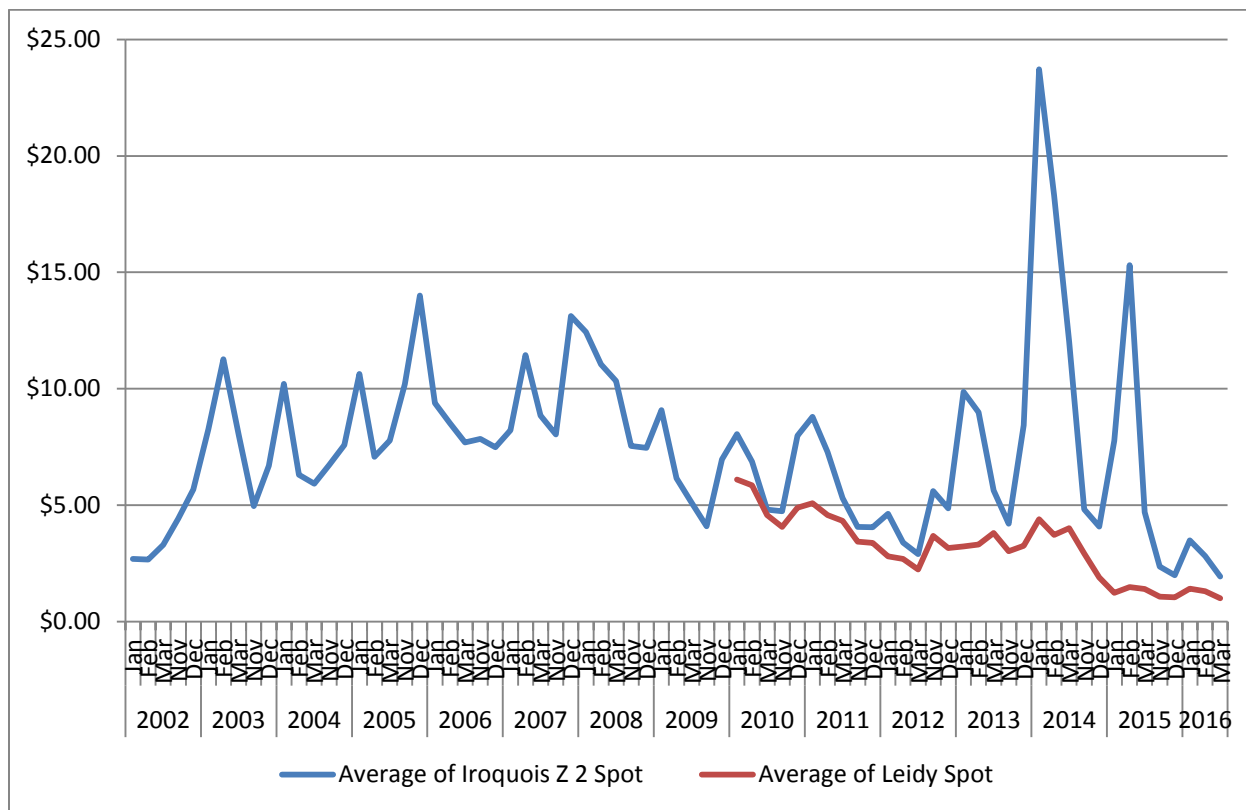


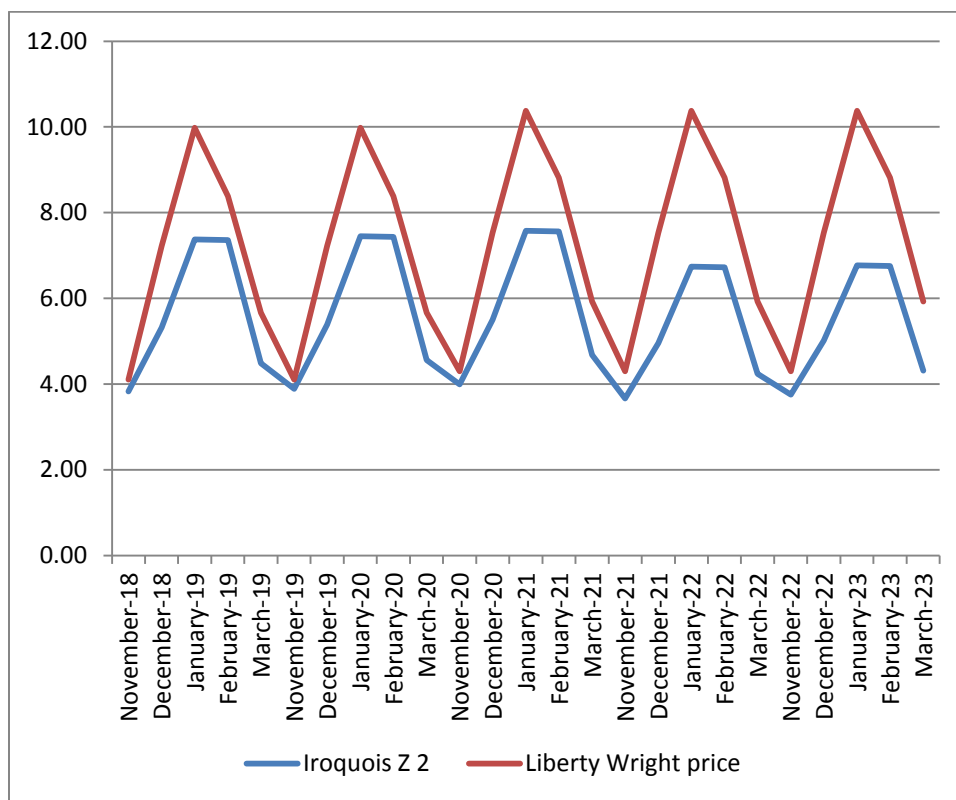
**Attachment IA-1**

Average Monthly Spot Prices at IROZ 2 and Leidy



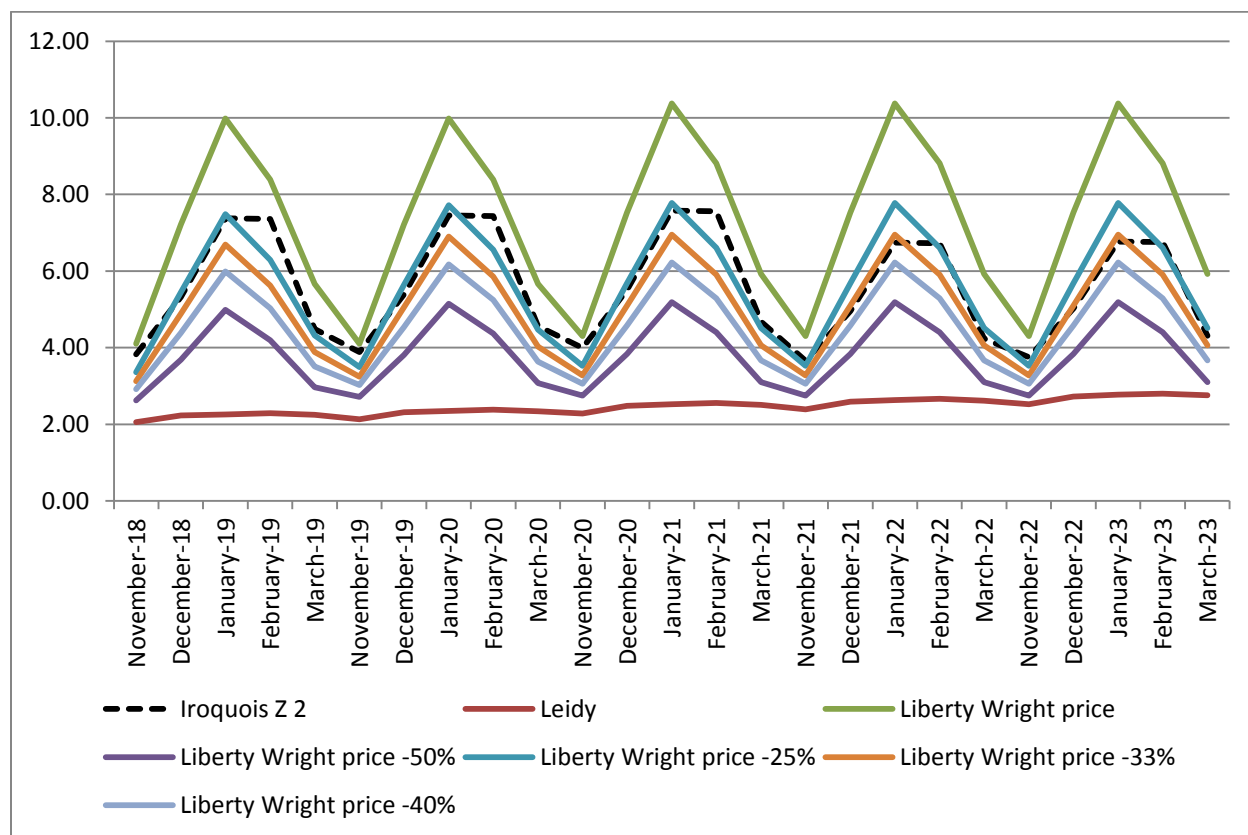
**Attachment IA-2**

IROZ2 Futures Prices and Calculated Average Monthly Prices Using Liberty Multiplier



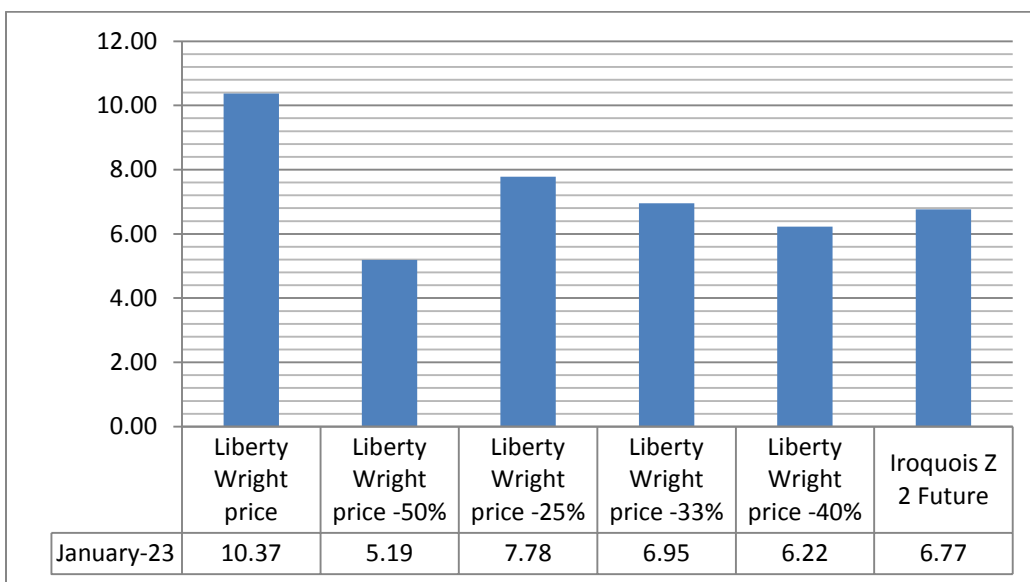
**Attachment IA-3**

Monthly Prices from Different Scenarios



**Attachment IA-4**

Price Comparisons for January 2023



DG 15-494 Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities  
 Supply Path Precedent Agreement  
 Staff Direct testimony

**Attachment IA-5**

Calculated Yearly Multiplier

<b>Manchester HDDs</b>	<b>2011-15</b>	<b>2015-16</b>	<b>2014-15</b>	<b>2013-14</b>	<b>2012-13</b>	<b>2011-12</b>	<b>2010-11</b>
60 - 64	5.09		4.88	6.15	3.40		2.63
50 - 59	3.99	1.54	4.08	4.87	3.01	1.31	1.37
40 - 49	2.59	1.13	2.90	2.81	2.57	1.00	1.27
30 - 39	1.27	0.84	1.59	1.58	1.18	0.80	1.06
20 - 29	1.07	0.82	1.22	1.22	1.07	0.86	0.89

DG 15-494 Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities  
 Supply Path Precedent Agreement  
 Staff Direct testimony

**Attachment IA-6**

Results of Optimizations for Different Scenarios

Source	Volume Scenario	Supply Path Volume (Dth/day)	Total Costs (\$000)	Capacity Release (\$000)	Net Costs (\$000)
DaFonte Testimony, Table 3	(1) Supply Path = 0K (All Purchases at Wright)	0	\$4,331,828	\$130,513	\$4,201,315
	(2) Supply Path = 115K	115,000	\$3,933,818	\$250,087	\$3,683,731
	(3) Resource Mix	79,920	\$3,771,714	\$168,326	\$3,603,388
	(4) Resource Mix (Rounded Volume Level)	78,000	\$3,769,697	\$165,438	\$3,604,259
Staff 1-20	Without Propane	79,920	\$3,817,431	\$118,061	\$3,699,370
Staff 2-1	Market path at 100K dth/day	79,920	\$3,651,553	109,074	\$3,542,479
Staff 2-3(b)	without iNATGAS, Keene, New Expansion and 100Kdth/day	79,160	\$3,607,237	152,387	\$3,454,849
Staff 2-4	Multiplier at -25%	73,180	\$3,744,324	160,131	\$3,584,193
Staff 2-4	Multiplier at -50%	60,000	\$3,699,075	147,219	\$3,551,856
OCA Tech 1-4	Multiplier at -33%	67,990	\$3,768,394	156,799	\$3,611,595
	Multiplier at -40%	65,120	\$3,757,318	153,811	\$3,603,506
Staff tech 2-2	Refreshed with latest data	78,490	\$3,811,149	169,755	\$3,641,394
	Multiplier at -25%	71,490	\$3,781,181	160,495	\$3,620,686
	Multiplier at -50%	55,720	\$3,728,146	145,078	\$3,683,067

## **Attachment IA-7**

### **Educational and Professional Background**

#### **Al-Azad Iqbal**

I am employed by the New Hampshire Public Utilities Commission (PUC) as a Utility Analyst. My business address is 21 S. Fruit Street, Suite 10, Concord New Hampshire, 03301.

I received my Bachelor degree in Architecture (B. Arch) from Bangladesh University of Engineering and Technology. Later, I received my Masters (MS) in Environmental Management from Asian Institute of Technology and another Masters in City and Regional Planning (MCRP) from the Ohio State University. I was a Doctoral Candidate at the City and Regional Planning Department at the Ohio State University. After joining the PUC in 2007, I participated in several utility related training courses including Advanced Regulatory Studies at Institute of Public Utilities, Michigan State University.

Prior to joining the PUC, I was involved in teaching and research activities in different academic and research organizations. Most of my research work was related to quantitative analysis of regional and environmental issues.