Elizabethtown Gas™
An AGL Resources Company

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Union, NJ 07083

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July 1, 2016

VIA ELECTRONIC MAIL AND FEDERAL EXPRESS

Irene Kim Asbury, Secretary
State of New Jersey
Board of Public Utilities
44 S. Clinton Avenue
3rd Floor, Suite 314
Trenton, New Jersey 08625

Re: In the Matter of the Petition of Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas for Authority to Extend the Term of Energy Efficiency Programs with Certain Modifications and Approval of Associated Cost Recovery Mechanism
BPU Docket No._____

Dear Secretary Asbury:

Enclosed for filing are an original and ten copies of the Verified Petition of Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas ("Elizabethtown" or "Company") for authority to extend the term of the Company's current Energy Efficiency Programs with certain modifications for a four-year period effective January 1, 2017. The Petition also requests that the costs of the Energy Efficiency Programs continue to be recovered through the Company's existing Energy Efficiency Program surcharge entitled the "Energy Efficiency Program" ("EEP") Rider. The Company is not requesting a change to its EEP Rider rate at this time but will instead seek any necessary rate adjustments in its next filing to reconcile that rate.

Please contact the undersigned if you have any questions.

Respectfully submitted,

M. Patricia Keefe /KB

M. Patricia Keefe
Vice President, Regulatory Affairs
And Business Support

Enclosures

cc: Richard Mroz, President
Joseph L. Fiordaliso, Commissioner
Mary-Anna Holden, Commissioner
Dianne Solomon, Commissioner
Upendra Chivukula, Commissioner
Jerome May, Director, Division of Energy
Stefanie A. Brand, Director, Rate Counsel
Parties to BPU Docket Nos. GO15050504 and GR16020119

IN THE MATTER OF THE PETITION OF
PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
FOR AUTHORITY TO EXTEND THE TERM OF ENERGY EFFICIENCY
PROGRAMS WITH CERTAIN MODIFICATIONS AND
APPROVAL OF ASSOCIATED COST RECOVERY MECHANISM
BPU DOCKET NO. _____

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Minimum Filing Requirements For Petitions Under N.J.S.A. 48:3-98.1

Number	Requirements	Index
I.	**General Filing Requirements**	
a.	The utility shall provide with all filings, information and data pertaining to the specific program proposed, as set forth in applicable sections of N.J.A.C. 14:1-5.11 and N.J.A.C. 14:1-5.12.	Petition and Testimony with supporting schedules including financial statements, public notice, notice to counties and municipalities and proposed tariff sheets
b.	All filings shall contain information and financial statements for the proposed program in accordance with the applicable Uniform System of Accounts that is set forth in N.J.A.C. 14:1-5.12. The utility shall provide the Accounts and Account Numbers that will be utilized in booking the revenues, costs, expenses and assets pertaining to each proposed program so that they can be properly separated and allocated from the regulated and/or other programs.	EEP Schedule TK- 9
c.	The utility shall provide supporting explanations, assumptions, calculations, and work papers for each proposed program and cost recovery mechanism petition filed under N.J.S.A. 48:3-98.1 and for all qualitative and quantitative analyses therein. The utility shall provide electronic copies of all materials and supporting materials and supporting schedules, with all inputs and formulae intact.	EEP Schedules TK-1 - TK-6 (electronic copies of these Schedules with inputs intact are provided); and electronic copies of JH-7 will be provided after the execution of a non-disclosure agreement
d.	The utility shall file testimony supporting its petition.	Petition and supporting Testimony
e.	For any small scale or pilot program, the utility shall only be subject to the requirements in this Section and Sections II, III, and IV. The utility shall, however, provide its estimate of costs and list of data intends to collect in a subsequent review of the benefits of the program. Information in Section V may be required for pilot and small programs if such programs are particularly large or complex. A "small scale" project is defined as one that would result in either a rate increase of less than half of one percent of the average residential customer's bill or an additional annual total revenue requirement of less than $5 million. A pilot program shall be no longer than three years, but can be extended under appropriate circumstances.	Schedule JH-2

f.	If the utility is filing for an increase in rates, charges etc., or approval of a program which may increase rates/charges to ratepayers in the future, the utility shall include a draft public notice with the petition and proposed publication dates.	Public Notice included with the Petition
II.	**<u>Program Descriptions</u>**	
a.	The utility shall provide a detailed description of each proposed program for which the utility seeks approval.	Schedule SB-1
b.	The utility shall provide a detailed explanation of the differences and similarities between each proposed program and existing and/or prior programs offered by the New Jersey Clean Energy Program, or the utility.	Schedule SB-1, Petition, Buck Testimony at page 4-9
c.	The utility shall provide a description of how the proposed program will complement, and impact existing programs being offered by the utility and the New Jersey Clean Energy Program with all supporting documentation.	Schedule SB-1, Petition, Buck Testimony at page 6
d.	The utility shall provide a detailed description of how the proposed program is consistent with and/or different from other utility programs or pilots in place or proposed with all supporting documentation.	Schedule SB-1, Schedule SB-4, Petition, Buck Testimony at page 10-11
e.	The utility shall provide a detailed description of how the proposed program comports with New Jersey State policy as reflected in reports, including the New Jersey Energy Master Plan, the draft New Jersey Energy Master Plan, and the greenhouse gas emissions reports to be issued by the New Jersey Department of Environmental Protection pursuant to N.J.S.A 26:2C-42(b) and (c) and N.J.S.A.26:2c-43 of the Global Warming Response Act, N.J.S.A. 26:2C-37 et seq.	Schedule SB-1, Petition at paragraphs 4, 6 and 8, Schedules JH-2 – JH-6
f.	The utility shall provide the features and benefits for each proposed program including the following: i. The target market and customer eligibility if incentives are to be offered; ii. The program offering and customer incentives; iii. The quality control method including inspection; iv. Program administration; and v. Program delivery mechanisms.	Schedule SB-1, Buck Testimony at page 6-11
g.	The utility shall provide the criteria upon which it chose the program.	Schedule SB-1, Buck Testimony at page 5-6, 13
h.	The utility shall provide the estimated program costs by the following categories: administrative (all utility costs), marketing/sales, training, rebates/incentives including inspections and quality control, program implementation (all contract costs) and evaluation and other.	Schedule SB-2

i.	The utility shall provide the extent to which the utility intends to utilize employees, contractors or both to deliver the program and, to the extent applicable, the criteria the utility will use for contractor selection.	Schedule SB-1, Petition and Testimony, Buck Testimony at page 9-10
j.	In the event the program contemplates an agreement between the utility and its contractors and/or the utility and its ratepayers, copies of the proposed standard contract or agreement between the ratepayer and the utility, the contractor and the utility, and/or the contractor and ratepayer shall be provided.	Buck Testimony at page 14; Schedule SB-6
k.	The utility shall provide a detailed description of the process for resolving any customer complaints related to these programs.	Buck Testimony at page 11-12
l.	The utility shall describe the program goals including number of participants on an annual basis and the energy savings, renewable energy generation and resource savings, both projected annually and over the life of the measures.	Schedules JH-3 – JH-6
m.	Marketing- The utility shall provide the following: a description of where and how the proposed program/project will be marketed or promoted throughout the demographic seSBents of the utility's customer base including an explanation of how prices and the service for each proposed program/project will be conveyed to customers.	Schedule SB-1, Buck Testimony at page 12-13
III.	**<u>Additional Required Information</u>**	
a.	The utility shall describe whether the proposed programs will generate incremental activity in the energy efficiency/conservation/renewable energy marketplace and what, if any impact on competition may be created, including any impact on employment, economic development and the development of new business with all supporting documentation. This shall include a breakdown of the impact on the employment within this marketplace as follows: marketing/sales, training, program implementation, installation, equipment manufacturing and evaluation and other applicable markets. With respect to the impact on competition the analysis should include the competition between utilities and other entities already currently delivering the service in the market or new markets that may be created.	Petition, Schedule SB-3, Buck Testimony at page 9-10

b.	The utility shall provide a description of any known market barriers that may impact the program and address the potential impact on such known market barriers for each proposed program with all of the supporting documentation. This analysis shall include barriers across the various markets including residential (both single and multi-family), commercial and industrial (both privately owned or leased buildings), as well as between small, medium, and large commercial and industrial markets. This should include both new development and retrofit or replacement upgrades across the market sectors.	Petition, Buck Testimony at page 13
c.	The utility shall provide a qualitative/quantitative description of any anticipated environmental benefits associated with the proposed programs and a quantitative estimate of such benefits for the programs overall and for each participant in the program with all supporting documentation. This shall include an estimate of the energy saved in kWh and/or therms and the avoided air emissions, wastewater discharges, waste generation and water use or other saved or avoided resources.	Petition, Schedules JH-5 - JH-6
d.	To the extent known, the utility shall identify whether there are similar programs available in the existing marketplace and provide supporting documentation if applicable. This shall include those programs that provide other societal benefits to other under served markets. This should include an analysis of the services already provided in the market place, and the level of competition.	Schedule SB-1
e.	The utility shall provide an analysis of the benefits or impacts in regards to Smart Growth.	N/A
f.	The utility shall provide the method for treatment of Renewable Energy Certificates ("REC") including Solar RECs or any other certificate developed by the Board of Public Utilities, including Greenhouse Gas Emissions Portfolio and Energy Efficiency Portfolio Standards including ownership, and use of the certificate revenue stream(s).	N/A
g.	The utility shall propose the method for treatment of any air emission credits and offsets, including Regional Greenhouse Gas Initiative carbon dioxide allowances and offsets including ownership, and use of the certificate revenue stream(s).	N/A
h.	The utility shall analyze the proposed quantity and expected prices for a REC, solar REC, air emissions credits, offsets or allowances or other certificates to the extent possible.	N/A

IV.	**Cost Recovery**	
a.	The utility shall provide appropriate financial data for the proposed program, including estimated revenues, expenses and capitalized investments, for each of the first three years of operations and at the beginning and the end of each year of said three year period. The utility shall include pro forma income statements for the proposed program, for each of the first three years of operations and actual or estimated balance sheets as at the beginning and end of each years said three year period.	EEP Schedules TK-2 – TK-6, TK-9
b.	The utility shall provide detailed spreadsheets of the accounting treatment of the cost recovery including describing how costs will be amortized, which accounts will be debited or credited each month, and how the costs will flow through the proposed method of recovery of program costs.	EEP Schedule TK- 8
c.	The utility shall provide a detailed explanation, with all supporting documentation, of the recovery mechanism it proposes to utilize for cost recovery of the proposed program, including proposed recovery through the Societal Benefits Charge a separate clause established for these programs, base rate revenue requirements, government funding reimbursement, retail margin, and/or other.	Petition, EEP Schedules TK-1 – TK-5
d.	The utility's petition for approval, including proposed tariff sheets and other required information, shall be verified as to its accuracy and shall be accompanied by a certification of service demonstrating that the petition was served on Rate Counsel simultaneous to its submissions to the Board.	Verified and Certification of Service included with filing
e.	The utility shall provide an annual rate impact summary by year for the proposed program, and an annual cumulative rate impact summary for all approved and proposed programs showing the impact of individual programs as well as the cumulative impact of all programs on each customer class of implementing each program and all approved and proposed programs based upon a revenue requirement analysis that identifies all estimated program costs and revenues for each proposed program on an annual basis. The utility shall also provide an annual bill impact summary by year for each program, and an annual cumulative bill impact summary by year for all approved and proposed programs showing bill impacts on a typical customer for each class.	EEP Schedule TK-10

f.	The utility shall provide, with supporting documentation, a detailed breakdown of the total costs for the proposed program, identified by cost seSBent (capitalized costs, operating expense, administrative expense, etc.). This shall also include a detailed analysis and breakdown and separation of the embedded and incremental costs that will be incurred to provide the services under the proposed program with all supporting documentation.	EEP Schedule TK-4 Schedule SB-2 and SB-7
g.	The utility shall provide a detailed revenue requirement analysis that clearly identifies all estimated program costs and revenues for the proposed program on an annual basis, including effects upon rate base and pro forma income calculations.	EEP Schedule TK-3
h.	The utility shall provide, with all supporting documentation: (i) a calculation of its current capital structure as well as its calculation of the capital structure approved by the Board in its most recent electric and/or gas base rate cases, and (ii) a statement as to its allowed overall rate of return approved by the board in its most recent electric and/or gas base rate case.	EEP Schedule TK-7
i.	A utility seeking incentives or rate mechanism that decouples utility revenues from sales, shall provide all supporting justification, and rationale for incentives, along with supporting documentation, assumptions and calculations.	N/A
V.	**<u>Cost/Benefit Analysis</u>**	
a.	The utility shall provide a detailed analysis with supporting documentation of the net benefits associated with the proposed program, including, if appropriate, a comprehensive and detailed avoided costs savings study with supporting documentation. The value of the avoided environmental impacts and the environmental benefits and the value of any avoided or deferred energy infrastructure should be stated separately.	Schedule JH-2, JH-7
b.	The utility shall calculate a cost/benefit analysis utilizing the Total Resource Cost ("TRC") test that assesses all program costs and benefits from a societal perspective. The utility may also provide any cost benefit analysis that it believes appropriate with supporting rationales and documentation.	Schedule JH-2, JH-7
c.	The utility shall quantify all direct and indirect benefits as well as provide projected costs resulting from a proposed program that is subject to a cost/benefit test.	Schedule JH-2, JH-7

d.	Renewable energy programs shall not be subject to a cost/benefit test but the utility must quantify all direct and indirect benefits resulting from a such a proposed program as well as provide the projected costs. The utility must also demonstrate how such a proposed program will support energy and environmental statewide planning objectives, such as attainment of the Renewable Portfolio Standard and any emission requirements.	Schedule JH-2, JH-7
e.	The utility must demonstrate for the proposed program that it results in a positive benefit/cost ratio, or, if the utility cannot make such a demonstration, it must provide the rationale for why the proposed program should be approved.	Schedule JH-2, JH-7
f.	The level of energy and capacity savings utilized in these calculations shall be based upon the most recent protocols approved by the Board of Public Utilities to measure energy savings for the New Jersey Clean Energy Program. In the event no such protocols exist, or to the extent that a protocol dopes not exist for a filed program, the utility must submit a measurement protocol for the program or contemplated measure for approval by the Board.	Schedule JH-2, JH-7
g.	The utility shall also quantify and deduct from the energy and capacity savings under any free rider effects and the business as usual benefits from homeowners and businesses installing Energy Efficiency or Renewable Energy without the N.J.S.A. 48:33-98.1 benefits or incentives.	Schedule JH-2, JH-7

STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

In The Matter Of The Petition Of	**:**	
Pivotal Utility Holdings, Inc. d/b/a	**:**	**BPU Docket No._____**
Elizabethtown Gas For Authority to	**:**	
Extend the Term of Energy	**:**	
Efficiency Programs with Certain	**:**	**Verified Petition**
Modifications and Approval of	**:**	
Associated Cost Recovery Mechanism	**:**	

To The Honorable Board of Public Utilities:

Pursuant to *N.J.S.A.* 48:3-98.1 *et seq.*, Petitioner Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas ("Petitioner," "Elizabethtown," or "the Company") hereby submits this Petition by which it seeks approval from the Board of Public Utilities ("Board") to extend the term of its existing Energy Efficiency Programs with a number of modifications described herein for a four-year term effective January 1, 2017 through December 31, 2020. Petitioner also seeks approval to continue to recover the costs associated with the extended Energy Efficiency Programs through Petitioner's surcharge contained in Rider G to the Company's Tariff for Gas Service No. 14 entitled the Energy Efficiency Program ("EEP") Rider. Petitioner is not proposing to revise its existing EEP Rider rate at this time. In support of the requested relief, Petitioner states as follows:

1. Petitioner is a public utility corporation organized under the laws of the State of New Jersey. Petitioner's principal office is located at 520 Green Lane, Union, New Jersey, 07083.

2. Communications and correspondence concerning this petition should be sent as follows:

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Vice President, Regulatory Affairs
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3. Petitioner is engaged in the sale, transmission and distribution of natural gas to approximately 283,000 customers located within its service territory in Hunterdon, Mercer, Middlesex, Morris, Sussex, Union and Warren Counties.

Background Statement

4. Petitioner's existing EE Programs consist of three energy efficiency programs ("EE Programs") consistent with the "Global Warming Response Act," N.J.S.A.26-2C-45 or "RGGI Legislation" and the Board's May 12, 2008 Order ("May 12 Order") in Docket No. EO08030164 issued pursuant to N.J.S.A. 48:3-98.1(c). In the RGGI Legislation, the State Legislature determined that global warming is a pervasive and dangerous threat that should be addressed through the establishment of a statewide greenhouse gas emissions reduction program. The May 12 Order allows electric and gas public utilities to offer energy efficiency and conservation programs on a regulated basis.

5. The EE Programs, described more fully below, were first authorized by an August 3, 2009 Board Order ("August 3 Order") in Docket Nos. EO09010056 and GO09010060 *et al.*, which approved a Stipulation ("Stipulation") among Petitioner, Board Staff and the Division of Rate Counsel ("Rate Counsel"). In the Stipulation, parties agreed to the implementation of the EE Programs and the establishment of surcharge to enable Petitioner to recover the costs associated with its EE Programs. The EE Programs were designed to enhance or supplement New Jersey's Clean Energy Program ("NJCEP") over the 17-month period commencing August 3, 2009 through December 31, 2010. The Board authorized a number of extensions of Petitioner's EE Programs in BPU Docket Nos. GO11070399, GO12100946 and GO15050504. The currently effective EE Programs, which were authorized in GO15050504 by BPU order dated December 16, 2015 ("December 16 Order"), are effective through December 31, 2016. These programs are described below.

6. The August 3 Order found the EE Programs to be reasonable, in the public interest and consistent with the State's economic stimulus and energy conservation goals. The Board also found the EE Programs cost effective and beneficial as reflected in the cost-benefit analysis performed by Rutgers Center for Energy, Economic and Environmental Policy. The June 7, 2011 draft Energy Master Plan ("2011 EMP") indicated that it is the goal of the State's current administration to "manage energy in a manner that saves money, stimulates the economy, creates jobs and protects the environment . . . ." It further noted that "[n]atural gas EE remains a worthwhile goal with respect to increasing the penetration rate of high efficiency gas burning appliances, gas-related EE Programs, and general conservation trends." The Board updated the 2011

EMP in December 2015 (“2015 EMP Update”) and generally reiterated the goals of the 2011 EMP.

7. The existing EE Programs approved by the December 16 Order are as follows:

a. Residential Gas Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Program;

b. Commercial Customer Energy Efficiency Program; and

c. Customer Education and Outreach Program.

In addition to a range of rebates, the EE Programs include various customer education and outreach initiatives, including an on-line customer Dashboard, designed to encourage customers to conserve energy and provide information to them on how to lower their gas bills. Details concerning the proposed term extension and modifications to the EE Programs are described below and in the supporting schedules.

8. Based on the continued need of the State to meet the energy efficiency, conservation and greenhouse gas emission reduction goals established for New Jersey, Elizabethtown has determined that it is reasonable and prudent at this time to continue the Company’s Energy Efficiency Programs with the modifications proposed by this filing and to recover the costs associated with these Programs through the Company’s existing EEP rider rate reflected in Rider G, the mechanism already in place for recovery of these costs.

9. By this Petition, the Company is not seeking to change its currently effective EEP Rider rate of $0.0054 per therm, inclusive of all applicable taxes approved by the Board pursuant to an order dated August 19, 2015 in BPU Docket No.

GR14091073. Costs incurred in connection with the proposed EE Program will be reflected in future EEP Rider rate reconciliation proceedings. On February 11, 2016, Petitioner filed a Petition ("2016 Petition") with the Board, which was assigned Docket No. GR16020119 requesting to decrease its currently effective EEP rider rate from $0.0054 per therm to $0.0031 per therm, inclusive of all applicable taxes effective May 1, 2016. The 2016 Petition sought to reconcile EE Program costs and cost recoveries for the period commencing July 1, 2014 through June 30, 2015 and to recover actual and forecast revenues for the period July 1, 2015 through June 30, 2016. The 2016 Petition is pending final review by the Board.

10. Annexed hereto and made a part of this Petition is Exhibit P-1, which Petitioner suggests be marked as indicated. Exhibit P-1 consists of the testimony and supporting schedules of Thomas Kaufmann, Manager of Rates and Tariffs for Petitioner. The schedules listed below are attached and referred to in Exhibit P-1 and contain information responsive to the Minimum Filing Requirements ("MFRs") set forth in the Board's May 12, 2008 Order in BPU Docket No. EO08030164:

(a) Tariff Schedule TK-1 consists of revised tariff sheets in redlined and clean form reflecting the changes being proposed to the EE Programs;

(b) EEP Schedule TK-1 sets forth an example calculation of an EEP Rider rate;

(c) EEP Schedule TK-1a sets forth the calculation of the Projected EEP Rider rates based on current cost and recovery projections,

as well as bill impacts for certain tariff classes through 2025 to a near zero balance;

(d) EEP Schedule TK-2 sets forth the calculation of the carrying costs on the EEP balance for the periods ended June 30;

(e) EEP Schedule TK-3 sets forth the calculation of the monthly EEP revenue requirement through June 2025;

(f) EEP Schedule TK-4 sets forth the EEP estimated O&M and Program Expenditures for the periods ended June through June 2025;

(g) EEP Schedule TK-5 sets forth cost recoveries for the period through June 2025;

(h) EEP Schedule TK-6 sets forth the over/underrecovered carrying costs rate applicable to the monthly balances set forth on EEP Schedule TK-2;

(i) EEP Schedule TK-7 contains a calculation of Petitioner's current capital structure as well as a calculation of the capital structure approved by the Board in Elizabethtown's last rate case;

(j) EEP Schedule TK-8 contains Uniform System of Account information that will be utilized in booking revenues, costs, expenses and assets pertaining to the Program;

(k) EEP Schedule TK-9 contains certain financial statements required by *N.J.A.C.* 14:1-5.12; and

(l) EEP Schedule TK-10 contains a rate impact analysis in compliance with MFR IV.e.

11. Annexed hereto and also made a part of this Petition is Exhibit P-2, which Petitioner suggests be marked as indicated. Exhibit P-2 contains the testimony and supporting schedules of Susan Buck, Program Manager, Energy Efficiency Programs of Petitioner. The schedules listed below are attached and referred to in Exhibit P-2 and contain information responsive to the MFRs set forth in the Board's May 12, 2008 Order in BPU Docket No. EO08030164:

(a) Schedule SB-1 contains program descriptions of the proposed programs:

(i) Residential Gas Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Program;

(ii) Residential Home Energy Assessment Program;

(iii) Residential Home Energy Report (Opower) Program;

(iv) Residential Home Weatherization for Income Qualified Customers Program;

(v) Residential Financing Program;

(vi) Commercial Financing Program; and

(vii) Commercial Steam Trap Survey and Repair Program.

(b) Schedule SB-2 contains budgeted, estimated EE Program costs by major spending categories through December, 2020;

(c) Schedule SB-3 contains estimated direct FTE employment data;

(d) Schedule SB-4 contains a comparison of EE programs amongst New Jersey gas utilities;

(e) Schedule SB-5 contains sample marketing material;

(f) Schedule SB-6 contains a copy of the standard agreement;

(g) Schedule SB-7 contains Proposed Allocation of Customer Outreach/Education Funds; and

(h) Schedule SB-8 contains Steam Trap Survey/Repair Background Information.

12. Annexed hereto and also made a part of this Petition is Exhibit P-3, which Petitioner suggests be marked as indicated. Exhibit P-3 contains the testimony and supporting schedules of Jim Herndon, Principal, Strategy and Planning, Nexant, Inc. The schedules listed below are attached and referred to in Exhibit P-3 and contain information responsive to the MFRs set forth in the Board's May 12, 2008 Order in BPU Docket No. EO08030164:

(i) Schedule JH-1 contains Mr. Herndon's resume and Nexant client list;

(j) Schedule JH-2 sets forth the Cost Benefit Analysis Summary;

(k) Schedule JH-3 sets forth the Estimated Participants and Incentives;

(l) Schedule JH-4 contains the Estimated Annual Energy Savings;

(m) Schedule JH-5 sets forth the Greenhouse Gas Emissions Reductions;

(n) Schedule JH-6 sets forth the Free Riders and Spillover; and

(o) Schedule JH-7 sets forth the Cost Benefit Analysis Details.

An Index of the MFRs referencing the responsive schedules or testimony sponsored by Mr. Kaufmann, Ms. Buck and Mr. Herndon accompanies this Petition.

13. In addition, attached as Exhibits P-4 and P-5, respectively is a form public notice and notice to county clerks, municipal clerks and county administrators.

14. The Company satisfied the 30-day pre-filing meeting requirement by teleconference held with Board Staff and Rate Counsel on June 15, 2016.

Proposed Energy Efficiency Program

15. Elizabethtown proposes to extend the term of its EE Programs for a four-year period commencing January 1, 2017 through December 31, 2020 subject to the modifications contained herein and the supporting testimony and schedules. As set forth in Schedule SB-2, the proposed annual amount budgeted for the EE Programs for each year is approximately $3.75 million, for a total program budget of approximately $14.3 million over the four-year term. The budgeted amounts are based on projected expenditures for program investments and associated O&M and labor expense, which, as discussed below, Elizabethtown proposes to recover through the proposed EEP Rider Surcharge rate that will be reconciled in future proceedings to true-up that rate. A general overview of the Company's Energy Efficiency Programs and the specific proposed material modifications are as follows, with more detailed descriptions of each of the proposed programs provided in Schedule SB-1 that accompanies Ms. Buck's testimony:

Residential Expanded Gas Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Program

16. This program is designed to enhance the existing NJCEP gas HVAC and gas hot water heater incentive program by supplementing the incentive offered through NJCEP. The program targets all residential customers who receive natural gas service from Elizabethtown or have the potential to receive gas service. Elizabethtown is not proposing to materially alter this program. The only change is the addition of a rebate for

power vented water heaters. A more detailed description of this program is set forth in Schedule SB-1.

Expanded Residential EE Program Offerings

17. The Company is proposing to add the following programs to expand the breadth of its existing residential EE Program offerings:

- The Residential Home Energy Assessment Program which will provide participants with a 75-minute home energy audit and the direct installation of energy efficient measures such as faucet aerators, low-flow shower heads, water heater pipe wrap insulation and a programmable thermostat; this offering replaces the current mailing of weatherization kits to NJCEP participants;
- The Residential Home Energy Report (Opower) Program which will provide customers with regular updates on their gas usage compared with the usage of their neighbors, along with recommendations on how to improve their energy efficiency; this Program is intended to enhance the Company's currently effective consumer education program by offering a more effective, user-friendly and accessible on-line audit function;
- The Residential Home Weatherization for Income Qualified Customers Program which will provide weatherization measures such as air sealing and insulation measures to low income customers who do not otherwise qualify for the Comfort Partners Program offered through the NJCEP; and
- The Residential Financing Program which will offer residential customers no- to low-interest loans for qualifying energy efficiency measures in their homes.

Commercial Customer Energy Efficiency Programs

18. The Company is proposing to eliminate the equipment rebate program currently offered to commercial customers and replace it with a Commercial Financing Program and a Commercial Steam Trap Survey and Repair Program. The Commercial Financing Program would offer commercial customers low-interest, short-term financing for NJCEP direct installation projects. The Steam Trap Program would provide participating customers with yearly surveys concerning the functionality of their steam traps and repair or replace defective steam traps to maximize energy efficiency. A more detailed description of these programs is set forth in Schedule SB-1.

Cost/Benefit Information

19. As reflected in Schedule JH-2, the proposed EE Programs pass all cost benefit tests with the exception of the Residential Home Weatherization for Income Qualified Customers Program, which has a Program Administrator Cost Test ratio of 0.85 versus 1.0 or greater, primarily attributable to the program costs incurred to provide this program to this class of customers. Elizabethtown respectfully submits that this slight ratio differential and the societal benefit that results from offering this program to low income customers otherwise makes this program cost-beneficial. Petitioner respectfully submits that the proposed programs are appropriate from a cost/benefit perspective, consistent with the goals of the 2011 EMP and 2015 EMP Update.[1]

Cost Recovery

20. As is currently the case, the Company is proposing to recover all costs associated with the program, including, all program investments, such as rebates and reasonable and prudent incremental O&M expense, such as labor, customer education

[1] An electronic copy of Schedule JH-7 will be provided upon the execution of a non-disclosure agreement.

and outreach and costs associated with the on-line audit tool through the existing Rider G EEP Rider rate. Elizabethtown is proposing to continue to amortize and recover its EE Program investments in rebates and customer financing over a four-year period, with the return on the unamortized portion of the investments based upon the Company's weighted average cost of capital established by a Board Order in Docket No. GO12100946, grossed up for the revenue expansion factor established in the same proceeding. The unamortized portion of these EE Program investments are net of accumulated amortization and accumulated deferred income taxes associated with the EE Program investments.

21. As noted above, a continuation of the EE Programs may have the beneficial effect of creating additional jobs in the energy efficiency market. The anticipated job impacts are set forth in Schedule SB-3. As discussed in Ms. Buck's testimony, the Company intends to utilize a combination of internal employees and third party contractors to deliver the EE Programs.

22. The proposed EE Programs will also help customers reduce their natural gas costs and play an important role in reducing greenhouse gas emissions, preserving environmental resources and stimulating economic growth. As reflected in the 2011 EMP and 2015 EMP Update, these remain important State goals.

Procedure and Request for Expedited Treatment

23. As set forth in the May 12 Order, once a Petition has been filed with the Board, Board Staff shall have 30 days, commencing on the filing date, to determine whether the Petition is administratively complete, advise the utility in writing whether or not the Petition is administratively complete and set forth the deficiencies and items

required to remedy the deficiencies. The RGGI legislation provides that unless the Board issues a written order within 180 days after the filing of the Petition approving, modifying or denying the requested recovery, the recovery required by the utility shall be granted effective on the 181st day after the filing without further order by the Board. *N.J.S.A.* 48:3-98.1(b).

24. To ensure that Petitioner can continue its Energy Efficiency Programs without interruption, Elizabethtown requests expedited treatment of this Petition. Elizabethtown further requests that the Board retain jurisdiction of this matter and not transfer the filing to the Office of Administrative Law. Elizabethtown submits that evidentiary hearings are not necessary or required to approve this Petition and requests that the Board issue an Order as soon as reasonably possible to promote implementation of the proposed EE Programs effective January 1, 2017.

25. As stated in the May 12 Order (at 5) "[t]he Board encourages all interested parties to work toward a settlement for the Board's consideration before the expiration of the 180 day period." Elizabethtown will work with the Board Staff and Rate Counsel to reach an amicable and mutually acceptable resolution of this proceeding in the most expedient manner possible that is convenient to all the parties.

Overall Impact

26. As a result of the proposed program extension, the overall impact of Petitioner's filing in this proceeding is a potential increase in the monthly bill of a typical heating customer using 100 therms by an average rate of $0.44 per therm. This results in a bill increase of $0.44 from $86.91 to $87.35, or 0.5% based on rates in effect June 1, 2016.

Notice

27. Petitioner is serving notice and a copy of this Petition, together with a copy of the exhibits and schedules annexed hereto upon Stefanie A. Brand, Director, Division of Rate Counsel, 140 East Front Street, 4th Floor, Trenton, New Jersey, upon updated service lists compiled in Docket Nos. GO15050504 and GR16020119.

Conclusion

28. For all the foregoing reasons, Elizabethtown respectfully requests that the Board retain jurisdiction of this matter and issue an Order on an expedited basis approving this Petition in its entirety and finding as follows:

a. The Energy Efficiency Programs are in the public interest and Elizabethtown is authorized to continue to offer and administer these regulated services utility services under the terms set forth in this Petition and accompanying testimony, and supporting schedules for a four-year term effective January 1, 2017 through December 31, 2020;

b. Elizabethtown is authorized to recover all costs as requested herein;

c. Elizabethtown is authorized to amend its tariff in the manner reflected in the proposed tariff sheet contained in Tariff Schedule TK-1; and

d. Elizabethtown is granted such other and further relief as may be necessary to protect the Company's interests and implement the proposals as set forth in this Petition.

Respectfully submitted,

By: Mary Patricia Keefe /KB

Mary Patricia Keefe, Esq.
Vice President, Regulatory Affairs
And Business Support
Pivotal Utility Holdings, Inc.
d/b/a Elizabethtown Gas
520 Green Lane
Union, New Jersey 07083
(908) 662-8452

Date: June 30, 2016

STATE OF NEW JERSEY)

: SS

COUNTY OF UNION)

AFFIDAVIT

Mary Patricia Keefe, being duly sworn according to law, upon her oath, deposes and says that:

1. I am the Vice President, Regulatory Affairs and Business Support of Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas, the petitioner in the foregoing Petition.

2. I have read the annexed petition, and the matters and things contained therein are true to the best of my knowledge and belief.

Mary Patricia Keefe

Sworn and subscribed before me this

30 day of June, 2016.

Notary Public in the
State of New Jersey

JANE JAMES
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires December 20, 2016

STATE OF NEW JERSEY)
: ss:
COUNTY OF UNION)

Thomas Kaufmann, being duly sworn according to law, upon his oath, deposes and says:

1. I am Manager of Rates and Tariffs of the Petitioner in the foregoing Petition and I am authorized to make this Affidavit on behalf of the Petitioner.

2. The statements made in the foregoing Petition and the Exhibits and Schedules related to the development of the EEP charges submitted therewith correctly portray the information set forth therein, to the best of my knowledge, information and belief.

Thomas Kaufmann
Manager, Rates and Tariffs

Sworn to and subscribed to before me this 30 day of June, 2016.

JANE JAMES
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires December 20, 2016

STATE OF NEW JERSEY)

: ss:

COUNTY OF UNION)

Susan Buck, being duly sworn according to law, upon her oath, deposes and says:

1. I am Program Manager of Energy Efficiency Programs of the Petitioner in the foregoing Petition and I am authorized to make this Affidavit on behalf of the Petitioner.

2. The statements made in the foregoing Petition and the Exhibits and Schedules related to the development of the EEP charges submitted therewith correctly portray the information set forth therein, to the best of my knowledge, information and belief.

Susan Buck
Program Manager,
Energy Efficiency Programs

Sworn to and subscribed to before me this 30 day of June, 2016.

JANE JAMES
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires December 20, 2016

STATE OF NEW JERSEY)
: ss:
COUNTY OF UNION)

Jim Herndon, being duly sworn according to law, upon his oath, deposes and says:

1. I am Principal, Strategy and Planning of Nexant, Inc., consultant for the Petitioner in the foregoing Petition and I am authorized to make this Affidavit on behalf of the Petitioner.

2. The statements made in the foregoing Petition and the Exhibits and Schedules related to the development of the EEP charges submitted therewith correctly portray the information set forth therein, to the best of my knowledge, information and belief.

Jim Herndon
Principal, Strategy and Planning

Sworn to and subscribed to before me this 30 day of June, 2016.

Wake, North Carolina
County, State

MICHAEL ROEBUCK NOTARY PUBLIC My Commission Expires August 4, 2016 WAKE COUNTY, NC

Official Signature of Notary

Michael Roebuck, Notary Public
Notary's printed or typed name

My commission expires: 8/4/2016

STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

In The Matter Of The Petition Of	**x**	
Pivotal Utility Holdings, Inc. d/b/a	**:**	**BPU Docket No._____**
Elizabethtown Gas For Authority to	**:**	
Extend the Term of Energy	**:**	
Efficiency Programs with Certain	**:**	
Modifications and Approval of	**:**	
Associated Cost Recovery Mechanism	**x**	

CERTIFICATE OF SERVICE

I hereby certify that on the 1st day of July, 2016, a true and correct copy of the Verified Petition and supporting Testimony and Schedules relating to the above-captioned proceeding were served by Federal Express upon Stefanie A. Brand, Director, Division of Rate Counsel, 140 East Front Street, 4th Floor, P.O. Box 003, Trenton, New Jersey, 08625 and by electronic mail upon the parties listed on the service list attached to the Verified Petition.

Kim Bradshaw

Kim Bradshaw
Legal Assistant
Cullen and Dykman LLP

EXHIBIT P-1

PIVOTAL UTILITY HOLDINGS, INC.
d/b/a ELIZABETHTOWN GAS
DIRECT TESTIMONY OF
THOMAS KAUFMANN

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Thomas Kaufmann. My business address is 520 Green Lane, Union, New Jersey, 07083.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas ("Elizabethtown" or "Company") as Manager of Rates and Tariffs.

Q. WHAT IS THE SCOPE OF YOUR DUTIES AT ELIZABETHTOWN?

A. I am responsible for designing and developing rates and rate schedules for regulatory filings with the New Jersey Board of Public Utilities ("Board") and internal management purposes. I also oversee daily rate department functions, including tariff administration, monthly parity pricing, competitive analyses and preparation of management reports.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS AND BUSINESS EXPERIENCE.

A. In June 1977, I graduated from Rutgers University, Newark, N.J. with a Bachelor of Arts degree in Business Administration, majoring in accounting and economics. In July 1979, I graduated from Fairleigh Dickinson

University, Madison, N.J. with a Masters of Business Administration, majoring in finance.

My professional responsibilities have encompassed financial analysis, accounting, planning, and pricing in manufacturing and energy services companies in both regulated and unregulated industries. In 1977, I was employed by Allied Chemical Corp. as a staff accountant. In 1980, I was employed by Celanese Corp. as a financial analyst. In 1981, I was employed by Suburban Propane as a Strategic Planning Analyst, promoted to Manager of Rates and Pricing in 1986 and to Director of Acquisitions and Business Analysis in 1990. In 1993, I was employed by Concurrent Computer as a Manager, Pricing Administration. In 1996, I joined NUI Corporation ("NUI") as a Rate Analyst, was promoted to Manager of Regulatory Support in August 1997 and Manager of Regulatory Affairs in February 1998, and named Manager of Rates and Tariffs in July 1998. NUI Corporation was acquired by AGL Resources Inc. ("AGL") in November 2004. AGL is now the parent company of Elizabethtown.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to support Elizabethtown's proposed extension of the term of its Energy Efficiency Program ("EEP") which is currently scheduled to expire on

December 31, 2016. My testimony and schedules present the projected ("EEP") Rider rates, based on the proposed extension, to be assessed to all customers except those served under special contracts as filed and approved by the Board, and those customers exempt from this charge pursuant to the Long-Term Capacity Agreement Pilot Program ("LCAPP"), P.L. 2011, c. 9.

Q. IS THE COMPANY PROPOSING TO CHANGE THE RATE IN THIS FILING AND IF SO, WHAT IS THE EFFECTIVE DATE?

A. The Company is not proposing a rate change in this filing. The calculation of future projected rates in this filing are based on twelve months of actual data through June 30 ("Recovery Year"), and estimated data from July 1 through June 30 of each subsequent year ("Subsequent Recovery Year").

Q. WHAT IS THE BASIS FOR THE COMPANY'S FUTURE PROJECTED EEP RATES?

A. The Company's filing is being made in connection with the Company's request to extend the term of the expenditures applicable to the Energy Efficiency Programs ("EE Programs"). These programs were initially approved in the August 3, 2009 Board Order ("August 3 Order") in Docket No. GO09010056 and GO09010060 et al., which approved a Stipulation ("Stipulation") signed by

Elizabethtown, Board Staff and the Division of Rate Counsel in which these parties agreed to the establishment of a surcharge to enable Elizabethtown to recover the costs associated with its EE Programs. Multiple Board Orders have been approved to extend the program and alter the recovery rate from the initial filing. In the most recent Order, dated December 16, 2015 ("December 16 Order") issued in BPU Docket No. GR15050504, the Company was authorized to extend its EEP Program through December 31, 2016. The EE Program and associated projected expenditures are addressed by Company witness Buck.

Q. ARE YOU PROPOSING ANY MATERIAL CHANGES TO THE EEP SURCHARGE COMPARED TO THOSE APPROVED IN THE AUGUST 3 ORDER?

A. No. The Company is not proposing to change the cost recovery methodology. The rate proposed in this filing has been calculated in accordance with the methodology approved in the August 3 Order.

Q. DOES YOUR TESTIMONY INCLUDE ANY ILLUSTRATIVE SCHEDULES?

A. Yes. My testimony includes schedules and proposed tariff sheets that were prepared under my direction and supervision. These schedules contain information responsive to the Minimum Filing Requirements ("MFRs") as

referenced in the MFR Index attached to the Company's Petition. The MFRs were set forth in the Board's May 12 Order in BPU Docket No. EO08030164 and the August 3 Order. The schedules are as follows:

(a) Tariff Schedule TK-1 consists of revised tariff sheets in redlined and clean form reflecting the changes being proposed to the EE Programs;

(b) EEP Schedule TK-1 sets forth an example calculation of an EEP Rider rate;

(c) EEP Schedule TK-1a sets forth the calculation of the Projected EEP Rider rates based on current cost and recovery projections, as well as bill impacts for certain tariff classes through 2025 to a near zero balance;

(d) EEP Schedule TK-2 sets forth the carrying costs on the EEP balance for the periods ended June 30;

(e) EEP Schedule TK-3 sets forth the calculation of the monthly EEP revenue requirement through June 2025;

(f) EEP Schedule TK-4 sets forth the EEP estimated O&M and Program Expenditures for the periods ended June 30 through June 2025;

(g) EEP Schedule TK-5 sets forth cost recoveries for the period through June 2025;

(h) EEP Schedule TK-6 sets forth the over/underrecovered carrying costs rate applicable to the monthly balances set forth on EEP Schedule TK-2;

(i) EEP Schedule TK-7 contains a calculation of Petitioner's current capital structure as well as a calculation of the capital structure approved by the Board in Elizabethtown's last rate case;

(j) EEP Schedule TK-8 contains Uniform System of Account information that will be utilized in booking revenues, costs, expenses and assets pertaining to the Program;

(k) EEP Schedule TK-9 contains financial statements required by N.J.A.C. 14:1-5.12; and

(l) EEP Schedule TK-10 contains a rate impact analysis in compliance with MFR IV.e.

REVENUE FORECAST

Q. WHAT IS THE METHODOLOGY USED TO PROJECT FIRM SALES AND SERVICES FOR THE RECOVERY YEAR IN ORDER TO DERIVE THE COMPANY'S PROPOSED EEP RATE?

A. The methodology used to derive the Projected Normalized Sales and Services on EEP Schedule TK-1 is the same as that used in developing the demand forecast that supported Elizabethtown's Basic Gas Supply Service rate filing dated May 31, 2016. As mentioned above, the EEP rate is applicable to all customers except those served under special contracts as filed and approved by the Board and those exempt from this charge pursuant to the LCAPP legislation.

EEP RATE

Q. PLEASE DESCRIBE THE EEP RIDER AND WHAT IT IS DESIGNED TO RECOVER.

A. The August 3 Order authorized the establishment of a surcharge by which Elizabethtown recovers the costs associated with its EE Program. The cost recovery methodology reflected in this filing is consistent with that approved in the August 3 Order. Details concerning projected spending during the period January 2017 through December 2020, as well as other information associated with the EE Programs, are provided in Ms. Buck's testimony and supporting schedules.

Q. PLEASE EXPLAIN HOW THE PROPOSED EEP RATE IS CALCULATED.

A. The proposed EEP rate is calculated by taking the sum of (i) any prior period balance, plus (ii) current year O&M

costs, plus (iii) current year revenue requirements, less (iv) current year recoveries and (v) applicable carrying costs, plus (vi) projected recoverable amounts for the upcoming year and dividing the total amount by the volumes projected for that upcoming year for the service classifications and customers subject to the EEP as shown on Tariff Schedule TK-1. The resulting quotient is adjusted for applicable taxes and assessments to arrive at an EEP rate per therm.

Q. PLEASE EXPLAIN HOW INCURRED O&M COSTS AND REVENUE REQUIREMENTS FOR PROGRAM EXPENDITURES ARE DETERMINED AND CALCULATED.

A. Projected O&M amounts are recoverable in the year incurred. EE Program Expenditures are recoverable over a four (4) year period, as reflected on EEP Schedule TK-4. The calculation of the allowable monthly revenue requirement for the amortized EE Program expenditures is set forth on EEP Schedule TK-3. The allowable monthly recoverable amount is developed by taking EE Program expenditures less accumulated amortization and accumulated deferred income tax credits to derive a month end rate base. The average of the beginning and end of month balances is multiplied by the Company's after tax weighted average cost of capital ("WACOC"), grossed up

for the Company's revenue factor and divided by twelve (12) to derive a monthly return on investment. This amount plus the monthly amortization results in the allowable monthly revenue. The Company's current EEP WACOC and revenue factor of 5.68% and 1.71565 respectively are those approved by a Board Order in Docket No. GO12100946 issued August 21, 2013 ("August 21 Order").

Q. HOW ARE AMORTIZATION EXPENSES CALCULATED?

A. The amortization expenses are calculated by dividing each month's amortizable expenditure by forty eight (48) months and accumulating (or layering) the amounts to the total monthly amortization expenses.

Q. HOW IS THE DEFERRED INCOME TAX BENEFIT CALCULATED?

A. The deferred tax benefit is calculated by multiplying the temporary difference in the Company's tax and book amortization expense by the effective income tax rate. The tax rate used in the calculation of the deferred tax benefit for Elizabethtown is 41.08% through June 30, 2010 and 40.85% thereafter and includes Corporate Business Tax.

Q. ARE CARRYING COSTS INCLUDED IN THE EEP CALCULATION?

A. Yes. In accordance with the August 3 Order, the Company is permitted to recover carrying costs or issue credits

on its EEP over/under recovered balances. The Company will continue to accrue such amounts on its deferred EEP balances for recovery in subsequent years as shown on EEP Schedule TK-2.

Q. HOW ARE THE CARRYING COSTS CALCULATED?

A. Carrying cost rates are applied to each year’s net prior year balance and current year revenue requirements and recoveries. The interest rate is based on the Company's monthly short-term debt rate on an after-tax basis shown on Schedule TK-6 and is applied monthly to the average monthly EEP balance as shown on EEP Schedule TK-2. Interest on monthly balances is not compounded.

Q. WHAT ARE THE EE PROGRAM COSTS REFLECTED IN THE FILING?

A. EEP Schedule TK-4 presents a summary of the expenditures for the actual and projected periods for the EE Programs used in setting the rates shown on EEP Schedule TK-1a. These expenditures plus those projected through 2020 result in total EE Program expenditures of approximately $25.7 million from inception to December 31, 2020. A breakdown of these expenditures to specific EE programs can also be found on Schedule SB-2 sponsored by Ms. Buck.

Q. DOES THE RIDER REFLECT A MECHANISM TO RECOVER ANY COSTS BEYOND THE EXPIRATION OF THE PROPOSED EE PROGRAM TERM?

A. Yes. As reflected on EEP Schedule TK-4, for purposes of this filing estimated residual costs related to loan service fees of $183,060 are reflected in the EEP costs, for the seven years beyond the proposed four year EEP extension. Thus, Tariff Schedule TK-1 provides that in the event the EEP Program is ended, any residual spending for loan servicing fees or other committed costs of a continuing nature beyond the EEP Program end date would be reclassified and recovered as an O&M expense while the EEP rider is in existence, and if terminated, in an alternative rider such as the CEP.

Q. WHAT IS THE RANGE OF BILL IMPACTS OF THE PROPOSED CHANGES IN THESE RATES ON TYPICAL RESIDENTIAL CUSTOMERS?

A. The impact of the proposed rate adjustments are projected on EEP Schedule TK-1a. For the extension period October 1, 2016 to October 1, 2024, the projected rates range from a high of $0.0083 to a low of $0.0000 per therm. As shown on EEP Schedule TK-1a this is an average increase of $0.0044 inclusive of taxes and assessments, over the projected rates of the current program which on a 100 therm bill amounts to $0.44. This incremental average rate results in a 100 therm residential bill increasing

from $86.91 to $87.35, or 0.5% based on rates in effect June 1, 2016.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

ELIZABETHTOWN GAS
B. P. U. NO. 14 – GAS
CANCELLING
B. P. U. NO. 13 – GAS ~~EIGHTH~~ REVISED SHEET NO. 120

RIDER "G"

ENERGY EFFICIENCY PROGRAM ("EEP")

Applicable to all customers except those customers under special contracts as filed and approved by the NJBPU and those customers exempted pursuant to the Long-Term Capacity Agreement Pilot Program ("LCAPP"), P.L. 2011 c.9, codified as N.J.S.A. 48:3-60.1. See the LCAPP Exemption Procedures at the end of the Societal Benefits Charge ("SBC") Rider "D."

The EEP will enhance or supplement existing CEP incentives. The EEP will recover all costs associated with the program, including, but not limited to customer outreach, system implementations and program management ~~shall be collected~~ on a per therm basis and shall remain in effect until changed by order of the NJBPU. The applicable EEP unit charges are as follows:

$0.0054 per therm

In accordance with P.L. 1997, c. 162, the charges applicable under this Rider include provision for the New Jersey Sales and Use Tax, and when billed to customers exempt from this tax shall be reduced by the amount of such tax included therein.

~~In the "Global Warming Act," *N.J.S.A.*26-2C-45. or "RGGI Legislation" the State Legislature determined that global warming is a pervasive and dangerous threat that should be addressed through the establishment of a statewide greenhouse gas emissions reduction program. On May 8, 2008, the Board issued an Order (the "RGGI Order") pursuant to *N.J.S.A.* 48:3-98.1(c). The RGGI Order allowed electric and gas public utilities to offer energy efficiency and conservation programs on a regulated basis. By Order dated April 11, 2012 in Docket No. GO11070399, the Board approved a Stipulation that extended the program for one year, changed the name to EEP, and streamlined the program offerings. By Order dated April 29, 2013 in Docket No. GO12100946, the Board approved a Stipulation that extended the program to September 1, 2013. By Order dated August 21, 2013 in Docket No. GO12100946, the Board approved a Stipulation that extended the program through August, 2015.~~

~~The EEP will enhance or supplement existing Clean Energy Program ("CEP") incentives with programs such as:~~

~~1. Expanded gas HVAC and hot water heater incentive programs for residential customers;~~

~~2. Commercial customer energy efficiency programs which enhance CEP SmartStart and Pay for Performance incentives; and~~

~~3. Enhanced customer education and outreach initiatives designed to encourage customers to conserve energy and lower their gas bills.~~

Date of Issue: ~~September 1, 2015~~

Effective: Service Rendered on and after ~~September 1, 2015~~

Issued by: Brian MacLean, President
520 Green Lane
Union, New Jersey 07083

Filed Pursuant to Order of the Board of Public Utilities
Dated ~~August 19, 2015~~ in Docket No. ~~GR14091073~~

ELIZABETHTOWN GAS
B. P. U. NO. 14 – GAS
CANCELLING
B. P. U. NO. 13 – GAS ~~FOURTH~~ REVISED SHEET NO. 121

RIDER "G"

ENERGY EFFICIENCY PROGRAM ("EEP")
(continued)

~~The EEP will recover all costs associated with the program, including, but not limited to customer outreach and system implementations to implement and manage the programs.~~

Determination of the EEP

On or about July 31 of each year, the Company shall file with the Board an EEP rate filing based on the costs and recoveries incurred during the previous EEP year ending June 30th as well as estimates, if applicable, through the upcoming calendar year to develop the EEP rate to be effective October 1st as follows:

The EEP monthly recoverable expenditure amounts shall be derived from taking the average of the cumulative beginning and end of month expenditures associated with the EEP investments less accumulated amortization and accumulated deferred income tax credits times the after tax weighted average cost of capital grossed up for the Company's revenue factor, as directed in the Board's August 21, 2013 Order in Docket No. GO12100946, plus monthly amortization using a four year amortization period.

The EEP rate shall be calculated by summing the (i) prior year's EEP over or under recovery balance, plus (ii) current year monthly recoverable expenditure amounts, less (iii) current year recoveries, plus (iv) current year carrying costs based on the monthly average over or under recovered balances, at a rate equal to the rate obtained on the Company's weighted average of its commercial paper and bank credit lines, if both sources have been utilized, not to exceed the weighted average cost of capital after tax as described above, plus (v) an estimated amount to recover the upcoming year's recoverable expenditures amount and dividing the resulting sum by the annual forecasted per therm quantities for the applicable customers set forth above. The resulting rate shall be adjusted for all applicable taxes. The EEP rate shall be self-implementing on a refundable basis as directed by the NJBPU. In the event the EEP Program is ended, any residual spending for loan servicing fees or other committed costs of a continuing nature beyond the EEP Program end date would be reclassified and recovered as an O&M expense while the EEP rider is in existence, and if terminated, in an alternative rider such as the CEP.

CLEAN

ELIZABETHTOWN GAS
B. P. U. NO. 14 – GAS
CANCELLING
B. P. U. NO. 13 – GAS _____ REVISED SHEET NO. 120

RIDER "G"

ENERGY EFFICIENCY PROGRAM ("EEP")

Applicable to all customers except those customers under special contracts as filed and approved by the NJBPU and those customers exempted pursuant to the Long-Term Capacity Agreement Pilot Program ("LCAPP"), P.L. 2011 c.9, codified as N.J.S.A. 48:3-60.1. See the LCAPP Exemption Procedures at the end of the Societal Benefits Charge ("SBC") Rider "D."

The EEP will enhance or supplement existing CEP incentives. The EEP will recover all costs associated with the program, including, but not limited to customer outreach, system implementations and program management on a per therm basis and shall remain in effect until changed by order of the NJBPU. The applicable EEP unit charges are as follows:

$0.0054 per therm

In accordance with P.L. 1997, c. 162, the charges applicable under this Rider include provision for the New Jersey Sales and Use Tax, and when billed to customers exempt from this tax shall be reduced by the amount of such tax included therein.

Determination of the EEP

On or about July 31 of each year, the Company shall file with the Board an EEP rate filing based on the costs and recoveries incurred during the previous EEP year ending June 30th as well as estimates, if applicable, through the upcoming calendar year to develop the EEP rate to be effective October 1st as follows:

The EEP monthly recoverable expenditure amounts shall be derived from taking the average of the cumulative beginning and end of month expenditures associated with the EEP investments less accumulated amortization and accumulated deferred income tax credits times the after tax weighted average cost of capital grossed up for the Company's revenue factor, as directed in the Board's August 21, 2013 Order in Docket No. GO12100946, plus monthly amortization using a four year amortization period.

The EEP rate shall be calculated by summing the (i) prior year's EEP over or under recovery balance, plus (ii) current year monthly recoverable expenditure amounts, less (iii) current year recoveries, plus (iv) current year carrying costs based on the monthly average over or under recovered balances, at a rate equal to the rate obtained on the Company's weighted average of its commercial paper and bank credit lines, if both sources have been utilized, not to exceed the weighted average cost of capital after tax as described above, plus (v) an estimated amount to recover the upcoming year's recoverable expenditures amount and dividing the resulting sum by the annual forecasted per therm quantities for the applicable customers set forth above. The

ELIZABETHTOWN GAS
B. P. U. NO. 14 – GAS
CANCELLING
B. P. U. NO. 13 – GAS _____ REVISED SHEET NO. 121

RIDER "G"

ENERGY EFFICIENCY PROGRAM ("EEP")
(continued)

resulting rate shall be adjusted for all applicable taxes. The EEP rate shall be self-implementing on a refundable basis as directed by the NJBPU. In the event the EEP Program is ended, any residual spending for loan servicing fees or other committed costs of a continuing nature beyond the EEP Program end date would be reclassified and recovered as an O&M expense while the EEP rider is in existence, and if terminated, in an alternative rider such as the CEP.

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS

ENERGY EFFICIENCY PROGRAM ("EEP")

CALCULATION OF THE EEP RATE
October 1, 2016 through September 30, 2017
RECOVERY YEAR - 2017

1	Prior Year Balance - (Sch. TK-2)	June 30, 2015		$343,263	
	Actuals Through May, Projected Through:	June 30, 2016			
2	Current Year O& M Costs (Sch. TK-2)			$211,382	
3	Current Year Revenue Requirements (Sch. TK-2)			$661,226	
4	Current Year Recoveries (Sch.TK-2)			($2,140,611)	
5	Current Year Carrying Costs (Sch. TK-2)			($971)	
6	Proforma Current Year TK-2 Ending Balance (Sum L1-L5)			($925,712)	
7	Projected Recoverables :	June 30, 2017			
	- Revenue Requirements (Sch. TK-3)		$542,956		
	- O&M Costs (Sch. TK-4)		$1,040,599	$1,583,555	
8	Total Proposed Recoveries (L6+L7)			$657,843	
9	12 Month Projected Normalized Sales and Services:				
	- Residential		222,802,800		
	- Commercial		136,734,563		
	- Industrial		76,114,559		
	- Street /Yard Lights		28,800		
	- Cogeneration		0	435,680,722	therms
10	EEP Rate, before taxes and assessment (L8/L9)			$0.0015	/therm
11	BPU & RC Assessment Factors			1.0024	
12	EEP Rate, before taxes (L10*L11)			$0.0015	
13	Sales & Use Tax @	7.00%		$0.0001	
14	EEP Rate (L12+L13) if ETG was proposing a rate in this filing			**$0.0016**	/therm

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

CALCULATION OF THE EEP RATE
PROFROMA RATES PER KNOWN ACTUALS
Data to June 30th to Set Rate For

			October 1, 2016 June-16	October 1, 2017 June-17	October 1, 2018 June-18	October 1, 2019 June-19	October 1, 2020 June-20	October 1, 2021 June-21	October 1, 2022 June-22	October 1, 2023 June-23	October 1, 2024 June-24
1	Prior Year (Over)/ Under Balance (Sch. TK-2)		($925,712)	$680,124	$387,041	$9,550	$4,872	($62,505)	($146,606)	($69,024)	($49,007)
2	Monthly Revenue Requirement (Sch. TK-2)		$542,956	$914,375	$1,331,332	$1,729,884	$1,995,680	$1,561,509	$1,031,857	$517,833	$69,259
3	O&M Expenditures (Sch. TK-2)		$1,040,599	$1,685,502	$1,626,936	$1,638,127	$804,190	$0	$0	$0	$0
4	Total Proposed Recoveries (Sum L1+L2+L3)		$657,843	$3,280,001	$3,345,309	$3,377,560	$2,804,741	$1,499,004	$885,251	$448,809	$20,253
5	Projected Firm Sales (Sch. TK-5) Therms (1)		435,680,722	435,680,722	435,680,722	435,680,722	435,680,722	435,680,722	435,680,722	435,680,722	435,680,722
6	**Rate, before taxes (L4/L5)**		**$0.0015**	**$0.0075**	**$0.0077**	**$0.0078**	**$0.0064**	**$0.0034**	**$0.0020**	**$0.0010**	**$0.0000**
7	BPU & RC Assessment Factor times L6	0.0024	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
7	Sales & Use Tax @	7.00%	$0.0001	$0.0005	$0.0005	$0.0005	$0.0005	$0.0002	$0.0001	$0.0001	$0.0000
8	**Rate (L6+L7) per Therm (2)**		**$0.0016**	**$0.0081**	**$0.0082**	**$0.0083**	**$0.0069**	**$0.0037**	**$0.0022**	**$0.0011**	**$0.0000**
9	Projected Rates excluding the Extension		($0.0007)	$0.0001	$0.0006	$0.0003	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
10	Average and Incremental Rate Changes:	$0.0044	$0.0023	$0.0080	$0.0076	$0.0080	$0.0069	$0.0037	$0.0022	$0.0011	$0.0000

(1) All therms excluding NJBPU approved special contracts.
(2) The October 1, 2016 rate is if ETG was proposing a rate in this filing Line 8. The October 1, 2017 rate is based on the projected current program rate excluding the extension going into effect on 10/1/16 shown on Line 9

Average Billing Changes:

Determinates		**Rates 6/1/16**	**October 1, 2016** Prj. Billed Amt	**October 1, 2017** Prj. Billed Amt	**October 1, 2018** Prj. Billed Amt	**October 1, 2019** Prj. Billed Amt	**October 1, 2020** Prj. Billed Amt	**October 1, 2021** Prj. Billed Amt	**October 1, 2022** Prj. Billed Amt	**October 1, 2023** Prj. Billed Amt	**October 1, 2024** Prj. Billed Amt
	Effective EEP Rate >	$0.0054									
	Residential Sales Service										
12	Service Charge	$8.00									
1,000	Volumetric Charge	$0.7891									
	Bill	$885.10	$881.32	$887.77	$887.94	$888.02	$886.61	$883.39	$881.88	$880.80	$879.75
	Annual Bill Change		($3.78)	$6.45	$0.16	$0.08	($1.41)	($3.22)	($1.51)	($1.07)	($3.64)
	Percent Change		(0.4%)	0.7%	0.0%	0.0%	(0.2%)	(0.4%)	(0.2%)	(0.1%)	(0.4%)
	Bill Change from Base		($3.78)	$2.67	$2.84	$2.92	$1.51	($1.71)	($3.22)	($4.30)	($5.35)
	Cumulative Billed							$4.44	$1.21	($3.08)	($8.44)
	Small General Service										
12	Service Charge	$16.15									
1,000	Volumetric Charge	$0.8030									
	Bill	$996.80	$993.02	$999.47	$999.64	$999.72	$998.31	$995.09	$993.58	$992.50	$991.45
	Annual Bill Change		($3.78)	$6.45	$0.16	$0.08	($1.41)	($3.22)	($1.51)	($1.07)	($3.64)
	Percent Change		(0.4%)	0.6%	0.0%	0.0%	(0.1%)	(0.3%)	(0.2%)	(0.1%)	(0.4%)
	Bill Change from Base		($3.78)	$2.67	$2.84	$2.92	$1.51	($1.71)	($3.22)	($4.30)	($5.35)
	Cumulative Billed							$4.44	$1.21	($3.08)	($8.44)
	General Delivery Service										
12	Service Charge	$20.00									
1,300	Demand Charge	$0.811									
13,000	Volumetric Charge	$0.6585									
	Bill	$9,854.80	$9,805.64	$9,889.53	$9,891.67	$9,892.72	$9,874.40	$9,832.53	$9,812.90	$9,798.93	$9,785.21
	Annual Bill Change		($49.16)	$83.89	$2.14	$1.06	($18.32)	($41.88)	($19.63)	($13.96)	($47.32)
	Percent Change		(0.5%)	0.8%	0.0%	0.0%	(0.2%)	(0.4%)	(0.2%)	(0.1%)	(0.5%)
	Bill Change from Base		($49.16)	$34.73	$36.87	$37.92	$19.60	($22.27)	($41.90)	($55.87)	($69.59)
	Cumulative Billed							$57.69	$15.79	($40.08)	($109.67)

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

Carrying Costs

a		Beginning Balance b	Revenue Requirement TK-3 c	O&M TK-4 d	Recoveries TK-5 e	Ending Balance f=b+c+d-e	Average Balance g=(b+f)2	Interest Rate TK-6 h	Carrying Cost i=g*h/12	Ending Balance plus Cum. (O)/U Carrying Cost j=f+ cum of i
Jun-10			$153,477	$522,139	$2,991,884	($2,316,268)	($2,271,915)		($4,355)	($2,320,623)
Jun-11			$470,645	$1,314,822	$2,061,741	($2,596,897)	($2,713,015)		($7,591)	($2,604,489)
Jun-12			$1,016,065	$1,610,350	$4,416	$17,510	($49,708)		($2,417)	$15,093
Jun-13			$1,326,761	$348,053	$817	$1,689,090	$1,620,331		$2,228	$1,691,318
Jun-14			$1,259,657	$462,362	$1,120,717	$2,292,620	$2,262,281		$4,340	$2,296,960
Jun-15			$1,043,901	$447,774	$3,449,216	$339,419	$368,590		$3,844	$343,263
Jun-16	*		$661,226	$211,382	$2,140,611	($924,741)	($911,764)		($971)	($925,712)
Jun-17	*		$542,956	$1,040,599	($24,170)	$682,013	$611,994		($1,889)	$680,124
Jun-18	*		$914,375	$1,685,502	$2,877,603	$402,398	$382,556		$4,485	$387,041
Jun-19	*		$1,331,332	$1,626,936	$3,337,979	$7,331	($28,917)		$2,219	$9,550
Jun-20	*		$1,729,884	$1,638,127	$3,373,940	$3,620	($50,685)		$1,252	$4,872
Jun-21	*		$1,995,680	$804,190	$2,869,038	($64,296)	($88,462)		$1,792	($62,505)
Jun-22	*		$1,561,509	$0	$1,645,567	($146,563)	($173,099)		($42)	($146,606)
Jun-23	*		$1,031,857	$0	$954,142	($68,891)	($85,205)		($133)	($69,024)
Jun-24	*		$517,833	$0	$497,798	($48,989)	($52,542)		($18)	($49,007)
Jun-25	*		$69,259	$0	$68,356	($48,086)	($47,697)		($193)	($48,297)
Total			$15,626,417	$11,712,236	$27,369,657				$2,549	

* Projected

Monthly Recoverable Investment
Program Expenditures - Amortized Over Four Years

a	Amortizable Expenditures TK-4 b	Cumulative Expenditures c	Average Expenditures d	Amort. Months e	Monthly Amortization f	Accum. Amort. g	Accum. Deferred Income Tax h	Earnings / Rate Base i=c-g-h	Average Rate Base i	Wtd. Avg. Cost of Capital (1) After-tax k	Revenue Factor l	Monthly Return on Rate Base m= (j) *k*l/12	Monthly Revenue Requirement n=m+f	YTD ending June
Begin Balance		$0				$0		$0						
Aug-09	$415	$415	$208	48	$9	$9	$167	$239	$120	6.87%	1.71702	$1	$10	
Sep-09	$58,552	$58,967	$29,691	48	$1,228	$1,237	$23,715	$34,014	$17,127	6.87%	1.71702	$168	$1,397	
Oct-09	$503,469	$562,436	$310,702	48	$11,717	$12,955	$225,727	$323,754	$178,884	6.87%	1.71702	$1,758	$13,475	
Nov-09	$9,154	$571,590	$567,013	48	$11,908	$24,863	$224,596	$322,132	$322,943	6.87%	1.71702	$3,173	$15,081	
Dec-09	$6,648	$578,238	$574,914	48	$12,047	$36,909	$222,378	$318,951	$320,541	6.70%	1.72388	$3,087	$15,133	
Jan-10	$29,746	$607,984	$593,111	48	$12,666	$49,576	$229,394	$329,014	$323,983	6.53%	1.73120	$3,051	$15,717	
Feb-10	$22,212	$630,196	$619,090	48	$13,129	$62,705	$233,125	$334,366	$331,690	6.53%	1.73120	$3,124	$16,253	
Mar-10	$67,165	$697,361	$663,779	48	$14,528	$77,233	$254,749	$365,379	$349,873	6.53%	1.73120	$3,295	$17,823	
Apr-10	$25,100	$722,461	$709,911	48	$15,051	$92,284	$258,877	$371,300	$368,340	6.53%	1.73120	$3,469	$18,520	
May-10	$45,518	$767,979	$745,220	48	$16,000	$108,284	$271,003	$388,692	$379,996	6.53%	1.73120	$3,579	$19,578	11 mos.
Jun-10	$37,061	$805,040	$786,510	48	$16,772	$125,056	$279,338	$400,647	$394,670	6.53%	1.73120	$3,717	$20,488	$153,477
Jul-10	$66,161	$871,201	$838,121	48	$18,150	$143,206	$298,950	$429,045	$414,846	6.53%	1.72431	$3,891	$22,041	
Aug-10	$38,308	$909,509	$890,355	48	$18,948	$162,154	$306,859	$440,497	$434,771	6.53%	1.72431	$4,078	$23,026	
Sep-10	$102,354	$1,011,863	$960,686	48	$21,080	$183,234	$340,059	$488,570	$464,533	6.53%	1.72431	$4,357	$25,438	
Oct-10	$115,476	$1,127,339	$1,069,601	48	$23,486	$206,720	$377,637	$542,982	$515,776	6.53%	1.72431	$4,838	$28,324	
Nov-10	$160,103	$1,287,442	$1,207,391	48	$26,822	$233,542	$432,082	$621,818	$582,400	6.53%	1.72431	$5,463	$32,285	
Dec-10	$121,085	$1,408,527	$1,347,985	48	$29,344	$262,886	$469,558	$676,082	$648,950	6.53%	1.72431	$6,087	$35,432	
Jan-11	$316,793	$1,725,320	$1,566,924	48	$35,944	$298,831	$584,285	$842,205	$759,143	6.53%	1.72431	$7,121	$43,065	
Feb-11	$69,466	$1,794,786	$1,760,053	48	$37,391	$336,222	$597,387	$861,177	$851,691	6.53%	1.72431	$7,989	$45,380	
Mar-11	$145,466	$1,940,252	$1,867,519	48	$40,422	$376,644	$640,298	$923,310	$892,243	6.53%	1.72431	$8,369	$48,791	
Apr-11	$123,753	$2,064,005	$2,002,129	48	$43,000	$419,644	$673,285	$971,076	$947,193	6.53%	1.72431	$8,885	$51,885	
May-11	$181,299	$2,245,304	$2,154,655	48	$46,777	$466,421	$728,238	$1,050,645	$1,010,860	6.53%	1.72431	$9,482	$56,259	
Jun-11	$94,109	$2,339,413	$2,292,359	48	$48,738	$515,159	$746,772	$1,077,482	$1,064,064	6.53%	1.72431	$9,981	$58,719	$470,645
Jul-11	$151,612	$2,491,025	$2,415,219	48	$51,896	$567,055	$787,506	$1,136,464	$1,106,973	6.53%	1.72431	$10,383	$62,280	
Aug-11	$225,652	$2,716,677	$2,603,851	48	$56,597	$623,653	$856,564	$1,236,460	$1,186,462	6.53%	1.72431	$11,129	$67,727	
Sep-11	$217,236	$2,933,913	$2,825,295	48	$61,123	$684,776	$920,336	$1,328,801	$1,282,630	6.53%	1.72431	$12,031	$73,154	
Oct-11	$223,848	$3,157,761	$3,045,837	48	$65,787	$750,563	$984,905	$1,422,294	$1,375,547	6.53%	1.72431	$12,903	$78,689	
Nov-11	($250,636)	$2,907,125	$3,032,443	48	$60,565	$811,128	$857,779	$1,238,218	$1,330,256	6.53%	1.72431	$12,478	$73,043	
Dec-11	$200,118	$3,107,243	$3,007,184	48	$64,734	$875,862	$913,083	$1,318,298	$1,278,258	6.53%	1.72431	$11,990	$76,724	
Jan-12	$279,326	$3,386,569	$3,246,906	48	$70,554	$946,415	$998,367	$1,441,787	$1,380,042	6.53%	1.72431	$12,945	$83,498	
Feb-12	$256,311	$3,642,880	$3,514,725	48	$75,893	$1,022,309	$1,072,067	$1,548,504	$1,495,145	6.53%	1.72431	$14,025	$89,918	
Mar-12	$249,404	$3,892,284	$3,767,582	48	$81,089	$1,103,398	$1,140,824	$1,648,062	$1,598,283	6.53%	1.72431	$14,992	$96,081	
Apr-12	$198,955	$4,091,239	$3,991,762	48	$85,234	$1,188,632	$1,187,279	$1,715,328	$1,681,695	6.49%	1.72431	$15,679	$100,913	
May-12	$238,126	$4,329,365	$4,210,302	48	$90,195	$1,278,827	$1,247,709	$1,802,829	$1,759,079	6.42%	1.72431	$16,228	$106,423	
Jun-12	$43,972	$4,373,337	$4,351,351	48	$91,111	$1,369,938	$1,228,452	$1,774,946	$1,788,888	6.42%	1.72431	$16,503	$107,614	$1,016,065
Jul-12	$8,900	$4,382,237	$4,377,787	48	$91,297	$1,461,235	$1,194,793	$1,726,209	$1,750,577	6.42%	1.72431	$16,149	$107,446	
Aug-12	$54,599	$4,436,836	$4,409,537	48	$92,434	$1,553,669	$1,179,338	$1,703,829	$1,715,019	6.42%	1.72431	$15,821	$108,255	
Sep-12	$13,890	$4,450,726	$4,443,781	48	$92,723	$1,646,393	$1,147,134	$1,657,199	$1,680,514	6.42%	1.72431	$15,503	$108,226	
Oct-12	$64,306	$4,515,032	$4,482,879	48	$94,063	$1,740,456	$1,134,978	$1,639,598	$1,648,399	6.42%	1.72431	$15,207	$109,270	
Nov-12	$25,868	$4,540,900	$4,527,966	48	$94,602	$1,835,058	$1,106,900	$1,598,942	$1,619,270	6.42%	1.72431	$14,938	$109,540	
Dec-12	$38,951	$4,579,851	$4,560,376	48	$95,414	$1,930,471	$1,083,836	$1,565,544	$1,582,243	6.42%	1.72431	$14,596	$110,010	$652,747

Monthly Recoverable Investment
Program Expenditures - Amortized Over Four Years

	Amortizable Expenditures TK-4	Cumulative Expenditures	Average Expenditures	Amort. Months	Monthly Amortization	Accum. Amort.	Accum. Deferred Income Tax	Earnings / Rate Base	Average Rate Base	Wtd. Avg. Cost of Capital (1) After-tax	Revenue Factor	Monthly Return on Rate Base	Monthly Revenue Requirement	YTD ending June
a	b	c	d	e	f	g	h	i=c-g-h	i	k	l	m= (j) *k*l/12	n=m+f	
Jan-13	$11,653	$4,591,504	$4,585,678	48	$95,656	$2,026,128	$1,049,520	$1,515,856	$1,540,700	6.42%	1.72431	$14,213	$109,869	
Feb-13	$39,889	$4,631,393	$4,611,449	48	$96,487	$2,122,615	$1,026,400	$1,482,378	$1,499,117	6.42%	1.72431	$13,829	$110,317	
Mar-13	$61,254	$4,692,647	$4,662,020	48	$97,763	$2,220,379	$1,011,486	$1,460,783	$1,471,580	6.42%	1.72431	$13,575	$111,339	
Apr-13	$115,134	$4,807,781	$4,750,214	48	$100,162	$2,320,541	$1,017,602	$1,469,639	$1,465,211	6.42%	1.72431	$13,517	$113,679	
May-13	$33,163	$4,840,944	$4,824,363	48	$100,853	$2,421,394	$989,950	$1,429,600	$1,449,619	6.42%	1.72431	$13,373	$114,226	
Jun-13	$34,827	$4,875,771	$4,858,358	48	$101,579	$2,522,972	$962,682	$1,390,116	$1,409,858	6.42%	1.72431	$13,006	$114,585	$1,326,761
Jul-13	$38,889	$4,914,660	$4,895,216	48	$102,389	$2,625,361	$936,743	$1,352,556	$1,371,336	6.42%	1.72431	$12,651	$115,039	
Aug-13	$35,900	$4,950,560	$4,932,610	48	$103,128	$2,728,489	$909,280	$1,312,791	$1,332,674	6.42%	1.72431	$12,294	$115,422	
Sep-13	$19,751	$4,970,311	$4,960,436	48	$102,320	$2,830,809	$875,551	$1,263,952	$1,288,371	5.68%	1.71565	$10,463	$112,782	
Oct-13	$23,954	$4,994,265	$4,982,288	48	$92,330	$2,923,138	$847,619	$1,223,507	$1,243,730	5.68%	1.71565	$10,100	$102,430	
Nov-13	$35,053	$5,029,318	$5,011,792	48	$92,869	$3,016,008	$824,001	$1,189,309	$1,206,408	5.68%	1.71565	$9,797	$102,666	
Dec-13	$13,937	$5,043,255	$5,036,287	48	$93,021	$3,109,029	$791,695	$1,142,531	$1,165,920	5.68%	1.71565	$9,468	$102,489	
Jan-14	$45,466	$5,088,721	$5,065,988	48	$93,349	$3,202,378	$772,135	$1,114,208	$1,128,369	5.68%	1.71565	$9,163	$102,512	
Feb-14	$37,678	$5,126,399	$5,107,560	48	$93,671	$3,296,049	$749,262	$1,081,088	$1,097,648	5.68%	1.71565	$8,914	$102,585	
Mar-14	$1,330	$5,127,729	$5,127,064	48	$92,299	$3,388,348	$712,101	$1,027,280	$1,054,184	5.68%	1.71565	$8,561	$100,860	
Apr-14	$56,891	$5,184,620	$5,156,175	48	$92,962	$3,481,310	$697,366	$1,005,944	$1,016,612	5.68%	1.71565	$8,256	$101,217	
May-14	$41,786	$5,226,406	$5,205,513	48	$92,884	$3,574,193	$676,493	$975,720	$990,832	5.68%	1.71565	$8,046	$100,930	
Jun-14	$39,235	$5,265,641	$5,246,024	48	$92,929	$3,667,123	$654,559	$943,960	$959,840	5.68%	1.71565	$7,795	$100,724	$1,259,657
Jul-14	$4,676	$5,270,317	$5,267,979	48	$91,648	$3,758,771	$619,031	$892,516	$918,238	5.68%	1.71565	$7,457	$99,105	
Aug-14	$40,208	$5,310,525	$5,290,421	48	$91,688	$3,850,459	$598,001	$862,065	$877,290	5.68%	1.71565	$7,124	$98,812	
Sep-14	$27,556	$5,338,081	$5,324,303	48	$90,130	$3,940,588	$572,440	$825,053	$843,559	5.68%	1.71565	$6,850	$96,980	
Oct-14	$32,072	$5,370,153	$5,354,117	48	$88,392	$4,028,980	$549,433	$791,740	$808,396	5.68%	1.71565	$6,565	$94,957	
Nov-14	$75	$5,370,228	$5,370,191	48	$85,058	$4,114,038	$514,717	$741,472	$766,606	5.68%	1.71565	$6,225	$91,283	
Dec-14	$60,029	$5,430,257	$5,400,243	48	$83,786	$4,197,824	$505,013	$727,420	$734,446	5.68%	1.71565	$5,964	$89,750	
Jan-15	$33,078	$5,463,335	$5,446,796	48	$77,875	$4,275,700	$486,713	$700,922	$714,171	5.68%	1.71565	$5,800	$83,675	
Feb-15	$35,129	$5,498,464	$5,480,900	48	$77,160	$4,352,860	$469,543	$676,061	$688,492	5.68%	1.71565	$5,591	$82,751	
Mar-15	$32,917	$5,531,381	$5,514,923	48	$74,815	$4,427,675	$452,428	$651,278	$663,670	5.68%	1.71565	$5,389	$80,205	
Apr-15	$1,697	$5,533,078	$5,532,230	48	$72,272	$4,499,947	$423,598	$609,533	$630,406	5.68%	1.71565	$5,119	$77,392	
May-15	$60,423	$5,593,501	$5,563,290	48	$69,754	$4,569,701	$419,786	$604,014	$606,773	5.68%	1.71565	$4,927	$74,682	
Jun-15	$76,527	$5,670,028	$5,631,765	48	$69,388	$4,639,089	$422,703	$608,236	$606,125	5.68%	1.71565	$4,922	$74,310	$1,043,901
Jul-15	$17,591	$5,687,619	$5,678,824	48	$66,596	$4,705,685	$402,684	$579,250	$593,743	5.68%	1.71565	$4,822	$71,417	
Aug-15	$2,706	$5,690,325	$5,688,972	48	$61,951	$4,767,636	$378,483	$544,207	$561,728	5.68%	1.71565	$4,562	$66,513	
Sep-15	$22,340	$5,712,665	$5,701,495	48	$57,891	$4,825,526	$363,960	$523,179	$533,693	5.68%	1.71565	$4,334	$62,225	
Oct-15	$32,451	$5,745,116	$5,728,891	48	$53,903	$4,879,430	$355,197	$510,490	$516,834	5.68%	1.71565	$4,197	$58,100	
Nov-15	$27,056	$5,772,172	$5,758,644	48	$59,688	$4,939,118	$341,866	$491,187	$500,838	5.68%	1.71565	$4,067	$63,756	
Dec-15	$67,554	$5,839,726	$5,805,949	48	$56,927	$4,996,045	$346,208	$497,473	$494,330	5.68%	1.71565	$4,014	$60,941	
Jan-16	$5,366	$5,845,092	$5,842,409	48	$51,219	$5,047,264	$327,477	$470,351	$483,912	5.68%	1.71565	$3,930	$55,149	
Feb-16	$139,111	$5,984,203	$5,914,648	48	$48,778	$5,096,042	$364,378	$523,783	$497,067	5.68%	1.71565	$4,037	$52,814	
Mar-16	$26,827	$6,011,030	$5,997,617	48	$44,141	$5,140,182	$357,305	$513,543	$518,663	5.68%	1.71565	$4,212	$48,352	
Apr-16	$1,132	$6,012,162	$6,011,596	48	$40,019	$5,180,201	$341,420	$490,541	$502,042	5.68%	1.71565	$4,077	$44,096	
May-16	$4,007	$6,016,169	$6,014,166	48	$35,142	$5,215,343	$328,701	$472,125	$481,333	5.68%	1.71565	$3,909	$39,051	
Jun-16	$36,000	$6,052,169	$6,034,169	48	$34,976	$5,250,319	$329,120	$472,730	$472,427	5.68%	1.71565	$3,836	$38,812	$661,226
Jul-16	$36,000	$6,088,169	$6,070,169	48	$35,540	$5,285,859	$329,308	$473,002	$472,866	5.68%	1.71565	$3,840	$39,380	

Monthly Recoverable Investment
Program Expenditures - Amortized Over Four Years

	Amortizable Expenditures TK-4	Cumulative Expenditures	Average Expenditures	Amort. Months	Monthly Amortization	Accum. Amort.	Accum. Deferred Income Tax	Earnings / Rate Base	Average Rate Base	Wtd. Avg. Cost of Capital (1) After-tax	Revenue Factor	Monthly Return on Rate Base	Monthly Revenue Requirement	YTD ending June
a	b	c	d	e	f	g	h	i=c-g-h	j	k	l	m= (j) *k*l/12	n=m+f	
Aug-16	$36,000	$6,124,169	$6,106,169	48	$35,153	$5,321,012	$329,654	$473,503	$473,253	5.68%	1.71565	$3,843	$38,996	
Sep-16	$36,000	$6,160,169	$6,142,169	48	$35,613	$5,356,625	$329,812	$473,732	$473,618	5.68%	1.71565	$3,846	$39,460	
Oct-16	$36,000	$6,196,169	$6,178,169	48	$35,024	$5,391,649	$330,210	$474,310	$474,021	5.68%	1.71565	$3,849	$38,873	
Nov-16	$36,000	$6,232,169	$6,214,169	48	$35,235	$5,426,884	$330,523	$474,762	$474,536	5.68%	1.71565	$3,854	$39,088	
Dec-16	$45,252	$6,277,421	$6,254,795	48	$35,366	$5,462,250	$334,561	$480,610	$477,686	5.68%	1.71565	$3,879	$39,245	
Jan-17	$272,205	$6,549,626	$6,413,524	48	$40,794	$5,503,044	$429,093	$617,489	$549,050	5.68%	1.71565	$4,459	$45,253	
Feb-17	$147,204	$6,696,830	$6,623,228	48	$43,030	$5,546,074	$471,648	$679,108	$648,299	5.68%	1.71565	$5,265	$48,295	
Mar-17	$147,205	$6,844,035	$6,770,433	48	$44,821	$5,590,894	$513,472	$739,669	$709,388	5.68%	1.71565	$5,761	$50,581	
Apr-17	$147,204	$6,991,239	$6,917,637	48	$45,489	$5,636,383	$555,023	$799,833	$769,751	5.68%	1.71565	$6,251	$51,740	
May-17	$147,706	$7,138,945	$7,065,092	48	$47,875	$5,684,258	$595,804	$858,883	$829,358	5.68%	1.71565	$6,735	$54,610	
Jun-17	$147,705	$7,286,650	$7,212,798	48	$50,227	$5,734,485	$635,623	$916,542	$887,713	5.68%	1.71565	$7,209	$57,436	$542,956
Jul-17	$147,706	$7,434,356	$7,360,503	48	$52,494	$5,786,979	$674,518	$972,860	$944,701	5.68%	1.71565	$7,672	$60,165	
Aug-17	$147,705	$7,582,061	$7,508,209	48	$54,823	$5,841,801	$712,460	$1,027,800	$1,000,330	5.68%	1.71565	$8,123	$62,946	
Sep-17	$147,702	$7,729,763	$7,655,912	48	$57,489	$5,899,290	$749,312	$1,081,161	$1,054,480	5.68%	1.71565	$8,563	$66,052	
Oct-17	$147,701	$7,877,464	$7,803,614	48	$60,067	$5,959,357	$785,111	$1,132,997	$1,107,079	5.68%	1.71565	$8,990	$69,057	
Nov-17	$147,701	$8,025,165	$7,951,315	48	$62,413	$6,021,770	$819,951	$1,183,444	$1,158,220	5.68%	1.71565	$9,406	$71,819	
Dec-17	$147,701	$8,172,866	$8,099,016	48	$65,200	$6,086,970	$853,652	$1,232,243	$1,207,844	5.68%	1.71565	$9,809	$75,009	
Jan-18	$152,304	$8,325,170	$8,249,018	48	$67,426	$6,154,396	$888,325	$1,282,449	$1,257,346	5.68%	1.71565	$10,211	$77,637	
Feb-18	$152,304	$8,477,474	$8,401,322	48	$69,814	$6,224,210	$922,022	$1,331,241	$1,306,845	5.68%	1.71565	$10,613	$80,427	
Mar-18	$153,304	$8,630,778	$8,554,126	48	$72,980	$6,297,191	$954,834	$1,378,753	$1,354,997	5.68%	1.71565	$11,004	$83,984	
Apr-18	$153,304	$8,784,082	$8,707,430	48	$74,989	$6,372,179	$986,826	$1,425,076	$1,401,915	5.68%	1.71565	$11,385	$86,373	
May-18	$153,805	$8,937,887	$8,860,985	48	$77,323	$6,449,502	$1,018,069	$1,470,316	$1,447,696	5.68%	1.71565	$11,756	$89,079	
Jun-18	$153,805	$9,091,692	$9,014,790	48	$79,709	$6,529,211	$1,048,337	$1,514,143	$1,492,230	5.68%	1.71565	$12,118	$91,827	$914,375
Jul-18	$153,805	$9,245,497	$9,168,595	48	$82,816	$6,612,028	$1,077,336	$1,556,133	$1,535,138	5.68%	1.71565	$12,466	$95,283	
Aug-18	$153,806	$9,399,303	$9,322,400	48	$85,183	$6,697,210	$1,105,369	$1,596,724	$1,576,428	5.68%	1.71565	$12,802	$97,985	
Sep-18	$153,802	$9,553,105	$9,476,204	48	$87,813	$6,785,023	$1,132,325	$1,635,756	$1,616,240	5.68%	1.71565	$13,125	$100,938	
Oct-18	$153,802	$9,706,907	$9,630,006	48	$90,349	$6,875,373	$1,158,246	$1,673,289	$1,654,522	5.68%	1.71565	$13,436	$103,785	
Nov-18	$153,802	$9,860,709	$9,783,808	48	$93,552	$6,968,924	$1,182,858	$1,708,927	$1,691,108	5.68%	1.71565	$13,733	$107,285	
Dec-18	$153,802	$10,014,511	$9,937,610	48	$95,505	$7,064,430	$1,206,672	$1,743,409	$1,726,168	5.68%	1.71565	$14,018	$109,523	
Jan-19	$156,217	$10,170,728	$10,092,620	48	$98,071	$7,162,500	$1,230,425	$1,777,803	$1,760,606	5.68%	1.71565	$14,297	$112,368	
Feb-19	$156,217	$10,326,945	$10,248,837	48	$100,593	$7,263,094	$1,253,147	$1,810,704	$1,794,253	5.68%	1.71565	$14,571	$115,164	
Mar-19	$157,217	$10,484,162	$10,405,554	48	$103,183	$7,366,276	$1,275,220	$1,842,665	$1,826,685	5.68%	1.71565	$14,834	$118,017	
Apr-19	$157,217	$10,641,379	$10,562,771	48	$106,423	$7,472,699	$1,295,970	$1,872,710	$1,857,688	5.68%	1.71565	$15,086	$121,509	
May-19	$157,718	$10,799,097	$10,720,238	48	$108,450	$7,581,149	$1,316,096	$1,901,852	$1,887,281	5.68%	1.71565	$15,326	$123,776	
Jun-19	$157,718	$10,956,815	$10,877,956	48	$110,141	$7,691,291	$1,335,531	$1,929,994	$1,915,923	5.68%	1.71565	$15,559	$125,700	$1,331,332
Jul-19	$157,718	$11,114,533	$11,035,674	48	$113,061	$7,804,351	$1,353,773	$1,956,408	$1,943,201	5.68%	1.71565	$15,780	$128,841	
Aug-19	$157,719	$11,272,252	$11,193,393	48	$116,290	$7,920,642	$1,370,697	$1,980,914	$1,968,661	5.68%	1.71565	$15,987	$132,277	
Sep-19	$157,716	$11,429,968	$11,351,110	48	$119,110	$8,039,752	$1,386,467	$2,003,749	$1,992,331	5.68%	1.71565	$16,179	$135,290	$396,408
Oct-19	$157,716	$11,587,684	$11,508,826	48	$121,720	$8,161,472	$1,401,171	$2,025,040	$2,014,395	5.68%	1.71565	$16,358	$138,079	
Nov-19	$157,716	$11,745,400	$11,666,542	48	$124,442	$8,285,914	$1,414,764	$2,044,722	$2,034,881	5.68%	1.71565	$16,525	$140,967	
Dec-19	$157,716	$11,903,116	$11,824,258	48	$126,321	$8,412,235	$1,427,589	$2,063,292	$2,054,007	5.68%	1.71565	$16,680	$143,001	
Jan-20	$157,468	$12,060,584	$11,981,850	48	$129,489	$8,541,725	$1,439,018	$2,079,841	$2,071,567	5.68%	1.71565	$16,823	$146,312	
Feb-20	$157,468	$12,218,052	$12,139,318	48	$129,872	$8,671,596	$1,450,291	$2,096,165	$2,088,003	5.68%	1.71565	$16,956	$146,828	

Monthly Recoverable Investment
Program Expenditures - Amortized Over Four Years

	Amortizable Expenditures TK-4	Cumulative Expenditures	Average Expenditures	Amort. Months	Monthly Amortization	Accum. Amort.	Accum. Deferred Income Tax	Earnings / Rate Base	Average Rate Base	Wtd. Avg. Cost of Capital (1) After-tax	Revenue Factor	Monthly Return on Rate Base	Monthly Revenue Requirement	YTD ending June
a	b	c	d	e	f	g	h	i=c-g-h	i	k	l	m= (j) *k*l/12	n=m+f	
Mar-20	$158,468	$12,376,520	$12,297,286	48	$132,614	$8,804,211	$1,460,852	$2,111,457	$2,103,811	5.68%	1.71565	$17,085	$149,699	
Apr-20	$158,468	$12,534,988	$12,455,754	48	$135,892	$8,940,103	$1,470,075	$2,124,811	$2,118,134	5.68%	1.71565	$17,201	$153,093	
May-20	$158,969	$12,693,957	$12,614,473	48	$139,121	$9,079,224	$1,478,183	$2,136,551	$2,130,681	5.68%	1.71565	$17,303	$156,423	
Jun-20	$158,968	$12,852,925	$12,773,441	48	$141,682	$9,220,906	$1,485,244	$2,146,775	$2,141,663	5.68%	1.71565	$17,392	$159,074	$1,729,884
Jul-20	$158,968	$13,011,893	$12,932,409	48	$144,244	$9,365,150	$1,491,258	$2,155,484	$2,151,130	5.68%	1.71565	$17,469	$161,713	
Aug-20	$158,968	$13,170,861	$13,091,377	48	$146,806	$9,511,956	$1,496,227	$2,162,678	$2,159,081	5.68%	1.71565	$17,533	$164,339	
Sep-20	$158,965	$13,329,826	$13,250,344	48	$149,368	$9,661,324	$1,500,147	$2,168,355	$2,165,517	5.68%	1.71565	$17,586	$166,953	
Oct-20	$158,965	$13,488,791	$13,409,309	48	$151,930	$9,813,254	$1,503,021	$2,172,516	$2,170,436	5.68%	1.71565	$17,626	$169,555	
Nov-20	$158,965	$13,647,756	$13,568,274	48	$154,491	$9,967,745	$1,504,848	$2,175,162	$2,173,839	5.68%	1.71565	$17,653	$172,145	
Dec-20	$342,025	$13,989,781	$13,818,769	48	$160,674	$10,128,419	$1,578,930	$2,282,431	$2,228,797	5.68%	1.71565	$18,099	$178,774	
Jan-21	$0	$13,989,781	$13,989,781	48	$155,003	$10,283,423	$1,515,611	$2,190,747	$2,236,589	5.68%	1.71565	$18,163	$173,166	
Feb-21	$0	$13,989,781	$13,989,781	48	$151,936	$10,435,359	$1,453,545	$2,100,877	$2,145,812	5.68%	1.71565	$17,426	$169,362	
Mar-21	$0	$13,989,781	$13,989,781	48	$148,870	$10,584,229	$1,392,732	$2,012,820	$2,056,848	5.68%	1.71565	$16,703	$165,573	
Apr-21	$0	$13,989,781	$13,989,781	48	$145,803	$10,730,032	$1,333,172	$1,926,578	$1,969,699	5.68%	1.71565	$15,995	$161,798	
May-21	$0	$13,989,781	$13,989,781	48	$142,726	$10,872,757	$1,274,868	$1,842,155	$1,884,367	5.68%	1.71565	$15,302	$158,028	
Jun-21	$0	$13,989,781	$13,989,781	48	$139,649	$11,012,406	$1,217,822	$1,759,553	$1,800,854	5.68%	1.71565	$14,624	$154,273	$1,995,680
Jul-21	$0	$13,989,781	$13,989,781	48	$136,571	$11,148,977	$1,162,032	$1,678,771	$1,719,162	5.68%	1.71565	$13,961	$150,532	
Aug-21	$0	$13,989,781	$13,989,781	48	$133,494	$11,282,472	$1,107,500	$1,599,810	$1,639,290	5.68%	1.71565	$13,312	$146,806	
Sep-21	$0	$13,989,781	$13,989,781	48	$130,417	$11,412,889	$1,054,225	$1,522,668	$1,561,239	5.68%	1.71565	$12,678	$143,095	
Oct-21	$0	$13,989,781	$13,989,781	48	$127,340	$11,540,229	$1,002,206	$1,447,346	$1,485,007	5.68%	1.71565	$12,059	$139,399	
Nov-21	$0	$13,989,781	$13,989,781	48	$124,263	$11,664,491	$951,445	$1,373,845	$1,410,596	5.68%	1.71565	$11,455	$135,718	
Dec-21	$0	$13,989,781	$13,989,781	48	$121,186	$11,785,677	$901,940	$1,302,164	$1,338,004	5.68%	1.71565	$10,866	$132,051	
Jan-22	$0	$13,989,781	$13,989,781	48	$118,013	$11,903,690	$853,732	$1,232,359	$1,267,261	5.68%	1.71565	$10,291	$128,304	
Feb-22	$0	$13,989,781	$13,989,781	48	$114,840	$12,018,530	$806,820	$1,164,431	$1,198,395	5.68%	1.71565	$9,732	$124,572	
Mar-22	$0	$13,989,781	$13,989,781	48	$111,646	$12,130,175	$761,213	$1,098,393	$1,131,412	5.68%	1.71565	$9,188	$120,834	
Apr-22	$0	$13,989,781	$13,989,781	48	$108,452	$12,238,628	$716,910	$1,034,243	$1,066,318	5.68%	1.71565	$8,659	$117,111	
May-22	$0	$13,989,781	$13,989,781	48	$105,248	$12,343,875	$673,916	$971,989	$1,003,116	5.68%	1.71565	$8,146	$113,394	
Jun-22	$0	$13,989,781	$13,989,781	48	$102,044	$12,445,919	$632,232	$911,631	$941,810	5.68%	1.71565	$7,648	$109,692	$1,561,509
Jul-22	$0	$13,989,781	$13,989,781	48	$98,839	$12,544,758	$591,856	$853,167	$882,399	5.68%	1.71565	$7,166	$106,005	
Aug-22	$0	$13,989,781	$13,989,781	48	$95,635	$12,640,393	$552,789	$796,599	$824,883	5.68%	1.71565	$6,699	$102,334	
Sep-22	$0	$13,989,781	$13,989,781	48	$92,431	$12,732,824	$515,031	$741,926	$769,263	5.68%	1.71565	$6,247	$98,678	
Oct-22	$0	$13,989,781	$13,989,781	48	$89,227	$12,822,050	$478,582	$689,149	$715,537	5.68%	1.71565	$5,811	$95,037	
Nov-22	$0	$13,989,781	$13,989,781	48	$86,022	$12,908,073	$443,442	$638,267	$663,708	5.68%	1.71565	$5,390	$91,412	
Dec-22	$0	$13,989,781	$13,989,781	48	$82,818	$12,990,891	$409,611	$589,280	$613,773	5.68%	1.71565	$4,984	$87,802	
Jan-23	$0	$13,989,781	$13,989,781	48	$79,564	$13,070,454	$377,109	$542,218	$565,749	5.68%	1.71565	$4,594	$84,158	
Feb-23	$0	$13,989,781	$13,989,781	48	$76,309	$13,146,763	$345,937	$497,081	$519,649	5.68%	1.71565	$4,220	$80,529	
Mar-23	$0	$13,989,781	$13,989,781	48	$73,034	$13,219,797	$316,102	$453,881	$475,481	5.68%	1.71565	$3,861	$76,895	
Apr-23	$0	$13,989,781	$13,989,781	48	$69,758	$13,289,556	$287,606	$412,619	$433,250	5.68%	1.71565	$3,518	$73,277	
May-23	$0	$13,989,781	$13,989,781	48	$66,473	$13,356,028	$260,452	$373,301	$392,960	5.68%	1.71565	$3,191	$69,664	
Jun-23	$0	$13,989,781	$13,989,781	48	$63,187	$13,419,215	$234,640	$335,926	$354,613	5.68%	1.71565	$2,880	$66,067	$1,031,857
Jul-23	$0	$13,989,781	$13,989,781	48	$59,901	$13,479,116	$210,171	$300,494	$318,210	5.68%	1.71565	$2,584	$62,485	
Aug-23	$0	$13,989,781	$13,989,781	48	$56,615	$13,535,731	$187,043	$267,007	$283,750	5.68%	1.71565	$2,304	$58,919	
Sep-23	$0	$13,989,781	$13,989,781	48	$53,329	$13,589,061	$165,258	$235,462	$251,234	5.68%	1.71565	$2,040	$55,370	

Monthly Recoverable Investment
Program Expenditures - Amortized Over Four Years

	Amortizable Expenditures TK-4	Cumulative Expenditures	Average Expenditures	Amort. Months	Monthly Amortization	Accum. Amort.	Accum. Deferred Income Tax	Earnings / Rate Base	Average Rate Base	Wtd. Avg. Cost of Capital (1) After-tax	Revenue Factor	Monthly Return on Rate Base	Monthly Revenue Requirement	YTD ending June
a	b	c	d	e	f	g	h	i=c-g-h	j	k	l	m= (j) *k*l/12	n=m+f	
Oct-23	$0	$13,989,781	$13,989,781	48	$50,044	$13,639,104	$144,815	$205,861	$220,662	5.68%	1.71565	$1,792	$51,836	
Nov-23	$0	$13,989,781	$13,989,781	48	$46,758	$13,685,862	$125,715	$178,204	$192,033	5.68%	1.71565	$1,559	$48,317	
Dec-23	$0	$13,989,781	$13,989,781	48	$43,472	$13,729,334	$107,956	$152,490	$165,347	5.68%	1.71565	$1,343	$44,815	
Jan-24	$0	$13,989,781	$13,989,781	48	$40,192	$13,769,526	$91,538	$128,717	$140,604	5.68%	1.71565	$1,142	$41,333	
Feb-24	$0	$13,989,781	$13,989,781	48	$36,911	$13,806,437	$76,460	$106,884	$117,800	5.68%	1.71565	$957	$37,868	
Mar-24	$0	$13,989,781	$13,989,781	48	$33,610	$13,840,047	$62,730	$87,004	$96,944	5.68%	1.71565	$787	$34,397	
Apr-24	$0	$13,989,781	$13,989,781	48	$30,308	$13,870,355	$50,350	$69,077	$78,040	5.68%	1.71565	$634	$30,942	
May-24	$0	$13,989,781	$13,989,781	48	$26,996	$13,897,351	$39,322	$53,108	$61,092	5.68%	1.71565	$496	$27,492	
Jun-24	$0	$13,989,781	$13,989,781	48	$23,685	$13,921,036	$29,646	$39,099	$46,104	5.68%	1.71565	$374	$24,059	$517,833
Jul-24	$0	$13,989,781	$13,989,781	48	$20,373	$13,941,408	$21,324	$27,048	$33,074	5.68%	1.71565	$269	$20,641	
Aug-24	$0	$13,989,781	$13,989,781	48	$17,061	$13,958,469	$14,355	$16,957	$22,003	5.68%	1.71565	$179	$17,240	
Sep-24	$0	$13,989,781	$13,989,781	48	$13,749	$13,972,218	$8,738	$8,824	$12,891	5.68%	1.71565	$105	$13,854	
Oct-24	$0	$13,989,781	$13,989,781	48	$10,437	$13,982,655	$4,475	$2,651	$5,738	5.68%	1.71565	$47	$10,484	
Nov-24	$0	$13,989,781	$13,989,781	48	$7,126	$13,989,781	$1,564	($1,564)	$543	5.68%	1.71565	$4	$7,130	
Dec-24	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
Jan-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
Feb-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
Mar-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
Apr-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
May-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	
Jun-25	$0	$13,989,781	$13,989,781	48	$0	$13,989,781	$1,564	($1,564)	($1,564)	5.68%	1.71565	($13)	($13)	$69,259

(1) The Company's Weighted Average After Tax Cost of Capital from its most recent rate case thru April 19, 2012.

Schedule of Expenditures

		O&M Recoverable In Period Expended					Program Expenditures - Amortized Over Four Years			
		Labor (1)	Customer Education	Dashboard / Opower	Prog Eval/ Consultant	Total O&M	Customer Financing	Program Expenditures	Program Total	Total
Jun-10		$99,464	$204,988	$217,687	$0	$522,139	$500,000	$305,040	$805,040	$1,327,179
Jun-11		$451,985	$801,775	$61,062	$0	$1,314,822	$0	$1,534,373	$1,534,373	$2,849,195
Jun-12		$884,924	$693,368	$32,058	$0	$1,610,350	($500,000)	$2,533,924	$2,033,924	$3,644,274
Jun-13		$126,113	$134,040	$87,900	$0	$348,053	$0	$502,434	$502,434	$850,487
Jun-14		$119,181	$302,681	$40,500	$0	$462,362	$0	$389,870	$389,870	$852,232
Jun-15		$92,172	$268,202	$54,000	$33,400	$447,774	$0	$404,387	$404,387	$852,161
Jun-16	*	$121,788	$35,594	$54,000	$0	$211,382	$0	$382,141	$382,141	$593,523
Jun-17	*	$263,063	$320,536	$452,000	$5,000	$1,040,599	$421,829	$812,652	$1,234,481	$2,275,080
Jun-18	*	$401,002	$447,000	$822,500	$15,000	$1,685,502	$613,242	$1,191,800	$1,805,042	$3,490,544
Jun-19	*	$413,436	$443,500	$755,000	$15,000	$1,626,936	$643,323	$1,221,800	$1,865,123	$3,492,059
Jun-20	*	$428,125	$440,002	$715,000	$55,000	$1,638,127	$659,310	$1,236,800	$1,896,110	$3,534,237
Jun-21	*	$217,192	$219,498	$357,500	$10,000	$804,190	$517,456	$619,400	$1,136,856	$1,941,046
Jun-22	*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jun-23	*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jun-24	*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jun-25	*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total		$3,618,445	$4,311,184	$3,649,207	$133,400	$11,712,236	$2,855,160	$11,134,621	$13,989,781	$25,702,017

* Projected
(1) Excludes AIP and includes external Auditor and Temporary Labor costs

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

EEP Schedule
TK-5

Recoveries

		Therm Sales and Services					Total	Recoveries					Total
		Residential	Commercial	Industrial	Lighting	Cogen.	Therms	Residential	Commercial	Industrial	Lighting	Cogen.	Recoveries
Jun-10		199,762,222	121,568,200	81,414,763	27,127	853,170	403,625,482	$1,488,362	$900,379	$599,096	$192	$3,855	$2,991,884
Jun-11		222,119,693	135,002,697	90,445,144	21,010	2,637,430	450,225,974	$1,019,525	$608,929	$410,115	$110	$23,062	$2,061,741
Jun-12		181,172,806	115,394,478	82,175,908	16,848	0	378,760,040	$1,780	$2,636	$0	$0	$0	$4,416
Jun-13		217,439,046	135,113,439	80,848,839	16,866	0	433,418,190	$270	$547	$0	$0	$0	$817
Jun-14		246,119,458	151,372,547	77,878,792	16,644	0	475,387,441	$597,790	$363,514	$159,385	$28	$0	$1,120,717
Jun-15		249,586,742	153,520,036	79,638,706	5,461	0	482,750,945	$1,815,538	$1,104,714	$528,934	$30	$0	$3,449,216
Jun-16	*	199,729,809	125,551,399	77,549,982	6,415	0	402,837,605	$1,048,954	$663,407	$428,214	$36	$0	$2,140,611
Jun-17	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	($68,215)	($12,900)	$56,917	$28	$0	($24,170)
Jun-18	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$1,551,618	$910,727	$415,111	$148	$0	$2,877,603
Jun-19	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$1,708,467	$1,047,734	$581,558	$220	$0	$3,337,979
Jun-20	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$1,726,120	$1,058,950	$588,648	$223	$0	$3,373,940
Jun-21	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$1,454,408	$899,205	$515,228	$196	$0	$2,869,038
Jun-22	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$812,374	$513,673	$319,396	$124	$0	$1,645,567
Jun-23	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$474,236	$298,145	$181,691	$70	$0	$954,142
Jun-24	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$244,825	$155,302	$97,633	$38	$0	$497,798
Jun-25	*	222,802,800	136,734,563	76,114,559	28,800	0	435,680,722	$25,389	$20,543	$22,416	$10	$0	$68,356
Total		3,521,154,976	2,168,133,863	1,254,983,165	369,571	3,490,600	6,948,132,175	$13,901,441	$8,535,505	$4,904,341	$1,453	$26,917	$27,369,657

* Projected

** Billing at the tariff rate yields the dollars recovered, inclusive of rate proration, if any. The rate presented is derived from dividing that amount by the therms, as such rounding differences to the tariff / billing ra

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

Over / Under Recovered Carrying Cost Rate
Weighted Average Cost of Borrowing

	Rates:		Ratio:		After Tax
	Commercial Paper	Bank Credit Lines	Commercial Paper	Bank Credit Lines	Wtd. Avg. Cost of Borrowing. (1)
a	b	c	d	e	f=(b*d+c*e)*(1-.4085)
Aug-09	0.82%	0.00%	100.00%	0.00%	0.49%
Sep-09	0.79%	0.00%	100.00%	0.00%	0.47%
Oct-09	0.70%	0.00%	100.00%	0.00%	0.41%
Nov-09	0.56%	0.00%	100.00%	0.00%	0.33%
Dec-09	0.53%	0.00%	100.00%	0.00%	0.31%
Jan-10	0.52%	0.00%	100.00%	0.00%	0.31%
Feb-10	0.57%	0.00%	100.00%	0.00%	0.34%
Mar-10	0.65%	0.00%	100.00%	0.00%	0.38%
Apr-10	1.13%	0.00%	100.00%	0.00%	0.67%
May-10	1.11%	0.00%	100.00%	0.00%	0.66%
Jun-10	0.60%	0.00%	100.00%	0.00%	0.35%
Jul-10	0.59%	0.00%	100.00%	0.00%	0.35%
Aug-10	0.54%	0.00%	100.00%	0.00%	0.32%
Sep-10	0.51%	0.00%	100.00%	0.00%	0.30%
Oct-10	0.51%	0.00%	100.00%	0.00%	0.30%
Nov-10	0.51%	0.00%	100.00%	0.00%	0.30%
Dec-10	0.50%	0.00%	100.00%	0.00%	0.30%
Jan-11	0.49%	0.00%	100.00%	0.00%	0.29%
Feb-11	0.49%	0.00%	100.00%	0.00%	0.29%
Mar-11	0.92%	0.00%	100.00%	0.00%	0.54%
Apr-11	0.00%	0.00%	100.00%	0.00%	0.00%
May-11	0.32%	0.00%	100.00%	0.00%	0.19%
Jun-11	0.31%	0.00%	100.00%	0.00%	0.18%
Jul-11	0.33%	0.00%	100.00%	0.00%	0.20%
Aug-11	0.34%	0.00%	100.00%	0.00%	0.20%
Sep-11	0.00%	0.00%	100.00%	0.00%	0.00%
Oct-11	0.00%	0.00%	100.00%	0.00%	0.00%
Nov-11	0.47%	0.00%	100.00%	0.00%	0.28%
Dec-11	0.57%	0.00%	100.00%	0.00%	0.34%
Jan-12	0.55%	0.00%	100.00%	0.00%	0.33%
Feb-12	0.50%	0.00%	100.00%	0.00%	0.30%
Mar-12	0.48%	0.00%	100.00%	0.00%	0.28%
Apr-12	0.48%	0.00%	100.00%	0.00%	0.28%
May-12	0.48%	0.00%	100.00%	0.00%	0.28%
Jun-12	0.48%	0.00%	100.00%	0.00%	0.28%
Jul-12	0.49%	0.00%	100.00%	0.00%	0.29%
Aug-12	0.49%	0.00%	100.00%	0.00%	0.29%
Sep-12	0.50%	0.00%	100.00%	0.00%	0.30%
Oct-12	0.50%	0.00%	100.00%	0.00%	0.30%
Nov-12	0.51%	0.00%	100.00%	0.00%	0.30%
Dec-12	0.50%	0.00%	100.00%	0.00%	0.30%
Jan-13	0.51%	0.00%	100.00%	0.00%	0.30%
Feb-13	0.50%	0.00%	100.00%	0.00%	0.30%
Mar-13	0.47%	0.00%	100.00%	0.00%	0.28%
Apr-13	0.43%	0.00%	100.00%	0.00%	0.25%
May-13	0.40%	0.00%	100.00%	0.00%	0.24%
Jun-13	0.36%	0.00%	100.00%	0.00%	0.21%
Jul-13	0.35%	0.00%	100.00%	0.00%	0.21%
Aug-13	0.33%	0.00%	100.00%	0.00%	0.20%
Sep-13	0.35%	0.00%	100.00%	0.00%	0.21%
Oct-13	0.38%	0.00%	100.00%	0.00%	0.22%
Nov-13	0.35%	0.00%	100.00%	0.00%	0.21%
Dec-13	0.36%	0.00%	100.00%	0.00%	0.21%
Jan-14	0.33%	0.00%	100.00%	0.00%	0.20%
Feb-14	0.34%	0.00%	100.00%	0.00%	0.20%
Mar-14	0.35%	0.00%	100.00%	0.00%	0.21%

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

Over / Under Recovered Carrying Cost Rate
Weighted Average Cost of Borrowing

		Rates:		Ratio:		After Tax
		Commercial Paper	Bank Credit Lines	Commercial Paper	Bank Credit Lines	Wtd. Avg. Cost of Borrowing. (1)
a		b	c	d	e	f=(b*d+c*e)*(1-.4085)
Apr-14		0.37%	0.00%	100.00%	0.00%	0.22%
May-14		0.23%	0.00%	100.00%	0.00%	0.14%
Jun-14		0.25%	0.00%	100.00%	0.00%	0.15%
Jul-14		0.24%	0.00%	100.00%	0.00%	0.14%
Aug-14		0.27%	0.00%	100.00%	0.00%	0.16%
Sep-14		0.28%	0.00%	100.00%	0.00%	0.17%
Oct-14		0.31%	0.00%	100.00%	0.00%	0.18%
Nov-14		0.37%	0.00%	100.00%	0.00%	0.22%
Dec-14		0.48%	0.00%	100.00%	0.00%	0.28%
Jan-15		0.50%	0.00%	100.00%	0.00%	0.30%
Feb-15		0.51%	0.00%	100.00%	0.00%	0.30%
Mar-15		0.54%	0.00%	100.00%	0.00%	0.32%
Apr-15		0.45%	0.00%	100.00%	0.00%	0.27%
May-15		0.44%	0.00%	100.00%	0.00%	0.26%
Jun-15		0.47%	0.00%	100.00%	0.00%	0.28%
Jul-15		0.46%	0.00%	100.00%	0.00%	0.27%
Aug-15		0.46%	0.00%	100.00%	0.00%	0.27%
Sep-15		0.47%	0.00%	100.00%	0.00%	0.28%
Oct-15		0.47%	0.00%	100.00%	0.00%	0.28%
Nov-15		0.47%	0.00%	100.00%	0.00%	0.28%
Dec-15		0.71%	0.00%	100.00%	0.00%	0.42%
Jan-16		0.80%	0.00%	100.00%	0.00%	0.47%
Feb-16		0.80%	0.00%	100.00%	0.00%	0.47%
Mar-16		0.77%	0.00%	100.00%	0.00%	0.46%
Apr-16		0.74%	0.00%	100.00%	0.00%	0.44%
May-16		0.80%	0.00%	100.00%	0.00%	0.47%
Jun-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-16	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-17	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-18	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-18	*	0.80%	0.00%	100.00%	0.00%	0.47%

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

Over / Under Recovered Carrying Cost Rate
Weighted Average Cost of Borrowing

		Rates:		Ratio:		After Tax
		Commercial Paper	Bank Credit Lines	Commercial Paper	Bank Credit Lines	Wtd. Avg. Cost of Borrowing. (1)
a		b	c	d	e	f=(b*d+c*e)*(1-.4085)
Jan-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-19	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-20	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-21	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-22	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-23	*	0.80%	0.00%	100.00%	0.00%	0.47%

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

Over / Under Recovered Carrying Cost Rate
Weighted Average Cost of Borrowing

		Rates:		Ratio:		After Tax
		Commercial Paper	Bank Credit Lines	Commercial Paper	Bank Credit Lines	Wtd. Avg. Cost of Borrowing. (1)
a		b	c	d	e	f=(b*d+c*e)*(1-.4085)
Oct-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-23	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jul-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Aug-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Sep-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Oct-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Nov-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Dec-24	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jan-25	*	0.80%	0.00%	100.00%	0.00%	0.47%
Feb-25	*	0.80%	0.00%	100.00%	0.00%	0.47%
Mar-25	*	0.80%	0.00%	100.00%	0.00%	0.47%
Apr-25	*	0.80%	0.00%	100.00%	0.00%	0.47%
May-25	*	0.80%	0.00%	100.00%	0.00%	0.47%
Jun-25	*	0.80%	0.00%	100.00%	0.00%	0.47%

* Projected

(1) The Company's weighted average interest rate obtained on its commercial paper and bank credit lines, when utilized. The projected months are based on the last actual rate.

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

MFR - IV h.

Rate Case December 17, 2009

	Capitalization Ratios	Rate	Cost %	After Tax
				40.85%
Long Term Debt	45.10%	5.77%	2.602%	1.539%
Short Term Debt	7.01%	1.50%	0.105%	0.062%
Common Equity	47.89%	10.30%	4.933%	4.933%
Total Capitalization	100.00%		**7.64%**	**6.53%**

Capital Structure and Debt Rates Updated as of December 31, 2015

	Capitalization Ratios	Rate	Cost %	After Tax
				40.85%
Long Term Debt	46.92%	4.89%	2.294%	1.357%
Short Term Debt	5.51%	1.49%	0.082%	0.049%
Common Equity	47.57%	9.75%	4.638%	4.638%
Total Capitalization	100.00%		**7.01%**	**6.04%**

Energy Efficiency Chart of Accounts

MFR I.b and IV.b

Account	General Ledger Title	Description
166100	Residential Base Programs	HVAC,AWH,TWH, Home Energy Assessment, Home Weatherization for Income Qualified
166101	Commercial Base Programs	Commercial Steam Trap Survey & Repair program
166102	Financing	Residential & Commercial Financing
166103	Residential outreach & ICustomer Education	Customer Education, Home Energy Report - Opower
166106	Regulatory Asset	Customer Recoveries
166107	Accumulated Amortization	Accumulated Amortization

Accounts 166100 – 166102 are program costs that are amortized over a four year period.

Accounts 166103 – 166105 are O & M cost which are recovered annually.

Account 166106 – Allowable RGGI revenue requirements offset by recoveries billed to customers.

Account 166107 – Recoverable current year portion of the program costs.

Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas
Three Year Comparative Balance Sheet
Balance As of December 31

		2015	2014	2013
Assets and Other Debits				
Utility Plant				
101-106, 114	Utility Plant	$ 1,157,261,739	$ 1,094,225,482	$ 1,006,333,390
107	Construction Work in Progress	47,364,738	35,420,416	49,369,363
108,111,115	(Less) Accum. Prov. for Depr. Amort. Depl.	(324,544,010)	(321,094,867)	(301,867,005)
	Net Utility Plant	880,082,467	808,551,032	753,835,748
176	Long-Term Portion of Derivative Assets-Hedges	-	-	58,525
	Total Other Property and Investments	-	-	58,525
Current and Accrued Assets				
142	Customer Accounts Receivable	31,207,003	63,009,192	72,151,285
143	Other Accounts Receivable	1,710,774	33,600,489	1,013,745
144	(Less) Accum. Prov. for Uncollectible Acct.-Credit	(4,896,787)	(5,544,827)	(4,804,332)
154	Plant Materials and Operating Supplies	266,401	271,293	296,317
164.1	Gas Stored Underground - Current	21,294,198	28,243,054	30,671,815
164.2-164.3	Liquefied Natural Gas Stored and Held for Processing	2,227,089	1,913,530	420,368
165	Prepayments	14,571,948	11,716,510	11,379,898
176	Derivative Instrument Assets-Hedges	-	-	1,331,945
176	(less) Long-Term Portion of Derivative Assets-Hedges	-	-	(58,525)
	Total Current and Accrued Assets	66,380,627	133,209,242	112,402,519
Deferred Debits				
181	Unamortized Debt Expense	816,660	886,657	884,656
182.3	Other Regulatory Assets	95,047,319	89,958,074	202,382,200
186	Miscellaneous Deferred Debits	26,065	45,614	65,162
189	Unamortized Loss on Reacquired Debt	4,739,382	5,173,858	5,166,255
190	Accumulated Deferred Income Taxes	12,124,309	15,753,918	-
191	Unrecovered Purchased Gas Costs	5,662,700	-	-
	Total Deferred Debits	118,416,435	111,818,121	208,498,274
Total Assets and Other Debits		$ 1,064,879,528	$ 1,053,578,393	$ 1,074,795,065
Liabilities and Other Credits				
Proprietary Capital				
208-211	Other Paid-In Capital	$ 64,858,216	$ 57,653,646	$ 77,718,368
215,215.1,216	Retained Earnings	261,792,076	254,745,248	257,546,888
219	Accumulated Other Comprehensive Income	(19,960,809)	(20,539,609)	(13,410,396)
	Total Proprietary Capital	306,689,483	291,859,285	321,854,860
Long-Term Debt				
223	Advances from Associated Companies	115,830,205	107,264,535	124,008,896
224	Other Long-Term Debt	180,100,000	180,100,000	180,100,000
226	(Less) Unamortized Discount on Long-Term Debt-Dr.	(127,986)	(135,590)	(143,193)
	Total Long-Term Debt	295,802,219	287,228,945	303,965,704
Other Noncurrent Liabilities				
228.2	Accumulated Provision for Injuries and Damages	-	-	500,000
228.3	Accumulated Provision for Pensions and Benefits	32,409,227	31,898,224	19,442,767
228.4	Accumulated Miscellaneous Operating Provisions	346,961	344,534	363,830
245	Long-Term Portion of Derivative Instrument Lia.-Hedges	-	-	58,525
	Total Other Noncurrent Liabilities	32,756,188	32,242,758	20,365,122
Current and Accrued Liabilities				
232	Accounts Payable	11,802,717	9,382,878	7,098,664
234	Accounts Payable to Associated Companies	50,030,858	55,595,518	59,730,089
235	Customer Deposits	10,683,773	10,699,245	10,205,163
236	Taxes Accrued	5,607,190	14,671,710	12,493,507
237	Interest Accrued	166,479	167,040	166,288
241	Tax Collections Payable	1,688,354	3,299,246	3,760,924
242	Miscellaneous Current and Accrued Liabilities	5,171,206	4,210,725	3,562,874
243	Obligations Under Capital Leases-Current	-	-	26,437
245	Derivative Instrument Liabilities-Hedges	13,857,965	16,313,140	1,331,945
245	(less) Long-Term Portion of Derivative Instrument Lia.-Hedges	-	-	(58,525)
	Total Current and Accrued Liabilities	99,008,542	114,339,501	98,317,367
Deferred Credits				
252	Customer Advances for Construction	623,933	1,010,951	948,229
253	Other Deferred Credits	122,371,604	117,897,961	145,436,286
254	Other Regulatory Liabilities	6,541,892	24,844,623	20,446,261
255	Accumulated Deferred Investment Tax Credits	267,162	419,187	606,477
281 - 282	Accumulated Deferred Federal Income Taxes	200,818,505	183,735,181	151,388,985
283	Accumulated Deferred Other Income Taxes	-	-	11,465,774
	Total Deferred Credits	330,623,096	327,907,903	330,292,011
Total Liabilities and Other Credits		$ 1,064,879,528	$ 1,053,578,393	$ 1,074,795,065

Please note that minor adjustments have been made to some FERC amounts previously reported for 2014 FERC Form II filings in order to more appropriately align the accounts within the FERC acount classification.

Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas
Three Year Comparative Income Statement
For Year Ended December 31

		2015	2014	2013
Utility Operating Income				
400	Gas Operating Revenues	$ 309,927,271	$ 395,035,523	$ 388,814,030
Utility Operating Expenses				
401	Operation Expenses	207,405,683	297,400,809	293,581,289
402	Maintenance Expenses	7,159,963	7,478,911	6,546,878
403	Depreciation Expense	25,415,640	24,397,021	22,363,682
404-405	Amort. & Depl. of Utility Plant	19,549	19,549	19,549
408.1	Taxes Other Than Income Taxes	3,362,715	2,715,579	7,237,709
409.1	Income Taxes - Federal	(661,416)	10,380,021	11,471,950
409.1	Income Taxes - Other	1,023,906	5,202,480	3,332,749
410.1	Provision for Deferred Income Taxes	20,056,115	9,768,613	5,807,761
411.4	Investment Tax Credit Adj. - Net	(152,025)	(187,290)	(218,328)
	Total Utility Operating Expenses	263,630,130	357,175,694	350,143,237
	Net Operating Income (Loss)	46,297,141	37,859,829	38,670,792
Other Income (Deductions)				
415-421.1	Other Income, Net	(507,401)	1,501,099	1,907,281
426.1-426.5	Miscellaneous Income Deductions	(105,494)	(164,240)	(85,447)
409.2	Total Taxes on Other Inc. and Ded.	246,094	(674,508)	(744,219)
	Net Other Income (Deductions)	(366,801)	662,351	1,077,615
Interest Charges				
427	Interest on Long-Term Debt	1,608,104	1,558,213	1,736,910
428	Amort. of Debt Disc. and Expense	67,997	67,997	69,745
428.1	Amortization of Loss on Reacquired Debt	442,080	504,278	611,718
430	Interest on Debt to Assoc. Companies	11,774,830	14,187,599	4,589,929
431	Other Interest Expense	1,174,444	540,725	1,083,972
432	(Less) Allow. for Borrowed Funds Used During Construction-Cr.	(184,971)	(432,371)	(669,970)
	Net Interest Charges	14,882,484	16,426,440	7,422,305
Net Income (Loss)		$ 31,047,856	$ 22,095,740	$ 32,326,102

PIVOTAL UTILITY HOLDINGS, INC.
d/b/a ELIZABETHTOWN GAS
STATEMENT OF GAS OPERATING REVENUES
FOR THE YEAR ENDED DECEMBER 31, 2015

		Jurisdictional	Non-Jurisdictional	Total
Sales of Gas				
480	Residential	$ 178,802,623		$ 178,802,623
481	Commercial	$ 63,964,295	$ 20,819,135	$ 84,783,429
	Total Sales of Gas	$ 242,766,917	$ 20,819,135	$ 263,586,052
Other Gas Revenues				
487	Forfieted Discounts	$ 504,207		$ 504,207
488	Miscellaneous Service Revenues	$ 643,725		$ 643,725
489	Revenue from Transportation of Gas of Others	$ 37,563,600	$ 751,968	$ 38,315,568
495	Other Gas Revenues	$ 6,877,719		$ 6,877,719
	Total Other Gas Revenues	$ 288,356,168	$ 21,571,103	$ 309,927,271

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")

		Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25
Operating Revenue		$ 2,140,611	$ (24,170)	$ 2,877,603	$ 3,337,979	$ 3,373,940	$ 2,869,038	$ 1,645,567	$ 954,142	$ 497,798	$ 68,356
Operating Expense											
Operations & Maintenance		$ 211,382	$ 1,040,599	$ 1,685,502	$ 1,626,936	$ 1,638,127	$ 804,190	$ -	$ -	$ -	$ -
Amortized Program Expenses		$ 382,141	$ 1,234,481	$ 1,805,042	$ 1,865,123	$ 1,896,110	$ 1,136,856	$ -	$ -	$ -	$ -
Depreciation & Amortization		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Taxes	40.85%	$ 788,090	$ (434,958)	$ 486,973	$ 698,961	$ 709,080	$ 843,490	$ 672,214	$ 389,767	$ 203,351	$ 27,924
Interest Expense		$ (971)	$ (1,889)	$ 4,485	$ 2,219	$ 1,252	$ 1,792	$ (42)	$ (133)	$ (18)	$ (193)
Total Operating Expense		$ 1,380,642	$ 1,838,233	$ 3,982,002	$ 4,193,239	$ 4,244,569	$ 2,786,328	$ 672,172	$ 389,634	$ 203,333	$ 27,731
Net Income		$ 759,970	$ (1,862,403)	$ (1,104,399)	$ (855,261)	$ (870,628)	$ 82,710	$ 973,396	$ 564,508	$ 294,466	$ 40,626
Balance Sheet											
Assets											
Cumulative Expenditures		$ 6,052,169	$ 7,286,650	$ 9,091,692	$ 10,956,815	$ 12,852,925	$ 13,989,781	$ 13,989,781	$ 13,989,781	$ 13,989,781	$ 13,989,781
Less: Accum Amortization		$ (5,250,319)	$ (5,734,485)	$ (6,529,211)	$ (7,691,291)	$ (9,220,906)	$ (11,012,406)	$ (12,445,919)	$ (13,419,215)	$ (13,921,036)	$ (13,989,781)
Net Cumulative Expenditures		$ 801,850	$ 1,552,165	$ 2,562,481	$ 3,265,524	$ 3,632,019	$ 2,977,375	$ 1,543,862	$ 570,566	$ 68,745	$ -
Plant, Property & Equipment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Less: Accum Depreciation		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Property, Plant & Equipment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Deferred Tax Asset		$ 329,120	$ 635,623	$ 1,048,337	$ 1,335,531	$ 1,485,244	$ 1,217,822	$ 632,232	$ 234,640	$ 29,646	$ 1,564
Total Assets		$ 1,130,970	$ 2,187,789	$ 3,610,818	$ 4,601,055	$ 5,117,263	$ 4,195,197	$ 2,176,094	$ 805,206	$ 98,392	$ 1,564
Liabilities & Capitalization											
Liabilities:											
Deferred Income Taxes		$ 329,120	$ 635,623	$ 1,048,337	$ 1,335,531	$ 1,485,244	$ 1,217,822	$ 632,232	$ 234,640	$ 29,646	$ 1,564
Capitalization	3/31/2013										
Debt	56.15%	$ 450,239	$ 871,541	$ 1,438,833	$ 1,833,592	$ 2,039,379	$ 1,671,796	$ 866,879	$ 320,373	$ 38,601	$ -
Common Equity	43.85%	$ 351,611	$ 680,624	$ 1,123,648	$ 1,431,932	$ 1,592,640	$ 1,305,579	$ 676,984	$ 250,193	$ 30,145	$ -
Total Capitalization		$ 801,850	$ 1,552,165	$ 2,562,481	$ 3,265,524	$ 3,632,019	$ 2,977,375	$ 1,543,862	$ 570,566	$ 68,745	$ -
Total Liabilities & Capitalization		$ 1,130,970	$ 2,187,789	$ 3,610,818	$ 4,601,055	$ 5,117,263	$ 4,195,197	$ 2,176,094	$ 805,206	$ 98,392	$ 1,564
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Pivotal Utility Holdings, Inc.
d/b/a Elizabethtown Gas
Schedule of Intercompany and Interdivisional Transactions
Between Elizabethtown Gas and Other Divisions and Subsidiaries of AGL Resources
Year Ended December 31, 2015

Transaction Type (Pay)/ Rec	AGL Resources Inc.	AGL Services Company	Sequent Energy Mngmt, LP-Corp	Pivotal Utility Holdings Inc	Grand Total
Allocated O&M Costs		($16,951,558)			($16,951,558)
Allocation of Tax				($12,008,413)	($12,008,413)
Capitalization of O&M Costs		($1,187,200)			($1,187,200)
Dividends	($24,001,027)				($24,001,027)
Fixed Assets		$291,420			$291,420
Interest		($172,093)		($13,083,042)	($13,255,134)
Net Cash Activity *		$185,010,471			$185,010,471
Payment/ Refund of Tax		($707,687)			($707,687)
Payroll & Benefits		($31,065,934)			($31,065,934)
Purchase of Gas			($124,364,990)		($124,364,990)
		($107,324)			($107,324)
Asset Management Fees			$26,945,573		$26,945,573
Recapitalization of Capital Structure-Increase in Common Equity				$7,204,570	$7,204,570
Recapitalization of Capital Structure - Issuance LT Debt				($8,565,670)	($8,565,670)
Recapitalization of Capital Structure - Issuance ST Debt				$8,565,670	$8,565,670
Grand Total	($24,001,027)	$135,110,096	($97,419,417)	($17,886,885)	($4,197,233)

* Net Cash Activity includes all Accounts Payable, Accruals, Accounts Receivables, and Cash Receipts activities that are recorded through the Money Pool Agreement.

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS
ENERGY EFFICIENCY PROGRAM ("EEP")
RATE IMPACT

Note: ETG is not requesting a rate change in this filing.

	Curent rate 2014 filing*	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
(Over)/Under Balance at June **	($1,036,118)	($925,712)	$680,124	$387,041	$9,550	$4,872
Recoverable Program Costs 7/15 - 6/17: ***						
Original filing - 8/09 - 12/10	$41,056	$0	$0	$0	$0	$0
Extension 1/11 - 3/12	$746,426	$0	$0	$0	$0	$0
Extension 4/12 - 8/13	$548,181	$94,601	$748	$0	$0	$0
Extension 9/13 - 12/16 ****	$1,843,964	$358,303	$344,868	$237,751	$117,365	$14,256
Proposed Extension	$0	$1,130,652	$2,254,261	$2,720,517	$3,250,646	$2,785,614
Total Amount to be Recovered	**$2,143,509**	**$657,843**	**$3,280,001**	**$3,345,309**	**$3,377,560**	**$2,804,741**
Per Therm Recovery - Incl. Tax						
Firm Throughput - therms	430,414,210	435,680,722	435,680,722	435,680,722	435,680,722	435,680,722
(Over)/Under Recovery	($0.0025)	($0.0023)	$0.0017	$0.0010	$0.0000	$0.0000
Original filing - 8/09 - 12/10	$0.0001	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Extension 1/11 - 3/12	$0.0019	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Extension 4/12 - 8/13	$0.0014	$0.0002	$0.0000	$0.0000	$0.0000	$0.0000
Extension 9/13 - 12/16 ****	$0.0046	$0.0009	$0.0008	$0.0006	$0.0003	$0.0000
Proposed Extension		$0.0028	$0.0055	$0.0067	$0.0080	$0.0068
EEP Rate, $ / Therm, inclusive of taxes	**$0.0054**	**$0.0016**	**$0.0081**	**$0.0082**	**$0.0083**	**$0.0069**
Typical Annual Bill Amounts						
Residential Non-Heat	250	Annual Therms				
(Over)/Under Recovery	($0.63)	($0.57)	$0.42	$0.24	$0.01	$0.01
Original filing - 8/09 - 12/10	$0.03	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 1/11 - 3/12	$0.46	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 4/12 - 8/13	$0.34	$0.06	$0.00	$0.00	$0.00	$0.00
Extension 9/13 - 12/16 ****	$1.15	$0.22	$0.21	$0.15	$0.07	$0.01
Proposed Extension		$0.69	$1.38	$1.67	$2.00	$1.71
Total Typical Annual Bill Amount	$1.35	$0.40	$2.02	$2.06	$2.08	$1.73
$ Increase from Current Bill Amount	$0.00	($0.95)	$0.67	$0.71	$0.73	$0.38
% Increase from Current Bill Amount	0.0%	(0.3%)	0.2%	0.2%	0.2%	0.1%
Residential Heat	1,000	Annual Therms				
(Over)/Under Recovery	($2.50)	($2.27)	$1.69	$0.97	$0.05	$0.03
Original filing - 8/09 - 12/10	$0.10	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 1/11 - 3/12	$1.86	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 4/12 - 8/13	$1.36	$0.23	$0.00	$0.00	$0.00	$0.00
Extension 9/13 - 12/16 ****	$4.58	$0.88	$0.85	$0.58	$0.29	$0.04
Proposed Extension		$2.78	$5.54	$6.68	$7.98	$6.84
Total Typical Annual Bill Amount	$5.40	$1.62	$8.07	$8.24	$8.32	$6.91
$ Increase from Current Bill Amount	$0.00	($3.78)	$2.67	$2.84	$2.92	$1.51
% Increase from Current Bill Amount	0.0%	(0.4%)	0.3%	0.3%	0.3%	0.2%
Small General Service	1,000	Annual Therms				
(Over)/Under Recovery	($2.50)	($2.27)	$1.69	$0.97	$0.05	$0.03
Original filing - 8/09 - 12/10	$0.10	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 1/11 - 3/12	$1.86	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 4/12 - 8/13	$1.36	$0.23	$0.00	$0.00	$0.00	$0.00
Extension 9/13 - 12/16 ****	$4.58	$0.88	$0.85	$0.58	$0.29	$0.04
Proposed Extension		$2.78	$5.54	$6.68	$7.98	$6.84
Total Typical Annual Bill Amount	$5.40	$1.62	$8.07	$8.24	$8.32	$6.91
$ Increase from Current Bill Amount	$0.00	($3.78)	$2.67	$2.84	$2.92	$1.51
% Increase from Current Bill Amount	0.0%	(0.4%)	0.3%	0.3%	0.3%	0.2%
General Delivery Service	13,000	Annual Therms				
(Over)/Under Recovery	($32.56)	($29.52)	$21.92	$12.62	$0.59	$0.41
Original filing - 8/09 - 12/10	$1.33	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 1/11 - 3/12	$24.12	$0.00	$0.00	$0.00	$0.00	$0.00
Extension 4/12 - 8/13	$17.72	$3.02	$0.02	$0.00	$0.00	$0.00
Extension 9/13 - 12/16 ****	$59.59	$11.44	$11.01	$7.59	$3.75	$0.46
Proposed Extension		$36.10	$71.97	$86.86	$103.78	$88.94
Total Typical Annual Bill Amount	$70.20	$21.04	$104.93	$107.07	$108.12	$89.80
$ Increase from Current Bill Amount	$0.00	($49.16)	$34.73	$36.87	$37.92	$19.60
% Increase from Current Bill Amount	0.0%	(0.5%)	0.4%	0.4%	0.4%	0.2%

*** 2014 filed rate updated with additional actuals; approved rate from RCR-EE-17.4 in Docket No. GO15050504.**
**** Consists of prior year balance plus current year recoveries and carrying costs.**
***** Amortized costs and return on rate base for the respective periods plus O&M for the period.**
****** Extension 9/13-8/15 which was subsequently extended through 12/16 using the same budget.**

EXHIBIT P-2

PIVOTAL UTILITY HOLDINGS, INC.
d/b/a ELIZABETHTOWN GAS
DIRECT TESTIMONY OF
SUSAN BUCK

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Susan Buck. My business address is 520 Green Lane, Union, New Jersey, 07083.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas ("Elizabethtown" or "Company") as Program Manager – Energy Efficiency Programs.

Q. WHAT IS THE SCOPE OF YOUR DUTIES AT ELIZABETHTOWN?

A. I manage all residential and commercial energy efficiency programs for Elizabethtown Gas.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS AND BUSINESS EXPERIENCE.

A. I am a graduate of Nova International University in Fort Lauderdale, Florida, graduating with a Bachelor of Arts Degree, with a major in Business and Professional Management. I have over 27-years of experience in leadership and program management, most of which has been with United Airlines from 1988 through 2015. During a 2.5 year furlough from United, I managed training programs for our affiliate company in Illinois, Nicor Gas, which included energy

efficiency programs. I joined the Elizabethtown Gas team in July 2015 as the Program Manager – Energy Efficiency Programs.

Q. DOES YOUR TESTIMONY INCLUDE ANY ILLUSTRATIVE SCHEDULES?

A. Yes. My testimony includes the schedules listed below that were prepared under my direction and supervision. These schedules contain information responsive to the Minimum Filing Requirements ("MFRs") as referenced in the MFR Index attached to the Petition and as set forth in the Board's May 12 Order in BPU Docket No. EO08030164 and the Board's August 3, 2009 Order ("August 3 Order") in Docket Nos. EO09010056 and GO09010060 et al. The schedules are as follows:

(a) Schedule SB-1 contains program descriptions of the proposed programs:

(i) Residential Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Program;

(ii) Residential Home Energy Assessment Program;

(iii) Residential Home Energy Report (Opower) Program;

(iv) Residential Home Weatherization for Income Qualified Customers Program;

(v) Residential Financing Program;

(vi) Commercial Financing Program; and

(vii) Commercial Steam Trap Survey and Repair Program.

(b) Schedule SB-2 contains budgeted, estimated EE Program costs by major spending categories through December, 2020;

(c) Schedule SB-3 contains estimated direct FTE employment data;

(d) Schedule SB-4 contains a comparison of EE programs amongst New Jersey gas utilities;

(e) Schedule SB-5 contains sample marketing material;

(f) Schedule SB-6 contains a copy of the standard agreement;

(g) Schedule SB-7 contains Historical and Proposed Allocation of Customer Outreach/Education Funds; and

(h) Schedule SB-8 contains Steam Trap Survey/Repair Background Information.

Q. PLEASE DESCRIBE THE COMPANY'S EE PROGRAMS.

A. The Company's EE Programs were initially approved by the Board's August 3 Order which then consisted of six EE Programs that were designed to enhance or supplement New Jersey's Clean Energy Program ("NJCEP") over the 17-month period commencing August 2009 through December 2010. Pursuant to a Board order dated January 19, 2011 ("January 19 Order") in BPU Docket No. GO10100735 that approved a January 12, 2011 Stipulation ("January 12 Stipulation") among Elizabethtown, Board Staff and Rate Counsel, Elizabethtown was authorized to extend the term of its EE Programs through December 31, 2011. A third Order issued April 11, 2012 in BPU Docket No. GO11070399 authorized the Company to extend three of its EE Programs until April 19, 2013. A fourth Order issued August 21, 2013 in BPU Docket No. GO12100946 authorized the Company to extend three of its EE Programs through September 1, 2015. A fifth Order issued December 16, 2015 in BPU Docket No. GO15050504 authorized the Company to extend existing EE programs through December 31, 2016.

Q. PLEASE IDENTIFY THE COMPANY'S CURRENTLY EFFECTIVE INDIVIDUAL EE PROGRAMS.

A. The currently effective EE Programs comprise the following:

1. Residential Expanded Gas Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Programs;
2. Commercial Customer Energy Efficiency Program; and
3. Customer Education and Outreach Program.

In addition to a number of rebates and related offers, the EE Programs contain various customer education and outreach initiatives, including an on-line customer home energy audit designed to encourage energy conservation and provide information on ways customers can lower their gas bills.

Q. WHAT IS THE COMPANY PROPOSING IN THIS FILING WITH RESPECT TO THESE PROGRAMS?

A. The Company is proposing to extend its EE Program with a number of new EE Program offerings for a four-year period commencing January 1, 2017 through December 31, 2020.

An overview of the proposed EE Programs are set forth in the accompanying Petition and reflected in the program descriptions contained in Schedule SB-1 that accompanies my testimony. Overall, the Company is

proposing to offer an EE Program that has been designed to produce more energy and cost savings and reach more customers who may not have had the ability to participate in past programs.

Q. PLEASE EXPLAIN THE CHANGES BETWEEN THE CURRENTLY EFFECTIVE PROGRAMS AND THE PROGRAMS PROPOSED BY THIS FILING.

A. With respect to residential offerings, the Company is proposing to maintain its existing HVAC/Hot Water Heating Program and add four new programs: the Home Energy Assessment; the Home Energy Report (Opower); Home Weatherization for Income Qualified Customers; and Financing. There is one notable change to the HVAC/Hot Water Heater Program – the addition of an incentive for power vented water heaters. The expansion of the residential programs is intended to facilitate enhanced program participation and provide customers with greater energy efficiency benefits.

The Home Energy Assessment will include the direct installation of energy efficiency measures such as faucet aerators, low-flow shower heads, water heater pipe wrap insulation and a programmable thermostat. This offering replaces the current mailing of Weatherization Kits to NJCEP participants who also

receive supplemental rebates from the Company through the HVAC and Gas Hot Water Heater Incentive Programs.

The Home Energy Reports Program, which will be administered by Opower, an outside vendor, provides a test group of customers with regular updates on their gas usage compared with the usage of their like neighbors and recommends measures to improve energy efficiency, including recommendations for NJCEP programs. The program compares the test group results against a control group of customers to determine effectiveness. With this program, Elizabethtown is proposing to change the current software used to support the on-line audit customer Dashboard from Aclara's software to the software supported by Opower. The Opower technology is expected to improve the ability to measure effectiveness and is more user-friendly and accessible.

The Home Weatherization for Income Qualified Customers is a program similar to the Comfort Partners program offered through NJCEP. The Elizabethtown program targets customers that are between 225% and 400% over the federal poverty level. This offering provides weatherization measures, such as air sealing and insulation measures, offers direct installation of

energy efficient measures (same as the Home Energy Assessment), cleans and maintains energy equipment and provides safety testing. If needed, the replacement of gas appliances may be completed for safety reasons. This program, although similar to Comfort Partners, aids customers who would not qualify through Comfort Partners due to income level. Elizabethtown's program provides these customers with opportunities for no-cost energy efficiency measures that they previously may not have been able to afford.

The Financing Program offers residential customers no- to low- interest loans for qualifying energy efficiency upgrades/improvements in their homes. The loan amounts offered, the interest rate and the terms of the loan make the Program's loans attractive to customers and helps customers make the decision to move forward with energy efficiency measures.

With respect to the commercial offerings, the Company is proposing to eliminate the rebates that are currently offered to commercial customers and instead offer a Financing Program and a Commercial Steam Trap Survey and Repair Program. The Commercial Financing Program will aid commercial customers with their 30%

liability for the NJCEP Direct Install Program by offering no- to low-interest loans. The Commercial Steam Trap Survey and Repair Program will provide yearly survey and repair activity ensuring the number of failing steam traps is reduced, enabling steam equipment to operate more efficiently. The Commercial Steam Trap Program is consistent with programs offered in other jurisdictions such as Massachusetts, New York, and Rhode Island.

Q. PLEASE DESCRIBE THE COMPANY'S PROJECTED SPENDING LEVELS FOR THE EE PROGRAMS DURING THE JANUARY 1, 2017 THROUGH DECEMBER 31, 2020 PERIOD.

A. As set forth in Schedule SB-2, the proposed annual amount budgeted for the EE Programs for the January 1, 2017 through December 31, 2020 period is approximately $14.3 or approximately $3.4 million on an annual basis.

Q. WHAT DIRECT IMPACTS DOES THE COMPANY EXPECT THE EE PROGRAMS TO HAVE ON COMPETITION AND FULL-TIME EMPLOYMENT?

A. To the best of Elizabethtown's knowledge, there is no relevant impact on competition as the other gas utility programs are not marketed in Elizabethtown's service territory. The direct FTE employment

impacts, with an FTE defined as 1,820 hours of work annually, are reflected in Schedule SB-3. The Company estimates that the EE Programs will result in three in-house jobs and approximately 17 contractor jobs. The Company intends to utilize a combination of internal employees and third-party contractors to deliver the EE Programs. Contractors will be selected on the basis of a combination of factors, including price, capability and availability.

Q. HOW ARE ELIZABETHTOWN'S PROPOSED EE PROGRAMS CONSISTENT WITH AND/OR DIFFERENT FROM THE PROGRAMS OFFERED BY THE NJCEP?

A. Elizabethtown's proposed EE Programs are designed to enhance or supplement the NJCEP and offer unique options not available through the NJCEP. The Home Weatherization for Income Qualified Customers is designed to provide customers, whose income is between 225% and up to 400% above the federal poverty level, enhanced opportunities to participate in energy efficiency initiatives. Financing provides both residential and commercial customers with low-interest options to finance energy efficiency projects. More details showing the comparison between Elizabethtown's

programs and those offered by the NJCEP are contained in Schedule SB-1.

Q. HOW ARE ELIZABETHTOWN'S PROPOSED EE PROGRAMS CONSISTENT WITH AND/OR DIFFERENT FROM OTHER UTILITY PROGRAMS?

A. A comparison of Elizabethtown's programs and other utility programs is outlined in Schedule SB-4.

Q. PLEASE DESCRIBE THE (i) TARGET MARKET AND CUSTOMER ELIGIBILITY FOR THE PROGRAMS; (ii) THE PROGRAM OFFERINGS; (iii) QUALITY CONTROL METHODS; AND (iv)THE PROGRAM ADMINISTRATION AND PROGRAM DELIVERY MECHANISM.

A. This information is set forth in detail in Schedule SB-1. In general, Elizabethtown's target market encompasses customers who are interested in improving their energy efficiency through equipment upgrades, direct install of energy efficient measures and weatherization. Qualifications for each program, including program incentives and related offerings, are outlined in detail in SB-1. Quality control is generally performed by an independent contractor, and the primary administration and delivery methods are provided through a group of qualified contractors.

Q. HOW DOES ELIZABETHTOWN PROPOSE TO RESOLVE CUSTOMER COMPLAINTS?

A. Customer complaints in the first instance will be reviewed by Elizabethtown's call center. The call center representative intakes the information and directs it for investigation and cause. A company representative will be assigned to resolve the complaint internally. If the complaint is not resolved to the customer's satisfaction, the customer will be referred to the New Jersey Board of Public Utilities Consumer Complaint Division.

Q. PLEASE DESCRIBE HOW THE COMPANY INTENDS TO MARKET THE PROGRAMS.

A. The Company will use extensive direct marketing to customers through traditional utility channels (*i.e.* bill inserts), mail, print, radio, online advertising, email blasts, social media, outreach events (*i.e.*, street fairs) and indirect outreach through other stakeholders that can help to increase awareness and education. Other stakeholders include contractors, realtors, environmental commissions, green teams and community groups. Sample marketing materials from the current Elizabethtown program are attached as SB-5 as a point of reference. Final materials used to promote the programs proposed are still being developed will

ultimately depend on a final resolution in this proceeding.

Q. PLEASE DESCRIBE THE CRITERIA UPON WHICH ELIZABETHTOWN SELECTED THE PROPOSED PROGRAMS.

A. Elizabethtown selected programs that it believes will foster the goals of the programs, enabling customers of all demographic areas the ability to participate in our programs, and are consistent with New Jersey's clean energy policies. As reflected in the testimony of Jim Herndon and his supporting cost benefit analysis, the proposed programs are consistent with these objectives. In addition, as reflected in Mr. Herndon's schedules JH-3 through JH-4, the programs are expected to produce a number of benefits that are consistent with the State's objectives to promote clean energy, including the reduction of carbon emissions.

Q. ARE THERE ANY KNOWN MARKET BARRIERS THAT MAY IMPACT THE PROGRAMS?

A. The Company is unaware of any market barriers that may impact the Program.

Q. DOES ETG USE ANY STANDARD AGREEMENTS AS PART OF THE PROGRAM?

A. To process rebates, CLEAResult, the implementation contractor, upon receiving rebate forms from the NJCEP, forwards a list to Elizabethtown of approved NJCEP rebate submissions. These forms include customer names and addresses (but not street numbers). Elizabethtown then reviews the listing, comparing it against the customer database, to add the street number of the addresses and their customer account number to assure that all participants are active customers. Elizabethtown then sends the updated listing back to CLEAResult, who then provides Elizabethtown with a list of measures installed by the approved customers. Elizabethtown then sends the list to Blackhawk Engagement Solutions for rebate fulfillment. This method was established to be consistent with privacy concerns raised by the State regarding the disclosure of customer information. In addition, attached is Schedule SB-6 which is a copy of our standard terms and conditions currently being used.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Elizabethtown Gas Residential HVAC and Gas Hot Water Heater Incentive Program

Description Of Program

This program is designed to enhance the existing New Jersey Clean Energy Program ("NJCEP") gas HVAC and hot water heater incentive program by supplementing the incentives offered through NJCEP. The name of the NJCEP program being supplemented by this Elizabethtown Gas (ETG) Program is WARMADVANTAGE.

This program will be available to all residential customers as follows:

Customers will be informed via outreach opportunities of the energy efficiency offerings of both the NJCEP and ETG's energySMART Program.

If qualifying energy efficient units are installed, ETG will supplement the NJCEP incentive of $300 for boilers and $250 / $500 for furnaces in an amount up to $300 for the installation of a complete energy efficient gas heating boiler or furnace.

ETG will supplement the NJCEP incentive of $500 in an amount up to $200 for the installation of an energy efficient gas hot water heater, including power vented gas hot water heaters.

In no event will the combined NJCEP and ETG incentive exceed the total project cost.

The specific types of equipment that qualify for incentives under this program are as follows:

Gas Fired Boilers
Gas Boiler – Hydronic AFUE* 90% or greater
Gas Boiler – Steam AFUE 82% or greater
Gas Furnaces
Tier 1 – AFUE 95% or greater
Tier 2 - AFUE 97% or greater
Gas Water Heater
Energy Factor (EF) .82 or greater and ENERGY STAR
Thermal Efficiency (TE) 90% or greater with sealed combustion
Power Vented (EF) .67 or greater

*AFUE (Annual Fuel Utilization Efficiency)

Only those customers who are in good standing and subject to the EEP surcharge are eligible to participate in and receive the incentives associated with this program.

ETG will offer this program through December 31, 2020.

The equipment standards reflected in this program description track the standards utilized by the NJCEP. To the extent these standards are modified by NJCEP during the term of the program, the ETG own equipment standard will reflect such modified standard.

Elizabethtown Gas Residential HVAC and Gas Hot Water Heater Incentive Program

Summary of Program Description As Set Forth Above:

		ETG Rebates	NJCEP Rebates	Total
HEATING	**Furnace – Tier 1** AFUE* 95% or greater	$250	$250	$500
	Furnace – Tier 2 AFUE 97% or greater	$250	$500	$750
	Boiler – Hydronic* AFUE 90% or greater *Steam boilers do not qualify for rebate*	$300	$300	$600
WATER HEATING	**Gas On-Demand Water Heater** EF* .82 or greater	$200	$300	$500
	Gas Power-Vented Water Heater EF 0.67 OR TE* 90% or greater	$100	$300	$400
COMBINATIONS	**Furnace and Water Heater Combination** (1) Qualifying Tier 1 gas furnace and a qualifying water heater above	$450	$700	$1,150
	(2) Qualifying Tier 2 gas furnace and a qualifying water heater above	$450	$950	$1,400
	Boiler and Water Heater Combination Qualifying boiler (above) and water heater (above): • Integrated water heating and boiler unit (Combi Boilers) • OR a qualifying water heater • OR an indirect water heater attached to a qualifying boiler	$500	$700	$1,200

The NJCEP incentives may be subject to change. The change in an NJCEP incentive level will not impact the ETG incentive level, but may impact the total grant amount.

Participation in this program does not require an energy audit, however ETG will refer participants to the ETG Home Energy Assessment Program and the NJCEP Home Performance with Energy Star ("HPwES") Program in order to promote a whole house solutions approach to energy efficiency.

Delivery Method

HVAC installation and/or quality control work will be performed by trained heating, home improvement and energy service providers, including contractors providing such services for the NJCEP.

Elizabethtown Gas Residential HVAC and Gas Hot Water Heater Rebate Incentive Program

Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)
Total: 6,000 (1,500 PY1; 1,500 PY2; 1,500 PY3; 1,500 PY4) 1,380 Participants (HVAC – Furnaces & Boilers) 120 Participants (Hot Water Heaters)
4-Year Budget Information (January 1, 2017 – December 31, 2020)
Total Rebates: $1,600,000 ($400,000 PY1; $400,000 PY2; $400,000 PY3; $400,000 PY4) Total Rebate Processing: $56,000 ($14,000 PY1; $14,000 PY2; $14,000 PY3; $14,000 PY4)

Elizabethtown Gas Residential Home Energy Assessment Program

Description Of Program

Elizabethtown Gas' Home Energy Assessment Program is available to all residential customers and provides a 75-minute home energy assessment, free direct installs and educational information on additional energy-saving measures and activities. A customized report provides details on specific measures the homeowner can take to reduce their energy consumption.

The incentive for this program covers most of the assessment fee, leaving a minimal fee for the customer of $30.00.

Direct install energy-saving measures and activities include:

- A programmable thermostat, if needed
- Programmable thermostat education
- Faucet aerators
- Low-flow shower heads
- Water heater pipe wrap insulation
- Water heater setback

The assessor will evaluate the age and functionality of gas-related energy consuming equipment within the home and provide the customer with details on eligible rebates the customer can receive as a result of upgrading their furnace, boiler or hot water heater. Rebates are available from both the NJ Clean Energy Warm Advantage Program and the Elizabethtown Gas energySMART Program.

If needed, assessors will recommend additional measures for air sealing & insulation. An implementation contractor will qualify a select group of contractors to provide air sealing and insulation services. These contractors will receive an incentive for which they can provide customers an "instant rebate" on the work completed. The on-site assessor will provide a listing of the pre-qualified contractors to the customer. Incentives include:

• Air Sealing	$250-$500/unit (average $375/unit)
• Duct Sealing	$350/unit
• Attic Insulation r5-r38	$600/unit
• Attic Insulation r11-r38	$520/unit
• Attic Insulation r19-r38	$400/unit
• Attic Knee Wall Insulation	$250/unit
• Wall Insulation	$200/unit
• Basement Sidewall Insulation	$300/unit

Assessors will focus on the "whole-house" approach and if needed, will recommend the NJCEP's Home Performance with Energy Star (HPwES) Program.

Elizabethtown Gas Residential Home Energy Assessment Program

Assessors will also provide literature on the Elizabethtown Gas Financing Program, if eligible and based on the home energy efficiency projects needed.

Elizabethtown Gas will contract with a third-party vendor to schedule and perform the home energy assessment and to provide quality assurance.

The Elizabethtown Gas Home Energy Assessment is similar to Home Energy Assessments offered by New Jersey Natural Gas and South Jersey Gas. Key differences include:

- Cost to the customer – No charge by NJNG and SJG
- Not required to receive a rebate – Required by NJNG and SJG

Delivery Method

Home Energy Assessment services will be provided by a third party vendor (CLEAResults provided estimates). This includes the scheduling of appointments, answering of inquiries and quality control. Air sealing/insulation work will be performed by trained heating, home improvement and energy service providers, including contractors providing such services for the NJCEP.

Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)

2,800 Home Energy Assessment Participants, 700 per program year
840 Air Sealing & Insulation Participants, 210 per program year (30% take rate)

4 Year Budget Information (January 1, 2017 – December 31, 2020)

$1,491,200 ($372,800 PY1; $372,800 PY2; $372,800 PY3; $372,800 PY4)

Elizabethtown Gas Residential Home Energy Report (Opower) Program

Description Of Program

Elizabethtown Gas (ETG) will partner with Opower to run a four-year program designed to provide a sample population of residential customers with Home Energy Reports that compare energy usage against that of their neighbors. Home Energy Reports are user-friendly, detailed, and informative messages that provide personalized information to customers about their natural gas energy usage and easy to follow tips that can quickly lead to energy savings.

The Home Energy Reports have proven results in influencing customer behavior in the reduction of energy usage and is a means to leverage customer participation in other energy efficiency programs offered by both ETG and the New Jersey Clean Energy Program (NJCEP).

At the heart of each report is a "neighborhood comparison," that compares a participating customer's energy use against their neighbor's energy use, so they have meaningful context regarding their overall energy consumption. Comparisons are based on "like" homes and excludes homes that are not the same home type, use a different heating fuel, are not of similar size, are far away, or are vacant. Customers in the test group are provided with an energy efficiency score that are calculated through comparisons with these neighbors.

Energy consumption is monitored for the test group and is measured against a control group who do not receive the reports. The use of test and control groups has proven to be highly successful Worldwide in reducing customer energy usage cost-effectively through information, education, and also by increasing customer participation rates in other energy efficiency programs.

Participating customers are also given the opportunity to access a customized portal, where they can change profile information, track energy usage, access tips, find out more about our other energy-saving programs and learn about rebate opportunities.

All ETG customers have access to and are encouraged to use an Online Home Energy Audit. This interactive tool provides suggestions on how to improve home energy usage. Customers enter specifics about their home and the tool determines where the most energy is being utilized and recommends ways to reduce energy usage.

In addition, a dedicated call center phone number is provided on all reports, where participating customers can ask questions or opt out of the program at any time.

Proven results for the Opower offering show a 60% participation lift in energy efficiency programs and a 5% increase in customer satisfaction. In addition, New Jersey Natural Gas has utilized Opower's offerings since 2010 claiming successful results and South Jersey Gas contracted and successfully launched this offering with Opower in 2015.

The Home Energy Reports and Online Energy Audits recommend other programs to customers such as the ETG Home Energy Assessment & the NJCEP Home Performance with Energy Star Program.

Elizabethtown Gas Residential Home Energy Report (Opower) Program

Delivery Method
The Home Energy Reports and Online Energy Audits are provided by Opower, a company who specializes in behavioral science, data analytics, and user-centric software design, currently working with over 100 utilities in nine countries.
Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)
155,000 Residential Customers in the Test Group / 25,000 Residential Customers in the Control Group
4 Year Budget Information (January 1, 2017 – December 31, 2020)
Program Costs: Total: $3,075,000 ($850,000 PY1; $795,000 PY2; $715,000 PY3; $715,000 PY4) **Call Center Costs:** Total: $154,000 ($42,00 PY1; $42,000 PY2; $35,000 PY3; $35,000 PY4)

Elizabethtown Gas Residential Home Weatherization for Income Qualifed Customers Program

Description Of Program

This program is an energy saving and energy education program provided to those residential customers with low to moderate income who based on household salary, would not qualify for the Comfort Partners Program.

Participants of this program are provided with a free Home Energy Assessment, as well as energy-saving information and measures. A certified contractor will evaluate the home's energy efficiency, provide comprehensive, personalized information that educates customers on their energy usage and educates them on how to save energy daily. If eligible, participants will also be provided with systems testing and the direct install of energy-saving measures (determined on a home-specific basis) which can include:

- A programmable thermostat
- Programmable thermostat education
- Faucet aerators
- Low-flow shower heads
- Pipe wrap insulation
- Air sealing
- Insulation
- Efficient lighting products
- Heating/cooling equipment maintenance
- Combustion safety testing

The maximum approved measures cannot exceed $6000 per home. *Note: Any exceptions made to rectify safety issues *must* have pre-approval from ETG Program Manager prior to completing the project.*

Comfort Partners qualification level includes household income that falls in the category of up to 225% over the Federal Income Poverty Level. The Home Weatherization for Income Qualified Customers Program qualification includes household income that falls in the category of over 225% up to 400% over the Federal Income Poverty Level for the number of family members living in the home. *The Federal Income Poverty Level is updated yearly and Elizabethtown Gas will update our requirements to show the appropriate income levels with each update.*

Gas appliance replacement will be provided to those participants who fail safety testing who are unable to purchase the replacement product on their own. Approved energy efficient gas appliances only will be installed by qualified technicians provided by the program.

Other requirements:

- The customer must also use the home as a primary residence and be the ratepayer of record with the electric or gas utility.
- The customer must be an Elizabethtown Gas customer to qualify for this program.

Elizabethtown Gas Residential Home Weatherization for Income Qualifed Customers Program

Delivery Method
Elizabethtown Gas will partner with Green Life Energy Solutions to provide this offering to the Company's qualified residential customers. Green Life Energy Solutions will provide all in-home work and will also provide income verification, quality control and a phone contact for customer inquiries.
Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)
Total: 200 (50 PY1; 50 PY2; 50 PY3; 50 PY4)
4 Year Budget Information (January 1, 2017 – December 31, 2020)
Total Program Costs: $1,200,000 ($300,000 PY1; $300,000 PY2; $300,000 PY3; $300,000 PY4) Total Program Administrative Fees: $120,000 ($30,000 PY1; $30,000 PY2; $30,000 PY3; $30,000 PY4)

Elizabethtown Gas Residential Financing Program

Description Of Program

This program is designed to provide financing options to eligible residential customers. Many customers want to be energy efficient but don't always have the financial means to install these measures. By providing a financing option, customers will have another alternative to help afford and proceed with energy efficiency projects.

Elizabethtown Gas (ETG) financing will be launched as an off-bill option. The Company reserves the right to change to an on-bill program during the term of this program. Current infrastructure will not currently support on-bill financing and is expected to be available no earlier than PY2.

Financing Terms:
Residential financing terms are as follows:

- $1,000 minimum/$10,000 maximum – 5-year term – 0% interest to the customer
- $1,000 minimum/$15,000 maximum – 7-year term – 4.99% interest to the customer

ETG will work with a third-party vendor who will provide loan approvals, monthly correspondence, debt collection activities, and answer customer inquiries. The third-party vendor will also coordinate contact with a funding source for the loans. ETG will "buy down" the interest rate at the time the loan is approved, providing the customer with the interest rates noted above. ETG will also act at guarantor of the loan in exchange for a significantly reduced interest rate to buy down from. The company expects the loans to secured from the funding source at a rate between 5% and 7%.

Residential Financing Goal:
The goal of the residential financing program is to help customers afford energy efficient measures that will reduce their energy usage and save them money. To be eligible for financing from ETG, a customer must first take advantage of ETG's Home Energy Assessment (HEA) program. Auditors will recommend equipment upgrades, air sealing and insulation, or they may recommend the New Jersey Clean Energy Program (NJCEP) Home Performance with Energy Star (HPwES) Progam depending on the specific needs of the home. Once the auditor provides the detailed and documented list of recommendations, the customer can apply for a loan to cover the costs for these recommended changes.

There are minimum cost requirements to be eligible for an ETG loan. Auditor recommendations must have a minimum cost to the customer of $1,000 to be elible to apply for a loan. A furnace or boiler is eligible for a loan as long as it is combined with another upgrade such as a gas hot water heater or air sealing and insulation.

Residential Equipment Qualifications: Loans will only be granted for recommended projects that promote energy efficient changes to the home. If customers are upgrading equipment, qualifications must match those of the NJCEP program for rebates. Equipment that qualifies for loans under this program include:

- Gas Furnace – AFUE 95% or greater
- Gas Boiler (Hydronic) – AFUE 90% or greater
- Gas Boiler (Steam) – AFUE 82% or greater
- Gas Water Heater – EF .82 or greater
- Gas Water Heater (with Sealed Combustion) – TE 90% or greater
- Gas Water Heater (Power Vented) – EF .67 or greater

Elizabethtown Gas Residential Financing Program

Note:

(1) *The company may also consider complete system replacement as long as there is at least one gas component to this system.*

(2) *Customers who are granted a loan through this program, will not be eligible for energySMART rebates on equipment, but they can still take advantage of the NJCEP offerings.*

Credit Check:

The following criteria (which has not been finalized) must be met in order to qualify for a loan:

- Customer must have an active ETG account in their name
- Minimum FICA score = 640
- No bankruptcy in the last 10 years
- Meets certain debt to credit ratio standards
- Although ETG payment history is not a criteria at this time, the Company reserves the right to impose payment history at any time

Additional Information:

ETG's financing program matches key features of other successful programs run by two New Jersey gas utilities, which now broadens utility financing options to additional NJ residents within our ETG communities. New Jersey Natural Gas (NJNG) and South Jersey Gas (SJG) both offer successful financing programs.

In addition, more customers in the state of New Jersey can take advantage of energy efficiency measures because this loan option at zero percent interest is available to them. The NJCEP offers loans to those customers who are unable to secure a loan through their utility and ETG's financing program adds this option to customers within its territory.

Delivery Method

Selected vendor will provide a turn-key, off-bill financing program for qualifying ETG customers. The vendor will review and approve loan applications based on our agreed-upon credit criteria. The vendor will also secure a capital source through a third party and manage the back office operations of the program including debt collection.

Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)

Total:

2,000 residential participants

Yearly:

500 residential and 100 commercial participants per program year

- Estimated 400 yearly residential loans at 0% & 100 yearly residential loans at 4.99%

4 Year Budget Information (January 1, 2017 – December 31, 2020)

Residential:

$2,268,520 ($552,505 PY1; $502,505 PY2; $517,505 PY3; $696,005 PY4**)

**Included are admin fees ($163,500) that will be incurred in years 5 through 11

Elizabethtown Gas Commercial Financing Program

Description Of Program

This program is designed to provide financing options to commercial customers. Many commercial customers want to be energy efficient but don't always have the financial means to install these measures. By providing a financing alternative, commercial customers will have another option to help better manage their business and afford energy efficiency projects.

Elizabethtown Gas (ETG) financing will be launched as an off-bill option. The Company reserves the right to change to an on-bill program during the term of this program. Current infrastructure will not currently support on-bill financing and is expected to be available no earlier than PY2.

Financing Terms:
Commercial financing terms are as follows:

- $30,000 maximum – 2-year term – 0% interest to the commercial customer

ETG will work with a third-party vendor who will provide loan approvals, monthly correspondence, debt collection activities, and answer customer inquiries. The third-party vendor will also coordinate contact with a funding source for the loans. ETG will "buy down" the interest rate at the time the loan is approved, providing the customer with 0% interest rate on the loan. ETG will act at guarantor of the loan in exchange for a significantly reduced interest rate to buy down from. The company expects the loans to secured from the funding source at a rate between 5% and 7%.

Commercial Financing Goal:
The goal of the commercial financing program is to promote the New Jersey Clean Energy Program (NJCEP) Direct Install Program. Small- or medium-sized ETG commercial customers who qualify for the program are eligible to apply for a loan to cover their 30% of the project costs.

Note: *The project must have a natural gas component included to be considered for a loan.*

Requirements:

- Must have an active ETG commercial account for this business
- The third party vendor will review financial statements and other credit-related requirements to determine credit worthiness
- Although ETG payment history is not a criteria at this time, the Company reserves the right to impose payment history at any time

Additional Information:
ETG's financing program matches key features of other successful programs run by two New Jersey gas utilities, which now broadens utility financing options to additional New Jersey residents within our ETG communities. New Jersey Natural Gas (NJNG) and South Jersey Gas (SJG) both offer successful financing programs.

Elizabethtown Gas Commercial Financing Program

In addition, more customers in the state of New Jersey can take advantage of energy efficiency measures because this loan option at zero percent interest is available to them. The NJCEP offers loans to those customers who are unable to secure a loan through their utility and ETG's commercial financing program adds this option to customers within its territory.

Delivery Method

Selected vendor will provide a turn-key, off-bill financing program for qualifying ETG customers. The vendor will review and approve loan applications based on our agreed-upon credit criteria. The vendor will also secure a capital source through a third party and manage the back office operations of the program including debt collection.

Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)

Total:
400 commercial participants
Yearly:
100 commercial participants per program year

4 Year Budget Information (January 1, 2017 – December 31, 2020)

Total:
$586,640 ($166,140 PY1; $132,340 PY2; $134,300 PY3; $153,860 PY4**)
**Included are admin fees ($19,560) that will be incurred in years 5 through 11

Elizabethtown Gas Commercial Steam Trap Survey and Repair Program

Description Of Program

Steam trap surveys test and document the operational status of steam traps, utilizing both ultrasound and temperature differentials. In steam systems that have not been maintained for 3 to 5 years, between 15% to 30% of the installed steam traps fail allowing live steam to escape into the condensate return system. In systems with a regularly scheduled maintenance program, leaking traps should account for less than 5% of the trap population.

The goal of this program is to incorporate a steam trap survey and repair cycle to a sample population of hospitals, municipalities, and/or schools, who use steam heating to ensure their leaking traps account for no more than 5% of the total number of traps.

A surveyor completes a comprehensive survey and provides a detailed steam-trap functionality report. Survey documentation details a complete trap inventory including location, type, and application engineering. Survey reports also include a full economic analysis (return on investment) and recommendations for overall system improvements. The goal of the report is to document recommendations aimed at improving energy/emission losses, steam generation and distribution, engineering practices/correct applications, health and safety, and heat recovery/return of condensate.

Qualified and fully experienced technicians will repair or replace the defective steam traps as required. Since this program places the building on a yearly maintenance cycle, each year the building is surveyed and repairs are made. It is the cycle of maintenance that reduces the number of failing steam traps yearly, ensuring that ultimately no more than 5% of the trap population fail.

Incentives include:

- Incentive covers 50% of survey costs
- Incentive pays $0.50 per therm saved up to 50% or total project costs

Note: *The project must include a natural gas boiler system to be eligible for this project.*

Elizabethtown Gas will work with the company performing the surveys to identify and recommend hospitals, municipalities, schools, etc.

Delivery Method

Steam trap surveys and the repair/replacement of steam traps will be performed by American Plant Maintenance, Inc., an independent steam trap and repair company . Their independent gives them the ability to perform unbiased surveys and recommend the optimum solution for our customers regardless of the manufacturer.

Estimated 4-Year Program Participants (January 1, 2017 – December 31, 2020)

Total: 70 surveys
PY1 = 10; PY2 = 10 *(from PY1)* add 5; PY3 = 15 *(from PY2)* add 5; PY4 = 20 *(from PY3)* add 5

4 Year Budget Information (January 1, 2017 – December 31, 2020)

Total: $390,000
PY1 = $60,000; PY2 = $90,000; PY3 = $120,000; PY4 = $120,000

Schedule SB-2

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS ENERGY EFFICIENCY PROGRAM ("EEP")

2017 ESTIMATE	***PY1-2017***	***PY2-2018***	***PY3-2019***	***PY4-2020***	**Total**
O&M EXPENDITURES					
Labor (Total)	$ 397,000	$ 405,000	$ 421,873	$ 434,380	$ 1,658,253
*-Labor / Home Energy Report - Opower (30.9%)**	*$ 122,673*	*$ 125,145*	*$ 130,359*	*$ 134,223*	*$ 512,400*
*-Labor / Rebates, Grants, Incentives (14.8%)**	*$ 58,756*	*$ 59,940*	*$ 62,437*	*$ 64,288*	*$ 245,421*
*-Labor / Home Energy Assessments (13.3%)**	*$ 52,801*	*$ 53,865*	*$ 56,109*	*$ 57,773*	*$ 220,548*
*-Labor / Home Weatherization for Income Qualified (11.8%)**	*$ 46,846*	*$ 47,790*	*$ 49,781*	*$ 51,257*	*$ 195,674*
*-Labor / Residential Financing (20.3%)**	*$ 80,591*	*$ 82,215*	*$ 85,640*	*$ 88,179*	*$ 336,625*
*-Labor / Steam Trap Survey and Repair Program (3.7%)**	*$ 14,689*	*$ 14,985*	*$ 15,609*	*$ 16,072*	*$ 61,355*
*-Labor / Commercial Financing (5.2%)**	*$ 20,644*	*$ 21,060*	*$ 21,937*	*$ 22,588*	*$ 86,229*
Outside Consultant	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 60,000
Customer Education, Outreach	$ 405,000	$ 405,000	$ 405,000	$ 405,000	$ 1,620,000
Home Energy Report - Opower	$ 850,000	$ 795,000	$ 715,000	$ 715,000	$ 3,075,000
Call Center Support	$ 42,000	$ 42,000	$ 35,000	$ 35,000	$ 154,000
Program Evaluation	$ -	$ -	$ -	$ 40,000	$ 40,000
TOTAL O&M	**$1,709,000**	**$1,662,000**	**$1,591,873**	**$1,644,380**	**$ 6,607,253**

**These allocations represent a pro rata share of each program based on program expenditures; the overall cost of the labor however, remain fixed over the 4-year term of the EEP program.*

PROGRAM EXPENDITURES					
Residential Gas HVAC/WH :					
Rebates, Grants, Incentives	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 1,600,000
-Rebate Processing	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 56,000
Home Energy Assessments	$ 372,800	$ 372,800	$ 372,800	$ 372,800	$ 1,491,200
Home Weatherization for Income Qualified	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 1,200,000
-HW for IQC Administrative Fees	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 120,000
	$1,116,800	**$1,116,800**	**$1,116,800**	**$1,116,800**	**$ 4,467,200**
Residential Financing:					
-Origination Fees	$ 157,500	$ 157,500	$ 157,500	$ 157,500	$ 630,000
-Loan Servicing Costs	$ 8,105	$ 23,105	$ 38,105	$ 206,605	$ 275,920
-Prepaid Interest	$ 311,900	$ 311,900	$ 311,900	$ 311,900	$ 1,247,600
-Bad Debt	$ -	$ 10,000	$ 10,000	$ 20,000	$ 40,000
-Start Up Costs	$ 75,000	$ -	$ -	$ -	$ 75,000
	$ 552,505	**$ 502,505**	**$ 517,505**	**$ 696,005**	**$ 2,268,520**
Commercial Gas					
Steam Trap Survey, Cleaning & Repair Pilot Program	$ 60,000	$ 90,000	$ 120,000	$ 120,000	$ 390,000
	$ 60,000	**$ 90,000**	**$ 120,000**	**$ 120,000**	**$ 390,000**
Commercial Financing:					
-Origination Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 200,000
-Loan Servicing Costs	$ 2,240	$ 6,440	$ 8,400	$ 15,960	$ 33,040
-Prepaid Interest	$ 63,900	$ 63,900	$ 63,900	$ 63,900	$ 255,600
-Bad Debt	$ -	$ 12,000	$ 12,000	$ 24,000	$ 48,000
-Start Up Costs	$ 50,000	$ -	$ -	$ -	$ 50,000
	$ 166,140	**$ 132,340**	**$ 134,300**	**$ 153,860**	**$ 586,640**
Total Program Expenditures	**$1,895,445**	**$1,841,645**	**$1,888,605**	**$2,086,665**	**$ 7,712,360**
Total RGGI Expenditures	**$3,604,445**	**$3,503,645**	**$3,480,478**	**$3,731,045**	**$ 14,319,613**

Estimated Direct Full-Time Employee ("FTE") Employment Data

RGGI	Program Admin	Residential (HVAC & WH)	Home Energy Assessment	Home Energy Report	Home Weatherization for Income Qualified	Residential & Commercial Financing	Steam Trap Survey and Repair
Yearly participants	N/A	1500	700	155,000	50	550	10-25
Yearly man-days per job	N/A	2.25	0.125	N/A	1.0	N/A	3
Yearly work-days needed	N/A	3375	263	N/A	50	N/A	60
Available work days per year	227	227	227	N/A	227	N/A	227
Total estimated jobs created	1.5	15	2	0	1	.5	.5
• ETG Positions	1.5	0	1	0	.25	.25	0
• ETG Audit Contractor	0	0	0	0	0	0	0
• Contractor Positions	0	15	1	0	.5	0	.5

Total Estimated Jobs Created:	#
• ETG Jobs	3
• ETG Direct Contractor Jobs	0
• Contractor Jobs	17
Total:	20

Comparison of Energy Efficiency Programs Amongst Investor-Owned New Jersey Gas Utilities*

Overview of Residential Programs

Gas Utility	Rebates	Home Energy Assessment	Home Energy Report	Home Weatherization for Income Qualified	Financing (On-bill)	Financing (Off-bill)
ETG	Yes	Yes	Yes	Yes	No	Yes
NJNG	Yes	Yes	Yes	Yes- pilot program	Yes	No
SJG	Yes	Yes	Yes	No	No	Yes

Overview of Commercial Programs

Gas Utility	Rebates	Financing (On-bill)	Financing (Off-bill)	Steam Trap Surveys & Repair
ETG	No	No	Yes	Yes
NJNG	No	Yes	No	No
SJG	No	No	Yes	No

*PSE&G does not offer enhanced rebates and redirects customers to the New Jersey Clean Energy Program site for information on rebates that are available. Therefore, PSE&G is not included in this comparison.

Summary of Residential Offerings

ETG

Elizabethtown offers enhanced rebates of $250 for furnaces and $300 for boilers; $200/$100 for approved water heaters; no audits are required. Or customers can elect to apply for an off-bill financing option for up to $10,000 maximum at 0% APR for five years or $15,000 maximum at 4.99% APR for seven years. Customers have the option to participate in a Home Energy Assessment for $30 which includes the direct install of energy saving measures. Elizabethtown also offers the free Home Weatherization for Income Qualified Customers program for income levels between 225% and 400% over the Federal Poverty Level, which is a unique program in New Jersey.

NJNG

After the installation of NJCEP WARMAdvantage qualifying furnace, boiler or hot water heater, customers can apply for a $500 (furnace/boiler) or $100 (hot water heater) NJNG enhanced rebate, following a required free home energy analysis. If a customer installs a qualifying water heater in addition to a qualifying furnace or boiler, they can apply for the $600 rebate or apply for up to $6,500 at 0% APR for five years through an NJNG on-bill repayment program.

SJG

South Jersey Gas provides $500 enhanced rebates or they can apply for off-bill financing for up to $6,500 at 0% APR for five years, for customers who install NJCEP qualifying combination gas furnace and water heater and combination gas boiler and water heater. The incentive requires a free home energy audit to be completed before the customer applies for the rebate.

Summary of Commercial Offerings

ETG

Elizabethtown offers a unique Steam Trap Survey and Repair Program for hospitals/municipalities which is a unique option in New Jersey. In addition, Elizabethtown offers an off-bill financing option to finance at 0% APR for two years the 30% business liability for the NJCEP Direct Install Program.

NJNG

NJNG does not provide enhanced rebates for the installation of energy efficient equipment in commercial buildings. The utility website redirects customers to the NJCEP SmartStart Buildings rebate program.

SJB

South Jersey Gas provides enhanced incentives for customers who qualify for the NJCEP Direct Install Program and NJCEP SmartStart Program. The NJCEP Direct Install Program pays 70% of the cost of all qualifying upgrades up to $125,000. South Jersey Gas finances the remaining 30% at 0% financing for two years with an unsecured loan. The NJCEP SmartStart Buildings Program provides financial incentives for qualifying equipment dependent on type, size, and efficiency. Through South Jersey Gas, this program includes an unsecured loan at 0% financing over five years up to $100,000.

CONSERVATION TIPS

Conserve energy use and save money

energySMART
An Elizabethtown Gas program

HEATING & COOLING

- ☐ Install a programmable thermostat to automatically adjust your home's temperatures for when you're away or at work. No more turning the dial up and down... just set it and forget it.
- ☐ Program your thermostat for 78°F in the summer and 68°F in the winter.
- ☐ Clean or replace air filters regularly.
- ☐ Get a seasonal heating system checkup to ensure system is operating at peak performance.
- ☐ Add insulation to the attic.
- ☐ Keep furniture, drapes, stuffed animals and other objects from blocking your heating source.
- ☐ Keep shades open on the sunny side of the house during winter and closed during summer.

WATER HEATING

- ☐ Lower your water heater's temperature setting to 120°F.
- ☐ Adding insulation to your water heater and any exposed pipes can knock up to 15% off the costs of heating water. Never put insulation on the top or near the bottom of the heater, wrap around the sides of the water heater.
- ☐ Fix leaky faucets and install faucet aerators and low flow showerheads.
- ☐ Time your showers to 4-5 minutes. Shortening your shower time by 1-2 minutes can save about 150 gallons of water per month.
- ☐ Use the proper water level setting on your clothes washer for the size load of clothes and use cold water whenever possible.

COOKING

- ☐ Match the cooking method to the meal – small burner for small pan (for example, a 6" pan over an 8" burner wastes 40% of the heat), etc.
- ☐ Keep bottom of pan and burner surfaces clean to reduce the energy needed to heat food.
- ☐ Minimize the number of times you open an oven door during cooking. Each time it's opened, you lose between 25-50°F.
- ☐ Turn off heat in oven just before food is done.

Elizabethtown Gas®
An AGL Resources Company

For more ways to save visit
elizabethtowngas.com/energysmart

EFFICIENCY MADE EASY

Reduce your energy use and save on your natural gas bill

ENERGY-SAVING OPPORTUNITIES

Elizabethtown Gas is proud to offer energySMART, our energy efficiency program designed to help you conserve energy, reduce your carbon footprint and save on your energy bills without sacrificing comfort, style or convenience.

Our energySMART rebates are an enhancement to WARMAdvantage rebates from New Jersey's Clean Energy Program for the purchase and installation of new, high-efficiency natural gas equipment. You can save hundreds, not to mention the energy savings you'll realize by upgrading to high efficiency equipment. We're helping to make efficiency affordable!

		energySMART An Elizabethtown Gas program Rebates†	New Jersey's cleanenergy program Rebates†	Your Total Cash Back
HEATING	**Furnace - Tier 1** AFUE* 95% or greater	$250	$250	Up to $500
HEATING	**Furnace - Tier 2** AFUE 97% or greater	$250	$500	Up to $750
HEATING	**Boiler - Hydronic** AFUE 90% or greater	$300	$300	Up to $600
HEATING	**Boiler - Steam** AFUE 82% or greater	$300	$300	Up to $600
WATER HEATING	**Gas Water Heater** EF* .82 or greater	$200	$500	Up to $700
WATER HEATING	**Gas Water Heater** TE* 90% or greater with sealed combustion	$200	$500	Up to $700
COMBINATIONS	**Furnace and Water Heater Combination** Qualifying gas furnace and either: • A qualifying standalone water heater • OR an indirect-fired water heater attached to the qualifying furnace	$450	$1,000** Best Values	Up to $1,450
COMBINATIONS	**Boiler and Water Heater Combination** Qualifying boiler and water heating as noted below: • Integrated water heating and boiler unit (CombiBoilers) • OR a qualifying stand alone water heater • OR an indirect water heater attached to the qualifying boiler	$500	$900	Up to $1,400

* AFUE (Annual Fuel Utilization Efficiency), EF (Energy Factor), TE (Thermal Efficiency). Ratings for residential tank-less or commercial grade tank style gas water heaters. Power vent and heat pump water heater rebates are applicable to the New Jersey Clean Energy Program only.

** Tier 2 qualifying gas furnaces as noted above and either attached to a qualifying standalone water heater OR an indirect-fired water heater are eligible for a $1,000 rebate.

† **Effective August 1, 2015.** Restrictions apply. See **elizabethtowngas.com/energysmart** for terms and conditions

GETTING YOUR REBATE

After you've purchased qualifying equipment, simply download, complete and submit the NJCEP WARMAdvantage rebate form available at **elizabethtowngas.com/energySMART** or **njcleanenergy.com**.

Elizabethtown Gas will be notified by NJCEP of receipt of your approved application and we will process your energySMART rebate at that time. Please allow 8 to 12 weeks for receipt of your rebates.

Elizabethtown Gas customers who are approved for an energysmart rebate will also receive a FREE cost cutter weatherization kit mailed directly to your home. It's just another way to ensure energy efficiency and improve your comfort at home.

Questions about rebates?

800.242.5830
elizabethtowngas.com

Elizabethtown Gas®
An AGL Resources Company

energySMART
An Elizabethtown Gas® program

Elizabethtown Gas Payment Processing Activities

Statement of Work

June 1, 2014

This Statement of Work ("SOW") is an exhibit to and a part of the certain Master Services Agreement (the "Agreement") entered into by and between AGL Services Company and Parago Promotional Services, Inc. ("Contractor"), effective as of June 1, 2014. This SOW will be effective as of June 1, 2014 (the "Effective Date") only when signed by Pivotal Utility Holding, Inc. d/b/a Elizabethtown Gas Company ("Company") and Contractor. This SOW may be amended only as provided for in the Agreement. Capitalized but undefined terms shall have the meanings set forth in the Agreement.

1 Term and Termination The Term of this SOW shall begin on June 1, 2014 and continue until August 31, 2017. This SOW may be extended past the termination date upon mutual written agreement from both parties. Company or Contractor may terminate this SOW at any time pursuant to the Agreement.

2 Description of Service. This SOW details the scope of services (the "Services") to be provided by Contractor and deliverables to be created (the "Deliverables") as Contractor assists Company with payment processing (the "Project"). Capitalized terms used but not defined herein shall have the meanings ascribed to them in the Agreement.

2.1 Project Summary

Contractor shall provide processing and incentive payment services for consumer submissions based on a monthly listing received from the New Jersey Clean Energy Program (NJCEP)/Honeywell, also known as the WarmAdvantage Program. Honeywell is the program implementer and will approve all NJCEP applications – verifying supporting documentation and qualifying the measures. The Company rebate is an enhancement to the NJCEP WarmAdvantage rebate.

2.2 Location & Subcontractors

The payment processing shall take place at Contractor offices and call center locations provided below. All payment-processing activities done by Contractor and Contractor's subcontractors pursuant to this SOW shall be conducted within the United States, but subject to such limitation Company will not unreasonably deny approval of additional subcontractors and locations.

Contractor locations:

SG&A		
Parago, Inc.	700 State Highway 121 Bypass, Suite 200 Lewisville, TX 75067	SG&A

Printing Facilities		
FiServ Output Solutions	13100 N. Promenade Blvd., Stafford TX 77477	Printing

2.3 **Project Timeline**

- September 26, 2014 Initial File Receipt Date

3 Services Overview.

3.1 **Project Summary**

Contractor shall provide payment processing and payment services and manage and track incentive data and payment processing for the Company's residential rebate program. Company payments are delivered through a monthly electronic listing from NJCEP/Honeywell. Contractor shall be responsible for the timely payment of qualifying and approved incentives to Company's customers as described in this SOW.

3.2 **Monthly NJCEP/Honeywell Listing and Incentive Processing**

Expected annual volumes: 1,200 residential check payments.

Contractor shall be responsible for timely and accurate payment of qualifying and approved incentives to Company's customers. Contractor's responsibilities in processing incentives are as follows (together with such ancillary services that a reasonable person would understand to be included among Contractor's processing services):

A. An electronic approved payment file will be provided by Company each month.
B. Provided that Company has complied with the check funding requirements of this SOW, Contractor is responsible for the processing and mailing of checks, pending sufficient funds are available.
C. Contractor shall be responsible for check generation – including Company branding and listing of the measure the payment represents.
D. No customer service support will be needed.
E. Contractor will provide data transfers to the Company of check issuance data in a format mutually agreed upon by the parties.

3.3 **Company File Processing**

File transfers will be uploaded to Contractor's EFTP site by Company once a month.

3.4 **Customer Service and Call Center Operations**

Company's Energy Connection Center will perform inbound/outbound customer service support. Live operator customer support will be provided by Company Monday - Friday 8:00 A.M. – 5:00 P.M. ET (or such other hours as mutually agreed upon by the parties).

3.5 **Service Levels**

The Service Levels that will govern this SOW are as follows:

Process	Description	Performance Metric
Processing of import files	Time to process records in an import file received from Company and issue a corresponding invoice for check funds	Process records and generate invoice within 8 business days from receipt of import file.
Issuance of checks	Time to process payments and issue checks	Checks will be issued wthin five (5) business days of Contractor's receipt of corresponding check funds.

These Service Levels will be reported on a monthly basis in order to track Contractor's performance conforms to these metrics. Any reporting month that has a Service Level that is not met, will include a root cause analysis report and continuous improvement actions list that Contractor will implement by the subsequent monthly report.

4 Project Personnel.

Name	Role	Office #	Email
Emily Hintz	Director of Client Services	972-538-7213	emily.hintz@parago.com
Randy Fox	Account Manager	972-538-7232	randy.fox@parago.com
Jeremy Jessen	Business Systems Analyst	651762-9700 x437	jeremy.jessen@parago.com
Honey Bansal	Application Engineer	972-538-3995	honey.bansal@parago.com
Miriam Seasock	Client Project Delivery Manager	972-538-7338	miriam.seasock@parago.com

Provided that such replacement does not interfere with the efficient provision of the Services, project personnel may be replaced at the discretion of Contractor or at Company's request.

5 Invoicing

5.1 Contractor shall invoice Company for payments to be made by Contractor pursuant to this SOW ("Face Invoices") and for Contractor's administrative, processing and IT services ("Contractor's Fees") as described in the Fee section of this SOW during the term of this SOW.

5.2 In addition to the Company's standard invoicing requirements, all invoices must also be submitted directly to the Company's designated Project Manager in the format requested by Company. All invoices to the Company's Project Manager must be submitted electronically. Company may request changes to the invoice format during the term of this SOW. Contractor shall comply with all such requests.

5.3 Face Invoices. One Face Invoice is required monthly with each monthly listing.

5.4 Contactor's Fees Invoices. Contractor shall submit all Fees invoices monthly to Company for Contractor's Fees. This may result in multiple invoices that will be sent at one time to Company.

5.5 Invoicing Payment Terms

A. FACE Invoices:

Contractor will issue monthly invoices to Company for Company incentives paid by Contractor. All undisputed invoices for incentive payments are due upon receipt.

B. Fees Invoices:

Contractor will issue invoices for processing fees during the last batch week of the month. Contractor will issue invoices for all other Contractor's Fees during the first batch week of the following month. Invoices to Company shall be paid pursuant to the terms of the Agreement.

Company shall provide Contractor with the purchase order number associated with the Services and Contractor must include purchase order number on invoices.

Contractor shall invoice Company as outlined in the Fee section of this SOW during the term of this SOW. All invoices to the Company's Project Manager must be submitted electronically.

5.6 Invoicing Process

A. Contractor will generate the face invoices based on import file and send to Company for payment.
B. Contractor to send fulfillment file to Contractor's subcontractor for processing following payment – Default payment type is "check" for all measures.
C. Contractor's fulfillment subcontractor to generate and issue check payments

5.7 **Management of Uncashed Check Funds**

Contractor shall provide the following services for uncashed checks issued pursuant to this SOW:

Management of Uncashed Check Funds. Funds for underlying uncashed checks shall be retained by Contractor, until returned by Contractor to Company as provided below. Company will subsequently forward to the relevant state or District of Columbia as required by applicable law.

During the term of this SOW, Contractor shall provide to Company quarterly a report (the "Uncashed Check Report") providing the cumulative number of checks issued for each Company promotion which: (A) have not been cashed, stopped, or reissued, and (B) have been outstanding for more than 120 days, as well as the cumulative face value of such checks (the "Uncashed Check Funds"). During the term of this SOW, Uncashed Check Funds shall be retained by Contractor until returned to Company as follows: once per year, Contractor will return all uncashed check funds associated with checks that remain uncashed (and have not been reissued) which: (a) have been outstanding for thirteen (13) months or longer; and (b) were not previously returned to Company. Company agrees that: (i) it will comply with all escheatment and unclaimed property laws which may apply to the affected uncashed checks and associated recipient payments, and (ii) Company assumes any and all liability related to the affected uncashed checks and related recipient payments under escheatment and unclaimed property law.

6 Fees

6.1 The Fee structure shall be as follows:

6.2 Payment Processing and Payment – Company shall pay Contractor the following unit fees for the processing and payment services described in this SOW, including, without limitation, validating submissions; processing, issuing and mailing payments; providing reports; including email status reporting:

Residential submissions -- $1.50 per check issued

6.3 Account Management Fixed Fee -- $75 per month

6.4 Program Development and Set-up Fee (development and implementation costs for Company processing launch slated for September 1, 2014) -- $5,000.

6.5 IT Support (for Project enhancements requested by Company in writing) -- $150/hr

6.6 Customer Service Support (if requested by Company in writing) – ($0.95 per staffed minute for web chat, email, or live operator telephonic)

Assumptions
Contractor has established scheduled on-line maintenance windows from 11:00 p.m. to 3:00 a.m. (C.T.) each day. Contractor may reasonably modify such window upon two weeks prior written notice to Company. Contractor may, on occasion, perform additional maintenance, upon two (2) weeks' notice to Company. During such maintenance, Contractor reserves the right to take down its server(s), in whole or in part, including those hosting any Contractor web solution, and otherwise block Company and Company's consumers from accessing Contractor software or databases through a web or customer service solution. Contractor shall not be responsible for any damages or costs incurred by Company, if any, for scheduled down time.

8. SSAE 16 Compliance

Contractor warrants and represents that it is and shall remain during the term of this SOW "SSAE 16 Compliant". "SSAE 16 Compliant" means that the hosting services provided herein (including transmission of data) and the controls used therein are in conformance with SSAE 16 and that Contractor has each year received an unqualified independent auditor's report, or a qualified independent auditor's report where the qualifications have subsequently been reasonably addressed by Contractor, regarding same ("Audit Report") and has provided such report to Company each year. In the event that Contractor ceases to be "SSAE 16 Compliant" it shall promptly notify Company. In the event that Contractor: (a) ceases to be "SSAE 16 Compliant", or; (b) fails to provide the annual Audit Report within ten (10) days of Company's request then Company shall have the right, at its sole option, to immediately terminate this SOW and/or exercise the following audit right:

Contractor will provide Company's internal and external auditors access at all reasonable times, subject to reasonable notice, to any facility at which Contractor is providing the services and to data, records, equipment, software, and personnel relating to Contractor's performance of the services, for the purpose of performing audits and inspections of Contractor to verify Contractor's compliance with SSAE 16. Contractor will provide to Company's internal and external auditors, attorneys, accountants and any regulator having jurisdiction over Company such assistance as they reasonably require. Contractor will provide reasonable cooperation to Company or

Company's designees or regulators in connection with audit functions without charge to Company.

Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas Company	**Parago Promotional Services, Inc.**
By:	By: David White
Print Name: Kevin W. Kirby	Print Name: DAVID WHITE
Title: Vice President	Title: EVP, BUSINESS DEVO.
Date: 10/15/14	Date: 10/10/14

KWK 10/13/14

Proposed Allocation of Customer Outreach/Education Funds

Proposed Customer Outreach/Education Budgetary Spend**

Activity	2017	2018	2019	2020
Radio / Digital	$90,000	$90,000	$90,000	$90,000
Consumer Print	$25,000	$25,000	$25,000	$25,000
Bill Inserts	$80,000	$80,000	$80,000	$80,000
Online / Social Media	$45,000	$45,000	$45,000	$45,000
Community Outreach	$30,000	$30,000	$30,000	$30,000
Contractor Outreach	$15,000	$15,000	$15,000	$15,000
Print Materials / Collateral / Signage	$25,000	$25,000	$25,000	$25,000
Direct Mail	$80,000	$80,000	$80,000	$80,000
Promotional Items	$15,000	$15,000	$15,000	$15,000
Total:	**$405,000**	**$405,000**	**$405,000**	**$405,000**

***Proposed budgetary spend is based on current market prices. Elizabethtown Gas reserves the right to change allocation of funds based on economic factors, new or enhanced outreach channels, program participation rate, and market focus.*

AMERICAN PLANT MAINTENANCE LLC

Specializing in Steam Trap & Compressed Gas Surveys

Steam Trap Surveys

Steam trap surveys test and document the operational status of traps, utilizing both ultrasound and temperature differentials. Survey documentation details a complete trap inventory including location, type, and application engineering. Survey reports also include a full economic analysis (return on investment) and recommendations for overall system improvements.

Steam Trap Installation

Steam trap installation is performed by qualified, fully experienced technicians. By utilizing our experienced specialists you avoid post installation problems. Additionally, experienced installation teams ensure minimized downtime. Making use of APM's installation resources allows you to maximize your resources by not taking valuable maintenance or operation personnel off of your core operations.

Steam Traps, Repair Parts & Components

American Plant Maintenance is an independent steam trap survey and repair company. Our business model gives us the ability to perform unbiased steam trap surveys and recommend the optimum solution for our clients regardless of the steam trap manufacturer. When it comes to steam traps we carry all the standard types of steam trap: thermostatic traps, thermodynamic traps, float and thermostatic traps, and inverted bucket traps

Compressed Air Surveys

Compressed air surveys evaluate and document system components, run-times, pressures, uses, and losses in order to identify areas for system improvement. Utilizing ultrasound technology, we will identify, tag and quantify compressed air leaks. Our capabilities for leak detection include compressed air, nitrogen, propane, argon, medical air, etc. Survey reports also include a full economic analysis (return on investment) and calculated costs associated with compressed gas leakage as well as recommendations for system improvements.

Heat Exchanger Maintenance

Heat Exchangers are prone to scale and sediment build up. This buildup drastically reduces the heat exchanger efficiency forcing the use of more power while causing more wear and tear on the system. APM offers cleaning with a biodegradable descaler dissolving scale and sediment approved for disposal to a normal drain. The heat exchanger is pressure tested before and after cleaning to verify integrity.

We supply traps and parts at very competitive prices for every major steam trap manufacturer including ***Armstrong, Barnes & Jones, Bestobell, Dunham Bush, Gestra, Hoffman, Illinois, Mepco, Nicholson, Spirax Sarco, Trane, Tunstall, Velan, Warren Webster, Watson McDaniel, and Yarway***

AMERICAN PLANT MAINTENANCE LLC
256 West Cummings Park, Woburn, MA 01801
Phone: 877-51 TRAPS Fax: 781-281-2429
Email: info@apmnortheast.com

AMERICAN PLANT MAINTENANCE, INC.

Steam Trap Survey Work Scope

1. Evaluate and document trap station noting the following components – isolation valves (inlet and outlet) inlet strainers, blowdown valves on the strainer, outlet check valves (if needed), trap station bypass, test valves or sight glass flow indicator.

2. Tag trap with sequentially numbered stainless steel tag and wire hanger.

3. Document traps location, application, steam pressure, manufacturer, model and technology of trap. Pipe size and trap sizes, connection type, inlet and outlet temperature and comments about existing installation are also documented.

4. Test operational status of trap using a combination of ultrasound and temperature differential.

5. Provide complete report noting entire results of survey, including synopsis of results (Traps tested, leaking, plugged, not in service, etc.)

6. Provide return on investment calculation. This includes the cost of the survey, replacement steam traps for those traps found to be plugged, failed closed, leaking or failed open, estimated labor to install the replacement traps. The return on investment is based on the estimated costs associated with the traps found to be plugged, failed closed, leaking or failed open. Trap applications and specific recommendations for trap and trap station improvements are also included.

7. A detailed formal report outlining findings and recommendations as well as a full inventory of the steam traps is the final product of the steam trap survey. The report includes all of the items above and is available electronically, hard copy or both.

2016 STEAM TRAP EFFICIENCY REPORT

COMPANY A-B-C
ANY TOWN, USA

January 2, 2016

AMERICAN PLANT MAINTENANCE

The Steam Trap & Compressed Air Specialists

American Plant Maintenance LLC
256 West Cummings Park
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Fax 781-281-2429

www.apmne.com - salesadmin@apmnortheast.com

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

American Plant Maintenance performed a steam trap survey at Company A-B-C in Any Town, USA. A one day survey was completed on January 2, 2016. A total of 62 traps are being reported on.

During the steam trap survey, existing trap tag numbers were referenced. Where tags were missing, stainless steel tags were hung on or around the steam traps. The numbers are used for identification purposes.

All steam traps are shown in Table 1 and are sorted by building, floor, and tag number.

Traps that were noted to be in a mode of failure (blowing, leaking or plugged) are listed in Table 2. These traps require immediate attention as they are currently allowing the loss of live steam or not allowing for the proper removal of condensate.

A combination of temperature and ultrasonic testing methods were used in testing the steam traps included in this report.

The Raytek Raynger Model number ST60 was used to measure temperatures. This is a non-contact infrared temperature sensor. Normal use of the Raytek is to measure the inlet and outlet temperatures of the steam trap. This information is used to determine the trap being in service and in some situations, aid in determining the pressure of the system.

The AccuTrak VPE-1000 was used in testing the various steam traps. This testing device uses ultrasound to detect the frequency (ex. 40 kHz) of the flowing medium within the piping around the steam traps. This is registered on the meter in two ways. The first is a digital readout from 0 to 255. The second is an intensity display meter. The higher the indication, the more the meter increases. Adjustable sensitivity is included to handle various pressures. More detailed information regarding this testing method is described in section 1.1.

The goal in testing and the use of each of these pieces of testing equipment is to identify the traps in the steam system that requires repair or replacement.

1.1 TESTING STEAM TRAPS WITH THE ACCUTRAK VPE-1000

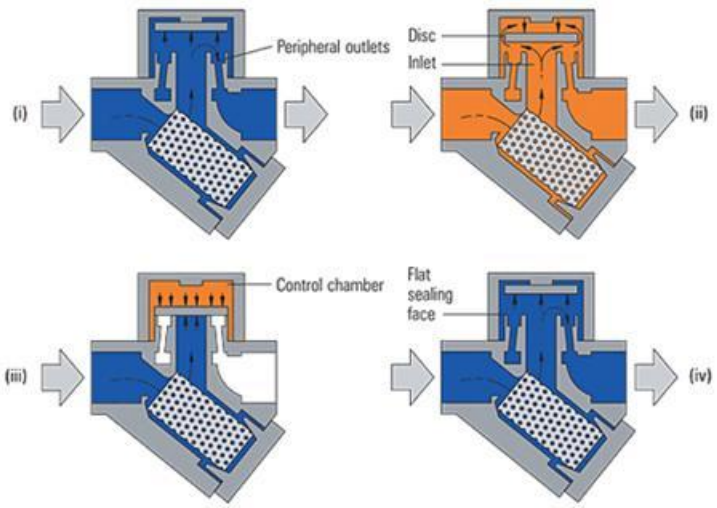
SENSITIVITY ADJUSTMENT: The sensitivity (scale 0-255) should be adjusted based on the system pressure and the trap type. It can also be adjusted while listening to the trap for proper operation.

Intensity Meter

- If the meter intensity cycles high to low and vice versa, the trap is okay.
- If the meter intensity is abnormal, the trap is starting to discharge live steam and should be replaced shortly.
- If the meter intensity is continuously high, large quantities of live steam are being lost and the trap should be replaced immediately.

Digital Readout on specific types of traps

- **Disc Traps**

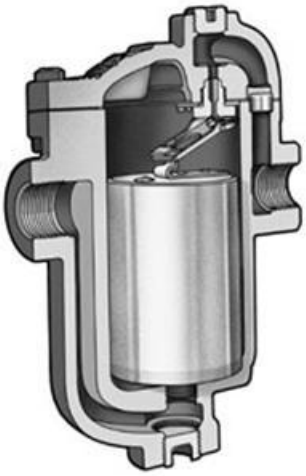


This trap has an intermittent operation, the cycle time usually being 10-20 seconds. The trap discharges condensate followed by a short blast of live steam before the disc re-seats.

When the disc trap is operating correctly, the VPE-1000 will give a zero reading when the disc is sealed, followed by a reading of up to 125 during discharge, prior to a brief reading of 200-255 before the disc reseats. The trap has two modes of failure:

1. Failure of the inner-sealing ring causes continuous loss of live steam superimposed on normal cycling. The VPE-1000 shows a continuously high reading with short kicks as the trap cycles.

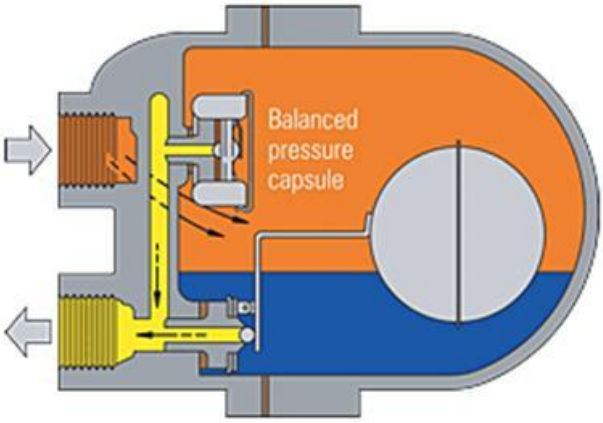
2. Failure of the outer seal ring causes rapid cycling. This is the most common mode of failure, and the deterioration of the trap can be detected by the frequency of cycling. In extreme cases, the trap will sound like a motorcycle engine. If the cycle time is less than 5 seconds, the trap should be regarded as having failed.



- **Inverted Bucket Traps**

  This type of trap is intermittent in operation and should cycle regularly at intervals depending on condensate load and size of bucket. Under acceptable operation, the VPE-1000 gives zero or very low readings followed by a reading of 0 to 255 during discharge. Under failed conditions, the VPE-1000 gives a continuous high reading.

- **Float & Thermostatic Traps**



These types of traps discharge continuously under load but at very low loads may become cyclic. Under acceptable operation, the VPE-1000 gives continuous readings.

This type of trap has three modes of failure:
1. Failure of the valve seat gives a continuous and high reading.
2. Failure of the air vent element also gives continuous high readings.
3. Collapsed float-in this mode the trap will remain closed permanently and the VPE-1000 will not give any reading since the float trap will be completely cold.

- **Bimetallic Traps, Bellows and Capsule Traps**

  These types of traps discharge continuously except at low loads when they can become cyclic. Under acceptable operation, the VPE-1000 gives low readings in the 0-100 range. Under failed conditions, the VPE-1000 gives a continuous and high reading.

Potential Losses:

The loss of steam energy due to failed traps can cause substantial and continuous wasting of energy dollars. Unfortunately failed traps do not provide a visible sign of their internal condition, making it difficult for facility maintenance personnel to identify problems. While failed traps may go un-noticed, internal trap leaks continue wasting energy. Below is a sample energy cost calculation for a single "Blowing" trap at your facility.

Calculation 1: Cost of Loss of Live Steam

Steam Loss Data								
Avg Size of Leak (dia):	0.250	in.		Hours/Day:	24		# Bad Traps:	1
Steam Pressure:	**5**	psi		Days/Year:	365		Steam Cost:	$15 /1000 lb
Steam Loss Calculations:								
Amount Lost:	29.85	lb/hr	X	24	hrs/day	=	716.292	lb/day
Daily Cost:	716.292	lb/day	X	$15.00	Steam cost	=	$10.74	Cost/day
Total Est. Loss Per Year:	$10.74	Cost /day	X	365	days/yr	=	$3,921.70	Loss/year
Annual Loss:	$3,921.70	Loss/year	X	1	trap	=	**$3,921.70**	Annual loss

To calculate the potential losses suffered from failed steam traps, Napier's Formula is used {Steam Flow (lb/hr) = 24.24 x Pa x D^2}. Annual losses are calculated taking into consideration the pressure, application, failure mode, and orifice size of the trap. For example, a drip leg is operational 24/7 when a system is in operation and a unit heater or radiator is estimated to run sixteen hours a day during the seven month heating cycle. An orifice is not typically wide open, to be conservative a 33% reduction in the losses is figured into the calculation. The above calculation is based on a blowing trap with no additional restrictions to the orifice resulting in $3,922 of annual losses. The calculated losses for a blowing trap have been conservatively calculated at $2,588 annually.

2. ACKNOWLEDGEMENTS

American Plant Maintenance would like to express our sincere appreciation for the hospitality and cooperation received from all the personnel at Company A-B-C, especially Mike for his assistance and guidance during this survey.

We would like to thank Your Name Here for giving American Plant Maintenance the opportunity to work with Company A-B-C in maintaining their steam trap systems. Making steam trap surveys part of your annual maintenance program will ensure your steam trap system is running efficiently and will minimize your cost from steam losses.

Thank you for your confidence in our ability to serve you. We welcome the opportunity to assist you in the future and look forward to a continuing relationship.

The survey was conducted by:

American Plant Maintenance LLC

Mr. Jeremy Short
Field Service Engineer

This report was prepared by:

American Plant Maintenance LLC.

Mr. Collin McGeary
Assistant Engineering Manager

This report was reviewed & approved by:

American Plant Maintenance LLC

Mr. Eric Honan, C.E.M
Engineering Manager

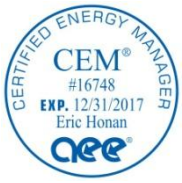


Table 1: All Steam Trap Survey Information

3. GATHERED DATA

Table 1: All Steam Trap Survey Information Sorted by Trap Tag Number

Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Type of Trap	Mfr.	Model	Pipe Size	System Press (PSI)	Temp °F In	Temp °F Out	Result	Comments
100201	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 25, 0-5'	TS-AN	Dunham Bush	1E	1/2"	5	219	210	B	Thermostatic Radiator Valve.
100202	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 40, 0-5'	TS-AN	Spirax Sarco	RTA-125	3/4"	5	214	199	OK	Thermostatic Radiator Valve. Radiator Valve Broken Off.
100203	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 75, 0-5'	TS-ST	Barnes & Jones	122S	1/2"	5	223	195	OK	Thermostatic Radiator Valve. Radiator Valve Leaking.
100204	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 93, 0-5'	TS-AN	Barnes & Jones	134A	3/4"	5	215	208	L	Thermostatic Radiator Valve.
100205	Radiator Trap	Bldg 1 / 1st / Warehouse	Main Aisle, 0-5'	TS-AN	Mepco	2E	3/4"	5	75	75	RIP	Thermostatic Radiator Valve. Suply And Return For Radiator Cut From System.
100206	Radiator Trap	Bldg 1 / 1st / Warehouse	Main Aisle, 0-5'	TS-AN	Dunham Bush	2E	3/4"	5	216	199	OK	Manual Radiator Valve.
100207	Radiator Trap	Bldg 1 / 2nd / Warehouse	By West Entrance Door, 0-5'	TS-AN	Spirax Sarco	B2	H"	5	220	227	OK	Pneumatic Radiator Valve.
100208	Radiator Trap	Bldg 1 / 2nd / Warehouse	Main Aisle, 0-5'	TS-AN	Barnes & Jones	12A	1/2" x 3/4"	5	221	209	L	Pneumatic Radiator Valve.
100252	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above A Boiler On Catwalk, Above 15’	IB	Spirax Sarco	B1H-180	3/4"	125	327	199	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100253	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above Boiler A At Catwalk, Above 15’	FT	Spirax Sarco	FT15	3/4"	125	352	213	L	Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation. PMO Issue.
100254	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above Boiler B At Catwalk, Above 15’	IB	Armstrong	811	3/4"	125	323	200	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100255	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above Boiler B On Catwalk, 5-10'	IB	Spirax Sarco	B1H-180	3/4"	125	120	120	NIS	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation. Boiler Offline For Service.

Result Key: OK = Okay B= Blowing L= Leaking P= Plugged NIS= Not In Service LBD= Leak By Design NA= Not Accessible RIP= Retired In Place
Trap Type Key: IB=Inverted Bucket VIB=Vertical Inverted Bucket FT=Float & Thermostatic BM=Bimetallic TD=Thermodynamic OR=Orifice
TS=Thermostatic AN=Angle ST=Straight LH=Left Hand RH=Right Hand

Company A-B-C **2016 - Steam Trap Efficiency Report**

Table 1: All Steam Trap Survey Information

Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Type of Trap	Mfr.	Model	Pipe Size	System Press (PSI)	Temp °F In	Temp °F Out	Result	Comments
100256	Drip Leg	Bldg 2 / 1st / Boiler Rm	On Catwalk At PRS On Side Of DA Tank, Above 15’	FT	Spirax Sarco	FT125	3/4"	15	232	202	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100257	Heat Exchanger	Bldg 3 / 1st / Mech Rm 7	At Hydronic HEX's Above Blue Pumps, 5-10'	IB	Armstrong	882	3/4"	25	151	148	OK	Inlet Isolation, Strainer, Blowdown.
100258	Heat Exchanger	Bldg 3 / 1st / Mech Rm 7	Back Right Corner At Hydronic HEX's Above Blue Pumps, 5-10'	IB	Armstrong	883	1 1/4"	25	148	139	OK	Inlet Isolation, Strainer, Blowdown, Outlet Isolation.
100259	Heat Exchanger	Bldg 3 / 1st / Mech Rm 7	Back Right Corner At Hydronic HEX's Above Blue Pumps, 5-10'	FT	Spirax Sarco	FTB-175	1 1/2"	25	185	167	OK	Inlet Isolation, Strainer, Blowdown, Outlet Isolation.
100260	Heat Exchanger	Bldg 3 / 1st / Mech Rm 7	Back Right Corner At Hydronic HEX's Above Blue Pumps, 5-10'	FT	Spirax Sarco	FTB-175	1 1/2"	25	136	134	OK	Inlet Isolation, Strainer, Blowdown, Outlet Isolation.
100261	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	TD	Spirax Sarco	TD52	1/2"	125	256	215	L	Bypass, Inlet Isolation, Strainer, Blowdown, Outlet Isolation.
100262	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	FT	Spirax Sarco	FT30	1"	25	256	209	L	Inlet Isolation, Outlet Isolation. Trap Not Level.
100209	Unit Heater	Bldg 11 / 1st / Mech Rm 5	Back Right Above Condensate Station, 5-10'	FT	Hoffman	FT015H	3/4"	10	221	195	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100210	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Back Right On Condensate Station, 0-5'	IB	Spirax Sarco	B1H-125	1/2"	75	300	194	OK	Inlet Isolation, Check Valve, Outlet Isolation.
100211	Air Handling Unit	Bldg 11 / 1st / Mech Rm 5	Front Of AHU 11-B, 0-5'	FT	Hoffman	FT015H	1 1/2"	10	231	201	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100212	Air Handling Unit	Bldg 11 / 1st / Mech Rm 5	Front Of AHU 11-B, 0-5'	FT	Hoffman	FT015H	1 1/2"	10	237	199	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100213	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Front Right Of Condensate Pump Station, 0-5'	IB	Spirax Sarco	B1H-125	1/2"	125	313	209	L	Inlet Isolation, Outlet Isolation. PACM At Unions.
100214	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Left Above Condensate Pump, 5-10'	FT	Hoffman	FT015H	3/4"	10	229	200	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.

Result Key: OK = Okay B= Blowing L= Leaking P= Plugged NIS= Not In Service LBD= Leak By Design NA= Not Accessible RIP= Retired In Place
Trap Type Key: IB=Inverted Bucket VIB=Vertical Inverted Bucket FT=Float & Thermostatic BM=Bimetallic TD=Thermodynamic OR=Orifice TS=Thermostatic AN=Angle ST=Straight LH=Left Hand RH=Right Hand

Company A-B-C **2016 - Steam Trap Efficiency Report**

Table 1: All Steam Trap Survey Information

Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Type of Trap	Mfr.	Model	Pipe Size	System Press (PSI)	Temp °F In	Temp °F Out	Result	Comments
100215	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Behind Condensate Pumps, 0-5'	FT	Spirax Sarco	IFT14	3/4"	10	178	176	OK	Test Valve, Outlet Isolation.
100216	Air Handling Unit	Bldg 11 / 1st / Mech Rm 5	On Left Side Of AHU 11-1, 0-5'	FT	Spirax Sarco	FT15	1 1/2"	10	237	201	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100217	Air Handling Unit	Bldg 11 / 1st / Mech Rm 5	On Left Side Of AHU 11-1, 0-5'	FT	Spirax Sarco	FT15	1 1/2"	10	242	207	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100218	Drip Leg	Bldg 11 / 1st / Mech Rm 5	On Left Side Of AHU 11-1, Above 15’	FT	Spirax Sarco	FTI-15	3/4"	10	242	200	OK	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100219	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Behind AHU 11-1, 0-5'	FT	Spirax Sarco	IFT14	1/2"	10	216	191	OK	Test Valve, Outlet Isolation.
100220	Drip Leg	Bldg 11 / 1st / Mech Rm 5	20' Downstream From PRS, Above 15’	IB	Armstrong	811	3/4"	10	236	185	OK	Bypass, Inlet Isolation, Strainer, Outlet Isolation.
100221	Humidifier	Bldg 11 / 1st / Mech Rm 5	20' Downstream From PRS, Above 15’	FT	Armstrong	B3	3/4"	10	216	208	L	Bypass, Inlet Isolation, Strainer, Outlet Isolation.
100222	Humidifier	Bldg 11 / 1st / Mech Rm 5	20' Downstream From PRS, Above 15’	FT	Armstrong	B3	3/4"	10	210	194	OK	Bypass, Inlet Isolation, Strainer, Outlet Isolation.
100223	Pressure Operated Pump	Bldg 11 / 1st / Mech Rm 5	Pump Skid Right Corner, 0-5'	POP	Spirax Sarco	PPC	3" x 2"	75	315	172	OK	Inlet Isolation, Strainer, Outlet Isolation.
100224	Pressure Operated Pump	Bldg 11 / 1st / Mech Rm 5	Pump Skid Right Corner, 0-5'	POP	Spirax Sarco	PPC	3" x 2"	75	300	172	OK	Inlet Isolation, Strainer, Outlet Isolation.
100225	Drip Leg	Bldg 11 / 1st / Mech Rm 5	To Left On Humidifier, 0-5'	FT	Hoffman	FT015H	3/4"	10	225	215	B	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation. Inlet Isolation Valve Leaking.
100226	Humidifier	Bldg 11 / 1st / Mech Rm 5	To Right Under Humidifier, 0-5'	FT	Mepco	40-515	1 1/4"	10	235	187	OK	Inlet Isolation, Strainer, Blowdown, Check Valve.
100227	Air Handling Unit	Bldg 11 / Mezzanine / Mech Rm 5	Above AHU 11-C Return Air Duct, Above 15’	FT	Armstrong	B3	3/4"	10	210	196	OK	No Components.

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Company A-B-C **2016 - Steam Trap Efficiency Report**

Table 1: All Steam Trap Survey Information

Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Type of Trap	Mfr.	Model	Pipe Size	System Press (PSI)	Temp °F In	Temp °F Out	Result	Comments
100228	Drip Leg	Bldg 11 / Mezzanine / Mech Rm 5	Above AHU 11-C Return Air Duct, Above 15’	IB	Armstrong	811	3/4"	10	228	194	OK	Inlet Isolation, Strainer, Check Valve, Outlet Isolation.
100229	Humidifier	Bldg 11 / Mezzanine / Mech Rm 5	Between AHU 11-C Return And Supply Ducts, Above 15’	FT	Armstrong	B3	3/4"	10	235	196	OK	Strainer, Blowdown.
100230	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	FT	Spirax Sarco	FT15	1 1/2"	10	220	215	B	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation. Trap Installed Upsidedown.
100231	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	FT	Spirax Sarco	FT15	1 1/2"	10	221	213	B	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation. Trap Installed Upsidedown.
100232	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-B, 0-5'	FT	Spirax Sarco	FT15	2"	10	177	161	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100233	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-B, 0-5'	FT	Spirax Sarco	FT15	2"	10	150	140	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100234	Drip Leg	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm Behind HEX-11-B, 5-10'	FT	Spirax Sarco	FTI-15	3/4"	10	244	186	OK	Bypass, Inlet Isolation, Strainer, Blowdown, Outlet Isolation.
100235	Drip Leg	Bldg 11 / Sub Basement / Mech Rm 2	AHU-2, 5-10'	FT	Hoffman	FT015H	1"	12	237	201	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100236	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-2, 0-5'	FT	Hoffman	FT015H	3/4"	12	76	76	NIS	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation. Coil Removed For Service.
100237	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-2, 0-5'	FT	Hoffman	FTI-125H	3/4"	12	76	76	NIS	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation. Coil Removed For Service.
100238	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-3, 0-5'	FT	Hoffman	FT-125H	1"	12	161	146	OK	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100239	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-3, 0-5'	FT	Hoffman	FT015H	1"	12	75	75	P	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.

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Company A-B-C **2016 - Steam Trap Efficiency Report**

Table 1: All Steam Trap Survey Information

Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Type of Trap	Mfr.	Model	Pipe Size	System Press (PSI)	Temp °F In	Temp °F Out	Result	Comments
100240	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-4, 0-5'	FT	Hoffman	FT-125H	3/4"	12	90	90	NIS	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation. Not Calling. Temperature Critical Area.
100241	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-4, 0-5'	FT	Hoffman	FT-125H	3/4"	12	90	90	NIS	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation. Not Calling. Temperature Critical Area.
100242	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-5, 0-5'	FT	Hoffman	FT125H	3/4"	12	217	206	L	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100243	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-5, 0-5'	FT	Hoffman	FT125H	3/4"	12	195	186	OK	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100244	Drip Leg	Bldg 11 / Sub Basement / Mech Rm 2	AHU-6, 5-10'	FT	Hoffman	FT015H	3/4"	12	229	217	OK	Bypass, Inlet Isolation, Strainer, Blowdown, Check Valve, Test Valve, Outlet Isolation.
100245	Humidifier	Bldg 11 / Sub Basement / Mech Rm 2	AHU-6, 5-10'	IB	Armstrong	1811	3/4"	12	203	179	OK	Inlet Isolation, Check Valve, Test Valve, Outlet Isolation.
100246	Humidifier	Bldg 11 / Sub Basement / Mech Rm 2	AHU-6, 5-10'	IB	Armstrong	1811	3/4"	12	219	197	OK	Inlet Isolation, Check Valve, Outlet Isolation.
100247	Drip Leg	Bldg 11 / Sub Basement / Mech Rm 2	Over Condensate Pumps HPS PRV, 10-15'	OR	Steamsphere	21	1/2"	125	329	217	LBD	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100248	Drip Leg	Bldg 11 / Sub Basement / Mech Rm 2	Over Condensate Pumps MPS PRV, 10-15'	TD	Spirax Sarco	TD52L	1/2"	50	271	204	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100249	Drip Leg	Bldg 11 / Sub Basement / Mech Rm 2	Over Condensate Pumps LPS PRV, 10-15'	FT	Spirax Sarco	FTI-15	3/4"	12	229	189	OK	Inlet Isolation, Strainer, Blowdown, Check Valve, Outlet Isolation.
100250	Pressure Operated Pump	Bldg 11 / Sub Basement / Mech Rm 2	Sarco Pumps Left Of Vacuum Pump, 0-5'	POP	Spirax Sarco	PPC	3" x 2"	125	315	192	OK	Inlet Isolation, Check Valve, Outlet Isolation.
100251	Pressure Operated Pump	Bldg 11 / Sub Basement / Mech Rm 2	Sarco Pumps Left Of Vacuum Pump, 0-5'	POP	Spirax Sarco	PTC	3" x 2"	125	301	193	OK	Inlet Isolation, Check Valve, Outlet Isolation.

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Trap Type Key: IB=Inverted Bucket VIB=Vertical Inverted Bucket FT=Float & Thermostatic BM=Bimetallic TD=Thermodynamic OR=Orifice TS=Thermostatic AN=Angle ST=Straight LH=Left Hand RH=Right Hand

Table 2: Blowing, Leaking, and Plugged Traps

Table 2: Blowing, Leaking, and Plugged Traps from the Survey

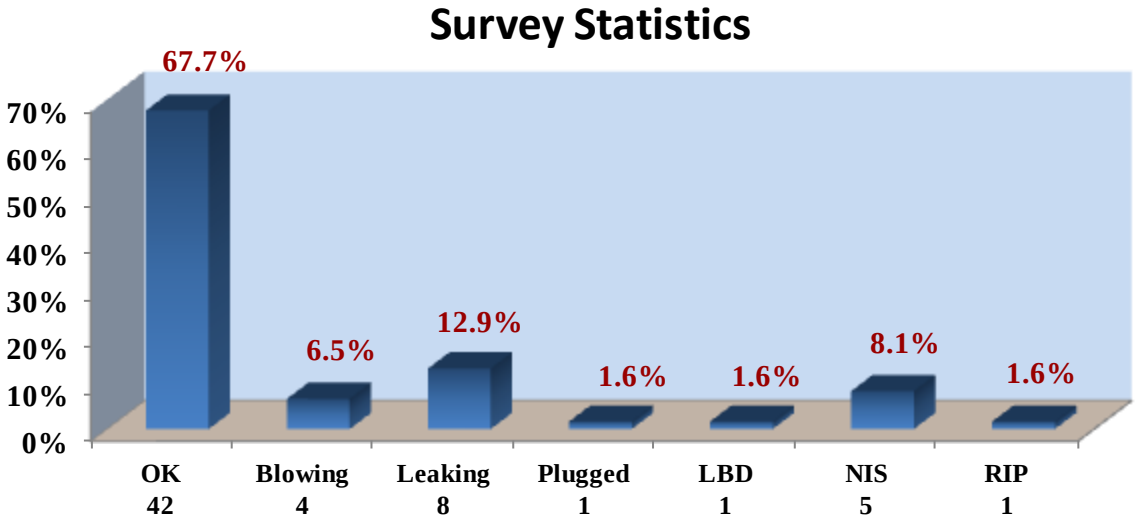
Tag #	Application	Building / Floor / Room	Trap Location, Elevation	Manufacturer	Model	Type of Trap	System Pressure	Pipe Size	Conn Type	Result
100201	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 25, 0-5'	Dunham Bush	1E	TS-AN	5	1/2"	NPT	B
100204	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 93, 0-5'	Barnes & Jones	134A	TS-AN	5	3/4"	NPT	L
100208	Radiator Trap	Bldg 1 / 2nd / Warehouse	Main Aisle, 0-5'	Barnes & Jones	12A	TS-AN	5	1/2" x 3/4"	NPT	L
100253	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above Boiler A At Catwalk, Above 15’	Spirax Sarco	FT15	Float & Thermostatic	125	3/4"	NPT	L
100261	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	Spirax Sarco	TD52	Thermodynamic	125	1/2"	NPT	L
100262	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	Spirax Sarco	FT30	Float & Thermostatic	25	1"	NPT	L
100213	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Front Right Of Condensate Pump Station, 0-5'	Spirax Sarco	B1H-125	Inverted Bucket	125	1/2"	NPT	L
100221	Humidifier	Bldg 11 / 1st / Mech Rm 5	20' Downstream From PRS, Above 15’	Armstrong	B3	Float & Thermostatic	10	3/4"	NPT	L
100225	Drip Leg	Bldg 11 / 1st / Mech Rm 5	To Left On Humidifier, 0-5'	Hoffman	FT015H	Float & Thermostatic	10	3/4"	NPT	B
100230	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	Spirax Sarco	FT15	Float & Thermostatic	10	1 1/2"	NPT	B
100231	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	Spirax Sarco	FT15	Float & Thermostatic	10	1 1/2"	NPT	B
100239	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-3, 0-5'	Hoffman	FT015H	Float & Thermostatic	12	1"	NPT	P
100242	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-5, 0-5'	Hoffman	FT125H	Float & Thermostatic	12	3/4"	NPT	L

Result Key: B= Blowing L= Leaking P= Plugged

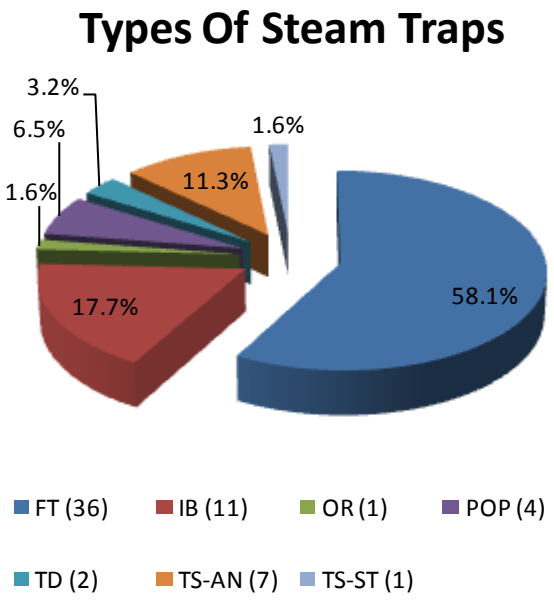
Trap Type Key: IB=Inverted Bucket VIB=Vertical Inverted Bucket FT=Float & Thermostatic BM=Bimetallic TD=Thermodynamic 90RT=Radiator CAPS=Capsule OR=Orifice TS=Thermostatic AN=Angle ST=Straight LH=Left Hand RH=Right Hand

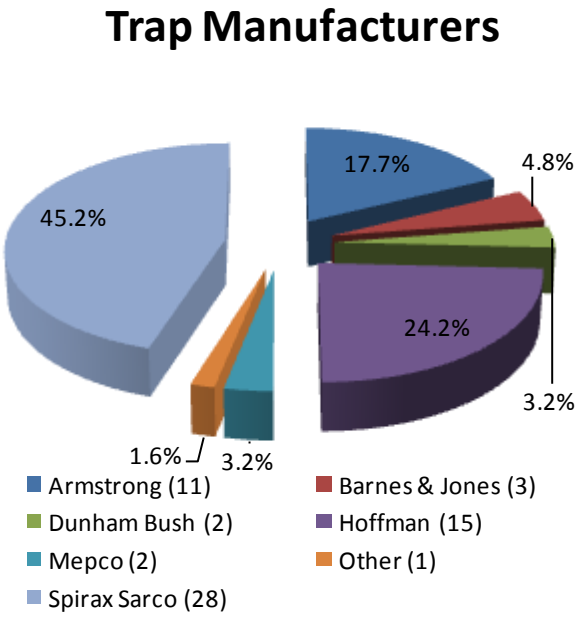
4. RESULTS

The complete survey shown in Table 1 lists a total of sixty two (62) traps. The quantity of blowing, leaking, and plugged traps accounts for about 21% of all the traps and about 24% of the traps tested. The results collected during the survey are shown graphically below.



Types and Manufacturers of traps should be taken into consideration when replacing failed steam traps. By standardizing on a manufacturer and type of trap it reduces the amount of spare parts needed to be kept in inventory for repairs.





The full table of estimated losses is attached as Appendix I. Results of this conservative method have been used in the return on investment calculation below in section 4.1.

4.1 RETURN ON INVESTMENT

The return on investment analysis is based on repairing the blowing, leaking, and plugged steam traps.

The steam trap estimate includes costs to repair or replace the failed steam traps and the labor to complete the installation. The average cost and labor per trap is $496.46.

The total estimate for repairing the traps (including labor) is: $6,454.

The return on investment is 163 days. This estimate uses $39.55 as a daily cost of loss of live steam. These estimates are shown below in Figure 2.

Figure 2: ROI for replacing all steam traps found to be blowing, leaking, and plugged.

Return on investment	Each	13X
Labor (avg.)	$253.85	$3,300
Trap costs (avg.)	$242.62	$3,154
Total Parts & Labor	$496.46	$6,454
Cost per day for failed trap (avg.)	$3.04	$39.55
Return on investment (Days):		**163**

A conservative method has been used to calculate the total estimated steam loss. This calculation is based on an industry standard method of calculating steam losses and accepted by the U.S. Department of Energy. The dominant factors in the formula are the steam pressure, orifice size and mode of failure. Utilizing an estimated steam cost of $15.00 per thousand pounds of steam, calculated annual losses in excess of **$14,400** are being suffered. This is based on the steam traps that were tested and found to be blowing, leaking, and plugged.

5. RECOMMENDATIONS

1. Repair or replace all blowing and leaking steam traps and valves. The costs associated with the loss of live steam are substantial.

2. Repair all plugged or failed closed steam traps. The purpose of the steam traps is to remove condensate buildup. When a trap is plugged or failed in a closed position, this prevents the removal of condensate, which prevents the supply of steam to the equipment. This can lead to water hammer, or inefficient performance of the associated equipment.

3. The radiator valve at station 100202 in the Warehouse in Aisle 40 has broken off and should be replaced to ensure proper temperature control of the space.

4. The radiator valve at station 1003203 in the Warehouse in Aisle 75 is leaking and should be replaced to eliminate the continuing loss of live steam.

5. Steam trap number 100205 is in a high pressure system, but is sized for a low pressure application. As the rated PMO (maximum operating pressure) of a trap increases, the orifice size decreases. With a larger orifice, the steam trap can cycle rapidly leading to premature failure and greater steam losses. This trap should be rebuilt with the appropriate orifice to ensure proper operation of the steam trap.

6. The steam trap at station 100262 in Mech Room 7 is not level and should be repiped in the correct orientation to ensure proper operation of the trap.

7. The inlet isolation valve at station 100225 in Mech Room 5 is leaking and should be replaced to eliminate the continuing loss of live steam and hot condensate. There is possible asbestos containing material covering the valve that will need to be abated prior to repairs.

8. The steam traps at stations 100230 and 100231 in Mech Room 5 were installed upside-down leading to constant blow by. These traps should be repaired and re piped in the correct orientation to ensure proper operation of the steam trap.

9. One orifice trap was found throughout your facility. These traps are designed for operation in a system with a constant pressure and demand. This is not the case in a heating system, especially in New England with temperatures fluctuating daily. When an orifice trap has removed all the condensate at the trap, it allows live steam to flow directly into the condensate system, much the way a failed mechanical or thermostatic trap would. This orifice trap should be replaced with mechanical or thermostatic trap that will stop the flow of steam once condensate is removed. This information is reinforced by the attached Department of Energy alert.

10. There is possible asbestos containing material at the unions at station 100213 in Mech Room 5 that will need to be abated prior to repairs.

11. The insulation of all steam and condensate pipes is strongly recommended due to the great amounts of heat loss that takes place. An un-insulated steam pipe will bring about an increase in steam consumption and a great loss in the thermal energy of the steam.

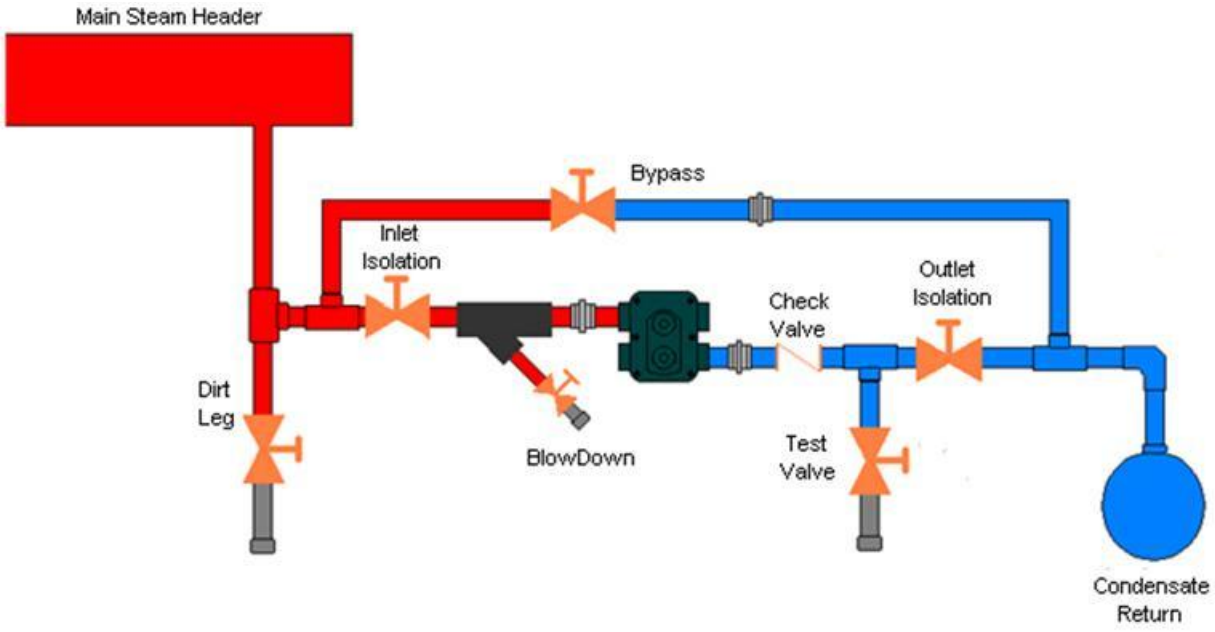
    There is also a safety risk to workers who could accidentally bump into these extremely hot lines, which could possibly burn exposed skin and seriously injure someone. To give you an example, one foot of 1" un-insulated pipe (steam @ 100 PSI with an ambient temperature of 60ºF) will bring about a loss of 326 BTUs/hr. This loss for 6000 working hours is the equivalent of 30 pounds (lbs.) of fuel.

    In addition, the heat energy that the condensate is expending to the atmosphere is going to decrease the temperature of the condensate that is returning to your boiler. This decrease or sub-cooling of your condensate will decrease the plant efficiency of your steam plant.

12. Steam trap testing should continue to be implemented and a preventive maintenance program developed. This will cut down on the cost of the loss of live steam and will allow for better knowledge as to the current and past condition of the traps. Annual trap surveys are recommended as a minimum.

13. All the trap stations were evaluated for the components below.
    - Dirtleg blow down valve
    - Inlet isolation valve
    - Strainer with blow down valve
    - Steam trap
    - Outlet check valve
    - Test valve
    - Outlet isolation valve
    - Bypass (on critical applications)

IDEAL TRAP STATION



APPENDIX 1

COMPANY: Company A-B-C

Result Key
P = Plugged
B = Blowing
L = Leaking

Cost of Steam: $15.00
Survey Date: January, 2016

Losses are determined by the duty cycle of the application

Tag #	Application	Bldg / Floor / Room	Trap Location, Elevation	Mfr	Model	Type	System Pressure	Size	Orifice	Result	Annual Steam Loss
100201	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 25, 0-5'	Dunham Bush	1E	TS-AN	5	1/2"	0.250	B	$502.30
100204	Radiator Trap	Bldg 1 / 1st / Warehouse	Aisle 93, 0-5'	Barnes & Jones	134A	TS-AN	5	3/4"	0.250	L	$165.76
100208	Radiator Trap	Bldg 1 / 2nd / Warehouse	Main Aisle, 0-5'	Barnes & Jones	12A	TS-AN	5	1/2" x 3/4"	0.250	L	$165.76
100253	Drip Leg	Bldg 2 / 1st / Boiler Rm	Above Boiler A At Catwalk, Above 15'	Spirax Sarco	FT15	Float & Thermostatic	125	3/4"	0.219	L	**$4,648.05**
100261	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	Spirax Sarco	TD52	Thermodynamic	125	1/2"	0.094	L	$856.32
100262	Drip Leg	Bldg 3 / 1st / Mech Rm 7	On Back Side Of HP Condensate Receiver, 5-10'	Spirax Sarco	FT30	Float & Thermostatic	25	1"	0.156	L	$670.23
100213	Drip Leg	Bldg 11 / 1st / Mech Rm 5	Front Right Of Condensate Pump Station, 0-5'	Spirax Sarco	B1H-125	Inverted Bucket	125	1/2"	0.094	L	$856.32
100221	Humidifier	Bldg 11 / 1st / Mech Rm 5	20' Downstream From PRS, Above 15'	Armstrong	B3	Float & Thermostatic	10	3/4"	0.219	L	$479.39
100225	Drip Leg	Bldg 11 / 1st / Mech Rm 5	To Left On Humidifier, 0-5'	Hoffman	FT015H	Float & Thermostatic	10	3/4"	0.219	B	**$2,490.33**
100230	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	Spirax Sarco	FT15	Float & Thermostatic	10	1 1/2"	0.375	B	$1,733.77
100231	Heat Exchanger	Bldg 11 / Mezzanine / Mech Rm 5	Far End Of Rm At HEX-11-A, 0-5'	Spirax Sarco	FT15	Float & Thermostatic	10	1 1/2"	0.375	B	$1,733.77
100239	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-3, 0-5'	Hoffman	FT015H	Float & Thermostatic	12	1"	0.219	P	$78.36
100242	Air Handling Unit	Bldg 11 / Sub Basement / Mech Rm 2	AHU-5, 0-5'	Hoffman	FT125H	Float & Thermostatic	12	3/4"	0.125	L	$56.16
ESTIMATED TOTAL ANNUAL EXPENSE OF STEAM LOSS:											**$14,436.52**

EXHIBIT P-3

PIVOTAL UTILITY HOLDINGS, INC.
d/b/a ELIZABETHTOWN GAS
DIRECT TESTIMONY OF
JIM HERNDON

Q. PLEASE STATE YOUR NAME, POSITION AND ADDRESS.

A. My name is Jim Herndon, and I am a Principal Consultant in the Utility Services group of Nexant, Inc. ("Nexant"). My business address is 1255 Crescent Green Drive, Suite 460, Cary, North Carolina 27518.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL RESPONSIBILITIES.

A. I am responsible for providing consulting services for Nexant clients who offer energy efficiency ("EE") initiatives. I currently focus on EE program planning and design for utility initiatives across the country.

Q. HAVE YOU PROVIDED A SUMMARY OF YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?

A. Yes, my resume is included as Schedule JH-1.

Q. PLEASE EXPLAIN NEXANT'S EXPERIENCE IN THE FIELD OF EE.

A. Nexant's Utility Services business unit provides energy efficiency engineering and consulting services to government agencies and utilities, as well as helping commercial, institutional, and industrial facility owners to manage energy consumption and reduce costs in their facilities. Nexant conducts development and implementation services of EE programs

for public and investor-owned utilities, governments, and end-use customers. Our range of EE experience includes but is not limited to:

- Market potential assessments;
- Program design and administration;
- Marketing;
- Vendor outreach, education, and training;
- Incentive processing and fulfillment;
- Turnkey customer service;
- Measurement and verification (M&V);
- Online program tracking and reporting; and
- Program process and impact evaluations.

Q. PLEASE INDICATE COMPANIES AND ROLES IN WHICH NEXANT HAS SUPPORTED EE INITIATIVES.

A. Nexant has developed, administered, and evaluated energy efficiency programs for clients across the country. An abbreviated, but representative, listing of our key clients is included with my resume in Schedule JH-1 of my testimony.

Q. HAVE YOU PROVIDED TESTIMONY IN OTHER REGULATORY PROCEEDINGS?

A. Yes. I have submitted testimony before the Virginia State Corporation Commission on behalf of both natural gas and electric utilities in their jurisdiction.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. My testimony supports the Application submitted by Elizabethtown Gas, Inc. ("ETG" or the "Company") to amend and extend its current energy efficiency programs. Specifically, I will present the results of the cost benefit analyses of the proposed programs.

Q. ARE YOU SPONSORING ANY SCHEDULES IN CONNECTION WITH YOUR DIRECT TESTIMONY?

A. Yes. I am presenting the following schedules, which have been prepared under my direction and supervision and are accurate and complete to the best of my knowledge and belief. The schedules attached hereto are described below.

- Schedule JH-1 – Resume and Nexant client list
- Schedule JH-2 – Cost Benefit Analysis Summary
- Schedule JH-3 – Estimated Participants and Incentives
- Schedule JH-4 – Estimated Annual Energy Savings
- Schedule JH-5 – Greenhouse Gas Emissions Reductions
- Schedule JH-6 – Free Riders and Spillover
- Schedule JH-7 – Cost Benefit Analysis Details

COST-BENEFIT ANALYSIS OF PROPOSED PROGRAMS

Q. PLEASE PROVIDE A SUMMARY OF THE COMPANY'S PROPOSED ENERGY EFFICIENCY PROGRAMS.

A. As detailed in the direct testimony of Company Witness Marmo, the Company is proposing seven programs that I have evaluated in the cost benefit analysis. These programs are:

- Residential Gas Heating Ventilation and Air Conditioning ("HVAC") and Gas Hot Water Heater Incentive Program;
- Residential Home Energy Assessment Program;
- Residential Home Energy Report (Opower) Program;
- Residential Home Weatherization for Income Qualified Customers Program;
- Residential Financing Program;
- Commercial Financing Program; and
- Commercial Steam Trap Survey and Repair Program;

Q. HOW WAS THE COST BENEFIT ANALYSIS OF THE PROPOSED EE PLAN EVALUATED?

A. The proposed EE programs were evaluated from the perspectives of five standard cost benefit analysis tests, which are consistent with the California

Standard Practice Manual. These tests can be described as follows:

- Total Resource Cost Test (“TRC”) – this test is designed to measure whether a program is cost-effective from a societal perspective and includes both the participants costs and the utility’s costs.
- Program Administrator Cost Test (“PACT”) – this test is designed to measure the cost-effectiveness of a program from the utility’s perspective.
- Societal Benefit Test (“SCT”) – this test is a modified version of the TRC test by including additional external societal impacts not captured in the TRC.
- Participant Cost Test (“PCT”) – this test is designed to measure the cost-effectiveness of the program from the perspective of the customer who installs the eligible program measure.
- Ratepayer Impact Measure (“RIM”) Test – this test is designed to measure the impact on customer bills or rates due to changes in utility revenues and operating costs resulting from the program.

Q. HOW IS A PROGRAM DETERMINED TO BE COST EFFECTIVE BASED ON THE TESTS?

A. The results of each test are presented as a ratio of benefits to costs. In general, if benefits are equal to or greater than costs, resulting in a ratio of 1.0 or greater, the measure or program is said to pass from that test perspective. The results of multiple tests should be considered since benefits and costs do not accrue equally to all. No one test perspective can capture the full economic impacts of a measure on each affected sub-group. Therefore, the five standard tests are utilized to examine the costs and benefits from different stakeholder perspectives.

Q. WHAT ASSUMPTIONS WERE INCLUDED IN ANALYZING THE COST-EFFECTIVENESS OF THE PROPOSED EE PLAN?

A. The key assumptions that were included in the cost benefit analysis involved the development of forecasted utility economic data, such as avoided cost, lost revenues, and customer bill savings; as well as measure impacts, such as incremental cost, natural gas savings, and equipment useful life.

Q. HOW WAS THE AVOIDED COST FORECAST DEVELOPED?

A. Based on guidance from ETG, and, as we understand, consistent with prior EE filings by other gas

utilities in New Jersey, the forecasted avoided cost was estimated using three primary components: the purchased gas commodity costs, which were based on Henry Hub prices taken from the NYMEX strip based on June 13, 2016 settlement prices forecasted through December 2028, the current ETG transmission and capacity rate, and the current ETG residential and non-residential distribution rates.

Q. WHAT IS THE ASSUMED DISCOUNT RATE?

A. The rate of return in this docket of 5.68% was assumed for the discount rate.

Q. PLEASE DESCRIBE HOW THE MEASURE IMPACTS WERE DEVELOPED FOR THIS ANALYSIS.

To determine the natural gas savings, equipment useful life, and incremental customer cost (collectively referred to as measure impacts) for the proposed EE program measures, Nexant relied on a combination of primary and secondary sources as follows:

- Natural gas savings for existing measures were based on findings reported in ETG's most recent true up filing, where appropriate.
- Natural gas savings for newly proposed measure were determined using engineering calculations that incorporated local weather characteristics,

as appropriate, as well as impacts calculated from similar programs in other jurisdictions, weather adjusted as appropriate. Primary sources used to develop the natural gas savings included the New Jersey Clean Energy Program Protocols to Measure Resource Savings ("NJ Protocols")[1] and the Illinois Statewide Technical Reference Manual[2].

- Equipment useful lives were derived from a review of industry standard secondary sources.
- Incremental customer costs were based on a combination of locally applicable sources, including: local retail cost data and average cost data provided by industry accepted sources, such as the DOE's National Renewable Energy Laboratory's (NREL) Residential Efficiency Database.

My Schedules 3 through 6 provide a summary of measure parameters and impacts for the proposed EE programs.

Q. PLEASE DESCRIBE THE COST BENEFIT ANALYSIS PROCESS AND RESULTS FOR THE PROPOSED EE PROGRAMS.

[1] http://www.njcleanenergy.com/files/file/Appeals/NJ%20Protocols%20Revisions%202013%20Update_04-16-2014_clean.pdf

[2] http://www.ilsag.info/il_trm_version_5.html

The cost benefit analysis for the proposed amendment included three key components as follows:

1. **Measure-Level Analysis:** For each energy efficiency measure, Nexant evaluated the associated measure costs and benefits. Measure-level costs included customer costs and incentives, as applicable. Program and portfolio administrative costs were excluded from the measure-level analysis.
2. **Program-Level Analysis:** Upon completion of the measure-level analysis, the program costs and benefits of the proposed updates were analyzed. During this step, program-specific operational and administrative program costs were included and summed along with the measure-level costs within a program to assess the overall program impacts.
3. **Portfolio-Level Analysis:** Program impacts were summed and portfolio-level management and administrative costs that extend across all programs were added to the individual program costs.

Q. CAN YOU SUMMARIZE THE FINDINGS OF THE COST BENEFIT ANALYSIS?

A. My Schedule 2 provides the cost benefit analysis results for each program and the overall portfolio in the proposed EE programs. Each program and the

overall portfolio have benefit/cost ratios greater than 1.0 from the TRC and SCT perspectives, with a portfolio b/c ratio of 1.26 for the TRC and 1.80 for the SCT. As I previously described, the SCT perspective is similar to the TRC perspective with the addition of societal benefits, which in this case included the social cost of carbon as provided in the Rutgers Center for Energy, Economic & Environmental Policy ("CEEEP") avoided cost study dated December 8, 2014. All programs and the portfolio were also cost effective from the PCT perspective, with a portfolio b/c ratio of 2.95. From the PACT perspective, six of the seven programs and the overall portfolio had a b/c ratio greater than 1.0, with a portfolio b/c ratio of 1.44. The Home Weatherization for Qualifying Customers Program had a PACT b/c ratio of 0.85, which is primarily attributable to the program costs incurred due to the comprehensive nature of services provided by ETG for making improvements to income qualified participants' homes. The programs and portfolio have a b/c ratio of less than 1.0 for the Rate Impact Measure Test, however failing this test is common with energy efficiency programs as the programs are designed to reduce natural gas usage, and

therefore reduce utility revenues that are largely based on customers' natural gas consumption.

Q. WHAT ARE THE ESTIMATED ANNUAL ENERGY SAVINGS ATTRIBUTABLE TO THE PROPOSED EE PROGRAMS?

A. As shown in my Schedule 3, the proposed EE programs will result in annual energy savings ranging from 813,066 therms to 1,072,620 therms over the four program years, and a cumulative lifetime energy savings of 48,865,221 therms.

Q. HAVE THE ESTIMATED GREENHOUSE GAS EMISSION REDUCTIONS ATTRIBUTABLE TO THE PROPOSED EE PROGRAMS BEEN ESTIMATED?

A. Yes, based on the CO_2 and NO_x emission rates provided in the NJ Protocols, the emissions reductions for each program were calculated and are provided in my Schedule 5. Over their lifetime, the proposed measures are expected to avoid over 209,000 metric tons of CO_2 and 165 metric tons of NO_x.

Q. PLEASE EXPLAIN HOW FREE RIDERS AND SPILLOVER WERE ACCOUNTED FOR IN THE PROPOSED EE PROGRAMS.

A. Consistent with the prior filing, free ridership estimates have include consideration of the impact of the NJ CEP programs for existing measures in the HVAC and Water Heater Rebates Program. Because of the

direct overlap with the NJ CEP Direct Install program, the Commercial Financing Program has also conservatively assumed the same level of free ridership for this newly proposed offering as the HVAC and Water Heater Program measures. For the other newly proposed programs, free ridership and spillover were considered, however due to the nature of the energy assessments and energy financing offered, the net-to-gross ratio, which combines the impacts of free ridership and spillover, was assumed to be 100%.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Nexant has conducted a cost benefit analysis on the proposed EE programs. Based on our analysis the proposed EE programs and portfolio are cost-effective offerings that provide ETG's customers the opportunity to conserve natural gas and improve the comfort and performance of their homes and businesses.

Q. MR. HERNDON, DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Jim Herndon

Principal Consultant

Jim Herndon is a Principal Consultant in Nexant's Strategy and Planning group located in the Cary, NC office. Jim currently focuses on strategic planning and program design for utility demand side management (DSM) initiatives throughout the country. His planning and design work is informed by over 14 years of experience in all facets of DSM programs, ranging from market assessments and portfolio planning to managing turn-key implementation and conducting technical project reviews to delivering 3rd party program evaluations.

Areas of Expertise

Resource Planning Support: Providing technical analysis, regulatory support, and expert witness testimony for DSM program development and integrated resource planning (IRP) activities to electric and natural gas utilities.

Energy Analysis and Market Characterization: Evaluating technical and economic applicability of DSM measures for program development; determining energy savings estimates and market potential for measures and program offerings in a particular region or service territory.

Portfolio Planning and Program Design: Conducting cost-effectiveness analysis and providing strategic insights to assist in the planning, design, and implementation of DSM programs.

Program Management: Ensuring compliance with energy program rules; coordinate staff workload and budgets; working directly with service providers and customers on projects; advising contractors on savings estimates.

Representative Project Experience

Columbia Gas of Virginia – DSM Program Design and Implementation (2010–Present)

Jim is the technical lead for Nexant's program design and regulatory support services for Columbia Gas of Virginia's WarmWise program offerings. Nexant's support includes portfolio planning and regulatory support for CGV's residential and commercial energy efficiency

Education and Licensing

MS, Engineering Management
Duke University, 1998

BS, Civil Engineering
Duke University, 1997

Work History

Nexant, Inc., Cary, NC
Principal (2014–Present)
Senior Project Manager (2009–2014)

Nexant, Inc., Atlanta, GA
Project Manager (2007–2009)
Senior Project Engineer (2005–2007)
Project Engineer (2003–2005)

Nexant, Inc., San Francisco, CA
Project Engineer (2002–2003)

IT Corporation, Andover, MA
Project Engineer (1998–2001)

programs, as well as providing rebate processing and other support services to assist CGV in the implementation of their programs. Jim has led Nexant's portfolio planning efforts, including market characterization analysis, technical analysis of proposed programs and portfolio, and regulatory support of CGV's program filings with the Virginia State Corporation Commission, including providing written testimony supporting Nexant's analysis.

Virginia Natural Gas – DSM Program Design and Regulatory Support (2014–Present)
Jim currently leads Nexant's technical and regulatory support for Virginia Natural Gas's residential DSM portfolio. Support activities include program cost-effectiveness analysis and preparation of regulatory filings, including annual status updates to the Virginia State Corporation Commission, and technical analysis and testimony for regulatory approval of program updates and modifications.

Dominion Virginia Power – Program Development and Regulatory Support (2014-2015)
Jim served as the program design lead and expert witness in support of Dominion Power's regulatory filing for three proposed DSM program offerings. Jim provided input on the delivery structure, eligibility criteria, and cost-effectiveness analysis in the development of program offerings. In addition, Jim provided written and oral testimony on behalf of Dominion in support of Nexant's technical analysis on the feasibility and cost-effectiveness of the programs to the Virginia State Corporation Commission.

Georgia Power Company – Demand Side Management Program Analysis and IRP Support (2005–Present)
Jim has provided technical and regulatory support for Georgia Power Company's DSM program analysis in the residential and commercial markets for Georgia Power Company's 2007, 2010, 2013, and 2016 Integrated Resource Plan (IRP) filings. The program analysis support includes comprehensive compilation and assessment of applicable DSM measures and technologies across the residential, commercial, and industrial sectors, and determination of the overall market potential through three separate technical potential studies (completed in 2007, 2012, and 2014). Jim also led the portfolio planning efforts that have included development of preliminary program designs and supporting cost-effectiveness analysis to determine feasibility of individual measures and program offerings for implementation.

Los Angeles Department of Water and Power – Energy Efficiency Potential Study (2013–2014)
Jim managed Nexant's development of an energy efficiency potential study for the Los Angeles Department of Water and Power (LADWP). Under Jim's direction, Nexant quantified the energy efficiency potential for LADWP's service territory, including collection of primary data through facility auditing to determine the energy efficiency potential of City of Los Angeles-owned facilities. The study followed industry best practices to determine the energy efficiency potential, and undertook unique approaches to aggregate and bundle measures into program delivery channels to identify all possible achievable savings. The study will inform LADWP's short term program planning, as well as updates to their ten-year program planning targets.

Duke Energy – Market Potential Study (2015-Present)
Jim currently serves as the project manager for Nexant's demand side management market potential study for Duke Energy's North Carolina, South Carolina, and Ohio service territories. The study is integrating both energy efficiency and demand response opportunities across Duke's residential, commercial, and industrial customer classes. The study will include determination of technical, economic, and program potential and is being conducted in close coordination with Duke's integrated resource planning team as well as program design and delivery teams in order to provide an accurate assessment of market potential that can be directly applied to Duke's current and future DSM planning efforts.

Duke Energy – Program Evaluations (2014-Present)
Jim currently serves as the project manager for Nexant's evaluation, measurement, and verification (EM&V) of three DSM program offerings. The evaluation activities include separate impact and process evaluations across Duke Energy's five service territories to assess program performance, adherence to best practices, and opportunities for program improves. Jim provides daily project management oversight of Nexant project staff, coordination of resources, and quality control oversight of project deliverables.

Santee Cooper – DSM Program Design and Implementation (2009–Present)
Jim provides strategic program design support activities for Santee Cooper's suite of energy efficiency programs across the residential and commercial market segments, as well as strategic program advisory services for Santee Cooper's long-term energy reduction goals. Previously, Jim oversaw Nexant's initial development, rollout, and management of Santee Cooper's commercial energy efficiency programs.

CPS Energy Market Potential Study – DSM Program Design, and Measurement and Verification (2008–2014)
Jim provided technical expertise and support for Nexant's DSM services to CPS Energy, which included development of an energy efficiency market potential study, DSM program design and implementation, and program measurement and verification. The comprehensive market potential evaluation analyzed the economic and achievable energy and demand impacts of cost-effective DSM measures across CPS Energy's residential, commercial, and industrial customer segments. The DSM program design utilized the identified market potential to enhance CPS Energy's existing DSM programs and provided recommendations on new programs that target CPS Energy's long-term energy efficiency goals. Nexant also provided annual measurement and verification of CPS Energy's DSM programs.

Danville Utilities – Residential Program Design and Implementation (2011–2013)
Jim led Nexant's initial development of Danville Utilities' (Danville, VA) HomeSave program. This residential program initiative includes a suite of energy efficiency measures targeting Danville's residential customer base. Jim oversaw the rollout of the program offering that currently includes Nexant's program support through rebate processing, trade ally outreach, marketing support, and verification of measure installation and energy savings achieved.

The following is a representative listing of Nexant's most prominent utility clients and its contractual role with each.

CLIENTS	SCOPE									
	Program Design	Administration	Marketing	Trade Ally Management	Call Center Support	Rebate Processing	Program Tracking	Auditing & Eng. Review	Market / Potential Study	Evaluatoin
CenterPoint Energy	■	■	■	■		■	■	■	■	■
Colorado Governor's Energy Office	■	■								■
Columbia Gas of Virginia	■	■			■	■	■	■	■	
Commonwealth Edison	■	■	■	■	■	■	■	■		
ConEdison New York										■
Danville Utilities	■	■	■	■	■	■	■	■		
Duke Energy										■
Energy Trust of Oregon		■	■			■	■	■		
Entergy, Texas	■	■		■						
Enbridge Gas									■	■
JEA	■	■	■	■		■	■	■		
Georgia Power Company	■								■	■
MidAmerican Energy	■	■	■	■			■	■	■	
Missouri Gas Energy	■									■
Northwestern Energy									■	■
NYSERDA		■					■	■		■
Oncor	■	■	■	■		■	■	■		
PacifiCorp	■	■	■	■		■	■	■	■	
PG&E	■	■	■	■			■	■		
Pennsylvania Public Utilities Commission									■	■
Platte River Power Authority	■	■								
Ontario Power Authority									■	■
Questar Gas	■	■	■	■	■	■	■	■	■	
Salt River Project	■	■	■	■	■	■	■	■		
Santee Cooper	■	■	■	■				■	■	
Southern California Edison	■	■	■					■		
Silicon Valley Power Laboratory Energy Management	■	■	■				■	■		
Southwest Gas	■	■	■	■	■	■	■	■		
Utah State Energy Program	■	■	■	■			■	■		
TVA	■	■		■	■	■	■	■		
Union Gas Limited									■	■
Vectren Energy	■	■	■	■		■	■	■		
Virginia Natural Gas	■									
Xcel Energy	■	■	■	■			■	■	■	

	Residential Gas HVAC and Gas Hot Water Heater Incentive Program	Residential Home Energy Assessments Program	Residential Home Weatherization for Income Qualified Customers Program	Residential Home Energy Report (Opower) Program	Residential Financing Program	Commercial Steam Trap Survey and Repair Program	Commercial Financing Program	Operational and Administrative Costs	Portfolio Total
Total Resource Cost Test (TRC)									
Benefits	$3,586,344	$4,636,646	$1,229,388	$2,848,975	$7,743,198	$1,014,606	$5,749,184	$0	**$26,808,341**
Costs	$1,616,356	$2,837,035	$789,247	$2,848,276	$6,815,660	$509,753	$2,540,594	$3,251,984	**$21,208,905**
Net Benefits	$1,969,988	$1,799,610	$440,141	$699	$927,538	$504,852	$3,208,590	-$3,251,984	**$5,599,436**
B-C Ratio	2.22	1.63	1.56	1.00	1.14	1.99	2.26	--	**1.26**
Participant Cost Test (PCT)									
Benefits	$10,192,240	$7,972,097	$2,831,980	$2,387,802	$13,953,296	$1,364,653	$16,293,230	$0	**$54,995,299**
Costs	$3,821,029	$2,293,560	$678,580	$0	$5,892,602	$509,753	$5,458,430	$0	**$18,653,954**
Net Benefits	$6,371,212	$5,678,537	$2,153,400	$2,387,802	$8,060,694	$854,900	$10,834,800	$0	**$36,341,346**
B-C Ratio	2.67	3.48	4.17	--	2.37	2.68	2.98	--	**2.95**
Program Administrator Cost Test (PACT)									
Benefits	$3,586,344	$3,647,986	$1,029,071	$2,848,975	$5,719,489	$1,014,606	$1,195,975	$0	**$19,042,445**
Costs	$1,527,212	$1,375,228	$1,208,250	$2,848,276	$2,073,631	$354,282	$541,089	$3,251,984	**$13,179,952**
Net Benefits	$2,059,133	$2,272,758	-$179,180	$699	$3,645,858	$660,323	$654,886	-$3,251,984	**$5,862,493**
B-C Ratio	2.35	2.65	0.85	1.00	2.76	2.86	2.21	--	**1.44**
Ratepayer Impact Measure Test (RIM)									
Benefits	$3,586,344	$3,647,986	$1,029,071	$2,848,975	$5,719,489	$1,014,606	$1,195,975	$0	**$19,042,445**
Costs	$5,096,689	$5,007,662	$2,232,350	$5,236,078	$7,763,687	$1,364,653	$1,728,247	$3,251,984	**$31,681,350**
Net Benefits	-$1,510,345	-$1,359,675	-$1,203,279	-$2,387,103	-$2,044,197	-$350,048	-$532,273	-$3,251,984	**-$12,638,905**
B-C Ratio	0.70	0.73	0.46	0.54	0.74	0.74	0.69	--	**0.60**
Societal Cost Test (SCT)									
Benefits	$4,920,975	$6,574,471	$1,741,721	$3,600,920	$11,169,925	$1,416,563	$8,838,756	$0	**$38,263,331**
Costs	$1,616,356	$2,837,035	$789,247	$2,848,276	$6,815,660	$509,753	$2,540,594	$3,251,984	**$21,208,905**
Net Benefits	$3,304,619	$3,737,435	$952,474	$752,644	$4,354,265	$906,809	$6,298,162	-$3,251,984	**$17,054,426**
B-C Ratio	3.04	2.32	2.21	1.26	1.64	2.78	3.48	--	**1.80**

		Participation Estimates				Incentive Estimates*			
	units	2017	2018	2019	2020	2017	2018	2019	2020
Residential Gas HVAC and Gas Hot Water Heater Incentive Program									
R-High efficiency furnace-Tier 1 (95%)	furnace	360	360	360	360	$90,000	$90,000	$90,000	$90,000
R-High efficiency furnace-Tier 2 (97%)	furnace	360	360	360	360	$90,000	$90,000	$90,000	$90,000
R-High efficiency boiler-hyronic (90%)	boiler	325	325	325	325	$97,500	$97,500	$97,500	$97,500
R-High efficiency boiler-steam (82%)	boiler	325	325	325	325	$97,500	$97,500	$97,500	$97,500
R-High efficiency water heater-Tier 1 (0.82)	water heater	50	50	50	50	$10,000	$10,000	$10,000	$10,000
R-High efficiency water heater-Tier 2 (0.90)	water heater	50	50	50	50	$10,000	$10,000	$10,000	$10,000
R-Power vent water heater	water heater	50	50	50	50	$5,000	$5,000	$5,000	$5,000
Residential Home Energy Assessments Program									
R-Direct Install-programmable thermostat	thermostat	350	350	350	350	$18,659	$18,659	$18,659	$18,659
R-Direct Install-kitchen aerator	aerator	700	700	700	700	$1,071	$1,071	$1,071	$1,071
R-Direct Install-bath aerator	aerator	1,400	1,400	1,400	1,400	$2,142	$2,142	$2,142	$2,142
R-Direct Install-showerheads	showerhead	1,400	1,400	1,400	1,400	$11,704	$11,704	$11,704	$11,704
R-Direct Install-HW pipe wrap	linear foot	4,200	4,200	4,200	4,200	$3,948	$3,948	$3,948	$3,948
R-HEA-air sealing	home	210	210	210	210	$78,750	$78,750	$78,750	$78,750
R-HEA-attic insulation	home	210	210	210	210	$109,200	$109,200	$109,200	$109,200
Residential Home Weatherization for Income Qualified Customers Program									
R-Direct Install-programmable thermostat (income qualified)	thermostat	50	50	50	50	$2,666	$2,666	$2,666	$2,666
R-Direct Install-kitchen aerator (income qualified)	aerator	50	50	50	50	$100	$100	$100	$100
R-Direct Install-bath aerator (income qualified)	aerator	100	100	100	100	$200	$200	$200	$200
R-Direct Install-showerheads (income qualified)	showerhead	100	100	100	100	$800	$800	$800	$800
R-Direct Install-HW pipe wrap (income qualified)	linear foot	300	300	300	300	$300	$300	$300	$300
R-Air Sealing (income qualified)	home	50	50	50	50	$78,000	$78,000	$78,000	$78,000
R-Attic Insulation (income qualified)	home	50	50	50	50	$61,100	$61,100	$61,100	$61,100
R-HVAC tune-up (heating & cooling) (income qualified)	home	45	45	45	45	$7,200	$7,200	$7,200	$7,200
R-Equipment Replacement (furnace) (income qualified)	furnace	45	45	45	45	$147,170	$147,170	$147,170	$147,170
Residential Financing Program									
R-Financing Tier 1	home	400	400	400	400	$245,600	$245,600	$245,600	$245,600
R-Financing Tier 2	home	100	100	100	100	$66,300	$66,300	$66,300	$66,300
Residential Home Energy Report (Opower) Program	home	155,000	155,000	155,000	155,000	N/A	N/A	N/A	N/A
Commercial Steam Trap Survey and Repair Program	facility	10	15	20	20	$60,000	$90,000	$120,000	$120,000
Commercial Financing Program	facility	100	100	100	100	$63,900	$63,900	$63,900	$63,900

*Includes capital cost of direct install measures

	Annual Energy Savings Estimates - GROSS (therms)				Annual Energy Savings Estimates - NET (therms)			
	2017	2018	2019	2020	2017	2018	2019	2020
Residential Gas HVAC and Gas Hot Water Heater Incentive Program								
R-High efficiency furnace-Tier 1 (95%)	56,880	56,880	56,880	56,880	23,292	23,292	23,292	23,292
R-High efficiency furnace-Tier 2 (97%)	56,880	56,880	56,880	56,880	23,292	23,292	23,292	23,292
R-High efficiency boiler-hyronic (90%)	39,650	39,650	39,650	39,650	16,237	16,237	16,237	16,237
R-High efficiency boiler-steam (82%)	39,650	39,650	39,650	39,650	16,237	16,237	16,237	16,237
R-High efficiency water heater-Tier 1 (0.82)	2,793	2,793	2,793	2,793	1,144	1,144	1,144	1,144
R-High efficiency water heater-Tier 2 (0.90)	3,345	3,345	3,345	3,345	1,370	1,370	1,370	1,370
R-Power vent water heater	1,404	1,404	1,404	1,404	575	575	575	575
Residential Home Energy Assessments Program								
R-Direct Install-programmable thermostat	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595
R-Direct Install-kitchen aerator	3,164	3,164	3,164	3,164	3,164	3,164	3,164	3,164
R-Direct Install-bath aerator	3,836	3,836	3,836	3,836	3,836	3,836	3,836	3,836
R-Direct Install-showerheads	25,928	25,928	25,928	25,928	25,928	25,928	25,928	25,928
R-Direct Install-HW pipe wrap	6,552	6,552	6,552	6,552	6,552	6,552	6,552	6,552
R-HEA-air sealing	22,359	22,359	22,359	22,359	22,359	22,359	22,359	22,359
R-HEA-attic insulation	17,373	17,373	17,373	17,373	17,373	17,373	17,373	17,373
Residential Home Weatherization for Income Qualified Customers Program								
R-Direct Install-programmable thermostat (income qualified)	1,514	1,514	1,514	1,514	1,514	1,514	1,514	1,514
R-Direct Install-kitchen aerator (income qualified)	226	226	226	226	226	226	226	226
R-Direct Install-bath aerator (income qualified)	274	274	274	274	274	274	274	274
R-Direct Install-showerheads (income qualified)	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852
R-Direct Install-HW pipe wrap (income qualified)	468	468	468	468	468	468	468	468
R-Air Sealing (income qualified)	5,324	5,324	5,324	5,324	5,324	5,324	5,324	5,324
R-Attic Insulation (income qualified)	4,137	4,137	4,137	4,137	4,137	4,137	4,137	4,137
R-HVAC tune-up (heating & cooling) (income qualified)	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
R-Equipment Replacement (furnace) (income qualified)	7,110	7,110	7,110	7,110	7,110	7,110	7,110	7,110
Residential Financing Program								
R-Financing Tier 1	65,487	65,487	65,487	65,487	65,487	65,487	65,487	65,487
R-Financing Tier 2	36,834	36,834	36,834	36,834	36,834	36,834	36,834	36,834
Residential Home Energy Report (Opower) Program	368,645	448,981	155,755	146,261	368,645	448,981	155,755	146,261
Commercial Steam Trap Survey and Repair Program	86,331	129,496	172,662	172,662	86,331	129,496	172,662	172,662
Commercial Financing Program	79,400	79,400	79,400	79,400	32,514	32,514	32,514	32,514
	949,118	1,072,620	822,560	813,066	783,777	907,279	657,218	647,725

	Lifetime Net Energy Savings (therms)	Greenhouse Gas Emissions Reductions (tons)* CO_2	NO_x
Residential Gas HVAC and Gas Hot Water Heater Incentive Program			
R-High efficiency furnace-Tier 1 (95%)	1,863,389	10,901	8.6
R-High efficiency furnace-Tier 2 (97%)	1,863,389	10,901	8.6
R-High efficiency boiler-hyronic (90%)	1,298,934	7,599	6.0
R-High efficiency boiler-steam (82%)	1,298,934	7,599	6.0
R-High efficiency water heater-Tier 1 (0.82)	45,754	268	0.2
R-High efficiency water heater-Tier 2 (0.90)	54,791	321	0.3
R-Power vent water heater	22,993	135	0.1
Residential Home Energy Assessments Program			
R-Direct Install-programmable thermostat	635,670	3,719	2.9
R-Direct Install-kitchen aerator	126,560	740	0.6
R-Direct Install-bath aerator	153,440	898	0.7
R-Direct Install-showerheads	1,037,120	6,067	4.8
R-Direct Install-HW pipe wrap	262,080	1,533	1.2
R-HEA-air sealing	2,683,041	15,696	12.3
R-HEA-attic insulation	2,084,816	12,196	9.6
Residential Home Weatherization for Income Qualified Customers Program			
R-Direct Install-programmable thermostat (income qualified)	90,810	531	0.4
R-Direct Install-kitchen aerator (income qualified)	9,040	53	0.0
R-Direct Install-bath aerator (income qualified)	10,960	64	0.1
R-Direct Install-showerheads (income qualified)	74,080	433	0.3
R-Direct Install-HW pipe wrap (income qualified)	18,720	110	0.1
R-Air Sealing (income qualified)	638,820	3,737	2.9
R-Attic Insulation (income qualified)	496,380	2,904	2.3
R-HVAC tune-up (heating & cooling) (income qualified)	13,316	78	0.1
R-Equipment Replacement (furnace) (income qualified)	711,000	4,159	3.3
Residential Financing Program			
R-Financing Tier 1	7,858,428	45,972	36.1
R-Financing Tier 2	4,420,061	25,857	20.3
Residential Home Energy Report (Opower) Program	3,758,944	21,990	17.3
Commercial Steam Trap Survey and Repair Program	1,683,453	9,848	7.7
Commercial Financing Program	2,601,144	15,217	12.0
*Based on Lifetime Net Natural Gas Savings		209,524	165

Gas Emission Factors from NJ CEP Protocols, March 17, 2014

CO_2	11.7	lbs/therm
NO_x	0.0092	lbs/therm

	Annual Energy Savings Estimates - GROSS (therms)				Net-To-Gross	Annual Energy Savings Estimates - NET (therms)			
	2017	2018	2019	2020		2017	2018	2019	2020
Residential Gas HVAC and Gas Hot Water Heater Incentive Program									
R-High efficiency furnace-Tier 1 (95%)	56,880	56,880	56,880	56,880	41%	23,292	23,292	23,292	23,292
R-High efficiency furnace-Tier 2 (97%)	56,880	56,880	56,880	56,880	41%	23,292	23,292	23,292	23,292
R-High efficiency boiler-hyronic (90%)	39,650	39,650	39,650	39,650	41%	16,237	16,237	16,237	16,237
R-High efficiency boiler-steam (82%)	39,650	39,650	39,650	39,650	41%	16,237	16,237	16,237	16,237
R-High efficiency water heater-Tier 1 (0.82)	2,793	2,793	2,793	2,793	41%	1,144	1,144	1,144	1,144
R-High efficiency water heater-Tier 2 (0.90)	3,345	3,345	3,345	3,345	41%	1,370	1,370	1,370	1,370
R-Power vent water heater	1,404	1,404	1,404	1,404	41%	575	575	575	575
Residential Home Energy Assessments Program									
R-Direct Install-programmable thermostat	10,595	10,595	10,595	10,595	100%	10,595	10,595	10,595	10,595
R-Direct Install-kitchen aerator	3,164	3,164	3,164	3,164	100%	3,164	3,164	3,164	3,164
R-Direct Install-bath aerator	3,836	3,836	3,836	3,836	100%	3,836	3,836	3,836	3,836
R-Direct Install-showerheads	25,928	25,928	25,928	25,928	100%	25,928	25,928	25,928	25,928
R-Direct Install-HW pipe wrap	6,552	6,552	6,552	6,552	100%	6,552	6,552	6,552	6,552
R-HEA-air sealing	22,359	22,359	22,359	22,359	100%	22,359	22,359	22,359	22,359
R-HEA-attic insulation	17,373	17,373	17,373	17,373	100%	17,373	17,373	17,373	17,373
Residential Home Weatherization for Income Qualified Customers Program									
R-Direct Install-programmable thermostat (income qualified)	1,514	1,514	1,514	1,514	100%	1,514	1,514	1,514	1,514
R-Direct Install-kitchen aerator (income qualified)	226	226	226	226	100%	226	226	226	226
R-Direct Install-bath aerator (income qualified)	274	274	274	274	100%	274	274	274	274
R-Direct Install-showerheads (income qualified)	1,852	1,852	1,852	1,852	100%	1,852	1,852	1,852	1,852
R-Direct Install-HW pipe wrap (income qualified)	468	468	468	468	100%	468	468	468	468
R-Air Sealing (income qualified)	5,324	5,324	5,324	5,324	100%	5,324	5,324	5,324	5,324
R-Attic Insulation (income qualified)	4,137	4,137	4,137	4,137	100%	4,137	4,137	4,137	4,137
R-HVAC tune-up (heating & cooling) (income qualified)	1,110	1,110	1,110	1,110	100%	1,110	1,110	1,110	1,110
R-Equipment Replacement (furnace) (income qualified)	7,110	7,110	7,110	7,110	100%	7,110	7,110	7,110	7,110
Residential Financing Program									
R-Financing Tier 1	65,487	65,487	65,487	65,487	100%	65,487	65,487	65,487	65,487
R-Financing Tier 2	36,834	36,834	36,834	36,834	100%	36,834	36,834	36,834	36,834
Residential Home Energy Report (Opower) Program	368,645	448,981	155,755	146,261	100%	368,645	448,981	155,755	146,261
Commercial Steam Trap Survey and Repair Program	86,331	129,496	172,662	172,662	100%	86,331	129,496	172,662	172,662
Commercial Financing Program	79,400	79,400	79,400	79,400	41%	32,514	32,514	32,514	32,514
	949,118	1,072,620	822,560	813,066		783,777	907,279	657,218	647,725

PROGRAM PORTFOLIO DESCRIPTIONS (4 Years)

PROGRAMS	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
Residential Gas HVAC and Gas Hot Water Heater Incer	$1,969,988	2.2	$6,371,212	2.7	$2,059,133	2.3	-$1,510,345	0.7	$3,304,619	3.0
Residential Home Energy Assessments Program	$1,799,610	1.6	$5,678,537	3.5	$2,272,758	2.7	-$1,359,675	0.7	$3,737,435	2.3
Residential Home Weatherization for Income Qualified C	$440,141	1.6	$2,153,400	4.2	-$179,180	0.9	-$1,203,279	0.5	$952,474	2.2
Residential Home Energy Report (Opower) Program	$699	1.0	$2,387,802	0.0	$699	1.0	-$2,387,103	0.5	$752,644	1.3
Residential Financing Program	$927,538	1.1	$8,060,694	2.4	$3,645,858	2.8	-$2,044,197	0.7	$4,354,265	1.6
Commercial Steam Trap Survey and Repair Program	$504,852	2.0	$854,900	2.7	$660,323	2.9	-$350,048	0.7	$906,809	2.8
Commercial Financing Program	$3,208,590	2.3	$10,834,800	3.0	$654,886	2.2	-$532,273	0.7	$6,298,162	3.5
Operational and Administrative Costs	-$3,251,984	0.0	$0	0.0	-$3,251,984	0.0	-$3,251,984	0.0	-$3,251,984	0.0
Totals	$5,599,436	1.3	$36,341,346	2.9	$5,862,493	1.4	-$12,638,905	0.6	$17,054,426	1.8

COST EFFECTIVENESS TESTS - Residential Gas HVAC and Gas Hot Water Heater Rebates PROGRAM (4 Years)

MEASURE	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
R-High efficiency furnace-Tier 1 (95%)	$626,746	2.5	$1,850,519	2.9	$700,620	3.1	-$327,089	0.8	$1,011,735	3.5
R-High efficiency furnace-Tier 2 (97%)	$626,746	2.5	$1,850,519	2.9	$700,620	3.1	-$327,089	0.8	$1,011,735	3.5
R-High efficiency boiler-hyronic (90%)	$400,706	2.3	$1,329,829	2.7	$360,153	2.0	-$356,244	0.7	$669,074	3.1
R-High efficiency boiler-steam (82%)	$400,706	2.3	$1,329,829	2.7	$360,153	2.0	-$356,244	0.7	$669,074	3.1
R-High efficiency water heater-Tier 1 (0.82)	$2,250	1.1	$42,214	1.6	-$6,721	0.8	-$36,820	0.5	$12,590	1.5
R-High efficiency water heater-Tier 2 (0.90)	-$22,765	0.6	-$18,905	0.9	-$763	1.0	-$36,806	0.5	-$10,383	0.8
R-Power vent water heater	-$12,757	0.5	-$12,794	0.8	-$3,284	0.8	-$18,410	0.5	-$7,561	0.7
Program Costs	-$51,645	0.0	$0	0.0	-$51,645	0.0	-$51,645	0.0	-$51,645	0.0
Subtotals	**$1,969,988**	**2.2**	**$6,371,212**	**2.7**	**$2,059,133**	**2.3**	**-$1,510,345**	**0.7**	**$3,304,619**	**3.0**

COST EFFECTIVENESS TESTS - Home Energy Assessments PROGRAM (4 Years)

MEASURE	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
R-Direct Install-programmable thermostat	$519,822	8.6	$1,130,086	17.4	$316,988	5.6	-$67,105	0.9	$770,142	12.2
R-Direct Install-kitchen aerator	$79,496	21.1	$83,254	22.1	$79,496	21.1	-$3,759	1.0	$108,096	28.4
R-Direct Install-bath aerator	$93,268	12.8	$100,937	13.8	$93,268	12.8	-$7,669	0.9	$127,943	17.2
R-Direct Install-showerheads	$640,643	15.8	$682,243	16.8	$640,643	15.8	-$41,600	0.9	$875,015	21.3
R-Direct Install-HW pipe wrap	$158,237	11.9	$172,403	12.8	$158,237	11.9	-$14,166	0.9	$217,463	15.9
R-HEA-air sealing	$672,858	1.6	$2,545,066	3.1	$959,295	4.3	-$284,070	0.8	$1,528,020	2.3
R-HEA-attic insulation	$178,763	1.2	$964,549	2.0	$568,306	2.4	-$397,832	0.7	$654,232	1.7
Program Costs	-$543,475	0.0	$0	0.0	-$543,475	0.0	-$543,475	0.0	-$543,475	0.0
Subtotals	**$1,799,610**	**1.6**	**$5,678,537**	**3.5**	**$2,272,758**	**2.7**	**-$1,359,675**	**0.7**	**$3,737,435**	**2.3**

COST EFFECTIVENESS TESTS - Home Weatherization for Income Qualified Customers PROGRAM (4 Years)

MEASURE	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
R-Direct Install-programmable thermostat (income qualif	$74,260	8.6	$161,441	17.4	$45,284	5.6	-$9,586	0.9	$110,020	12.2
R-Direct Install-kitchen aerator (income qualified)	$5,592	16.2	$5,947	17.1	$5,592	16.2	-$355	0.9	$7,634	21.7
R-Direct Install-bath aerator (income qualified)	$6,489	9.8	$7,210	10.8	$6,489	9.8	-$721	0.9	$8,965	13.2
R-Direct Install-showerheads (income qualified)	$45,893	16.6	$48,732	17.5	$45,893	16.6	-$2,839	0.9	$62,634	22.2
R-Direct Install-HW pipe wrap (income qualified)	$11,236	11.2	$12,314	12.1	$11,236	11.2	-$1,078	0.9	$15,467	15.0
R-Air Sealing (income qualified)	$141,751	1.5	$759,679	3.6	$9,835	1.0	-$286,204	0.5	$334,994	2.2
R-Attic Insulation (income qualified)	$42,544	1.2	$359,078	2.6	$5,828	1.0	-$224,203	0.5	$155,742	1.7
R-HVAC tune-up (heating & cooling) (income qualified)	-$13,696	0.5	$21,157	1.8	-$16,405	0.4	-$26,521	0.3	-$8,965	0.7
R-Equipment Replacement (furnace) (income qualified)	$236,740	2.9	$777,843	7.3	-$182,264	0.7	-$541,104	0.4	$376,650	4.0
Program Costs	-$110,668	0.0	$0	0.0	-$110,668	0.0	-$110,668	0.0	-$110,668	0.0
Subtotals	**$440,141**	**1.6**	**$2,153,400**	**4.2**	**-$179,180**	**0.9**	**-$1,203,279**	**0.5**	**$7,549,106**	**2.2**
Totals	$4,209,740	1.8	$14,203,150	3.1	$4,152,711	2.0	-$4,073,300	0.7	$14,591,161	2.5

COST EFFECTIVENESS TESTS - RESIDENTIAL FINANCING PROGRAM (4 Years)

MEASURE	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
R-Financing Tier 1	$1,284,471	1.3	$5,428,645	2.5	$2,754,566	4.0	-$887,160	0.8	$3,477,631	1.9
R-Financing Tier 2	$566,125	1.3	$2,632,049	2.2	$1,814,350	8.4	-$233,980	0.9	$1,799,692	1.8
Program Costs	-$923,058	0.0	$0	N/A	-$923,058	0.0	-$923,058	0.0	-$923,058	0.0
Totals	$927,538	1.1	$8,060,694	2.4	$3,645,858	2.8	-$2,044,197	0.7	$4,354,265	1.6

COST EFFECTIVENESS TESTS - HOME ENERY REPORTS - OPOWER PROGRAM (4 Years)										
	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
MEASURE	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
R-Home Energy Report - Yr 1	$758,250	0.0	$625,022	0.0	$758,250	0.0	$133,228	1.2	$940,670	0.0
R-Home Energy Report - Yr 2	$1,017,538	0.0	$719,610	0.0	$1,017,538	0.0	$297,929	1.4	$1,236,281	0.0
R-Home Energy Report - Yr 3	$554,525	0.0	$552,866	0.0	$554,525	0.0	$1,659	1.0	$736,849	0.0
R-Home Energy Report - Yr 4	$518,662	0.0	$490,305	0.0	$518,662	0.0	$28,357	1.1	$687,120	0.0
Program Costs	-$2,848,276	0.0	$0	0.0	-$2,848,276	0.0	-$2,848,276	0.0	-$2,848,276	0.0
Totals	$699	1.0	$2,387,802	0.0	$699	1.0	-$2,387,103	0.5	$752,644	1.3

COST EFFECTIVENESS TESTS - STEAM TRAP SURVEY & REPAIR PROGRAM PROGRAM (4 Years)										
	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
MEASURE	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
C-Steam trap	$504,852	2.0	$854,900	2.7	$660,323	2.9	-$350,048	0.7	$906,809	2.8
Program Costs										
Subtotals	**$504,852**	**2.0**	**$854,900**	**2.7**	**$660,323**	**2.9**	**-$350,048**	**0.7**	**$906,809**	**2.8**
Totals	$504,852	2.0	$854,900	2.7	$660,323	2.9	-$350,048	0.7	$906,809	2.8

COST EFFECTIVENESS TESTS - COMMERCIAL FINANCING PROGRAM (4 Years)										
	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
MEASURE	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C	NPV	B/C
C-Commercial Financing	$3,513,957	2.6	$10,834,800	3.0	$960,253	5.1	-$226,906	0.8	$6,603,529	4.0
Program Costs	-$305,367	0.0	$0	0.0	-$305,367	0.0	-$305,367	0.0	-$305,367	0.0
Totals	$3,208,590	2.3	$10,834,800	3.0	$654,886	2.2	-$532,273	0.7	$6,298,162	3.5

PROGRAM PORTFOLIO DESCRIPTIONS (4 Years)

Program	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
Residential Gas HVAC and Gas Hot Water Heater In	$3,586,344	$1,616,356	$10,192,240	$3,821,029	$3,586,344	$1,527,212	$3,586,344	$5,096,689	$4,920,975	$1,616,356
Residential Home Energy Assessments Program	$4,636,646	$2,837,035	$7,972,097	$2,293,560	$3,647,986	$1,375,228	$3,647,986	$5,007,662	$6,574,471	$2,837,035
Residential Home Weatherization for Income Qualifi	$1,229,388	$789,247	$2,831,980	$678,580	$1,029,071	$1,208,250	$1,029,071	$2,232,350	$1,741,721	$789,247
Residential Home Energy Report (Opower) Program	$2,848,975	$2,848,276	$2,387,802	$0	$2,848,975	$2,848,276	$2,848,975	$5,236,078	$3,600,920	$2,848,276
Residential Financing Program	$7,743,198	$6,815,660	$13,953,296	$5,892,602	$5,719,489	$2,073,631	$5,719,489	$7,763,687	$11,169,925	$6,815,660
Commercial Steam Trap Survey and Repair Prograr	$1,014,606	$509,753	$1,364,653	$509,753	$1,014,606	$354,282	$1,014,606	$1,364,653	$1,416,563	$509,753
Commercial Financing Program	$5,749,184	$2,540,594	$16,293,230	$5,458,430	$1,195,975	$541,089	$1,195,975	$1,728,247	$8,838,756	$2,540,594
Operational and Administrative Costs	$0	$3,251,984	$0	$0	$0	$3,251,984	$0	$3,251,984	$0	$3,251,984
Totals	$26,808,341	$21,208,905	$54,995,299	$18,653,954	$19,042,445	$13,179,952	$19,042,445	$31,681,350	$38,263,331	$21,208,905

COST EFFECTIVENESS TESTS - Residential Gas HVAC and Gas Hot Water Heater Rebates PROGRAM (4 Years)

Measure	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
R-High efficiency furnace-Tier 1 (95%)	$1,032,623	$405,876	$2,841,670	$991,150	$1,032,623	$332,003	$1,032,623	$1,359,711	$1,417,611	$405,876
R-High efficiency furnace-Tier 2 (97%)	$1,032,623	$405,876	$2,841,670	$991,150	$1,032,623	$332,003	$1,032,623	$1,359,711	$1,417,611	$405,876
R-High efficiency boiler-hyronic (90%)	$719,822	$319,117	$2,109,113	$779,284	$719,822	$359,669	$719,822	$1,076,066	$988,191	$319,117
R-High efficiency boiler-steam (82%)	$719,822	$319,117	$2,109,113	$779,284	$719,822	$359,669	$719,822	$1,076,066	$988,191	$319,117
R-High efficiency water heater-Tier 1 (0.82)	$30,168	$27,918	$110,389	$68,175	$30,168	$36,889	$30,168	$66,987	$40,507	$27,918
R-High efficiency water heater-Tier 2 (0.90)	$36,126	$58,891	$124,906	$143,811	$36,126	$36,889	$36,126	$72,932	$48,508	$58,891
R-Power vent water heater	$15,160	$27,918	$55,381	$68,175	$15,160	$18,445	$15,160	$33,570	$20,356	$27,918
Program Costs	$0	$51,645	$0	$0	$0	$51,645	$0	$51,645	$0	$51,645
Subtotals	**$3,586,344**	**$1,616,356**	**$10,192,240**	**$3,821,029**	**$3,586,344**	**$1,527,212**	**$3,586,344**	**$5,096,689**	**$4,920,975**	**$1,616,356**

COST EFFECTIVENESS TESTS - Home Energy Assessments PROGRAM (4 Years)

Measure	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
R-Direct Install-programmable thermostat	$588,651	$68,830	$1,198,916	$68,830	$385,818	$68,830	$385,818	$452,923	$838,972	$68,830
R-Direct Install-kitchen aerator	$83,446	$3,951	$87,205	$3,951	$83,446	$3,951	$83,446	$87,205	$112,047	$3,951
R-Direct Install-bath aerator	$101,170	$7,902	$108,838	$7,902	$101,170	$7,902	$101,170	$108,838	$135,845	$7,902
R-Direct Install-showerheads	$683,818	$43,175	$725,418	$43,175	$683,818	$43,175	$683,818	$725,418	$918,190	$43,175
R-Direct Install-HW pipe wrap	$172,801	$14,564	$186,966	$14,564	$172,801	$14,564	$172,801	$186,966	$232,026	$14,564
R-HEA-air sealing	$1,881,347	$1,208,489	$3,753,555	$1,208,489	$1,249,798	$290,502	$1,249,798	$1,533,868	$2,736,510	$1,208,489
R-HEA-attic insulation	$1,125,412	$946,650	$1,911,199	$946,650	$971,136	$402,830	$971,136	$1,368,968	$1,600,881	$946,650
Program Costs	$0	$543,475	$0	$0	$0	$543,475	$0	$543,475	$0	$543,475
Subtotals	**$4,636,646**	**$2,837,035**	**$7,972,097**	**$2,293,560**	**$3,647,986**	**$1,375,228**	**$3,647,986**	**$5,007,662**	**$6,574,471**	**$2,837,035**

COST EFFECTIVENESS TESTS - Home Weatherization for Income Qualified Customers PROGRAM (4 Years)

Measure	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
R-Direct Install-programmable thermostat (income q	$84,093	$9,833	$171,274	$9,833	$55,117	$9,833	$55,117	$64,703	$119,853	$9,833
R-Direct Install-kitchen aerator (income qualified)	$5,960	$369	$6,316	$369	$5,960	$369	$5,960	$6,316	$8,003	$369
R-Direct Install-bath aerator (income qualified)	$7,226	$738	$7,948	$738	$7,226	$738	$7,226	$7,948	$9,703	$738
R-Direct Install-showerheads (income qualified)	$48,844	$2,951	$51,683	$2,951	$48,844	$2,951	$48,844	$51,683	$65,585	$2,951
R-Direct Install-HW pipe wrap (income qualified)	$12,343	$1,107	$13,421	$1,107	$12,343	$1,107	$12,343	$13,421	$16,573	$1,107
R-Air Sealing (income qualified)	$429,487	$287,736	$1,047,415	$287,736	$297,571	$287,736	$297,571	$583,775	$622,730	$287,736
R-Attic Insulation (income qualified)	$267,937	$225,393	$584,471	$225,393	$231,220	$225,393	$231,220	$455,423	$381,134	$225,393
R-HVAC tune-up (heating & cooling) (income qualifie	$12,864	$26,560	$47,717	$26,560	$10,155	$26,560	$10,155	$36,676	$17,595	$26,560
R-Equipment Replacement (furnace) (income qualifi	$360,633	$123,894	$901,737	$123,894	$360,633	$542,897	$360,633	$901,737	$500,544	$123,894
Program Costs	$0	$110,668	$0	$0	$0	$110,668	$0	$110,668	$0	$110,668
Subtotals	**$1,229,388**	**$789,247**	**$2,831,980**	**$678,580**	**$1,029,071**	**$1,208,250**	**$1,029,071**	**$2,232,350**	**$1,741,721**	**$789,247**
Totals	$9,452,378	$5,242,638	$20,996,318	$6,793,168	$8,263,401	$4,110,690	$8,263,401	$12,336,701	$13,237,167	$5,242,638

COST EFFECTIVENESS TESTS - RESIDENTIAL FINANCING PROGRAM (4 Years)

Measure	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
R-Financing Tier 1	$4,955,770	$3,671,299	$9,099,944	$3,671,299	$3,660,564	$905,998	$3,660,564	$4,547,724	$7,148,929	$3,671,299
R-Financing Tier 2	$2,787,428	$2,221,303	$4,853,352	$2,221,303	$2,058,925	$244,575	$2,058,925	$2,292,905	$4,020,996	$2,221,303
Program Costs	$0	$923,058	$0	$0	$0	$923,058	$0	$923,058	$0	$923,058
Totals	$7,743,198	$6,815,660	$13,953,296	$5,892,602	$5,719,489	$2,073,631	$5,719,489	$7,763,687	$11,169,925	$6,815,660

COST EFFECTIVENESS TESTS - HOME ENERY REPORTS - OPOWER PROGRAM (4 Years)

	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
Measure	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
R-Home Energy Report - Yr 1	$758,250	$0	$625,022	$0	$758,250	$0	$758,250	$625,022	$940,670	$0
R-Home Energy Report - Yr 2	$1,017,538	$0	$719,610	$0	$1,017,538	$0	$1,017,538	$719,610	$1,236,281	$0
R-Home Energy Report - Yr 3	$554,525	$0	$552,866	$0	$554,525	$0	$554,525	$552,866	$736,849	$0
R-Home Energy Report - Yr 4	$518,662	$0	$490,305	$0	$518,662	$0	$518,662	$490,305	$687,120	$0
Program Costs	$0	$2,848,276	$0	$0	$0	$2,848,276	$0	$2,848,276	$0	$2,848,276
Totals	$2,848,975	$2,848,276	$2,387,802	$0	$2,848,975	$2,848,276	$2,848,975	$5,236,078	$3,600,920	$2,848,276

COST EFFECTIVENESS TESTS - STEAM TRAP SURVEY & REPAIR PROGRAM PROGRAM (4 Years)

	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
Measure	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
C-Steam trap	$1,014,606	$509,753	$1,364,653	$509,753	$1,014,606	$354,282	$1,014,606	$1,364,653	$1,416,563	$509,753
Program Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotals	**$1,014,606**	**$509,753**	**$1,364,653**	**$509,753**	**$1,014,606**	**$354,282**	**$1,014,606**	**$1,364,653**	**$1,416,563**	**$509,753**
Totals	$1,014,606	$509,753	$1,364,653	$509,753	$1,014,606	$354,282	$1,014,606	$1,364,653	$1,416,563	$509,753

COST EFFECTIVENESS TESTS - COMMERCIAL FINANCING PROGRAM (4 Years)

	Total Resource Cost		Participant Test		Program Administrator Cost Test		Ratepayer Impact Measure Test		Societal Cost Test	
Measure	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs	Benefits	Costs
C-Commercial Financing	$5,749,184	$2,235,227	$16,293,230	$5,458,430	$1,195,975	$235,722	$1,195,975	$1,422,880	$8,838,756	$2,235,227
Program Costs	$0	$305,367	$0	$0	$0	$305,367	$0	$305,367	$0	$305,367
Totals	$5,749,184	$2,540,594	$16,293,230	$5,458,430	$1,195,975	$541,089	$1,195,975	$1,728,247	$8,838,756	$2,540,594

Measure	Type	Include in Programs?	Annual Participant Savings [DTH] (Summer) [1]	Annual Participant Savings [DTH] (Winter) [1]	Demand Savings [DTH]	Annual Participant Savings [kWh]	Lifecycle Year [2]	Net to Gross Ratio	Customer Incentive {INCt} (one-time) [3]	Customer Cost {PCt} (one-time) [4]
R-Direct Install-programmable thermostat	R	Y	0.37	2.66	0.03	263	15	100%	53	53.31
R-Direct Install-kitchen aerator	R	Y	0.23	0.23	0.00	0	10	100%	2	1.53
R-Direct Install-bath aerator	R	Y	0.14	0.14	0.00	0	10	100%	2	1.53
R-Direct Install-showerheads	R	Y	0.93	0.93	0.01	0	10	100%	8	8.36
R-Direct Install-HW pipe wrap	R	Y	0.08	0.08	0.00	0	10	100%	1	0.94
R-HEA-air sealing	R	Y	1.30	9.35	0.09	795	30	100%	375	1,560.00
R-HEA-attic insulation	R	Y	1.01	7.26	0.07	194	30	100%	520	1,222.00
R-Financing Tier 1	R	Y	2.00	14.37	0.15	855	30	100%	614	2,488.06
R-Financing Tier 2	R	Y	4.50	32.33	0.33	1925	30	100%	663	6,021.56
R-High efficiency furnace-Tier 1 (95%)	R	Y	1.93	13.87	0.14	0	20	41%	250	746.34
R-High efficiency furnace-Tier 2 (97%)	R	Y	1.93	13.87	0.14	0	20	41%	250	746.34
R-High efficiency boiler-hyronic (90%)	R	Y	1.49	10.71	0.11	0	20	41%	300	650.00
R-High efficiency boiler-steam (82%)	R	Y	1.49	10.71	0.11	0	20	41%	300	650.00
R-High efficiency water heater-Tier 1 (0.82)	R	Y	2.79	2.79	0.02	0	10	41%	200	369.62
R-High efficiency water heater-Tier 2 (0.90)	R	Y	3.35	3.35	0.02	0	10	41%	200	779.69
R-Power vent water heater	R	Y	1.40	1.40	0.01	0	10	41%	100	369.62
R-Direct Install-programmable thermostat (income qualified)	R	Y	0.37	2.66	0.03	263	15	100%	53	53.31
R-Direct Install-kitchen aerator (income qualified)	R	Y	0.23	0.23	0.00	0	10	100%	2	2.00
R-Direct Install-bath aerator (income qualified)	R	Y	0.14	0.14	0.00	0	10	100%	2	2.00
R-Direct Install-showerheads (income qualified)	R	Y	0.93	0.93	0.01	0	10	100%	8	8.00
R-Direct Install-HW pipe wrap (income qualified)	R	Y	0.08	0.08	0.00	0	10	100%	1	1.00
R-Air Sealing (income qualified)	R	Y	1.30	9.35	0.09	697	30	100%	1,560	1,560.00
R-Attic Insulation (income qualified)	R	Y	1.01	7.26	0.07	194	30	100%	1,222	1,222.00
R-HVAC tune-up (heating & cooling) (income qualified)	R	Y	0.30	2.17	0.02	125	3	100%	160	160.00
R-Equipment Replacement (furnace) (income qualified)	R	Y	1.93	13.87	0.14	0	25	100%	3,270	746.34
C-Steam trap	C	Y	431.65	431.65	3.16	0	3	100%	6,000	8,633.00
C-Commercial Financing	C	Y	9.70	69.70	0.71	39681	20	41%	639	14,796.84
R-Home Energy Report - Yr 1	R	Y	0.04	0.20	0.00	0	2.5	100%	0	0.00
R-Home Energy Report - Yr 2	R	Y	0.05	0.24	0.00	0	2.9	100%	0	0.00
R-Home Energy Report - Yr 3	R	Y	0.01	0.09	0.00	0	5.0	100%	0	0.00
R-Home Energy Report - Yr 4	R	Y	0.01	0.08	0.00	0	5.2	100%	0	0.00

Measure	Annual Participants Year 1 [5]	Annual Participants Year 2 [5]	Annual Participants Year 3 [5]	Annual Participants Year 4 [5]	GrossProgram Savings [DTH] Year 1	Gross Program Savings [DTH] Year 2	Gross Program Savings [DTH] Year 3	Gross Program Savings [DTH] Year 4	Program Incentives [$] Year 1	Program Incentives [$] Year 2
R-Direct Install-programmable thermostat	350	350	350	350	1,059	1,059	1,059	1,059	$18,659	$18,659
R-Direct Install-kitchen aerator	700	700	700	700	316	316	316	316	$1,071	$1,071
R-Direct Install-bath aerator	1,400	1,400	1,400	1,400	384	384	384	384	$2,142	$2,142
R-Direct Install-showerheads	1,400	1,400	1,400	1,400	2,593	2,593	2,593	2,593	$11,704	$11,704
R-Direct Install-HW pipe wrap	4,200	4,200	4,200	4,200	655	655	655	655	$3,948	$3,948
R-HEA-air sealing	210	210	210	210	2,236	2,236	2,236	2,236	$78,750	$78,750
R-HEA-attic insulation	210	210	210	210	1,737	1,737	1,737	1,737	$109,200	$109,200
R-Financing Tier 1	400	400	400	400	6,549	6,549	6,549	6,549	$245,600	$245,600
R-Financing Tier 2	100	100	100	100	3,683	3,683	3,683	3,683	$66,300	$66,300
R-High efficiency furnace-Tier 1 (95%)	360	360	360	360	5,688	5,688	5,688	5,688	$90,000	$90,000
R-High efficiency furnace-Tier 2 (97%)	360	360	360	360	5,688	5,688	5,688	5,688	$90,000	$90,000
R-High efficiency boiler-hyronic (90%)	325	325	325	325	3,965	3,965	3,965	3,965	$97,500	$97,500
R-High efficiency boiler-steam (82%)	325	325	325	325	3,965	3,965	3,965	3,965	$97,500	$97,500
R-High efficiency water heater-Tier 1 (0.82)	50	50	50	50	279	279	279	279	$10,000	$10,000
R-High efficiency water heater-Tier 2 (0.90)	50	50	50	50	335	335	335	335	$10,000	$10,000
R-Power vent water heater	50	50	50	50	140	140	140	140	$5,000	$5,000
R-Direct Install-programmable thermostat (income qualified)	50	50	50	50	151	151	151	151	$2,666	$2,666
R-Direct Install-kitchen aerator (income qualified)	50	50	50	50	23	23	23	23	$100	$100
R-Direct Install-bath aerator (income qualified)	100	100	100	100	27	27	27	27	$200	$200
R-Direct Install-showerheads (income qualified)	100	100	100	100	185	185	185	185	$800	$800
R-Direct Install-HW pipe wrap (income qualified)	300	300	300	300	47	47	47	47	$300	$300
R-Air Sealing (income qualified)	50	50	50	50	532	532	532	532	$78,000	$78,000
R-Attic Insulation (income qualified)	50	50	50	50	414	414	414	414	$61,100	$61,100
R-HVAC tune-up (heating & cooling) (income qualified)	45	45	45	45	111	111	111	111	$7,200	$7,200
R-Equipment Replacement (furnace) (income qualified)	45	45	45	45	711	711	711	711	$147,170	$147,170
C-Steam trap	10	15	20	20	8,633	12,950	17,266	17,266	$60,000	$90,000
C-Commercial Financing	100	100	100	100	7,940	7,940	7,940	7,940	$63,900	$63,900
R-Home Energy Report - Yr 1	155,000	0	0	0	36,864	0	0	0	$0	$0
R-Home Energy Report - Yr 2	0	155,000	0	0	0	44,898	0	0	$0	$0
R-Home Energy Report - Yr 3	0	0	155,000	0	0	0	15,576	0	$0	$0
R-Home Energy Report - Yr 4	0	0	0	155,000	0	0	0	14,626	$0	$0
	166,390	166,395	166,400	166,400	94,912	107,262	82,256	81,307	$1,358,809	$1,388,809

Measure	Program Incentives [$] Year 3	Program Incentives [$] Year 4	Net Program Savings [DTH] Year 1	Net Program Savings [DTH] Year 2	Net Program Savings [DTH] Year 3	Net Program Savings [DTH] Year 4	Lifetime Gross Savings Year 1	Lifetime Gross Savings Year 2
R-Direct Install-programmable thermostat	$18,659	$18,659	1,059	1,059	1,059	1,059	15,892	15,892
R-Direct Install-kitchen aerator	$1,071	$1,071	316	316	316	316	3,164	3,164
R-Direct Install-bath aerator	$2,142	$2,142	384	384	384	384	3,836	3,836
R-Direct Install-showerheads	$11,704	$11,704	2,593	2,593	2,593	2,593	25,928	25,928
R-Direct Install-HW pipe wrap	$3,948	$3,948	655	655	655	655	6,552	6,552
R-HEA-air sealing	$78,750	$78,750	2,236	2,236	2,236	2,236	67,076	67,076
R-HEA-attic insulation	$109,200	$109,200	1,737	1,737	1,737	1,737	52,120	52,120
R-Financing Tier 1	$245,600	$245,600	6,549	6,549	6,549	6,549	196,461	196,461
R-Financing Tier 2	$66,300	$66,300	3,683	3,683	3,683	3,683	110,502	110,502
R-High efficiency furnace-Tier 1 (95%)	$90,000	$90,000	2,329	2,329	2,329	2,329	113,760	113,760
R-High efficiency furnace-Tier 2 (97%)	$90,000	$90,000	2,329	2,329	2,329	2,329	113,760	113,760
R-High efficiency boiler-hyronic (90%)	$97,500	$97,500	1,624	1,624	1,624	1,624	79,300	79,300
R-High efficiency boiler-steam (82%)	$97,500	$97,500	1,624	1,624	1,624	1,624	79,300	79,300
R-High efficiency water heater-Tier 1 (0.82)	$10,000	$10,000	114	114	114	114	2,793	2,793
R-High efficiency water heater-Tier 2 (0.90)	$10,000	$10,000	137	137	137	137	3,345	3,345
R-Power vent water heater	$5,000	$5,000	57	57	57	57	1,404	1,404
R-Direct Install-programmable thermostat (income qualified)	$2,666	$2,666	151	151	151	151	2,270	2,270
R-Direct Install-kitchen aerator (income qualified)	$100	$100	23	23	23	23	226	226
R-Direct Install-bath aerator (income qualified)	$200	$200	27	27	27	27	274	274
R-Direct Install-showerheads (income qualified)	$800	$800	185	185	185	185	1,852	1,852
R-Direct Install-HW pipe wrap (income qualified)	$300	$300	47	47	47	47	468	468
R-Air Sealing (income qualified)	$78,000	$78,000	532	532	532	532	15,971	15,971
R-Attic Insulation (income qualified)	$61,100	$61,100	414	414	414	414	12,410	12,410
R-HVAC tune-up (heating & cooling) (income qualified)	$7,200	$7,200	111	111	111	111	333	333
R-Equipment Replacement (furnace) (income qualified)	$147,170	$147,170	711	711	711	711	17,775	17,775
C-Steam trap	$120,000	$120,000	8,633	12,950	17,266	17,266	25,899	38,849
C-Commercial Financing	$63,900	$63,900	3,251	3,251	3,251	3,251	158,800	158,800
R-Home Energy Report - Yr 1	$0	$0	36,864	0	0	0	90,911	-
R-Home Energy Report - Yr 2	$0	$0	0	44,898	0	0	-	130,315
R-Home Energy Report - Yr 3	$0	$0	0	0	15,576	0	-	-
R-Home Energy Report - Yr 4	$0	$0	0	0	0	14,626	-	-
	$1,418,809	$1,418,809	78,378	90,728	65,722	64,772	1,202,381	1,254,734

Measure	Lifetime Gross Savings Year 3	Lifetime Gross Savings Year 4	Lifetime Net Savings Year 1	Lifetime Net Savings Year 2	Lifetime Net Savings Year 3	Lifetime Net Savings Year 4
R-Direct Install-programmable thermostat	15,892	15,892	15,892	15,892	15,892	15,892
R-Direct Install-kitchen aerator	3,164	3,164	3,164	3,164	3,164	3,164
R-Direct Install-bath aerator	3,836	3,836	3,836	3,836	3,836	3,836
R-Direct Install-showerheads	25,928	25,928	25,928	25,928	25,928	25,928
R-Direct Install-HW pipe wrap	6,552	6,552	6,552	6,552	6,552	6,552
R-HEA-air sealing	67,076	67,076	67,076	67,076	67,076	67,076
R-HEA-attic insulation	52,120	52,120	52,120	52,120	52,120	52,120
R-Financing Tier 1	196,461	196,461	196,461	196,461	196,461	196,461
R-Financing Tier 2	110,502	110,502	110,502	110,502	110,502	110,502
R-High efficiency furnace-Tier 1 (95%)	113,760	113,760	46,585	46,585	46,585	46,585
R-High efficiency furnace-Tier 2 (97%)	113,760	113,760	46,585	46,585	46,585	46,585
R-High efficiency boiler-hyronic (90%)	79,300	79,300	32,473	32,473	32,473	32,473
R-High efficiency boiler-steam (82%)	79,300	79,300	32,473	32,473	32,473	32,473
R-High efficiency water heater-Tier 1 (0.82)	2,793	2,793	1,144	1,144	1,144	1,144
R-High efficiency water heater-Tier 2 (0.90)	3,345	3,345	1,370	1,370	1,370	1,370
R-Power vent water heater	1,404	1,404	575	575	575	575
R-Direct Install-programmable thermostat (income qualified)	2,270	2,270	2,270	2,270	2,270	2,270
R-Direct Install-kitchen aerator (income qualified)	226	226	226	226	226	226
R-Direct Install-bath aerator (income qualified)	274	274	274	274	274	274
R-Direct Install-showerheads (income qualified)	1,852	1,852	1,852	1,852	1,852	1,852
R-Direct Install-HW pipe wrap (income qualified)	468	468	468	468	468	468
R-Air Sealing (income qualified)	15,971	15,971	15,971	15,971	15,971	15,971
R-Attic Insulation (income qualified)	12,410	12,410	12,410	12,410	12,410	12,410
R-HVAC tune-up (heating & cooling) (income qualified)	333	333	333	333	333	333
R-Equipment Replacement (furnace) (income qualified)	17,775	17,775	17,775	17,775	17,775	17,775
C-Steam trap	51,799	51,799	25,899	38,849	51,799	51,799
C-Commercial Financing	158,800	158,800	65,029	65,029	65,029	65,029
R-Home Energy Report - Yr 1	-	-	90,911	-	-	-
R-Home Energy Report - Yr 2	-	-	-	130,315	-	-
R-Home Energy Report - Yr 3	78,140	-	-	-	78,140	-
R-Home Energy Report - Yr 4	-	76,528	-	-	-	76,528
	1,215,510	1,213,897	876,153	928,505	889,281	887,668

Non-Incentive Program Costs

Program	Year 1 Budget (Actual)[2] (a)	Year 2 Budget Projections[2] (b)	Year 3 Budget Projections[2] (c)	Year 4 Budget Projections[2] (c)	Year 5 Budget Projections[2] (c)	Total Program Costs {PRCt} [3] (j)
Rebate Processing	$14,000	$14,000	$14,000	$14,000	$0	$51,645
Home Energy Assessments	$147,327	$147,327	$147,327	$147,327	$0	$543,475
Home Weatherization for Income Qualified	$30,000	$30,000	$30,000	$30,000	$0	$110,668
Home Energy Report - Opower	$850,000	$795,000	$715,000	$715,000	$0	$2,848,276
Residential Financing	$240,605	$190,605	$205,605	$220,605	$163,500	$923,058
					$0	$0
Steam Trap Survey & Repair Program	$0	$0	$0	$0	$0	$0
Commercial Financing	$102,240	$68,440	$70,400	$70,400	$19,560	$305,367
Operational and Administrative Costs	$859,000	$867,000	$876,873	$929,380	$0	$3,251,984
Total	$2,243,172	$2,112,372	$2,059,205	$2,126,712	$183,060	$8,034,472

[2] Program Costs include development, marketing, evaluation, and delivery costs. This amount does not include incentives or admin costs applied directly to individual measures.
[3] The total program costs include discounted costs in Yr2 and Yr3.

Incentive Costs

Program	Year 1 Budget (Actual)[2] (a)	Year 2 Budget Projections[2] (b)	Year 3 Budget Projections[2] (c)	Year 4 Budget Projections[2] (c)	Year 5 Budget Projections[2] (c)	Total Program Costs {PRCt} [3] (j)
Rebates - Furnaces, Boilers, Water Heaters	$400,000	$400,000	$400,000	$400,000	$0	$1,475,567
Home Energy Assess - Direct install measures	$225,474	$225,474	$225,474	$225,474	$0	$831,753
Loan interest buy down	$311,900	$311,900	$311,900	$311,900	$0	$1,150,573
Income qualified - Direct install measures	$297,535	$297,535	$297,535	$297,535	$0	$1,097,583
Steam Trap Survey & Repair Program	$60,000	$90,000	$120,000	$120,000	$0	$354,282
Commercial Financing	$63,900	$63,900	$63,900	$63,900	$0	$235,722
Total	$1,358,809	$1,388,809	$1,418,809	$1,418,809	$0	$4,555,476

[2] Program Costs include incentives provided to participating customers
[3] The total program costs include discounted costs in Yrs 2-4

PIVOTAL UTILITY HOLDINGS, INC. d/b/a ELIZABETHTOWN GAS ENERGY EFFICIENCY PROGRAM ("EEP")

2017 ESTIMATE	*PY1-2017*	*PY2-2018*	*PY3-2019*	*PY4-2020*	*PY5-2021*	Total
O&M EXPENDITURES						
Labor	$ 397,000	$ 405,000	$ 421,873	$ 434,380		$ 1,658,253
Outside Consultant	$ 15,000	$ 15,000	$ 15,000	$ 15,000		$ 60,000
Customer Education, Outreach	$ 405,000	$ 405,000	$ 405,000	$ 405,000		$ 1,620,000
Home Energy Report - Opower	$ 850,000	$ 795,000	$ 715,000	$ 715,000		$ 3,075,000
Call Center Support	$ 42,000	$ 42,000	$ 35,000	$ 35,000		$ 154,000
Program Evaluation	$ -	$ -	$ -	$ 40,000		$ 40,000
TOTAL O&M	**$ 1,709,000**	**$ 1,662,000**	**$ 1,591,873**	**$ 1,644,380**	**$ -**	**$ 6,607,253**
PROGRAM EXPENDITURES						
Residential Gas HVAC/WH :						
Rebates, Grants, Incentives	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ -	$ 1,600,000
Rebate Processing	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ -	$ 56,000
Home Energy Assessments	$ 372,800	$ 372,800	$ 372,800	$ 372,800	$ -	$ 1,491,200
Home Weatherization for Income Qualified	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ -	$ 1,200,000
HW for IQC Administrative Fees	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ -	$ 120,000
	$ 1,116,800	**$ 1,116,800**	**$ 1,116,800**	**$ 1,116,800**	**$ -**	**$ 4,467,200**
Residential Financing:						
Origination Fees	$157,500	$157,500	$157,500	$157,500	$ -	$630,000
Loan Servicing Costs	$8,105	$23,105	$38,105	$53,105	$153,500	$275,920
Prepaid Interest	$311,900	$311,900	$311,900	$311,900	$ -	$1,247,600
Bad Debt	$ -	$10,000	$10,000	$10,000	$10,000	$40,000
Start Up Costs	$75,000	$ -	$ -	$ -	$ -	$75,000
	$552,505	**$502,505**	**$517,505**	**$532,505**	**$163,500**	**$2,268,520**
Commercial Gas						
Steam Trap Survey & Repair Program	$60,000	$90,000	$120,000	$120,000	$0	$390,000
	$60,000	**$90,000**	**$120,000**	**$120,000**	**$0**	**$390,000**
Commercial Financing:						
Origination Fees	$50,000	$50,000	$50,000	$50,000	$ -	$200,000
Loan Servicing Costs	$2,240	$6,440	$8,400	$8,400	$7,560	$33,040
Prepaid Interest	$63,900	$63,900	$63,900	$63,900	$ -	$255,600
Bad Debt	$ -	$12,000	$12,000	$12,000	$12,000	$48,000
Start Up Costs	$50,000	$ -	$ -	$ -	$ -	$50,000
	$166,140	**$132,340**	**$134,300**	**$134,300**	**$19,560**	**$586,640**
Total Program Expenditures	**$ 1,895,445**	**$ 1,841,645**	**$ 1,888,605**	**$ 1,903,605**	**$ 183,060**	**$7,712,360**
Total RGGI Expenditures	**$ 3,604,445**	**$ 3,503,645**	**$ 3,480,478**	**$ 3,547,985**	**$ 183,060**	**$14,319,613**

Discount Rate 5.680%
Years 4

ETG Transmission/Capacity Rate: 0.1895 per therm
ETG Distribution Rate: Com: 0.20330 Res: 0.36910 per therm

	Bill Reductions ($/DTH)				Lost Revenue ($/DTH)			
1	2	3	4	5	6	7	8	9
	Commercial [1]		Residential [2]		Commercial DNG [3]		Residential DNG [4]	
Year	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
1	$6.92	$7.05	$8.58	$8.71	$6.92	$7.05	$8.578	$8.707
2	$6.81	$7.13	$8.47	$8.79	$6.81	$7.13	$8.47	$8.79
3	$6.79	$7.04	$8.45	$8.70	$6.79	$7.04	$8.45	$8.70
4	$6.85	$7.05	$8.51	$8.71	$6.85	$7.05	$8.51	$8.71
5	$7.00	$7.15	$8.66	$8.81	$7.00	$7.15	$8.66	$8.81
6	$7.16	$7.31	$8.82	$8.97	$7.16	$7.31	$8.82	$8.97
7	$7.33	$7.48	$8.99	$9.14	$7.33	$7.48	$8.99	$9.14
8	$7.50	$7.65	$9.16	$9.31	$7.50	$7.65	$9.16	$9.31
9	$7.67	$7.84	$9.33	$9.50	$7.67	$7.84	$9.33	$9.50
10	$7.84	$8.03	$9.50	$9.68	$7.84	$8.03	$9.50	$9.68
11	$8.00	$8.21	$9.66	$9.87	$8.00	$8.21	$9.66	$9.87
12	$8.17	$8.40	$9.83	$10.06	$8.17	$8.40	$9.83	$10.06
13	$8.27	$8.55	$9.93	$10.20	$8.27	$8.55	$9.93	$10.20
14	$8.38	$8.66	$10.04	$10.32	$8.38	$8.66	$10.04	$10.32
15	$8.49	$8.78	$10.15	$10.44	$8.49	$8.78	$10.15	$10.44
16	$8.61	$8.90	$10.26	$10.56	$8.61	$8.90	$10.26	$10.56
17	$8.72	$9.02	$10.38	$10.68	$8.72	$9.02	$10.38	$10.68
18	$8.84	$9.15	$10.50	$10.81	$8.84	$9.15	$10.50	$10.81
19	$8.96	$9.28	$10.62	$10.94	$8.96	$9.28	$10.62	$10.94
20	$9.09	$9.41	$10.75	$11.07	$9.09	$9.41	$10.75	$11.07
21	$9.22	$9.55	$10.87	$11.20	$9.22	$9.55	$10.87	$11.20
22	$9.35	$9.69	$11.01	$11.34	$9.35	$9.69	$11.01	$11.34
23	$9.48	$9.83	$11.14	$11.49	$9.48	$9.83	$11.14	$11.49
24	$9.62	$9.98	$11.28	$11.63	$9.62	$9.98	$11.28	$11.63
25	$9.76	$10.13	$11.42	$11.78	$9.76	$10.13	$11.42	$11.78
26	$9.91	$10.28	$11.56	$11.94	$9.91	$10.28	$11.56	$11.94
27	$10.05	$10.44	$11.71	$12.09	$10.05	$10.44	$11.71	$12.09
28	$10.21	$10.60	$11.86	$12.26	$10.21	$10.60	$11.86	$12.26
29	$10.36	$10.76	$12.02	$12.42	$10.36	$10.76	$12.02	$12.42
30	$10.52	$10.93	$12.18	$12.59	$10.52	$10.93	$12.18	$12.59
31	$10.68	$11.11	$12.34	$12.77	$10.68	$11.11	$12.34	$12.77
32	$10.85	$11.29	$12.51	$12.94	$10.85	$11.29	$12.51	$12.94
33	$11.02	$11.47	$12.68	$13.13	$11.02	$11.47	$12.68	$13.13
34	$11.20	$11.66	$12.86	$13.31	$11.20	$11.66	$12.86	$13.31
35	$11.38	$11.85	$13.04	$13.50	$11.38	$11.85	$13.04	$13.50
36								
37								
38								

		Avoided Cost-Res [5]	
		Summer Avoided Costs	Winter Avoided Costs
Year	Year		
1	2017	$8.578	$8.707
2	2018	$8.471	$8.792
3	2019	$8.450	$8.701
4	2020	$8.512	$8.709
5	2021	$8.662	$8.812
6	2022	$8.821	$8.971
7	2023	$8.986	$9.136
8	2024	$9.161	$9.311
9	2025	$9.331	$9.496
10	2026	$9.497	$9.684
11	2027	$9.662	$9.870
12	2028	$9.827	$10.060
13	2029	$9.932	$10.204
14	2030	$10.040	$10.319
15	2031	$10.151	$10.436
16	2032	$10.264	$10.557
17	2033	$10.380	$10.680
18	2034	$10.499	$10.806
19	2035	$10.621	$10.936
20	2036	$10.746	$11.069
21	2037	$10.874	$11.205
22	2038	$11.005	$11.344
23	2039	$11.140	$11.487
24	2040	$11.277	$11.634
25	2041	$11.419	$11.784
26	2042	$11.563	$11.937
27	2043	$11.712	$12.095
28	2044	$11.864	$12.256
29	2045	$12.019	$12.422
30	2046	$12.179	$12.592
31	2047	$12.343	$12.765
32	2048	$12.510	$12.944
33	2049	$12.682	$13.126
34	2050	$12.858	$13.313
35	2051	$13.039	$13.505
36	2052	$13.224	$13.701

		Avoided Cost-Com [6]	
		Summer Avoided Costs	Winter Avoided Costs
	Year		
1	2017	$6.920	$7.049
2	2018	$6.813	$7.134
3	2019	$6.792	$7.043
4	2020	$6.854	$7.051
5	2021	$7.004	$7.154
6	2022	$7.163	$7.313
7	2023	$7.328	$7.478
8	2024	$7.503	$7.653
9	2025	$7.673	$7.838
10	2026	$7.839	$8.026
11	2027	$8.004	$8.212
12	2028	$8.169	$8.402
13	2029	$8.274	$8.546
14	2030	$8.382	$8.661
15	2031	$8.493	$8.778
16	2032	$8.606	$8.899
17	2033	$8.722	$9.022
18	2034	$8.841	$9.148
19	2035	$8.963	$9.278
20	2036	$9.088	$9.411
21	2037	$9.216	$9.547
22	2038	$9.347	$9.686
23	2039	$9.482	$9.829
24	2040	$9.619	$9.976
25	2041	$9.761	$10.126
26	2042	$9.905	$10.279
27	2043	$10.054	$10.437
28	2044	$10.206	$10.598
29	2045	$10.361	$10.764
30	2046	$10.521	$10.934
31	2047	$10.685	$11.107
32	2048	$10.852	$11.286
33	2049	$11.024	$11.468
34	2050	$11.200	$11.655
35	2051	$11.381	$11.847
36	2052	$11.566	$12.043

Retail and Wholesale Electricity Prices[1]

	Retail ($/kWh)		Wholesale ($/MWh)				
	Residential	Commericial & Industrial	Average Price	Summer Peak	Summer Off-Peak	Non-Summer Peak	Non-Summer Off-Peak
2013	$ 0.17	$ 0.14	$ 40.81	$ 52.17	$ 33.50	$ 47.49	$ 36.82
2014	$ 0.17	$ 0.14	$ 41.74	$ 53.36	$ 34.27	$ 48.57	$ 37.66
2015	$ 0.17	$ 0.14	$ 42.69	$ 54.57	$ 35.05	$ 49.67	$ 38.51
2016	$ 0.18	$ 0.14	$ 41.52	$ 53.08	$ 34.09	$ 48.31	$ 37.46
2017	$ 0.18	$ 0.15	$ 42.97	$ 54.93	$ 35.27	$ 50.00	$ 38.77
2018	$ 0.18	$ 0.15	$ 43.18	$ 55.20	$ 35.45	$ 50.24	$ 38.96
2019	$ 0.19	$ 0.15	$ 45.24	$ 57.83	$ 37.14	$ 52.64	$ 40.82
2020	$ 0.19	$ 0.16	$ 46.03	$ 58.85	$ 37.79	$ 53.56	$ 41.53
2021	$ 0.19	$ 0.16	$ 49.55	$ 63.34	$ 40.68	$ 57.66	$ 44.71
2022	$ 0.19	$ 0.16	$ 51.30	$ 65.58	$ 42.11	$ 59.69	$ 46.28
2023	$ 0.20	$ 0.16	$ 53.34	$ 68.19	$ 43.79	$ 62.07	$ 48.13
2024	$ 0.20	$ 0.17	$ 56.46	$ 72.17	$ 46.35	$ 65.69	$ 50.94
2025	$ 0.21	$ 0.17	$ 58.50	$ 74.78	$ 48.03	$ 68.07	$ 52.78
2026	$ 0.22	$ 0.17	$ 60.58	$ 77.44	$ 49.74	$ 70.49	$ 54.66
2027	$ 0.22	$ 0.17	$ 63.07	$ 80.63	$ 51.78	$ 73.39	$ 56.91
2028	$ 0.23	$ 0.18	$ 65.38	$ 83.59	$ 53.68	$ 76.08	$ 58.99
2029	$ 0.23	$ 0.18	$ 67.08	$ 85.75	$ 55.07	$ 78.05	$ 60.52
2030	$ 0.24	$ 0.19	$ 69.30	$ 88.59	$ 56.89	$ 80.64	$ 62.53
2031	$ 0.25	$ 0.19	$ 71.42	$ 91.30	$ 58.63	$ 83.10	$ 64.44
2032	$ 0.25	$ 0.19	$ 74.16	$ 94.81	$ 60.89	$ 86.29	$ 66.91
2033	$ 0.26	$ 0.20	$ 76.21	$ 97.43	$ 62.57	$ 88.68	$ 68.76
2034	$ 0.26	$ 0.21	$ 78.32	$ 100.12	$ 64.30	$ 91.13	$ 70.66
2035	$ 0.27	$ 0.22	$ 80.70	$ 103.17	$ 66.25	$ 93.90	$ 72.81
2036	$ 0.28	$ 0.22	$ 84.04	$ 107.43	$ 68.99	$ 97.78	$ 75.82
2037	$ 0.29	$ 0.23	$ 88.83	$ 113.56	$ 72.93	$ 103.37	$ 80.15

[1] Source: from Table 1 in "DRAFT Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions"
Available from: http://www.njcleanenergy.com/files/file/public_comments/Draft%20Avoided%20Cost%20Memo%20-%208%20Dec%202014%20-%20CEEEP,%20Rutgers.pdf

		Avoided Costs-Electric		
	Year	Average Wholesale Price ($/kWh)	Res Retail ($/kWh)	C&I Retail ($/kWh)
2017	1	$0.043	$ 0.18	$ 0.15
2018	2	$0.043	$ 0.18	$ 0.15
2019	3	$0.045	$ 0.19	$ 0.15
2020	4	$0.046	$ 0.19	$ 0.16
2021	5	$0.050	$ 0.19	$ 0.16
2022	6	$0.051	$ 0.19	$ 0.16
2023	7	$0.053	$ 0.20	$ 0.16
2024	8	$0.056	$ 0.20	$ 0.17
2025	9	$0.059	$ 0.21	$ 0.17
2026	10	$0.061	$ 0.22	$ 0.17
2027	11	$0.063	$ 0.22	$ 0.17
2028	12	$0.065	$ 0.23	$ 0.18
2029	13	$0.067	$ 0.23	$ 0.18
2030	14	$0.069	$ 0.24	$ 0.19
2031	15	$0.071	$ 0.25	$ 0.19
2032	16	$0.074	$ 0.25	$ 0.19
2033	17	$0.076	$ 0.26	$ 0.20
2034	18	$0.078	$ 0.26	$ 0.21
2035	19	$0.081	$ 0.27	$ 0.22
2036	20	$0.084	$ 0.28	$ 0.22
2037	21	$0.089	$ 0.29	$ 0.23
2038	22	$0.091	$0.297	$0.236
2039	23	$0.093	$0.305	$0.242
2040	24	$0.096	$0.312	$0.248
2041	25	$0.098	$0.320	$0.254
2042	26	$0.100	$0.328	$0.260
2043	27	$0.103	$0.336	$0.266
2044	28	$0.105	$0.344	$0.273
2045	29	$0.108	$0.353	$0.280
2046	30	$0.111	$0.362	$0.287
2047	31	$0.114	$0.371	$0.294
2048	32	$0.116	$0.380	$0.301
2049	33	$0.119	$0.389	$0.309
2050	34	$0.122	$0.399	$0.316
2051	35	$0.125	$0.409	$0.324
2052	36	$0.128	$0.419	$0.332
2053	37	$0.131	$0.429	$0.340
2054	38	$0.135	$0.440	$0.349

Electric Emissions Factors	lbs CO2 per kWh 1.11179 saved	
	Social Cost of Carbon (Nominal $/metric ton) and U.S. GDP Chain-type Price Index[2]	
2013	$ 39.69	1.17
2014	$ 41.53	1.19
2015	$ 43.32	1.21
2016	$ 45.14	1.23
2017	$ 46.98	1.25
2018	$ 48.89	1.27
2019	$ 50.86	1.29
2020	$ 52.90	1.31
2021	$ 55.02	1.33
2022	$ 57.21	1.35
2023	$ 59.48	1.37
2024	$ 61.82	1.4
2025	$ 64.22	1.42
2026	$ 66.70	1.45
2027	$ 67.86	1.47
2028	$ 70.48	1.5
2029	$ 73.20	1.52
2030	$ 76.04	1.55
2031	$ 79.04	1.58
2032	$ 82.14	1.62
2033	$ 85.38	1.65
2034	$ 88.74	1.68
2035	$ 92.22	1.72
2036	$ 95.85	1.76
2037	$ 99.60	1.79

Gas Emissions Factors	lbs CO2 per 11.7 therm saved	
Year		Social Cost of Carbon (Nominal $/metric ton)
2017	1	$ 46.98
2018	2	$ 48.89
2019	3	$ 50.86
2020	4	$ 52.90
2021	5	$ 55.02
2022	6	$ 57.21
2023	7	$ 59.48
2024	8	$ 61.82
2025	9	$ 64.22
2026	10	$ 66.70
2027	11	$ 67.86
2028	12	$ 70.48
2029	13	$ 73.20
2030	14	$ 76.04
2031	15	$ 79.04
2032	16	$ 82.14
2033	17	$ 85.38
2034	18	$ 88.74
2035	19	$ 92.22
2036	20	$ 95.85
2037	21	$ 99.60
2038	22	$ 102.07
2039	23	$ 104.60
2040	24	$ 107.20
2041	25	$ 109.86
2042	26	$ 112.59
2043	27	$ 115.38
2044	28	$ 118.24
2045	29	$ 121.18
2046	30	$ 124.18
2047	31	$ 127.26
2048	32	$ 130.42
2049	33	$ 133.66
2050	34	$ 136.97
2051	35	$ 140.37

Demand Savings-Res [1]		
Year		Primary Fuel Initial Marginal Demand Cost ($/DTH)
2017	1	$0.000
2018	2	$0.000
2019	3	$0.000
2020	4	$0.000
2021	5	$0.000
2022	6	$0.000
2023	7	$0.000
2024	8	$0.000
2025	9	$0.000
2026	10	$0.000
2027	11	$0.000
2028	12	$0.000
2029	13	$0.000
2030	14	$0.000
2031	15	$0.000
2032	16	$0.000
2033	17	$0.000
2034	18	$0.000
2035	19	$0.000
2036	20	$0.000
2037	21	$0.000
2038	22	$0.000
2039	23	$0.000
2040	24	$0.000
2041	25	$0.000
2042	26	$0.000
2043	27	$0.000
2044	28	$0.000
2045	29	$0.000
2046	30	$0.000
2047	31	$0.000
2048	32	$0.000
2049	33	$0.000
2050	34	$0.000
2051	35	$0.000

Demand Savings-Com [1]		
Year		Primary Fuel Initial Marginal Demand Cost ($/DTH)
2017	1	$1.475
2018	2	$1.475
2019	3	$1.475
2020	4	$1.475
2021	5	$1.475
2022	6	$1.475
2023	7	$1.475
2024	8	$1.475
2025	9	$1.475
2026	10	$1.475
2027	11	$1.475
2028	12	$1.475
2029	13	$1.475
2030	14	$1.475
2031	15	$1.475
2032	16	$1.475
2033	17	$1.475
2034	18	$1.475
2035	19	$1.475
2036	20	$1.475
2037	21	$1.475
2038	22	$1.475
2039	23	$1.475
2040	24	$1.475
2041	25	$1.475
2042	26	$1.475
2043	27	$1.475
2044	28	$1.475
2045	29	$1.475
2046	30	$1.475
2047	31	$1.475
2048	32	$1.475
2049	33	$1.475
2050	34	$1.475
2051	35	$1.475

[2] Source: from Table 3 in "DRAFT Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions"
Available from: http://www.njcleanenergy.com/files/file/public_comments/Draft%20Avoided%20Cost%20Memo%20-%208%20Dec%202014%20-%20CEEEP,%20Rutgers.pdf

[1] Source: from "Schedule DJN-1 2015 ETG EEP Cost Benefit Analysis"

http://www.cmegroup.com/trading/energy/natural-gas/natural-gas.html

MONTH	Mon.				Seasonal Average NYMEX values	
	06/13/16		NYMEX			
Jun-98	$2.017		4/1/2016	0.1852	summer	winter
Jul-98	$2.353		5/1/2016	0.203	therms	therms
Aug-98	$1.953		6/1/2016	0.1978		
Sep-98	$1.754		7/1/2016	0.2585		
Oct-98	$2.130		8/1/2016	0.2652		
Nov-98	$2.190		9/1/2016	0.2682		
Dec-98	$2.136	2017	10/1/2016	0.2747	0.29915	0.31205
Jan-99	$1.811		11/1/2016	0.2919		
Feb-99	$1.746		12/1/2016	0.3182		
Mar-99	$1.693		1/1/2017	0.331		
Apr-99	$1.850		2/1/2017	0.3303		
May-99	$2.326		3/1/2017	0.3262		
Jun-99	$2.201		4/1/2017	0.2987		
Jul-99	$2.272		5/1/2017	0.2957		
Aug-99	$2.572		6/1/2017	0.2978		
Sep-99	$3.012		7/1/2017	0.3012		
Oct-99	$2.607		8/1/2017	0.3017		
Nov-99	$3.040		9/1/2017	0.2998		
Dec-99	$2.169	2018	10/1/2017	0.3023	0.288517	0.320567
Jan-00	$2.338		11/1/2017	0.3082		
Feb-00	$2.583		12/1/2017	0.3229		
Mar-00	$2.561		1/1/2018	0.3344		
Apr-00	$2.926		2/1/2018	0.331		
May-00	$3.112		3/1/2018	0.3246		
Jun-00	$4.238		4/1/2018	0.2866		
Jul-00	$4.538		5/1/2018	0.2847		
Aug-00	$3.748		6/1/2018	0.2875		
Sep-00	$4.644		7/1/2018	0.2908		
Oct-00	$5.304		8/1/2018	0.2913		
Nov-00	$4.621		9/1/2018	0.2902		
Dec-00	$6.320	2019	10/1/2018	0.292	0.28635	0.311483
Jan-01	$9.790		11/1/2018	0.2995		
Feb-01	$6.940		12/1/2018	0.3139		
Mar-01	$5.090		1/1/2019	0.3256		
Apr-01	$5.442		2/1/2019	0.3222		
May-01	$4.983		3/1/2019	0.3157		
Jun-01	$3.922		4/1/2019	0.2822		
Jul-01	$3.342		5/1/2019	0.2817		
Aug-01	$3.190		6/1/2019	0.285		
Sep-01	$2.418		7/1/2019	0.2888		
Oct-01	$1.888		8/1/2019	0.2906		
Nov-01	$3.060		9/1/2019	0.2898		
Dec-01	$2.539	2020	10/1/2019	0.2918	0.292633	0.3123
Jan-02	$2.787		11/1/2019	0.2994		
Feb-02	$1.984		12/1/2019	0.3141		
Mar-02	$2.381		1/1/2020	0.3266		
Apr-02	$3.418		2/1/2020	0.3241		
May-02	$3.344		3/1/2020	0.3178		
Jun-02	$3.349		4/1/2020	0.2878		
Jul-02	$3.386		5/1/2020	0.2876		
Aug-02	$2.938		6/1/2020	0.2909		
Sep-02	$3.463		7/1/2020	0.2946		
Oct-02	$3.641		8/1/2020	0.2974		
Nov-02	$4.110		9/1/2020	0.2975		
Dec-02	$4.220	2021	10/1/2020	0.3008	0.307633	0.322583
Jan-03	$5.032		11/1/2020	0.3088		
Feb-03	$5.500		12/1/2020	0.3238		
Mar-03	$9.282		1/1/2021	0.3378		
Apr-03	$5.107		2/1/2021	0.3353		
May-03	$5.358		3/1/2021	0.329		
Jun-03	$5.988		4/1/2021	0.3025		
Jul-03	$5.582		5/1/2021	0.3024		
Aug-03	$4.700		6/1/2021	0.3056		
Sep-03	$5.016		7/1/2021	0.3093		
Oct-03	$4.520		8/1/2021	0.3128		
Nov-03	$4.486		9/1/2021	0.3132		
Dec-03	$4.725	2022	10/1/2021	0.3168	0.323483	0.33845
Jan-04	$6.224		11/1/2021	0.3248		
Feb-04	$5.739		12/1/2021	0.3396		
Mar-04	$5.118		1/1/2022	0.3536		
Apr-04	$5.365		2/1/2022	0.3511		
May-04	$5.858		3/1/2022	0.3448		
Jun-04	$6.690		4/1/2022	0.3183		
Jul-04	$6.326		5/1/2022	0.3182		
Aug-04	$5.998		6/1/2022	0.3214		
Sep-04	$5.190		7/1/2022	0.3252		
Oct-04	$5.459		8/1/2022	0.3287		
Nov-04	$7.973		9/1/2022	0.3291		

Dec-04	**$7.177**	2023	10/1/2022	0.3331	0.339967	0.354983
Jan-05	**$6.347**		11/1/2022	0.3411		
Feb-05	**$6.360**		12/1/2022	0.3561		
Mar-05	**$6.239**		1/1/2023	0.3703		
Apr-05	**$7.128**		2/1/2023	0.3678		
May-05	**$7.007**		3/1/2023	0.3615		
Jun-05	**$6.262**		4/1/2023	0.335		
Jul-05	**$7.158**		5/1/2023	0.3345		
Aug-05	**$7.452**		6/1/2023	0.3377		
Sep-05	**$10.136**		7/1/2023	0.3415		
Oct-05	**$13.001**		8/1/2023	0.3451		
Nov-05	**$14.070**		9/1/2023	0.346		
Dec-05	**$11.471**	2024	10/1/2023	0.3505	0.357533	0.372483
Jan-06	**$11.579**		11/1/2023	0.3585		
Feb-06	**$8.363**		12/1/2023	0.3737		
Mar-06	**$7.284**		1/1/2024	0.3879		
Apr-06	**$7.171**		2/1/2024	0.3854		
May-06	**$7.337**		3/1/2024	0.3789		
Jun-06	**$5.955**		4/1/2024	0.3526		
Jul-06	**$5.988**		5/1/2024	0.3516		
Aug-06	**$6.779**		6/1/2024	0.3548		
Sep-06	**$6.815**		7/1/2024	0.3593		
Oct-06	**$4.401**		8/1/2024	0.3629		
Nov-06	**$7.448**		9/1/2024	0.364		
Dec-06	**$8.011**	2025	10/1/2024	0.369	0.374517	0.391017
Jan-07	**$6.195**		11/1/2024	0.377		
Feb-07	**$6.999**		12/1/2024	0.3922		
Mar-07	**$7.676**		1/1/2025	0.4064		
Apr-07	**$7.438**		2/1/2025	0.4041		
May-07	**$7.598**		3/1/2025	0.3974		
Jun-07	**$7.637**		4/1/2025	0.3699		
Jul-07	**$6.915**		5/1/2025	0.3685		
Aug-07	**$5.993**		6/1/2025	0.3718		
Sep-07	**$5.468**		7/1/2025	0.376		
Oct-07	**$6.384**		8/1/2025	0.3798		
Nov-07	**$7.225**		9/1/2025	0.3811		
Dec-07	**$7.494**	2026	10/1/2025	0.3866	0.391117	0.40975
Jan-08	**$7.081**		11/1/2025	0.3953		
Feb-08	**$8.025**		12/1/2025	0.4113		
Mar-08	**$9.107**		1/1/2026	0.4255		
Apr-08	**$9.523**		2/1/2026	0.4233		
May-08	**$11.011**		3/1/2026	0.4165		
Jun-08	**$11.858**		4/1/2026	0.3862		
Jul-08	**$12.956**		5/1/2026	0.3847		
Aug-08	**$9.155**		6/1/2026	0.3882		
Sep-08	**$9.523**		7/1/2026	0.3927		
Oct-08	**$7.625**		8/1/2026	0.3967		
Nov-08	**$6.259**		9/1/2026	0.3982		
Dec-08	**$6.561**	2027	10/1/2026	0.4037	0.407617	0.428383
Jan-09	**$5.957**		11/1/2026	0.413		
Feb-09	**$4.490**		12/1/2026	0.4305		
Mar-09	**$4.130**		1/1/2027	0.4447		
Apr-09	**$3.969**		2/1/2027	0.4427		
May-09	**$3.290**		3/1/2027	0.4357		
Jun-09	**$3.530**		4/1/2027	0.4027		
Jul-09	**$3.851**		5/1/2027	0.4012		
Aug-09	**$3.506**		6/1/2027	0.4047		
Sep-09	**$2.878**		7/1/2027	0.4092		
Oct-09	**$3.890**		8/1/2027	0.4132		
Nov-09	**$4.453**		9/1/2027	0.4147		
Dec-09	**$4.461**	2028	10/1/2027	0.4202	0.424117	0.447367
Jan-10	**$5.816**		11/1/2027	0.4307		
Feb-10	**$5.494**		12/1/2027	0.4502		
Mar-10	**$4.830**		1/1/2028	0.4647		
Apr-10	**$3.898**		2/1/2028	0.4627		
May-10	**$4.250**		3/1/2028	0.4557		
Jun-10	**$4.074**		4/1/2028	0.4192		
Jul-10	**$4.775**		5/1/2028	0.4177		
Aug-10	**$4.687**		6/1/2028	0.4212		
Sep-10	**$3.780**		7/1/2028	0.4257		
Oct-10	**$3.810**		8/1/2028	0.4297		
Nov-10	**$3.321**		9/1/2028	0.4312		
Dec-10	**$4.267**	2029	10/1/2028	0.4367	0.43464	0.461836
Jan-11	**$4.137**		11/1/2028	0.4482		
Feb-11	**$4.427**		12/1/2028	0.4687		
Mar-11	**$3.853**		1/1/2029	0.476		
Apr-11	**$4.339**		2/1/2029	0.474		
May-11	**$4.384**		3/1/2029	0.467		
Jun-11	**$4.350**		4/1/2029	0.430		
Jul-11	**$4.281**		5/1/2029	0.428		
Aug-11	**$4.375**		6/1/2029	0.432		
Sep-11	**$3.906**		7/1/2029	0.436		
Oct-11	**$3.789**		8/1/2029	0.440		
Nov-11	**$3.591**		9/1/2029	0.442		

Dec-11	**$3.455**	2030	10/1/2029	0.448	0.445425	0.473296
Jan-12	**$3.103**		11/1/2029	0.459		
Feb-12	**$2.671**		12/1/2029	0.480		
Mar-12	**$2.539**		1/1/2030	0.488		
Apr-12	**$2.208**		2/1/2030	0.486		
May-12	**$2.026**		3/1/2030	0.479		
Jun-12	**$2.548**		4/1/2030	0.440		
Jul-12	**$2.745**		5/1/2030	0.439		
Aug-12	**$3.062**		6/1/2030	0.442		
Sep-12	**$2.634**		7/1/2030	0.447		
Oct-12	**$2.928**		8/1/2030	0.451		
Nov-12	**$3.435**		9/1/2030	0.453		
Dec-12	**$3.732**	2031	10/1/2030	0.459	0.456477	0.48504
Jan-13	**$3.364**		11/1/2030	0.471		
Feb-13	**$3.320**		12/1/2030	0.492		
Mar-13	**$3.377**		1/1/2031	0.500		
Apr-13	**$3.923**		2/1/2031	0.498		
May-13	**$4.162**		3/1/2031	0.490		
Jun-13	**$4.186**		4/1/2031	0.451		
Jul-13	**$3.698**		5/1/2031	0.450		
Aug-13	**$3.553**		6/1/2031	0.453		
Sep-13	**$3.538**		7/1/2031	0.458		
Oct-13	**$3.494**		8/1/2031	0.462		
Nov-13	**$3.591**		9/1/2031	0.464		
Dec-13	**$3.792**	2032	10/1/2031	0.470	0.467804	0.497075
Jan-14	**$4.419**		11/1/2031	0.482		
Feb-14	**$5.146**		12/1/2031	0.504		
Mar-14	**$5.132**		1/1/2032	0.513		
Apr-14	**$4.466**		2/1/2032	0.510		
May-14	**$4.716**		3/1/2032	0.503		
Jun-14	**$4.510**		4/1/2032	0.462		
Jul-14	**$4.496**		5/1/2032	0.461		
Aug-14	**$3.779**		6/1/2032	0.465		
Sep-14	**$3.935**		7/1/2032	0.470		
Oct-14	**$3.955**		8/1/2032	0.474		
Nov-14	**$3.646**		9/1/2032	0.476		
Dec-14	**$4.233**	2033	10/1/2032	0.482	0.479411	0.509409
Jan-15	**$3.075**		11/1/2032	0.494		
Feb-15	**$2.909**		12/1/2032	0.517		
Mar-15	**$2.892**		1/1/2033	0.525		
Apr-15	**$2.662**		2/1/2033	0.523		
May-15	**$2.513**		3/1/2033	0.515		
Jun-15	**$2.841**		4/1/2033	0.474		
Jul-15	**$2.794**		5/1/2033	0.472		
Aug-15	**$2.832**		6/1/2033	0.476		
Sep-15	**$2.672**		7/1/2033	0.481		
Oct-15	**$2.573**		8/1/2033	0.486		
Nov-15	**$2.062**		9/1/2033	0.487		
Dec-15	**$2.205**	2034	10/1/2033	0.494	0.491307	0.522049
Jan-16	**$2.210**		11/1/2033	0.507		
Feb-16	**$2.176**		12/1/2033	0.530		
Mar-16	**$1.757**		1/1/2034	0.538		
Apr-16	**$1.852**		2/1/2034	0.536		
May-16	**$2.030**		3/1/2034	0.528		
Jun-16	**$1.978**		4/1/2034	0.486		
Jul-16	$2.585		5/1/2034	0.484		
Aug-16	$2.652		6/1/2034	0.488		
Sep-16	$2.682		7/1/2034	0.493		
Oct-16	$2.747		8/1/2034	0.498		
Nov-16	$2.919		9/1/2034	0.500		
Dec-16	$3.182	2035	10/1/2034	0.506	0.503498	0.535002
Jan-17	$3.310		11/1/2034	0.519		
Feb-17	$3.303		12/1/2034	0.543		
Mar-17	$3.262		1/1/2035	0.552		
Apr-17	$2.987		2/1/2035	0.549		
May-17	$2.957		3/1/2035	0.541		
Jun-17	$2.978		4/1/2035	0.498		
Jul-17	$3.012		5/1/2035	0.496		
Aug-17	$3.017		6/1/2035	0.500		
Sep-17	$2.998		7/1/2035	0.505		
Oct-17	$3.023		8/1/2035	0.510		
Nov-17	$3.082		9/1/2035	0.512		
Dec-17	$3.229	2036	10/1/2035	0.518	0.515991	0.548277
Jan-18	$3.344		11/1/2035	0.532		
Feb-18	$3.310		12/1/2035	0.556		
Mar-18	$3.246		1/1/2036	0.565		
Apr-18	$2.866		2/1/2036	0.563		
May-18	$2.847		3/1/2036	0.554		
Jun-18	$2.875		4/1/2036	0.510		
Jul-18	$2.908		5/1/2036	0.508		
Aug-18	$2.913		6/1/2036	0.512		
Sep-18	$2.902		7/1/2036	0.518		
Oct-18	$2.920		8/1/2036	0.523		
Nov-18	$2.995		9/1/2036	0.525		

Dec-18	$3.139	2037	10/1/2036	0.531	0.528794	0.561882
Jan-19	$3.256		11/1/2036	0.545		
Feb-19	$3.222		12/1/2036	0.570		
Mar-19	$3.157		1/1/2037	0.579		
Apr-19	$2.822		2/1/2037	0.577		
May-19	$2.817		3/1/2037	0.568		
Jun-19	$2.850		4/1/2037	0.523		
Jul-19	$2.888		5/1/2037	0.521		
Aug-19	$2.906		6/1/2037	0.525		
Sep-19	$2.898		7/1/2037	0.531		
Oct-19	$2.918		8/1/2037	0.536		
Nov-19	$2.994		9/1/2037	0.538		
Dec-19	$3.141	2038	10/1/2037	0.544	0.541915	0.575823
Jan-20	$3.266		11/1/2037	0.559		
Feb-20	$3.241		12/1/2037	0.584		
Mar-20	$3.178		1/1/2038	0.594		
Apr-20	$2.878		2/1/2038	0.591		
May-20	$2.876		3/1/2038	0.582		
Jun-20	$2.909		4/1/2038	0.536		
Jul-20	$2.946		5/1/2038	0.534		
Aug-20	$2.974		6/1/2038	0.538		
Sep-20	$2.975		7/1/2038	0.544		
Oct-20	$3.008		8/1/2038	0.549		
Nov-20	$3.088		9/1/2038	0.551		
Dec-20	$3.238	2039	10/1/2038	0.558	0.555361	0.590111
Jan-21	$3.378		11/1/2038	0.573		
Feb-21	$3.353		12/1/2038	0.599		
Mar-21	$3.290		1/1/2039	0.609		
Apr-21	$3.025		2/1/2039	0.606		
May-21	$3.024		3/1/2039	0.597		
Jun-21	$3.056		4/1/2039	0.549		
Jul-21	$3.093		5/1/2039	0.547		
Aug-21	$3.128		6/1/2039	0.552		
Sep-21	$3.132		7/1/2039	0.557		
Oct-21	$3.168		8/1/2039	0.563		
Nov-21	$3.248		9/1/2039	0.565		
Dec-21	$3.396	2040	10/1/2039	0.572	0.569141	0.604754
Jan-22	$3.536		11/1/2039	0.587		
Feb-22	$3.511		12/1/2039	0.614		
Mar-22	$3.448		1/1/2040	0.624		
Apr-22	$3.183		2/1/2040	0.621		
May-22	$3.182		3/1/2040	0.612		
Jun-22	$3.214		4/1/2040	0.563		
Jul-22	$3.252		5/1/2040	0.561		
Aug-22	$3.287		6/1/2040	0.565		
Sep-22	$3.291		7/1/2040	0.571		
Oct-22	$3.331		8/1/2040	0.577		
Nov-22	$3.411		9/1/2040	0.579		
Dec-22	$3.561	2041	10/1/2040	0.586	0.583263	0.619759
Jan-23	$3.703		11/1/2040	0.601		
Feb-23	$3.678		12/1/2040	0.629		
Mar-23	$3.615		1/1/2041	0.639		
Apr-23	$3.350		2/1/2041	0.636		
May-23	$3.345		3/1/2041	0.627		
Jun-23	$3.377		4/1/2041	0.577		
Jul-23	$3.415		5/1/2041	0.574		
Aug-23	$3.451		6/1/2041	0.579		
Sep-23	$3.460		7/1/2041	0.585		
Oct-23	$3.505		8/1/2041	0.591		
Nov-23	$3.585		9/1/2041	0.593		
Dec-23	$3.737	2042	10/1/2041	0.601	0.597736	0.635137
Jan-24	$3.879		11/1/2041	0.616		
Feb-24	$3.854		12/1/2041	0.645		
Mar-24	$3.789		1/1/2042	0.655		
Apr-24	$3.526		2/1/2042	0.652		
May-24	$3.516		3/1/2042	0.642		
Jun-24	$3.548		4/1/2042	0.591		
Jul-24	$3.593		5/1/2042	0.589		
Aug-24	$3.629		6/1/2042	0.594		
Sep-24	$3.640		7/1/2042	0.600		
Oct-24	$3.690		8/1/2042	0.606		
Nov-24	$3.770		9/1/2042	0.608		
Dec-24	$3.922	2043	10/1/2042	0.615	0.612567	0.650897
Jan-25	$4.064		11/1/2042	0.632		
Feb-25	$4.041		12/1/2042	0.661		
Mar-25	$3.974		1/1/2043	0.671		
Apr-25	$3.699		2/1/2043	0.668		
May-25	$3.685		3/1/2043	0.658		
Jun-25	$3.718		4/1/2043	0.605		
Jul-25	$3.760		5/1/2043	0.603		
Aug-25	$3.798		6/1/2043	0.608		
Sep-25	$3.811		7/1/2043	0.615		
Oct-25	$3.866		8/1/2043	0.621		
Nov-25	$3.953		9/1/2043	0.623		

Dec-25	$4.113	2044	10/1/2043	0.631	0.627767	0.667047
Jan-26	$4.255		11/1/2043	0.647		
Feb-26	$4.233		12/1/2043	0.677		
Mar-26	$4.165		1/1/2044	0.688		
Apr-26	$3.862		2/1/2044	0.685		
May-26	$3.847		3/1/2044	0.675		
Jun-26	$3.882		4/1/2044	0.620		
Jul-26	$3.927		5/1/2044	0.618		
Aug-26	$3.967		6/1/2044	0.623		
Sep-26	$3.982		7/1/2044	0.630		
Oct-26	$4.037		8/1/2044	0.636		
Nov-26	$4.130		9/1/2044	0.638		
Dec-26	$4.305	2045	10/1/2044	0.646	0.643344	0.683599
Jan-27	$4.447		11/1/2044	0.663		
Feb-27	$4.427		12/1/2044	0.694		
Mar-27	$4.357		1/1/2045	0.705		
Apr-27	$4.027		2/1/2045	0.702		
May-27	$4.012		3/1/2045	0.691		
Jun-27	$4.047		4/1/2045	0.636		
Jul-27	$4.092		5/1/2045	0.634		
Aug-27	$4.132		6/1/2045	0.639		
Sep-27	$4.147		7/1/2045	0.646		
Oct-27	$4.202		8/1/2045	0.652		
Nov-27	$4.307		9/1/2045	0.654		
Dec-27	$4.502	2046	10/1/2045	0.662	0.659307	0.700561
Jan-28	$4.647		11/1/2045	0.680		
Feb-28	$4.627		12/1/2045	0.711		
Mar-28	$4.557		1/1/2046	0.722		
Apr-28	$4.192		2/1/2046	0.719		
May-28	$4.177		3/1/2046	0.708		
Jun-28	$4.212		4/1/2046	0.652		
Jul-28	$4.257		5/1/2046	0.649		
Aug-28	$4.297		6/1/2046	0.655		
Sep-28	$4.312		7/1/2046	0.662		
Oct-28	$4.367		8/1/2046	0.668		
Nov-28	$4.482		9/1/2046	0.670		
Dec-28	$4.687	2047	10/1/2046	0.679	0.675666	0.717944
			11/1/2046	0.697		
			12/1/2046	0.729		
			1/1/2047	0.740		
			2/1/2047	0.737		
			3/1/2047	0.726		
			4/1/2047	0.668		
			5/1/2047	0.665		
			6/1/2047	0.671		
			7/1/2047	0.678		
			8/1/2047	0.685		
			9/1/2047	0.687		
		2048	10/1/2047	0.696	0.692431	0.735758
			11/1/2047	0.714		
			12/1/2047	0.747		
			1/1/2048	0.759		
			2/1/2048	0.755		
			3/1/2048	0.744		
			4/1/2048	0.684		
			5/1/2048	0.682		
			6/1/2048	0.688		
			7/1/2048	0.695		
			8/1/2048	0.702		
			9/1/2048	0.704		
		2049	10/1/2048	0.713	0.709613	0.754014
			11/1/2048	0.732		
			12/1/2048	0.765		
			1/1/2049	0.778		
			2/1/2049	0.774		
			3/1/2049	0.762		
			4/1/2049	0.701		
			5/1/2049	0.699		
			6/1/2049	0.705		
			7/1/2049	0.712		
			8/1/2049	0.719		
			9/1/2049	0.721		
		2050	10/1/2049	0.731	0.72722	0.772724
			11/1/2049	0.750		
			12/1/2049	0.784		
			1/1/2050	0.797		
			2/1/2050	0.793		
			3/1/2050	0.781		
			4/1/2050	0.719		
			5/1/2050	0.716		
			6/1/2050	0.722		
			7/1/2050	0.730		
			8/1/2050	0.737		
			9/1/2050	0.739		
		2051	10/1/2050	0.749	0.745265	0.791897
			11/1/2050	0.769		
			12/1/2050	0.804		
			1/1/2051	0.817		
			2/1/2051	0.813		
			3/1/2051	0.801		
			4/1/2051	0.737		
			5/1/2051	0.734		

	6/1/2051	0.740		
	7/1/2051	0.748		
	8/1/2051	0.755		
	9/1/2051	0.758		
2052	10/1/2051	0.767	0.763757	0.811546
	11/1/2051	0.788		
	12/1/2051	0.824		
	1/1/2052	0.837		
	2/1/2052	0.833		
	3/1/2052	0.821		
	4/1/2052	0.755		
	5/1/2052	0.752		
	6/1/2052	0.759		
	7/1/2052	0.767		
	8/1/2052	0.774		
	9/1/2052	0.777		

Mnemonic: FCPIU.IUSA_MNEY
Description: CPI: Total - All Urban Consumers, (Index 1982-84=100, SA)
Source: BLS; Moody's Analytics
Native Frequency: QUARTERLY
Geography: New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area

Dec-1970	na		
Dec-1971	43.35	rate	2.48%
Dec-1972	45.18		
Dec-1973	48.05		
Dec-1974	53.26		
Dec-1975	57.37		
Dec-1976	60.70		
Dec-1977	63.92		
Dec-1978	67.67		
Dec-1979	73.65		
Dec-1980	82.13		
Dec-1981	90.26		
Dec-1982	95.39		
Dec-1983	99.85		
Dec-1984	104.77		
Dec-1985	108.69		
Dec-1986	112.10		
Dec-1987	117.64		
Dec-1988	123.35		
Dec-1989	130.13		
Dec-1990	138.02		
Dec-1991	144.25		
Dec-1992	149.35		
Dec-1993	153.76		
Dec-1994	157.45		
Dec-1995	161.44		
Dec-1996	166.16		
Dec-1997	170.05		
Dec-1998	172.79		
Dec-1999	176.64		
Dec-2000	182.94		
Dec-2001	188.55		
Dec-2002	194.93		
Dec-2003	201.41		
Dec-2004	208.27		
Dec-2005	216.43		
Dec-2006	225.25		
Dec-2007	231.03		
Dec-2008	241.65		
Dec-2009	242.77		
Dec-2010	247.55		
Dec-2011	254.42		
Dec-2012	259.15		
Dec-2013	263.20		
Dec-2014	266.43		
Dec-2015	266.73		
Dec-2016	272.21		
Dec-2017	279.67		
Dec-2018	288.84		
Dec-2019	297.62		
Dec-2020	305.42		
Dec-2021	313.24		
Dec-2022	321.45		
Dec-2023	329.67		
Dec-2024	337.87		
Dec-2025	346.07		
Dec-2026	354.43		
Dec-2027	363.08		
Dec-2028	372.04		
Dec-2029	381.17		
Dec-2030	390.45		
Dec-2031	399.88		
Dec-2032	409.52		
Dec-2033	419.39		
Dec-2034	429.45		
Dec-2035	439.76		
Dec-2036	450.31		
Dec-2037	461.11		
Dec-2038	472.10		
Dec-2039	483.32		
Dec-2040	494.83		
Dec-2041	506.63		
Dec-2042	518.67		
Dec-2043	531.00		
Dec-2044	543.57		
Dec-2045	556.42		

Pivotal Utility Holdings, Inc.
d/b/a Elizabethtown Gas
Notice of Public Hearings Regarding
Proposed Energy Efficiency Program Rider Rate Increases and Other Tariff Changes

On July 1, 2016, Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas ("the Company") filed a Petition ("July 1 Petition") with the New Jersey Board of Public Utilities ("BPU" or "Board") in BPU Docket No. _____ to extend the term of its Energy Efficiency Programs ("EEPs") for an additional four-year term commencing January 1, 2017. The current Energy Efficiency Programs are scheduled to expire December 31, 2016. In general these programs provide monetary incentives and customer education to Elizabethtown's residential and commercial customers to encourage energy efficiency. The Company's July 1 Petition did not propose a rate increase and therefore it will not produce an increase in your current gas bills at this time.

The Company currently recovers the cost of its EEPs through its EEP Rider rate. The Company's current EEP Rider rate is $0.0054 per therm. The Company expects, based on current projections, to submit a filing in July 2016 proposing to decrease its current EEP Rider rate from $0.0054 to ($0.0007). If the Board does not approve the extension, the Company expects, based on current projections, to submit a filing in July 2017 proposing to increase its EEP Rider rate to $0.0001 per therm effective October 1, 2017. Although the Company's current programs expire at the end of December 2016, the Company recovers certain costs associated with its energy efficiency program over a four-year period. Absent an extension of the current energy efficiency programs, cost recovery would cease in 2020-2021 depending on the recovery true-up. If an extension of the EEPs is approved, instead of proposing an EEP rider rate of $0.0001 per therm in the July 2017 filing, the Company would propose a rate of $0.0081 per therm effective October 1, 2017. If an extension of the current EEPs is approved, cost recovery would continue through 2024-2025. The rates proposed in the July 2017 filing will be subject to public notice. The following chart reflects projections of the potential rate and bill impacts through 2025 with and without an extension of the current EEPs:

	Current Program	Program Extension	Increase	100 Therm Bill Change
October 1, 2016	($0.0007)			
October 1, 2017	$0.0001	$0.0081	$0.0080	$0.80
October 1, 2018	$0.0006	$0.0082	$0.0076	$0.76
October 1, 2019	$0.0003	$0.0083	$0.0080	$0.80
October 1, 2020	$0.0000	$0.0069	$0.0069	$0.69
October 1, 2021	$0.0000	$0.0037	$0.0037	$0.37
October 1, 2022	$0.0000	$0.0022	$0.0022	$0.22
October 1, 2023	$0.0000	$0.0011	$0.0011	$0.11
October 1, 2024	$0.0000	$0.0000	$0.0000	$0.00
Average				$0.44

Under the current program, in 2017 the effect of a rate change from the proposed rate of ($0.0007) per therm to $0.0001 per therm on a typical residential customer using an average of 100 therms per month is illustrated below:

Consumption in Therms	Present Bill*	Proposed Bill	Change in Bill	Percent Change
100	$86.30	$86.38	$0.08	0.1%

If the extension is approved, in 2017 the effect of a rate change from the proposed rate of ($0.0007) per therm to $0.0081 per therm on a typical residential customer using an average of 100 therms per month is illustrated below:

Consumption in Therms	Present Bill*	Proposed Bill	Change in Bill	Percent Change
100	$86.30	$87.18	$0.88	1.0%

*Adjusted to include ($0.0007) per therm

Copies of the Petition are available for inspection at the Company offices located at 520 Green Lane, Union, New Jersey 07083 or online at Elizabethtown's website: www.elizabethtowngas.com or at the Board of Public Utilities, 44 S. Clinton Avenue, 3rd Floor, Suite 314, Trenton, New Jersey 08625.

PLEASE TAKE NOTICE that Public Hearings have been scheduled on the above mentioned Petition at the following times and places:

Date and Time
Liberty Hall Corporate Center, 1085 Morris Avenue, Union, New Jersey 07083

Date and Time
Hunterdon County Complex, Route 12, Building #1, Flemington, New Jersey 08822

The public is invited to attend and interested persons will be permitted to testify and/or make a statement of their views on the proposed increases. Information provided at the public hearings will become part of the record of this case and will be considered by the Board in making its decision. In order to encourage full participation in this opportunity for public comment, please submit requests for needed accommodations, including interpreter, listening devices and/or mobility assistance, 48 hours prior to the Hearing. In addition, members of the public may submit written comments concerning the Petition to the BPU regardless of whether they attend the Hearing by addressing them to: Irene Kim Asbury, Secretary, Board of Public Utilities, 44 S. Clinton Avenue, 3rd Floor, Suite 314, Trenton, New Jersey 08625. Hearings will continue, if necessary, on such additional dates and at such locations as the Office of Administrative Law may designate in order to ensure that all interested persons may be heard.

Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas
Brian MacLean – President

Exhibit P-5

<<ADD DATE>>

To: County Clerks, Municipal Clerks and County Administrators

IN THE MATTER OF THE PETITION OF	**)**	
PIVOTAL UTILITY HOLDINGS, INC. D/B/A	**)**	**PETITION**
ELIZABETHTOWN GAS FOR AUTHORITY	**)**	
TO EXTEND THE TERM OF ENERGY	**)**	
EFFICIENCY PROGRAMS WITH CERTAIN	**)**	
MODIFICATIONS AND APPROVAL OF	**)**	**BPU DOCKET NO.**
ASSOCIATED COST RECOVERY MECHANISM	**)**	**_____**

Pursuant to law, Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas (the "Company") is providing you with notice of a filing made on July 1, 2016 with the New Jersey Board of Public Utilities for approval of the extension of energy-efficiency programs and the associated cost recovery mechanisms. You can download the filing from the Company's website at www.elizabethtowngas.com.

Hard copies of the filing are available for review at the Company's Customer Service Offices and at the New Jersey Board of Public Utilities, 44 South Clinton Street, 3rd Floor, Suite 314, P.O. Box 350, Trenton, New Jersey 08450-0350.

Very truly yours,

M. Patricia Keefe
Vice President, Regulatory Affairs
And Business Support

Enclosure