

### Testimony Experience of Timothy S. Lyons

<b>Sponsor</b>	<b>Date</b>	<b>Docket No.</b>	<b>Subject</b>
<b>Regulatory Commission of Alaska</b>			
ENSTAR Natural Gas Company	06/16	Docket No. U-16-066	Adopted testimony and sponsored Lead/Lag study for a general rate case proceeding.
<b>Connecticut Public Utilities Regulatory Authority</b>			
Yankee Gas Company	07/14	Docket No. 13-06-02	Sponsored report and testimony supporting the review and evaluation of gas expansion policies, procedures and analysis.
<b>Illinois Commerce Commission</b>			
Liberty Utilities (Midstates Natural Gas)	07/16	Docket No. 16-0401	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony includes proposal for new commercial classes and a decoupling mechanism.
<b>Iowa Utilities Board</b>			
Liberty Utilities (Midstates Natural Gas)	07/16	Docket No. RPU-2016-0003	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony includes proposal for new commercial classes.
<b>Maine Public Utilities Commission</b>			
Northern Utilities, Inc. d/b/a Unitil Gas Limited	06/15	Case No. 2015-00146	Sponsored testimony supporting the proposed gas expansion program, including a zone area surcharge.
<b>Maryland Public Service Commission</b>			
Sandpiper Energy, Inc.	12/15	Case No. 9410	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony includes proposal for new residential and commercial classes.
<b>Massachusetts Department of Public Utilities</b>			
Boston Gas	03/88	Docket No. DPU 88-67-II	Sponsored testimony supporting the rate reclassification of commercial and industrial customers for a rate design proceeding.
Boston Gas	03/90	DPU 90-55	Sponsored testimony supporting the weather and other cost of service adjustments, rate design and customer bill impact studies for a general rate case proceeding.
Boston Gas	10/93	DPU 92-230	Sponsored testimony describing the Company's position regarding rate treatment of vehicular natural gas investments and expenses.
<b>Missouri Public Service Commission</b>			
Laclede Gas Company	04/17	Docket No. GR-2017-0215	Sponsored testimony supporting the cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
Missouri Gas Energy	04/17	Docket No. GR-2017-0216	Sponsored testimony supporting the cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
Liberty Utilities	09/17	Docket No. GR-2018-00013	Sponsored testimony supporting the cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
<b>New Hampshire Public Utilities Commission</b>			
Liberty Utilities d/b/a Granite State Electric Company	04/16	Docket No. DE 16-383	Adopted testimony and sponsored Lead/Lag study for a general rate case proceeding.

### Testimony Experience of Timothy S. Lyons

<i>Sponsor</i>	<i>Date</i>	<i>Docket No.</i>	<i>Subject</i>
<b><i>New Jersey Board of Public Utilities</i></b>			
Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas Company	8/16	GR16090826	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
<b><i>Corporation Commission of Oklahoma</i></b>			
The Empire District Electric Company	04/17	Cause No. PUD 201600468	Adopted direct testimony and sponsored rebuttal testimony supporting the revenue requirements for a general rate case proceeding.
<b><i>Rhode Island Public Utilities Commission</i></b>			
Providence Gas Company	01/96	Docket No. 2076	Sponsored testimony supporting the rate reclassification of customers into new rate classes, rate design (including introduction of demand charges), and customer bill impact studies for a rate design proceeding.
Providence Gas Company	11/92	Docket No. 2025	Sponsored testimony supporting the Integrated Resource Plan filing, including a performance-based incentive mechanism.
Providence Gas Company	02/96	Docket No. 2374	Sponsored testimony supporting the rate design, customer bill impact studies and retail access tariffs for largest commercial and industrial customers for a rate design proceeding.
Providence Gas Company	04/97	Docket No. 2552	Sponsored testimony supporting the rate design, customer bill impact studies and retail access tariffs for commercial and industrial customers, including redesign of cost of gas adjustment clause, for a rate design proceeding.
Providence Gas Company	08/01 09/00 08/96	Docket No. 1673	Sponsored testimony supporting the changes in cost of gas adjustment factor related to projected under-recovery of gas costs; Filed testimony and witness for pilot hedging program to mitigate price risks to customers; Filed testimony and witness for changes in cost of gas adjustment factor related to extension of rate plan.
Providence Gas Company	06/97	Docket No. 2581	Sponsored testimony supporting a rate plan that fixed all billing rates for three-year period; included funding for critical infrastructure investments in accelerated replacement of mains and services, digitized records system, and economic development projects.
Providence Gas Company	08/00	Docket No. 2581	Sponsored testimony supporting the extension of a rate plan that began in 1997 and included certain modifications, including a weather normalization clause.
Providence Gas Company	03/00	Docket No. 3100	Sponsored testimony supporting the de-tariff and deregulation of appliance repair service, enabling the Company to have needed pricing flexibility.

**Testimony Experience of Timothy S. Lyons**

<i>Sponsor</i>	<i>Date</i>	<i>Docket No.</i>	<i>Subject</i>
<b><i>Railroad Commission of Texas</i></b>			
CenterPoint Energy – Houston Division and Texas Coast Division	11/16	GUD No. 10567	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Atmos Pipeline – Texas	01/17	GUD No. 10580	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
<b><i>Vermont Public Service Board</i></b>			
Vermont Gas Systems	02/11	Docket No. 7712	Sponsored testimony supporting the market evaluation and analysis for a system expansion and reliability regulatory fund.
Vermont Gas Systems	12/12	Docket No. 7970	Sponsored testimony describing market to be served by \$90 million natural gas expansion project to Addison County, VT. Also described the benefits of the project as well as the Company's programs and service offerings. Sponsored testimony describing the economic benefits and terms of a special contract with International Paper.

THIS PAGE INTENTIONALLY LEFT BLANK

### Summary of Levelized Cost Analysis

Levelized Cost Analysis	Granite Bridge Pipeline		Granite Bridge LNG Facility	
	Cost	Unit Cost	Cost	
Levelized Annual Costs	\$ 12,847,444	\$ 0.47	\$ 28,036,091	
<b>Facility Costs</b>				
Investment	\$ 109,993,165		\$ 201,706,990	
Add: AFUDC	\$ 7,546,427		\$ 20,942,839	
Total Facility Cost	\$ 117,539,592		\$ 222,649,828	
O&M Expenses	\$ 567,515		\$ 3,092,000	
ACQ (Dth, MCF)		27,375,000		

THIS PAGE INTENTIONALLY LEFT BLANK

## Levelized Cost Analysis: Granite Bridge Pipeline

Granite Bridge Pipeline Financial Analysis	Year 2021	Year 2030	Year 2040	Year 2060	Year 2070	Year 2075
Years	1	10	20	40	50	55
<b>Total Cost of Facility Investment</b>						
Revenues to Achieve ROE	\$ 17,086,408	\$ 13,271,292	\$ 9,540,871	\$ 6,259,993	\$ 4,748,218	\$ 4,016,314
O&M Expense	626,583	748,824	912,813	1,356,391	1,653,434	1,825,524
Uncollectible Expense	170,864	132,713	95,409	62,600	47,482	40,163
Depreciation Expense	2,137,083	2,137,083	2,137,083	2,137,083	2,137,083	2,137,083
Property Taxes	2,647,256	2,206,047	1,715,814	735,349	245,116	-
Property Insurance	15,212	12,676	9,859	4,225	1,408	-
Interest Expense	2,537,470	1,774,321	1,031,359	433,831	146,579	2,991
Return Requirement	5,441,526	3,804,977	2,211,719	930,337	314,333	6,414
Income Taxes	3,510,414	2,454,650	1,426,814	600,175	202,781	4,138
<b>Total Cost</b>	<b>\$ 17,086,408</b>	<b>\$ 13,271,292</b>	<b>\$ 9,540,871</b>	<b>\$ 6,259,993</b>	<b>\$ 4,748,218</b>	<b>\$ 4,016,314</b>
PV of Total Cost	17,086,408	7,791,248	3,099,381	622,654	261,335	164,434
<b>NPV of Total Cost</b>	<b>\$ 202,605,722</b>					
<b>Levelized Carrying Cost</b>	<b>\$12,847,444</b>	12,847,444	12,847,444	12,847,444	12,847,444	12,847,444
<b>Initial Investment</b>	<b>\$ 109,993,165</b>					
<b>Levelized Carrying Charge</b>	<b>11.68%</b>					
Rate Base	114,558,446	80,104,780	46,562,500	19,586,049	6,617,547	135,039
Equity	57,279,223	40,052,390	23,281,250	9,793,025	3,308,773	67,519
Debt	57,279,223	40,052,390	23,281,250	9,793,025	3,308,773	67,519
Return on Equity	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%

---

THIS PAGE INTENTIONALLY LEFT BLANK



## Levelized Cost Analysis: LNG Facility

Granite Bridge LNG Facility Financial Analysis	Year 2022	Year 2031	Year 2041	Year 2051	Year 2061
	1	10	20	30	40
<b>Total Cost of Facility Investment</b>					
Revenues to Achieve ROE	\$ 36,034,792	\$ 28,069,224	\$ 20,221,574	\$ 16,105,832	\$ 12,604,523
O&M Expense	3,092,000	3,695,226	4,504,460	5,490,912	6,693,391
Uncollectible Expense	360,348	280,692	202,216	161,058	126,045
Depreciation Expense	5,566,246	5,566,246	5,566,246	5,566,246	5,566,246
Property Taxes	4,979,752	3,830,578	2,553,719	1,276,859	-
Property Insurance	28,615	22,011	14,674	7,337	-
Interest Expense	4,860,494	3,240,899	1,629,952	795,826	48,332
Return Requirement	10,423,181	6,950,010	3,495,382	1,706,624	103,646
Income Taxes	6,724,157	4,483,560	2,254,925	1,100,970	66,864
Total Cost	\$ 36,034,792	\$ 28,069,224	\$ 20,221,574	\$ 16,105,832	\$ 12,604,523
PV of Total Cost	36,034,792	16,478,748	6,569,039	2,895,098	1,253,717
<b>NPV of Total Cost</b>	<b>\$ 416,764,964</b>				
<b>Levelized Carrying Cost</b>	<b>\$ 28,036,091</b>	28,036,091	28,036,091	28,036,091	28,036,091
<b>Initial Investment</b>	<b>\$ 201,706,990</b>				
<b>Levelized Carrying Charge</b>	<b>13.90%</b>				
Rate Base	219,435,380	146,316,003	73,586,983	35,928,925	2,182,022
Equity	109,717,690	73,158,002	36,793,491	17,964,463	1,091,011
Debt	109,717,690	73,158,002	36,793,491	17,964,463	1,091,011
Return on Equity	9.50%	9.50%	9.50%	9.50%	9.50%

THIS PAGE INTENTIONALLY LEFT BLANK

## Assumptions

Financial Assumptions	
<b>Income Taxes</b>	
Federal	34.00%
State	<u>7.90%</u>
Combined	39.21%
<b>Cost of Capital</b>	
Equity	50.00%
Cost of Equity	9.50%
Cost of Debt	<u>4.43%</u>
Weighted Capital Cost	6.97%
Discount Rate	6.10%
Inflation	2.00%
Uncollectible	1.00%
<b>Working Capital (Net Lead-Lag Days)</b>	
O&M	27
Property Taxes (of net plant)	2.29%
Property Insurance (of net plant)	0.013%
<b>Levelized Rate</b>	
Granite Bridge Pipeline	6.34%
Granite Bridge LNG Facility	6.73%
<b>Book Depreciation (Years)</b>	
Granite Bridge Pipeline	55
Granite Bridge LNG Facility	40

THIS PAGE INTENTIONALLY LEFT BLANK