

**DE 14-238 Determination Regarding PSNH's Generation Assets Settling Response to  
Dean M. Murphy Testimony Filed on 1/26/2016**

Date of Response: 2/1/2016

Witness: Billy Leung, REMI

Upon review of the testimony filed by Dean M. Murphy of Brattle Group on January 26<sup>th</sup>, 2016 the New Hampshire Public Utilities Commission requested REMI to run an additional simulation to model the \$163 million in energy cost savings over the first five year (2017-2021) time period. The purpose of this simulation is to better understand the economic impacts associated with the energy cost savings and compare them to previous simulations of the various divestiture proceeding estimated outcomes displayed in the Commission Staff Set TC-46 response. In order for REMI to input the energy cost savings, we required a breakdown of the energy cost savings per year and by customer class. Eric Chung on behalf of Eversource Energy provided REMI with those inputs, which account for energy cost changes to industrial, commercial, residential and public street lighting customers. Table one provides the energy cost savings in current millions of dollars that were inputs for this analysis. A negative dollar amount reflects a cost savings.

**Table 1: Energy Cost Changes by Customer Class 2017 – 2021 in Millions of Current Dollars**

Settlement	2017	2018	2019	2020	2021	Total	Average
<b>Overall energy (reductions) / increases related to generation</b>	-\$75.00	-\$38.00	-\$24.00	-\$18.00	-\$8.00	-\$163.00	-\$32.60
<b>Residential</b>	-\$36.58	-\$18.53	-\$11.71	-\$8.78	-\$3.90	-\$79.50	-\$15.90
<b>Commercial</b>	-\$30.41	-\$15.41	-\$9.73	-\$7.30	-\$3.24	-\$66.09	-\$13.22
<b>Industrial</b>	-\$7.79	-\$3.95	-\$2.49	-\$1.87	-\$0.83	-\$16.94	-\$3.39
<b>Public Street Lighting</b>	-\$0.22	-\$0.11	-\$0.07	-\$0.05	-\$0.02	-\$0.47	-\$0.09

When running the simulation, REMI modeled the energy cost savings as the same policy variable input categories in the TC-46 response and original economic assessment report. To compare the results to the previous findings, REMI ran the energy cost savings off of the default REMI control forecast. Table two provides summary level results of the Brattle Group PSNH divestiture energy cost changes when viewed as the difference from the REMI baseline. Table three compares the various estimated outcomes based on aggregate energy cost savings compared to various applicable economic indicators. Table four provides additional comparisons to understand the aggregate energy cost changes input into REMI and the results totals for the first five year time period.

When reading Tables three and four, TC-46A is based on a net electricity cost increase whereas the other simulations are based on assumptions reflecting a net cost decrease. The differences in the results of the three net positive economic impacts are based on the ratios of the various consumer classes affected and the years in which the energy cost changes occurred.

**Table 2: Economic Impact of Brattle Group Estimated PSNH Divestiture Energy Cost Changes (2017-2021)**

Category	Units	2017	2018	2019	2020	2021	Total	Average
<b>Total Employment</b>	Individuals (Jobs)	501	401	328	260	168	1,658	332
<b>Private Non-Farm Employment</b>	Individuals (Jobs)	468	362	289	224	137	1,480	296
<b>Residence Adjusted Employment</b>	Individuals	708	492	400	326	213	2,139	428
<b>Population</b>	Individuals	413	545	602	619	580	2,759	552
<b>Labor Force</b>	Individuals	296	349	374	375	339	1,733	347
<b>Gross Regional Product (GRP)</b>	Millions of Current Dollars	57	46	39	33	23	198	40
<b>Output</b>	Millions of Current Dollars	85	70	60	51	36	302	60
<b>Value Added</b>	Millions of Current Dollars	56	44	37	32	22	191	38
<b>Personal Income</b>	Millions of Current Dollars	52	41	37	33	25	188	38
<b>Disposable Personal Income</b>	Millions of Current Dollars	46	36	33	29	22	166	33
<b>Real Disposable Personal Income</b>	Millions of Current Dollars	109	66	51	44	29	299	60
<b>PCE-Price Index</b>	Percent Change	-0.09%	-0.04%	-0.02%	-0.02%	-0.01%	-0.18%	-0.04%

**Table 3: Economic Activity Creation Comparison (First Five Years of Simulation Results)**

Category	Units	BPD	TC-46A	TC-46B	TC-46BB	TC-46BC
<b>Job Per Dollars Saved</b>	Thousands of Current Dollars	\$98	-\$225	\$119	\$204	\$117
<b>GRP Per Dollars Saved</b>	Thousands of Current Dollars	\$823	-\$1,686	\$978	\$1,692	\$978
<b>Personal Income Per Dollars Saved</b>	Thousands of Current Dollars	\$867	-\$1,826	\$966	\$1,678	\$983

**Table 4: First Five Year Aggregate Impact Comparison (Difference from REMI Baseline)**

Category	Units	BPD	TC-46A	TC-46B	TC-46BB	TC-46BC
<b>Energy Cost Change (Input for Simulation)</b>	Millions of Current Dollars	-\$163	\$66	-\$227	-\$393	-\$227
<b>Total Employment</b>	Individuals (Jobs)	1,658	-292	1,915	1,924	1,942
<b>Gross Regional Product</b>	Millions of Current Dollars	\$198	-\$39	\$232	\$232	\$232
<b>Personal Income</b>	Millions of Current Dollars	\$188	-\$36	\$235	\$234	\$231

**Simulation Comparison Key**

- BPD – Brattle Group Estimated PSNH Divestiture Energy Cost Changes (2017-2021)
- TC-46A – TC-46(a) - La Capra High Natural Gas prices, High Sale Proceeds (Difference from REMI Default Baseline)
- TC-46B – TC-46(b) with Allocation Option A (Difference from REMI Default Baseline)
- TC-46BB – TC-46(b) with Allocation Option B (Difference from REMI Default Baseline)
- TC-46BC – TC-46(b) with Allocation Option C (Difference from REMI Default Baseline)