENTIAL)

2004.

ABSENCE OF SOME REFERENCED DOCUMENTS

Because of the urgency of this matter, this Application is being filed prior to the completion of some of the appendices referenced herein. Additionally, certain documents are deemed to be highly confidential and will be provided after a protective order has been entered. In accordance with Commission Rule 4 CSR 240-2.060(2), MGU will supplement its Application and furnish these documents as soon as they are available. MGU has identified those appendices which will be late filed on the list of appendices attached hereto.

APPLICANT

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office will be located at 702 E. Corine, Gallatin, Missouri 64640.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was is marked **Appendix A**, and attached hereto. MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU is a subsidiary of CNG Holdings, Inc. CNG Holdings' principal office is located at 7810 Shaffer Parkway, Suite 120 (P.O. Box 70868), Littleton, Colorado 80127. CNG Holdings also owns Colorado Natural Gas, Inc. Colorado Natural Gas, Inc. was founded in May of 1996 and provides natural gas service to approximately 6,300 customers in parts of Park, Jefferson, Gilpin, Teller, Clear Creek and Pueblo counties in the state of Colorado. CNG

provides this service subject to the jurisdiction of the Colorado Public Utilities Commission.

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Michael P. Earnest
President/CEO
Missouri Gas Utility, Inc.
P.O. Box 270868
Littleton, Colorado 80127
Telephone: 303.979.7680, ext. 107
Facsimile: 303.979.7892
Email: mpearne@coloradonaturalgas.com

BACKGROUND AND URGENCY

Gallatin Natural Gas Distribution System

5. The City of Gallatin Natural Gas Distribution System (“NGS”) serves the City and the surrounding communities of Coffey, Jameson and Brooklyn, Missouri. The gas pipeline was installed in late 1995 and became fully operational in 1996. The goal of the project was to convert as many of the approximate 900 potential customers from propane gas to natural gas. Natural gas has many benefits over propane gas, both for the customer and the community. The system currently has approximately 460 customers.

6. Construction of the Gallatin system was financed through the use of a lease-purchase agreement. Under this agreement, Gallatin leased and operated the system. Investment in the system was provided by holders of certain certificates of participation. In December 2003, the City of Gallatin assigned the legal title to certain rights of way and easements and personal property related to the Business to Agent (which holds such real and personal property as agent for the holders of the Certificates of Participation) because the City did not appropriate funds to

pay under the Lease Agreement for the 2004 fiscal year and therefore defaulted on the Lease.

7. The Gallatin System runs approximately 46 miles north and south. The northernmost point begins in an area of Missouri known as Brooklyn ("Brooklyn"), and the southernmost point terminates in Gallatin, Missouri. The main pipeline was constructed in 1995 from 6" steel pipe. The wall thickness of the pipe measures 188 inches. Maximum allowable operating pressure is 450 pounds per square inch ("PSI"). The pipeline has a cathodic protection anode (electrical current at 1.4 volts) to prevent rust. The steel pipe has a Gypson coating. Over the 46-mile, 6" line, there are 88 test stations (approximately every ½ mile) for cathodic protection monitoring, and 4 separate 6-inch in-line shut-off valves.

This NGS has an additional 25 miles of 2-inch plexco polypropylene pipe, and 7 miles of 4-inch plexco polypropylene pipe used for short runs from the main 6-inch line to customers' locations. Currently there are 576 services installed in ground with an average length of 60 feet. The pipeline is supported by four main regulator stations which convert the natural gas from 350 PSI down to 30/60 PSI for consumer use. There is also a smaller regulator station which services 6 separate accounts. The NGS also includes approximately 20 "Farm Taps" which also convert natural gas from 350 PSI to 30 PSI.

At the main connection point at the regulator station in Brooklyn, the pipeline has a fully automated Williams Company odorizer system. This system can also be used manually.

Hamilton Natural Gas Distribution System

8. The City of Hamilton Natural Gas Distribution System serves the City of Hamilton and surrounding areas. The system was built in 1998 to serve 870 potential customers. Today the system serves 277 customers which were converted from propane to natural gas.

9. Construction of the Hamilton system was financed through the use of a lease-purchase agreement. Under this agreement, Hamilton leased and operated the system. Investment in the system was provided by holders of certain certificates of participation. In December 2003, the City of Hamilton assigned the legal title to certain rights of way and easements and personal property related to the Business to Lessor/Trustee (which holds such real and personal property as Lessor/Trustee for the holders of the Certificates of Participation) because City did not appropriate funds to pay under the Lease Agreement for the 2004 fiscal year and therefore defaulted on the Lease.

10. The Hamilton System consists of a natural gas transmission line and distribution system serving the City and certain appurtenances thereto. The transmission line is a 4-inch steel pipeline between Gallatin, Missouri, and the City of Hamilton, a distance of approximately 13 miles. The distribution system is polyethylene plastic pipe and includes approximately 10,000 feet of 4-inch pipe, 48,000 feet of 2-inch pipe and 34,000 feet of ½ inch pipe. The distribution system currently serves 277 residential and commercial customers.

PROPOSED PURCHASE

11. MGU proposes to purchase from The Bank of New York and UMB Bank the assets, franchise, works or systems necessary and useful in the rendition of natural gas service to the cities of Gallatin and Hamilton, Missouri and the surrounding areas. The specific terms and conditions of the sale are set forth in a Purchase and Sale Agreement by and among City of Gallatin, Missouri and The Bank of New York Trust Company as Agent and Missouri Gas Utility, Inc. ("Gallatin Agreement") and an Purchase and Sale Agreement by and among City of Hamilton, Missouri and UMB Bank, N.A. as Agent and Missouri Gas Utility, Inc. ("Hamilton

Agreement”) attached hereto and incorporated by reference as Appendix B and Appendix C, respectively. Descriptions of the facilities to be sold and transferred are contained in the Agreements.

12. Copies of the Resolutions of the Board of Directors of MGU, as certified by the corporate secretary, authorizing the transactions proposed herein are attached to this Application and incorporated herein by reference as Appendix D and Appendix E, respectively.

13. The proposed sale and transfer of the Gallatin and Hamilton is not detrimental to the public interest because MGU and its employees and affiliates have experience in the provision of natural gas service and is dedicated to the provision of safe and adequate utility service to the public. The management of MGU possesses a considerable amount of experience in the provision of natural gas service. Accordingly, MGU possesses the managerial, engineering and financial expertise to provide good quality natural gas service to the public currently served by the Gallatin and Hamilton systems. Because of its financial stability, MGU may also be able to take advantage of certain strategies in the operation and management of these systems which have heretofore not been available.

14. The proposed transaction should have a positive impact on the tax revenues of the political subdivisions in which the structures, facilities or equipment are now located because MGU is an investor-owned utility and, as such, will be subject to personal and real property taxes, the same as any business owning assets within the taxing authorities.

15. Marked as Appendix F, and attached hereto, is a pro forma balance sheet and pro forma income statement of MGU showing the results of the proposed acquisitions.

CERTIFICATED AREA

16. Attached hereto and marked as Appendix G is a map of the location of the proposed service area.

17. Attached hereto and marked as Appendix H is a metes and bounds legal description of the proposed boundaries of the proposed certificated area in Harrison, Daviess and Caldwell Counties.

18. Because MGU is purchasing existing systems, there is no estimated cost of construction. Attached hereto and marked as Appendix I is a feasibility study, which incorporates plans for financing, proposed rates and charges and an estimate of the number of customers, revenues and expenses during the first three (3) years of operation.

19. Attached hereto and marked as Appendix J is a list of ten persons residing in the area proposed to be certificated.

20. Because MGU does not have a certificate from the Commission for the requested area, it is necessary for MGU to obtain the requisite permission from the Commission.

21. MGU will require franchises from the cities of Gallatin, Hamilton and Coffey. Marked Appendix K, Appendix L and Appendix M are the franchises from these cities. No other franchises or permits from municipalities, counties or other governmental authorities will be required at this time.

22. MGU proposes to use the following base rates for natural gas service:

	<u>Customer Charge</u>	<u>Commodity Charge</u>
Residential	\$ 8.00	\$ 3.00
Commercial	\$15.00	\$ 3.00

Transport (Firm)	\$125.00	\$ 2.70
Transport (Interruptible)	\$300.00	Set by Contract

Marked Appendix N and Appendix O, and attached hereto, are the rates currently utilized by the Gallatin and Hamilton systems. MGU's proposed rates lower the Commodity Charge to \$3.00, from \$3.70, for residential customers. To remain consistent with its affiliate operations, MGU proposes that all rates be set by the therm (100,000 BTU) or dekatherm (Dth). The normal BTU value of the gas delivered into the system from ANR Pipeline is 1000 BTU/CF, so these rates will be the same as equivalent rates in CCF or MCF.

23. Gallatin and Hamilton currently have 14,192 Dth in storage at a cost of \$6.476/Dth, including storage and transportation fees. The estimated usage for the period November 1, 2004, through April 30, 2005, is 59,458 Dth. Using all the storage gas and purchasing additional gas based on the October 27 NYMEX futures corrected for a differential basis of negative \$0.505 for gas delivered into ANR Pipeline, the total cost of gas necessary to meet system requirements for that period is \$520,470, for an initial PGA price of \$8.75/Dth. MGU does not intend to lock in the NYMEX futures prices until Commission approval of the purchase of the system. However, if rates decrease from the current historic highs, MGU may enter into an agreement with the City of Gallatin pursuant to which the City would contract for gas and MGU would agree to take over that contract upon approval.

24. MGU proposes to utilize other rates and regulations similar to those currently utilized by existing Missouri local distribution companies. MGU will work with Staff of the Commission and the Office of the Public Counsel to propose a set of tariff sheets which set forth such regulations.

FINANCING

25. In order to finance the purchases described herein, MGU has arranged for a bank loan (the "Loan"). A copy of the term sheet for which is attached hereto and marked Appendix P. In connection with the Loan, MGU will pledge a first security interest in all assets being acquired to include accounts receivable, inventory and the complete physical utility plant, which will constitute a lien on the MGU property to be acquired in the State of Missouri and contains a provision for subjecting after acquired property to the lien.

26. The Loan will be extended for a ten-year term with monthly payments of principal and interest based upon a 20-year amortization. The rate will be fixed for the first five-year period at a rate equivalent to the published rate of the Federal Home Loan Bank of Topeka for 5-year fixed-rate advances plus 225 basis points. As of today's date, the advance rate for this maturity is 3.85%. Were the Loan to close today, the fixed rate on the loan would therefore be 6.10%. All of the \$1.4 million of the Loan will be used for the purchase of the systems.

27. MGU seeks approval of this Commission for the Company to encumber the utility assets to be located in the State of Missouri and/or to create liens on its property to be situated in Missouri in order to secure the Loan.

28. The proposed encumbrance will have no impact on the tax revenues of the political subdivisions in which the structures, facilities or equipment is located as the financing arrangement itself will not result in a change of ownership of these assets.

CONCLUSION

29. Service from a natural gas supplier may not be available in this area if these transactions are not completed. Since MGU has the expertise and the ability to provide service in

this area, MGU believes that the customers should be afforded the opportunity to take continue to take service, if they so desire. These facts support a finding that the granting of the Application, and approval of the transactions described herein, is required by the public convenience and necessity and is not detrimental to the public interest.

WHEREFORE, Missouri Gas Utility, Inc. respectfully requests that the Commission issue its order:

1) authorizing MGU to acquire the franchise, works or systems of the Gallatin and Hamilton, Missouri natural gas systems pursuant to the terms and conditions contained in the Purchase and Sale Agreement by and among City of Gallatin, Missouri and The Bank of New York Trust Company as Agent and Missouri Gas Utility, Inc (“Gallatin Agreement”) and an Purchase and Sale Agreement by and among City of Hamilton, Missouri and UMB Bank, N.A. as Agent and Missouri Gas Utility, Inc. attached hereto as **Appendix B** and **Appendix C**;

2) granting MGU a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public in the area described herein;

3) authorizing MGU to file tariffs to establish rates, rules and regulations as described in this Application;

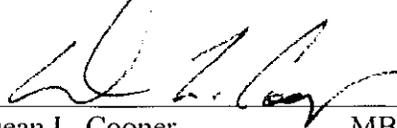
4) finding that the proposed encumbrance of the franchise, works or system of MGU necessary or useful in the performance of its duties to the public in the State of Missouri in order to secure its obligations under the described Loan and authorizing MGU to create and make effective a lien on MGU’s Missouri assets as described herein;

5) authorizing MGU to cause to be done and performed all such other acts and things

as well as to make, execute and deliver any and all documents as may be necessary, advisable and proper to the end that the intent and purposes of the foregoing transactions may be fully effectuated; and,

6) granting such further relief as the Commission may deem just and reasonable under the circumstances.

Respectfully submitted,



Dean L. Cooper MBE#36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 E. Capitol Avenue
P. O. Box 456
Jefferson City, MO 65102
(573) 635-7166
(573) 635-3847 facsimile
dcooper@brydonlaw.com

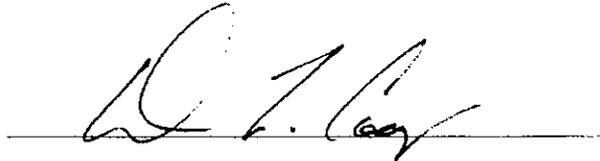
ATTORNEYS FOR MISSOURI GAS UTILITY, INC.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was hand-delivered, or sent by electronic mail, on October 29, 2004, to the following:

Tim Schwarz
Office of the General Counsel
Governor Office Building, 8th Floor
Jefferson City, Mo 65101

Douglas Micheel
Office of the Public Counsel
Governor Office Building, 6th Floor
Jefferson City, MO 65101



LIST OF APPENDICES

APPENDIX A – Certificate to Do Business in Missouri [*Application provided. Certificate to be late filed.*]

APPENDIX B – Gallatin Purchase Agreement [*Highly Confidential. Draft and ultimately an executed copy to be late filed after issuance of a protective order.*]

APPENDIX C – Hamilton Purchase Agreement [*Highly Confidential. Draft and ultimately an executed copy to be late filed after issuance of a protective order.*]

APPENDIX D – MGU Board Resolution Approving Gallatin Acquisition

APPENDIX E – MGU Board Resolution Approving Hamilton Acquisition

APPENDIX F – MGU Pro Forma Balance Sheet and Income Statement

APPENDIX G – Map of Proposed Certificated Area

APPENDIX H – Legal Description of Area to be Certificated

APPENDIX I – Feasibility Study

APPENDIX J – List of Ten Persons Residing in the Area to be Certificated (and their addresses)

APPENDIX K – Gallatin Franchise

APPENDIX L – Hamilton Franchise [*Draft provided. Final to be late filed.*]

APPENDIX M – Coffey Franchise [*Draft provided. Final to be late filed.*]

APPENDIX N – Current Gallatin Rates

APPENDIX O – Current Hamilton Rates

APPENDIX P – Loan Documents [*Highly confidential. Term sheet to be provided after issuance of a protective order.*]

AFFIDAVIT

STATE OF COLORADO)
) ss
COUNTY OF JEFFERSON)

I, Michael P. Earnest, having been duly sworn upon my oath, state that I am President / CEO of Missouri Gas Utility, Inc., that I am duly authorized to make this affidavit on behalf of Missouri Gas Utility, Inc., and that the matters and things stated in the foregoing application are true and correct to the best of my information, knowledge and belief.

Michael P. Earnest
President / CEO

Subscribed and sworn to before me this 26th day of October, 2004.

Franklin W. Taylor
Notary Public
FRANKLIN W. TAYLOR

My Commission Expires:

 3/23/2006

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Daviess County, Missouri, as a further expansion of its existing certified area.)
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Case No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. (MGU or Applicant), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation is attached hereto as **Appendix A**. Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, subject to the jurisdiction of the Missouri Public Service Commission (Commission).

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@cng Holdings.net

5. Landmark Manufacturing Corp. (Landmark) has requested that MGU provide natural gas service to its facility located within Section 30, Township 59 North, Range 26 West in Daviess County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. The line to serve Landmark will begin in Section 9, Township 59 North, Range 27 West, then proceed east along a county road, various easements, and the right-of-way of US Highway 6 for a distance of 3.2 miles, then turn south and proceed an additional 3 miles south along county roads and easements to the Landmark facility.

6. For its entire length, this line will lie along Section lines, and MGU requests an order from the Commission granting it a certificate of convenience and necessity in the sections immediately on both sides of the line. These sections would be Sections 11, 12, 13, 14, 24 and 25 in Township 59 North, Range 27 West and Sections 7, 18, 19 and 30 in Township 59 North, Range 26 West. In addition, MGU is also requesting an order from the Commission granting it a certificate of convenience and necessity in Section 22 and all of Sections 23, 26 and 27 in Township 59 North, Range 27 West. Granting the territory requested above along the line to Landmark will cause these last 4 Sections to be surrounded on 3 sides by area where MGU holds the certificate, and granting the certificate for these 4 sections will square off the MGU area on the east side of Gallatin, MO, as shown on the map attached as Appendix B attached hereto.

MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

7. Attached hereto and marked as **Appendix B** is a map of the location of the proposed service area as described above. MGU already has a certificate from the Commission to serve all sections in Township 59 North, Range 27 West which are immediately west of and adjacent to the requested sections, in addition to numerous other sections in Daviess County.

8. The metes and bounds legal description of the proposed boundaries of the certificated area in Daviess County are as follows:

Section 11, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 12, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 13, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 14, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 22, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 23, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 24, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 25, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 26, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 27, Township 59 North, Range 27 West in Daviess County, Missouri.

Section 7, Township 59 North, Range 26 West in Daviess County, Missouri.

Section 18, Township 59 North, Range 26 West in Daviess County, Missouri.

Section 19, Township 59 North, Range 26 West in Daviess County, Missouri.

Section 30, Township 59 North, Range 26 West in Daviess County, Missouri.

9. Attached hereto and marked as Appendix C is a feasibility study and description of the plans and specifications for the project including the estimated cost of construction and estimated revenues during the first three years. No external financing is anticipated for construction related to this area. Construction methods will follow MGU's customary standards and the rules of the Commission.

10. Attached hereto and marked as Appendix D is a list of ten persons residing in or who are landowners within the proposed service area.

11. Because MGU does not have a certificate from the Commission for the area where the potential customers are located, it is necessary for MGU to obtain the requisite permission from the Commission.

12. Applicant will not require any franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

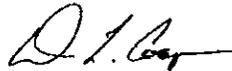
13. Applicant's existing rates and regulations for natural gas service contained in its tariff, as the same may change from time to time pursuant to law, will apply to service in the proposed area.

14. The area in which MGU is seeking to be certificated hereby is expected to develop and require natural gas service. Service from a natural gas supplier is not available in this area at the present time. Since MGU has the ability to provide service in this area by construction of additions to existing facilities, MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire, pursuant to

MGU's extension rule. These facts support a finding that the granting of the application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules and regulations, in the Sections listed above in Township 59 N, Range 26 West and Township 59 North, Range 27 West, in Daviess County, Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

Attorneys for Missouri Gas Utility, Inc.

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Harrison County, Missouri, as a further expansion of its existing certified area.)
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Case No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. (MGU or Applicant), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU’s principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference. Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU currently has a general rate case pending before the Commission (Case No. GR-2008-0060). MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a “gas corporation” and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, subject to the jurisdiction of the Missouri Public Service Commission (Commission).

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@cng Holdings.net

5. Maschhoffs, Inc. (Maschhoffs) has requested that MGU provide natural gas service to its facilities located within Sections 9 and 10, Township 64 North, Range 28 West in Harrison County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. The line to serve Maschhoffs will begin in Section 11, Township 64 North, Range 28 West, then proceed west along County Road West 240 St for a distance of 2.0 miles to a tee. From this tee, a line will continue west an additional 0.3 miles and another line will proceed south 0.4 miles. Each of these lines will serve a Maschhoffs facility.

6. For its entire length, this line will lie along Section lines, and MGU requests an order from the Commission granting it a certificate of convenience and necessity in the sections immediately on both sides of the line where MGU does not already have an existing certificate. These sections would be Sections 4, 9 and 10 in Township 64 North, Range 28 West, as shown on the map attached as Appendix A attached hereto. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

7. Attached hereto and marked as Appendix A is a map of the location of the proposed service area as described above. MGU already has a certificate from the Commission

to serve all sections in Township 64 North, Range 28 West which are immediately east of and adjacent to the requested sections, in addition to numerous other sections in Harrison County.

8. The metes and bounds legal description of the proposed boundaries of the certificated area in Harrison County is as follows:

Section 4, Township 64 North, Range 28 West in Harrison County, Missouri.

Section 9, Township 64 North, Range 28 West in Harrison County, Missouri.

Section 10, Township 64 North, Range 28 West in Harrison County, Missouri.

9. Attached hereto and marked as **Appendix B** is a feasibility study and description of the plans and specifications for the project including the estimated cost of construction and estimated revenues during the first three years. No external financing is anticipated for construction related to this area. Construction methods will follow MGU's customary standards and the rules of the Commission.

10. Attached hereto and marked as **Appendix C** is a list of the landowners and the potential customer within the proposed service area. These are all the persons who own land within the proposed service area.

11. Because MGU does not have a certificate from the Commission for the area where the potential customers are located, it is necessary for MGU to obtain the requisite permission from the Commission.

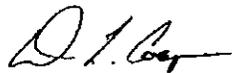
12. Applicant will not require any franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

13. Applicant's existing rates and regulations for natural gas service contained in its tariff, as the same may change from time to time pursuant to law, will apply to service in the proposed area.

14. The area in which MGU is seeking to be certificated hereby is expected to develop and require natural gas service. Service from a natural gas supplier is not available in this area at the present time. Since MGU has the ability to provide service in this area by construction of additions to existing facilities, MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire, pursuant to MGU's extension rule. These facts support a finding that the granting of the application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules and regulations, in the Sections listed above in Township 64 North, Range 28 West, in Harrison County, Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

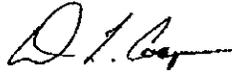
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 11th day of September, 2007:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



Dean L. Cooper

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Harrison County, Missouri, as a further expansion of its existing certified area.)
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Case No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. (MGU or Applicant), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU’s principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a “gas corporation” and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, subject to the jurisdiction of the Missouri Public Service Commission (Commission).

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@cng Holdings.net

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Ridgeway, a 4th Class city, located in Harrison County. Ridgeway is located in parts of Sections 33 and 34 in Township 65 N, Range 27 W, and Sections 3 and 4 of Township 64N, Range 27W, all in Harrison County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. MGU will utilize a 4" PE line to serve Ridgeway beginning in Section 9, Township 64 North, Range 27 West, then proceeding north along Highway T for a distance of 1.6 miles. Additional 2" PE lines will be attached to this main line and will be installed in the streets of Ridgeway to provide service to the businesses and residences in the town.

6. For its entire length, the main 4" PE line will lay along Section lines, and MGU requests an order from the Commission granting it a certificate of convenience and necessity (CCN) in the sections immediately on both sides of the line where MGU does not already have an existing certificate. These sections would be Sections 33 and 34 in Township 65 N, Range 27 W, and Sections 3 and 4 of Township 64N, Range 27W, as shown on the map attached hereto as Appendix A. In addition, granting the CCN in these sections will create a "U" shaped cut-out of non-certificated territory between these sections and the current MGU certificated territory located in Section 36, Township 65 N, Range 28 W and Section 1, Township 64N, Range 28 W.

MGU requests that a CCN for the area in this gap also be granted in order to square off the north line of MGU's certificated territory. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

7. MGU already has a certificate from the Commission to serve Section 1 in Township 64 N, Range 28 W and Section 36 in Township 65 N, Range 28 W, which are immediately west of and adjacent to the requested Sections, and in Sections 7, 8, 9 and 10 of Township 64 N, Range 27 W, which are immediately south of and adjacent to the requested Sections, in addition to numerous other sections in Harrison County.

8. The legal description of the area to be certificated in Harrison County is as follows:

Sections 31, 32, 33, 34 in Township 65 North, Range 27 West in Harrison County, Missouri.

Sections 3,4,5,6 in Township 64 North, Range 27 West in Harrison County, Missouri.

9. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. No external financing is anticipated for the construction related to this project. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use its existing rates and tariff in order to provide service to the proposed service area.

10. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

11. MGU has already begun to seek commitments from potential customers in Ridgeway and the immediate area around the town. As of this filing, the owners of 121 residences and 13 commercial properties have committed to take natural gas, if the requested CCN is granted.

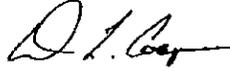
12. Applicant has obtained a franchise from the Town of Ridgeway, which is attached hereto as Appendix D. Applicant will not require any other franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

13. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. Since MGU has the ability to provide service in this area by construction of additions to existing facilities, MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules and regulations, in the Sections listed above in Township 64 North, Range 28 West, in Harrison

County, Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 4th day of April, 2008:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



Dean L. Cooper

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Daviess County, Missouri, as a further expansion of its existing certified area.)
)
)
)
)
)
)

Case No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. (MGU or Applicant), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, subject to the jurisdiction of the Missouri Public Service Commission (Commission).

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@cng Holdings.net

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Pattonsburg, a 4th Class city, located in Daviess County. Pattonsburg is located in parts of Sections 13 and 24 in Township 61 N, Range 29 W, and Sections 18 and 19 of Township 61N, Range 28W, all in Daviess County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. MGU will utilize a 4" PE line to serve Pattonsburg beginning in Section 9, Township 61 North, Range 28 West, then proceeding west along Highway B and Highway N for a distance of 1.8 miles, then turning south along 162nd Street and continuing along 1st Avenue in Pattonsburg for another 2 miles. Additional 2" PE lines will be attached to this main line and will be installed in the streets of Pattonsburg to provide service to the businesses and residences in the town.

6. For its entire east-west length, the main 4" PE line will lay along Section lines and MGU requests an order from the Commission granting it a certificate of convenience and necessity (CCN) in the sections immediately on both sides of the line where MGU does not already have an existing certificate. These sections would be Sections 5, 6, 7 and 8 in Township 61 N, Range 28 W, as shown on the map attached hereto as Appendix A. In addition, granting the CCN in these sections and the sections around Pattonsburg will create a cut-out of non-certificated territory north and west of these sections along both sides of Highway 69, the

secondary highway through this area. MGU requests that a CCN for this area, Sections 1 and 12 of Township 61 N, Range 29 W, to allow future expansion north of Pattonsburg along Highway 69 and to square off the CCN territory. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

7. MGU already has a certificate from the Commission to serve Sections 4 and 9 in Township 61 N, Range 28 W, which are immediately east of and adjacent to the requested Sections, in addition to numerous other sections in Daviess County.

8. The legal description of the area to be certificated in Daviess County is as follows:

Sections 5, 6, 7, 8, 18, 19 in Township 61 North, Range 28 West in Daviess County, Missouri.

Sections 1, 12, 13, 24 in Township 61 North, Range 29 West in Daviess County, Missouri.

9. Attached hereto and marked as **Appendix B** is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. No external financing is anticipated for the construction related to this project. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use its existing rates and tariff in order to provide service to the proposed service area.

10. Attached hereto and marked as **Appendix C** is a list of ten persons who reside, or own land, within the proposed service area.

11. MGU has already begun to seek commitments from potential customers in Pattonsburg and the immediate area around the town. As of this filing, the owners of 80 residences and 12 commercial properties have committed to take natural gas if the requested CCN is granted. 2 of these 12 commercial properties are expected to be served on the Large Volume rate schedule.

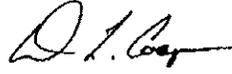
12. Applicant has obtained a franchise from the Town of Pattonsburg, which is attached hereto as Appendix D. Applicant will not require any other franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

13. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. Since MGU has the ability to provide service in this area by construction of additions to existing facilities, MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules and regulations, in the Sections listed above in Township 64 North, Range 28 West, in Daviess

County, Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 7th day of April, 2008:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



Dean L. Cooper

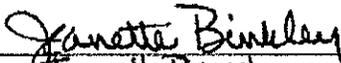
VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 4th day of April, 2008.



Jeanette Binkley, Notary Public



GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@cng Holdings.net

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Jamesport, a 4th Class city, located in Daviess County. Jamesport is located in parts of Sections 26, 27, 34 and 35 in Township 60 N, Range 26 W, all in Daviess County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. MGU will utilize a 4" PE line to serve Jamesport beginning in Section 7, Township 59 North, Range 26 West, then proceeding north-east along State Highway 6 for a distance of 4 miles, then turning east along Main Street in Jamesport for another 2 miles. Additional 2" PE lines will be attached to this main line and will be installed in the streets of Jamesport to provide service to the businesses and residences in the town.

6. For its entire east-west length, the main 4" PE line will lay along Section lines or along State Highway 6, and MGU requests an order from the Commission granting it a certificate of convenience and necessity (CCN) in the sections immediately on both sides of the line where MGU does not already have an existing certificate. These sections would be Sections 4, 5, 6, and 8 in Township 59 N, Range 26 W, and Sections 28, 32 and 33 in Township 60 N, Range 26 W, as shown on the map attached hereto as Appendix A. In addition, granting the CCN in these sections and the sections around Jamesport will create a cut-out of non-certificated territory south and east of these sections along State Highway 190, the secondary highway that

runs north to south through this area. MGU requests that a CCN for this area, Sections 2 and 3 of Township 59 N, Range 26 W, to allow future expansion north of Jamesport along Highway 190 and to square off the CCN territory. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

7. MGU already has a certificate from the Commission to serve Sections 7 and 18 in Township 59 N, Range 26 W, which are immediately south-west of and adjacent to the requested Sections, in addition to numerous other sections in Daviess County.

8. The legal description of the area to be certificated in Daviess County is as follows:

Sections 2, 3, 4, 5, 6, 8 in Township 59 North, Range 26 West in Daviess County, Missouri.

Sections 26, 27, 28, 32, 33, 34, 35 in Township 60 North, Range 26 West in Daviess County, Missouri.

9. Attached hereto and marked as **Appendix B** is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. No external financing is anticipated for the construction related to this project. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use its existing rates and tariff in order to provide service to the proposed service area.

10. Attached hereto and marked as **Appendix C** is a list of ten persons who reside, or own land, within the proposed service area.

11. MGU has already begun to seek commitments from potential customers in Jamesport and the immediate area around the town. As of this filing, the owners of 63 residences and 8 commercial properties have committed to take natural gas if the requested CCN is granted. 1 of these 8 commercial properties is expected to be served on the Large Volume rate schedule.

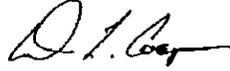
12. Applicant has obtained a franchise from the Town of Jamesport, which is attached hereto as **Appendix D**. Applicant will not require any other franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

13. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. Since MGU has the ability to provide service in this area by construction of additions to existing facilities, MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules and regulations, in the Sections listed above in Township 59 North, Range 26 West, and

Township 60 North, Range 26 West in Daviess County, Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

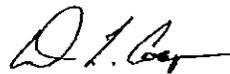
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 22nd day of April, 2008:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101

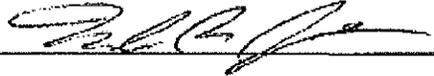


Dean L. Cooper

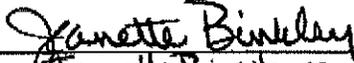
VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 4th day of April, 2008.



Jeanette Binkley, Notary Public



GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the matter of the Application of)	
Southern Missouri Gas Company, L.P.)	
d/b/a Southern Missouri Natural Gas)	
for a certificate of public convenience)	
and necessity authorizing it to construct,)	
install, own, operate, control, manage)	Case No.
and maintain a natural gas distribution)	
system to provide gas service in)	
Houston, Licking, and Mountain View, Missouri.)	

APPLICATION

COMES NOW Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, ("SMNG" or "Applicant"), by and through its counsel, and for its Application pursuant to Section 393.170, RSMo 2000,¹ and 4 CSR 240-2.060(1) and 4 CSR 240-3.205 requests that the Commission issue an order granting SMNG a certificate of convenience and necessity for a pipeline and natural gas distribution system to provide natural gas and transportation services in Houston, Licking, and Mountain View, Missouri. In support of this Application, SMNG respectfully states as follows:

1. Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, a Missouri limited partnership, ("SMNG") owns and operates a natural gas transmission and distribution system located in southern Missouri which serves approximately 7,500 residential, commercial and industrial customers. SMGC is a "gas corporation" and "public utility" under the jurisdiction of the Missouri Public Service Commission, pursuant to Chapters 386 and 393;

¹All statutory references are to Revised Statutes of Missouri 2000, unless otherwise indicated.

RSMo. 2000. The Company's street and mailing address is: 301 E. 17th Street, Mountain Grove, Missouri 65711. The Company's telephone number is: (417) 926-7533.

2. All correspondence, pleadings, orders, and documents in this proceeding should be addressed to:

James M. Fischer
Fischer & Dority, P.C.
101 Madison Street--Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Email: jfischerpc@aol.com

Mike Lumby, General Manager
Southern Missouri Gas Company, L.P.
301 E. 17th Street
Mountain Grove, Missouri 65711
Telephone: (417) 926-7533
Email: mlumby@smng.biz

Randal T. Maffett, President & CEO
Sendero Asset Management, LLC
1001 Fannin--Suite 550
Houston, Texas 77022
Telephone: (713) 655-0523
Email: rmaffett@sendero.biz

3. A copy of SMNG's Certificate Of Good Standing In Missouri from the Missouri Secretary of State is attached as Appendix A and is incorporated herein by reference.

4. In 1995, the Commission issued orders in Case No. GA-94-127 granting a certificate of convenience and necessity to SMNG to construct and operate natural gas systems in

several municipalities, including Houston, Licking and Mountain View, Missouri.² SMNG exercised such authority and constructed its trunkline and distribution facilities as authorized by the orders in Case No. GA-94-127. However, SMNG did not complete the trunkline and distribution systems in Houston, Licking, and Mountain View.³

5. SMNG desires to complete the construction of its distribution system to Houston, Licking, and Mountain View. In order to commence construction in these areas, SMNG requests that the Commission issue a certificate of convenience and necessity to construct and operate natural gas systems in the Houston, Licking, and Mountain View, Missouri areas.

6. The maps, metes and bounds legal description of the Houston, Licking, and Mountain View, Missouri service area were filed with in the record in Case No. GA-94-127 and are incorporated herein by reference. An updated Feasibility Study is also being provided in Appendix C. A list of ten persons residing in the Company's service area was previously provided in the record in Case No. GA-94-127 and are incorporated herein by reference.

7. Applicant has been new franchises for Houston and Licking, and is in the process obtaining a new franchise for Mountain View, Missouri. The franchises are included in Appendix D. (The Mountain View franchise will be late-filed upon receipt). No other franchises or permits will be required from the counties, or other authorities in connection with

² On April 15, 1995, the Commission issued its Order Approving Tariffs And Authorizing The Commencement Of Construction Of Gas Facilities which authorized the predecessor of SMNG, Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C., to commence construction of its trunkline facilities and municipal distribution facilities in several municipalities, including Houston and Licking, Missouri. Following a ratification vote in Mountain View, Missouri, the Commission issued a similar Order Granting Certificate Of Convenience And Necessity For Mountain View, Missouri, And Authorizing Construction Of Distribution Facilities In Mountain View, Missouri, And In Texas And Wright Counties. (Appendix B).

³ Section 393.170(3) states in part: "Unless exercised within two years from the grant thereof, authority conferred by such certificate of convenience and necessity issued by the commission shall be null and void."

the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

8. Applicant proposes to use its current rates and regulations, as approved by the Commission, for natural gas service contained in its existing tariff.

9. There is no same or similar utility service, regulated or unregulated, available in the area requested.

10. The granting of this Application is required by the public convenience and necessity since natural gas service is not presently available in the proposed certificated area, and the availability of natural gas to Houston, Licking, and Mountain View, Missouri will promote the public interest since natural gas is an economical, safe, and reliable source of energy for residential, commercial, industrial, municipal and other customers.

11. The Applicant has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court which involve customer service or rates which has occurred within three (3) years of the date of the Application.

12. The Applicant has no annual report or assessment fees that are overdue.

13. The financing requirements for the expansion into Houston, Licking, and Mountain View along with the request for a certificate of convenience and necessity for Lebanon (Case No. GA-2007-0212) are being considered in Case No. GF-2007-0215. In order to obtain the financing requested in Case No. GF-2007-0215, it will be necessary for the Company to have regulatory authority to proceed with the construction of the facilities, as requested herein. By separate motion, the Company will seek to consolidate the proceedings in Case No. GF-2007-0215, Case No. GA-2007-0212, and this proceeding.

WHEREFORE, Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas respectfully requests an order from the Commission grant SNMG a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its proposed rates, rules, and regulations contained in its tariff in Houston, Licking, and Mountain View, Missouri, as more fully described herein.

Respectfully submitted,

/s/ James M. Fischer

James M. Fischer Mo. Bar No. 27543
Fischer & Dority, P.C.
101 Madison Street, Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Fax: (573) 636-0383
Email: jfischerpc@aol.com

ATTORNEYS FOR
APPLICANT

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been hand-delivered, emailed or mailed, postage prepaid, by U.S. Mail, First Class, this 15th day of February, 2007, to:

Office of the Public Counsel
P.O. Box 2230
Jefferson City, MO 65102

General Counsel
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

/s/ James M. Fischer

James M. Fischer

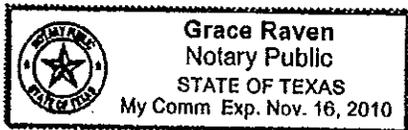
VERIFICATION

STATE OF TEXAS)
)
COUNTY OF HARRIS) ss.

Randal T. Maffett, being first duly sworn, on his oath and in his capacity as Executive Vice-President states that he is authorized to execute this Application on behalf of Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas and has knowledge of the matters stated herein, and that said matters are true and correct to the best of his knowledge and belief.


Randal T. Maffett

Subscribed and sworn to before me this 13th day of February, 2007.




Notary Public

My Commission Expires: Nov. 16th 2010

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held at its office
in Jefferson City on the 14th
day of April, 1995.

In the matter of the application of Tartan)
Energy Company, L.C., d/b/a Southern Missouri)
Gas Company, for a certificate of convenience)
of necessity authorizing it to construct,)
install, own, operate, control, manage and)
maintain gas facilities and to render gas)
service in and to residents of certain areas)
of Wright, Texas, Howell, Webster, Greene and)
Douglas Counties, including the incorporated)
municipalities of Seymour, Cabool, Houston,)
Licking, Mountain Grove, Mountain View, West)
Plains, Ava, Mansfield, Marshfield and Willow)
Springs, Missouri.)

CASE NO. GA-94-127

ORDER APPROVING TARIFFS AND AUTHORIZING THE COMMENCEMENT OF CONSTRUCTION
OF GAS FACILITIES

On September 16, 1994, the Commission issued a Report and Order which granted Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company (Tartan) a Certificate of Convenience and Necessity authorizing it to construct, install, own, operate, control, manage and maintain gas facilities and render gas service in and to the residents of certain areas of Wright, Texas, Howell, Webster, Greene, and Douglas Counties, including the incorporated municipalities of Seymour, Cabool, Houston, Licking, Mountain Grove, West Plains, Ava, Mansfield, Marshfield, and Willow Springs, Missouri, as well as Mountain View, Missouri if the franchise granted by Mountain View was ratified by its voters. The Report and Order contained a number of conditions, and stated that the Certificate of Convenience and Necessity would become effective simultaneously with the effective date of the tariffs Tartan was required to file, while in turn indicating that Tartan's tariff would not be approved until a number of conditions had been met. In addition, the Report and Order also stated that Tartan was required to show compliance with a further set of

conditions prior to the commencement of construction of any gas facilities. Tartan also was required to comply with the terms of the Nonunanimous Stipulation and Agreement. The various conditions are listed in detail on pages 27-28 of the Commission's Report and Order. On October 12, 1994, Tartan filed tariff sheets to comply with the Commission's Report and Order, with a proposed effective date of November 14, 1994. Since that time, the effective date of the tariffs have been extended by Tartan on numerous occasions, with a current effective date of April 15, 1995. On March 29, 1995, Tartan filed a document styled Applicant's Motion for Order Authorizing Commencement of Construction of Natural Gas Distribution System.

On April 7, 1995, the Staff of the Missouri Public Service Commission (Staff) filed a memorandum entitled Staff Recommendation and Report on Items and Tariffs Submitted in Compliance with the Commission's Report and Order. Staff's memorandum serves a threefold purpose: (1) it provides Staff's recommendation with respect to the tariffs filed by Tartan; (2) it provides a brief report to the Commission on Tartan's compliance with the conditions of the Report and Order as required by the Report and Order; and (3) it provides a recommendation with respect to Tartan's motion for authorization to commence construction of its gas system. Staff first explains that the purpose of the extension of the effective date of the tariffs was to allow Tartan additional time to provide Staff with the documents required by the Stipulation and Agreement which the Commission approved in its Report and Order. In addition, Staff adds that since the original filing of the tariffs, Tartan has filed substitute tariff sheets on a number of occasions.

Staff states that the tariff sheets filed by Tartan contain the rates, rules, and regulations under which natural gas service will be provided to its service area in south-central Missouri. The material

contained in the filing, according to Staff, includes a table of contents, a map, metes and bounds descriptions, rate tariff sheets, a Purchased Gas Adjustment Clause, and general Rules and Regulations. Staff indicates that this filing also includes Tartan's Promotional Practice provisions and incorporates material consistent with the most revisions of the Commission's Chapter 13 rules on Service and Billing Practices. In addition, Staff notes that on February 15, 1995, the company submitted to the Commission's Gas Safety Staff an Operations and Maintenance Manual, including requirements for transmission O&M and a Drug Testing Program pursuant to paragraph 5(c) of the Stipulation, and also notes that on March 23, 1995, the company submitted to the Procurement Analysis Staff a copy of a signed firm transportation contract between Tartan and Williams Natural Gas Company pursuant to paragraph 3 of the Stipulation. Additionally, Staff mentions it has received unofficial notification from Tartan that the franchise for Mountain View was ratified by the voters in the April 4, 1995 election.

In conclusion, Staff states that it has reviewed the documents which comprise the conditioned items required to be produced prior to the granting of the Certificate and authorization of construction, and believes that they are in satisfactory compliance with the Commission's Report and Order. The Staff also indicates that it has examined the proposed tariff sheets and has determined that they are in compliance with the Commission's Report and Order and should be approved. The Staff therefore recommends that the Commission approve the Certificate and tariff sheets filed by Tartan to become effective with service to be rendered on and after April 15, 1995, and grant Tartan's request for an order authorizing the commencement of construction.

The Commission has reviewed all of the material filed by Tartan subsequent to the issuance of the Report and Order, and has reviewed the

recommendation of Staff, and finds that Tartan is in substantial compliance with the conditions precedent to the approval of its tariffs; that Tartan's tariffs are in substantial compliance with the Commission's Report and Order; and that Tartan is in substantial compliance with the conditions precedent to Commission authorization of the commencement of construction of Tartan's gas facilities.

More specifically, prior to the approval of Tartan's tariffs, Tartan was required to file a certificate of authority to do business in the State of Missouri, an affidavit of its President detailing the relationship between Tartan, Torch Energy Advisors, Inc., and Torch Marketing, Inc., and a signed firm transportation contract with Williams Natural Gas Company. On October 14, 1994, Tartan filed the required certificate, and the affidavit of Tom M. Taylor,¹ which substantially comply with the Commission's directive. On March 23, 1995, Tartan filed a copy of the contract with Williams Natural Gas with the Commission's Procurement Analysis Department, in compliance with the Nonunanimous Stipulation and Agreement and the Commission's Report and Order. Thus all the prerequisites to approval of Tartan's tariffs have been met. The Commission finds that upon review of the tariff sheets filed on October 12, 1994, as substituted on March 16, 1995 and March 20, 1995, and upon review of Staff's recommendation, the tariff sheets as substituted are in compliance with the Commission's Report and Order, and the rates contained in the tariff sheets as substituted are just and reasonable.

¹In addition to the required information, Mr. Taylor's affidavit notes that Tartan, which will be doing business in the State of Missouri under the name of Southern Missouri Gas Company, is required under Missouri state law to identify itself as a limited liability company, and therefore should be referred to as Southern Missouri Gas Company, L.C. The Commission will use the designation "Southern Missouri Gas Company, L.C." in the remainder of its order and in the future.

In addition, prior to the commencement of any gas facilities, Tartan was required by the Commission's Report and Order to provide a commitment for the infusion into Tartan of common equity sufficient to achieve a 40-42 percent common equity to total capital ratio, and was required to file certified copies of the required approval of other governmental agencies. The required financial commitment was filed as an exhibit to Tartan's motion, and is in substantial compliance with the Commission's Report and Order. Also attached to Tartan's motion as exhibits are the required approvals of other governmental agencies, including: (1) Missouri Highway and Transportation Commission permits; (2) nationwide permits from the Department of the Army, U.S. Corp of Engineers; and (3) the affidavit of Tom M. Taylor, with attached county franchises authorizing use of county facilities in unincorporated areas of Douglas, Howell, and Webster Counties. These also appear to be in substantial compliance with the Commission's Report and Order.

While county franchises are not a prerequisite to the commencement of construction by Tartan, the Commission's Report and Order does require any necessary county franchises prior to the construction by Tartan of *distribution* facilities to serve residents in the unincorporated portions of the counties within its service territory. Tartan explains in its motion that it does not yet have county franchises for the Counties of Texas and Wright, but states that it has met with the County Commissions in Texas and Wright Counties and expects to receive authorization in the very near future. Tartan adds that it will file the county authorizations when they are available. The Commission is of the opinion that lack of county franchises for Texas and Wright Counties is not an impediment to Tartan's commencement of construction of trunkline facilities. As Tartan correctly states in its motion, since Tartan's trunkline facilities will be constructed along a public highway right-of-way for which approval has

been received from the Missouri Highway and Transportation Department, the trunkline facility and the municipal distribution facilities may be constructed with the governmental permits and franchises which have been obtained to date. In addition, Tartan may construct distribution facilities to serve residents in the unincorporated portions of Douglas, Howell, and Webster Counties.

For purposes of clarity, the Commission determines there are only three areas where Tartan may not yet commence construction: Tartan may not construct distribution facilities to serve residents in the unincorporated portions of Texas and Wright Counties unless it has obtained any necessary county franchises authorizing it to do so, and has filed either a certified copy of the county franchise or an affidavit indicating that the county franchise has been obtained, and Tartan may not construct distribution facilities to serve residents in the city of Mountain View until it files with the Commission a certified copy of the franchise ratified by the voters of Mountain View, or an affidavit indicating that the voters ratified the franchise in the voter ratification election.²

The Commission concludes that it is appropriate to approve Tartan's tariffs for service on and after April 15, 1995; to authorize Tartan's Certificate of Convenience and Necessity to become effective simultaneously with the effective date of its tariffs on April 15, 1995; and to authorize commencement of construction of Tartan's trunkline facilities, municipal distribution facilities in the incorporated municipalities contained within its Certificate of Convenience and Necessity, with the exception of Mountain View, and distribution facilities to serve unincorporated areas in Douglas, Howell, and Webster Counties.

²While Staff's recommendation indicates it received unofficial notification that the franchise was ratified by voters on April 4, 1995, Tartan is still required to file with the Commission either the franchise or an affidavit.

IT IS THEREFORE ORDERED:

1. That the following tariff sheets filed by Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. on October 12, 1994, as substituted by the tariff sheets of March 16, 1995 and March 20, 1995, be and are hereby approved to become effective April 15, 1995:

P.S.C. MO. No. 1

Title Page

Original Sheet Numbers i through x Inclusive

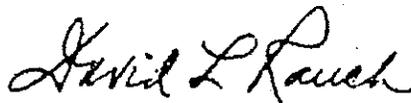
Original Sheet Numbers 1 through 71 Inclusive

2. That the Certificate of Convenience and Necessity granted to Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. in the Commission's Report and Order of September 16, 1994, shall become effective simultaneously with the effective date of the tariffs approved in Ordered Paragraph No. 1 above, on April 15, 1995.

3. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby authorized to commence construction of its trunkline facilities; municipal distribution facilities in the incorporated municipalities contained within its Certificate of Convenience and Necessity, with the exception of Mountain View; and distribution facilities in the unincorporated portions of Douglas, Howell, and Webster Counties.

4. That this order shall become effective on April 15, 1995.

BY THE COMMISSION



David L. Rauch
Executive Secretary

(S E A L)

Mueller, Chm., McClure, Perkins,
Kincheloe and Crumpton, CC., Concur.

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

At a Session of the Public Service
Commission held at its office
in Jefferson City on the 19th
day of May, 1995.

In the matter of the application of Tartan)
Energy Company, L.C., d/b/a Southern Missouri)
Gas Company, for a certificate of convenience)
and necessity authorizing it to construct,)
install, own, operate, control, manage, and)
maintain gas facilities and to render gas)
service in and to residents of certain areas) CASE NO. GA-94-127
of Wright, Texas, Howell, Webster, Greene)
and Douglas Counties, including the)
incorporated municipalities of Seymour,)
Cabool, Houston, Licking, Mountain Grove,)
Mountain View, West Plains, Ava, Mansfield,)
Marshfield, and Willow Springs, Missouri.)

ORDER GRANTING CERTIFICATE OF CONVENIENCE AND NECESSITY FOR MOUNTAIN
VIEW, MISSOURI, AND AUTHORIZING CONSTRUCTION OF DISTRIBUTION FACILITIES
IN MOUNTAIN VIEW, MISSOURI, AND IN TEXAS AND WRIGHT COUNTIES

On September 16, 1994, the Commission issued a Report and Order which granted Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company (Tartan) a Certificate of Convenience and Necessity authorizing it to construct, install, own, operate, control, manage, and maintain gas facilities and render gas service in and to the residents of certain areas of Wright, Texas, Howell, Webster, Greene, and Douglas Counties, including the incorporated municipalities of Cabool, Houston, Licking, Mountain Grove, West Plains, Ava, Mansfield, Marshfield, and Willow Springs, Missouri, as well as Mountain View, Missouri, if the franchise granted by Mountain View was ratified by its voters. The Report and Order contained a number of conditions with which Tartan was required to comply prior to approval of its tariffs and authorization for the construction of gas facilities. On April 14, 1995, the Commission issued an Order Approving Tariffs and Authorizing the Commencement of Construction of Gas Facilities.¹ In that order, the

¹In that order, the Commission inadvertently referred to Seymour as one of the incorporated municipalities for which Tartan had received a Certificate of Convenience and Necessity. In fact, Tartan dropped its request with respect to Seymour in its First Amended Application, as it had not received a franchise from Seymour. Tartan has subsequently filed an application seeking a Certificate of Convenience and Necessity for Seymour and other incorporated municipalities in Case No. GA-95-349.

have indeed ratified the franchise granted to Tartan have been filed with the Commission. In addition, the remainder of Tartan's Certificate of Convenience and Necessity was made effective simultaneously with the effective date of Tartan's tariffs, which were approved by the Commission in its Order Approving Tariffs and Authorizing the Commencement of Construction of Gas Facilities on April 14, 1995. As Tartan's Certificate of Convenience and Necessity with respect to the incorporated municipality of Mountain View will be effective as of the effective date of this order, Tartan will also *a fortiori* be authorized as of the same date to commence construction of its municipal distribution facilities in the incorporated municipality of Mountain View without further action by Tartan. The Commission also finds that Tartan should be authorized to commence construction of its distribution facilities in the unincorporated portions of Texas and Wright Counties, as Tartan has filed with the Commission appropriate documents indicating receipt of county franchises from the county commissions of Texas and Wright Counties.

IT IS THEREFORE ORDERED:

1. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby granted a Certificate of Convenience and Necessity authorizing it to construct, install, own, operate, control, manage, and maintain gas facilities and to render gas service in and to the residents of the incorporated municipality of Mountain View, Missouri.

2. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby authorized to commence construction of municipal distribution facilities in the incorporated municipality of Mountain View, Missouri, and distribution facilities in the unincorporated portions of Texas and Wright Counties.

3. That this order shall become effective on May 30, 1995.

BY THE COMMISSION

David L. Rauch

David L. Rauch
Executive Secretary

(S E A L)

McClure, Perkins, Kincheloe
and Crumpton, CC., Concur.
Mueller, Chm., Absent.

STATE OF MISSOURI

OFFICE OF THE PUBLIC SERVICE COMMISSION

I have compared the preceding copy with the original on file in this office and I do hereby certify the same to be a true copy therefrom and the whole thereof.

WITNESS my hand and seal of the Public Service Commission, at Jefferson City, Missouri, this 19th day of May, 1995.



David L. Rauch
Executive Secretary

APPENDIX C

FEASIBILITY STUDY

(HIGHLY CONFIDENTIAL INFORMATION—FILED UNDER SEAL)

**BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI**

In the matter of the Application of)	
Southern Missouri Gas Company, L.P.)	
d/b/a Southern Missouri Natural Gas)	
for a certificate of public convenience)	
and necessity authorizing it to construct,)	
install, own, operate, control, manage)	Case No.
and maintain a natural gas distribution)	
system to provide gas service in)	
Houston, Licking, and Mountain View, Missouri.)	

APPLICATION

COMES NOW Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, ("SMNG" or "Applicant"), by and through its counsel, and for its Application pursuant to Section 393.170, RSMo 2000,¹ and 4 CSR 240-2.060(1) and 4 CSR 240-3.205 requests that the Commission issue an order granting SMNG a certificate of convenience and necessity for a pipeline and natural gas distribution system to provide natural gas and transportation services in Houston, Licking, and Mountain View, Missouri. In support of this Application, SMNG respectfully states as follows:

1. Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, a Missouri limited partnership, ("SMNG") owns and operates a natural gas transmission and distribution system located in southern Missouri which serves approximately 7,500 residential, commercial and industrial customers. SMGC is a "gas corporation" and "public utility" under the jurisdiction of the Missouri Public Service Commission, pursuant to Chapters 386 and 393,

¹All statutory references are to Revised Statutes of Missouri 2000, unless otherwise indicated.

RSMo. 2000. The Company's street and mailing address is: 301 E. 17th Street, Mountain Grove, Missouri 65711. The Company's telephone number is: (417) 926-7533.

2. All correspondence, pleadings, orders, and documents in this proceeding should be addressed to:

James M. Fischer
Fischer & Dority, P.C.
101 Madison Street--Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Email: jfischerpc@aol.com

Mike Lumby, General Manager
Southern Missouri Gas Company, L.P.
301 E. 17th Street
Mountain Grove, Missouri 65711
Telephone: (417) 926-7533
Email: mlumby@smng.biz

Randal T. Maffett, President & CEO
Sendero Asset Management, LLC
1001 Fannin--Suite 550
Houston, Texas 77022
Telephone: (713) 655-0523
Email: rmaffett@sendero.biz

3. A copy of SMNG's Certificate Of Good Standing In Missouri from the Missouri Secretary of State is attached as Appendix A and is incorporated herein by reference.

4. In 1995, the Commission issued orders in Case No. GA-94-127 granting a certificate of convenience and necessity to SMNG to construct and operate natural gas systems in

several municipalities, including Houston, Licking and Mountain View, Missouri.² SMNG exercised such authority and constructed its trunkline and distribution facilities as authorized by the orders in Case No. GA-94-127. However, SMNG did not complete the trunkline and distribution systems in Houston, Licking, and Mountain View.³

5. SMNG desires to complete the construction of its distribution system to Houston, Licking, and Mountain View. In order to commence construction in these areas, SMNG requests that the Commission issue a certificate of convenience and necessity to construct and operate natural gas systems in the Houston, Licking, and Mountain View, Missouri areas.

6. The maps, metes and bounds legal description of the Houston, Licking, and Mountain View, Missouri service area were filed with in the record in Case No. GA-94-127 and are incorporated herein by reference. An updated Feasibility Study is also being provided in Appendix C. A list of ten persons residing in the Company's service area was previously provided in the record in Case No. GA-94-127 and are incorporated herein by reference.

7. Applicant has been new franchises for Houston and Licking, and is in the process obtaining a new franchise for Mountain View, Missouri. The franchises are included in Appendix D. (The Mountain View franchise will be late-filed upon receipt). No other franchises or permits will be required from the counties, or other authorities in connection with

² On April 15, 1995, the Commission issued its Order Approving Tariffs And Authorizing The Commencement Of Construction Of Gas Facilities which authorized the predecessor of SMNG, Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C., to commence construction of its trunkline facilities and municipal distribution facilities in several municipalities, including Houston and Licking, Missouri. Following a ratification vote in Mountain View, Missouri, the Commission issued a similar Order Granting Certificate Of Convenience And Necessity For Mountain View, Missouri, And Authorizing Construction Of Distribution Facilities In Mountain View, Missouri, And In Texas And Wright Counties. (Appendix B).

³ Section 393.170(3) states in part: "Unless exercised within two years from the grant thereof, authority conferred by such certificate of convenience and necessity issued by the commission shall be null and void."

the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

8. Applicant proposes to use its current rates and regulations, as approved by the Commission, for natural gas service contained in its existing tariff.

9. There is no same or similar utility service, regulated or unregulated, available in the area requested.

10. The granting of this Application is required by the public convenience and necessity since natural gas service is not presently available in the proposed certificated area, and the availability of natural gas to Houston, Licking, and Mountain View, Missouri will promote the public interest since natural gas is an economical, safe, and reliable source of energy for residential, commercial, industrial, municipal and other customers.

11. The Applicant has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court which involve customer service or rates which has occurred within three (3) years of the date of the Application.

12. The Applicant has no annual report or assessment fees that are overdue.

13. The financing requirements for the expansion into Houston, Licking, and Mountain View along with the request for a certificate of convenience and necessity for Lebanon (Case No. GA-2007-0212) are being considered in Case No. GF-2007-0215. In order to obtain the financing requested in Case No. GF-2007-0215, it will be necessary for the Company to have regulatory authority to proceed with the construction of the facilities, as requested herein. By separate motion, the Company will seek to consolidate the proceedings in Case No. GF-2007-0215, Case No. GA-2007-0212, and this proceeding.

WHEREFORE, Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas respectfully requests an order from the Commission grant SNMG a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its proposed rates, rules, and regulations contained in its tariff in Houston, Licking, and Mountain View, Missouri, as more fully described herein.

Respectfully submitted,

/s/ James M. Fischer

James M. Fischer Mo. Bar No. 27543
Fischer & Dority, P.C.
101 Madison Street, Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Fax: (573) 636-0383
Email: jfischerpc@aol.com

ATTORNEYS FOR
APPLICANT

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been hand-delivered, emailed or mailed, postage prepaid, by U.S. Mail, First Class, this 15th day of February, 2007, to:

Office of the Public Counsel
P.O. Box 2230
Jefferson City, MO 65102

General Counsel
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

/s/ James M. Fischer

James M. Fischer

VERIFICATION

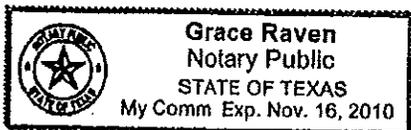
STATE OF TEXAS)
)
COUNTY OF HARRIS) ss.

Randal T. Maffett, being first duly sworn, on his oath and in his capacity as Executive Vice-President states that he is authorized to execute this Application on behalf of Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas and has knowledge of the matters stated herein, and that said matters are true and correct to the best of his knowledge and belief.



Randal T. Maffett

Subscribed and sworn to before me this 13th day of February, 2007.





Notary Public

My Commission Expires: Nov. 16th 2010

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held at its office
in Jefferson City on the 14th
day of April, 1995.

In the matter of the application of Tartan)
Energy Company, L.C., d/b/a Southern Missouri)
Gas Company, for a certificate of convenience)
of necessity authorizing it to construct,)
install, own, operate, control, manage and)
maintain gas facilities and to render gas)
service in and to residents of certain areas)
of Wright, Texas, Howell, Webster, Greene and)
Douglas Counties, including the incorporated)
municipalities of Seymour, Cabool, Houston,)
Licking, Mountain Grove, Mountain View, West)
Plains, Ava, Mansfield, Marshfield and Willow)
Springs, Missouri.)

CASE NO. GA-94-127

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conditions prior to the commencement of construction of any gas facilities. Tartan also was required to comply with the terms of the Nonunanimous Stipulation and Agreement. The various conditions are listed in detail on pages 27-28 of the Commission's Report and Order. On October 12, 1994, Tartan filed tariff sheets to comply with the Commission's Report and Order, with a proposed effective date of November 14, 1994. Since that time, the effective date of the tariffs have been extended by Tartan on numerous occasions, with a current effective date of April 15, 1995. On March 29, 1995, Tartan filed a document styled Applicant's Motion for Order Authorizing Commencement of Construction of Natural Gas Distribution System.

On April 7, 1995, the Staff of the Missouri Public Service Commission (Staff) filed a memorandum entitled Staff Recommendation and Report on Items and Tariffs Submitted in Compliance with the Commission's Report and Order. Staff's memorandum serves a threefold purpose: (1) it provides Staff's recommendation with respect to the tariffs filed by Tartan; (2) it provides a brief report to the Commission on Tartan's compliance with the conditions of the Report and Order as required by the Report and Order; and (3) it provides a recommendation with respect to Tartan's motion for authorization to commence construction of its gas system. Staff first explains that the purpose of the extension of the effective date of the tariffs was to allow Tartan additional time to provide Staff with the documents required by the Stipulation and Agreement which the Commission approved in its Report and Order. In addition, Staff adds that since the original filing of the tariffs, Tartan has filed substitute tariff sheets on a number of occasions.

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In conclusion, Staff states that it has reviewed the documents which comprise the conditioned items required to be produced prior to the granting of the Certificate and authorization of construction, and believes that they are in satisfactory compliance with the Commission's Report and Order. The Staff also indicates that it has examined the proposed tariff sheets and has determined that they are in compliance with the Commission's Report and Order and should be approved. The Staff therefore recommends that the Commission approve the Certificate and tariff sheets filed by Tartan to become effective with service to be rendered on and after April 15, 1995, and grant Tartan's request for an order authorizing the commencement of construction.

The Commission has reviewed all of the material filed by Tartan subsequent to the issuance of the Report and Order, and has reviewed the

recommendation of Staff, and finds that Tartan is in substantial compliance with the conditions precedent to the approval of its tariffs; that Tartan's tariffs are in substantial compliance with the Commission's Report and Order; and that Tartan is in substantial compliance with the conditions precedent to Commission authorization of the commencement of construction of Tartan's gas facilities.

More specifically, prior to the approval of Tartan's tariffs, Tartan was required to file a certificate of authority to do business in the State of Missouri, an affidavit of its President detailing the relationship between Tartan, Torch Energy Advisors, Inc., and Torch Marketing, Inc., and a signed firm transportation contract with Williams Natural Gas Company. On October 14, 1994, Tartan filed the required certificate, and the affidavit of Tom M. Taylor,¹ which substantially comply with the Commission's directive. On March 23, 1995, Tartan filed a copy of the contract with Williams Natural Gas with the Commission's Procurement Analysis Department, in compliance with the Nonunanimous Stipulation and Agreement and the Commission's Report and Order. Thus all the prerequisites to approval of Tartan's tariffs have been met. The Commission finds that upon review of the tariff sheets filed on October 12, 1994, as substituted on March 16, 1995 and March 20, 1995, and upon review of Staff's recommendation, the tariff sheets as substituted are in compliance with the Commission's Report and Order, and the rates contained in the tariff sheets as substituted are just and reasonable.

¹ In addition to the required information, Mr. Taylor's affidavit notes that Tartan, which will be doing business in the State of Missouri under the name of Southern Missouri Gas Company, is required under Missouri state law to identify itself as a limited liability company, and therefore should be referred to as Southern Missouri Gas Company, L.C. The Commission will use the designation "Southern Missouri Gas Company, L.C." in the remainder of its order and in the future.

In addition, prior to the commencement of any gas facilities, Tartan was required by the Commission's Report and Order to provide a commitment for the infusion into Tartan of common equity sufficient to achieve a 40-42 percent common equity to total capital ratio, and was required to file certified copies of the required approval of other governmental agencies. The required financial commitment was filed as an exhibit to Tartan's motion, and is in substantial compliance with the Commission's Report and Order. Also attached to Tartan's motion as exhibits are the required approvals of other governmental agencies, including: (1) Missouri Highway and Transportation Commission permits; (2) nationwide permits from the Department of the Army, U.S. Corp of Engineers; and (3) the affidavit of Tom M. Taylor, with attached county franchises authorizing use of county facilities in unincorporated areas of Douglas, Howell, and Webster Counties. These also appear to be in substantial compliance with the Commission's Report and Order.

While county franchises are not a prerequisite to the commencement of construction by Tartan, the Commission's Report and Order does require any necessary county franchises prior to the construction by Tartan of *distribution* facilities to serve residents in the unincorporated portions of the counties within its service territory. Tartan explains in its motion that it does not yet have county franchises for the Counties of Texas and Wright, but states that it has met with the County Commissions in Texas and Wright Counties and expects to receive authorization in the very near future. Tartan adds that it will file the county authorizations when they are available. The Commission is of the opinion that lack of county franchises for Texas and Wright Counties is not an impediment to Tartan's commencement of construction of trunkline facilities. As Tartan correctly states in its motion, since Tartan's trunkline facilities will be constructed along a public highway right-of-way for which approval has

been received from the Missouri Highway and Transportation Department, the trunkline facility and the municipal distribution facilities may be constructed with the governmental permits and franchises which have been obtained to date. In addition, Tartan may construct distribution facilities to serve residents in the unincorporated portions of Douglas, Howell, and Webster Counties.

For purposes of clarity, the Commission determines there are only three areas where Tartan may not yet commence construction: Tartan may not construct distribution facilities to serve residents in the unincorporated portions of Texas and Wright Counties unless it has obtained any necessary county franchises authorizing it to do so, and has filed either a certified copy of the county franchise or an affidavit indicating that the county franchise has been obtained, and Tartan may not construct distribution facilities to serve residents in the city of Mountain View until it files with the Commission a certified copy of the franchise ratified by the voters of Mountain View, or an affidavit indicating that the voters ratified the franchise in the voter ratification election.²

The Commission concludes that it is appropriate to approve Tartan's tariffs for service on and after April 15, 1995; to authorize Tartan's Certificate of Convenience and Necessity to become effective simultaneously with the effective date of its tariffs on April 15, 1995; and to authorize commencement of construction of Tartan's trunkline facilities, municipal distribution facilities in the incorporated municipalities contained within its Certificate of Convenience and Necessity, with the exception of Mountain View, and distribution facilities to serve unincorporated areas in Douglas, Howell, and Webster Counties.

²While Staff's recommendation indicates it received unofficial notification that the franchise was ratified by voters on April 4, 1995, Tartan is still required to file with the Commission either the franchise or an affidavit.

IT IS THEREFORE ORDERED:

1. That the following tariff sheets filed by Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. on October 12, 1994, as substituted by the tariff sheets of March 16, 1995 and March 20, 1995, be and are hereby approved to become effective April 15, 1995:

P.S.C. MO. No. 1

Title Page

Original Sheet Numbers i through x Inclusive

Original Sheet Numbers 1 through 71 Inclusive

2. That the Certificate of Convenience and Necessity granted to Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. in the Commission's Report and Order of September 16, 1994, shall become effective simultaneously with the effective date of the tariffs approved in Ordered Paragraph No. 1 above, on April 15, 1995.

3. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby authorized to commence construction of its trunkline facilities; municipal distribution facilities in the incorporated municipalities contained within its Certificate of Convenience and Necessity, with the exception of Mountain View; and distribution facilities in the unincorporated portions of Douglas, Howell, and Webster Counties.

4. That this order shall become effective on April 15, 1995.

BY THE COMMISSION



David L. Rauch
Executive Secretary

(S E A L)

Mueller, Chm., McClure, Perkins,
Kincheloe and Crumpton, CC., Concur.

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

At a Session of the Public Service
Commission held at its office
in Jefferson City on the 19th
day of May, 1995.

In the matter of the application of Tartan)
Energy Company, L.C., d/b/a Southern Missouri)
Gas Company, for a certificate of convenience)
and necessity authorizing it to construct,)
install, own, operate, control, manage, and)
maintain gas facilities and to render gas)
service in and to residents of certain areas) CASE NO. GA-94-127
of Wright, Texas, Howell, Webster, Greene)
and Douglas Counties, including the)
incorporated municipalities of Seymour,)
Cabool, Houston, Licking, Mountain Grove,)
Mountain View, West Plains, Ava, Mansfield,)
Marshfield, and Willow Springs, Missouri.)

ORDER GRANTING CERTIFICATE OF CONVENIENCE AND NECESSITY FOR MOUNTAIN
VIEW, MISSOURI, AND AUTHORIZING CONSTRUCTION OF DISTRIBUTION FACILITIES
IN MOUNTAIN VIEW, MISSOURI, AND IN TEXAS AND WRIGHT COUNTIES

On September 16, 1994, the Commission issued a Report and Order which granted Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company (Tartan) a Certificate of Convenience and Necessity authorizing it to construct, install, own, operate, control, manage, and maintain gas facilities and render gas service in and to the residents of certain areas of Wright, Texas, Howell, Webster, Greene, and Douglas Counties, including the incorporated municipalities of Cabool, Houston, Licking, Mountain Grove, West Plains, Ava, Mansfield, Marshfield, and Willow Springs, Missouri, as well as Mountain View, Missouri, if the franchise granted by Mountain View was ratified by its voters. The Report and Order contained a number of conditions with which Tartan was required to comply prior to approval of its tariffs and authorization for the construction of gas facilities. On April 14, 1995, the Commission issued an Order Approving Tariffs and Authorizing the Commencement of Construction of Gas Facilities.¹ In that order, the

¹In that order, the Commission inadvertently referred to Seymour as one of the incorporated municipalities for which Tartan had received a Certificate of Convenience and Necessity. In fact, Tartan dropped its request with respect to Seymour in its First Amended Application, as it had not received a franchise from Seymour. Tartan has subsequently filed an application seeking a Certificate of Convenience and Necessity for Seymour and other incorporated municipalities in Case No. GA-95-349.

have indeed ratified the franchise granted to Tartan have been filed with the Commission. In addition, the remainder of Tartan's Certificate of Convenience and Necessity was made effective simultaneously with the effective date of Tartan's tariffs, which were approved by the Commission in its Order Approving Tariffs and Authorizing the Commencement of Construction of Gas Facilities on April 14, 1995. As Tartan's Certificate of Convenience and Necessity with respect to the incorporated municipality of Mountain View will be effective as of the effective date of this order, Tartan will also a fortiori be authorized as of the same date to commence construction of its municipal distribution facilities in the incorporated municipality of Mountain View without further action by Tartan. The Commission also finds that Tartan should be authorized to commence construction of its distribution facilities in the unincorporated portions of Texas and Wright Counties, as Tartan has filed with the Commission appropriate documents indicating receipt of county franchises from the county commissions of Texas and Wright Counties.

IT IS THEREFORE ORDERED:

1. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby granted a Certificate of Convenience and Necessity authorizing it to construct, install, own, operate, control, manage, and maintain gas facilities and to render gas service in and to the residents of the incorporated municipality of Mountain View, Missouri.

2. That Tartan Energy Company, L.C., d/b/a Southern Missouri Gas Company, L.C. be and is hereby authorized to commence construction of municipal distribution facilities in the incorporated municipality of Mountain View, Missouri, and distribution facilities in the unincorporated portions of Texas and Wright Counties.

3. That this order shall become effective on May 30, 1995.

BY THE COMMISSION

David L. Rauch

David L. Rauch
Executive Secretary

(S E A L)

McClure, Perkins, Kincheloe
and Crumpton, CC., Concur.
Mueller, Chm., Absent.

STATE OF MISSOURI

OFFICE OF THE PUBLIC SERVICE COMMISSION

I have compared the preceding copy with the original on file in this office and I do hereby certify the same to be a true copy therefrom and the whole thereof.

WITNESS my hand and seal of the Public Service Commission, at Jefferson City, Missouri, this 19th day of May, 1995.



David L. Rauch
Executive Secretary

APPENDIX C

FEASIBILITY STUDY

(HIGHLY CONFIDENTIAL INFORMATION—FILED UNDER SEAL)

**BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI**

In the matter of the Application of)
Southern Missouri Gas Company, L.P.)
d/b/a Southern Missouri Natural Gas)
for a certificate of public convenience)
and necessity authorizing it to construct,)
install, own, operate, control, manage)
and maintain a natural gas distribution)
system to provide gas service in)
Laclede County, Missouri, as an)
expansion of its existing service area.)

Case No. _____

APPLICATION AND MOTION FOR EXPEDITED TREATMENT

COMES NOW Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, ("SMNG" or "Applicant"), by and through its counsel, and for its Application pursuant to Section 393.170, RSMo 2000,¹ 4 CSR 240-2.060(1) and 4 CSR 240-2.080(16) and 4 CSR 240-3.205 for a certificate of public convenience and necessity, respectfully states as follows:

1. Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas, a Missouri limited partnership, ("SMNG") owns and operates a natural gas transmission and distribution system located in southern Missouri which currently serves approximately 7,500 residential, commercial and industrial customers. SMGC is a "gas corporation" and "public utility" under the jurisdiction of the Missouri Public Service Commission, pursuant to Chapters 386 and 393, RSMo. 2000. The Company's street and mailing address is: 500 W. 19th Street, Mountain Grove, Missouri 65711. The Company's telephone number is: (417) 926-7533.

¹All statutory references are to Revised Statutes of Missouri 2000, unless otherwise indicated.

2. All correspondence, pleadings, orders, and documents in this proceeding should be addressed to:

James M. Fischer
Larry W. Dority
Fischer & Dority, P.C.
101 Madison Street--Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Email: jfischerpc@aol.com
lwdority@sprintmail.com

Mike Lumby, General Manager
Southern Missouri Gas Company, L.P.
500 W. 19th Street
Mountain Grove, Missouri 65711
Telephone: (417) 926-7533
Email: mlumby@smng.biz

Randal T. Maffett, President & CEO
Sendero Asset Management, LLC
1001 Fannin--Suite 550
Houston, Texas 77022
Telephone: (713) 655-0523
Email: rmaffett@sendero.biz

3. A copy of SMNG's Certificate Of Good Standing In Missouri from the Missouri Secretary of State was submitted in Case No. GA-2007-0212 and is incorporated herein by reference.

4. In Case No. GA-2007-0212, the Commission granted SMNG a certificate of convenience and necessity to expand its backbone pipeline system and to construct, install, own, operate, control and manage a gas distribution system for the public in the Cities of Lebanon,

Licking and Houston, Missouri, as an expansion of its then-existing certificated area, subject to the conditions set out therein.²

5. A major commercial business (i.e. Willard Asphalt Paving, Inc.) has requested that SMNG provide natural gas service to its facility located approximately four (4) miles outside the municipal limits of Lebanon, Missouri, within Section 28, Township 35 North, Range 15 West in Laclede County, Missouri. This is an area where SMNG currently does not hold a certificate for natural gas service from the Commission.

6. Attached hereto and marked as Appendix A is a map of the location of the proposed service area described above, which includes the area of the proposed line extension from SMNG's existing system by approximately four (4) miles. SMNG already has a certificate from the Commission to serve certain Sections and Ranges of Townships 33 North and 34 North in Laclede County.

7. Attached hereto and marked as Appendix B is a metes and bounds legal description of the boundaries of the proposed service area.

8. Attached hereto as Appendix C is SMNG's Feasibility Study and a summary of the plans and specifications for the project including the estimated cost of construction (Highly Confidential--filed under seal). Construction methods will follow SMNG's customary standards and the rules of the Commission.

9. Attached hereto and marked as Appendix D is a list of ten persons residing in or who are landowners with the proposed service area.

² The certificates granted were conditioned upon the Company's obtaining financing acceptable to the Commission and, pursuant to the Commission's *Order Approving Stipulation and Agreement* issued April 17, 2008, in Case No. GF-2007-0215, SMNG's Second Amended Financing Application was approved.

10. Because SMNG does not have a certificate from the Commission for the area where the potential customer is located, it is necessary for SMNG to obtain the requisite permission from the Commission.

11. Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction other than the usual and customary state highway, railroad and county road permits which will be obtained prior to construction.

12. Applicant proposes to use its current rates and regulations, as approved by the Commission, for natural gas service contained in its existing tariff.

13. There is no same or similar natural gas utility service, regulated or unregulated, available in the area requested. Since SMNG has the ability to provide natural gas service in this area by construction of additions to existing facilities, SMNG believes that potential new customers should be afforded the opportunity to take service from SMNG if they so desire, pursuant to SMNG's extension rule. The availability of natural gas to this area will support the public interest since natural gas is an economical, safe and reliable source of energy for customers. These facts support a finding that the granting of the application is required by the public convenience and necessity.

14. No gas transmission lines are required to be constructed as a part of this application.

15. The Applicant has no pending actions or final unsatisfied judgments or decisions against it from any state or federal agency or court which involve customer service or rates which has occurred within three (3) years of the date of the Application.

16. The Applicant has no annual report or assessment fees that are overdue.

MOTION FOR EXPEDITED TREATMENT

17. Pursuant to 4 CSR 240-2.080(16), the Company requests that the Order Approving Certificate of Convenience And Necessity be effective no later than January 1, 2010, if possible. The commercial customer desires to have natural gas service as soon as possible. This pleading is also being filed as soon as it could have been once it became apparent that there was a need for natural gas service in the requested area. The benefit that will accrue from granting the application by the requested date is the commercial customer will be provided a safe and reasonably priced source of natural gas as soon as possible. No harm will accrue to SMNG's existing customers or the general public by granting this request for expedited treatment.

WHEREFORE, Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas respectfully requests an order from the Commission granting it a certificate of convenience and necessity on an expedited basis to construct, install, own, operate, control, manage, and maintain a system for the provision of natural gas service to the public pursuant to its approved rates, rules, and regulations contained in its tariff for Lebanon, Missouri, in the proposed service area in Laclede County, Missouri, as more fully described herein.

Respectfully submitted,

/s/ James M. Fischer

James M. Fischer Mo. Bar No. 27543
Larry W. Dority Mo. Bar No. 25617
Fischer & Dority, P.C.
101 Madison Street, Suite 400
Jefferson City, Missouri 65101
Telephone: (573) 636-6758
Fax: (573) 636-0383
Email: jfischerpc@aol.com
lwdority@sprintmail.com

ATTORNEYS FOR APPLICANT

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been hand-delivered, emailed or mailed, postage prepaid, by U.S. Mail, First Class, this 13th day of October, 2009, to:

Office of the Public Counsel
P.O. Box 2230
Jefferson City, MO 65102

General Counsel
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

/s/ James M. Fischer

James M. Fischer

VERIFICATION

STATE OF MISSOURI)
)
) ss.
COUNTY OF)

Michael Lumby, being first duly sworn, on his oath and in his capacity as General Manager states that he is authorized to execute this Application on behalf of Southern Missouri Gas Company, L.P. d/b/a Southern Missouri Natural Gas and has knowledge of the matters stated herein, and that said matters are true and correct to the best of his knowledge and belief.

Michael Lumby
Michael Lumby

Subscribed and sworn to before me this 13th day of October, 2009.

Linda A. Moore
Notary Public

My Commission Expires: 5/04/12

LINDA A MOORE
Notary Public - Notary Seal
State of Missouri
Commissioned for Wright County
My Commission Expires: May 04, 2012
Commission Number: 08414018

APPENDIX C

FEASIBILITY STUDY

(HIGHLY CONFIDENTIAL INFORMATION—FILED UNDER SEAL)

JAMES M. FISCHER, P.C.

ATTORNEY AT LAW
REGULATORY CONSULTANT

101 WEST McCARTY, SUITE 215
JEFFERSON CITY, MO 65101

TELEPHONE (314) 636-6758
FAX (314) 636-0383

July 11, 1995

Mr. David L. Rauch
Executive Secretary
Missouri Public Service Commission
P.O. Box 360
Jefferson City, Missouri 65102

RE: Tartan Energy Company, L.C.
Case No. GA-95-349

Dear Mr. Rauch:

During the Commission Staff's review of the Application in the above-referenced matter, two typographical errors were found. The purpose of this letter is to correct those typographical errors.

On page 1 of Exhibit 2 of the Application, there is the following reference: "Note: This proposed additional service area includes the previously existing service area of sections 13, 24 and 25 of T20N R20W and does not exclude any portion of the corporate limits of Rogersville lying in Greene County." The reference to "T20N" in the above-referenced sentence should read "T28N".

Second, when the Company late-filed its Feasibility Study, it incorrectly designated the Feasibility Study as Exhibit 4. It should have been designated as Exhibit 3.

I hope these errors have not inconvenienced you or your Staff.

Should you have any questions regarding this matter, please contact me.

Sincerely,

James M. Fischer
James M. Fischer

JMF:jr

cc: Office of the Public Counsel

FILED
JUL 11 1995
MISSOURI
PUBLIC SERVICE COMMISSION

4.

JAMES M. FISCHER, P.C.

ATTORNEY AT LAW
REGULATORY CONSULTANT

101 WEST McCARTY, SUITE 215
JEFFERSON CITY, MO 65101

TELEPHONE (314) 636-6758
FAX (314) 636-0383

FILED

June 14, 1995

JUN 14 1995

Mr. David L. Rauch
Executive Secretary
Missouri Public Service Commission
P.O. Box 360
Jefferson City, Missouri 65102

MISSOURI
PUBLIC SERVICE COMMISSION

RE: Tartan Energy Company, L.C. d/b/a Southern Missouri Gas
Company, L.C.; Case No. GA-95-349

Dear Mr. Rauch:

Enclosed are ^{should be 3} the original and fourteen (14) copies of late-filed Exhibit ~~8~~ -- Feasibility Study of Tartan Energy Company, L.C. d/b/a Southern Missouri Gas Company, L.C. for filing in the above-referenced matter. A copy of the foregoing document has been hand-delivered or mailed this date to parties of record.

Should you have any questions, please do not hesitate to contact the undersigned.

Thank you for your attention to this matter.

Sincerely,

James M. Fischer
James M. Fischer

JMF:jr
Enclosures

cc: Parties of Record

EXHIBIT ³X - FEASIBILITY STUDY

INTRODUCTION

The original Feasibility Study for the Tartan Energy Company, L.C. ("Tartan"), dba Southern Missouri Gas Company, L.C. ("SMGC"), submitted in December 1993, with supplements submitted in January 1994 and April 1994, as part of Case Number GA-94-127, included Tartan's plans to provide natural gas service to five smaller "probable additional cities" located along the then-proposed trunk pipeline route. These five cities, Rogersville, Fordland, Diggins, Seymour and Norwood, had not at that time granted franchises to Tartan for such gas service, although discussions directed towards obtaining franchises were beginning. In the absence of these franchises, the Missouri Public Service Commission, in its order issued September 16, 1994, did not grant Tartan authority to provide gas service within the corporate limits of these cities, although Tartan's approved service area surrounds the corporate limits of all these cities on all sides. Since the issuance of the MPSC's order, Tartan has obtained franchises in all five cities, with voter ratification completed in four and voter ratification scheduled in the fifth, Diggins, in August 1995. Copies of these franchises were filed with Tartan's May 9, 1995 Application to the MPSC for authority and a Certificate of Convenience and Necessity to provide natural gas service to these cities.

In Greene County, local enthusiasm for natural gas is high and Tartan has received in excess of 40 local residents' requests for farm taps, along the SMGC trunk pipeline route between the system origin point and Rogersville. As a result, Tartan is requesting that its typically three mile wide service area be extended westward approximately seven miles. This slightly expanded service area will allow Tartan to accommodate local residents' requests for farm taps along this segment of trunkline and is shown on Exhibit 2, page 1 of 3, of Tartan's Application.

To fulfill the statutory requirement that a feasibility study accompany an Application for additional service area, Tartan has prepared this feasibility study, to be late-filed as Exhibit 4, with current information supporting the service area expansions (the five cities plus Greene County extension) sought in its recently filed Application. The following discussion is supported by Tables 1 through 6 immediately following the discussion.

DISCUSSION

Specifications

The distribution piping specifications planned for these five cities are given in Table 1. Previously, this information had been based on the use of Phillips Driscopipe Series 6500. After solicitation of material quotes for SMGC's 1995 construction season, the best value was achieved with Chevron Plexco PE2406 series medium density polyethylene (which is fully equivalent to Phillips Driscopipe 6500), thus Table 1 now references this selection. Although Table 1 provides information for piping as large as nominal 8-inch diameter, no pipe larger than 4-inch diameter, with one possible exception, is planned for use in any of the five cities. The possible exception is for the City of Seymour, where a short segment of nominal 8-inch diameter pipe may be used. No steel pipe will be used at any point between the city gate meter station and the individual service meter/regulators in any of the five cities. City gate regulator/meter stations, appropriately sized clones of those now being installed at each city previously approved for service by SMGC, will be used for each city.

The distribution systems to be constructed for each of the five cities will be designed, constructed, operated and maintained to the same specifications and criteria as those being built in the ten cities previously approved for gas service along the SMGC system. Copies of all construction specifications, welding and polyethylene fusion specifications, O&M manuals, emergency manuals, drug manual, etc. were provided

to the MPSC as part of the voluminous submissions in Case No. GA-94-127 and are incorporated herein by reference. Updates of these manuals and specifications are periodically provided to the MPSC and will be equally applicable to the distribution systems proposed for these five cities.

Table 2 gives updated test pressures and maximum allowable operating pressures (MAOPs) for the in-house piping now planned for use by SMGC. After on-site surveys, Tartan has concluded that most, if not all, existing in-house propane piping can be cost effectively replaced as part of the conversion to natural gas process. Replacement of propane piping will give uniformly and appropriately sized in-house piping in the majority of SMGC's customer base and will eliminate the labor consumptive selective replacement of frequently too small propane pipe segments and well as the time consuming location and repair of existing propane piping leaks. Complete piping replacement is made feasible through the availability and cost effectiveness of "gas-yellow" flexible, corrugated, vinyl clad stainless steel tubing that is industry and AGA (American Gas Association) approved for use as in-house natural gas piping. The need for only relatively short runs of this robust tubing in the typical house combined with its ease of installation and requirement for essentially no fittings other than end connectors make the tubing the material of choice for SMGC's upgrading of in-home piping. This selection is especially obvious when compared to the fitting, tooling and labor consumptive installation of rigid "black" steel pipe otherwise typical of in-house gas piping. The typical household conversion from propane to natural gas can be accomplished using stainless steel tubing within the same \$200 per conversion budget previously approved for SMGC.

SMGC now plans to use a 14-inch WC (water column) in-house MAOP piping pressure. This pressure is within the approved pressure rating of household appliances gas regulation/control valves and eliminates the need for the individual appliance regulators required for the previously planned two-pound (2 psig) in-house piping system. Use of the 14-inch WC MAOP also allows the downsizing of in-house

pipng, especially for higher loss corrugated tubing such as the vinyl clad stainless steel tubing proposed for use by SMGC. The combination of reduced tubing/end connector size (typically 1/2-inch versus 3/4-inch) and cost plus the ease of tubing installation and elimination of a 2-pound to 4-ounce regulator on each appliance all support the use of the 14-inch WC in-house piping MAOP. The in-house piping conversions for these five cities are proposed, and will be, absolutely consistent with conversions to be done in the ten previously approved SMGC cities.

Demand

Demand estimates for these five cities are addressed in Tables 3 and 4A/4B/4C. Table 3 shows demand for the five cities as estimated in the original feasibility study. That study called for a residential demand at the end of year 3 equalling 112,613 MCF/year. The original study used logically derived percentage multipliers to estimate annual commercial (44.2%) and industrial (58%) demand for the then-proposed SMGC system. These estimates were not made individually for these five cities, but applying these percentages to the above residential demand at the end of year three yields 49,775 MCF/year for commercial demand and 65,315 MCF/year industrial demand. It should be noted that these percentage multipliers were statistical and were based on a relatively large population; these were noted during Case No. GA-94-127 as not being particularly applicable to the smaller SMGC communities where the presence or absence of a single large commercial or industrial user could greatly skew the statistics. Since these five cities are or are among the five smallest for the SMGC system, the total demand estimate determined from the original feasibility study should be viewed as a maximum demand estimate.

Table 4A gives the current demand estimate. It is based on actual propane tank counts taken in May 1995 and assumes 90% of in-city propane users convert to natural gas within three years of gas service becoming available. These assumptions yield an end of year 3 residential demand equalling 137,070 MCF/year. Reviewing

Dun and Bradstreet-Duns Market Identifiers database yields commercial activity counts for each of the five cities and allows both the exclusion of propane/oil related activities and the identification of large commercial or industrial activities that have strong natural gas customer potential. Assuming 70% conversion of commercial activities at the end of year three with a conservative typical 150 MCF/year (50% greater than a typical residential customer) consumption per customer yields a commercial demand equalling 42,105 MCF/year. Direct contacts with three identified potential industrial or large commercial customers yields hydrocarbon energy consumption equivalent to 32,956 MCF/year.

Table 4B totals residential, commercial and industrial demands by city and yields a five city total demand equal to 212,131 MCF/year. As in the original feasibility study, no specific allowance has been made for the near-term conversion of electric or wood heating residential customers to natural gas, although residential contacts made with SMGC indicate that several such conversions are likely when gas becomes available.

Table 4C summarizes various database information (D&B and Strategic Mapping, Inc.) to demonstrate the upside market potential for these five cities. Using information summarized by zip code region (i.e., the individual geographic areas having a given zip code), area commercial activity counts are confirmed and the populations closely surrounding the corporate limits of the five cities are presented. The most striking upside potential arises from the surprisingly dense population surrounding Rogersville (8-to-1 versus corporate limits population and the more typical 3-to-1 for other cities along the SMGC system). This population's enthusiasm for natural gas is further evidenced by the numerous contacts SMGC is receiving, as system trunk pipeline construction progresses in the area, along the lines of "When will gas service be available?" and "How can I sign up for it?"

To summarize the estimated demand study for these five cities, there are no substantive differences from the information presented in the original feasibility study

and factored into Tartan's planning since inception. These five cities offer attractive, small incremental markets for a distribution system that is already passing through the area. Local enthusiasm for natural gas gives a high likelihood that this market will be realized given competitive pricing with propane and good service response. As for the remainder of SMGC, farm taps will be reviewed, justified and addressed on an individual basis based on installation costs versus demand.

Engineering Cost Estimate

The original feasibility study estimated cost for the distribution system in the five cities to total \$2,245,000 predicated on 1,150 residential customers. Using a current residential customer count estimate of 1,371 and using current SMGC materials and contractor quotes, the total estimated costs for the five cities are \$2,984,667. Table 5 gives the individual cost estimate per city. Note that these estimates are extrapolations from the detailed estimates prepared for polyethylene distribution construction and propane-to-natural gas conversions in seven cities during SMGC's 1995 construction season.

The original study provided tentative distribution piping grids superimposed on city map backgrounds for the original ten cities approved for SMGC. These preliminary grids, prepared by map and aerial photo analysis with selected on-site checks, proved of limited worth (and less accurate than a well reviewed extrapolation) relative to the later detailed construction maps that have been prepared showing the actual proposed piping locations and the location of all identified propane tanks in each city. Propane tank locations have been mapped for each of these five cities and a tentative piping grid discussed but, due to the expense involved in drafting construction drawings on AutoCad and plotting all propane tank locations, further construction drawing work is being deferred until the Fall of 1995 when such work is also to be completed for the SMGC 1996 construction season. This work, as well as all project management and subsequent operation and maintenance, will be performed to the same

specification, attention to detail, etc. and by the same management team members as the work performed for the 1995 SMGC construction season.

Project Economics

Table 6 gives forecast customer counts, annual demand, investment, revenue at existing tariffs (& without gas cost PGA), annual operating expenses and operating income before taxes. As can be seen, the addition of these five cities, which involves the installation of NO additional trunk pipeline, generates an attractive before tax operating income at existing tariffs. Since the demand associated with these five cities is relatively small overall, SMGC proposes to lump this investment with the investment otherwise being made in SMGC during 1995 and 1996 and to use existing tariffs without any modifications other than the addition of these five cities and the Greene County service area extension into SMGC's approved service area. No specific assumptions were made in preparing this economic summary relative to financing or interest expense, with this being equivalent to assuming the use of company (equity) funds for these five additional cities. If financing is required at a later date, this issue would be addressed specifically in an Application for approval of additional debt placement.

CONCLUSION

As can be seen from the original Feasibility Study and the data given herein, the addition of each of the five additional cities of Rogersville, Fordland, Diggins, Seymour and Norwood to the SMGC service area contributes positively to the overall SMGC system economics. SMGC's already approved service area surrounds each of these cities on all sides, each city has granted a natural gas distribution franchise to Tartan, and ratification votes have been completed in the four largest cities with Diggins to be completed during the Summer of 1995. SMGC trunk pipeline construction is

underway in the vicinity of each of these cities and has aroused considerable local enthusiasm. SMGC will be conducting late 1995 and year-long 1996 distribution construction activity in the vicinity of each of these cities and these five relatively small cities can be provided gas service most economically by integrating their systems' construction fully into SMGC's other on-going activity for late 1995 and 1996.

Numerous local requests for future farm taps have been accommodated by Tartan's request for the narrow SMGC service area to be extended seven miles westward along the trunk pipeline route in Greene County to the SMGC system origin point. All issues relevant to providing service to these five cities, including conversion incentives, were thoroughly explored, as well as aggressively challenged by Conoco, Inc. and various groups of local propane dealers, during the recent Case No. GA-94-127. While the demand to be served in these five small cities plus the Greene County service area extension is small relative to the remainder of SMGC, these citizens and potential customers are asking for natural gas and SMGC now is in the business of providing this service in the area. The MPSC is thus requested to approve this incremental, low risk addition to the overall SMGC system and make natural gas available to these five communities plus farm tap customers in south-central Missouri.

Name: _____
 Title: _____

Distribution Pipe Specifications (1):
Table 1

Nominal Pipe Size	O.D. (in.)	SDR	Min. Wall (in.)	Min. Burst Pressure (4) (psig)	Design MAOP (psig)	SMGC MAOP (3) (psig)	Test Pressure for SMGC MAOP (psig)
3/4"	1.080	11	0.085	260	60	60	114
1"	1.315	11	0.120	260	60	60	114
2"	2.375	11	0.216	260	60	60	114
3"	3.500	11.5	0.304	238	76	60	114
4"	4.500	11.5	0.366	238	76	60	114
6"	6.625	11.5	0.576	238	76	60	114
8"	8.625	11.5	0.700	238	76	60	114

- Notes: 1 Information typical for Chevron Plasco PE2405 series medium density polyethylene pipe
 2 SDR = Standard Dimension Ratio (O.D./Min. Wall)
 3 Poly piping (exit of city gate meter/regulator station to service regulator inlet) will have MAOP of 60 psig
 4 Using long-term hydrostatic strength = 1260 psig @ 73 degrees F

In-House Piping:
Table 2

MAOP (& typical operating pressure): 14 inches W.C.
 Test Pressure: Minimum: 5 psig for 20 minutes
 Maximum: 10 psig for 20 minutes

Typical Materials: Cast & Machined steel & brass fittings
 3/4" or 1" Black steel pipe
 3/8"-1/2"-3/4"-1" Victrolux and/or Tufflex corrugated stainless steel tubing

Original Estimated Demand:
Table 3

Data from Original Feasibility Study (Exhibit F6-17):

City:	1990 Population:	Estimated Residences: (see note #1)	Estimated # Conversions @ End Yr. 3: (see note #2)	Estimated Residential Demand/City @ End Yr. 3: (MCF/YR) (see note #3)	Commercial Demand per City @ End Yr. 3: (MCF/YR) (see note #4)	Industrial Demand per City @ End Yr. 3: (MCF/YR) (see notes #5/6)	Total Demand per City @ End Yr. 3: (MCF/YR)
Rogersville	985	415	290	29,021	12,827	16,532	68,680
Fordland	523	218	153	15,254	6,742	6,847	30,844
Diggins	298	106	75	7,525	3,326	4,365	15,216
Seymour	1636	682	477	47,717	21,091	27,678	96,483
Norwood	449	187	131	13,096	5,768	7,596	26,460
	3861	1,609	1,126	112,613	49,775	65,315	227,702

- Notes: 1 Assuming 2.4 residents per household
 2 Assuming 70% household conversion rate
 3 Assuming 100 MCF/Yr demand per household
 4 Assuming commercial demand = 44.2% of residential demand
 5 Orig. study used all industrial vol. = 66% of all residential vol. w/ only 1 actual identified industrial user in Seymour;
 6 Was noted that industrial density in the five small cities would probably be lower than average for SMGC system

**Current Estimated Demand
Table 4A**

City:	Actual May 85 Propane Tank Counts (see note #1)	Est. Residential Conversions @ End Yr. 3: (see note #2)	Est. Res. Demand @ End Yr. 3: (MCF/YR)	Est. # Commercial Activities (see note #3)	Est. Comm. Demand @ End Yr. 3: (MCF/YR) (see note #4)	Est. # Indus. tot Activities (see note #5)	Est. Indus. Demand @ End Yr. 3: (MCF/YR) (see note #6)
Rogersville	364	346	34,600	105	17,325	1	5,475
Fordland	236	214	21,420	50	5,250	0	0
Diggins	74	67	6,680	3	315	0	0
Seymour	630	657	65,700	125	13,125	2	27,451
Norwood	197	177	17,700	55	6,060	0	0
	<u>1529</u>	<u>1,371</u>	<u>137,070</u>	<u>401</u>	<u>42,105</u>	<u>3</u>	<u>32,956</u>

- Notes:
- 1 Includes an add'l. 65 tanks, excluding those in Leesbrooke, that are immediately outside city limits of Rogersville
 - 2 Assuming # of customers = 90% of propane users convert to natural gas within 3 years; no electric user conversions
 - 3 Per D&B - Duns Market Identifiers for each city (inc. churches, schools & Post Office; exc. propane/oil dealers)
 - 4 Conservative assumption = 70% conversions @ end year 3 w/ ea. customer = 150 MCF/Yr
 - 5 Per D&B - Duns Market Identifiers (May 1985)
 - 6 Potential demand from three specific industrial or large comml. propane users per 1984 actual energy consumption
 - 7 No farm taps included

**Estimated Demand Summary
Table 4B**

City:	Total Est. Demand (MCF/Yr)	Average Daily Demand MCF/Day (see note #7)	Est. Peak Daily Demand MCF/Day (see note #8)
Rogersville	57,300	157	629
Fordland	28,670	73	292
Diggins	6,970	19	75
Seymour	97,300	267	1,066
Norwood	23,830	65	261
	<u>212,131</u>	<u>581</u>	<u>2,325</u>

- Notes:
- 7 MCF/Yr divided by 365 days per yr
 - 8 Usage peaking factor equal to 4 per MP&C Staff opinion for conservative peaking factor in a-o MO

**Demand Related Comparison Data
Table 4C**

Note that all data in Table 4C is from D&B Information Services and Strategic Mapping, Inc. and is tabulated by zip code region

Zip Code Region	Zip Code	Tot. # Mfg. Firms 1983	Tot. # Retail Firms 1983	Tot. # All Firms 1983	Tot. # All Employees 1983
Rogersville	65742	6	46	192	753
Fordland	65852	1	15	53	226
Seymour	65746	15	47	154	1306
Norwood	65717	3	7	61	221

Zip Code Region	1980 Population	1980 Population	Est. 1988 Population	1980 Households	1983 Households	Est. 1988 Households
Rogersville	6760	6768	8641	3213	3373	3685
Fordland	2080	2082	2112	605	612	630
Seymour	4746	4968	5082	1635	1667	1708
Norwood	1035	1035	1704	557	566	626

Official 1980 US Census Pop. Inside City Limits
665
523
1638
440

**Engineering Cost Estimate
Table 5**

City:	Original Feasibility Study (from Exhibit F3-10)		Current Cost Estimate	
	Est. # Services	Estimated Cost (see note #1)	Est. # Services	Estimated Cost (see note #2)
Regersville	298	\$380,000	348	\$753,242
Purdum	199	\$308,000	214	\$465,975
Diggins	77	\$180,000	97	\$145,859
Seymour	467	\$650,000	567	\$1,234,359
Norwood	134	\$260,000	177	\$385,329
	<u>1,180</u>	<u>\$2,246,000</u>	<u>1,371</u>	<u>\$2,984,967</u>

Notes: 1 Extrapolated # based on assumed \$1,943 average cost per service
2 Assumes \$2,177 avg. cost/service from actual 1995 Phase 1 SMGO distribution construction estimates

**Project Economics
Table 6**

Average # Customers:	← Operations →		
	Year 1	Year 2	Year 3
Residential	946	1,217	1,352
Commercial	81	104	110
Industrial (or Large Comm'l.)	1	2	3
	<u>1,028</u>	<u>1,323</u>	<u>1,465</u>
Annual Demand:	← MCF/Year →		
	Year 1	Year 2	Year 3
Residential	47,344	91,267	132,535
Commercial	15,147	29,212	42,411
Industrial (or Large Comm'l.)	11,300	21,009	31,808
	<u>73,651</u>	<u>142,409</u>	<u>206,754</u>
Investment (\$000):	Year 1	Year 2	Year 3
Existing	\$0	\$2,526	\$2,019
Residuals	\$2,090	\$354	\$0
Ending	\$2,090	\$2,882	\$2,009
- Depreciation	(962)	(969)	(969)
	<u>\$2,526</u>	<u>\$2,019</u>	<u>\$2,004</u>
Income Statement (\$000):	Year 1	Year 2	Year 3
Revenue (w/o gas cost PGA):	\$558	\$630	\$645
Operating Expenses (w/o PGA):			
O&M + Admin.	(\$100)	(\$125)	(\$125)
Depreciation	(962)	(969)	(969)
	<u>\$404</u>	<u>\$532</u>	<u>\$505</u>

TARTAN ENERGY COMPANY, L.C.

dba

SOUTHERN MISSOURI GAS COMPANY

FEASIBILITY STUDY

FILED
JAN 4 1994
MISSOURI
PUBLIC SERVICE COMMISSION

EXHIBIT 4

DECEMBER 1993

SOUTHERN MISSOURI GAS COMPANY

FEASIBILITY STUDY

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SOUTHERN MISSOURI GAS COMPANY

FEASIBILITY STUDY

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SYSTEM DEMAND

Residential

Excluding Greene County, which is traversed by Tartan's SGMC project only to obtain a Springfield area gas supply, the five counties in which SMGC proposes to serve various communities have historical 1970 and 1980, as well as current 1990, census populations as given in Table I below. The column labeled "Assumed Growth %" shown at below right is the trended growth percentage assumed by Tartan for each county.

<u>County</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>Assumed Growth %</u>
Webster	15,562	20,414	23,753	1%
Wright	13,667	16,188	16,758	1%
Douglas	9,268	11,594	11,878	1%
Howell	23,521	28,807	31,447	1%
Texas	18,320	21,070	21,478	1%
Total Population	80,338	98,073	105,310	

TABLE I -- COUNTY POPULATION & GROWTH TREND

The ten cities for which Tartan has franchises have respective 1990 populations as given below. For purposes of this demand study, numbers of households in each of the cities were uniformly estimated by dividing the city population by the average number of residents per household in the State of Missouri (approx. 2.4; per census extrapolation for each year 2,000). The following Table II summarizes the number of households by city with historical and current population for the Highway 60/63 project service area:

<u>City</u>	<u>1970 Pop.</u>	<u>1980 Pop.</u>	<u>1990 Pop.</u>	<u>#Households¹⁹⁹⁰</u>
Mansfield	1,056	1,423	1,429	595
Marshallfield	2,961	3,871	4,374	1,822
Ava	2,504	2,761	2,938	1,224
Mountain Grove	3,377	3,974	4,182	1,742
Cabool	1,848	2,090	2,006	836
Willow Springs	2,015	2,215	2,038	849
West Plains	6,893	7,741	8,913	3,714
Mountain View	1,320	1,664	2,036	848
Houston	2,178	2,157	2,118	883
Licking	<u>1,002</u>	<u>1,272</u>	<u>1,328</u>	<u>553</u>
	25,154	29,168	31,362	13,066

TABLE II -- CITY POPULATIONS AND ESTIMATED NUMBER OF HOUSEHOLDS

Informal polling of various of the above city governments in late 1992 through 1993 yielded empirical confirmation of the Table II approximation of household (residences) counts. The confirming counts were usually based on number of electrical utility services and/or water services with estimated adjustments for multifamily housing. The counts generally agreed within +/- 10% of these uniformly calculated estimates of number of households, with the above calculated numbers typically being slightly conservative. Exhibit FS-15 MISC. COMPARISON DATA summarizes various of the data used in part for household count confirmation.

For a calculated estimate of the number of households that would be natural gas customers in the franchised cities (i.e., convert to natural gas for heat and/or other use), a conservative industry average would be 70% of all households to which natural gas is available, including 90+ % of all households which use propane or fuel oil for heating, within three years of the gas first becoming available. The three year

timeframe assumes a reasonable gas marketing effort by the local distribution utility with some subsidy of customer conversion costs (see Exhibit FS-16 CONVERSION INCENTIVE PROGRAM SUMMARY for Tartan's proposed SMGC conversion incentive plan). Using the 70% conversion percentage, the estimated number of natural gas customers per franchised city after three years is given in Table III below.

City	Initial Estimate of NG Customers	Counted # of Propane Tanks*	Estimated # Propane Tks.
Mansfield	416	N/A	450 ***
Marshfield	1,275	N/A	1,250 ***
Ava	856	N/A	850 ***
Mountain Grove	1,219	N/A	1,200 ***
Cabool	585	683	683
Willow Springs	594	595	595
West Plains	2,599	2,010	2,010
Mountain View	593	626	626
Houston	618	** 600+	625
Licking	387	N/A	375 ***
	9,142	4,514	8,664

TABLE III -- ESTIMATED NG CUSTOMERS VS. PROPANE TANK COUNT

Note: * Propane tank counting proved to be a time consuming undertaking; with reasonable confidence in the counts for five of the original cover cities that were the nucleus of the Highway 66/63 project, only noncomprehensive drive-around surveys were conducted in cities that were later added to the nucleus group. Mansfield has a propane tank density (if tanks per # houses) roughly equivalent to Cabool; Marshfield has a higher density than West Plains, but somewhat less than Cabool; Ava and Mountain Grove tank density are roughly equivalent to Willow Springs or Mountain View.

** Two tank counts were available for Houston; the original count totaled 792, but is believed to have included commercial and outside city limits tankage.

*** These are estimated propane tank counts by analogy with counted cities of comparable tank density.

When estimating the actions of a population, arbitrary use of typical "Industry" percentages, such as the 70% conversion rate cited above, however valid these may be elsewhere, sometimes can yield very misleading results. To make the use of a 70% household conversion rate less arbitrary, Tartan sought substantiation via

multiple data sources. First, where available, counts of existing propane tanks were reviewed; given competitive pricing, Tartan has high confidence that 90+ % of typical residential propane users will convert to natural gas when it becomes available. Propane tank counts, where available, for the various franchised cities are listed opposite the estimated household conversion rate in Table III above.

It can be seen from Table III that the estimated propane tank count, based directly on counts or reasonably analogous estimates and with the high confidence assumption of a relatively high propane user conversion rate, plus any minimal allowance for fuel oil, wood heat and other conversions, supports Tartan's 70% estimate for household conversions. An exception might be in the case of West Plains.

Interface with West Plains city government revealed that most new home construction there within the past 10 years has been all-electric, thus further substantiating both the relatively lower propane tank count and the need for an adjustment in Tartan's initial household conversion estimate (see footnote below). On the basis of largely all-electric home construction in recent years, the West Plains estimate of household conversions within the first three years was reduced to 2,228 (i.e., 60% conversion rate) for purposes of this demand study.

Footnote:

The typical all electric home tends itself less well to conversion to natural gas than do homes heated by propane or fuel oil. The all electric home conversion process is generally more expensive, with major equipment replacement, piping and venting required versus only utility or burner replacement plus piping test or upgrade that is typical of the non-electric home conversion. It is reasonable to assume, however, that when an all-electric home does require major heating system equipment or appliance replacement and when natural gas is available, that in a significant percentage of such cases a conversion will be made to natural gas for at least a part of that home's energy needs.

Additional support of the 70% household conversion rate anticipated by Tartan was taken directly from the November 2, 1993 franchise ratification votes in 7 cities (summarized in Exhibit FS-15 MISC. COMPARISON DATA). Of 2,339 total votes cast, 1,588 voted yes versus 751 no votes for a 67.9% endorsement of natural gas in the seven cities. This level of endorsement came despite the vote being held on a day of extremely inclement weather, with few or no additional issues on the various city ballots, and despite a major, last minute, opposition publicity campaign mounted by local propane interests.

In one specific instance, Tartan believes that ratification of the Cabool franchise (which allowed the city the option of constructing its own natural gas distribution system as described elsewhere in this study) was successfully deflected in the voter's viewpoint from being a ratification of natural gas becoming available in the city into a vote on whether the local citizens wanted the city of Cabool to be in the natural gas business. Cabool was the only franchise not ratified in the November 1993 election, with a vote count of 168 yes versus 169 no. A second ratification vote is planned in Cabool in February 1994, to be preceded by better public education concerning the benefits of natural gas and the nature of the franchise. Removing the Cabool results from the November 1993 total vote tally would yield 2,004 total votes, with 1,422 yes and 582 no for a 71.0% natural gas endorsement.

As a third analogous confirmation of Tartan's anticipated conversion rates, the most recently converted city closest to the Tartan's SMGC Highway 60/63 project

was scrutinized. In the City of St. James, Missouri, the September 1992 first availability of natural gas, the same distribution project management firm (Utter and Associates, Inc.) as that to be used by Tartan for SMGC, and a strong natural gas marketing effort have led to conversion rates of 62.5%, (1,300 total homes with 924 on propane; 758 homes converted of a total 812 signed up through December 1993) with 80+% of propane homes converting, within the first 16 months of gas availability.

A fourth and final confirmation was taken from a review of previous natural gas feasibility studies performed by third party consultants for various cities in Missouri (including some cities that will be part of Tartan's SMGC project). A total of six studies were reviewed; household conversion rate assumptions ranged from 50% to 78% in this group of studies, with these assumptions supported by a wide variety of sources, including direct sampling and/or polling of the local populations. Tartan is confident that its assumption of a 70% household conversion rate in three years for the SMGC Highway 60/63 project is both valid and conservative.

Average demand (i.e., consumption of natural gas) per residential customer was estimated using Missouri-specific data from the Natural Gas Annual 1991 ("NGA 1991"; compiled by the Energy Information Administration, Office of Oil & Gas, Reserves and Natural Gas Division, U.S. Dept. of Energy, Washington, D.C. 20585). The five years of Missouri residential and commercial consumption data (average annual consumption per residential or commercial consumer) presented therein are as follow in Table IV:

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Residential	96	107	107	96	100
Commercial	602	652	632	565	537

(data given in MCF per consumer; MCF = Thousand Cubic Feet)

TABLE IV - MISSOURI RESIDENTIAL/COMMERCIAL CONSUMPTION HISTORY

For purposes of this demand study, Tartan elected to assume an average annual consumption per residential consumer (i.e., household) of 100 MCF. A confirmation review using textbook values for average winter heat load (and annual other-use load) per degree day (using Springfield NOAA degree day data) for the Springfield to West Plains area was made to support this NGA-1991-based assumption (Note: The NOAA and AGA Springfield heating degree day data used is that given in Exhibit FS-17 DEMAND FORECAST, page 3, Section 5). Lastly, information from recent Laclede Gas Company annual reports was reviewed to elicit comparison data for the St. Louis area (e.g., in 1991, the average annual consumption per residential customer for Laclede's service area during the previous 10 years was 111 MCF). Tartan's 100 MCF per residence assumption is believed both valid and conservative.

Section 1 of Exhibit FS-17 DEMAND FORECAST gives residential demand forecasts by city for the first 10 years of the SMGC project. This exhibit uses residential demand growth rates of 1.3% for each city. These are based on historical population trends (from Table II data; supported by trends as given in Table I) and current forecasts of individual city growth plus an allowance for continued existing home conversions to natural gas. This section shows conservative Years 3, 5 and 10 residential demand to be 990,200, 1,015,429 and 1,081,367 MCF per year, respectively.

Commercial

Commercial demand was evaluated in two ways for purposes of this study. Studies published by the American Gas Association note commercial demand on average equaling approximately 38% of residential demand. Applying this percentage to the Residential Demand totals of Section 1 of Exhibit FS-17 DEMAND FORECAST and using a somewhat more conservative aggregate commercial growth rate of 1.0% per year (i.e., post-year-3; as a region versus an individual city basis), a forecast of commercial demand for the same time period was produced. This forecast is included in Section 2 (1st calculation) of Exhibit FS-17 DEMAND FORECAST.

Faced with the use of another "industry" percentage, albeit a well supported one, to forecast commercial demand, Tartan reviewed other Missouri-specific information included in the NGA 1991. Numbers of commercial versus residential consumers for Missouri in the years 1987 through 1991 were reviewed, as given in Table V-a below, on a percentage basis. Total commercial consumption in Missouri versus total Missouri residential consumption, as a percentage for each of the years 1987 through 1991, were also reviewed, as given in Table V-b following. As can be seen from Table V-b, the average commercial vs. residential consumption percentage for Missouri during the 1987-1991 timeframe was 50.4%, which is significantly higher than the typical 38% average value published by the AGA. The product of this Missouri-specific 50.4% commercial vs. residential consumption times the residential consumption forecast for the SMGC Highway 60/63 project is given in Section 2 (2nd calculation) of Exhibit FS-17 DEMAND FORECAST.

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Commercial (x1000)	97	96	100	105	118
Residential (x1000)	1,181	1,195	1,209	1,213	1,211
% #Comm./#Res.	8.2%	8.0%	8.3%	8.7%	9.7%

TABLE V-a -- NUMBER OF COMMERCIAL AND RESIDENTIAL USERS

Commercial (x10 ⁴)	58,205	63,839	63,039	58,367	63,191
Residential (x10 ⁴)	116,050	128,317	129,144	115,950	120,680
% #Comm./#Res.	50.2%	49.8%	48.8%	50.3%	52.4%

TABLE V-b -- MISSOURI COMMERCIAL VS. RESIDENTIAL CONSUMPTION

Tartan has averaged the demands generated by both the typical industry 38% value and the Missouri-specific 50.4% value to produce for this feasibility study what is believed to be a very conservative forecast of future commercial gas consumption equaling 44.2% of residential gas consumption in Years 1 through 3, with 1% annual growth thereafter. Review of the Missouri-specific percentage of commercial vs. residential customers given in Table V-a above versus the data shown in Exhibit FS-15 MISC. COMPARISON DATA gives further support for Tartan's 44.2% forecast. This forecast produces Year 3, 5 and 10 commercial demands of 437,748, 446,547 and 409,325 MCF per year, respectively.

Industrial

Industrial demand generally defies broad percentage forecasting, since actual use is highly dependent on industry location, whether process gas is involved and

specific plant type (a plant can use gas in amounts ranging from minimal to enormous depending on the type of product or manufacturing involved). The availability of Missouri-specific historical data for industrial vs. residential natural gas consumption, however, does provide a basis for a tentative beginning estimate of industrial consumption for the SMGC Highway 60/63 project. Table VI below gives Missouri industrial vs. residential consumption for the years 1987-1991, as well as yearly industrial/residential percentages. An average industrial consumption for Missouri as a percentage of residential consumption can be seen to be 45.1%. Section 3 (1st calculation) of Exhibit FS-17 DEMAND FORECAST uses this Missouri-specific percentage and conservative 1% annual post-year-3 growth to give a first estimate for SMGC Highway 60/63 project industrial consumption.

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Industrial (btu/yr)	54,326	54,243	53,936	54,536	57,196
Residential (btu/yr)	116,050	128,317	129,144	115,950	120,680
% #Ind./#Res.	46.8%	42.3%	41.8%	47.0%	47.4%

TABLE VI -- MISSOURI INDUSTRIAL VS. RESIDENTIAL CONSUMPTION

To have a higher confidence estimate of industrial consumption, direct identification, survey or polling of potential industrial customers must be undertaken, with due care taken not to classify larger commercial customers as being in the industrial category. To date, Tarten has identified high probability industrial usage

along the proposed SMGC system that totals 580,000 MCF per day at the end of year 3. This demand is spread between at least five separate city locations and by no means represents a complete polling of all potential industrial rate customers for the project.

Section 3 (2nd empirical determination) of Exhibit FS-17 DEMAND FORECAST includes this identified near-term industrial demand. An annual growth rate of 1.0% is forecast by Tartan for this demand post-year 3. To ensure that the industrial demand assumed for this demand study is adequately conservative, the product of the first Missouri-percentage-based industrial demand calculation and the somewhat higher result of the identified industrial demand were averaged to give the industrial demand numbers shown in Section 3 of Exhibit FS-17 DEMAND FORECAST.

Peak Demand Assessment

Design and sizing of the SMGC trunk pipeline and distribution systems in the various cities require that peak loading (i.e., the maximum hourly and daily rate of gas consumption) be considered as well as the average daily amounts of gas consumption. Section 4 of Exhibit FS-17 DEMAND FORECAST also includes Tartan's forecasts of residential seasonal peak loading due to varying heat loads, plus normal non-heating loads and routine load factor fluctuation between average and peak daily commercial (varying heat and business hour loads) and industrial (varying production processes, heat loads and operating hours) demand rates. Using Tartan management experience, the American Gas Association (AGA) Gas Engineer's Handbook (1st Ed., 1965, 9th

The preliminary SMGC manpower budget also is given in Table VII. Detailed plans will continue to be developed up to and during the construction process concerning the timing of staffing decisions and, in some cases, whether to contract out or provide in-house service capability(s). Also influencing SMGC's final employee organization and O&M budget will be the decisions by the individual cities concerning whether to own and operate municipal distribution systems or to allow Tartan to provide gas distribution via franchise. These preliminary estimates, however, do provide for the flexibility to make certain that adequate response personnel are available at all times and that customer service needs are always met.

CONVERSION INCENTIVE PROGRAM

The SMGC investment in its proposed five county service area will generate acceptable returns for the investors only if sufficient customers use natural gas. Tartan expects that the majority of system customers will be those that connect to the system within the first two years of gas availability. To foster a rapid buildup of customers, SMGC will provide natural gas service connections and appliance conversions at no cost to the customer during the first 24 months after natural gas service becomes available in a community. Additionally, in-house piping will be tested and revitalized and, in some cases, appliances modified or upgraded (at-cost) as needed, to ensure safe natural gas service in the most convenient manner for the customer. A cost-neutral appliance purchase plan also will be available for those customers needing or wishing to purchase new gas appliances.

Exhibit FS-16 INCENTIVE PROGRAM SUMMARY gives additional details of Tartan's SMGC conversion incentive program. The average cost of the proposed conversion incentive program subsidies included in the distribution system cost estimates is approximately \$200 per residence. The at-cost or cost-neutral features of the conversion incentive program will entail some minor administrative burden and expense which will be absorbed routinely within Tartan's accounting and administrative structure.

The capital investment required to provide the above discussed programs is proposed to be included in the rate base of the SMGC system. All customers will benefit from this program and all customers will pay for the service over the life of the system. This program provides confidence to the investor that there will be sufficient customers using the system near-term to justify the substantial risk of capital required to bring first time natural gas service to the region.

Inclusion of this program is a corner stone to the approach that will allow a significant area of Missouri to enjoy the benefits of natural gas and make the project risks acceptable to the investor.

ECONOMIC ANALYSIS

The development of economic projections is the tying together of the various study data into yearly revenue and expense statements. The total investment of the system, the operation costs projected for the system, and the total demand for natural

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas transmission line and a distribution system to provide gas service in Pettis and Benton Counties, Missouri, as a new certificated area.)
)
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)
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Case No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. (MGU or Applicant), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity for a gas transmission line and a service area, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU’s principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a “gas corporation” and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, subject to the jurisdiction of the Missouri Public Service Commission (Commission).

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.net

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Green Ridge, Cole Camp, Lincoln and Warsaw, all of which are 4th Class cities located in Pettis and Benton Counties. Green Ridge is located in parts of Sections 1, 2, 11, and 12 in Township 44 N, Range 23 W, and Sections 6 and 7 of Township 44N, Range 22W, all in Pettis County. Cole Camp is located in parts of Sections 25, 26, 27, 34, 35 and 36 in Township 43 N, Range 21 W, all in Benton County. Lincoln is located in parts of Sections 22, 23, 26, 27, 26, 34 and 35 in Township 42 N, Range 22 W, all in Benton County. Warsaw is located in parts of Sections 8, 9, 15, 16, 17, 20 and 21 in Township 40 N, Range 22 W, all in Benton County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission.

LINE CERTIFICATE

6. MGU will utilize an 8" HDPE line to serve these communities. This line will begin at a tap on the Southern Star Central Pipeline transmission line in Section 35, Township 46 North, Range 23 West. The first segment of the line will then proceed south within the right-of-way of Thomas Road for a distance of 1.3 miles, then east within the right-of-way of Highway Y

for a distance of 0.95 miles, then south within the right-of-way of Highway 127 for one mile. This first segment will have no taps or customers served, and for this first segment MGU is requesting a line certificate only. This line will not cross any other natural gas lines or railroad tracks, however, MGU assumes that the line will cross residential electric and telephone lines, for which locates will be obtained through the Missouri One-Call program at the time of construction.

AREA CERTIFICATE

7. From the south end of this first segment, at the intersection of the north line of Section 13, Township 45N, Range 23W and Highway 127, the 8" main line will continue south along Highway 127 one mile, then east one mile, then south nine miles to Highway 52, then east along Highway 52 for 3 and one-half miles, then south along Highway ZZ eleven and one-half miles into the city of Lincoln, where Highway ZZ intersects Hwy 65. The main line then will continue south along Highway 65 for a further nine miles to end at the city of Warsaw. Cole Camp will be served by a 4" HDPE line that will come off the 8" mainline and run east along county roads and Highway 52 to the city.

8. For its entire length, the main 8" HDPE line will lay along Section lines and half-section lines. For the area south of the first segment of the mainline, as described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity (CCN) in the sections immediately on both sides of the line where the it lays along a section line, and in the section through which the line lays and the sections on either side of that section where the line lays along a half-section line. In the areas around the cities, MGU requests that the Commission grant a CCN in the sections within which the towns lie and those sections contiguous to these sections. In addition, Appendix A shows several areas along the route of the

mainline and east of the city of Warsaw that are requested because MGU has determined that either potential commercial or residential customers exist within these sections in sufficient quantity to justify building and operating a line to provide service. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

9. The legal description of the area to be certificated in Pettis County is as follows:

Sections 13, 14, 23, 24, 25, 36 in Township 45 North, Range 23 West

Sections 18, 19, 30, 31 in Township 45 North, Range 22 West

Sections 1, 2, 11, 12, 13, 24, 25, 36 in Township 44 North, Range 23 West

Sections 6, 7, 18, 19, 30, 31, 32, 33, 34, 35, 36 in Township 44 North, Range 22 West

Sections 31, 32, 33 in Township 44 North, Range 21 West

Sections 1, 2, 11, 12, 13, 14 in Township 43 North, Range 23 West

Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 in Township 43 North, Range 22 West

The legal description of the area to be certificated in Benton County is as follows:

Sections 4, 5, 6 in Township 43 North, Range 21 West

Sections 13, 14 in Township 43 North, Range 23 West

Sections 14, 15, 16, 17, 18, 21, 22, 23, 25, 26, 27, 28, 33, 34, 35, 36 in

Township 43 North, Range 22 West

Sections 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 in

Township 43 North, Range 21 West

Sections 2, 3, 4, 9, 10, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34, 35 in

Township 42 North, Range 22 West

Section 36 in Township 41 North, Range 23 West

Sections 2, 3, 4, 9, 10, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 31, 32, 33, 34, 35, 36 in
Township 41 North, Range 22 West

Sections 31, 32, 33, 34 in Township 41 North, Range 21 West

Sections 1, 12, 13, 24 in Township 40 North, Range 23 West

Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27,
28 in Township 40 North, Range 22 West

Sections 3, 4, 5, 6, 7, 8, 9, 10 in Township 40 North, Range 21 West

PROJECT INFORMATION

10. The proposed line certificate route and proposed service area are shown on the map attached hereto as Appendix A.

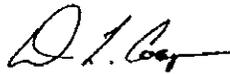
11. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. This feasibility study also includes the following rates that MGU intends to charge in this new CCN area:

Rate Description	Rate
GS Class Customer Charge	\$15.00/month
GS Class Commodity Charge	\$0.550/CCF
CS Class Customer Charge	\$30.00/month
CS Class Commodity Charge	\$0.600/CCF
LVS Class Customer Charge	\$100.00/month
LVS Class Commodity Charge	\$0.600/CCF
TS Class Customer Charge	\$200.00/month

facilities and MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Pettis and Benton Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

Attorneys for Missouri Gas Utility, Inc.

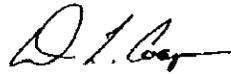
as stated above, MGU seeks only a line certificate in that section.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 14th day of January, 2009:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



Dean L. Cooper

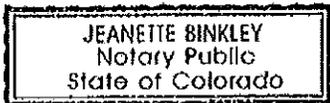
VERIFICATION

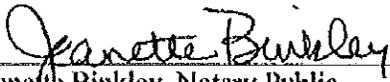
STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 14th day of January, 2009.





Jeanette Binkley, Notary Public

Commission expires 1/4/13

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.net

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Bolivar and Buffalo, which are 4th Class cities located in Polk and Dallas Counties. Bolivar is located in parts of Sections 1, 2, 3, 4, 10, 11, 12, 13, 14 and 15 in Township 33N, Range 23W, and Sections 6 and 7 of Township 33N, Range 22W, all in Polk County. Buffalo is located in parts of Sections 22, 23, 24, 25, 26, 27, 34 and 35 in Township 34N, Range 20W, all in Dallas County. Service will also be provided along Hwy 13 south of Bolivar along the mainline route and between Bolivar and Buffalo along Hwy 32, including areas as shown on Appendix A. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission. MGU does not intend to begin construction on this system until March 2011. The required gas transportation capacity on the Southern Star Central Gas Pipeline transmission line to be accessed will not be available until the summer of 2011.

LINE CERTIFICATE

6. MGU will utilize a 6" steel main pipeline to serve these communities. This line will begin at a tap on the Southern Star Central Pipeline transmission line in Section 23, Township 28 North, Range 23 West. The first segment of the line will proceed east within the

right-of-way of Farm Road 178 for a distance of 0.25 miles, then north within the right-of-way of Farm Road 107 for a distance of 2.2 miles, then continue north in private right-of-way for 0.75 miles. The line will continue north within the right-of-way of Rose Drive for 1.2 miles, then continue north in private right-of-way for 1.8 miles. The line will continue north within the right-of-way of N. Kaylor Drive for 2.1 miles, then turn west within the right-of-way of W. State Hwy EE for 0.4 miles. The line then turns north within the right-of-way of County Road 103 for a distance of 2.4 miles, then turns east within the right-of-way of County Road 94 for 1.25 miles. The line then turns north within the right-of-way of Ross Road for a distance of 1.25 miles, then again turns east for a distance of 0.5 miles within the right-of-way of W. Farm Road 82, then north again within the right-of-way of Farm Road 117 for 1.0 mile. The line then proceeds east and north within the right-of-way of W. State Hwy O for a distance of 2.8 miles to the intersection of Hwy O and Hwy 13. The line then follows the east side of Hwy 13, within the right-of-way, for a distance of 3.8 miles, to a point where it enters the area for which MGU is requesting a CCN in this Case. This first segment will have no taps or customers served, and for this first segment MGU is requesting a line certificate only. This line will cross natural gas distribution lines operated by the City of Springfield Municipal Utilities and by Missouri Gas Energy. It will also cross two sets of railroad tracks operated by Burlington Northern Santa Fe. MGU also assumes that the line will cross residential electric and telephone lines, for which locates will be obtained through the Missouri One-Call program at the time of construction.

7. Missouri Gas Energy holds a certificate for Section 23, Township 28 North, Range 23 West (the location of the Southern Star Central Pipeline tap) and also for various other sections along the first segment of the proposed MGU mainline.

AREA CERTIFICATE

8. From the north end of this first segment, at the intersection of the south line of Section 27, Township 31N, Range 22W and Highway 13, the 6” main line will continue north along Highway 13 for 12 miles, then east 0.5 miles, then north four miles to Highway 32. Bolivar will be served by a 6” HDPE line and a 4” HDPE line originating at this point and proceeding west, south and north to form a loop around the central part of the town. Buffalo will be served by a 6” HDPE line that will proceed east along Hwy 32 and various County Roads for a distance of 16 miles, terminating in a 4” HDPE loop around the central business district of that town.

9. For the area north of the first segment of the mainline, as described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity (CCN) in areas shown in Appendix A. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76.

10. The legal description of the area to be certificated in Greene County is as follows:

Greene County		
<u>Township</u>	<u>Range</u>	<u>Sections</u>
31 North	22 West	15-17, 20-22, and 27-29

The legal description of the area to be certificated in Dallas County is as follows:

Dallas County		
<u>Township</u>	<u>Range</u>	<u>Sections</u>
33 North	20 West	2-10, and 15-21*
34 North	20 West	22-36

The legal description of the area to be certificated in Polk County is as follows:

Polk County		
<u>Township</u>	<u>Range</u>	<u>Sections</u>
31 North	21 West	4-6
31 North	22 West	1-5, 8-10
32 North	21 West	19, 20, and 29-33
32 North	22 West	4-10, 15-30, and 32-36
32 North	23 West	22-27
33 North	21 West	1-14, 23, 24*
33 North	22 West	1-12, 15-21, and 28-33
33 North	23 West	1-5, 8-17, 22-27, 35, 36
34 North	21 West	25, 33-36
34 North	22 West	31
34 North	23 West	32-36

PROJECT INFORMATION

11. The proposed line certificate route and proposed service area are shown on the map attached hereto as **Appendix A**.

12. Attached hereto and marked as **Appendix B** is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. This feasibility study also includes the following rates that MGU intends to charge in this new CCN area:

Rate Description	Rate
GS Class Customer Charge	\$15.00/month
GS Class Commodity Charge	\$0.550/CCF
CS Class Customer Charge	\$30.00/month
CS Class Commodity Charge	\$0.600/CCF
LVS Class Customer Charge	\$100.00/month
LVS Class Commodity Charge	\$0.600/CCF

TS Class Customer Charge	\$200.00/month
TS Class Commodity Charge	\$0.600/CCF

These are the same rates as charged within the remainder of the MGU South Service Area, of which this new area will become a part.

13. MGU intends to finance this project by issuing indebtedness, as evidenced by a mortgage and security agreement that will secure said indebtedness. MGU will seek Commission approval for this financing through a separate application. It is MGU's intent to file that application with the Commission by April 15, 2010.

14. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use the general terms and conditions of service found in MGU's currently approved tariffs, as supplemented by the rates described above.

15. Attached hereto and marked as Appendix C is a list of at least ten persons who reside, or own land, within the proposed service area.

16. MGU has not yet begun to seek commitments from potential customers in the cities or rural areas contained within the CCN requested in this filing. However, MGU does intend to begin these activities by June 1, 2010. Such commitments would be clearly conditioned upon MGU's receipt of the requested certificates.

17. Applicant has obtained franchises from the Cities of Bolivar and Buffalo. Copies of those franchises are attached hereto as Appendix D. If MGU determines that additional franchises are necessary or desirous in regard to this project, it will supplement its filing at a later date in accordance with Commission Rule CSR 240-3-205(2). Applicant will not require any other franchises or permits from municipalities, counties, or other authorities in connection with

the proposed construction other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

18. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. MGU has the ability to provide service in this area by construction of new facilities and MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Greene, Polk and Dallas Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
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Jefferson City, Missouri 65102-0456
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Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

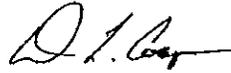
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 22nd day of December, 2009:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



Dean L. Cooper

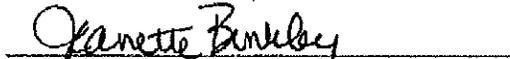
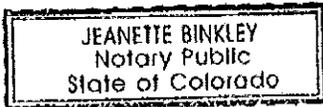
VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 18th day of December, 2009.


Jeanette Binkley, Notary Public

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Pettis and Benton Counties, Missouri, as a new certificated area.)
)
)
) Case No. _____
)
)
)

APPLICATION

COMES NOW Missouri Gas Utility, Inc. ("MGU" or "Applicant"), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity ("CCN") for a gas transmission line and a service area, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, Pettis, and Benton, subject to the jurisdiction of the Missouri Public Service Commission ("Commission").

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.com

and

Michelle A. Moorman
Manager of Regulatory Affairs
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: mmoorman@SummitUtilitiesInc.com

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Pettis and Benton Counties. MGU is requesting approval of installations at several locations, including; 1) Sections 29-32 of Township 40 N, Range 22 W, 2) Sections 4-8, 18 of Township 42 N, Range 21 W, 3) Sections 1, 5, 8 in Township 42 N, Range 22 W, 4) Sections 18, 19, 30 in Township 43 N, Range 20 W, 5) Section 7-9, 13-24 in Township 43 N, Range 21 W, 6) Sections 12, 13, 20, 24, 29, 32 in Township 43 N, Range 22 W, all in Benton County. Sections 3-5, 8-10, 15-17, 20-22, 27-29 in Township 44 N, Range 22 W, and Sections 29, 32 in Township 45 N, Range 22 W are located in Pettis County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission.

AREA CERTIFICATE

6. All sections identified in this filing will be served by 4" HDPE or 2" HDPE taps off of existing MGU lines within the certificate approved in Case No. GA-2009-0264. The lines in all sections follow utility right-of-ways or county or MODOT roads. No other easements are necessary at this time.

7. For the areas described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity in the sections immediately on both sides of the line where it lays along a section line, and in the section through which the line lays. Appendix A shows several sections along the route of the mainline that are requested in order to maintain a contiguous service territory and because MGU has determined that potential commercial or residential customers exist within these sections in sufficient quantity to justify building and operating a line to provide service. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 -- 76. In addition, MGU already has a certificate from the Commission to currently serve areas adjacent to all requested areas in both Pettis and Benton Counties, as shown in Appendix A.

8. The legal description of the area to be certificated in Pettis County is as follows:

Sections 3-5, 8-10, 15-17, 20-22, 27-29 in Township 44 N, Range 22 W

Sections 29, 32 in Township 45 N, Range 22 W

The legal description of the area to be certificated in Benton County is as follows:

Sections 29-32 in Township 40 N, Range 22 W

Sections 4-8, 18 of Township 42 N, Range 21 W

Sections 1, 5, 8 in Township 42 N, Range 22 W,

Sections 18, 19, 30 in Township 43 N, Range 20 W,

Section 7-9, 13-24 in Township 43 N, Range 21 W

Sections 12, 13, 20, 24, 29, 32 in Township 43 N, Range 22 W,

PROJECT INFORMATION

9. The proposed service area is shown (identified as “Filing 1”) on the map attached hereto as Appendix A.”

10. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. The rates for the proposed sections will be those approved in Docket No. GA-2009-0264 and are as follows:

Rate Description	Rate
GS Class Customer Charge	\$15.00/month
GS Class Commodity Charge	\$0.550/CCF
CS Class Customer Charge	\$30.00/month
CS Class Commodity Charge	\$0.600/CCF
LVS Class Customer Charge	\$100.00/month
LVS Class Commodity Charge	\$0.600/CCF
TS Class Customer Charge	\$200.00/month
TS Class Commodity Charge	\$0.600/CCF

11. MGU intends to finance this project by issuing indebtedness, as evidenced by a mortgage and security agreement that will secure said indebtedness, and MGU will seek Commission approval for this financing through a separate application. It is MGU’s intent to file that application with the Commission by May 15, 2010.

12. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use the general terms and conditions of service found in MGU's currently approved tariffs, as supplemented by the rates described above.

13. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

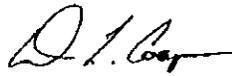
14. MGU has begun seeking commitments from potential customers in the areas contained within the CCN requested in this filing. Such commitments are clearly conditioned upon MGU's receipt of the requested certificates.

15. The Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction for this filing other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

16. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. MGU has the ability to provide service in this area by construction of new facilities and MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Pettis and Benton Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

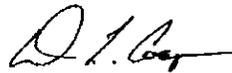
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 19th day of April, 2010:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

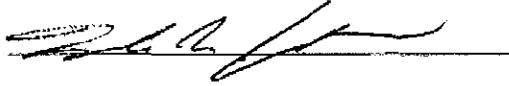
Office of the Public Counsel
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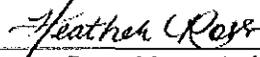
VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 18th day of April, 2010.



Heather Ross, Notary Public

HEATHER ROSS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 01/22/2011

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Pettis and Benton Counties, Missouri, as a new certificated area.)
)
)
) Case No. _____
)
)
)

APPLICATION

COMES NOW Missouri Gas Utility, Inc. ("MGU" or "Applicant"), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity ("CCN") for a gas transmission line and a service area, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, Pettis, and Benton, subject to the jurisdiction of the Missouri Public Service Commission ("Commission").

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.com

and

Michelle A. Moorman
Manager of Regulatory Affairs
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: mmoorman@SummitUtilitiesInc.com

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Pettis and Benton Counties. Two sites were selected; the first includes Sections 26, 27, 33-35 in Township 44 N, Range 23 W in Pettis County and Section 3, 4, and the eastern half of Section 5 in Township 43 N, Range 23 W in Benton County. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission.

AREA CERTIFICATE

6. All sections identified in this filing will be served by 4" HDPE or 2" HDPE taps off of existing MGU lines within the certificate approved in Docket No. GA-2009-0264. The lines in all sections follow utility right-of-ways or county or MODOT roads. No other easements are necessary at this time.

7. For the areas described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity in the sections immediately on both sides of the line where it lays along a section line, and in the section through which the line lays. Appendix A shows several sections along the route of the mainline that are requested in order to maintain a contiguous service territory and because MGU has determined that potential commercial or residential customers exist within these sections in sufficient quantity to justify building and operating a line to provide service. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76. In addition, MGU already has a certificate from the Commission to currently serve areas adjacent to all requested areas in both Pettis and Benton Counties, as shown in Appendix A.

8. The legal description of the area to be certificated in Pettis County is as follows:

Sections 26, 27, 33-35 in Township 44 N, Range 23 W

The legal description of the area to be certificated in Benton County is as follows:

Section 3, 4, and the eastern half of Section 5 in Township 43 N, Range 23 W

PROJECT INFORMATION

9. The proposed service area is shown (identified as “Filing 2”) on the map attached hereto as Appendix A.

10. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. The rates for the proposed sections will be those approved in Docket No. GA-2009-0264 and are as follows:

Rate Description	Rate
GS Class Customer Charge	\$15.00/month
GS Class Commodity Charge	\$0.550/CCF
CS Class Customer Charge	\$30.00/month
CS Class Commodity Charge	\$0.600/CCF
LVS Class Customer Charge	\$100.00/month
LVS Class Commodity Charge	\$0.600/CCF
TS Class Customer Charge	\$200.00/month
TS Class Commodity Charge	\$0.600/CCF

11. MGU intends to finance this project by issuing indebtedness, as evidenced by a mortgage and security agreement that will secure said indebtedness, and MGU will seek Commission approval for this financing through a separate application. It is MGU's intent to file that application with the Commission by May 15, 2010.

12. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use the general terms and conditions of service found in MGU's currently approved tariffs, as supplemented by the rates described above.

13. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

14. MGU has begun seeking commitments from potential customers in the areas contained within the CCN requested in this filing. Such commitments are clearly conditioned upon MGU's receipt of the requested certificates.

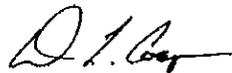
15. The Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction for this

filing other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

16. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. MGU has the ability to provide service in this area by construction of new facilities and MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Pettis and Benton Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
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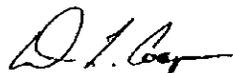
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 19th day of April, 2010:

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Missouri Public Service Commission
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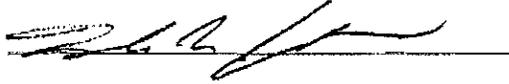
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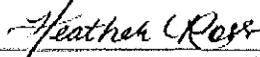
VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 18th day of April, 2010.



Heather Ross, Notary Public

HEATHER ROSS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 01/22/2011

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas distribution system to provide gas service in Pettis County, Missouri, as a new certificated area.)
)
)
) Case No. _____
)
)
)

APPLICATION

COMES NOW Missouri Gas Utility, Inc. ("MGU" or "Applicant"), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity ("CCN") for a gas transmission line and a service area, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, Pettis, and Benton, subject to the jurisdiction of the Missouri Public Service Commission ("Commission").

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.com

and

Michelle A. Moorman
Manager of Regulatory Affairs
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: mmoorman@SummitUtilitiesInc.com

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Pettis County. The site is located in Sections 15-17, 20-22 in township 45 N, Range 22 W. This is an area where MGU currently does not hold a certificate for natural gas service from the Commission.

AREA CERTIFICATE

6. All sections identified in this filing will be served by 4" HDPE or 2" HDPE taps off of existing MGU lines within the certificate approved in Docket No. GA-2009-0264. The lines in all sections follow utility right-of-ways or county or MODOT roads. No other easements are necessary at this time.

7. For the areas described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity in the sections immediately on both sides of

the line where it lays along a section line, and in the section through which the line lays. Appendix A shows several sections along the route of the mainline that are requested in order to maintain a contiguous service territory and because MGU has determined that potential commercial or residential customers exist within these sections in sufficient quantity to justify building and operating a line to provide service. MGU stands ready, if necessary, to serve any potential customers in these sections, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76. In addition, MGU already has a certificate from the Commission to currently serve areas adjacent to all requested areas in Pettis County, as shown in Appendix A.

8. The legal description of the area to be certificated in Pettis County is as follows:
Sections 15-17, 20-22 in township 45 N, Range 22 W

PROJECT INFORMATION

9. The proposed service area is shown identified as “Filing 3) on the map attached hereto as Appendix A.

10. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. The rates for the proposed sections will be those approved in Docket No. GA-2009-0264 and are as follows:

Rate Description	Rate
GS Class Customer Charge	\$15.00/month
GS Class Commodity Charge	\$0.550/CCF
CS Class Customer Charge	\$30.00/month
CS Class Commodity Charge	\$0.600/CCF

LVS Class Customer Charge	\$100.00/month
LVS Class Commodity Charge	\$0.600/CCF
TS Class Customer Charge	\$200.00/month
TS Class Commodity Charge	\$0.600/CCF

11. MGU intends to finance this project by issuing indebtedness, as evidenced by a mortgage and security agreement that will secure said indebtedness, and MGU will seek Commission approval for this financing through a separate application. It is MGU's intent to file that application with the Commission by May 15, 2010.

12. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use the general terms and conditions of service found in MGU's currently approved tariffs, as supplemented by the rates described above.

13. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

14. MGU has begun seeking commitments from potential customers in the areas contained within the CCN requested in this filing. Such commitments are clearly conditioned upon MGU's receipt of the requested certificates.

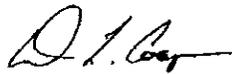
15. The Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction for this filing other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

16. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. MGU has the ability to provide service in this area by construction of new facilities and MGU believes that

potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Pettis and Benton Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
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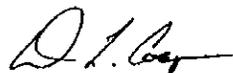
Attorneys for Missouri Gas Utility, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 19th day of April, 2010:

Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101

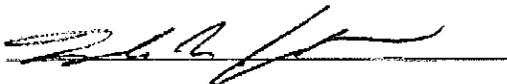
Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101



VERIFICATION

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

I, Timothy R. Johnston, state that I am the Executive Vice President of Missouri Gas Utility, Inc. (MGU); that I have read the above and foregoing document; that the statements contained therein are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of MGU.



Subscribed and sworn to before me this 18th day of April, 2010.



Heather Ross, Notary Public

HEATHER ROSS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 01/22/2011

GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Missouri Gas Utility, Inc., for a certificate of convenience and necessity authorizing it to construct, install, own, operate, control, manage and maintain a natural gas transmission line and a distribution system to provide gas service in Benton County, Missouri as a new certificated area.)
)
)
)
)
)
)
)

File No. _____

APPLICATION

COMES NOW Missouri Gas Utility, Inc. ("MGU" or "Applicant"), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity ("CCN") for a gas transmission line and a service area, respectfully states as follows:

1. Applicant is Missouri Gas Utility, Inc. MGU's principal office is located at 7810 Shaffer Parkway, Suite 120, Littleton, CO 80127.

2. MGU is a corporation duly incorporated under the laws of the State of Colorado. A copy of a certificate from the Missouri Secretary of State that MGU is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2007-0421 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, MGU has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. MGU has no annual report or assessment fees that are overdue.

3. MGU conducts the business of a "gas corporation" and provides natural gas service in the Missouri counties of Harrison, Daviess and Caldwell, Pettis, and Benton, subject to the jurisdiction of the Missouri Public Service Commission ("Commission").

4. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Michelle A. Moorman
Manager of Regulatory Affairs
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: mmoorman@SummitUtilitiesInc.com

and

Tim Johnston, P.E.
Executive Vice President and Chief Operating Officer
Missouri Gas Utility, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: (800) 927-0787
Facsimile: (303) 979-7892
Email: tjohnston@SummitUtilitiesInc.com

SUMMARY

5. MGU proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Benton County. MGU is requesting approval of installations in four (4) sections -- Sections 4, 8-10, in Township 41 North, Range 21 West, all in Benton County. This is an area surrounded by existing MGU service territory, where MGU currently holds a certificate for natural gas service from the Commission.

AREA CERTIFICATE

6. The sections identified in this filing will be served by 2" and 4" HDPE. The Company intends to build an 8.5 mile mainline to connect a chicken farm as well as additional customers along the length of the new mainline. The majority of the new pipe will be in existing territory, however the ideal route for construction crosses the aforementioned section 4. Sections

8, 9, and 10 will allow for natural expansion through the area as the Company continues to reach out to rural customers. The new mainline through this section follows utility right-of-ways, county roads or state highways. No other easements are necessary at this time.

7. For the area described above, MGU requests an order from the Commission granting it a certificate of convenience and necessity. MGU already has a certificate from the Commission to serve areas adjacent to the requested area, as shown in Appendix A. MGU stands ready, if necessary, to serve any additional potential customers in this section, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76

8. The legal description of the area to be certificated in Benton County is as follows:
Sections 4, 8-10, in Township 41 N, Range 21 W

PROJECT INFORMATION

9. The proposed service area is shown on the map attached hereto as Appendix A.

10. Attached hereto and marked as Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. The rates for the proposed sections will be those currently approved and in effect for service provided in MGU's Southern Service Area.

11. MGU intends to finance this project through existing funds and indebtedness.

12. Construction methods will follow MGU's customary standards and the rules of the Commission. MGU plans to use the general terms and conditions of service found in MGU's currently approved tariffs, as supplemented by the rates described above.

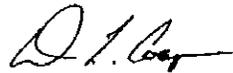
13. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

14. The Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction for this filing other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

15. The area in which MGU is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. MGU has the ability to provide service in this area by construction of new facilities and MGU believes that potential new customers should be afforded the opportunity to take service from MGU if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas transmission line and a distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Benton County, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
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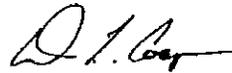
ATTORNEYS FOR
MISSOURI GAS UTILITY, INC.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 9th day of August, 2011:

Lera Shemwell
Missouri Public Service Commission
Governor's Office Building
Jefferson City, Missouri 65102
lera.shemwell@psc.mo.gov
gencounsel@psc.mo.gov

Marc Poston
Governor's Office Building
200 Madison Street
Jefferson City, Missouri 65102
lewis.mills@ded.mo.gov
opeservice@ded.mo.gov



GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of the application of Summit)
Natural Gas of Missouri, Inc., for a certificate of)
convenience and necessity authorizing it to)
construct, install, own, operate, control, manage)
and maintain a natural gas distribution system to) Case No. _____
provide gas service in Pettis County and Benton)
County, Missouri as a new certificated area.)

APPLICATION

COMES NOW Summit Natural Gas of Missouri, Inc. (“SNG” or “Applicant”), by and through its counsel, and as its Application pursuant to §393.170, RSMo (2000), 4 CSR 240-2.060 and 4 CSR 240-3.205, for a certificate of convenience and necessity (“CCN”) for a natural gas distribution system and a service area, respectfully states as follows:

THE APPLICANT

1. SNG is a wholly owned subsidiary of Summit Utilities, Inc., and is a corporation duly incorporated under the laws of the State of Colorado with its principal offices located at 7810 Shaffer Parkway, Suite 120, Littleton, Colorado 80127. A copy of a certificate from the Missouri Secretary of State that SNG is authorized to do business in Missouri as a foreign corporation was submitted in Case No. GA-2012-0285 and is incorporated by reference in accordance with Commission Rule 4 CSR 240-2.060(1)(G). Other than cases that have been docketed at the Commission, SNG has no pending action or final unsatisfied judgments or decisions against it from any state or federal agency or court within the past three (3) years that involve customer service or rates. SNG has no annual report or assessment fees that are overdue.

2. SNG conducts business as a “gas corporation” and a “public utility” as those terms are defined at § 386.020 RSMo and provides natural gas service in the Missouri counties of Harrison, Daviess, Caldwell, Pettis, Benton, Morgan, Camden, Miller, Dallas, Greene, Polk,

Webster, Laclede, Wright, Douglas, Texas, Howell, Stone, and Taney subject to the jurisdiction of the Commission as provided by law.

3. All correspondence, communications, notices, orders and decisions of the Commission with respect to this matter should be sent to the undersigned counsel and:

Martha Wankum
Missouri Regulatory Manager
Summit Natural Gas of Missouri, Inc.
312 East Capitol Avenue
Jefferson City, MO 65101
Telephone: 573-635-9150
Facsimile: 573-635-8285
Cell: 573-317-7863
Email: mwankum@summitutilitiesinc.com

and

Michelle A. Moorman
Director of Regulatory Affairs
Summit Natural Gas of Missouri, Inc.
7810 Shaffer Parkway, Suite 120
Littleton, CO 80127
Telephone: 720-981-2127
Facsimile: 720-981-2129
Cell: 303-478-0329
Email: mmoorman@summitutilitiesinc.com

SUMMARY

4. SNG proposes to install a natural gas distribution system to provide natural gas sales and transportation service in Pettis and Benton County. SNG is requesting approval of installations in thirteen (13) sections -- Sections W ½ 5, 8-10 in Township 43 North, Range 23 West, in Pettis County and Sections 15, 16, 17, 20, 21, 28, 29, 32, 33 in Township 43 North, Range 23 West in Benton County. This is an area adjacent to existing SNG service territory, where SNG currently holds a certificate for natural gas service from the Commission.

AREA CERTIFICATE

5. The sections identified in this filing will be served by 2" and 4" HDPE. The Company intends to build a 4.4 mile mainline to connect to a chicken farm as well as additional customers along the length of the new mainline. SNG will be connecting onto existing 4" HDPE at Elm Branch and Swisher Road and going South into the aforementioned sections of new territory. The new mainline through this section follows utility right-of-ways, county roads or state highways. No other easements are necessary at this time.

6. For the area described above, SNG requests an order from the Commission granting it a certificate of convenience and necessity. SNG already has a certificate from the Commission to serve areas adjacent to the requested area, as shown in Appendix A. SNG stands ready, if necessary, to serve any additional potential customers in this section, under the terms of its Main Extension tariff, as set forth on Sheets 72 – 76

7. The legal description of the area to be certificated in Pettis County is as follows:
Sections W ½ 5, 8-10 in Township 43 N, Range 23 W

8. The legal description of the area to certificated in Benton County is as follows:
Sections 15, 16, 17, 20, 21, 28, 29, 32 and 33 in Township 43 N, Range 23 W

PROJECT INFORMATION

9. The proposed service area is shown on the map attached hereto as Appendix A.

10. Attached hereto and marked as Highly Confidential Appendix B is a feasibility study containing a description of the plans and specifications for the project, to include the estimated cost of construction and an estimate of the number of customers, revenues and expenses during the first three years of operations. The rates for the proposed sections will be those currently approved and in effect for service provided in SNG's Southern Service Area.

11. SNG intends to finance this project through existing funds and indebtedness.

12. Construction methods will follow SNG's customary standards and the rules of the Commission. SNG plans to use the general terms and conditions of service found in SNG's currently approved tariffs, as supplemented by the rates described above.

13. Attached hereto and marked as Appendix C is a list of ten persons who reside, or own land, within the proposed service area.

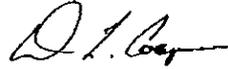
14. The Applicant will not require any additional franchises or permits from municipalities, counties, or other authorities in connection with the proposed construction for this filing other than the usual and customary state highway, railroad and county road permits, which will be obtained prior to construction.

15. The area in which SNG is seeking to be certificated hereby is already developed. Service from a natural gas supplier is not available in this area at the present time. SNG has the ability to provide service in this area by construction of new facilities and SNG believes that potential new customers should be afforded the opportunity to take service from SNG if they so desire. These facts support a finding that a grant of this application is required by the public convenience and necessity.

WHEREFORE, Applicant requests an order from the Commission granting it a certificate of convenience and necessity to construct, install, own, operate, control, manage, and maintain a gas distribution system for the provision of natural gas service to the public pursuant to the proposed rates, and approved rules and regulations, in the Sections listed above in Pettis and

Benton Counties, in the State of Missouri.

Respectfully submitted,



Dean L. Cooper MBE #36592
BRYDON, SWEARENGEN & ENGLAND P.C.
312 East Capitol Avenue
P.O. Box 456
Jefferson City, Missouri 65102-0456
Telephone: (573) 635-7166
Facsimile: (573) 635-3847
Email: Dcooper@brydonlaw.com

ATTORNEYS FOR SUMMIT NATURAL GAS
OF MISSOURI, INC.

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail to the following counsel this 27th day of February, 2013:

Robert Berlin
Office of the General Counsel
Missouri Public Service Commission
Governor State Office Building
Jefferson City, Missouri 65101
Bob.berlin@psc.mo.gov

Marc Poston
Office of the Public Counsel
Governor State Office Building
Jefferson City, Missouri 65101
marc.poston@ded.mo.gov



GR-2014-0086

Feasibility Study has been
deemed “Highly Confidential”
in its entirety

Schedule 2 has been deemed
“Highly Confidential” in its entirety

Office of the Public Counsel

Data Request

Data Request No. 5
Company Name Summit Natural Gas of Missouri, Inc.-Investor(Gas)
Case/Tracking No. GR-2014-0086
Date Requested 4/17/2014
Requested From Dean Cooper
Requested By Marc Poston

Description The Direct Testimony of Mr. James Anderson states at Page 22 that additional risks to common equity investors are created by "a reduction in the competitiveness of the utility's total gas cost compared to all other alternative fuels." Please provide all facts and documents relied upon by Mr. Anderson to support his conclusion that the competitiveness of the Company's total gas cost is reduced as compared to all other alternative fuels.

Due Date 5/7/2014
Security Public

RESPONSE:

Natural gas supplied by SNG competes directly with propane in all of its service areas. The communities in the Company's service areas have not erected the same regulatory barriers to the delivery of propane as exist in many metropolitan area.

At December 31, 2013, SNG's rates for natural gas (including natural gas commodity costs) in equivalent values to propane prices by district were:

Gallatin District: Gas		Monthly Chr.
GS Class	\$0.804	\$15.00
CS Class	\$0.856	\$24.53
LVS Class	\$0.856	\$81.77
Warsaw District:		
GS Class	\$1.003	\$15.00
CS Class	\$1.049	\$30.00

LVS Class	\$1.049	\$100.00
Lake District:		
GS Class	\$1.367	\$15.00
CS Class	\$1.413	\$30.00
LV Class	\$1.413	\$100.00
Branson District:		
GS Class	\$1.039	\$10.00
Optional GS	\$1.257	-0-
CS Class	\$1.036	\$15.00
Optional GS	\$1.254	-0-
LGS Class	\$1.006	\$50.00
Rogersville District:		
GS Class	\$0.947	\$10.00
Optional GS	\$1.166	-0-
CS Class	\$0.945	\$15.00
Optional GS	\$1.163	-0-
LGS Class	\$0.915	\$50.00
LVS Class	\$0.915	\$300.00

Although the Lake of the Ozarks is not part of this rate case, it best demonstrates the competitiveness of propane to the Company's natural gas prices because any adjustment in rates in the other districts as a result of this rate case could produce rates similar to the Lake District.

At the Lake District, when propane prices approach \$1.40 a gallon, conversion to natural gas slows down or discontinues altogether.

Dave Moody, the president of SNG, has experienced the following: "Typically, when we arrive in a new expansion area, propane prices drop. The Lake District was no exception; however, the price typically drops 20-30 cents overall, and the Lake District prices dropped nearly 40 cents. In the Spring of 2012, a good cash average price for the Lake and most of Missouri was in the range of \$1.40 a gallon. In the Gallatin District, the price was slightly less. Many propane companies were offering a pre-buy price to the average homeowner of \$1.29 a gallon. At the time, the Gallatin GS tariff rate for an equivalent amount of natural gas was \$1.25. Adding the customer charge and franchise fees made the Company's rate higher than propane.

The Lake Ozark District did lose a few commercial load potentials. For example, Speedline Technologies at 1629 Old Route 5, Camdenton, received a bid for \$1.01 a gallon and would not consider switching to natural gas. Woodland Scenics in Linn Creek also received a price \$1.24 a gallon for propane. Woodland needed 7 natural gas meters, and

some meters were small enough that we could not discount the rate in the GS rate class.

Currently, the propane pre-buy price is \$1.89, but many consumers are not signing up for natural gas because they think the price of propane will go lower."

Response Provided by: James M. Anderson and Dave Moody

Summit Natural Gas of Missouri, Inc.
MPSC Case No GR-2014 - 0086
Pro forma Revenues

Schedule TDP-1
 Exhibit 3

Line No		Customer Charge Revenue			Commodity Charge Revenue			
		Monthly Charge Note 1	Annual Bills Note 2	Annual Revenue	Charge per Ccf Note 1	Annual Volume Mcf Note 3	Annual Revenue	
1	Callatin							
2	GS-residential	\$ 15.00	15,232	\$ 228,480	\$ 0.4449	84,715	\$ 376,897	
3	GS-commercial	15.00	2,298	34,470	0.4449	10,560	87,022	
4	CS	24.53	600	14,718	0.5027	38,095	191,504	
5	LVS	81.77	12	981	0.5027	20,926	105,195	
6	ISS	204.42	-	-	0.4415	-	-	
7	TS	204.42	60	12,265	0.5027	32,102	161,377	
8			<u>18,202</u>	<u>\$ 290,914</u>		<u>185,398</u>	<u>\$ 921,995</u>	1,212,900
9	Warsaw							
10	GS-residential	\$ 15.00	10,024	\$ 150,360	\$ 0.5500	47,680	\$ 262,240	
11	GS-commercial	15.00	2,331	34,985	0.5500	20,596	113,278	
12	CS	30.00	420	12,600	0.6000	32,673	196,038	
13	LVS	100.00	288	28,800	0.6000	88,724	532,344	
14	TS	200.00	-	-	0.6000	-	-	
15			<u>13,063</u>	<u>\$ 226,725</u>		<u>189,673</u>	<u>\$ 1,103,900</u>	1,330,625
16	Rogersville							
17	GS-residential	\$ 10.00	58,820	\$ 588,200	\$ 0.4660	293,657	\$ 1,368,442	
18	GS-residential - optional	-	63,896	-	0.7060	226,008	1,595,616	
19	GS-commercial	15.00	12,574	188,610	0.4630	216,626	1,002,974	
20	GS-commercial - optional	-	4,272	-	0.7030	29,047	204,200	
21	LGS	50.00	804	40,200	0.4300	123,300	530,190	
22	LVS	300.00	96	28,800	0.4180	122,403	511,645	
23	TS (note 4)	300.00	360	108,000	3.6900	744,482	2,747,139	
24			<u>128,822</u>	<u>\$ 933,810</u>		<u>1,755,522</u>	<u>\$ 7,060,205</u>	8,894,015
25	Branson							
26	GS-residential	\$ 10.00	4,378	\$ 43,780	\$ 0.5680	22,127	\$ 125,239	
27	GS-residential - optional	-	1,356	-	0.8060	3,784	30,338	
28	GS-commercial	15.00	2,076	31,140	0.5630	49,397	278,105	
29	GS-commercial - optional	-	396	-	0.8030	2,519	20,228	
30	LGS	50.00	1,392	69,600	0.5300	135,147	716,279	
31	LVS	300.00	-	-	0.5180	-	-	
32	TS (note 4)	300.00	84	25,200	4.7150	208,232	981,814	
33			<u>9,682</u>	<u>\$ 169,720</u>		<u>421,186</u>	<u>\$ 2,152,002</u>	2,321,722

- Notes: (1) charges taken from current tariff.
 (2) annual bills calculated on shaped customer count study for 9-30-13.
 (3) annual retail sales volume taken from base excess study for 9-30-13, modified to Mcf, weather normalized, transportation revenues taken from Transportation Study.
 (4) MMBtu rate in the tariff converted to MCF rate to reflect volumes shown.

Summit Natural Gas of Missouri, Inc.
MPSC Case No GR-2014 - 0086
Revenue Excess (Deficiency)

<u>Line No</u>	<u>Division</u>	<u>Proforma Service Revenue</u>	<u>Revenue Requirement</u>	<u>Revenue Excess (Deficiency)</u>	<u>Deficiency Reduction</u>	<u>Revised Deficiency</u>	<u>Revised Revenue Requirement</u>
1	Gallatin	\$ 1,212,907	\$ 1,657,230	\$ (444,323)		\$ (444,323)	\$ 1,657,230
2	Warsaw	1,330,625	2,910,186	(1,579,561)	820,869	(758,692)	2,089,317
3	Rogersville	8,894,015	13,893,750	(4,999,735)		(4,999,735)	13,893,750
4	Branson	<u>2,321,722</u>	<u>8,091,025</u>	<u>(5,769,303)</u>	<u>4,499,919</u>	<u>(1,269,383)</u>	<u>3,591,106</u>
5		<u>\$ 13,759,270</u>	<u>\$ 26,552,191</u>	<u>\$ (12,792,921)</u>	<u>\$ 5,320,788</u>	<u>\$ (7,472,133)</u>	<u>\$ 21,231,403</u>

Schedule 4

Exhibit No.: _____
Issue: Merger
Witness: Michael P. Earnest
Exhibit Type: Direct
Sponsoring Party: Missouri Gas Utility, Inc.
File No.: GM-2011-0354
Date: April 27, 2011

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

DIRECT TESTIMONY OF MICHAEL P. EARNEST

**ON
BEHALF OF
MISSOURI GAS UTILITY, INC.**

APRIL 27, 2011

**DIRECT TESTIMONY
MICHAEL P. EARNEST
MISSOURI GAS UTILITY, INC.**

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**DIRECT TESTIMONY
MICHAEL P. EARNEST
MISSOURI GAS UTILITY, INC.**

I. INTRODUCTION AND QUALIFICATION

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Michael P. Earnest, my business address is 7810 Shaffer Parkway,
3 Suite 120, Littleton, CO 80127.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

5 A. I am employed by Summit Utilities, Inc., ("Summit") the parent company of
6 Missouri Gas Utility, Inc. ("MGU" or "the Company") as the President and Chief
7 Executive Officer.

8 **Q. PLEASE DESCRIBE YOUR EDUCATION, EXPERIENCE, AND EMPLOYMENT
9 HISTORY.**

10 A. I attended Metropolitan State College of Denver majoring in Criminology and
11 Business Management. I have 30 years in the natural gas industry, and co-
12 founded Summit Utilities, Inc. (then Colorado Natural Gas, Inc.) 14 years ago.
13 Prior to founding the company, I held the position of Vice President of Operations
14 for The Meter and Valve Company, which supplied equipment to natural gas
15 utilities and pipeline companies, as well as sat on the Board of Directors for
16 Pinedale Natural Gas Inc., in Pinedale, Wyoming.

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. I will provide a description of MGU and the relationship between MGU and
19 Southern Missouri Gas Company L.P. d/b/a Southern Missouri Natural Gas

1 ("SMNG"). I will also explain the similarities and synergies between these two
2 companies, how the consolidated company will look, and the reasons this
3 consolidation is in the public interest.

4 **II. BACKGROUND**

5 **Q. PLEASE PROVIDE AN OVERVIEW OF MISSOURI GAS UTILITY, INC.**

6 A. MGU operates under the parent company, Summit Utilities, Inc., which has
7 corporate offices in Littleton, Colorado. Summit Utilities, Inc. is a privately held
8 company with the principal business of natural gas distribution. Summit operates
9 four subsidiaries in two states: Colorado Natural Gas Inc.; Missouri Gas Utility,
10 Inc.; Summit Utilities Management Services, LLC ("SUMS"), a non-regulated
11 consulting company specializing in gas distribution; and Wolf Creek Energy, LLC,
12 a natural gas reseller located in Colorado.

13 Missouri Gas Utility, Inc., was established in 2005, and has since
14 expanded to provide gas transportation and distribution services to areas of rural
15 Missouri, including Harrison, Daviess, Caldwell, Pettis and Benton counties.
16 MGU operates a Northern and Southern division, serving approximately 2,800
17 customers.

18 MGU under Summit Utilities Inc., performs all utility operations in-house,
19 including engineering and construction, field operations and maintenance,
20 accounting, customer service, human resources and regulatory.

21 **Q. PLEASE DESCRIBE THE RELATIONSHIP BETWEEN MGU AND SMNG.**

22 A. MGU and SMNG share common ownership. IIF CNG Investment LLC first
23 invested in Summit Utilities, Inc., and by extension, in its subsidiaries including

1 MGU in 2007. In 2010, IIF purchased all remaining shares of Summit and
2 became 100% owner. In 2008, IIF SMNG Investment LLC bought a majority
3 interest in Sendero SMGC GP Acquisition Company, LLC and Sendero SMGC
4 Limited Acquisition Company, LLC, which together formed a partnership that
5 owned SMNG. In 2011, IIF SMNG Investment II LLC purchased all the remaining
6 partnership interest. IIF CNG Investment LLC, IIF SMNG Investment LLC, and
7 IIF SMNG Investment II LLC are under common ownership ("IIF"). Additionally,
8 in 2010, SMNG contracted with Summit Utilities Management Services, LLC to
9 construct the Branson system. As I mentioned above, SUMS is a subsidiary of
10 Summit, and a sister company of MGU.

11 III. MERGER DETAILS

12 **Q. WHAT WILL THE CONSOLIDATED COMPANY LOOK LIKE FOLLOWING**
13 **THE PROPOSED TRANSACTION?**

14 A. After the transaction, SMNG will be merged into MGU. The transaction will result
15 in MGU becoming a stronger regional utility. After the transaction is completed,
16 MGU will have a footprint that spans from the northwestern part of Missouri,
17 including Gallatin and Hamilton, to south-central Missouri, including Branson and
18 Lebanon, serving nearly 13,000 customers.

19 **Q. WHO WILL MANAGE THE SURVIVING ENTITY?**

20 Summit's executive management, management and Board of Directors will
21 remain the same. Dave Moody, current Chief Executive Officer of SMNG, will
22 become the Chief Operating Officer of the consolidated MGU. The current

1 General Partner of SMNG, which was occupied primarily by the investor, will be
2 dissolved.

3 **Q. DOES MGU PREDICT ANY SYNERGIES BETWEEN MGU AND SMNG?**

4 A. Yes. MGU and SMNG both provide gas service to small rural towns in Missouri.
5 MGU is well equipped with the knowledge and skills to operate SMNG in such a
6 manner that the customers will not feel a significant change from the approval of
7 this merger. MGU has identified synergies in corporate operations, field
8 operations, customer service, engineering, accounting, human resources and
9 regulatory functions. SMNG's natural gas system and existing customers will
10 benefit from the support staff and expertise that MGU will provide.

11 **Q. WHAT IMPACT WILL THE CONSOLIDATION HAVE ON CUSTOMERS AND
12 COMMUNITIES SERVED BY SMNG AND MGU?**

13 A. If they notice a change, we hope that it will be positive. MGU has an excellent
14 track record of providing safe, reliable, affordable natural gas service to its
15 customers and communities. In addition, MGU has a strong working relationship
16 with the Commission. Both companies are striving towards a consolidated MGU
17 that combines best practices and resources that will achieve a higher level of
18 reliability and customer satisfaction while reducing costs through efficiencies,
19 economies of scale, and a larger market for gas supply.

20 **Q. DO YOU HAVE ANY CONCLUDING COMMENTS REGARDING THE
21 PROPOSED TRANSACTION?**

22 A. Yes I do. SMNG and MGU have focused our businesses on providing natural
23 gas distribution and transportation service to retail customers and both

1 operations are dedicated to providing safe and reliable service to our customers.
2 The merger of SMNG and MGU for which we are seeking Commission approval
3 will bring proven operational expertise and financial capabilities of MGU to bear
4 for the benefit of SMNG's customers. As described in more detail by additional
5 witnesses identified below, the approval of this Joint Application is in the best
6 interests of SMNG's customers and we respectfully request that the Commission
7 grant this Application at its earliest opportunity.

8 **Q. WILL THERE BE ADDITIONAL WITNESSES PROVIDING TESTIMONY IN**
9 **THIS CASE?**

10 A. Yes, there will be three additional witnesses providing testimony in this Docket:

11 a) David N. Moody, Chief Executive Officer of Southern Missouri Natural
12 Gas, will provide background on SMNG's gas operations, as well as synergies
13 between the companies and an overview of the consolidated operations.

14 b) Timothy R. Johnston, Executive Vice President and Chief Operating
15 Officer of Missouri Gas Utilities, Inc., will describe MGU's gas operations and
16 provide economic support for this transaction.

17 c) Michelle A. Moorman, Manager of Regulatory Affairs for MGU, will
18 address the regulatory issues related to both SMNG and MGU including tariffs,
19 rates, regulatory treatment of assets, and discuss parallel filings that impact this
20 case.

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

22 A. Yes.

Table CE2.4 Household Site Fuel Consumption in the South Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene
Total South	42.1	3.220	2.091	0.942	0.142	0.039	0.006	76.5	49.7	53.1	30.2	58.7	10.6
South Divisions and States													
South Atlantic.....	22.2	1.647	1.099	0.436	0.067	0.039	0.006	74.1	49.5	55.9	26.9	58.7	11.4
Virginia.....	3.0	0.255	0.146	0.085	0.014	Q	Q	85.9	49.3	64.2	29.2	55.2	Q
Georgia.....	3.5	0.311	0.177	0.129	0.004	Q	Q	89.5	50.9	64.3	23.7	Q	Q
Florida.....	7.0	0.389	0.354	0.020	0.014	Q	Q	55.7	50.7	19.4	24.8	Q	Q
DC, DE, MD, WV.....	3.4	0.304	0.165	0.103	0.010	0.026	Q	88.9	48.1	64.1	21.1	62.0	Q
North Carolina, South Carolina.....	5.4	0.389	0.258	0.098	0.025	Q	0.003	72.3	47.9	54.1	31.2	Q	13.6
East South Central.....	7.1	0.565	0.367	0.157	0.040	Q	Q	79.7	51.9	55.1	33.3	N	Q
Tennessee.....	2.4	0.193	0.126	0.057	Q	N	Q	78.7	51.6	57.2	40.0	N	Q
Alabama, Kentucky, Mississippi.....	4.6	0.372	0.241	0.099	0.031	N	Q	80.2	52.0	53.9	31.8	N	Q
West South Central.....	12.8	1.008	0.624	0.350	0.035	N	Q	79.0	48.8	49.3	34.4	N	Q
Texas.....	8.5	0.658	0.415	0.230	0.012	N	Q	77.1	48.7	46.2	26.7	N	Q
Arkansas, Louisiana, Oklahoma.....	4.2	0.350	0.208	0.120	0.022	N	N	82.6	49.1	56.4	41.1	N	Q
Urban and Rural³													
Urban.....	26.6	2.121	1.320	0.748	0.022	0.028	0.003	74.0	46.1	53.0	20.8	56.1	8.9
Rural.....	13.4	1.100	0.771	0.195	0.119	Q	0.004	81.8	57.4	53.4	32.9	66.5	12.3
Metropolitan and Micropolitan Statistical Area													
In metropolitan statistical area.....	33.4	2.555	1.630	0.792	0.091	0.038	0.004	76.6	48.9	52.7	31.2	59.7	11.9
In micropolitan statistical area.....	4.7	0.369	0.245	0.103	0.019	Q	Q	78.8	52.4	60.4	25.6	Q	10.1
Not in metropolitan or micropolitan statistical area.....	4.0	0.296	0.215	0.048	0.032	Q	Q	73.2	53.2	46.8	30.5	Q	Q
Climate Region⁴													
Very Cold/Cold.....	Q	Q	Q	Q	Q	N	N	87.4	38.9	Q	Q	N	N
Mixed-Humid.....	21.9	1.849	1.078	0.625	0.102	0.038	0.006	84.4	49.2	61.4	34.0	59.7	12.0
Mixed-Dry/Hot-Dry.....	1.3	0.106	0.056	0.044	Q	N	Q	79.0	43.4	51.0	Q	N	Q
Hot-Humid.....	18.6	1.247	0.946	0.265	0.034	Q	Q	67.0	50.8	40.0	22.2	Q	Q
Marine.....	N	N	N	N	N	N	N	N	N	N	N	N	N

Schedule 6

Table CE2.4 Household Site Fuel Consumption in the South Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene
Total South.....	42.1	3.220	2.091	0.942	0.142	0.039	0.006	76.5	49.7	53.1	30.2	58.7	10.6
Housing Unit Type													
Single-Family.....	29.7	2.634	1.624	0.841	0.126	0.038	0.005	88.6	54.6	57.8	32.7	60.2	11.8
Single-Family Detached.....	27.6	2.492	1.539	0.787	0.125	0.035	0.005	90.3	55.8	58.3	32.9	62.3	11.6
Single-Family Attached.....	2.1	0.142	0.085	0.054	Q	Q	Q	66.3	39.5	51.4	Q	Q	Q
Multi-Family.....	8.4	0.350	0.261	0.087	Q	Q	Q	41.5	30.9	32.0	Q	Q	Q
Apartments in 2-4 Unit Buildings.....	2.2	0.105	0.074	0.030	Q	N	N	48.0	33.7	38.9	Q	N	N
Apartments in 5 or More Unit Buildings.....	6.2	0.245	0.187	0.057	Q	Q	Q	39.3	29.9	29.2	Q	Q	Q
Mobile Homes.....	3.9	0.236	0.206	0.015	0.014	Q	Q	60.3	52.5	30.6	18.2	Q	Q
Ownership of Housing Unit³													
Owned.....	29.3	2.512	1.602	0.741	0.132	0.034	0.003	85.8	54.7	56.8	30.7	62.8	8.0
Single-Family.....	25.2	2.290	1.416	0.719	0.119	0.034	0.003	90.8	56.2	58.6	33.0	63.6	9.1
Multi-Family.....	1.0	0.043	0.028	0.015	N	N	N	42.2	27.6	32.6	N	N	N
Mobile Homes.....	3.0	0.179	0.158	0.008	0.013	Q	Q	59.0	52.1	24.3	18.6	Q	Q
Rented.....	12.8	0.709	0.489	0.201	0.010	0.006	0.003	55.3	38.1	42.7	24.7	42.0	15.3
Single-Family.....	4.5	0.345	0.209	0.122	0.008	Q	0.002	76.1	46.1	53.7	27.9	Q	17.3
Multi-Family.....	7.4	0.307	0.233	0.072	Q	Q	Q	41.5	31.4	31.9	Q	Q	Q
Mobile Homes.....	0.9	0.057	0.048	Q	Q	N	Q	64.7	54.0	Q	Q	N	Q
Year of Construction													
Before 1940.....	2.4	0.237	0.110	0.094	0.019	0.013	Q	97.9	45.5	61.1	65.8	56.6	Q
1940 to 1949.....	1.6	0.122	0.064	0.047	0.002	Q	Q	78.6	41.5	52.6	20.7	Q	Q
1950 to 1959.....	3.6	0.271	0.150	0.105	0.009	Q	Q	75.7	42.1	53.5	24.0	Q	Q
1960 to 1969.....	4.4	0.344	0.201	0.119	0.014	Q	Q	78.3	45.9	51.2	28.7	Q	Q
1970 to 1979.....	6.5	0.448	0.314	0.113	0.016	Q	Q	68.7	48.1	45.9	24.2	Q	Q
1980 to 1989.....	7.5	0.513	0.376	0.107	0.027	Q	Q	68.6	50.3	50.2	37.8	Q	Q
1990 to 1999.....	8.0	0.616	0.434	0.152	0.029	Q	Q	77.5	54.6	52.0	26.6	Q	Q
2000 to 2009.....	8.2	0.670	0.441	0.205	0.025	Q	Q	81.7	53.7	58.5	26.3	Q	Q

Schedule 6

Table CE2.4 Household Site Fuel Consumption in the South Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene
Total South	42.1	3.220	2.091	0.942	0.142	0.039	0.006	76.5	49.7	53.1	30.2	58.7	10.6
Total Square Footage^b													
Fewer than 500.....	0.7	0.024	0.016	0.006	Q	N	Q	33.8	21.9	33.0	Q	N	Q
500 to 999.....	9.3	0.439	0.322	0.102	0.013	Q	Q	47.4	34.7	33.5	19.7	Q	8.5
1,000 to 1,499.....	10.5	0.672	0.473	0.172	0.021	Q	0.001	64.1	45.1	44.9	20.2	Q	6.9
1,500 to 1,999.....	7.6	0.588	0.404	0.150	0.025	0.008	Q	77.9	53.5	50.4	32.6	43.8	15.0
2,000 to 2,499.....	5.3	0.467	0.303	0.128	0.027	Q	Q	88.6	57.5	53.7	33.9	Q	Q
2,500 to 2,999.....	2.7	0.272	0.160	0.102	0.007	Q	N	99.1	58.3	63.3	24.9	Q	N
3,000 to 3,499.....	2.0	0.214	0.122	0.077	0.010	Q	N	9.0	62.1	68.1	31.0	Q	N
3,500 to 3,999.....	1.4	0.161	0.087	0.060	0.009	Q	Q	16.5	63.4	70.8	34.6	Q	Q
4,000 or More.....	2.7	0.382	0.203	0.145	0.029	Q	Q	43.1	76.2	84.2	55.4	Q	Q
Number of Household Members													
1 Person.....	11.5	0.603	0.394	0.162	0.034	0.012	Q	52.4	34.2	39.7	27.0	50.5	10.5
2 Persons.....	13.4	1.035	0.660	0.307	0.055	0.012	Q	77.4	49.3	53.2	31.1	61.3	7.9
3 Persons.....	6.8	0.583	0.388	0.175	0.016	Q	Q	85.1	56.7	54.2	24.6	Q	Q
4 Persons.....	5.8	0.547	0.358	0.164	0.016	Q	Q	94.3	61.8	64.8	28.7	Q	Q
5 Persons.....	2.8	0.270	0.173	0.083	0.009	Q	Q	98.0	63.0	59.4	33.4	Q	Q
6 or More Persons.....	1.8	0.183	0.116	0.051	0.012	Q	Q	2.4	65.1	68.7	56.4	Q	Q
2009 Annual Household Income													
Less than \$20,000.....	10.0	0.586	0.393	0.164	0.022	Q	0.003	58.6	39.3	43.6	23.8	Q	16.3
\$20,000 to \$39,999.....	10.7	0.694	0.472	0.184	0.029	0.006	0.002	65.0	44.2	48.8	25.4	42.5	9.3
\$40,000 to \$59,000.....	8.1	0.633	0.422	0.166	0.039	Q	Q	78.1	52.1	50.5	38.4	Q	Q
\$60,000 to \$79,999.....	4.6	0.386	0.253	0.105	0.021	Q	Q	84.4	55.3	54.0	33.6	Q	Q
\$80,000 to \$99,999.....	3.2	0.294	0.183	0.101	0.007	Q	N	92.2	57.4	57.9	25.8	Q	N
\$100,000 to \$119,999.....	1.6	0.156	0.100	0.049	0.004	Q	Q	96.4	61.8	56.0	24.6	Q	Q
\$120,000 or More.....	3.9	0.470	0.267	0.175	0.018	Q	Q	20.9	68.8	73.2	36.6	Q	Q
Income Relative to Poverty Line^c													
Below 100 Percent.....	7.2	0.443	0.305	0.117	0.016	Q	0.003	61.9	42.6	45.6	24.3	Q	20.4
100 to 150 Percent.....	4.5	0.299	0.200	0.085	0.009	Q	Q	66.4	44.4	46.4	24.1	Q	Q
Above 150 Percent.....	30.4	2.478	1.585	0.740	0.116	0.034	0.003	81.5	52.1	55.5	31.9	60.6	7.7

Schedule 6

Table CE2.4 Household Site Fuel Consumption in the South Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/L PG	Fuel Oil	Kerosene
Total South.....	42.1	3.220	2.091	0.942	0.142	0.039	0.006	76.5	49.7	53.1	30.2	58.7	10.6
Payment Method for Energy Bills													
All Paid by Household.....	39.7	3.080	2.004	0.893	0.139	0.038	0.006	77.6	50.5	54.9	30.1	59.6	10.6
Some Paid, Some in Rent.....	0.7	0.039	0.022	0.016	Q	Q	N	52.5	29.1	27.8	Q	Q	N
All Included in Rent.....	1.2	0.060	0.036	0.024	Q	N	N	51.7	30.6	38.3	Q	N	N
Other Method.....	0.5	0.042	0.030	0.010	Q	Q	N	85.8	61.7	34.2	Q	Q	N

¹Includes all primary occupied housing units in the 50 States and the District of Columbia. Vacant housing units, seasonal units, second homes, military housing, and group quarters are excluded.

²Data in these tables represent site or delivered energy. Consumption and expenditures for biomass (e.g. wood), coal, solar, and outdoor propane grills are excluded. See RECS Terminology (<http://www.eia.gov/consumption/residential/terminology.cfm>) for further explanation of these terms.

³Housing units are classified as urban or rural using definitions created by the U.S. Census Bureau, which are publically available through 2009 TIGER/Line Shapefiles.

⁴These climate regions were created by the Building America program, sponsored by the U.S. Department of Energy's Office of Energy and Efficiency and Renewable Energy (EERE).

⁵Rented includes households that occupy their primary housing unit without payment of rent.

⁶Total square footage includes all basements, finished or conditioned (heated or cooled) areas of attics, and conditioned garage space that is attached to the home. Unconditioned and unfinished areas in attics and attached garages are excluded.

⁷To determine the number of households below the poverty line, the annual household income and number of household members were compared to the 2009 Poverty Guidelines for families published by the U.S. Department of Health and Human Services.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

N = No cases in reporting sample.

(*) Number rounds to zero.

Notes: • Because of rounding, data may not sum to totals.

Source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Forms EIA-457 A and C-G of the 2009 Residential Energy Consumption Survey.

Table CE2.3 Household Site Fuel Consumption in the Midwest Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene
Total Midwest	25.9	2.914	0.936	1.751	0.193	0.033	0.001	112.4	36.1	90.3	66.8	61.4	3.2
Mobile Homes.....	0.9	0.081	0.033	0.033	0.014	N	Q	92.4	37.9	65.7	56.3	N	Q
Rented.....	7.4	0.590	0.190	0.373	0.022	0.005	Q	80.2	25.8	72.4	56.7	51.3	Q
Single-Family.....	2.3	0.270	0.079	0.174	0.013	Q	Q	115.1	33.8	92.8	76.2	Q	Q
Multi-Family.....	4.8	0.301	0.103	0.191	0.005	Q	Q	62.6	21.4	60.2	37.7	Q	Q
Mobile Homes.....	0.2	0.018	0.006	Q	Q	N	Q	97.1	40.5	Q	Q	N	Q
Year of Construction													
Before 1940.....	4.6	0.614	0.169	0.396	0.041	0.008	Q	133.0	36.6	107.8	74.4	64.5	Q
1940 to 1949.....	1.4	0.182	0.056	0.113	0.011	Q	Q	127.2	39.0	96.1	68.7	Q	Q
1950 to 1959.....	3.6	0.431	0.107	0.302	0.012	0.010	Q	119.9	29.8	96.4	55.3	53.1	Q
1960 to 1969.....	3.2	0.349	0.103	0.234	0.007	0.005	Q	107.6	31.7	87.5	54.1	61.6	Q
1970 to 1979.....	4.2	0.407	0.160	0.210	0.032	Q	Q	95.9	37.7	78.4	76.9	Q	Q
1980 to 1989.....	3.1	0.289	0.110	0.151	0.025	Q	Q	94.6	36.2	78.1	55.6	Q	Q
1990 to 1999.....	3.2	0.348	0.122	0.195	0.030	N	Q	110.4	38.8	82.7	63.9	N	Q
2000 to 2009.....	2.6	0.294	0.109	0.150	0.035	Q	Q	113.9	42.1	84.2	70.6	Q	Q
Total Square Footage⁵													
Fewer than 500.....	0.6	0.030	0.009	0.021	Q	N	N	53.1	16.5	52.4	Q	N	N
500 to 999.....	4.4	0.308	0.105	0.188	0.014	Q	Q	70.8	24.1	65.5	43.1	Q	Q
1,000 to 1,499.....	4.3	0.388	0.131	0.238	0.017	Q	Q	90.9	30.6	75.3	60.5	Q	Q
1,500 to 1,999.....	3.7	0.412	0.129	0.252	0.027	Q	0.000	110.5	34.6	87.2	62.1	Q	3.0
2,000 to 2,499.....	3.6	0.435	0.130	0.275	0.024	0.006	Q	120.7	36.2	94.4	72.7	64.0	Q
2,500 to 2,999.....	2.9	0.372	0.120	0.222	0.023	Q	Q	126.2	41.3	94.8	73.2	Q	Q
3,000 to 3,499.....	2.2	0.284	0.082	0.180	0.018	Q	Q	131.5	37.8	102.2	69.4	Q	Q
3,500 to 3,999.....	1.7	0.234	0.076	0.133	0.019	Q	Q	140.7	45.4	108.6	61.3	Q	Q
4,000 or More.....	2.7	0.451	0.154	0.242	0.051	Q	Q	168.8	57.8	132.2	80.9	Q	Q
Number of Household Members													
1 Person.....	7.4	0.634	0.177	0.410	0.037	0.010	Q	85.4	23.8	76.0	54.0	69.7	Q
2 Persons.....	8.5	0.963	0.314	0.556	0.077	0.015	0.001	112.9	36.8	86.7	70.4	56.3	4.2
3 Persons.....	3.9	0.491	0.154	0.311	0.023	Q	Q	127.1	39.9	99.6	67.9	Q	Q
4 Persons.....	3.5	0.466	0.163	0.265	0.034	Q	Q	133.3	46.5	100.6	70.5	Q	Q
5 Persons.....	1.7	0.230	0.082	0.130	0.018	Q	Q	134.8	47.9	104.3	79.6	Q	Q
6 or More Persons.....	0.9	0.130	0.046	0.080	Q	N	Q	145.1	51.4	110.3	Q	N	Q
2009 Annual Household Income													
Less than \$20,000.....	5.5	0.516	0.161	0.322	0.025	0.008	Q	94.1	29.3	82.9	51.6	58.4	Q
\$20,000 to \$39,999.....	6.5	0.644	0.201	0.378	0.052	0.012	0.001	98.5	30.7	80.7	67.0	58.2	3.9
\$40,000 to \$59,000.....	5.0	0.563	0.177	0.353	0.027	0.006	Q	112.0	35.3	91.0	64.9	52.7	Q
\$60,000 to \$79,999.....	3.4	0.397	0.128	0.236	0.029	Q	Q	115.7	37.5	86.9	71.3	Q	Q
\$80,000 to \$99,999.....	2.0	0.264	0.093	0.151	0.020	Q	Q	129.2	45.3	99.7	70.7	Q	Q
\$100,000 to \$119,999.....	1.3	0.177	0.056	0.111	0.008	Q	Q	138.9	44.2	101.3	78.0	Q	Q
\$120,000 or More.....	2.1	0.354	0.119	0.200	0.032	Q	Q	166.2	56.1	123.5	75.7	Q	Q

Table CE2.3 Household Site Fuel Consumption in the Midwest Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene
Total Midwest	25.9	2.914	0.936	1.751	0.193	0.033	0.001	112.4	36.1	90.3	66.8	61.4	3.2
Midwest Divisions and States													
East North Central	17.9	2.053	0.617	1.314	0.101	0.020	0.001	115.0	34.6	93.6	62.5	55.9	3.3
Illinois.....	4.8	0.613	0.169	0.429	0.015	N	Q	128.8	35.5	102.6	56.7	N	Q
Michigan.....	3.8	0.471	0.113	0.321	0.032	Q	Q	123.3	29.7	102.4	70.3	Q	Q
Wisconsin.....	2.3	0.235	0.067	0.143	0.016	0.009	Q	103.2	29.6	80.0	63.2	65.4	Q
Indiana, Ohio.....	7.0	0.735	0.268	0.422	0.039	Q	Q	105.0	38.3	85.3	59.1	Q	Q
West North Central	8.1	0.861	0.319	0.437	0.092	0.013	0.000	106.7	39.5	81.7	72.4	72.5	3.0
Missouri.....	2.3	0.234	0.110	0.103	0.021	Q	Q	100.2	46.9	79.7	58.0	Q	Q
IA, MN, ND, SD.....	3.9	0.442	0.143	0.220	0.066	0.013	0.000	113.0	36.6	85.9	79.2	74.0	2.5
Kansas, Nebraska.....	1.8	0.185	0.066	0.114	Q	N	Q	101.7	36.3	76.3	Q	N	Q
Urban and Rural³													
Urban.....	19.9	2.248	0.646	1.574	0.016	0.009	0.001	112.8	32.5	91.9	42.2	59.4	4.3
Rural.....	6.0	0.666	0.288	0.177	0.177	0.024	0.001	111.3	48.1	78.4	70.6	62.3	2.3
Metropolitan and Micropolitan Statistical Area													
In metropolitan statistical area.....	19.4	2.277	0.669	1.485	0.103	0.019	0.001	117.2	34.4	94.3	69.4	59.6	4.1
In micropolitan statistical area.....	4.7	0.444	0.184	0.216	0.039	Q	Q	95.1	39.4	72.8	59.6	Q	Q
Not in metropolitan or micropolitan statistical area.....	1.8	0.193	0.082	0.050	0.051	0.009	Q	106.5	45.4	73.3	68.0	78.0	Q
Climate Region⁴													
Very Cold/Cold.....	20.4	2.359	0.690	1.493	0.144	0.032	0.001	115.7	33.8	93.3	68.8	63.1	2.6
Mixed-Humid.....	5.5	0.555	0.246	0.258	0.049	Q	0.000	100.4	44.5	76.1	61.5	Q	4.8
Mixed-Dry/Hot-Dry.....	N	N	N	N	N	N	N	N	N	N	N	N	N
Hot-Humid.....	N	N	N	N	N	N	N	N	N	N	N	N	N
Marine.....	N	N	N	N	N	N	N	N	N	N	N	N	N
Housing Unit Type													
Single-Family.....	19.2	2.425	0.769	1.453	0.171	0.031	0.001	126.1	40.0	97.3	70.2	62.5	3.3
Single-Family Detached.....	18.0	2.302	0.735	1.367	0.169	0.030	0.001	128.0	40.9	99.0	70.6	61.8	3.3
Single-Family Attached.....	1.2	0.123	0.034	0.086	Q	Q	Q	98.6	27.4	77.0	Q	Q	Q
Multi-Family.....	5.6	0.390	0.126	0.257	0.005	Q	Q	69.4	22.4	66.7	37.7	Q	Q
Apartments in 2-4 Unit Buildings.....	1.9	0.199	0.051	0.147	N	Q	Q	102.6	26.0	94.9	N	Q	Q
Apartments in 5 or More Unit Buildings.....	3.7	0.191	0.075	0.110	0.005	Q	Q	51.9	20.4	47.6	37.7	Q	Q
Mobile Homes.....	1.1	0.099	0.041	0.041	0.017	N	Q	93.2	38.4	67.6	54.0	N	Q
Ownership of Housing Unit²													
Owned.....	18.6	2.324	0.746	1.378	0.171	0.028	0.001	125.2	40.2	95.8	68.4	63.7	3.0
Single-Family.....	16.9	2.154	0.690	1.278	0.157	0.028	0.001	127.6	40.9	98.0	69.7	63.7	3.3
Multi-Family.....	0.8	0.089	0.023	0.066	N	N	Q	110.5	28.3	96.5	N	N	Q

Table CE2.3 Household Site Fuel Consumption in the Midwest Region, Totals and Averages, 2009
British Thermal Units (Btu), Final

Housing Unit Characteristics and Energy Usage Indicators	Total Housing Units ¹ (millions)	Total Site Energy Consumption (quadrillion Btu)						Average Site Energy Consumption (million Btu per household using the fuel)					
		Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene	Total ²	Electricity	Natural Gas	Propane/ LPG	Fuel Oil	Kerosene
Total Midwest	25.9	2.914	0.936	1.751	0.193	0.033	0.001	112.4	36.1	90.3	66.8	61.4	3.2
Income Relative to Poverty Line⁴													
Below 100 Percent.....	3.7	0.368	0.120	0.230	0.014	Q	Q	99.0	32.2	85.0	50.5	Q	Q
100 to 150 Percent.....	2.6	0.268	0.082	0.161	0.017	Q	Q	104.8	32.0	89.5	61.6	Q	Q
Above 150 Percent.....	19.6	2.278	0.734	1.360	0.162	0.021	0.001	116.0	37.4	91.4	69.4	61.4	3.4
Payment Method for Energy Bills													
All Paid by Household.....	22.6	2.632	0.853	1.563	0.185	0.030	0.001	116.4	37.7	93.1	67.8	61.2	3.1
Some Paid, Some in Rent.....	1.6	0.120	0.023	0.093	Q	Q	Q	74.9	14.6	62.7	Q	Q	Q
All Included in Rent.....	1.0	0.061	0.021	0.040	N	Q	Q	61.4	20.8	66.5	N	Q	Q
Other Method.....	0.7	0.101	0.039	0.055	Q	Q	Q	141.4	54.4	105.5	47.4	Q	Q

¹Includes all primary occupied housing units in the 50 States and the District of Columbia. Vacant housing units, seasonal units, second homes, military housing, and group quarters are excluded.

²Data in these tables represent site or delivered energy. Consumption and expenditures for biomass (e.g. wood), coal, solar, and outdoor propane grills are excluded. See RECS Terminology (<http://www.eia.gov/consumption/residential/terminology.cfm>) for further explanation of these terms.

³Housing units are classified as urban or rural using definitions created by the U.S. Census Bureau, which are publically available through 2009 TIGER/Line Shapefiles.

⁴These climate regions were created by the Building America program, sponsored by the U.S. Department of Energy's Office of Energy and Efficiency and Renewable Energy (EERE).

⁵Rented includes households that occupy their primary housing unit without payment of rent.

⁶Total square footage includes all basements, finished or conditioned (heated or cooled) areas of attics, and conditioned garage space that is attached to the home. Unconditioned and unfinished areas in attics and attached garages are excluded.

⁷To determine the number of households below the poverty line, the annual household income and number of household members were compared to the 2009 Poverty Guidelines for families published by the U.S. Department of Health and Human Services.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

N = No cases in reporting sample.

(*) Number rounds to zero.

Notes: • Because of rounding, data may not sum to totals.

Source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics. Forms EIA-457 A and C-G of the 2009 Residential Energy Consumption Survey.

AARP Public Policy Institute

Affordable Home Energy and Health:
Making the Connections

Lynne Page Snyder, PhD, MPH
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Research Report

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AARP's Public Policy Institute (PPI) informs and stimulates public debate on the issues we face as we age. Through research, analysis, and dialogue with the nation's leading experts, PPI promotes development of sound, creative policies to address our common need for economic security, health care, and quality of life.

The views expressed herein are for information, debate, and discussion, and do not necessarily represent official policies of AARP.

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EXECUTIVE SUMMARY

Unaffordable home energy bills pose a serious and increasing threat to the health and well-being of a growing number of older people in low- and moderate-income households. For many of these households, high and volatile home energy prices jeopardize the use of home heating and cooling and increase the prospect of exposure to temperatures that are too hot in summer and too cold in winter. The potential consequences of exposure to such temperatures and related financial pressures include a host of adverse health outcomes, such as chronic health conditions made worse, food insecurity, and even the premature death of thousands of people in the United States each year.

Home energy service provides a buffer against the impact of unsafe temperatures and is particularly important for older adults. Aging can impair the body's ability to maintain a normal temperature because of physiological changes, such as the loss of physical fitness, reduction in body mass, and decline in body temperature. Older adults are more likely to have chronic medical conditions and to take multiple prescription medicines, which can further reduce the body's ability to sense and respond to changes in temperatures. These characteristics may indicate particular risk for older adults living in urban areas, where the heat-retaining properties of roads, buildings, and other urban infrastructure magnify and extend hot weather events compared with rural areas.

The significant risks associated with unaffordable home energy are unlikely to diminish any time soon. To the extent that climate change accelerates in the coming years and oppressive temperatures occur more frequently and for longer periods of time, adverse health outcomes are both more likely and more severe. In addition, unaffordable home energy undermines national priorities in the areas of long-term care services and livable communities, destabilizing efforts to support aging in place and hindering opportunities to facilitate independent living.

PRINCIPAL FINDINGS

Evidence connects temperature, health, and safety. Heat and cold challenge the body's ability to maintain a steady core temperature. Anything that impairs the body's ability to regulate its own temperature heightens vulnerability. Significant risk factors include the following:

- Age
- Chronic diseases such as heart disease, stroke, respiratory disease, and diabetes
- Medications that impair thermoregulation (such as antihistamines, tricyclic antidepressants, beta-blockers, and vasodilators)
- Dependency and frailty signaled by cognitive impairment or limited mobility

While exposure to heat and cold kills thousands of people prematurely in the United States each year, the death toll underestimates the true impact of temperature on health. For example, mortality statistics do not distinguish between outdoor and indoor exposure to unsafe temperatures as the cause of death and do not account for a range of

adverse health consequences that fall short of premature death. For many older adults, it is the aggravation of existing health conditions from exposure to even moderate temperature changes, rather than extreme exposure, that is both of concern and difficult to measure.

Adverse health outcomes, including death, become more likely as temperatures deviate from a moderate range. Temperature thresholds beyond which adverse health outcomes occur reflect local climate, access to resources (such as prevalence of central air-conditioning), and acclimatization (how adapted the population is to local conditions). Greater numbers of temperature-related deaths occur in warmer regions exposed to unseasonable cold and colder regions experiencing atypical warming. Lack of acclimatization also explains why heat waves early in the summer are more deadly than those later in the season.

Lower socioeconomic status is associated with a greater risk of temperature-related death, particularly for older adults. Strong evidence points to indoor cooling, particularly central air-conditioning, and lower temperatures in upstairs sleeping areas as key to mitigating the health effects of hot weather. Research suggests that access to, use of, and efficacy of home heating and cooling increases as household income increases.

High and volatile home energy costs make heating and cooling increasingly unaffordable to millions of low- and moderate-income households, many of which include older persons. Since 2005, the average cost to heat homes in winter has risen about 27.3 percent and the price of residential electrical service has jumped 22 percent. While energy prices rose, median incomes stagnated, especially for low- and moderate-income households. These trends increased the proportion of a household's budget allocated for utility bills. The average low-income household spends 16 percent of its annual income on home energy costs—more than four times the level that all households, on average, devote to home energy bills.

The Low-Income Home Energy Assistance Program (LIHEAP) improves access to home energy, but it has not kept pace with need and does not guarantee basic, affordably priced utility service. In fiscal year 2009, the federal appropriation for LIHEAP nearly doubled from \$2.57 billion to \$5.1 billion, yet the 7.7 million households that received LIHEAP during 2009 was less than one-quarter of the number estimated to be income-eligible. Moreover, most states offer limited protections against the shutoff of home utility service for nonpayment.

Unaffordable home energy subjects many older adults to direct and indirect threats to their health and safety. For example, 74 percent of households that include older adults report that they cut back on the purchase of household necessities because of high home energy bills. Thirty-two percent of LIHEAP households that include an older person report going without medical or dental care as a result of high home energy bills in the past five years.

Policies and programs to address the health threats posed by high home energy prices can build on existing efforts in the areas of energy, long-term care and health care reform, and livable communities:

Energy: Affordable energy policies can and do promote public health. For example, energy assistance, shutoff protection rules and other policies that protect vulnerable

households against the involuntary loss of home utility service promote health and safety. Conversely, policies that address home energy costs by shifting or dampening consumer demand for energy pose a potential threat to health and safety for consumers who may have to choose between paying more for their energy or going without life-saving air-conditioning during summer heat because they cannot shift their usage from higher cost peak times to lower cost off-peak times.

Health Services and Long-Term Care: Published studies document the greater use of health services that result from exposures to excessive heat or cold and the potential of high home energy burdens to make aging in place and independent living more difficult. One implication of these findings is that efforts to strengthen access to affordable energy and ensure protections against shutoffs of basic service for nonpayment can reduce the economic costs of avoidable health care services, improve patient health status, and facilitate independent living.

Livable Communities: Ultimately, policies that promote adequate and affordable home energy use, and that acknowledge the role of home energy as a support for the effective delivery of long-term care and health services to older adults, in turn promote community dwelling that facilitates personal independence and quality of life.

POLICY RECOMMENDATIONS

- Ensure that subsidies and discounts help make home energy affordable and sustainable for households that include older adults.
- Assess the need for LIHEAP and the total amount of energy assistance for households in terms not only of lowering the home energy burden but also of recognizing the value added through improved health and reduced threats to safety.
- Expand categorical eligibility for LIHEAP, weatherization services, and other affordable energy programs to target groups identified as most at risk of adverse health outcomes, for example, through their eligibility for state Medicaid waiver programs and the Medicare Part D Low-Income Subsidy.
- Ensure that state-regulated utility consumer protections and policies (such as shutoff policies) specifically recognize and address the needs of groups identified as most at risk of adverse health outcomes.
- Ensure that demand-response programs for consumers balance the need to reduce energy consumption with the protection of health and safety for older adults and persons living with serious or disabling conditions.
- Design evaluations of weatherization and energy efficiency programs to assess their impact on health and safety as a way to demonstrate the importance of home energy for health.
- Ensure that intake services for state Medicaid waiver program participation and long-term care case management services include referrals for LIHEAP, weatherization, and other affordable energy programs.

- Support education and outreach efforts to increase awareness—both within the health care community and among older adults, their families, and caregivers—of resources that can help them maintain access to healthy and comfortable temperatures.
- Give priority in home repair or modification programs that serve medically frail participants (such as under a state Medicaid waiver) to cost-effective energy efficiency measures that protect health and safety, for example, special coatings for flat-roofed rowhouses that lower indoor temperatures in summer.
- Identify and implement best practices for communicating with the public, especially older adults, their families, and caregivers, about the risks of heat waves and cold temperatures, the links between temperature and health, and the most effective prevention, education, and response efforts.

CONCLUSION

As the U.S. population ages, as the U.S. health care system shifts toward support for independent living and aging in place, and as urban infrastructure and global warming present new environmental challenges, demand for affordable home energy is growing. Increased demand combined with the rising cost of basic utility service jeopardizes the stability and capacity for self-sufficiency of households that include older adults. Understanding and addressing the implications for energy policy of public and population health priorities, as well as the implications for public health of affordable energy and energy efficiency priorities, requires a fresh approach. Such an approach should unite two diverse groups of practitioners, in the energy and health fields, to craft new solutions to help American households maintain both economic security and good health.

INTRODUCTION

In July 1995, a week of sustained hot weather in Chicago killed hundreds of people, most of whom were low-income, older residents living independently. The extreme heat also hospitalized close to a thousand people with strokes, heart attacks, renal failure, and other conditions.¹ Chicago's experience highlighted the value of social connections, walkable neighborhoods, affordable housing, and basic utility services during extreme weather conditions. Extreme heat events in the United States are still rare, but growth in urban infrastructure and climate change are contributing to a gradual rise in ambient temperature and greater seasonal variation in the weather.²

This report has two primary goals: first, to explore the implications of affordable home energy for health services, long-term care, and livable communities; and second, to consider low-income energy assistance and other approaches to lowering household energy burdens (the ratio of a household's energy expenditures to its income) in light of this more explicit connection between affordable home energy and health.

The report begins with a review of literature to characterize the health threats posed by weather and high home energy costs and to describe how affordable home energy protects health and reduces inappropriate use of health services. It then describes the energy burden faced by households across the income spectrum, ways to trace the health impacts of unaffordable home energy, and evidence of these impacts documented through telephone surveys. Next, it frames the discussion of affordable home energy and health in the context of policy interests in energy, health services and long term care reform, and livable communities. Finally, the report offers recommendations that promote adequate and affordable home energy use and that acknowledge the role of home energy in helping older adults and people of all ages maintain both economic security and good health.

- 1 E. Klinenberg, *Heat Wave. A Social Autopsy of Disaster in Chicago* (Chicago: University of Chicago Press, 2002). Other key sources include J. Dematte, K. O'Mara, J. Buescher, C. G. Whitney, S. Forsythe, T. McNamce, R. B. Adiga, and I. M. Ndukwu, "Near-Fatal Heat Stroke during the 1995 Heat Wave in Chicago," *Annals of Internal Medicine* 129 (1998): 173-81; R. Kaiser, A. Le Tetre, J. Schwartz, C. A. Gotway, W. R. Daley, and C. H. Rubin, "The Effect of the 1995 Heat Wave in Chicago on All-Cause and Cause-Specific Mortality," *American Journal of Public Health* 97 (2007): 158-62; R. J. Rydman, D. P. Rumoro, J. C. Silva, T. M. Hogan, and L. M. Kampe, "The Rate and Risk of Heat-Related Illness in Hospital Emergency Departments during the 1995 Chicago Heat Disaster," *Journal of Medical Systems* 23 (1999): 41-56; J. Semenza, "Acute Renal Failure during Heat Waves," *American Journal of Preventive Medicine* 17 (1999): 97; J. C. Semenza, J. E. McCullough, W. D. Flanders, M. A. McGechin, and J. R. Lumpkin, "Excess Hospital Admissions during the July 1995 Heat Wave in Chicago," *American Journal of Preventive Medicine* 16 (1999): 269-77; J. Semenza, C. Rubin, K. Falter, J. D. Selanikio, W. D. Flanders, H. L. Howe, and J. L. Wilhelm, "Heat-Related Deaths during the July 1995 Heat Wave in Chicago," *New England Journal of Medicine* 335, no. 2 (1996): 84-90.
- 2 G. Luber and M. McGechin, "Climate Change and Extreme Heat Events," *American Journal of Preventive Medicine* 35, no. 5 (2008): 429-35.

EVIDENCE ON TEMPERATURE, HEALTH, AND SAFETY

The use of home energy for heating and cooling buffers the impact of outdoor temperatures. Publication of epidemiological studies on the adverse effects on health of both heat (from heat waves and predicted changes in global climate) and cold (from exposures connected with substandard, energy-inefficient housing during wintertime in temperate climates) has increased appreciation of the importance of this buffering effect.³

Heat and cold challenge the body's ability to maintain a steady core temperature. Anything that impairs the body's ability to regulate its own temperature heightens vulnerability. Significant risk factors include the following:⁴

- Age (infants and young children are at greater than average risk, and old age increases risk because of the loss of physical fitness and related physiological changes associated with the aging process)
- Chronic diseases that slow the heart's response to stress; the circulatory system's capacity to dilate or contract blood vessels that convey heat (cardiovascular and cerebrovascular disease); the body's ability to change fluid levels in plasma or through sweating (diabetes, kidney and metabolic conditions, scleroderma, cystic fibrosis, and dehydration)
- Medications that impair thermoregulation (such as antihistamines, tricyclic antidepressants, beta-blockers, and vasodilators)
- Frailty signaled by cognitive impairment or limited mobility (nervous system disorders such as Parkinson's disease)

The most commonly recognized adverse outcomes of heat and cold exposure are hyperthermia (and the range of effects from heat cramps and exhaustion to heat stroke) and hypothermia, but many less severe ailments also exist. For many older adults, it is the aggravation of existing health conditions from exposure to even moderate temperature changes, rather than an extreme exposure, that is both of concern and more difficult to measure.

3 For this research report, a literature review was conducted using the PubMed search engine and the MeSH search terms "heat/adverse effects" and "cold/adverse effects" for publications that included human subjects, reviewing all publications starting in 1990. In addition, a citation searching strategy was used to identify peer-reviewed publications dated before 1990 and those in subject areas not covered comprehensively by Pub Med, such as journals in the areas of meteorology and housing. Approximately 300 peer-reviewed journal articles and monographs and a small number of grey literature reports were identified.

4 Discussion in this paragraph based on E. M. Kilbourne, "Temperature and Health," in *Wallace/Maxcy-Rosenau-Last. Public Health and Preventive Medicine*, ed. Robert B. Wallace, 725-34, 15th ed. (New York: McGraw Hill Medical, 2008); R. S. Kovats and S. Hajat, "Heat Stress and Public Health: A Critical Review," *Annual Review of Public Health* 29 (2008): 41-55; F. Matthies, G. Bickler, N. C. Marin, and S. Hales, *Heat Health Action Plans. Guidance* (Denmark: World Health Organization, Regional Office for Europe, 2008).

EXPOSURE TO HEAT AND COLD

Exposure to heat and cold kills thousands of people prematurely in the United States each year; however, the death toll underestimates the true impact of temperature on health. Accounts of the impact of temperature on health typically focus on the number of deaths reported based on death certificates or estimated by looking at seasonal patterns of excessive numbers that correlate with weather extremes.

Death certificates: The most recent annual count for the United States identifies 688 heat-related deaths and 1,152 cold-related deaths, with older adults accounting for 40 to 50 percent of these deaths.⁵ Such counts likely underestimate the impact of exposure to unsafe temperatures, reflecting differences from state to state in how such deaths are defined. In this regard, the more narrow definition taken by many coroners' offices hinges on the body temperature of the deceased, whereas in those counties or states where a medical examiner (physician) determines causation, a broader view is more likely to take into account the circumstances in which a victim is found, such as in an overheated apartment.⁶

Attributable deaths: For heat-related deaths alone in the United States, studies converge on an annual number of between 1,700 and 1,800 per year.⁷ These estimates are derived by looking at the experiences of populations statistically, measuring deaths from all causes or deaths from conditions linked to heat or cold exposure (for example, seasonal rises in cardiovascular or respiratory disease), adjusting these measures to account for influences unrelated to temperature exposures or home energy burden (the ratio of a household's expenditures to its income), and counting the estimated number of deaths over and above what is observed at other times of year or during the same time period in the absence of extreme weather. One study of deaths during California's 2006 heat wave finds that the attributed number of deaths is two to three times higher than the number reported by coroners' offices.⁸

Using counts or estimates of deaths as the sole measure of temperature's impact neglects the range of nonfatal health consequences. Such estimates are also of limited utility in understanding the impact of home energy use on health, as most studies fail to distinguish between outdoor and indoor exposure to unsafe temperatures or to account for other risk

5 G. E. Luber, C. A. Sanchez, and L. M. Conklin, "Heat-Related Deaths—United States, 1999–2003," *Morbidity and Mortality Weekly Review* 55 (2006): 796–98; T. Murphy, R. Zumwalt, and F. Fallico, "Hypothermia-Related Deaths—United States, 1999–2002 and 2005," *Morbidity and Mortality Weekly Review* 55 (2006): 282–84.

6 H. G. Mirchandani, G. McDonald, I. C. Hood, and C. Fonseca, "Heat-Related Deaths in Philadelphia—1993," *American Journal of Medical Pathology* 17, no. 2 (1996): 106–08; B. D. Ostro, L. A. Roth, R. S. Green, and R. Basu, "Estimating the Mortality Effect of the July 2006 California Heat Wave," *Environmental Research* 109, no. 5 (2009): 614–19.

7 C. E. Reid, M. S. O'Neill, C. Gronlund, S. J. Brines, D. G. Brown, A. V. Diez-Roux, and J. Schwartz, "Mapping Community Determinants of Heat Vulnerability," *Environmental Health Perspectives*, epub 11 (June 2009); Environmental Protection Agency, *Excessive Heat Event Guidebook*, EPA 430-B-06-005 (Washington, DC: EPA, 2006).

8 Ostro et al., "Estimating the Mortality Effect."

factors not directly related to home heating or cooling (such as the prevalence of influenza or the adequacy of clothing in protecting from cold).⁹

ADVERSE HEALTH OUTCOMES

Adverse health outcomes, including death, become more likely as temperatures deviate from a moderate range. Although mortality rates offer only one perspective on the consequences of inadequate home heating and cooling, they do convey information that is useful for guiding policy choices, for example, in establishing threshold temperatures above and below which public health precautions are needed. For a population, the relationship between temperature and death resembles a U, V, or J shape, with a dip or flat area in moderate temperature ranges and greater numbers of deaths at temperatures both lower and higher than thresholds specific to a given area.¹⁰

Temperature thresholds reflect local climate, infrastructure (such as prevalence of central air-conditioning), and acclimatization (how adapted the population is to local conditions). More temperature-related deaths occur in warmer regions exposed to the cold and colder areas experiencing unseasonable warming. Heat waves tend to have a stronger impact in the Northeast and Midwest than the South and West, and an index of heat vulnerability mapped nationally indicates that the 20 most vulnerable cities are clustered on the East and West Coasts, while most of the least vulnerable cities are in the Southeast.¹¹ During California's July 2006 heat wave, the highest rate of heat-related emergency department visits was seen in the Central Coast region, where more moderate temperatures are the norm.¹² The lack of time to acclimatize explains why heat waves early in the summer are more deadly than those later in the season.¹³

For U.S. cities, deaths increase by an estimated 2 to 4 percent per degree Fahrenheit above an area's heat threshold (during a heat wave, daily death rates climb even more quickly), and up to an estimated 6 percent per degree Fahrenheit below the cold threshold.¹⁴ Temperature-related respiratory and cardiovascular deaths are more likely

- 9 K. L. Ebi, "Climate Change, Ambient Temperature, and Health in the U.S.," unpublished presentation at AARP Roundtable, December 2008; T. A. Reichert, L. Simonsen, A. Sharma, S. A. Pardo, D. S. Fedson, and M. A. Miller, "Influenza and the Winter Increase in Mortality in the United States, 1959-99," *American Journal of Epidemiology* 160, no. 5 (2004): 492-502.
- 10 A. Braga, A. Zanobetti, and J. Schwartz, "The Time Course of Weather-Related Deaths," *Epidemiology* 12 (2001): 662-67; R. Basu and J. Samet, "An Exposure Assessment Study of Ambient Heat Exposure in an Elderly Population in Baltimore, Maryland," *Environmental Health Perspectives* 110 (2002): 1219-24.
- 11 Environmental Protection Agency, *Excessive Heat Events Guidebook*, 13-14.
- 12 K. Knowlton, M. Rotkin-Ellman, G. King, H. G. Margolis, D. Smith, G. Solomon, R. Trent, and P. English, "The 2006 California Heat Wave: Impacts on Hospitalizations and Emergency Department Visits," *Environmental Health Perspectives* 117, no. 1 (2009): 61-67.
- 13 Braga et al., "The Time Course of Weather-Related Deaths"; F. Curriero, K. Heiner, J. Samet, S. Zeger, L. Strug, and J. Patz, "Temperature and Mortality in 11 Cities of the Eastern United States," *American Journal of Epidemiology* 155 (2002): 80-87.
- 14 Braga et al., "The Time Course of Weather-Related Deaths"; S. Hajat, R. S. Kovats, and K. Lachowycz, "Heat-Related and Cold-Related Deaths in England and Wales: Who Is at Risk?" *Occupational and Environmental Medicine* 64, no. 2 (2007): 93-100; M. Medina-Ramon and J. Schwartz, "Temperature, Temperature Extremes, and Mortality: A Study of Acclimatization and Effect Modification in 50 United States Cities," *Occupational and Environmental Medicine*, epub (2007); R. Basu, W. Y. Feng, and B. D. Ostro, "Characterizing Temperature and Mortality in Nine California Counties," *Epidemiology* 19 (2008): 138-45; A.

during the summertime for older adults, with premature or what are known as excess deaths seen from kidney failure and electrolyte imbalance.¹⁵ In temperate climates, the winter months bring excess deaths for older adults from circulatory system disease (particularly heart attacks and congestive heart failure), respiratory disease (influenza, bronchitis, emphysema, and chronic obstructive pulmonary disorder),¹⁶ and diabetes.¹⁷

No consensus yet exists on how global climate change will influence current patterns of heat- and cold-related deaths.¹⁸ Some see an increase in heat-related deaths that will more than exceed an anticipated decrease in cold-related deaths.¹⁹ Others anticipate that new weather extremes will mean more respiratory disease deaths in cities with colder climates.²⁰ Regardless of any future shift in the range of ambient temperatures related to climate change, many other factors, such as personal behavior (in terms of energy use and decisions about appropriate clothing and outdoor gear) and urban infrastructure capacity to respond to shifts in outdoor temperature, will affect the rate of temperature-related deaths and other adverse health outcomes. The fact that heat waves bring greater adverse health impacts to areas that typically experience moderate temperatures, compared with areas accustomed to a broad range of temperatures, underscores the significance of a population's overall capacity to adapt over time.²¹

Zanobetti and J. Schwartz, "Temperature and Mortality in Nine U.S. Cities," *Epidemiology*, epub (2008); Ostro et al., "Estimating the Mortality Effect."

- 15 A. Braga, A. Zanobetti, and J. Schwartz, "The Effect of Weather on Respiratory and Cardiovascular Deaths in 12 U.S. Cities," *Environmental Health Perspectives* 110 (2002): 859–63; H. Johnson, R. S. Kovats, G. McGregor, J. Stedman, M. Gibbs, H. Walton, L. Cook, and E. Black, "The Impact of the 2003 Heat Wave on Mortality and Hospital Admissions in England," *Health Statistics Quarterly* 25 (2005): 6–11; Hajat et al., "Heat-Related and Cold-Related Deaths"; A. Ishigami, S. Hajat, R. S. Kovats, L. Bisanti, M. Rognoni, A. Russo, and A. Paldy, "An Ecological Time-Series Study of Heat-Related Mortality in Three European Cities," *Environmental Health* 7 (2008): 5.
- 16 Braga et al., "The Effect of Weather"; G. S. Davies, M. G. Baker, S. Hales, and J. B. Carlin, "Trends and Determinants of Excess Winter Mortality in New Zealand: 1980 to 2000," *BMC Public Health* 7 (2007): 263; Hajat et al., "Heat-Related and Cold-Related Deaths"; Medina-Ramon et al., "Temperature, Temperature Extremes, and Mortality."
- 17 Elevated wintertime death rates may be influenced by influenza as well as cold stress. T. A. Reichert, L. Simonsen, A. Sharma, S. A. Pardo, D. S. Fedson, and M. A. Miller, "Influenza and the Winter Increase in Mortality in the United States, 1959–1999," *American Journal of Epidemiology* 160, no. 5 (2004): 492–502.
- 18 M. A. McGeehin and M. Mirabelli, "The Potential Impacts of Climate Variability and Change on Temperature-Related Morbidity and Mortality in the United States," *Environmental Health Perspectives* 109, Supplement 2 (2001): 185–89; K. L. Ebi, J. Balbus, P. L. Kinney, E. Lipp, D. Mills, M. S. O'Neill, and M. Wilson, "Effects of Global Change on Human Health," Chapter 2, pages 39–87 in *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems. A Report by the U. S. Climate Change Science Program and the Subcommittee on Global Change Research*, J.L. Gamble (ed.), K.L. Ebi, F.G. Sussman, T.J. Wilbanks (Washington, DC: U.S. Environmental Protection Agency, 2008), <http://www.climatechange.gov/Library/sap/sap4-6/final-report/default.htm> (accessed 04/08/10).
- 19 L. S. Kalkstein and J. Greene, "An Evaluation of Climate/Mortality Relationships in Large U.S. Cities and the Possible Impacts of a Climate Change," *Environmental Health Perspectives* 105 (1997): 84–93; W. Keatinge, G. Donaldson, E. Cordioli, M. Martinelli, A. E. Kunst, J. P. Mackenbach, S. Nayha, and I. Vuori, "Heat Related Mortality in Warm and Cold Regions of Europe: Observational Study," *British Medical Journal* 321 (2000): 670–73; G. Barnett, "Temperature and Cardiovascular Deaths in the U.S. Elderly: Changes over Time," *Epidemiology* 18 (2007): 369–72.
- 20 Braga et al., "The Time Course of Weather-Related Deaths"; Braga et al., "The Effect of Weather."
- 21 Braga et al., "The Time Course of Weather-Related Deaths"; Medina-Ramon and Schwartz, "Temperature, Temperature Extremes, and Mortality"; Knowlton K, Lynn B, Goldberg RA, Rosenzweig C, Hogrefe C, Rosenthal JK, Kinney PL, "Projecting heat-related mortality impacts under a changing climate in the New York City region," *American Journal of Public Health* 97

INTERIOR HEATING AND AIR-CONDITIONING

Interior heating in the wintertime and air-conditioning in the summertime protect against deaths from heart disease, stroke, and respiratory disease. For populations over time and in regions facing episodes of extreme weather, adequate heating in winter and air-conditioning in summer play key roles in promoting public health.²²

- Poorly insulated dwellings and low indoor temperatures in bedrooms and living rooms are associated with greater numbers of deaths, especially in regions with warmer winters.²³ Among people living with chronic obstructive pulmonary disorder, those whose living rooms in the wintertime are warm (21 degrees Celsius or 70 degrees Fahrenheit and higher) fewer than nine hours per day have significantly poorer respiratory health than those whose living rooms are warm for at least nine hours per day.²⁴ Older residents in East London are 60 to 70 percent more likely to experience an emergency hospitalization in wintertime if they live in a neighborhood where high home energy burdens are more common.²⁵ Central heating lowers the odds of wintertime death for older residents,²⁶ and studies from the United Kingdom and New Zealand as well as the United States document the improved health and quality of life reported by low-income residents of newly weatherized dwellings.²⁷

no.11 (2007): 2028-2034; Knowlton K, Rotkin-Ellman M, King G, Margolis HG, Smith D, Solomon G, Trent R, English P, "The 2006 California heat wave: impacts on hospitalizations and emergency department visits," *Environmental Health Perspectives* 117 no.1 (2009): 61-67.

- 22 F. Ballester, P. Michelozzi, and C. Iniguez, "Editorial. Weather, Climate, and Public Health," *Journal of Epidemiology and Community Health* 57, no. 10 (2003): 759-60; Davie et al., "Trends and Determinants of Excess Winter Mortality"; J. Hassi, "Cold Extremes and Impacts on Health," in *Extreme Weather Events and Public Health Responses*, ed. W. Kirch, B. Menne, and R. Bertolini, 59-67 (New York: Springer-Verlag, on behalf of the World Health Organization, 2005); Hajat et al., "Heat-Related and Cold-Related Deaths"; Ishigami et al., "An Ecological Time-Series Study"; Curriero, et al., "Temperature and Mortality in 11 Cities"; R. E. Davis, P. C. Knappenberger, P. J. Michaels, and W. M. Novicoff, "Changing Heat-Related Mortality in the United States," *Environmental Health Perspectives* 111, no. 14 (2003): 1712-18; Barnett, "Temperature and Cardiovascular Deaths."
- 23 Eurowinter Group (W. R. Keatinge, G. C. Donaldson, K. Bucher, G. Jendritzky, E. Cordioli, M. Martinelli, K. Katsouyanni, A. E. Kunst, C. McDonald, S. Nayha, and I. Vuori), "Cold Exposure and Winter Mortality from Ischaemic Heart Disease, Cerebrovascular Disease, Respiratory Disease and All Causes in Warm and Cold Regions of Europe," *The Lancet* 349 (1997): 1341-46; J. D. Healy, "Excess Winter Mortality in Europe: A Cross Country Analysis Identifying Key Risk Factors," *Journal of Epidemiology and Community Health* 57, no. 10 (2003): 784-89.
- 24 L. M. Osman, J. G. Ayres, C. Garden, K. Reglitz, J. Lyon, and J. G. Douglas, "Home Warmth and Health Status of Patients with COPD," *European Journal of Public Health* 18, no. 4 (2008): 399-405.
- 25 J. Rudge and R. Gilchrist, "Excess Winter Morbidity among Older People at Risk of Cold Homes: A Population-Based Study in a London Borough," *Journal of Public Health* 27 (2005): 353-58.
- 26 P. Aylin, S. Morris, J. Wakefield, A. Grossinho, L. Jarup, and P. Elliott, "Temperature, Housing, Deprivation and Their Relationship to Excess Winter Mortality in Great Britain, 1986-96," *International Journal of Epidemiology* 30, no. 5 (2001): 1100-108.
- 27 E. L. Lloyd, C. McCormack, M. McKeever, and M. Syme, "The Effect of Improving the Thermal Quality of Cold Housing on Blood Pressure and General Health: A Research Note," *Journal of Epidemiology and Community Health* 62 (2008): 793-97; P. Howden-Chapman, A. Matheson, J. Crane, H. Viggers, M. Cunningham, T. Blakely, C. Cunningham, A. Woodward, K. Saville-Smith, D. O'Dea, M. Kennedy, M. Baker, N. Waipara, R. Chapman, and G. Davie, "Effect of Insulating Existing Houses on Health Inequality: Cluster Randomised Study in the Community," *British Medical Journal* 334, no. 7591 (2007): 460; N. Shortt and J. Rugsasa, "'The Walls Were So Damp and Cold': Fuel Poverty and Ill Health in Northern Ireland: Results from a Housing Intervention," *Health Place* 13, no. 1 (2007): 99-110.

- Indoor cooling, especially central air-conditioning, is key to saving lives and mitigating the heat-related impacts of climate warming.²⁸ Studies of heat waves in Philadelphia, Chicago, and Cincinnati confirm the risk posed by high temperatures in upstairs sleeping areas and the efficacy of air-conditioning to reduce the frequency of heat-related death.²⁹ Looking at the general population over time, people living in homes with central air-conditioning are 42 percent less likely to die than those living in homes without air-conditioners, with positive effects seen for window air-conditioning units in smaller residences.³⁰ And a study of deaths in Pittsburgh, Chicago, Detroit, and Minneapolis-St. Paul finds a 5 percent higher heat-related death rate among African Americans than white residents and concludes that more than two-thirds of this racial disparity reflects the lack of central air-conditioning among African-American households surveyed.³¹

LOWER SOCIOECONOMIC STATUS

Lower socioeconomic status is associated with a greater risk of temperature-related death, particularly for older adults. Poverty and low-income status in the United States are associated with unsafe indoor temperatures and, through this link, with adverse health outcomes.³² Research suggests that access to, use of, and efficacy of home heating and cooling increase as household income increases.

- 28 E. M. Kilbourne, K. Choi, T. S. Jones, and S. B. Thacker, "Risk Factors for Heatstroke: A Case-Control Study," *Journal of the American Medical Association* 247 (1982): 3332–36; Mirchandani et al., "Heat-Related Deaths in Philadelphia—1993"; M. P. Naughton, A. Henderson, M. C. Mirabelli, R. Kaiser, J. L. Wilhelm, S. M. Kieszak, C. H. Rubin, and M. A. McGeehin, "Heat-Related Mortality During a 1999 Heat Wave in Chicago," *American Journal of Preventive Medicine* 22 (2002): 221–27; G. C. Donaldson, W. Keatinge, and S. Nayha, "Changes in Summer Temperature and Heat-Related Mortality Since 1971 in North Carolina, South Finland, and Southeast England," *Environmental Research* 91, no. 1 (2003): 1–7; Barnett, "Temperature and Cardiovascular Deaths"; Medina-Ramon et al., "Temperature, Temperature Extremes, and Mortality"; Ebi et al., "Effects of Global Change on Human Health."
- 29 Naughton et al., "Heat-Related Mortality"; Mirchandani et al., "Heat-Related Deaths in Philadelphia—1993"; Semenza et al., "Heat-Related Deaths During the July 1995 Heat Wave"; R. Kaiser, C. H. Rubin, et al., "Heat-Related Death and Mental Illness During the 1999 Cincinnati Heat Wave," *American Journal of Forensic Medical Pathology* 22 (2001): 303–07.
- 30 E. Rogot, P. D. Sorlie, and E. Backlund, "Air-Conditioning and Mortality in Hot Weather," *American Journal of Epidemiology* 136 (1992): 106–16.
- 31 M. S. O'Neill, A. Zanobetti, and J. Schwartz, "Disparities by Race in Heat-Related Mortality in Four U.S. Cities: The Role of Air Conditioning Prevalence," *Journal of Urban Health* 82, no. 2 (2005): 191–97.
- 32 The relationship between indoor exposures and poverty or socioeconomic status in European Union (EU) countries differs from that in the United States, given stronger supports for affordable housing in EU countries and the quality of the housing stock more generally. P. Wilkinson, M. Landon, B. Armstrong, et al., *Cold Comfort: The Social and Environmental Determinants of Excess Winter Death in England, 1986–1996* (Bristol: The Policy Press, 2001); N. Gouveia, S. Hajat, and B. Armstrong, "Socioeconomic Differentials in the Temperature-Mortality Relationship in Sao Paulo, Brazil," *International Journal of Epidemiology* 32 (2003): 390–97; F. Canoui-Poitrine, E. Cadot, A. Spira, Groupe Régional Canicule, "Excess Deaths During the August 2003 Heat Wave in Paris, France," *Revue d'Epidemiologie et de Sante Publique* 54 (2006): 127–35; Hajat, Kovats, and Iachowycz, "Heat-Related and Cold-Related Deaths in England and Wales"; P. Wilkinson, S. Pattenden, B. Armstrong, A. Fletcher, R. S. Kovats, P. Mangtani, and A. J. McMichael, "Vulnerability to Winter Mortality in Elderly People in Britain: Population Based Study," *British Medical Journal* 329, no. 7467: 647.

Heating:³³

- Almost all households have space-heating equipment, but households eligible for the Low-Income Home Energy Assistance Program (LIHEAP)³⁴ are less likely to have such equipment (1.6 percent, versus 1.1 percent of all households) and twice as likely to not use heating equipment that they have (1.6 percent, versus 0.7 percent of all households).
- LIHEAP-eligible households are more likely to live in homes that lack adequate insulation (24.9 percent, versus 18.4 percent of all households) and are more likely to report that their home is too drafty most of the time (14.5 percent, versus 10.5 percent of all households).

Cooling:

- LIHEAP-eligible households with air-conditioning are much more likely than all households with air-conditioning to have window or wall air conditioning units (45.3 percent versus 30.9 percent, respectively).³⁵
- A recent national survey of LIHEAP-recipient households finds that only 62 percent use air-conditioning as a primary means to keep cool in summer.³⁶

Lower socioeconomic status means greater risk of temperature-related death, especially for older adults.³⁷ Other socioeconomic indicators of temperature-related death include social isolation, gender, black ethnic or racial identity, and housing conditions that

33 Data in this section are from the U.S. Department of Energy, Energy Information Administration (2009), Table HC7.5, "Space Heating Usage Indicators by Household Income, 2005," http://www.eia.doe.gov/emcu/rece/rece2005/hc2005_tables/hc5spaceheatingindicators/pdf/tablehc7.5.pdf (accessed 04/08/10).

34 Federal statute limits LIHEAP eligibility to households with incomes that do not exceed 150 percent of the federal poverty level or 60 percent of the state median income, whichever is greater.

35 U.S. Department of Energy, Energy Information Administration (2009), Table HC7.6, "Air Conditioning Usage Indicators by Household Income, 2005," http://www.eia.doe.gov/emcu/rece/rece2005/hc2005_tables/hc7airconditioningindicators/pdf/tablehc7.7.pdf (accessed 04/08/10).

36 National Energy Assistance Directors Association (NEADA), "2008 National Telephone Sample Survey" (Washington, DC: Apprise, Inc., unpublished and available from NEADA).

37 Kilbourne, "Temperature and Health."

concentrate heat indoors.³⁸ The income gradient widened by high home energy prices also contributes to health disparities related to home energy, such as food insecurity.³⁹

- Older residents in low-income households of the northern United States are more likely to go hungry in late winter, while similar households in the South are more likely to go hungry in late summer, reflecting the costs of heating and cooling.⁴⁰
- In northern states, poor families with children spend less on food and more on home fuel, and their children have lower caloric intake during the winter months, than higher income families.⁴¹

HIGH AND RISING HOME ENERGY PRICES: A THREAT TO LOW- AND MODERATE-INCOME HOUSEHOLDS

According to data from the Energy Information Administration, the average cost to heat homes in winter has increased by 27.3 percent since 2005.⁴² During the same time period, the use of air conditioning has also become more expensive as the price of residential electrical service (cents per kilowatt hour) has jumped 22 percent.⁴³ The trend is likely to continue as electrical utilities invest in more modern infrastructure, pay more for fuel, and respond to new regulatory policies related to climate change.⁴⁴

38 Curriero et al., "Temperature and Mortality in 11 Cities"; J. Diaz, A. Jordan, R. Garcia, C. Lopez, J. C. Alberdi, E. Hernandez, and A. Otero, "Heat Waves in Madrid 1986–1997: Effects on the Health of the Elderly," *International Archives of Occupational and Environmental Health* 75 (2002): 163–70; Kaiser et al., "The Effect of the 1995 Heat Wave in Chicago"; Naughton et al., "Heat-Related Mortality"; M. O'Neill, A. Zanobetti, and J. Schwartz, "Modifiers of the Temperature and Mortality Association in Seven U.S. Cities," *American Journal of Epidemiology* 157 (2003): 1074–82; O'Neill, Zanobetti, and Schwartz, "Disparities by Race in Heat-Related Mortality"; M. Medina-Ramon, A. Zanobetti, D. P. Cavanagh, and J. Schwartz, "Extreme Temperatures and Mortality: Assessing Effect Modification by Personal Characteristics and Specific Cause of Death in a Multi-City Case-Only Analysis," *Environmental Health Perspectives* 114 (2006): 1331–36; J. Schwartz, "Who Is Sensitive to Extremes of Temperature? A Case-Only Analysis," *Epidemiology* 16 (2005): 67–72; Zanobetti and Schwartz, "Temperature and Mortality in Nine U.S. Cities."

39 N. Adler and D. Rehkopf, "U.S. Disparities in Health: Descriptions, Causes, and Mechanisms," *Annual Reviews in Public Health* 29 (2008): 235–52; M. S. O'Neill, A. J. McMichael, J. Schwartz, and D. Wartenberg, "Poverty, Environment, and Health: The Role of Environmental Epidemiology and Environmental Epidemiologists," *Epidemiology* 18 (2007): 664–68.

40 M. Nord and L. S. Kantor, "Seasonal Variation in Food Insecurity Is Associated with Heating and Cooling Costs among Low-Income Elderly Americans," *Journal of Nutrition* 136 (2006): 2939–44.

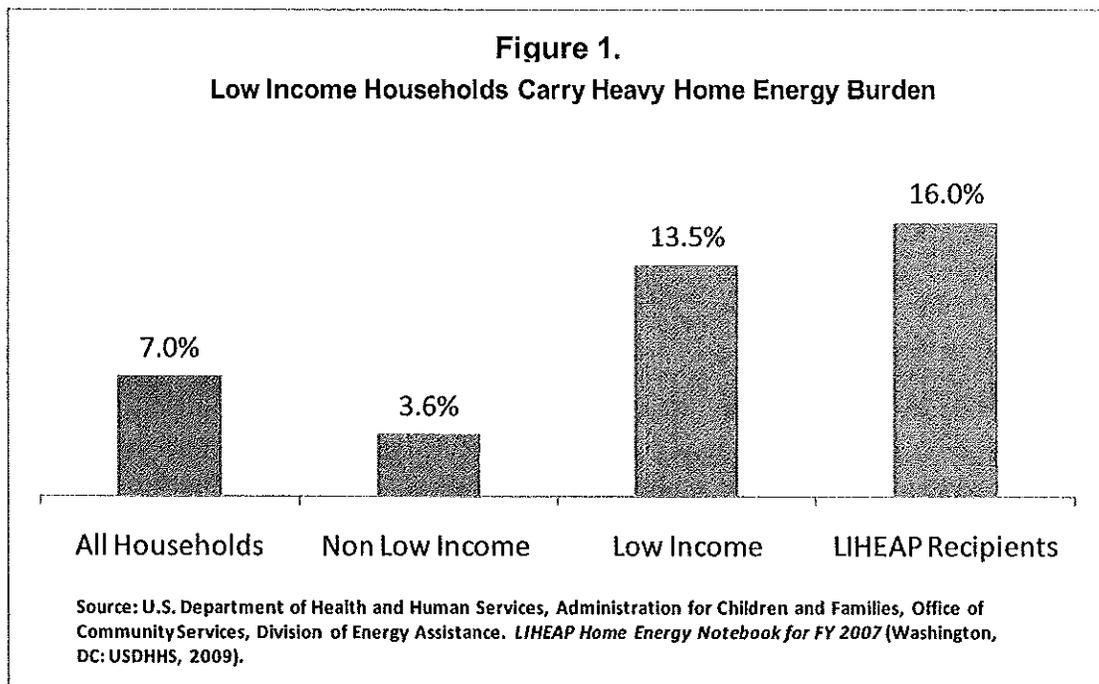
41 J. Bhattacharya, T. DeLeire, S. Haider, and J. Currie, "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families," *American Journal of Public Health* 93 (2003): 1149–54.

42 Expenditures are in nominal terms and not adjusted for inflation. U.S. Department of Energy, Energy Information Administration, Short-Term Energy Outlook (March 2010), Table WF01, "Average Consumer Prices and Expenditures for Heating Fuels During the Winter," <http://www.eia.doe.gov/pub/forecasting/stco/oldsteos/mar10.pdf> (accessed 5/18/2010).

43 U.S. Department of Energy, Energy Information Administration (2010), Table 5.3, "Average Retail Price of Electricity to Ultimate Customers: Total by End-Use Sector, 1996 through February 2010," http://www.eia.doe.gov/cneaf/electricity/epm/table5_3.html (accessed 5/18/2010).

⁴⁴U.S. Department of Energy, Energy Information Administration (2010), *Annual Energy Outlook 2010*, p.66; Rebecca Smith, "Utilities Seek Round of Rate Increases," *Wall Street Journal* November 27, 2009; Scott DiSavino, "U.S. Power Bills Down, But Not For Long," *Reuters*, August 25, 2009.

In fiscal year (FY) 2007, the most recent year for which such data are available, the average residential energy expenditure for all households was \$1,986, the mean home energy burden (the proportion of a household's budget allocated for utility bills) was 7 percent, and heating costs and cooling costs accounted for about 41 percent (28 percent and 13 percent, respectively) of residential energy expenditures.⁴⁵ Households *eligible* for LIHEAP spend less on energy (\$1,715) on average but carry nearly twice the home energy burden (13.5 percent), while households *enrolled* in LIHEAP spent about an average amount (\$1,900) but 16 percent of their annual income (see Figure 1). On average, LIHEAP-enrolled households have lower incomes than LIHEAP-eligible households.



High and rising energy prices have a disparate impact on households that include older adults, even though they consume less energy than households without older adults. In fact, households that include older adults use about 5 percent less energy, reflecting smaller homes, and among these households, those at or below the federal poverty level use about one-third less energy.⁴⁶ Nationally, and in all regions of the country (Northeast, Midwest, South) except the West, low-income households that include older adults use energy more intensively—that is, they consume more energy per square foot of living

45 U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, *LIHEAP Home Energy Notebook for FY 2007* (Washington, DC: USDHHS, June 2009).

46 J. Howat and P. Taormina, "Home Energy Costs: The New Threat to Independent Living for the Nation's Low-Income Elderly," *Clearinghouse REVIEW. Journal of Poverty Law and Policy* 41 (2008): 552-68.

space—than do households above the poverty line. This use reflects the fact that these households are more likely to have older, less energy-efficient appliances such as refrigerators and heating equipment. Because of this disparity, these households pay more and receive less, in terms of home energy, than the average household.⁴⁷

While energy prices have risen, median incomes have stagnated, especially for low- and moderate-income households. As a result, home energy burdens, have increased:

- Between 2001 and 2006, home energy burdens for poor, older adults living in two-person households rose significantly.⁴⁸ For such households whose incomes are less than 150 percent of the federal poverty levels, average energy burdens grew by almost 25 percent in the Northeast (to 9.6 percent) and South (to 8.2 percent), and by more than 10 percent in the Midwest (to 7.5 percent).⁴⁹
- The home energy affordability gap, which illustrates differences between what low-income households are billed and what they can afford to pay, has more than doubled between 2002 and 2007.⁵⁰
- Since the early 1970s, while median household incomes have risen, the volatility of income has increased; and the chance that a household headed by a working-age adult (ages 25 through 65) will experience a significant loss of income has increased by almost 50 percent.⁵¹

LIHEAP IMPROVES ACCESS TO HOME ENERGY

LIHEAP improves access to home energy, but it has not kept pace with need and does not guarantee basic, affordably priced utility service. LIHEAP, the single largest source of federal income support for home energy costs, provides eligible low-income households with financial assistance to offset the costs of heating and cooling their homes. According to the most recent data from the U.S. Department of Health and Human Services (FY 2007), an estimated 5.3 million households received an average of \$320 in winter heating or winter crisis assistance, and 600,000 households received an average of \$171 in summer cooling or summer crisis assistance.⁵²

47 Howat and Taormina, "Home Energy Costs: The New Threat."

48 Ibid.

49 Ibid. These figures do not reflect significant energy price increases seen in 2007 and those predicted for the future.

50 This measure aggregates county-level measures of total energy bills, weighted by the proportion of low-income residents (households earning less than 185 percent of the poverty level); see <http://www.homeenergyaffordabilitygap.com>. A home energy burden is defined as affordable if bills are less than 10 percent of household income.

51 P. Gosselin and S. Zimmerman, "Trends In Income Volatility and Risk, 1970–2004," Urban Institute Working Paper (Washington, DC: The Urban Institute, 2008).

52 USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.

Unfortunately, LIHEAP benefits cover only a portion of home energy costs. In fact, the percentage of the total home heating bill covered by LIHEAP benefits decreased from 23 percent in 1981 to 10 percent in FY 2007.⁵³

Moreover, the number of households that receive LIHEAP assistance represents only a small fraction of income-eligible households. More than 33.8 million households—which included more than 13.7 million households that had at least one member 60 years of age or older—were income-eligible for LIHEAP in FY 2007.⁵⁴ Millions more households became eligible during FY 2009 as many states increased their maximum income eligibility guidelines for LIHEAP from 60 percent to 75 percent of state median income.

Congress nearly doubled the federal allocation for LIHEAP from \$2.6 billion in FY 2008 to \$5.1 billion for FY 2009. The increase provided a much-needed infusion of support for the program:

- The purchasing power of LIHEAP dollars jumped to approximately 56 percent of the average cost to heat a home, the highest percentage since the program began.
- The average grant increases modestly to an estimated \$543.
- The number of households served rose by 25 percent, or an additional 1.9 million households.⁵⁵

Nevertheless, the 7.7 million households who received LIHEAP during 2009 was less than one-quarter of the number estimated to be income-eligible.⁵⁶

Households that cannot afford to pay their utility bills face the possibility of having their utility service disconnected. While LIHEAP can help prevent shutoff of essential utility service by making payment more affordable, millions of residential consumers, including many LIHEAP-eligible and -assisted households, have their electricity or natural gas service terminated for failing to pay their bills.⁵⁷ Most states offer only limited protections to prevent the shutoff of regulated home utility service for nonpayment, and there are no regulatory protections governing delivered fuels, such as heating oil, propane, and wood. According to the National Center for Appropriate Technology's LIHEAP Clearinghouse, 40 states have seasonal moratoria on the shutoff of electricity or natural gas during the wintertime, 10 states have seasonal moratoria for the summer

53 USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.

54 The number of eligible households is calculated using state-level income guidelines. USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.

55 NEADA, "Low Income Home Energy Assistance Program – Program Purchasing Power," (unpublished memo: NEADA, October 6, 2008, available from Mark Wolfe, mwolfe@neada.org); NEADA, "Table 1: LIHEAP Winter Heating Households Served FY 09 & FY 10 Projected (Revised 02-23-10)," press release available at <http://www.neada.org/communications/press/2010-02-22/Table1-LIHEAP10ProjServed.pdf> (accessed 04/08/10).

56 *Ibid.*

57 S. Sloane, M. Miller, B. Barker, and L. Colosimo, "2008 National Association of Regulatory Utility Commissioners (NARUC) Collections Survey Report," <http://www.naruc.org/Publications/2008%20NARUC%20Collections%20Survey%20Report.pdf> (accessed 04/08/10).

months, and 43 states have limited protections against shutoffs on the grounds of life-threatening or serious illness (usually a delay in a scheduled shutoff for nonpayment if a health care practitioner certifies poor health).⁵⁸ Only eight states have utility shutoff protections specifically for older adults, two of which protect against shutoffs during summertime and wintertime, while six offer protection only during the wintertime.

Low-income energy assistance, and related utility rate discount programs, where offered, help increase access to moderate indoor temperatures and temper the stress that high utility bills place on household budgets. Smart public policy, however, also involves weatherization and energy efficiency measures, utility shutoff protections, and guaranteed basic levels of service, as well as public education to inform individual decision making about using and conserving home energy.

NATIONAL ENERGY ASSISTANCE SURVEY

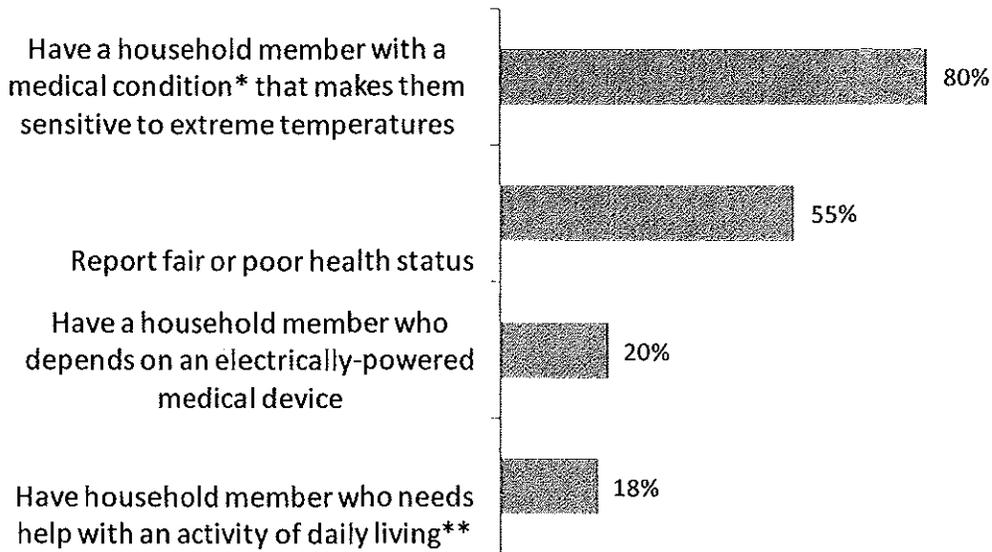
Unaffordable home energy subjects many older adults to direct and indirect threats to their health and safety. A survey released by the National Energy Assistance Directors' Association indicates that LIHEAP-enrolled households that include an older adult are particularly vulnerable to adverse health outcomes related to high home energy burdens (see figure 2) and frequently make difficult choices that pose both *direct* and *indirect* risks to health.⁵⁹

58 LIHEAP Clearinghouse, "Seasonal Termination Protection Regulations," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.necat.org/Disconnect/SeasonalDisconnect.htm> (accessed 12/25/09).

59 The concept of two main pathways through which household energy burden affects health is developed in Child Health Impact Working Group, *Unhealthy Consequences: Energy Costs and Child Health* (Boston, MA: Child Health Impact Working Group, 2006). Unless otherwise noted, all findings reported in this section are from a 12-state telephone sample survey of households receiving an LIHEAP benefit. See NEADA, "2008 National Energy Assistance Survey" (Washington, DC: Apprise, Inc., 2009), available from Mark Wolfe, mlwolfe@neada.org.

Figure 2.

Health Status Makes LIHEAP Households with an Older Adult Particularly Vulnerable to Unaffordable Home Energy



* including asthma, emphysema, chronic obstructive pulmonary disorder (COPD), diabetes, high blood pressure, heart disease, or stroke

** help with personal care needs because of a physical, mental or emotional problem

Source: National Energy Assistance Directors' Association. *2008 National Energy Assistance Survey* (Princeton, NJ: Apprise, Inc., 2009). Available from Mark Wolfe, mwolfe@neada.org.

Direct threats to health:

Health is at risk *directly* through exposure when heat is turned down in winter or air-conditioning is turned off in summer, when unsafe means are used to heat or light homes, and when utility service is lost due to nonpayment. Substandard dwellings may be hard or impossible to keep within a moderate temperature range, and excessive humidity may lead to mold growth that increases the likelihood of respiratory disease. The following statistics pertain to LIHEAP-enrolled households that include an older adult:

- In response to high home energy prices perceived as unaffordable, 46 percent report closing off part of their home for at least one month a year, 24 percent maintain their home at what they perceived as an unsafe or unhealthy temperature, and 17 percent

report leaving their home for part of the day because they were unable to maintain moderate indoor temperatures..⁶⁰

- More than one-quarter (27 percent) report using the kitchen stove or oven for heat, and 4 percent use candles or lanterns because of loss of utility service for nonpayment..⁶¹
- More than one-quarter (28 percent) report skipping payment of a utility bill or paying less than the full amount, 19 percent received a shutoff notice for nonpayment within the past year, and 6 percent report the loss of either electrical or natural gas service for nonpayment..⁶²
- One in six (17 percent) report that they were unable to use their main heating source at some point during the previous year because they did not have the money to accomplish one or more of the following: fix or replace a broken furnace; purchase bulk fuel such as heating oil, propane, or wood; or prevent the shutoff of utility service for nonpayment..⁶³
- One in eight (12 percent) report that they were unable to use their air-conditioning at some point during the previous year because they did not have the money to accomplish one or both of the following: fix or replace a broken air conditioner; or prevent the shutoff of electricity for nonpayment..⁶⁴

Indirect threats to health:

Financial stress poses *indirect* threats when households must make difficult decisions in the face of competing demands for limited dollars. This scenario is commonly described as “heat or eat,” making vivid the trade-offs between paying a utility bill and purchasing groceries or medications. The following statistics pertain to LIHEAP-participating households that include an older adult:

- Three-quarters (74 percent) report cutting back on the purchase of household necessities because of high home energy bills..⁶⁵
- Nearly one-quarter (24 percent) report going without food for at least one day because of energy bills in the past five years..⁶⁶

60 NEADA, “2008 National Energy Assistance Survey,” Table IV-17B, Table IV-18B, Table IV-19B.

61 Ibid., Table IV-20B, Table IV-37B.

62 Ibid., Table IV-22B, Table IV-23B, Table IV -27B.

63 Ibid., Table IV-31B.

64 Ibid., Table IV-34B.

65 Ibid., Table IV-14B.

66 Ibid., Table IV-50B.

- Almost one-third (32 percent) report going without medical or dental care because of energy bills in the past five years, and 31 percent report neglecting to fill a medical prescription or taking less than a full dose because of high energy bills.⁶⁷
- One in six (15 percent) report being unable to pay energy bills because of medical or prescription drug expenses during the past year.⁶⁸

MAKING THE CONNECTIONS: HIGH HOME ENERGY BURDENS AND POLICY PRIORITIES

Policies and programs to address the health threats posed by high home energy prices can build on existing efforts in the areas of energy, long-term care and health care reform, and livable communities.

ENERGY

The high cost of basic home utility service threatens the economic security of low- and moderate-income households and by extension, the health and well-being of household members. Affordable energy policies promote population health.

The ultimate goal of home heating and cooling is to maintain moderate indoor temperatures. Meeting energy needs affordably has been a consistent challenge for too many households and could become even more problematic as energy prices increase in response to efforts to reduce greenhouse gas emissions. Full funding of LIHEAP in recent years has enabled many states to raise their maximum income eligibility guidelines, the size of individual awards, and the numbers of households enrolled. However, LIHEAP still services only about one-quarter of eligible households.⁶⁹

Recognizing that a host of issues can make young children and older adults more vulnerable to temperatures that deviate from a moderate range, some states prohibit or limit the disconnection of residential energy services for households with members of certain ages.⁷⁰ Many states offer a limited protection against involuntary loss of home utility service for people facing life-threatening circumstances or serious illness. Typically, these protections take the form of a delay or extension in the schedule for a shutoff, which is set in motion by the periodic filing of a medical certification with the state energy office or utility company.⁷¹ Only a handful of states prohibit shutoffs

67 Ibid., Table IV-51B, Table IV-52B.

68 Ibid., Table IV-53B.

69 NEADA, "LIHEAP Program Purchasing Power," unpublished memo, November 11, 2009, available from Mark Wolfe, mhwolfe@ncada.org.

70 LIHEAP Clearinghouse, "State Disconnection Policies," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.ncat.org/Disconnect/disconnect.htm> (accessed 12/25/09).

71 LIHEAP Clearinghouse, "Seasonal Termination Protection Regulations," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.ncat.org/Disconnect/SeasonalDisconnect.htm> (accessed 12/25/09).

altogether for people facing significant health challenges. Current practice does not acknowledge the difficulty that the average low-income household has in maintaining regular access to appropriate health care so that a medical provider can file such a notice.

Some recent policy initiatives pose threats to the health of older people. At the local, state, regional, and national levels, policymakers and industry groups have initiated efforts to shift and dampen consumer demand for electricity. These efforts have focused on the deployment of advanced metering technology and a variety of new pricing programs that vary the price of electricity based on the time of day.⁷² These demand-response policies not only create financial incentives and indirect pressure to reduce consumption but also pose a potential threat to health and safety for consumers who must pay more for electricity because they cannot shift their usage from higher cost peak times to lower cost off-peak times. These policies raise other concerns as well:

- Installing advanced meters, and related technology is expensive and expected to be financed by utility customers, adding to the cost of residential electricity.
- While traditional meter technology requires a visit to the customer's premises to disconnect service for nonpayment or other reasons, advanced meters typically include a switch that allows the utility to disconnect service from a remote location. The use of this functionality could result in an increase in the volume of disconnections for nonpayment and have adverse impacts on health and safety if utilities do not visit the customer's premises at the time of disconnection. In this regard, a site visit allows utility field personnel to observe individual customer circumstances and identify signs of potential medical emergencies and other safety risks associated with the loss of service. It also provides customers with opportunity to pay any delinquencies on their bill and ensures that they are aware of the impending action. The potential danger of remote disconnections is exemplified in the case of a 93-year-old Michigan resident who died of hypothermia inside his home, the result of a service limiter being tripped.⁷³

HEALTH SERVICES AND LONG-TERM CARE

Exposures to extreme temperatures and lack of access to home energy assistance are associated with greater use of health services, especially by older adults with chronic health conditions. Published studies document the greater use of health services that result from exposures to excessive heat or cold and the potential of high home energy burdens to destabilize the national movement to promote aging in place and independent living.

72 B. Alexander, "Smart Meters, Real Time Pricing, and Demand Response Programs: Implications for Low Income Electric Customers," unpublished paper, revised May 30, 2007, available from Barbara Alexander, barbalex@ctel.net; N. Brockway, "Advanced Metering Infrastructure: What Regulators Need to Know about Its Value to Residential Customers" (Silver Spring, MD: National Regulatory Research Institute, 2008); N. Walters, *Can Advanced Metering Help Reduce Electricity Costs for Residential Consumers?* AARP Insight on the Issues no. 18 (Washington, DC: AARP, 2008).

73 D. Eggert, "Freezing Death of Michigan Man, 93, Inside House Sparks Anger; City Utility Cut Power with Limiter," Associated Press, January 28, 2009.

One implication of these findings is that efforts to strengthen access to affordable energy and ensure protections against shutoffs of basic service can reduce the economic costs of avoidable health care services, improve patient health status, and facilitate independent living. This relationship between home energy and health services is analogous to the connection between the use of primary health care and potentially avoidable hospitalization. Hospitalizations can be avoided with sufficient access to primary care.⁷⁴ Similarly, in the context of high home energy burdens, avoidable hospital visits and admissions for heat- and cold-sensitive conditions suggest the need to strengthen access to affordable energy and to ensure protections against shutoffs of basic service.

In the federal LIHEAP statute, Congress recognizes that affordable home energy has important implications for the health and safety of older adults (defined as at least 60 years of age), young children (up to age 6), and people living with a disability. The statute identifies these three populations in its definition of households that have the “highest home energy needs” and identifies them as priorities for outreach and enrollment.

The federal statute gives each state and tribal LIHEAP program the option of allowing households to demonstrate eligibility for the program based on their participation in other means-tested programs rather than having to provide evidence of income. Known as categorical eligibility, the option of using other low-income assistance programs, including Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), and the Supplemental Nutrition Assistance Program (food stamps), as proxies for income eligibility gives states more flexibility and provides the opportunity to identify and serve households that are at risk of adverse health outcomes from high home energy burdens. For instance, SSI provides monthly benefits to 7.5 million low-income individuals who live with a significant disabling condition, who are legally blind, or who are at least 65 years old.⁷⁵ States likely would reach even more of those most at risk of adverse health outcomes if categorical eligibility were extended to targeted groups of medically frail individuals, as identified through their participation in health services and receipt of long-term care services. For example, consider the following statistics that pertain to approximately 12.6 million Medicare beneficiaries who are at least 65 years old and who live in households that are income-eligible for LIHEAP (earning no more than 150 percent of the federal poverty level):⁷⁶

74 A. B. Bindman, K. Grumbach, D. Osmand, M. Komaromy, K. Vranizan, N. Lurie, J. Billings, and A. Stewart A, “Preventable Hospitalizations and Access to Care,” *Journal of the American Medical Association* 274, no. 4 (1995): 305–11.

75 SSI is a federal entitlement program providing monthly income support for members of low-income households who live with a significant disabling condition, who are legally blind, or who are at least 65 years of age. Social Security Administration, *SSI Annual Statistical Report, 2007*, SSA Pub. No. 13-11827 (Washington, DC: SSA, 2008).

76 Estimates cited in this paragraph are from Kaiser Family Foundation (KFF), Urban Institute, and Kaiser Commission on Medicaid and the Uninsured, based on the U.S. Census Bureau, “March 2007 and 2008 Current Population Survey,” CPS: Annual Social and Economic Supplements (Washington, DC: U.S. Census Bureau, 2008, 2009), <http://statehealthfacts.org> (04/20/09).

- Nearly 9.4 million are eligible to enroll in the Medicare Part D Low-Income Subsidy for assistance paying for prescription drugs.⁷⁷
- About 6.2 million are fully eligible for Medicaid subsidy of health care expenses not covered under Medicare.⁷⁸

Long-term care arrangements for older adults who are seriously ill or disabled should acknowledge the importance of affordable home energy. Most states have Medicaid waiver programs that pay for home- and community-based services for income-eligible people who otherwise might enter a nursing home. Some 1.3 million people receive support to stay in their homes under Medicaid waivers, and many more are eligible and

Box 1.
Extreme Temperatures, LIHEAP, and Potentially Avoidable Hospitalization

- **Hospital admissions attributed to exposure:** In 2005, about 12,700 people were hospitalized in the United States for weather-related reasons, with residents of lower income communities more than twice as likely as those from higher income areas to be hospitalized.^a Aggregate costs for these admissions are significant—\$38.7 million for heat-related stays and \$81.5 million for cold-related stays.
- **Hospital visits and admissions during heat waves:** During a two-week heat wave in California in July 2006, emergency department visits rose more than sixfold and hospital admissions more than tenfold for heat-related diagnoses for the state as a whole.^b Chicago's July 1995 heat wave boosted hospital admissions 35 percent over the average for older Americans.^c
- **Positive impact of energy assistance:** Young children in families eligible for but not enrolled in LIHEAP are more likely to need hospital admission on the day of a health care visit.^d

a C.T. Merrill, M. Miller and C. Steiner, "Hospital Stays Resulting From Excessive Heat and Cold Exposure Due to Weather Conditions in U.S. Community Hospitals, 2005," *Healthcare Cost and Utilization Project, Statistical Brief No. 55* (Rockville, MD: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, 2008).

b Knowlton et al., "The 2006 California Heat Wave."

c Semenza et al., "Excess Hospital Admissions."

d D.A. Frank, N.B. Neault, A. Skalicky, J.T. Cook, J.D. Wilson, S. Levenson, A.F. Meyers, T. Heeren, D.B. Cutts, P.H. Casey, M.M. Black and C. Berkowitz, "Heat or Eat: the Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 Years of Age," *Pediatrics* 118, no.5 (2006): e1293-1302.

77 KFF statehealthfacts.org, estimate for 2008 from Centers for Medicare and Medicaid Services (CMS), Office of External Affairs, released January 31, 2008.

78 KFF, statehealthfacts.org, Urban Institute estimates for 2003 based on data from the Medicaid Statistical Information System (MSIS) prepared for the Kaiser Commission on Medicaid and the Uninsured.

on waiting lists for waiver slots.⁷⁹ Affordable home energy and adequate indoor temperatures are an important support for the success of home- and community-based services, stabilizing the home environment and freeing up dollars in the household budget. Although federal Medicaid funds may not be used to pay for home utility service, some states, such as Florida, have carried out demonstration projects (cash and counseling) that give participants greater latitude in how funds for long-term care services are used, including to pay utility bills.⁸⁰ Access to basic home utility service can be considered part of accommodations made under the Americans with Disabilities Act to guarantee that people who are ill or disabled enough to live in a nursing home have the option to live in a community setting instead.⁸¹

Strengthening the connections between affordable home energy and health requires a greater understanding of affordable energy issues among clinicians, health care administrators, and analysts. Many in the health care community fail to recognize the role of home energy as a support for the effective delivery of health services and long-term care. Various studies indicate that health care and public health professionals, and the clients and family caregivers they serve, need better information about the health and safety threats posed by inadequately heated and cooled homes and the high home energy burdens borne by low- and moderate-income households.⁸² Preparing the health care community for climate change will involve training providers and safety net workers to recognize heat-related ailments and making them aware of the resources that can help at-risk patients maintain access to healthy and comfortable temperatures. For example, a health care practitioner's ability to protect people facing life-threatening circumstances or serious illness against involuntary loss of home utility service (as discussed above) depends significantly on the practitioner's awareness of and ability to comply with the consumer protection regulations that govern utility service shutoffs.⁸³

LIVABLE COMMUNITIES

Ultimately, policies that promote adequate and affordable home energy use, and that acknowledge the role of home energy as a support for the effective delivery of long-term

79 Estimate for 2004 from AARP, *A Balancing Act: State Long-Term Care Reform* (Washington, DC: AARP, 2008), Table A3.

80 On the cash and counseling demonstration in Florida, see B. Phillips and B. Schneider, "Commonalities and Variations in the Cash and Counseling Programs across the Three Demonstration States," *Health Services Research* 42, no. 1 (2007): 397-413.

81 A state's Olmsted plan, required under federal law, details how the state will provide long-term care supports to residents in the least restrictive setting available. R. Desonia, *Is Community Care a Civil Right?* National Health Policy Forum Background Paper, 2003, <http://www.nhpf.org> (12/14/09).

82 R. Jackson and K. N. Shields, "Preparing the U.S. Health Community for Climate Change," *Annual Reviews in Public Health* 29 (2008): 57-73; F. Matthies, G. Bickler, N. C. Marin, and S. Hales S., eds., *Heat-Health Action Plans. Guidance* (Copenhagen, Denmark: World Health Organization, 2008); J. Balbus, K. Ebi, L. Finzer, C. Malina, A. Chadwick, D. McBride, M. Chuk, and E. Maibach, *Are We Ready? Preparing for the Public Health Challenges of Climate Change* (New York: Environmental Defense Fund, 2008), http://www.edf.org/documents/7846_AreWeReady_April 2008.pdf (accessed 04/08/10).

83 One such strategy, the Energy Clinic, has been developed at the Boston Medical Center. Energy Clinic activities include training for clinicians about how to prepare medical certification letters to prevent shutoffs of home utility services for the families of pediatric patients - Adam Sege, *Utility Access and Health. A Medical-Legal Partnership Patients-to-Policy Case Study* (Boston, MA: National Center for Medical Legal Partnership, 2010). Available at <http://www.medical-legalpartnership.org>.

care and health services to older adults, promote community dwelling that facilitates personal independence and quality of life.

For example, prudent land-use planning recognizes that the urban heat island effect, or how buildings and paved space retain heat locally, increases ambient temperatures and raises the risk of premature death.⁸⁴ Studies of differences in neighborhood temperatures during the summer underscore the importance of access to air-conditioning in protecting against the heat. In urban St. Louis, older adults are more likely to die during a heat wave if they live in the more crowded blocks adjacent to the central business district, where older, red brick buildings are more likely to retain heat overnight and where residents tend to be from lower-income households and therefore less likely to have air-conditioning.⁸⁵ In Phoenix, Arizona, temperatures vary by up to 7 to 12 degrees Fahrenheit among urban, suburban, and urban fringe neighborhoods.⁸⁶ The highest temperatures are seen in the poorest neighborhoods, which are densely populated and have little green or open space, and in newer middle-class areas that by design also feature homes built in close proximity and that substitute desert landscaping for green space. For residents of these middle-class Phoenix neighborhoods, access to central air-conditioning and to swimming pools lowers the risks associated with the heat.

Policies that make affordable housing energy efficient lower the costs of heating and cooling, preserve household budgetary assets, and protect the health and safety of occupants. As such, these policies leverage the impact of public benefit dollars spent for health care (Medicaid, Medicare) and food (Supplemental Nutrition Assistance Program, Commodity Foods).

Policies that promote walkable neighborhoods discourage crime, nurture intergenerational social networks, and minimize (through these networks) social isolation and the chances that weather extremes will lead to premature deaths, hospitalizations, and an increased burden of disability and disease among low- and moderate-income households that include older adults.⁸⁷ For example, the Philadelphia Department of Health maintains a partnership with a network of neighborhood block captains to support the outreach efforts of city's heat health warning/watch system during heat waves. Working with city Health Department staff, the block captains—volunteers elected by residents to organize neighborhood activities and projects with the city—disseminate information as a heat wave develops and identify and evaluate the health status of vulnerable local residents.⁸⁸ This active and personal approach to conveying public health information is particularly important for socially isolated and older adults, who

84 K. E. Smoyer, "Putting Risk in Its Place: Methodological Considerations for Investigating Extreme Event Health Risk," *Social Science and Medicine* 47, no. 11 (1998): 1809–24.

85 Ibid.

86 S.L. Harlan, A.J. Brazel, L. Prashad, W.L. Stefanov and L. Larsen, "Neighborhood Microclimates and Vulnerability to Heat Stress," *Social Science and Medicine* 63, no. 11 (2006): 2847–2863.

87 During heat waves, the most vulnerable are older people who live alone, have limited mobility, and are socially isolated. E. Klinenberg, *Heat Wave. A Social Autopsy of Disaster in Chicago* (Chicago: University of Chicago Press, 2002); Kovats and Hajat, "Heat Stress and Public Health."

88 Environmental Protection Agency, *Excessive Heat Event Guidebook*.

tend to be less responsive to information disseminated through brochures and other more passive means.⁸⁹

Finally, effective risk communication efforts help the public understand the threats to health and safety posed by inadequate home heating and cooling, as well as exposures to outdoor temperatures that are likely to vary dramatically and to change from historic patterns because of climate change.⁹⁰ For example, in implementing heat health warning and watch systems in their communities, policymakers have taken advantage of various communication strategies, including the following:

- Developing and disseminating information that summarizes health and safety risks
- Instructing members of the public about available municipal services to mitigate summertime heat or winter cold
- Targeting messages to specific groups of at-risk residents
- Developing warnings that function effectively, for example, to discourage older adults from using electric fans as a cooling strategy when temperatures climb into the upper nineties.⁹¹

The reviews of the heat health warning/watch system in Philadelphia indicate impressive results.⁹² Over its first three years (1995–1998), Philadelphia’s Hot Weather-Health Watch/Warning System is estimated to have saved about 2.6 lives per day when a warning is issued and for the three-days following the warning, for a total of 117 lives, at an estimated total cost of \$210,000.⁹³ This cost is about 5 percent of the valuation of a statistical life of one older adult, as estimated by the Environmental Protection Agency, making a communications-based strategy a practically no-cost approach to saving lives.

POLICY RECOMMENDATIONS

The following recommendations could help address the serious and increasing health threats posed by unaffordable home energy:

- Ensure that subsidies and discounts help make home energy affordable and sustainable for households that include older adults. These households should have

89 Matthies et al., *Heat-Health Action Plans*.

90 E. W. Maibach, C. Roser-Renouf, and A. Leiserowitz, “Communication and Marketing as Climate Change-Intervention Assets: A Public Health Perspective,” *American Journal of Preventive Medicine* 35, no. 5: 488–500.

91 Environmental Protection Agency, *Excessive Heat Event Guidebook*.

92 Environmental Protection Agency, *Excessive Heat Event Guidebook*, citing M. A. Palecki, S. A. Chagnon, and K. E. Kunkel, “The Nature and Impacts of the July 1999 Heat Wave in the Midwestern United States: Learning from the Lessons of 1995,” *Bulletin of the American Meteorological Society* 82: 1353–67.

93 K. L. Ebi, T. J. Teisberg, L. S. Kalkstein, L. Robinson, and R. F. Weiher, “Heat Watch/Warning Systems Save Lives. Estimated Costs and Benefits for Philadelphia 1995–1998,” *Bulletin of the American Meteorological Society* 85, no. 8: 1067–73.

the option to pay down utility arrearages (amounts due) while not jeopardizing current payments, and should have priority access to energy-efficiency and conservation services and to appliance replacement programs.

- Assess the need for LIHEAP and the total amount of energy assistance for households in terms not only of lowering the home energy burden (the percentage of household income that must be spent for essential home energy services) but also the value added through improved health and reduced threats to safety. Such an approach is rooted in the perspective of the household, rather than that of the utility company.
- Expand categorical eligibility for LIHEAP, weatherization services, and other affordable energy programs to target groups identified as most at risk of adverse health outcomes through their eligibility for Medicaid and Medicare programs, such as state Medicaid waiver programs and the Medicare Part D Low-Income Subsidy.
- Ensure that state-regulated utility consumer protections and policies specifically recognize and address the needs of groups identified as most at risk of adverse health outcomes. For example, shutoff protections based on certification of serious illness should be extended to at least 120 days or one full year (before requiring recertification). In addition, states should adopt policies to lessen the likelihood of a shutoff, such as in-person notification of intent to disconnect and the option to make alternative payment arrangements.
- Ensure that demand-response programs for consumers balance the need to reduce energy consumption with the protection of health and safety for older adults and persons living with serious or disabling conditions.
- Design evaluations of weatherization and energy-efficiency programs to assess their impact on health and safety to demonstrate the importance of home energy for health, for example, how improvements in asthma symptoms can lower health care costs.
- Ensure that intake services for state Medicaid waiver program participation and long-term care case management services include referrals for LIHEAP, weatherization, and other affordable energy programs.
- Support education and outreach efforts to increase awareness both within the health care community and among older adults, their families, and caregivers of the resources that can help at-risk individuals maintain access to healthy and comfortable temperatures. For example, in each state, clinicians and public health officials should be trained in regulated utility consumer protections and in procedures to prepare letters to certify medical shutoff protections for their patients.
- Give priority in home repair or modification programs that serve medically frail participants (such as under a state Medicaid waiver) to cost-effective energy-efficiency measures that protect health and safety (for example, special coatings for flat-roofed rowhouses that lower indoor temperatures in summer).

- Identify and implement best practices for communicating with the public, especially older adults, their families, and caregivers, about the risks of heat waves and cold temperatures, about the links between temperature and health, and about which prevention, education, and response efforts are most effective. Implementation should bring together public officials from health departments, energy offices, and state emergency preparedness.

CONCLUSION

As the U.S. population ages, as our health care system shifts toward support for independent living and aging in place, and as urban infrastructure and global warming present new environmental challenges, the rising cost of basic utility services jeopardize the stability and capacity for self-sufficiency of households that include older adults. Understanding and addressing the implications for energy policy of public and population health priorities, and the implications for public health of affordable energy and energy efficiency priorities, requires a fresh approach. Such an approach should unite two diverse groups of practitioners, in the energy and health fields, to craft new solutions to help American households maintain both economic security and good health.

When a heat wave recurred in Chicago in 1999, four years after hundreds of deaths and hospitalizations during the July 1995 heat wave, city officials and civic groups responded with an effective, coordinated approach informed by the research done in the wake of the 1995 disaster. Chicago implemented a heat health emergency plan that included the opening of cooling centers and outreach to homebound older adults. Far fewer residents died prematurely on account of this second heat wave. Nevertheless, the summer of 1999 in Chicago exposed a number of critical issues, including the following:

- High home energy burdens
- Limited subsidies under LIHEAP and related programs
- Lack of coordination among Medicaid and other public benefit programs with low-income home energy subsidies or residential utility consumer protections
- The realities of life in neighborhoods that remained unsafe and socially isolating for older adults

Ten years later, these and many other related issues remain unresolved, a fact that must change if the United States is to address the widespread problem of insufficient access to affordable heating and cooling as the public health threat it has become.



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Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design

A RESOURCE OF THE NATIONAL ACTION PLAN FOR
ENERGY EFFICIENCY

SEPTEMBER 2009

The Leadership Group of the National Action Plan for Energy Efficiency is committed to taking action to increase investment in cost-effective energy efficiency. *Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design* was developed under the guidance of and with input from the Leadership Group. The document does not necessarily represent a consensus view and does not represent an endorsement by the organizations of Leadership Group members.

Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design is a product of the National Action Plan for Energy Efficiency and does not reflect the views, policies, or otherwise of the federal government. The role of the U.S. Department of Energy and U.S. Environmental Protection Agency is limited to facilitation of the Action Plan.

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List of Abbreviations and Acronyms

CO ₂	carbon dioxide
CPP	critical peak price
FERC	Federal Energy Regulatory Commission
kW	kilowatt
kWh	kilowatt-hour
MW	megawatt
SFV	straight fixed-variable
TOU	time of use

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Executive Summary

This brief, Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design, summarizes the issues and approaches involved in motivating customers to reduce the total energy they consume through energy prices and rate design. The scope of this brief is limited to how the multi-objective ratemaking process can address customer incentives to reduce total energy consumption, which also contributes to reductions in peak demand.¹ This brief is provided as part of a comprehensive suite of papers and tools to assist organizations in meeting the National Action Plan for Energy Efficiency goal to achieve all cost-effective energy efficiency by 2025.

Improving energy efficiency in our homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the country—is one of the most constructive, cost-effective ways to address the challenges of high energy prices, energy security, air pollution, and global climate change. Despite these benefits and proven approaches, energy efficiency remains critically underutilized in the nation's energy portfolio. Regulators can address this problem in part by removing one of the persistent barriers to energy efficiency by creating effective customer incentives for energy efficiency through electric and natural gas rates.

Prices, Rates, and Energy Efficiency

Customers respond to increases in energy prices by (1) changing energy usage behavior, (2) investing in energy-using technologies and practices, or (3) making no change to their energy usage. Customers see energy prices through their rates, which are typically embedded in a “tariff,” a document approved by a regulatory commission (for investor-owned utilities) or by a utility's leadership (for publicly owned utilities). Rates differ across customer classes and are offered in various forms, consisting of charges they must pay regardless of how much energy is consumed² and charges they can avoid by using less energy. Both rates and prices affect the total energy bill paid by customers. Some states are considering how to encourage all types of customers to become more energy-efficient as one of the many objectives of rate design.³

Key Findings

States may consider rate design changes due to a number of drivers, including rising energy prices and utility investments in advanced meter infrastructure, as well as new energy efficiency policies. This brief explains how retail electricity and natural gas rate design affects customers' energy use behavior and investment choices. The key findings include:

Overarching Findings

- Ratemaking is a complex process that serves multiple policy and business goals. Encouraging energy efficiency is one of those goals, but it must be balanced with equity and other considerations.
- Utility tariffs and the prices they convey can motivate energy efficiency, but high rates and prices alone are not likely to overcome the well-documented barriers to cost-effective energy efficiency.

- Utilities and regulators should continue to examine rate and pricing approaches that encourage customer energy efficiency, while recognizing their limitations and pursuing non-price approaches as well.
- Price transparency and the ability for customers to understand their rates and energy usage are important elements of providing customer incentives through rate design.

Specific Findings

- Shifting costs from volumetric to fixed charges, through rate designs such as straight fixed-variable, does not encourage customer energy efficiency.⁴
- Some rate designs, such as declining block rates and bill adders, send price signals that mask the true cost of incremental units of energy and thus can encourage more rather than less energy consumption.
- Rate designs that encourage energy usage should be examined. Alternatives such as inclining block rates offer greater customer incentives for energy efficiency.
- New time-differentiated rate options referred to as “dynamic pricing” have delivered energy use reductions under specific, short-term conditions, although their long-term impacts on total customer energy use remain uncertain.
- Enabling technologies and programs, such as energy information to customers and grid-connected measures, have been shown to increase customer savings.

As states proceed with rate and pricing policy changes, additional information would be useful to inform considerations of using rate design to encourage energy efficiency, including:

- Additional and more consistent data on emerging rate and pricing options, including their effect on total energy consumption and the persistence of savings over the long term.
- Assessing the limits of rates to achieve desired energy efficiency levels, maintain political acceptance, and meet other ratemaking objectives.
- More reliable methods for projecting the longer-term impacts of rate and pricing designs on load forecasts, so as to better incorporate their effects into resource plans.

Achieving All Cost-effective Energy Efficiency—A Vision for 2025

This brief has been developed to help parties pursue the key policy recommendations of the National Action Plan for Energy Efficiency and its Vision for 2025 implementation goals. It directly supports Vision Implementation Goal Seven, which encourages utilities and ratemaking bodies to align customer pricing and incentives to encourage investment in energy efficiency. The Action Plan has identified this as an area of minimal progress (National Action Plan for Energy Efficiency, 2008a, Chapter 2); significant state progress is needed in order to achieve the Action Plan Vision to achieve all cost-effective energy efficiency by 2025.

This brief necessarily focuses somewhat narrowly on the effects that rate design and pricing may have on customer energy efficiency behavior and investment. It therefore does not address the many other considerations involved in ratemaking, nor does it encompass the numerous

non-price policies and programs that states and utilities can pursue to encourage customer energy efficiency. Many of these issues are addressed in other Action Plan documents.

Within this context, state public utility commissions, publicly owned utility boards, and all energy utility companies are encouraged to consider how the rates and pricing they provide to customers can be part of a comprehensive solution to energy efficiency. All parties, including policy-makers, utilities, and stakeholders, are encouraged to consider the role of rates and pricing within a comprehensive suite of policies and programs to remove persistent barriers to energy efficiency. For information on the full suite of policy and programmatic options to remove barriers to energy efficiency, see the Vision for 2025 and the various other Action Plan papers and guides available at www.epa.gov/eeactionplan.

Notes

- ¹ Discussion of rate design options commonly designed to incent customer reductions during limited days and hours of peak demand is limited in this brief, addressing only the incentives these rates and pricing provide to customers to reduce total consumption throughout the year. Further, the brief does not encompass additional issues in the multi-objective ratemaking process, such as utility cost recovery and inter-class customer equity.
- ² These charges are often referred to as customer charges, which recover costs that do not vary with kilowatt-hour (kWh) usage (e.g., transmission and distribution assets, billing and customer care services).
- ³ As of December 31, 2007, seven states have examined and modified electricity rates considering the impact on customer incentives to pursue energy efficiency. Two states have done the same for natural gas rates. See National Action Plan for Energy Efficiency (2008a).
- ⁴ While fixed charges are being considered to reflect utility costs, the focus of this brief is customer incentives for efficiency. For more information on ratemaking considerations to incent utility investment in energy efficiency, see the Action Plan's utility incentives guide (National Action Plan for Energy Efficiency, 2007).

Customer Incentives for Energy Efficiency Through Electric and Natural Gas Rate Design

This brief examines utility rates and pricing policies to encourage customers to pursue energy efficiency. The need for this brief stems from the Action Plan's Vision for 2025, which observed that minimal progress has been made in examining and modifying rates considering the impact on customer incentives to pursue efficiency.⁵

This brief is designed to discuss the key concepts and issues surrounding rate design and the incentives/disincentives they provide for customer energy efficiency, in terms of both behavior changes and investment in efficient technologies. The brief reviews existing common rate design approaches and summarizes selected case studies of rate design approaches for their impact on energy efficiency. The brief also highlights the typical steps a state would need to take to implement new rate designs and identify areas where additional information is needed to understand the contributions rate design can make to achieving all cost-effective energy efficiency.

After reading this brief, parties are encouraged to turn to one of the many references provided in the brief for additional information and detailed guidance on implementing changes in rate design. Changing rates is a state-specific process, supported by localized analysis of how the rates can encourage customers to save energy. During these and other processes, states may also explore options to incentivize customer energy efficiency through programs and financing mechanisms.⁶ Some utilities are also considering the effectiveness of information delivery and related technologies that communicate usage and price levels to customers to affect their behavior and investment decisions. These options are not covered in this brief, but a separate Action Plan guidance document (National Action Plan for Energy Efficiency, 2008c) is available on the options and benefits of providing commercial customers with standardized electronic billing data.

This brief also does not address issues related to ratemaking such as decoupling of sales and revenues, or incentives to shareholders for utility investments in efficiency resources; these are addressed in other Action Plan documents (see National Action Plan for Energy Efficiency, 2006 and 2007a).

What Are Customer Incentives for Energy Efficiency Through Rates?

In this brief, the term "energy efficiency incentive" is used to refer to any effect that a change in utility rates or pricing may have to encourage or motivate customers to reduce the total amount of energy they consume, without compromising the service they receive. This energy efficiency can be due to an investment in energy-efficient technologies and practices and/or a change in customer behavior. The terms "motivate," "encourage," and "incent" may be used interchangeably.

Effective rate designs can incent customers to pursue more efficient technologies or practices by providing clearer and more timely energy use and price information and by reducing the perceived payback period of the investment from the customers' perspectives. The payback period needed to incent more efficiency varies greatly by customer and customer type. Providing a short payback period with a high degree of certainty to customers can help remove

one of the key financial barriers to energy-efficient investments. Factors such as split incentives, lack of information, and transaction cost barriers will also affect a customer's decision to invest in energy efficiency. These barriers and the potential solutions to address them are well known, and they are discussed by the Action Plan in its reports, its Vision for 2025, and its work with commercial customers under the Sector Collaborative on Energy Efficiency.⁷ Policy-makers, utilities, and stakeholders are considering changes in utility rates as part of a comprehensive policy framework to motivate customers to use energy more efficiently.

Utility Rates and Energy Prices—Key Concepts

"Electricity and natural gas rates," "ratemaking," and "rate design" are terms used to refer to the regulated process of setting prices for energy delivered to customers. To elaborate:

- A rate is typically embedded in a "tariff," a legal document approved by a regulatory commission, which defines the prices to be paid for defined classes of customers under defined terms of service.
- Prices are defined more narrowly, as the amount charged for a specific unit of energy under defined conditions.
- A rate may thus contain multiple prices: for example, a time of use (TOU) rate may contain two prices, one for peak periods and one for off-peak periods.
- Prices are based either on the costs incurred to provide the service or on market prices, depending on whether electricity rates are administered pursuant to cost of service regulation or set in competitive markets. In a restructured state with competitive energy service, a regulated distribution utility may have a rate tariff that applies to its distribution service, while an unregulated retail electric or gas provider may charge a separate price for the energy it sells to the consumer. Regardless of regulatory structure, all customers pay rates with various prices embedded in or associated with those rates.

As discussed in the Action Plan report (National Action Plan for Energy Efficiency, 2006), utility ratemaking has evolved to achieve multiple policy goals such as providing universal energy service, recovering utility costs, ensuring that energy is affordable, incenting energy efficiency, and encouraging economic development. The process of designing new rates and changing existing rates is a state-specific, time-consuming process that can often be highly contentious. In this process, regulators balance the increasingly complex linkage between utility system costs and customer rates and prices. Today's utilities incur a complex array of fixed and variable costs, and they use more sophisticated methods to manage these costs. Utility or retail provider rates include:

- Costs of energy acquisition (which include a mix of capital and variable costs of self-production and purchases under spot and long-term contracts).
- Fixed and variable energy delivery costs.
- Other fixed cost components (such as customer service, administration and management, and more).

- Some utilities use techniques to manage price risk, while others have retail rate structures that allow supply prices to flow through to customers, such as fuel adjustment clauses.

Lastly, electricity and natural gas embody different supply, distribution, and consumption characteristics that have led to different rate treatments. Most notably, natural gas usage is typically more uniform throughout the day, and gas utilities have greater flexibility to purchase and store gas supply before distributing to customers. By contrast, electricity use varies significantly throughout the day while the electricity supply cannot be stored in quantities needed to even out these daily changes in demand and, therefore, must largely be delivered as it is generated. Also, electricity transmission and distribution systems are typically subject to more congestion and other constraints, which change the cost of electricity across time and location. Natural gas networks can also be subject to congestion and constraints, but historically these effects have been less pronounced than in power grids.

Due to these differences, electric rate design has become more complex, more variable, and more subject to experimentation than natural gas ratemaking. While many of the principles in this brief are also relevant to natural gas rates and prices, most of the discussion focuses on electricity-specific issues. This is not to suggest that natural gas rates and prices cannot be used to provide customer energy efficiency incentives; it means only that the range of considerations in the gas utility industry is somewhat narrower.

The Economics of Energy Prices and Customer Incentives

For the purpose of this brief, “price response” means the change in customer energy consumption as the price of energy supply changes. From a policy-maker's viewpoint, it is important to understand the economic theory behind price response, which is the concept of price elasticity. Price elasticity is based on the concept that consumption of a good or service is elastic, or changeable, and that consumption tends to change inversely to changes in price—higher prices cause consumption to drop, and vice versa.

While the general theory of price elasticity is well established, applying it to specific ratemaking/pricing policies requires real-world experience and effective measurement methods that policy-makers can use. To bring theory into effective practice, investigation and debate continues on the magnitude of elasticity effects, the differences between short-term and long-term elasticity, and related issues.

Measuring elasticity involves different methods, depending on the framework of analysis. Long-term, economy-wide analyses typically examine elasticity over periods as long as 10 to 30 years. Short-term elasticity effects are estimated more narrowly, sometimes just for a period of hours or less when a particular price signal is in effect. Electricity rates that change by time of day and load management programs⁸ can create short-term elasticity effects, though estimating sustained effects on energy usage over a multi-year basis is more difficult.

For example, a long-term price elasticity may be expressed in terms of “-0.15,” which means that for every 10 percent increase in electricity prices in such timeframes, usage would be expected to fall by 1.5 percent. Short-term elasticities are often measured as hourly peak demand or energy use reductions, and are not consistently measured as changes in annual energy use. In programs that encourage short-term price response, initial hourly demand reductions can decline over subsequent hours or days, making longer-term usage impacts especially difficult to predict.

Price response, whether short-term or long-term, also varies by customer class and end-use. Smaller customers, such as residences and small businesses, are typically seen as less price-responsive overall than larger commercial and industrial customers, although providing residential customers with enabling technologies and programs can narrow this gap (see Sachs, 2007). Such differences can be attributed to several factors, including:

- Ability to prioritize energy cost control and invest in the personnel, monitoring capabilities, and load management capabilities needed to make significant price-responsive changes in energy use.
- Varying degrees of price transparency—customers' ability to see and understand price and rate information, in a timeframe and format that enables them to make price-response decisions. Customers need to get usage and cost information that allows them to connect their energy use decisions with the resulting cost impacts.
- Availability of technical options to manage energy use, such as substituting the type of energy used, shifting operating hours, or changing processes to respond to price signals.⁹
- Inelasticity when energy is used to provide an essential service.
- Additional persistent market barriers to energy efficiency across customer types.

This discussion suggests that for ratemaking purposes, it may be most useful to estimate price elasticity by customer type and location.¹⁰ Localized analysis can determine the magnitude of price signals associated with local utility system costs: in some regions, on-peak energy is much more expensive compared with off-peak energy than in other areas. Customer end-uses and their relative importance also vary geographically; for example, customers in some climates may show different tolerances for comfort effects associated with changing air conditioning settings than customers in other climates.

Other, non-energy elasticity effects can affect net changes in energy consumption. For example, income elasticity tends to increase energy demand in economies with rising incomes; e.g., a household may buy a larger home or purchase more energy-using devices when its income increases, increasing net energy use. Also, cross-elasticity tends to deflect energy price effects onto other goods; e.g., a household whose utility bills rise may elect to reduce other expenditures, such as dining out, rather than reducing energy use.

As part of implementing rate designs to encourage customer energy efficiency, policy-makers, utilities, and states may also consider options to increase transparency, or visibility, of prices such as billing statement enhancements and providing electronic usage and cost data to customers (National Action Plan for Energy Efficiency, 2008c). Unlike other energy products such as gasoline, which are typically quite transparent to customers at the time of purchase, utility prices are typically embedded in billing statements that (1) are not seen until after energy is consumed and (2) may not lend themselves to simple understanding of prices. As discussed above, large energy-intensive customers typically are more price-responsive, in part because they have assigned staff or specialist consultants to interpret their utility bills, and may invest in their own metering, data reporting, and other methods to make energy cost information both transparent and linked to operational behavior and capital investment decisions.

Utility Rate Design and Pricing Options

Rate design is a multi-objective process in which policy-makers seek to balance goals for utility cost recovery, equity among customers, economic efficiency, and other considerations along with energy efficiency. In recent decades, many different energy rate and pricing options have been offered to customers to meet different policy goals and address the regulatory, business, and technical issues of the time.¹¹ This section reviews the main pricing options in use today. These options are organized in three categories:

- Fixed rates
- Variable rates
- Emerging approaches to blend fixed rates and variable pricing

The section discusses the rate options and their link to energy efficiency incentives. A high-level summary of key issues to consider for the rate options when incentivizing customer rates for energy efficiency is provided in Table 1. This table, in a necessarily oversimplified fashion, provides a qualitative assessment of rate options with respect to the following five variables:

- **Customer types**—indicates which customer types are typically appropriate for each rate option.
- **Customer incentive for overall energy savings**—indicates the degree to which the option encourages customers to reduce overall energy use over the entire year or during limited hours, days, or months.
- **Customer incentive for peak demand savings**—indicates the extent to which the option encourages customers to reduce peak demand during limited hours, irrespective of total energy use.
- **Financial risk to utility**—indicates the extent to which the option tends to place more risk on the utility; for example, TOU rates are judged lower-risk than flat rates, because rates are more closely linked to utility costs, and so the risk of failing to recover costs is reduced.
- **Financial risk to customer**—indicates the extent to which customers take on relatively more risk; for example, customers' risk is assessed as relatively lower with flat rates than with TOU rates, in that their total bill is less likely to vary based on when they use energy.

Table 1 builds on Chapter 5 of the Action Plan report (National Action Plan for Energy Efficiency, 2006, p. 5-9), which contains a more detailed discussion of ratemaking options to support customer energy efficiency actions, including references to utility tariff examples in Table 5-2. *Aligning Utility Incentives With Investment in Energy Efficiency* (National Action Plan for Energy Efficiency, 2007a) provides greater discussion on utility financial risk.

Table 1. Overview of Customer Incentives for Energy Efficiency From Various Rate and Pricing Options

Rate/Price Type	Description	Customer Types*	Customer Incentive for Overall Energy Savings**	Customer Incentive for Peak Demand Savings**	Financial Risk to Utility**	Financial Risk to Customer**
Fixed Rate Options						
Flat rates	<ul style="list-style-type: none"> Customer charge for direct service costs. Other fixed and variable costs allocated on an average basis, per kWh consumed. 	A	M	L	M	L
Inclining block rates	<ul style="list-style-type: none"> Basic customer charge. Fixed volumetric rate for first usage block. Higher fixed volumetric rate for subsequent "tail" block(s). 	A	H	M	M	M
Seasonal rates	<ul style="list-style-type: none"> Fixed volumetric rates, but with seasonal increase. 	A	M	M	M	M
TOU rates	<ul style="list-style-type: none"> Basic customer charge. Volumetric charges that vary by time of day (typically with two or three periods, e.g. peak/off-peak or peak/mid/off-peak). 	A	M	H	L	M
Declining block rates	<ul style="list-style-type: none"> Basic customer charge. Fixed volumetric rate for first usage block. Lower fixed volumetric rate for subsequent "tail" block(s). 	A	L	L	M	L
Bill adders/surcharges	<ul style="list-style-type: none"> Recover various costs such as franchise fees, universal service charges. Some fee structures use fixed charges, some use volumetric. Absolute amounts typically small. 	A	L	L	L	M

Rate/Price Type	Description	Customer Types*	Customer Incentive for Overall Energy Savings**	Customer Incentive for Peak Demand Savings**	Financial Risk to Utility**	Financial Risk to Customer**
Demand charges	<ul style="list-style-type: none"> Separate billing charge for peak demand, separate from customer or energy charges. May include "ratchet" feature, where peak demand charges carry over for up to a year. 	C I	M	H	L	M
Straight fixed-variable (SFV) rates	<ul style="list-style-type: none"> Customer charge recovers all fixed costs. Volumetric charge covers only variable costs. 	A	L	L	L	M
Flat/fixed-bill rates	<ul style="list-style-type: none"> Billing charges are fixed over a 12-month or longer period. In budget billing, charges are adjusted in the following year. In flat bill contracts, no automatic adjustment. 	R C	L	L	M	L
Variable Rate/Dynamic Pricing Options						
Critical peak pricing	<ul style="list-style-type: none"> Basic customer charge. Basic fixed volumetric rate. Critical peak price (CPP)—substantially higher rate for usage during CPP periods. CPP periods not preset, but infrequent. 	R C	M	H	L	H
Peak time rebate	<ul style="list-style-type: none"> Offers a rebate for reduced usage during CPP times, rather than a higher price. Requires baseline and savings calculation. 	R C	M	H	L	L
Variable peak pricing	<ul style="list-style-type: none"> A variant of TOU pricing, in which on-peak prices vary, typically daily. Requires interval metering. 	C I	M	H	L	H

Rate/Price Type	Description	Customer Types*	Customer Incentive for Overall Energy Savings**	Customer Incentive for Peak Demand Savings**	Financial Risk to Utility**	Financial Risk to Customer**
Real-time pricing	<ul style="list-style-type: none"> Beyond basic fixed customer charges, prices vary hourly, typically based on wholesale power market prices. 	C I	M	H	L	H
Blended Fixed and Variable Rate Options						
	<ul style="list-style-type: none"> Mainly unregulated price offerings. Generation price only—customer can choose a mix of fixed and variable prices. 	A	M	M	L	M

Source: National Action Plan for Energy Efficiency analysis.

* A = all; R = residential; C = commercial; I = industrial

** H = high; M = moderate; L = low. Note that "low" can include cases where there is no effect or a negative effect.

Fixed Rates

Within the fixed-rate category, the rate options that tend to provide customer incentives for energy efficiency are:

- **Flat rates.** Flat rates are constant rates that do not vary by TOU, though they are also volumetric, in that they are based on the volume of energy consumed. They are designed to produce revenue for the utility to cover its fixed and variable costs of service and its allowed rate of return. While flat rates are neutral in the sense that they charge the same for each unit of energy consumed, they do not convey the signal that the cost of electricity supply varies by TOU. They do convey that customer bills will be in proportion to consumption, and thus signal to customers that controlling consumption can control costs.
- **Inclining block rates.** By making incremental consumption beyond a minimum block more expensive (a "block" is simply a defined amount of usage, for example 1,000 kilowatt-hours [kWh]), customers get price signals that should encourage them to moderate additional usage. The effectiveness of this incentive depends, however, on customers understanding this price signal through billing statements or other sources, and in knowing when they have exceeded their initial block of consumption and are thus in higher-price territory. These transparency issues can limit the effectiveness of this incentive; utilities can and often do provide information to help customers understand these issues.
- **Seasonal or TOU rates.** These rate types signal to customers that energy consumption can become more expensive depending on when it is used. Customers might then, for example, invest in products, such as high-efficiency air conditioners, that use less energy in higher-priced seasons, or higher-cost times of day, and might modify their behavior to shift usage like dishwashing or clothes drying to lower-cost hours. While such incentives are somewhat indirect and may have limited transparency without specific customer information on when or in what devices to reduce usage, they nonetheless encourage customers to reduce usage at least at certain times.

Other fixed-rate options, however, tend to discourage customer energy efficiency:

- **Declining block rates.** Because they offer lower prices for consumption beyond the basic block of consumption, declining block rates encourage customers to increase rather than decrease energy consumption and convey the message that using more power is good, and that the utility can always provide more power at cheaper costs.
- **Bill adders.** Many states include various charges, such as specific-purpose surcharges, franchise fees, or other charges, on utility bills in addition to base tariff charges. If such charges appear on the customer bill as fixed costs, they may be efficient ways to recover fixed costs, but they do not encourage customers to reduce energy use because they cannot be avoided through energy efficiency.¹² If the charge is volumetric, but shown as a separate line item without a total volumetric charge, it can reduce price transparency and inhibit customers' understanding of the full price and how much they can save, and thus can indirectly reduce incentives to cut consumption.
- **Straight fixed-variable (SFV) rates.** This approach places all utility fixed costs in a fixed charge and all variable costs in a variable charge. Because it tends to shift costs out of

volumetric charges, it tends to reduce customers' efficiency incentive, because the marginal price of additional consumption is reduced. While SFV rates are being considered to better reflect the utility's costs behind the rate, these rates do not encourage customers to change energy usage behavior or invest in efficient technologies. Such customer disincentives persist even when SFV rates are applied to individual components of the bill, such as charges for distribution service.

- **Flat/fixed-bill pricing.** Many utilities offer a "budget billing" option, which levelizes billing payments over 12 months. This reduces efficiency incentives in the short run, because customers do not see any bill impacts from consumption changes until the following year. However, there is an annual adjustment, which may provide a longer-term efficiency incentive. Some companies offer a fixed annual bill without an automatic annual adjustment. This approach can produce both short and long-term disincentives for customers to become more energy-efficient, in that the customer's actions may have little effect on their bill.

Variable Rates/Dynamic Pricing

Variable rates and dynamic pricing are under active development and are being implemented in some states, with substantial pilot program activity and associated research and evaluation. Table 1 summarizes the four main options in this category. Due to the differences in physical characteristics and system economics between electricity and natural gas service providers, no evidence was found of these kinds of rates being pursued for natural gas service. Hence this brief discusses only electric rates in this category.

In simple terms, variable rates and dynamic pricing are designed to reflect the actual cost of electricity during specific hours of the day and year, to change customers' hourly load shapes with reductions in peak demand or shifts of peak usage to other hours of the day. Energy efficiency is typically a secondary effect of such pricing approaches, although measured short-term energy usage reductions have been documented.¹³ Because the specifics of these pricing plans vary substantially, it is difficult to make generic assessments of their effectiveness as customer energy efficiency incentives. The incentive effect can depend heavily on implementation details, including customers' capabilities to see and respond to price signals, the effectiveness of control technologies, and whether customers are given effective education on their price response options. Rates intended to reduce peak usage often build a large price differential between on-peak and off-peak energy, so that the high on-peak cost strongly dissuades on-peak use.

For example, a residential customer who participates in a dynamic pricing program may have pre-agreed to an automated adjustment in their thermostat set point during critical peak periods. Assuming that the customer simply reduces energy use during the critical peak period, and does not over-consume energy in a recovery period, there will be a net reduction in daily energy use. However, this behavioral effect is likely to be limited, because the customer may not be willing to accept more than minimal comfort losses lasting only a few hours on a limited number of days. In addition, usage in some cases could simply be shifted to off-peak periods, resulting in no overall savings or in some cases a small increase in use. However, if the critical peak price level were high enough and sustained over a period of time, it might create a "tipping point" effect that would encourage the customer to invest in a more efficient air conditioner in the longer term. This would allow the customer to save energy through the entire cooling season without sacrificing as much comfort on peak days, and would thus create both short-

term behavioral and long-term investment changes that over time can help transform energy use markets and change customer demand for more energy-efficient products and services.

As a commercial sector example, a large customer may combine dynamic pricing with a sophisticated energy management system and technologies to reduce peak, such as thermal storage optimized with chiller plant design and operation, dimmable lighting systems linked to daylighting controls, and a building automation system programmed to respond to price signals using advanced controls that adapt building systems operation to price signals. In this example, the rate gave the customer the incentive to reduce energy and peak demand, but may also have encouraged the customer to examine and act on other efficiency opportunities.^{14,15}

Emerging Approaches to Blend Fixed Rates and Variable Pricing

In competitive retail energy markets, some electricity providers offer blends of fixed and variable prices. Typically, this kind of offering provides a portion of a customer's consumption at an agreed fixed rate and prices the remaining amount at a variable set linked to market prices. In some cases, customers can select different amounts of fixed-price energy, and these blended offers may also vary in terms of pricing details by time of day or seasonally. Such offerings are typically provided by unregulated power marketers rather than regulated utilities, and they are most commonly marketed to larger customers, who are seen as better able to use the risk management value such price offerings may promise.

The effectiveness of blended price offerings as energy efficiency incentives depends greatly on the specific design of the offering. If a customer elects a plan in which the great majority of consumption is priced at fixed rates, it would tend to create a longer-term incentive, in that most of the customer's energy bill will not vary in the short term. But if there is a substantial difference between the fixed price and the variable price, this could create a strong short-term behavioral focus on avoiding high energy bills when variable prices are in effect. If the majority of the customer's bill is driven by variable rates, this would tend to shift the focus more strongly to short-term load management to control energy costs.

Current State Examples—Rate Design to Incent Energy Efficiency

States are making minimal progress in encouraging utilities and ratemaking bodies to align customer pricing and incentives to encourage investment in energy efficiency (National Action Plan for Energy Efficiency, 2008a, Chapter 2). Those states that have advanced activities within this space are listed in Table 2.

A recent national summary of utility pricing data is also available from the Federal Energy Regulatory Commission's (FERC's) 2008 report on demand response (FERC, 2008). Table 3 summarizes the relevant information from that report; it is limited to time-based pricing, but still indicates some of the trends emerging in the utility pricing arena.

Key observations from this recent pricing and ratemaking experience include:

- In the fixed-rate category, in addition to the general trend toward overall rate increases in many jurisdictions, a trend is emerging away from declining block rates toward inclining block rates. Five states have eliminated declining block rates.
- In the variable rate category, an increasing number of jurisdictions are experimenting with several varieties of dynamic pricing and rate-setting. The reported peak demand

and energy savings results from the selected programs in Appendix C range from peak reductions of 3.7 to 41 percent and short-term energy savings of 3.3 to 7.6 percent.¹⁶

- The trends in time-based or dynamic pricing show an overall 9 percent growth in total offerings from 2006 to 2008. TOU rates remain the majority of total time-based pricing offerings, though their share dropped between 2006 and 2008.
- Most of the dynamic rate results are from pilot efforts lasting less than a full year. This limits the ability to project longer-term price response effects from these initiatives, especially effects on customers' longer-term energy efficiency investments.

Table 2. Summary of State Actions on Electricity and Natural Gas Rates

	States That Have Taken Electricity Rate Action	States That Have Taken Natural Gas Rate Action
Impact on energy efficiency a consideration when designing retail rates?	AZ, CA, IA, ME, NY, OR, WI	IA, NY
Declining block/fixed-variable rates eliminated?	CA, ID, OR, VT, WI	
Time-sensitive rates in place?	AL, CA, CT, DC, DE, GA, IA, ID, IL, KY, MD, MI, MN, MO, ND, NM, NV, NY, OK, SD, TX, VT, WI, WY	IL, NM
Usage-sensitive rates in place?	CA, DC, DE, MD, OR, VT	

Source: Supporting data used in National Action Plan for Energy Efficiency (2008a).

Note: Table 2 reflects state actions through December 31, 2007, as compiled in support of the Action Plan's Vision measuring progress efforts. See Appendix D of the Vision 2025 report (National Action Plan for Energy Efficiency, 2008a) for more information on this methodology.

Table 3. Total U.S. Time-Based Rate Offerings

Rate/Price Type	Number of Offerings Reported in 2006 FERC Survey	Number of Offerings Reported in 2008 FERC Survey
TOU rates	366	315
Real-time pricing	60	100
Critical peak pricing	36	88
Total	462	503

Source: FERC (2008)

Note: The 2008 survey was sent to 3,407 entities across the United States, representing investor-owned utilities, municipal utilities, rural electric cooperatives, power marketers, state and federal agencies, and demand response providers. Respondents include all entities covered by EIA Form 861 reporting requirements, plus regional transmission organizations/independent system operators and curtailment service providers. A total of 2,094 entities responded to at least part of the survey; the entities reported in this table thus represent about 24 percent of respondents.

Implementing New Pricing and Rates

Change is never easy, and changing utility rates is typically a contentious process. Rate changes viewed as excessive, arbitrary, or unfair by some parties can lead to legal and political action with potentially major repercussions. In such environments, customers, utilities, and policy-makers can benefit from ratemaking and related processes that emphasize proactive outreach, communication, and stakeholder participation.

Based on a review of current practices in utility ratemaking, policy-makers and utilities may want to consider three key principles to guide future activity on changing rates to increase energy efficiency incentives to customers:

1. **Incremental vs. radical changes can be effective.** Energy efficiency incentives can be provided to customers without requiring rates and prices that are very complex or radically different from current practices. For example, shifting from declining block rates to inclining block rates can provide energy efficiency incentives to customers, as or before a state or utility considers more complex dynamic pricing designs.¹⁷
2. **Implementation processes should keep focus on rate design goals while addressing other issues.** Because ratemaking is a public and somewhat judicial process, many of the key details of rate design can be distorted in the process. It is thus important to understand the analytical issues and their implications, as well as the participants and their interests, before entering the potentially long and difficult process of implementing new rate/pricing plans.
3. **Communicate actively with key stakeholders.** If there is a policy purpose that suggests new rate designs, outreach should be undertaken with key stakeholders before any ratemaking proceedings begin, to communicate the basis and the importance for these changes. During the ratemaking process, opportunities for stakeholder involvement should be considered, beyond those available through current adjudicatory proceedings. Once decisions are made, further communication efforts are needed to educate customers and sustain support for the decisions.

Several other contextual issues are driving changes to rates and pricing to encourage energy usage changes and efficiency investments, including:

- **Rising supply energy prices.** Some states are facing large rate increases due to higher energy supply prices, especially as rate caps that were put in place during restructuring and deregulation are removed. In areas of price increases, there is more pressure to provide consumers with options to become more energy-efficient, which includes but is not limited to pricing.
- **New efficiency policies.** Many states have enacted new energy efficiency policies and aggressive energy savings goals on electric and natural gas utilities. Utilities are considering rate changes as part of a larger suite of approaches to deliver and encourage energy efficiency.
- **Smart grid technologies.** Proposals for advanced metering and other “smart grid” technology applications are being considered, in part for their ability to offer new rate design and pricing possibilities and customer response options. Because many smart

grid proposals claim to offer energy efficiency benefits, it is also important to understand the claims made.

- **Transparency.** Beyond changing rates or pricing, utility billing and customer information delivery affect customers' response to energy prices. As noted above, lack of transparency can limit some customers' ability to understand and respond to the price signals their bills contain. Today's information technologies can allow bills to include more granular information and can also create parallel options for utilities and customers to interact on pricing and energy usage. Further, several utilities and larger customers are working to automate customer information into energy management systems and building benchmarking tools (National Action Plan for Energy Efficiency, 2008c).

Additional factors that should be considered in designing rates that effectively increase customer incentives to change usage behavior and invest in energy efficiency include:

- **Cost allocation.** When rate changes shift costs among times of day, seasons of the year, or customer types, equity issues can arise. Much discussion has been devoted to the issue of identifying "winners and losers" in a given rate or pricing scheme. This requires analytical effort to determine how cost allocation changes affect different customers, and policy decisions on balancing equity concerns with other policy goals. Further, existing unintended and hidden subsidies can be removed so customers currently paying disproportionately more can see bill reductions; this can be an important part of the balancing act involved in ratemaking.
- **Customer protection.** Concerns have been raised about some kinds of rate/pricing approaches, based on the perceived disadvantaging of customers who are unable to respond to the proposed new plan, resulting in net energy bill increases. If new rates are to be mandatory, they should be designed to minimize such disadvantages. One way to address this concern is to create "opt-in" or "opt-out" conditions that give customers degrees of choice. The "opt-out" approach tends to create wider participation. This may lead to explicit subsidies in some cases.
- **Market targeting.** Following the classic "80/20 rule," some rate or pricing designs can achieve the majority of the desired price response effect by targeting a small segment of customers. Effective voluntary marketing of such plans to the segments that can best realize their benefits can help maximize the effectiveness of the plan while managing concerns about customer equity. For example, residential and small commercial customers with high summer monthly consumption can be targeted for marketing of peak pricing programs.
- **Funding priorities.** In some situations, competition may arise between energy efficiency and demand response or load management programs. It is thus important to understand the full range of benefits and costs from each type of customer program, so that policy-makers can allocate resources appropriately.
- **Scale-up.** Most recent pricing/rate innovations have been implemented as pilot programs. Scaling up to cover entire rate classes or broad customer segments raises new challenges, recognizing that challenges are bigger for some options than others. Stakeholders must be engaged to understand issues involving costs, benefits, and equity. This can entail a substantial public participation/communication process if rate changes are large or sweeping.

Processes for Implementing New Rates and Pricing Plans

Rate cases are the most common processes for instituting new rate and pricing offerings. Sometimes, a revenue-neutral rate design proceeding changes the rates that specific customers pay. Depending on state rules, either utility commissions or utilities can initiate such proceedings. In states with competitive retail markets, unregulated power marketers can also offer new pricing plans, typically without extensive (or any) regulatory review, while the default service provider remains governed by the regulator for its rate and rate design. In the context of reviewing new options from an energy efficiency standpoint, the following elements of such a proceeding can be important:

- **Documenting expected customer response and net impacts.** Proponents should be able to estimate with quantitative analysis how the proposed rate or pricing plan will affect customer peak demand and net energy consumption. Demand and energy impacts should be calculated on both short-term and long-term bases. Data sources and assumptions for customer response should be transparent. Stakeholders should be able to review the data, assumptions, and analyses behind these estimates.
- **Documenting benefits and costs.** Proponents should be able to detail projected costs and benefits on both short-term and long-term bases. Stakeholders should be able to review the data, assumptions, and analyses behind these estimates. Costs should include customer education and complementary programs that will be required in order to achieve customer response assumptions.
- **Balancing customer equity and stakeholder interests.** Deciding which customers are covered, be it by mandatory or voluntary rate/pricing plans, is an important part of the process. Some rate/pricing approaches may be appropriate for mandatory application, but only for some customer types. Voluntary eligibility is more a marketing question of where the plan would be most effective and best accepted. For any broad-based change in rates or pricing to be sustainable, though, customers and other stakeholders need to understand and ultimately accept the rationale for the new approach.
- **Staging.** Many jurisdictions have begun their efforts with pilot projects to test impacts, benefits, costs, customer acceptance, and other issues. Scaling up in steps, rather than all at once, may be desirable to ensure long-term success.

While these issues generally apply to all rate innovations, more complex rate and pricing designs may entail greater challenges in documenting customer response, net impacts, and net benefits, and in resolving customer equity issues.

Needs Identification

While this brief summarizes a substantial body of research and market experience, it also has identified several needs for more data and research, covering such topics as:

- **Persistence of energy savings.** Most pilot impact data are relatively short-term, particularly with dynamic rates. To be useful for resource planning purposes, policy-makers will need longer-term, reliable estimates of the expected effects of pricing and rate plans on energy usage forecasts.

- **Understanding changes in benefits at scale and over time.** If significant peak demand reductions occur on a large scale under dynamic pricing, they may begin to reduce the price differential between time periods. They may also modify overall average prices. These effects could reduce and ultimately negate the nearer-term energy and demand price signals they initially contain. Addressing this issue requires better understanding of the total scale of demand, energy, and price effects, beyond their marginal, short-term effects.
- **Developing the best approaches to incorporate dynamic pricing into resource planning.** Because the key benefit of many variable rates and dynamic pricing plans is to reshape load curves and utility costs, policy-makers may need more sophisticated tools for understanding the effects of such pricing and ratemaking approaches on longer-term energy and demand forecasts, which are fundamental to determining future resource needs. While these pricing approaches can reduce risk and costs in the near term, understanding their longer term effects on total energy use can be more complex, and better tools may be needed to fully incorporate these approaches in formal resource plans.
- **Developing new approaches to evaluating energy savings from behavioral changes.** Proven approaches exist for evaluation, measurement, and verification of administered energy efficiency programs (National Action Plan for Energy Efficiency, 2007b). More work is needed, not only to understand the effects rate design could have on customer behavior and the investment choices they make, but also to inform decisions to modify program approaches that maximize energy savings through rate design changes.

Notes

- ⁵ The Vision (National Action Plan for Energy Efficiency, 2008a) found less than 20 percent progress under Goal Seven, step 21.
- ⁶ A future Action Plan brief will be developed on this topic.
- ⁷ See the Action Plan's Vision for 2025 (National Action Plan for Energy Efficiency, 2008a), as well as an upcoming Action Plan paper on energy efficiency and carbon dioxide emissions and the Action Plan Sector Collaborative resources at <http://www.epa.gov/cleanenergy/energy-programs/napee/collaborative.html>.
- ⁸ "Load management" traditionally refers to "direct load control" or "active load management" programs that control customer devices via utility-installed control technologies; in these programs, rate designs are typically not directly affected, through incentives may be offered for participation. More recent demand response and dynamic pricing programs tend to encourage customers to change behavior or operational settings of devices (e.g., changing air conditioning thermostat settings or appliance start times) with greater customer choice, in response to utility price signals.
- ⁹ Note that the California pilot results showed that the persistence of residential customer response is enhanced through enabling technology. Residential customers who were given remotely controlled thermostats, for example, showed greater average load reductions and also were more likely to sustain such reductions over successive days (George et al., 2006).
- ¹⁰ See Faruqui and Wood (2008). For example, the New Jersey Board of Public Utilities is having Jersey Central Power & Light Co. amend its summer rate pilot program to account for customer differences in ability to reduce usage at certain times.
- ¹¹ See Appendix B for more background on the history of utility ratemaking.
- ¹² If costs are fixed in nature, the utility still incurs them even if customers reduce their total consumption.
- ¹³ For example, see findings by the Center for Neighborhood Technologies, Chicago, Illinois.
- ¹⁴ For more guidance on larger-customer energy and demand control options, see the Sector Collaborative report (National Action Plan for Energy Efficiency, 2008b), Chapter 3.
- ¹⁵ Advanced ratemaking practices such as dynamic rates still must recover the underlying costs of acquiring and delivering electricity, as well as infrastructure and fixed and variable costs. Over time, one would expect well-designed rates to change these underlying fixed and variable cost elements, and one would expect those changes to be passed through in future rates.
- ¹⁶ See summary results for selected dynamic pricing pilots in Appendix C.
- ¹⁷ It should be noted, however, that the analytical effort needed to develop robust numbers for new rate designs may be substantial, even if the price signal and rate structure provided to the customer is relatively simple.

Appendix A: National Action Plan for Energy Efficiency Leadership Group

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Commissioner, Idaho Public
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Natural Resources Defense
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Austin Energy

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Dian Grueneich
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Vermont Energy Investment
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Connecticut Consumer Counsel

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Efficiency and Demand
Response
Tennessee Valley Authority

Val Jensen
Vice President, Marketing and
Environmental Programs
ComEd (Exelon Corporation)

Mary Kenkel
Consultant, Alliance One
Duke Energy

Ruth Kiselewich
Director, Demand Side
Management Programs
Baltimore Gas and Electric
Company

Harris McDowell
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Delaware General Assembly

Ed Melendreras
Vice President, Sales and
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Entergy Corporation

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Fred Moore
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The Dow Chemical Company

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and Sustainability
Johnson Controls, Inc.

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Environment and Natural
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Consumer Advocate
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Advocate

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Energy Programs Consortium

Lisa Wood
Executive Director
Institute for Electric Efficiency

Facilitators

U.S. Department of Energy

U.S. Environmental Protection
Agency

Appendix B: A Brief History of Pricing and Ratemaking Practices

Pricing and ratemaking has evolved substantially in the century-plus history of energy utilities in the United States. Some of the first power generation ventures were hydroelectric facilities, such as the Niagara Falls project in New York. Their initial customers, typically industrial facilities, were charged a flat amount based on the amount of capacity they required. Because the hydroelectric facilities' costs were almost all capital costs, this provided a simple rationale for flat capacity payments. As thermal power generation evolved to provide the bulk of power supply, as grids evolved into universal service networks, and as utility commissions emerged to set pricing and ratemaking policies, the practices involved in setting customer utility rates grew more complex.

It is also worth recalling that for most of the 20th century, expanding the electricity grid was associated with public policy goals of providing universal service at affordable rates. Economies of scale predominated in most electricity markets in this era, such that adding customers, load, and power supply capacity to the grid tended to reduce average costs. In this environment, ratemaking remained a relatively straightforward process of calculating utilities' fixed and variable costs into rate tariffs on an averaged basis. Because rate cases most often resulted in reduced average rates, there was little perceived need to examine costs and rates more closely.

One of the few departures from pure average-cost ratemaking was the practice of declining block rates. These typically included:

- A fixed customer charge, designed to recover the direct costs associated with serving an individual customer in that rate class.
- A rate assigned to the first block of energy consumed for the billing period (e.g., 500 kWh).
- A lower rate assigned to additional energy consumed above the first block.

This practice was based on the assessment that marginal additional consumption imposed lower marginal costs on the utility, as most of its fixed costs would be recovered through fixed customer charges, plus the initial block of energy consumption. Because it was also true in most cases that adding generation to the grid would tend to reduce average costs, the potential load growth that declining block rates might stimulate was generally seen to be a public good. In an era of declining energy and capital costs, with few perceived limits on grid capacity or natural resources, and with little accounting for environmental impacts, this straightforward system of pricing and ratemaking worked well for decades.

Since 1970, at least three important shifts occurred to disrupt traditional ratemaking practices:

- Capital costs stopped declining for many power supply and grid technologies. Maturation of the U.S. grid, flattening economies of scale, and natural resource constraints began to drive power plant and other system costs higher, resulting in rate increases and the phenomenon popularized as "rate shock."

- Energy costs stopped falling in many markets with spikes in global oil prices. Coupled with rising capital costs, higher energy prices exacerbated the rate shocks that began in the 1970s.
- Environmental laws and regulations came into energy markets, adding new compliance costs for utilities and shifting the earlier perception that additional energy consumption was beneficial.

Energy and environmental legislation of the 1970s reflected these trends. The Public Utility Regulatory Policies Act of 1978 and subsequent amendments called for states to examine a number of standards or practices for ratemaking, among other things:

1. **Cost of service.** Rates charged by any electric utility for providing electric service to each class of electric consumers shall be designed, to the maximum extent practicable, to reflect the costs of providing electric service to such class, as determined under section 2625 (a) of this title.
2. **Declining block rates.** The energy component of a rate, or the amount attributable to the energy component in a rate, charged by any electric utility for providing electric service during any period to any class of electric consumers may not decrease as kilowatt-hour consumption by such class increases during such period except to the extent that such utility demonstrates that the costs to such utility of providing electric service to such class, which costs are attributable to such energy component, decrease as such consumption increases during such period.
3. **Time-of-day rates.** The rates charged by any electric utility for providing electric service to each class of electric consumers shall be on a time-of-day basis which reflects the costs of providing electric service to such class of electric consumers at different times of the day unless such rates are not cost-effective with respect to such class, as determined under section 2625 (b) of this title.
4. **Seasonal rates.** The rates charged by an electric utility for providing electric service to each class of electric consumers shall be on a seasonal basis which reflects the costs of providing service to such class of consumers at different seasons of the year to the extent that such costs vary seasonally for such utility.
5. **Interruptible rates.** Each electric utility shall offer each industrial and commercial electric consumer an interruptible rate which reflects the cost of providing interruptible service to the class of which such consumer is a member.
6. **Load management techniques.** Each electric utility shall offer to its electric consumers such load management techniques as the State regulatory authority (or the non-regulated electric utility) has determined will—

- a. be practicable and cost-effective, as determined under section 2625 (c) of this title,
- b. be reliable, and
- c. provide useful energy or capacity management advantages to the electric utility.

These policy developments spurred a wave of studies and experiments in pricing and ratemaking; the late 1970s and early 1980s were studded with groundbreaking work in ratemaking and related analysis, and several states instituted ratemaking changes accordingly.

Energy market conditions stabilized to a large extent later in the 1980s, and the wave of ratemaking experimentation subsided somewhat accordingly. Energy prices moderated, system capacity was adequate in most areas, and the urgency for further action became somewhat muted, though industry researchers, utility commissions, and advocates continued to work on many of these issues.

In the current decade, the urgency for action on utility pricing and ratemaking has risen once more. The growth in peak electricity demand has created the risk of capacity shortages in many regions (North American Electric Reliability Corporation, 2008). This is driving a new round of capacity construction proposals; however, rising energy prices and capital costs promise to make new builds more expensive, raising new rate shock concerns. Additionally, the emergence of climate change as a public policy issue, and specifically the designation of carbon dioxide (CO₂) as a pollutant covered under the Clean Air Act, has created the likelihood that U.S. CO₂ emissions will soon be regulated, raising energy prices and adding new risks for CO₂-emitting energy facilities. Because energy efficiency is viewed as a cornerstone of the policy solution to today's energy and climate challenges, utilities and their regulators are looking for new ways to encourage customer energy efficiency.

As this new era of carbon constraints and higher energy and capacity costs unfolds, the utility industry is a much more complex business than it was in the last century. Restructuring and deregulation of electricity and natural gas markets in wholesale and many state retail markets has added new layers of complexity to calculating and managing utility system costs and risks. At the same time, technologies have advanced to enable substantial new capabilities in managing grid operations and customer price response, in a wave known generically as the "smart grid."

These factors have converged to increase both the urgency and the complexity of pricing and ratemaking in the utility sector. This brief seeks to highlight the electricity pricing options that utilities and policy-makers can best use to help customers become more energy-efficient, both in near-term behavioral changes and in long-term technology investments. In the broadest sense, customer awareness of rising energy prices and the need to reduce carbon "footprints" provides a general set of signals to use energy more carefully. However, because of the issues raised earlier in this section, differences in price response between customer types and end-use markets call for a more focused assessment of the specific techniques most likely to produce desired reductions in peak demand, energy consumption, and CO₂ emissions.

Appendix C: Summary of Recent Dynamic Pricing Programs

Table C-1 summarizes five well-documented dynamic pricing experiments. (The table begins on page C-2.)

Table C-1. Summary of Recent Dynamic Pricing Programs

Program	Rate/Price Type	Location	Customer Type/Load Size	Participants	Customer Incentive	Duration	Peak Demand Reductions	Energy Savings
California Statewide Pricing Pilot	CPP	Southern California Edison Service Area	Commercial/industrial <20 kW	59 in 2004; 57 in 2005; about 33% accepted thermostats	Free installation of smart thermostat that automatically adjusts air conditioning setting in CPP periods	4 months x 2 years: June–October 2004 and 2005	<20 kW: Peak-period energy use fell 4.83%; with thermostats, savings rose to 13%	Savings calculated for peak hours only, not monthly or annual
			Commercial/industrial 20–200 kW	83 in 2004; 76 in 2005; about 60% accepted thermostats			20–200 kW: Peak-period energy use fell 6.75%; with thermostats, savings rose to 9.57%	
Gulf Power Company—Energy Select	Price-responsive load management with CPP	Gulf Power Company service territory—northwest Florida	Residential	8,500	None—customers pay \$4.95/month to participate in the program for the opportunity to save on their electric bill by purchasing electricity at prices lower than the standard rate 87% of the time	March 2000 to present	Summer peak reduction of 1.73 kW/home or 14.7 MW to date Winter peak reduction of 3 kW/home or 25.5 MW to date	Savings calculated for peak hours only, not monthly or annual
Ontario Energy Board/ Hydro One	Regulated Price Plan TOU rates	Hydro One service area	Residential, farm, small business under 50 kW	500	Real-time in-home display monitors for half the participants	5 months: May–September 2007	Peak load reductions averaged 3.7% With displays, impact averaged 5.5%	Annual energy savings averaged 3.3%; with displays, savings averaged 7.6%

Program	Rate/ Price Type	Location	Customer Type/Load Size	Participants	Customer Incentive	Duration	Peak Demand Reductions	Energy Savings
Ontario Energy Board—Smart Price Pilot	Regulated Price Plan TOU; TOU with CPP; TOU with critical peak rebate	Hydro Ottawa's service territory	Residential TOU scheduled to have smart meters installed prior to the start of the pilot	373 participants total: 125 in a critical peak rebate price group, 124 each in TOU-only and CPP groups	CPP participants: off-peak rate cut to 3.1 cents per kWh to offset critical peak price TOU with rebate participants: refund of 30 cents per kWh below baseline usage +\$75 at end of pilot	7 months: August 2006–February 2007	Peak load reductions were: 5.7% for TOU-only participants, 25.4% for CPP participants	6.0% average annual conservation effect across all customers
Community Energy Cooperative—Energy Smart Pricing Plan	Hourly pricing pilot program; air conditioning cycling added as an option	Chicago	Residential	750 in 2003, rising to 1,100 in 2006	Cooperative provided outreach, education, information materials, high price alerts	2003–2006	Peak reductions up to 25% in first hour; greatest reductions through air conditioning cycling Peak reductions declined after first hour and over successive high-price days	Summer-month energy usage reduced 3–4%; no annual net usage impact reported

Sources: California Statewide Pilot: George et al. (2006); Gulf Power Company: comments from Ervan Hancock III, Georgia Power Company; Ontario Energy Board: Hydro One (2006); and Community Energy Cooperative: Summit Blue Consulting (2004).

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Meisenheimer, Barb

From: Beck, Dan [dan.beck@psc.mo.gov]
Sent: Wednesday, July 09, 2014 11:10 AM
To: Meisenheimer, Barb
Subject: The Mains Allocator for Summit

The Company's mains allocator was based on January and February usage for each class in GR-2014-0086. Staff used the Company's values but combined several classes to match the Staff's COS classes. For example, the Company's Branson COOS had two classes for residential customers, GS-RES and GS-RES-OP. Staff had a single class for residential and combined the two values. $9.53\% + 1.31\% = 10.84\%$

GROSS PLANT IN SERVICE

Summit Natural Gas of Missouri, inc.

TEST YEAR ENDED September 30, 2013, Updated Through 12/31/13

CASE NO. GR-2014-0086 (Gallatin District)

DESCRIPTION	GROSS PLANT	GENERAL SERVICE	COMMERCIAL SERVICE	TRANSPORTATION SERVICE	LARGE VOLUME	UNMETERED GAS LIGHTS	ALLOCATION BASIS
Intangible Plant	\$32,160	\$22,364	\$5,484	\$2,391	\$1,921	\$0	C-O-S REVENUES
Manufactured Gas Production Plant	\$0	\$0	\$0	\$0	\$0	\$0	PEAK DEMAND LESS INTERRUPTIBLE, TRA
Transmission Plant	\$0	\$0	\$0	\$0	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
Distribution Plant							
374 Land & Land Rights	\$74,930	\$47,989	\$11,427	\$7,852	\$7,662	\$0	DIST'N MAINS
375 Structures & Improvements	\$199,313	\$127,651	\$30,395	\$20,886	\$20,381	\$0	DIST'N MAINS
376 Mains	\$4,629,177	\$2,964,789	\$705,936	\$485,091	\$473,361	\$0	DIST'N MAINS
378 Measure & Regulate Sta.	\$190,379	\$33,685	\$22,408	\$126,468	\$7,819	\$0	VOLUMES
379 City Gate Ck Stations	\$0	\$0	\$0	\$0	\$0	\$0	VOLUMES
380 Services	\$3,094,806	\$2,569,332	\$514,188	\$5,643	\$5,643	\$0	SERVICE ALLOCATOR
381 Meters	\$537,142	\$373,303	\$151,771	\$6,034	\$6,034	\$0	WTD CUST. - METERS
382 Meter Installations	\$183,733	\$127,691	\$51,914	\$2,064	\$2,064	\$0	WTD CUST. - METERS
383 House Regulators	\$33,200	\$23,073	\$9,381	\$373	\$373	\$0	WTD CUST. - REGULATORS
385 ind. Meas. & Reg. Sta. Eq.	\$0	\$0	\$0	\$0	\$0	\$0	LV/LGS VOLUMES
386 Property on Customer Premises	\$367,537	\$258,096	\$61,668	\$26,631	\$21,142	\$0	DIST'N PLANT
387 Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	DIST'N PLANT
Total Distribution Plant	\$9,310,217	\$6,525,609	\$1,559,087	\$681,042	\$544,479	\$0	
397.1 Communication Equipment	\$43,657	\$36,641	\$6,988	\$28	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
General Plant	\$290,207	\$203,409	\$48,598	\$21,229	\$16,972	\$0	P,T,D PLANT
TOTAL GROSS PLANT IN SERVICE	\$9,676,241	\$6,788,023	\$1,620,158	\$704,689	\$563,372	\$0	

GROSS PLANT IN SERVICE

Summit Natural Gas of Missouri, Inc.

TEST YEAR ENDED September 30, 2013, Updated Through 12/31/13

CASE NO. GR-2014-0086 (Warsaw District)

DESCRIPTION	GROSS PLANT	GENERAL SERVICE	COMMERCIAL SERVICE	TRANSPORTATION SERVICE	LARGE VOLUME	UNMETERED GAS LIGHTS	ALLOCATION BASIS
Intangible Plant	\$14,753	\$5,722	\$4,123	\$0	\$4,908	\$0	C-O-S REVENUES
Manufactured Gas Production Plant	\$0	\$0	\$0	\$0	\$0	\$0	PEAK DEMAND LESS INTERRUPTIBLE, TRA
Transmission Plant	\$0	\$0	\$0	\$0	\$0	\$0	ASSIGNED - RES. SGS, LGS BILLS
Distribution Plant							
374 Land & Land Rights	\$22,545	\$6,723	\$6,583	\$0	\$9,239	\$0	DISTN MAINS
375 Structures & improvements	\$0	\$0	\$0	\$0	\$0	\$0	DISTN MAINS
376 Mains	\$13,310,226	\$3,969,109	\$3,886,586	\$0	\$5,454,531	\$0	DISTN MAINS
378 Measure & Regulate Sta.	\$79,254	\$19,582	\$22,970	\$0	\$36,702	\$0	VOLUMES
379 City Gate Ck Stations	\$0	\$0	\$0	\$0	\$0	\$0	VOLUMES
380 Services	\$2,966,308	\$2,171,586	\$596,527	\$0	\$198,195	\$0	SERVICE ALLOCATOR
381 Meters	\$493,333	\$245,740	\$179,122	\$0	\$68,471	\$0	WTD CUST. - METERS
382 Meter Installations	\$301,003	\$149,936	\$109,290	\$0	\$41,777	\$0	WTD CUST. - METERS
383 House Regulators	\$175,460	\$87,400	\$63,707	\$0	\$24,353	\$0	WTD CUST. - REGULATORS
385 Ind. Meas. & Reg. Sta. Eq.	\$0	\$0	\$0	\$0	\$0	\$0	LV/LGS VOLUMES
386 Property on Customer Premises	\$1,172,771	\$449,560	\$328,870	\$0	\$394,342	\$0	DISTN PLANT
387 Other Equipment	\$120,378	\$46,145	\$33,757	\$0	\$40,477	\$0	DISTN PLANT
Total Distribution Plant	\$18,641,278	\$7,145,780	\$5,227,410	\$0	\$6,268,087	\$0	
397.1 Communication Equipment	\$62,377	\$48,924	\$13,453	\$0	\$0	\$0	ASSIGNED - RES. SGS, LGS BILLS
General Plant	\$330,059	\$126,522	\$92,556	\$0	\$110,982	\$0	P,T,D PLANT
TOTAL GROSS PLANT IN SERVICE	\$19,048,467	\$7,326,948	\$5,337,542	\$0	\$6,383,977	\$0	

GROSS PLANT IN SERVICE

Summit Natural Gas of Missouri, Inc.

TEST YEAR ENDED September 30, 2013, Updated Through 12/31/13

CASE NO. GR-2014-0086 (Rogersville District)

DESCRIPTION	GROSS PLANT	RESIDENTIAL	GENERAL SERVICE	LARGE GENERAL SERVICE	LARGE VOLUME	TRANSPORTATION SERVICE	ALLOCATION BASIS
Intangible Plant	\$8,193	\$4,890	\$2,070	\$653	\$579	\$0	C-O-S REVENUES
Manufactured Gas Production Plant	\$0	\$0	\$0	\$0	\$0	\$0	PEAK DEMAND LESS INTERRUPTIBLE, TRA
Transmission Plant	\$0	\$0	\$0	\$0	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
Distribution Plant							
374 Land & Land Rights	\$2,774,811	\$978,676	\$430,651	\$191,739	\$180,640	\$993,105	DIST'N MAINS
375 Structures & Improvements	\$0	\$0	\$0	\$0	\$0	\$0	DIST'N MAINS
376 Mains	\$70,732,015	\$24,947,182	\$10,977,609	\$4,887,582	\$4,604,654	\$25,314,986	DIST'N MAINS
378 Measure & Regulate Sta.	\$652,896	\$179,063	\$104,167	\$46,689	\$39,363	\$283,615	VOLUMES
379 City Gate Ck Stations	\$0	\$0	\$0	\$0	\$0	\$0	VOLUMES
380 Services	\$14,041,757	\$11,158,429	\$2,705,421	\$94,389	\$25,250	\$58,268	SERVICE ALLOCATOR
381 Meters	\$6,429,186	\$3,123,578	\$2,876,764	\$248,907	\$52,888	\$122,050	WTD CUST. - METERS
382 Meter Installations	\$132,780	\$64,614	\$59,413	\$5,141	\$1,092	\$2,521	WTD CUST. - METERS
383 House Regulators	\$46,381	\$22,570	\$20,753	\$1,796	\$382	\$880	WTD CUST. - REGULATORS
385 Ind. Meas. & Reg. Sta. Eq.	\$700,852	\$0	\$0	\$88,517	\$74,628	\$637,707	LV/LGS VOLUMES
386 Property on Customer Premises	\$2,770,630	\$1,174,242	\$498,216	\$161,426	\$144,431	\$792,315	DIST'N PLANT
387 Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	DIST'N PLANT
Total Distribution Plant	\$98,281,308	\$41,653,352	\$17,672,993	\$5,726,185	\$5,123,328	\$28,105,450	
397.1 Communication Equipment	\$142,217	\$113,719	\$27,571	\$927	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
General Plant	\$1,902,497	\$806,312	\$342,108	\$110,846	\$99,176	\$544,056	P.T.D PLANT
TOTAL GROSS PLANT IN SERVICE	\$100,334,215	\$42,578,273	\$18,044,742	\$5,838,611	\$5,223,083	\$28,649,506	

GROSS PLANT IN SERVICE

Summit Natural Gas of Missouri, Inc.

TEST YEAR ENDED September 30, 2013, Updated Through 12/31/13

CASE NO. GR-2014-0086 (Branson District)

DESCRIPTION	GROSS PLANT	RESIDENTIAL	GENERAL SERVICE	LARGE GENERAL SERVICE	LARGE VOLUME	TRANSPORTATION SERVICE	ALLOCATION BASIS
Intangible Plant	\$1,019,789	\$277,436	\$267,552	\$474,801	\$0	\$0	C-O-S REVENUES
Manufactured Gas Production Plant	\$0	\$0	\$0	\$0	\$0	\$0	PEAK DEMAND LESS INTERRUPTIBLE, TRA
Transmission Plant	\$0	\$0	\$0	\$0	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
Distribution Plant							
374 Land & Land Rights	\$8,814,848	\$955,625	\$1,068,466	\$2,158,972	\$0	\$4,631,784	DISTN MAINS
375 Structures & Improvements	\$0	\$0	\$0	\$0	\$0	\$0	DISTN MAINS
376 Mains	\$36,985,144	\$4,009,591	\$4,483,048	\$9,058,568	\$0	\$19,433,938	DISTN MAINS
378 Measure & Regulate Sta.	\$319,932	\$17,751	\$42,092	\$104,199	\$0	\$155,890	VOLUMES
379 City Gate CK Stations	\$0	\$0	\$0	\$0	\$0	\$0	VOLUMES
380 Services	\$3,003,245	\$1,711,357	\$860,667	\$431,220	\$0	\$0	SERVICE ALLOCATOR
381 Meters	\$657,770	\$126,152	\$232,788	\$298,829	\$0	\$0	WTD CUST. - METERS
382 Meter Installations	\$137,973	\$26,462	\$48,829	\$62,682	\$0	\$0	WTD CUST. - METERS
383 House Regulators	\$37,160	\$7,127	\$13,151	\$16,882	\$0	\$0	WTD CUST. - REGULATORS
385 Ind. Meas. & Reg. Sta. Eq.	\$0	\$0	\$0	\$0	\$0	\$0	LV/LGS VOLUMES
386 Property on Customer Premises	\$1,029,642	\$141,269	\$139,104	\$250,039	\$0	\$499,230	DISTN PLANT
387 Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	DISTN PLANT
Total Distribution Plant	\$50,985,714	\$6,995,333	\$6,888,146	\$12,381,391	\$0	\$24,720,243	
397.1 Communication Equipment	\$35,864	\$20,540	\$10,330	\$4,995	\$0	\$0	ASSIGNED - RES, SGS, LGS BILLS
General Plant	\$594,999	\$81,635	\$30,384	\$144,490	\$0	\$288,490	P.T.D PLANT
TOTAL GROSS PLANT IN SERVICE	\$52,636,366	\$7,374,944	\$7,246,412	\$13,005,677	\$0	\$25,009,333	

SUMMIT NATURAL GAS
CASE NO. GR-2014-0086 (Branson District)
CUSTOMER CHARGE TABLE

	TOTAL	RESIDENTIAL	GENERAL SERVICE	LARGE GENERAL SERVICE	LARGE VOLUME	TRANSPORTATION SERVICE
TOTAL REVENUES TO COLLECT FROM CLASS	\$2,443,237	\$340,487	\$328,356	\$582,706	\$0	\$1,191,688
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	\$341,951	\$194,856	\$97,996	\$49,099	\$0	\$0
DIRECT METER COSTS	\$90,392	\$17,336	\$31,990	\$41,065	\$0	\$0
DIRECT REGULATOR COSTS	\$4,229	\$811	\$1,497	\$1,921	\$0	\$0
DIRECT BILLING COSTS	\$11,213	\$4,529	\$2,278	\$4,406	\$0	\$0
DIRECT METER READING COSTS	\$44,663	\$25,451	\$12,799	\$6,413	\$0	\$0
DIRECT CUSTOMER RELATED COSTS	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL AMOUNT TO COLLECT IN CUSTOMER CHARGE	\$492,447	\$242,983	\$146,560	\$102,904	\$0	\$0
NO. OF BILLS	11,477	6,518	3,278	1,585	0	96
TRADITIONAL CUSTOMER CHARGE FROM COS		\$37.28	\$44.71	\$64.92	#DIV/0!	\$12,413.41
TRADITIONAL CUSTOMER CHARGE (ROUNDED)		\$37.30	\$44.70	\$64.90	#DIV/0!	\$12,413.41
AMOUNT COLLECTED IN PROPOSED CUSTOMER CHARGE	#DIV/0!	\$243,121	\$146,527	\$102,867	#DIV/0!	\$0
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	#DIV/0!	\$97,365	\$181,830	\$479,840	#DIV/0!	\$1,191,688
COMMODITY CHARGE @ 0 PERCENT INCREASE		0.35930				
TOTAL AMOUNT TO COLLECT IN DELIVERY CHARGE	#DIV/0!	\$340,487	\$328,356	\$582,706	#DIV/0!	
DELIVERY CHARGE @ 0 Percent Increase		\$52.24	\$100.17			
		\$111,331,227	\$36,105,533	\$1,451,502	\$10,321,286	

SUMMIT NATURAL GAS
CASE NO. GR-2014-0086 (Gallatin District)
CUSTOMER CHARGE TABLE

	TOTAL	GENERAL SERVICE	COMMERCIAL SERVICE	TRANSPORTATION SERVICE	LARGE VOLUME	UNMETERED GAS LIGHTS
TOTAL REVENUES TO COLLECT FROM CLASS	\$1,267,991	\$881,749	\$216,238	\$94,254	\$75,750	\$0
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	\$346,669	\$287,807	\$57,597	\$632	\$632	\$0
DIRECT METER COSTS	\$78,776	\$54,748	\$22,258	\$885	\$885	\$0
DIRECT REGULATOR COSTS	\$3,331	\$2,315	\$941	\$37	\$37	\$0
DIRECT BILLING COSTS	\$20,409	\$16,967	\$3,236	\$103	\$103	\$0
DIRECT METER READING COSTS	\$3,935	\$3,267	\$654	\$7	\$7	\$0
DIRECT CUSTOMER RELATED COSTS	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL AMOUNT TO COLLECT IN CUSTOMER CHARGE	\$453,120	\$365,104	\$84,687	\$1,664	\$1,664	\$0
NO. OF BILLS	18,891	15,845	3,022	12	12	0
TRADITIONAL CUSTOMER CHARGE FROM COS		\$23.04	\$28.02	\$138.70	\$138.70	#DIV/0!
TRADITIONAL CUSTOMER CHARGE (ROUNDED)		\$23.00	\$28.00	\$138.70	\$138.70	#DIV/0!
AMOUNT COLLECTED IN PROPOSED CUSTOMER CHARGE	\$452,380	\$364,435	\$84,616	\$1,664	\$1,664	\$0
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	\$815,611	\$517,314	\$131,622	\$92,589	\$74,085	\$0
COMMODITY CHARGE @ 0 PERCENT INCREASE		0.57376				
TOTAL AMOUNT TO COLLECT IN DELIVERY CHARGE	\$1,267,991	\$881,749	\$216,238	\$94,254	\$75,750	
DELIVERY CHARGE @ 0 Percent Increase		\$55.65	\$71.55			
		\$111,331,227	\$36,105,533	\$1,451,502	\$10,321,286	

SUMMIT NATURAL GAS
CASE NO. GR-2014-0086 (Rogersville District)
CUSTOMER CHARGE TABLE

	TOTAL	RESIDENTIAL	GENERAL SERVICE	LARGE GENERAL SERVICE	LARGE VOLUME	TRANSPORTATION SERVICE
TOTAL REVENUES TO COLLECT FROM CLASS	\$10,034,751	\$4,518,310	\$1,912,802	\$603,434	\$535,189	\$2,465,016
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	\$1,446,460	\$1,149,445	\$278,689	\$9,723	\$2,601	\$6,002
DIRECT METER COSTS	\$689,968	\$335,753	\$308,729	\$26,712	\$5,676	\$13,098
DIRECT REGULATOR COSTS	\$5,260	\$2,560	\$2,354	\$204	\$43	\$100
DIRECT BILLING COSTS	\$148,113	\$113,054	\$27,411	\$3,692	\$1,196	\$2,760
DIRECT METER READING COSTS	\$24,601	\$19,549	\$4,740	\$165	\$44	\$0
DIRECT CUSTOMER RELATED COSTS	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL AMOUNT TO COLLECT IN CUSTOMER CHARGE	\$2,314,402	\$1,620,361	\$621,922	\$40,496	\$9,560	\$21,960
NO. OF BILLS	148,044	117,964	28,601	963	156	360
TRADITIONAL CUSTOMER CHARGE FROM COS		\$13.74	\$21.74	\$42.05	\$61.28	\$6,847.27
TRADITIONAL CUSTOMER CHARGE (ROUNDED)		\$13.70	\$21.70	\$42.10	\$61.30	\$6,847.27
AMOUNT COLLECTED IN PROPOSED CUSTOMER CHARGE	\$2,286,854	\$1,616,107	\$620,642	\$40,542	\$9,563	\$0
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	\$7,747,897	\$2,902,204	\$1,292,161	\$562,891	\$525,626	\$2,465,016
COMMODITY CHARGE @ 0 PERCENT INCREASE		0.53249				
TOTAL AMOUNT TO COLLECT IN DELIVERY CHARGE	\$10,034,751	\$4,518,310	\$1,912,802	\$603,434	\$535,189	
DELIVERY CHARGE @ 0 Percent Increase		\$38.30	\$66.88			
		\$111,331,227	\$36,105,533	\$1,451,502	\$10,321,286	

SUMMIT NATURAL GAS
CASE NO. GR-2014-0086 (Warsaw District)
CUSTOMER CHARGE TABLE

	TOTAL	GENERAL SERVICE	COMMERCIAL SERVICE	TRANSPORTATION SERVICE	LARGE VOLUME	UNMETERED GAS LIGHTS
TOTAL REVENUES TO COLLECT FROM CLASS	\$1,261,854	\$489,414	\$352,640	\$0	\$419,800	\$0
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	\$341,485	\$249,995	\$68,673	\$0	\$22,816	\$0
DIRECT METER COSTS	\$90,393	\$45,027	\$32,820	\$0	\$12,546	\$0
DIRECT REGULATOR COSTS	\$19,654	\$9,790	\$7,136	\$0	\$2,728	\$0
DIRECT BILLING COSTS	\$14,573	\$9,547	\$2,622	\$0	\$2,404	\$0
DIRECT METER READING COSTS	\$5,613	\$4,109	\$1,129	\$0	\$375	\$0
DIRECT CUSTOMER RELATED COSTS	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL AMOUNT TO COLLECT IN CUSTOMER CHARGE	\$471,718	\$318,468	\$112,381	\$0	\$40,869	\$0
NO. OF BILLS	13,447	10,295	2,828	0	324	0
TRADITIONAL CUSTOMER CHARGE FROM COS		\$30.93	\$39.74	#DIV/0!	\$126.14	#DIV/0!
TRADITIONAL CUSTOMER CHARGE (ROUNDED)		\$30.90	\$39.70	#DIV/0!	\$126.10	#DIV/0!
AMOUNT COLLECTED IN PROPOSED CUSTOMER CHARGE	#DIV/0!	\$318,116	\$112,272	#DIV/0!	\$40,856	\$0
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	#DIV/0!	\$171,299	\$240,368	#DIV/0!	\$378,944	\$0
COMMODITY CHARGE @ 0 PERCENT INCREASE		0.39340				
TOTAL AMOUNT TO COLLECT IN DELIVERY CHARGE	#DIV/0!	\$489,414	\$352,640	#DIV/0!	\$419,800	
DELIVERY CHARGE @ 0 Percent Increase		\$47.54	\$124.70			
		\$111,331,227	\$36,105,533	\$1,451,502	\$10,321,286	